

Compilation of Changes to the CPC Scheme Between 2020.08 and 2021.01

Presentation Details

Entries for new symbols and headings:	<i>Black text in italics</i>
Entries for existing symbols and headings	
—text insertions:	<i>Green text in italics with yellow background</i>
—text deletions:	Red strikethrough text with grey background
Entries for deleted symbols and headings:	Black strikethrough text

- In cases when the originating project cannot be found, "N/A" is given for the Project information (e.g. the change could be due to an Editorial Correction).
- Projects ending in "-F" indicate finalisation after reclassification was completed.

Project: RP0174 (A01H)

- M A01H** **NEW PLANTS OR ~~{NON-TRANSGENIC}~~ PROCESSES FOR OBTAINING THEM; PLANT REPRODUCTION BY TISSUE CULTURE TECHNIQUES**
- NOTES**
1. This subclass covers all aspects related to new plants, including disease resistance, cold resistance and growth speed.
 2. In this subclass, angiosperms, i.e. flowering plants, are classified in group [A01H 6/00](#) according to their botanic taxonomy and in group [A01H 5/00](#) according to their plant parts, where disclosed.
- C A01H 1/00** **~~Processes for modifying genotypes {; Processes for modifying genotypes Plants characterised by associated natural traits}~~ ([A01H 4/00](#) takes precedence)**
- WARNING**
- Group [A01H 1/00](#) is impacted by reclassification into groups [A01H 1/02](#), [A01H 1/021](#), [A01H 1/022](#), [A01H 1/023](#), [A01H 1/024](#), [A01H 1/026](#), [A01H 1/04](#), [A01H 1/045](#), [A01H 1/09](#), [A01H 1/10](#), [A01H 1/101](#), [A01H 1/102](#), [A01H 1/103](#), [A01H 1/104](#), [A01H 1/105](#), [A01H 1/106](#), [A01H 1/107](#), [A01H 1/108](#), [A01H 1/109](#), [A01H 1/12](#), [A01H 1/1205](#), [A01H 1/121](#), [A01H 1/1215](#), [A01H 1/122](#), [A01H 1/1225](#), [A01H 1/123](#), [A01H 1/1235](#), [A01H 1/124](#), [A01H 1/1245](#), [A01H 1/125](#), [A01H 1/1255](#), [A01H 1/126](#), [A01H 1/1265](#), [A01H 1/127](#), and [A01H 1/129](#). All groups listed in this Warning should be considered in order to perform a complete search.*
- C A01H 1/02** • **Methods or apparatus for hybridisation; Artificial pollination {; Fertility}**
- WARNING**
- Group [A01H 1/02](#) is incomplete pending reclassification of documents from group [A01H 1/00](#).
Group [A01H 1/02](#) is also impacted by reclassification into groups [A01H 1/021](#), [A01H 1/022](#), [A01H 1/023](#), [A01H 1/024](#), and [A01H 1/026](#).
All groups listed in this Warning should be considered in order to perform a complete search.*
- N A01H 1/021** • **{Methods of breeding using interspecific crosses, i.e. interspecies crosses}**
- WARNING**
- Group [A01H 1/021](#) is incomplete pending reclassification of documents from groups [A01H 1/00](#) and [A01H 1/02](#).
Groups [A01H 1/00](#), [A01H 1/02](#) and [A01H 1/021](#) should be considered in order to perform a complete search.*

- N A01H 1/022
- • {Genic fertility modification, e.g. apomixis}
- WARNING
Groups [A01H 1/022](#), [A01H 1/023](#), and [A01H 1/024](#) are incomplete pending reclassification of documents from groups [A01H 1/00](#) and [A01H 1/02](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N A01H 1/023
- • • {Male sterility}
- N A01H 1/024
- • • {Female sterility}
- D A01H 1/025
- • {Apparatus for pollination}
- <administratively transferred to [A01H 1/027](#)>
- N A01H 1/026
- • {by treatment with chemicals}
- WARNING
Group [A01H 1/026](#) is incomplete pending reclassification of documents from groups [A01H 1/00](#) and [A01H 1/02](#). Groups [A01H 1/00](#), [A01H 1/02](#), and [A01H 1/026](#) should be considered in order to perform a complete search.
- N A01H 1/027
- • {Apparatus for pollination}
- C A01H 1/04
- Processes of selection {involving genotypic or phenotypic markers; Methods of using phenotypic markers for selection}
- NOTE
{This group covers the use of phenotypic markers for selection, insofar as the output or input traits are not covered by groups [A01H 1/10](#) - [A01H 1/129](#).}
- WARNING
Group [A01H 1/04](#) is incomplete pending reclassification of documents from group [A01H 1/00](#). Group [A01H 1/04](#) is also impacted by reclassification into group [A01H 1/045](#). Groups [A01H 1/00](#), [A01H 1/04](#), and [A01H 1/045](#) should be considered in order to perform a complete search.
- N A01H 1/045
- • {using molecular markers}
- WARNING
Group [A01H 1/045](#) is incomplete pending reclassification of documents from groups [A01H 1/00](#) and [A01H 1/04](#). Groups [A01H 1/00](#), [A01H 1/04](#), and [A01H 1/045](#) should be considered in order to perform a complete search.
- M A01H 1/06
- Processes for producing mutations, e.g. treatment with chemicals or with radiation (~~mutation or genetic engineering~~ [C12N 15/00](#) specific mutations prepared by genetic engineering on plant cell or plant tissues [C12N 15/00](#) {; process for producing transgenic plants [C12N 15/82](#)})
- C A01H 1/08
- • Methods ~~or apparatus~~ for producing changes in chromosome number
- WARNING
Group [A01H 1/08](#) is impacted by reclassification into group [A01H 1/09](#). Groups [A01H 1/08](#), and [A01H 1/09](#) should be considered in order to perform a complete search.
- N A01H 1/09
- • {Apparatus for producing changes in chromosome number}
- WARNING
Group [A01H 1/09](#) is incomplete pending reclassification of documents from group [A01H 1/08](#).

Groups [A01H 1/08](#), and [A01H 1/09](#) should be considered in order to perform a complete search.

- N A01H 1/10
- {Processes for modifying non-agronomic quality output traits, e.g. for industrial processing; Value added, non-agronomic traits}
- WARNING
Groups [A01H 1/10](#) - [A01H 1/109](#) are incomplete pending reclassification of documents from group [A01H 1/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A01H 1/101
- • {involving biosynthetic or metabolic pathways, i.e. metabolic engineering, e.g. nicotine or caffeine}
- N A01H 1/102
- • • {involving modified carbohydrate or sugar alcohol metabolism, e.g. starch biosynthesis}
- N A01H 1/103
- • • • {Non-starch polysaccharides, e.g. cellulose, fructans or levans}
- N A01H 1/104
- • • {involving modified lipid metabolism, e.g. seed oil composition}
- N A01H 1/105
- • • • {involving altered sterol composition}
- N A01H 1/106
- • • {involving fruit development, senescence or ethylene biosynthesis, e.g. modified tomato ripening or cut flower shelf-life}
- N A01H 1/107
- • • {involving pigment biosynthesis}
- N A01H 1/108
- • • {involving amino acid content, e.g. synthetic storage proteins or altering amino acid biosynthesis}
- N A01H 1/109
- • • {involving lignin biosynthesis}
- N A01H 1/12
- {Processes for modifying agronomic input traits, e.g. crop yield}
- WARNING
Groups [A01H 1/12](#) - [A01H 1/129](#) are incomplete pending reclassification of documents from group [A01H 1/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A01H 1/1205
- • {Abscission; Dehiscence; Senescence}
- N A01H 1/121
- • {Plant growth habits}
- N A01H 1/1215
- • • {Flower development or morphology, e.g. flowering promoting factor [FPF]}
- N A01H 1/122
- • {for stress resistance, e.g. heavy metal resistance}
- N A01H 1/1225
- • • {for drought, cold or salt resistance}
- N A01H 1/123
- • • {for herbicide resistance}
- N A01H 1/1235
- • • • {to glyphosate}
- N A01H 1/124
- • • • {to sulfonylurea}
- N A01H 1/1245
- • • {for biotic stress resistance, e.g. pathogen, pest or disease resistance}
- N A01H 1/125
- • • • {for bacterial resistance}
- N A01H 1/1255
- • • • {for fungal resistance}
- N A01H 1/126
- • • • {for virus resistance}
- N A01H 1/1265
- • • • {for nematode resistance}
- N A01H 1/127
- • • • {for insect resistance}
- N A01H 1/129
- • {involving hormone-influenced development, e.g. auxin}
- M A01H 3/00
- Processes for modifying phenotypes, { } e.g. symbiosis with bacteria) ([A01H 4/00](#) takes precedence; influencing the growth of plants without producing new plants, non-chemically [A01G 7/00](#), chemically [A01N 25/00](#) - [A01N 65/00](#))**

U A01H 4/00 Plant reproduction by tissue culture techniques {; Tissue culture techniques therefor}

C A01H 4/001 · {Culture apparatus for tissue culture}; ~~Culture media therefor}~~

WARNING

Group A01H 4/001 is impacted by reclassification into group A01H 4/002. Groups A01H 4/001 and A01H 4/002 should be considered in order to perform a complete search.

N A01H 4/002 · {Culture media for tissue culture}

WARNING

Group A01H 4/002 is incomplete pending reclassification of documents from group A01H 4/001.

Groups A01H 4/001 and A01H 4/002 should be considered in order to perform a complete search.

Project: MP0496 (A23)**M A23 FOODS OR FOODSTUFFS; ~~THEIR TREATMENT~~ TREATMENT THEREOF, NOT COVERED BY OTHER CLASSES****NOTE**

Attention is drawn to the following places:

[C08B](#)

Polysaccharides, derivatives thereof

[C11](#)

Animal or vegetable oils, fats, fatty substances or waxes

[C12](#)

Biochemistry, beer, spirits, wine, vinegar

[C13](#)

Sugar industry

Project: RP0706 (A23C)**U A23C 11/00 Milk substitutes, e.g. coffee whitener compositions (cheese substitutes [A23C 20/00](#); butter substitutes [A23D](#); cream substitutes [A23L 9/20](#))**

U A23C 11/02 · containing at least one non-milk component as source of fats or proteins ([A23C 19/055](#), [A23C 21/04](#) take precedence)

C A23C 11/10 · · containing or not lactose but no other milk components as source of fats, carbohydrates or proteins, ~~e.g. soy milk~~

WARNING

Group A23C 11/10 is impacted by reclassification into groups [A23L 11/60](#) and [A23L 11/65](#).

Groups [A23C 11/10](#), [A23L 11/60](#), and [A23L 11/65](#) should be considered in order to perform a complete search.

C A23C 11/103 · · · {containing only proteins from pulses, oilseeds or nuts, e.g. ~~soy or~~ nut milk}

WARNING

Group A23C 11/103 is impacted by reclassification into groups [A23L 11/60](#) and [A23L 11/65](#).

Groups [A23C 11/103](#), [A23L 11/60](#), and [A23L 11/65](#) should be considered in order to perform a complete search.

- C A23C 11/106 . . . {Addition of, or treatment with, microorganisms ([A23C 20/025](#) and ~~[A23L 11/37](#)~~ take precedence)}
- WARNING**
Group [A23C 11/106](#) is impacted by reclassification into groups [A23L 11/60](#) and [A23L 11/65](#).
Groups [A23C 11/106](#), [A23L 11/60](#), and [A23L 11/65](#) should be considered in order to perform a complete search.
- U **A23C 20/00** **Cheese substitutes ([A23C 19/055](#), [A23C 19/093](#) take precedence)**
- C A23C 20/005 . {mainly containing proteins from pulses or oilseeds, ~~e.g. soy curd, tofu~~}
- WARNING**
Group [A23C 20/005](#) is impacted by reclassification into groups [A23L 11/40](#) and [A23L 11/45](#).
Groups [A23C 20/005](#), [A23L 11/40](#), and [A23L 11/45](#) should be considered in order to perform a complete search.
- C A23C 20/02 . containing neither milk components, nor caseinate, nor lactose, as sources of fats, proteins or carbohydrates
- WARNING**
Group [A23C 20/02](#) is impacted by reclassification into groups [A23L 11/40](#) and [A23L 11/45](#).
Groups [A23C 20/02](#), [A23L 11/40](#), and [A23L 11/45](#) should be considered in order to perform a complete search.
- C A23C 20/025 . . {mainly containing proteins from pulses or oilseeds, ~~e.g. soy curd, tofu~~}
- WARNING**
Group [A23C 20/025](#) is impacted by reclassification into groups [A23L 11/40](#) and [A23L 11/45](#).
Groups [A23C 20/025](#), [A23L 11/40](#), and [A23L 11/45](#) should be considered in order to perform a complete search.

Project: MP0477 (A23G)

M A23G **COCOA; COCOA PRODUCTS, e.g. CHOCOLATE; SUBSTITUTES FOR COCOA OR COCOA PRODUCTS; CONFECTIONERY; CHEWING GUM; ICE-CREAM; PREPARATION THEREOF**

NOTES

1. In this subclass, the following term is used with the meaning indicated:

- "ice-cream" includes any edible frozen or congealed semi-liquid or pasty substance, e.g. slush ice

2. In this subclass, subject matter which cannot be completely classified in a single one of the main groups should be classified in each relevant main group

~~3. The classification symbols of groups:-~~

~~[A23G 1/305](#), [A23G 1/56](#), [A23G 3/343](#), [A23G 3/346](#), [A23G 4/062](#), [A23G 9/322](#) and [A23G 9/52](#)~~

~~can be followed by additional symbols preceded by the sign "+", e.g. [A23G 1/56 +D8](#). The symbols give further information concerning structure, composition or form and have the meaning as listed below:~~

~~**D** .- Containing organic compounds
D2 .. containing microorganisms, enzymes
D4 .. containing vitamins, antibiotics
D6 .. containing beet sugar or cane sugar if specifically mentioned; containing other carbohydrates, e.g. starches, gums, alcohol sugar, polysaccharides, dextrans~~

D8	.. containing cocoa fat if specifically mentioned; containing products of cocoa fat; containing other fats, e.g. fatty acid, fatty alcohol, their esters, lecithin, paraffins
D10	.. containing amino-acids, proteins, e.g. gelatine, polypeptides
D12	.. containing dairy products
D14	.. containing fruits, nuts, e.g. almonds, seeds, plants or their extracts (gums D6)
F	.. Containing inorganic compounds
H	.. Products with special structure
H2	.. foamed, gas-expanded or cellular products
H4	.. products with a supported structure
H4D	... products with an inedible support, e.g. a stick
H4F	... products with an edible support, e.g. a cornet
H6	.. products with a composite structure, e.g. laminated products
H8	.. hollow products, e.g. with inedible or edible filling, fixed or movable within the cavity

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme:

M A23G 1/00

Cocoa; Cocoa products, e.g. chocolate; Substitutes therefor (~~kitchen equipment for cocoa preparation A47J, e.g. apparatus for making beverages A47J 31/00~~)

NOTE

Attention is drawn to the internal note after the subclass title

M A23G 1/02

• Preliminary treatment, e.g. fermentation of cocoa (~~machines for roasting cocoa A23N 12/00~~)

M A23G 1/04

• Apparatus specially adapted for manufacture or treatment of cocoa or cocoa products (machines for roasting cocoa [A23N 12/00](#); ~~crushing or grinding apparatus in general B02G~~)

M A23G 1/08

• • Cocoa butter presses (~~presses for squeezing out liquid from liquid-containing material in general B30B~~)

U A23G 1/20

• • Apparatus for moulding, cutting, or dispensing chocolate

M A23G 1/28

• • • Apparatus for removing chocolate from the moulds (~~discharging baked goods from tins A21B 3/18~~)

U A23G 1/30

• Cocoa products, e.g. chocolate; Substitutes therefor

M A23G 1/305

• • {Products for covering, coating, finishing, decorating}

NOTE

Attention is drawn to the internal note after the subclass title

M A23G 1/56

• • making liquid products, e.g. for making chocolate milk {drinks and the products for their preparation, pastes for spreading, milk crumb, ([A23G 1/305](#) takes precedence)}

NOTE

Attention is drawn to the internal note after the subclass title

M	A23G 3/00	Sweetmeats; Confectionery; Marzipan; Coated or filled products (chewing gum A23G 4/00)
		NOTE Attention is drawn to the internal note after the subclass title
U	A23G 3/02	<ul style="list-style-type: none"> • Apparatus specially adapted for manufacture or treatment of sweetmeats or confectionery; Accessories therefor
M	A23G 3/28	<ul style="list-style-type: none"> • • Apparatus for decorating sweetmeats or confectionery (applying liquids to surfaces in general B05)
M	A23G 3/32	<ul style="list-style-type: none"> • Process Processes for preparing caramel or sugar colours (colouring foodstuffs A23L 5/40; flavouring foodstuffs A23L 27/10)
		NOTE Attention is drawn to the internal note after the subclass title
U	A23G 3/34	<ul style="list-style-type: none"> • Sweetmeats, confectionery or marzipan; Processes for the preparation thereof
M	A23G 3/343	<ul style="list-style-type: none"> • • {Products for covering, coating, finishing, decorating}
		NOTE Attention is drawn to the internal note after the subclass title
M	A23G 3/346	<ul style="list-style-type: none"> • • {Finished or semi-finished products in the form of powders, paste or liquids (A23G 3/343 takes precedence)}
		NOTE Attention is drawn to the internal note after the subclass title
M	A23G 3/50	<ul style="list-style-type: none"> • • characterised by shape, structure or physical form, e.g. products with supported structure (composite structures including chocolate, e.g. as layer, coating or filler A23G 1/54)
M	A23G 4/00	Chewing gum (medicinal preparations characterised by chewing gum form {A61K 9/0058})
U	A23G 4/06	<ul style="list-style-type: none"> • characterised by the composition {containing organic or inorganic compounds}
M	A23G 4/062	<ul style="list-style-type: none"> • • {Products for covering, coating, finishing, decorating}
		NOTE Attention is drawn to the internal note after the subclass title
U	A23G 9/00	Frozen sweets, e.g. ice confectionery, ice-cream; Mixtures therefor
M	A23G 9/04	<ul style="list-style-type: none"> • Production of frozen sweets, e.g. ice-cream (packages B65D 85/78)
M	A23G 9/08	<ul style="list-style-type: none"> • • Batch production {{({A23G 9/06 takes precedence -}; continuous production A23G 9/14)}
U	A23G 9/32	<ul style="list-style-type: none"> • characterised by the composition {containing organic or inorganic compounds}
M	A23G 9/322	<ul style="list-style-type: none"> • • {Products for covering, coating, finishing, decorating}
		NOTE Attention is drawn to the internal note after the subclass title
M	A23G 9/52	<ul style="list-style-type: none"> • Liquid products; Solid products in the form of powders, flakes or granules for making liquid products {; Finished or semi-finished solid products, frozen granules}
		NOTE Attention is drawn to the internal note after the subclass title

Project: RP0706 (A23L)

- U A23L 2/00 **Non-alcoholic beverages; Dry compositions or concentrates therefor; Their preparation (soup concentrates [A23L 23/10](#); preparation of non-alcoholic beverages by removal of alcohol {[C12H 3/00](#)})**
- C A23L 2/38 • Other non-alcoholic beverages (*drinks from legumes [A23L 11/60](#)*)

WARNING

Group [A23L 2/38](#) is impacted by reclassification into groups [A23L 11/60](#) and [A23L 11/65](#).

Groups [A23L 2/38](#), [A23L 11/60](#), and [A23L 11/65](#) should be considered in order to perform a complete search.

Project: MP0427 (A23L)

- U A23L 3/00 **Preservation of foods or foodstuffs, in general, e.g. pasteurising, sterilising, specially adapted for foods or foodstuffs (preservation of flour or bread [A21D](#); processes specially adapted for particular foods or foodstuffs, see the relevant groups for the foods or foodstuffs in [A23](#); preserving foods or foodstuffs in association with packaging [B65B 55/00](#); preservation of alcoholic beverages [C12H](#))**

NOTE

In groups [A23L 3/3472](#) - [A23L 3/3562](#), the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place. {This Note corresponds to IPC Note (1) relating to [A23L 3/3472](#) - [A23L 3/3562](#)}

- U A23L 3/34 • by treatment with chemicals
- U A23L 3/3454 • • in the form of liquids or solids
- M A23L 3/3463 • • • Organic compounds; Microorganisms; Enzymes

NOTE

In groups [A23L 3/3472](#) - [A23L 3/3562](#), the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place.

{This Note corresponds to IPC Note relating to [A23L 3/3472](#) - [A23L 3/3562](#).}

Project: RP0706 (A23L)

- M A23L 7/00 **Cereal-derived products; Malt products (malt products of pulses ~~A23L 11/20~~[A23L 11/70](#)); Preparation or treatment thereof (preparation of malt for brewing [C12C](#))**
- M A23L 7/20 • Malt products (malt products of pulses ~~A23L 11/20~~[A23L 11/70](#); preparation of malt for brewing [C12C](#))
- C A23L 11/00 **Pulses, i.e. fruits of leguminous plants, for production of ~~fodder or~~ food; Products from legumes; Preparation or treatment thereof, ~~e.g. treatment with phosphates~~**

WARNING

Group [A23L 11/00](#) is impacted by reclassification into groups [A23L 11/40](#), [A23L 11/45](#), [A23L 11/60](#), [A23L 11/65](#), and [A23L 11/70](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- M A23L 11/01
- {Pulses or legumes in form of whole pieces or fragments thereof, without mashing or comminuting ([A23L 11/10](#) – ~~A23L 11/37~~ [A23L 11/70](#) take precedence)}
- U A23L 11/03
- • {Soya beans, e.g. full-fat soya bean flakes or grits}
- M A23L 11/05
- {Mashed or comminuted pulses or legumes; Products made therefrom ([A23L 11/30](#) takes precedence; ~~soya milk A23C 11/103; tofu or soya cheese A23C 20/025; tofu or soya cheese A23L 11/45; soy drinks A23L 11/65~~)}
- U A23L 11/07
- • {Soya beans, e.g. oil-extracted soya bean flakes ([A23L 11/30](#) takes precedence)}
- D A23L 11/09
- {Fermented pulses or legumes, e.g. miso, tempeh; Addition of microorganisms ([A23L 11/30](#) takes precedence; soya sauce [A23L 27/50](#); fermented soya milk [A23C 11/103](#); cheese-like products [A23C 20/025](#))}
- <administratively transferred to [A23L 11/50](#)>
- U A23L 11/10
- Rapid cooking pulses
- D A23L 11/20
- Malt products; Fermented malt products (flavouring agents or condiments [A23L 27/00](#); malt products of cereals [A23L 7/20](#))
- <administratively transferred to [A23L 11/70](#)>
- U A23L 11/30
- Removing undesirable substances, e.g. bitter substances
- U A23L 11/37
- • {using microorganisms}
- N A23L 11/40
- *Pulse curds*
- WARNING
Groups [A23L 11/40](#) and [A23L 11/45](#) are incomplete pending reclassification of documents from groups [A23C 20/005](#), [A23C 20/02](#), [A23C 20/025](#), and [A23L 11/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A23L 11/45
- • Soy bean curds, e.g. tofu
- N A23L 11/50
- Fermented pulses or legumes; Fermentation of pulses or legumes based on the addition of microorganisms (removing undesirable substances [A23L 11/30](#); soy sauce [A23L 27/50](#))
- WARNING
Group [A23L 11/50](#) is incomplete pending reclassification of documents from group [A23L 11/70](#).
Groups [A23L 11/70](#) and [A23L 11/50](#) should be considered in order to perform a complete search.
- N A23L 11/60
- Drinks from legumes, e.g. lupine drinks
- WARNING
Groups [A23L 11/60](#) and [A23L 11/65](#) are incomplete pending reclassification of documents from groups [A23C 11/10](#), [A23C 11/103](#), [A23C 11/106](#), [A23L 2/38](#), and [A23L 11/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A23L 11/65
- • Soy drinks
- Q A23L 11/70
- Germinated pulse products, e.g. from soy bean sprouts
- WARNING
Group [A23L 11/70](#) is incomplete pending reclassification of documents from group [A23L 11/00](#).
Group [A23L 11/70](#) is also impacted by reclassification into group [A23L 11/50](#).

Groups [A23L 11/00](#), [A23L 11/70](#), and [A23L 11/50](#) should be considered in order to perform a complete search.

Project: MP0427 (A24B)

U A24B 15/00 Chemical features or treatment of tobacco; Tobacco substitutes, e.g. in liquid form ([A24B 3/00](#) takes precedence)

NOTE

In groups [A24B 15/30](#) - [A24B 15/42](#), the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place for a substance. {This Note corresponds to IPC Note (1) relating to [A24B 15/30](#) - [A24B 15/42](#).}

- U A24B 15/18 · Treatment of tobacco products or tobacco substitutes
- M A24B 15/28 · · by chemical substances

NOTE

In groups [A24B 15/30](#) - [A24B 15/42](#), the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place for a substance. {This Note corresponds to IPC Note (1) relating to [A24B 15/30](#) - [A24B 15/42](#).}

Project: RP0699 (A42B)

M A42B HATS; HEAD COVERINGS (~~headbands, head-scarves A41D 20/00, A41D 23/00~~ [headbands A41D 20/00](#); ~~head-scarves A41D 23/00~~ [head-scarves A41D 23/00](#))

WARNING

{In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

C A42B 1/00 Hats; Caps; Hoods

WARNING

Group [A42B 1/00](#) is incomplete pending reclassification of documents from group [A42B 1/203](#).

Group [A42B 1/00](#) is also impacted by reclassification into groups [A42B 1/009](#), [A42B 1/011](#), [A42B 1/014](#), [A42B 1/017](#), [A42B 1/0175](#), [A42B 1/019](#), [A42B 1/0192](#) and [A42B 1/0195](#).

All groups listed in this Warning should be considered in order to perform a complete search.

M A42B 1/002 · ~~{Devices}~~ *External devices* or supports adapted to retain the shape of hats, [caps or hoods](#) (for changing the size [A42C 3/00](#))}

M A42B 1/004 · ~~{with special decorative arrangements or effects}~~ *Decorative arrangements or effects*

T A42B 1/006 · ~~{convertible or adapted for other uses}~~ *convertible or adaptable for uses other than as headgear*

WARNING

Group [A42B 1/006](#) is incomplete pending reclassification of documents from group [A42B 1/206](#).

Groups [A42B 1/206](#) and [A42B 1/006](#) should be considered in order to perform a complete search.

M A42B 1/008 · ~~{Head coverings with environmental control, e.g. with means}~~ *for heating or cooling (ventilating arrangements for head coverings [A42C 5/04](#))}*

- N A42B 1/009
- with means for light reflection
- WARNING
Group [A42B 1/009](#) is incomplete pending reclassification of documents from group [A42B 1/00](#).
Groups [A42B 1/00](#) and [A42B 1/009](#) should be considered in order to perform a complete search.
- N A42B 1/011
- Arrangements for deodorising or perfuming
- WARNING
Group [A42B 1/011](#) is incomplete pending reclassification of documents from group [A42B 1/00](#).
Groups [A42B 1/00](#) and [A42B 1/011](#) should be considered in order to perform a complete search.
- N A42B 1/012
- Sanitary or disposable, e.g. for use in hospitals or food industry
- N A42B 1/014
- specially adapted for protection against insects
- WARNING
Group [A42B 1/014](#) is incomplete pending reclassification of documents from group [A42B 1/00](#).
Groups [A42B 1/00](#) and [A42B 1/014](#) should be considered in order to perform a complete search.
- N A42B 1/017
- specially adapted for promoting health, e.g. with means for pressing on acupuncture points
- WARNING
Groups [A42B 1/017](#) and [A42B 1/0175](#) are incomplete pending reclassification of documents from group [A42B 1/00](#).
Groups [A42B 1/00](#), [A42B 1/017](#), and [A42B 1/0175](#) should be considered in order to perform a complete search.
- N A42B 1/0175
- • using magnets
- N A42B 1/018
- with means for protecting the eyes, ears or nape, e.g. sun or rain shields; with air-inflated pads or removable linings
- WARNING
Group [A42B 1/018](#) is incomplete pending reclassification of documents from group [A42B 1/06](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A42B 1/0181
- • with means for protecting the eyes
- N A42B 1/0182
- • • Peaks or visors
- N A42B 1/0183
- • • • with stiffening means
- N A42B 1/0184
- • • • detachable or movable, e.g. rotatable
- N A42B 1/0185
- • • • extendable, e.g. telescopic
- Q A42B 1/0186
- • with means for protecting the ears or nape
- WARNING
Group [A42B 1/0186](#) is impacted by reclassification into group [A42B 1/06](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A42B 1/0187
- • • Removable protection for the nape, e.g. sun or rain shields
- N A42B 1/0188
- • • Protection for the ears, e.g. removable ear muffs
- N A42B 1/0189
- • Linings

- N A42B 1/019
- characterised by their material
- WARNING
Groups [A42B 1/019](#) and [A42B 1/0195](#) are incomplete pending reclassification of documents from group [A42B 1/00](#).
Groups [A42B 1/00](#), [A42B 1/019](#) and [A42B 1/0195](#) should be considered in order to perform a complete search.
- N A42B 1/0192
- Paper; Cardboard
- WARNING
Group [A42B 1/0192](#) is incomplete pending reclassification of documents from groups [A42B 1/00](#) and [A42B 1/208](#).
Groups [A42B 1/00](#), [A42B 1/208](#) and [A42B 1/0192](#) should be considered in order to perform a complete search.
- N A42B 1/0195
- Antimicrobial or antibacterial
- U A42B 1/02
- Hats; Stiff caps
- U A42B 1/04
- Soft caps; Hoods
- C A42B 1/041
- ~~{Generally peakless~~ **Peakless** soft head coverings, e.g. turbans; ~~or~~ berets ([A42B 1/045](#), [A42B 1/046](#) take precedence)}
- WARNING
Group [A42B 1/041](#) is impacted by reclassification into group [A42B 1/049](#).
Groups [A42B 1/041](#) and [A42B 1/049](#) should be considered in order to perform a complete search.
- D A42B 1/043
- ~~{for use in hospital or food industries, e.g. sanitary or disposable caps}~~
<administratively transferred to [A42B 1/012](#)>
- C A42B 1/045
- ~~{fastened under the chin, e.g. bonnets}~~ (**millinery [A42B 1/16](#)**)
- WARNING
Group [A42B 1/045](#) is impacted by reclassification into groups [A42B 1/049](#) and [A42B 1/16](#).
Groups [A42B 1/045](#), [A42B 1/049](#) and [A42B 1/16](#) should be considered in order to perform a complete search.
- M A42B 1/046
- ~~{Balaclavas or the like}~~ **Balaclavas**
- M A42B 1/048
- ~~{characterised by hoods being attachable to garments}~~ **Detachable hoods**
- N A42B 1/049
- Nightcaps (hair nets or hair-protecting caps [A45D 8/40](#))
- WARNING
Group [A42B 1/049](#) is incomplete pending reclassification of documents from groups [A42B 1/041](#) and [A42B 1/045](#).
Groups [A42B 1/041](#), [A42B 1/045](#) and [A42B 1/049](#) should be considered in order to perform a complete search.
- C A42B 1/06
- Caps with flaps; Motoring caps; ~~Caps with means for protecting the eyes, ears, or nape of neck (ear and nape protecting devices in general [A41D](#)); Caps with airpads or removable linings~~
- WARNING
Group [A42B 1/06](#) is incomplete pending reclassification of documents from group [A42B 1/0186](#).
Group [A42B 1/06](#) is also impacted by reclassification into group [A42B 1/018](#).
All groups listed in this Warning should be considered in order to perform a complete search.

- D A42B 1/061
 - • • {Caps or soft head coverings with means for protecting the eyes; Uniform caps}
 - <administratively transferred to [A42B 1/0181](#)>
- D A42B 1/062
 - • • • {Peaks; Visors}
 - <administratively transferred to [A42B 1/0182](#)>
- D A42B 1/063
 - • • • • {with stiffening means}
 - <administratively transferred to [A42B 1/0183](#)>
- D A42B 1/064
 - • • • • {detachable or movable, e.g. rotatable}
 - <administratively transferred to [A42B 1/0184](#)>
- D A42B 1/065
 - • • • • {extensible or telescopic}
 - <administratively transferred to [A42B 1/0185](#)>
- D A42B 1/066
 - • • {Caps or soft head coverings with means for protecting the ears or nape of neck; Caps with flaps; Motoring caps}
 - <administratively transferred to [A42B 1/0186](#)>
- D A42B 1/067
 - • • • {with removable protection of the nape of neck, e.g. sun or rain shields}
 - <administratively transferred to [A42B 1/0187](#)>
- D A42B 1/068
 - • • • {with additional protection for the ears; Removable ear muffs}
 - <administratively transferred to [A42B 1/0188](#)>
- D A42B 1/069
 - • • {Linings}
 - <administratively transferred to [A42B 1/0189](#)>
- M A42B 1/08
 - • with protection against blows ~~{head-guards for sporting purposes}~~ [A63B 71/10](#)
- M A42B 1/10
 - • • Miners' caps ~~{(A42B 3/04 takes precedence)}~~
- U A42B 1/14
 - Straw hats; Substitutes therefor
- M A42B 1/16
 - ~~Ladies' millinery~~ [Millinery](#)

WARNING

*Group A42B 1/16 is incomplete pending reclassification of documents from group A42B 1/045.
Groups A42B 1/045 and A42B 1/16 should be considered in order to perform a complete search.*

- M A42B 1/18
 - ~~with coverings for protecting~~ [Coverings for protecting hats, caps or hoods](#) against dust, rain, or sunshine
- D A42B 1/20
 - Collapsible hats; Hats made of separable parts
 - <administratively transferred to [A42B 1/203](#)>
- T A42B 1/201
 - ~~{Collapsible or foldable hats}~~

WARNING

*Group A42B 1/201 is incomplete pending reclassification of documents from group A42B 1/203.
Groups A42B 1/203 and A42B 1/201 should be considered in order to perform a complete search.*

- C A42B 1/203
 - ~~{Inflatable hats}~~ [Inflatable](#)

WARNING

*Group A42B 1/203 is impacted by reclassification into groups A42B 1/00, A42B 1/201, A42B 1/205, A42B 1/206 and A42B 1/208.
All groups listed in this Warning should be considered in order to perform a complete search.*

- T A42B 1/205
- - ~~{Hats made of separable parts}~~
- WARNING**
Group A42B 1/205 is incomplete pending reclassification of documents from group A42B 1/203.
Groups A42B 1/203 and A42B 1/205 should be considered in order to perform a complete search.
- C A42B 1/206
- - ~~{Transformable, convertible, reversible hats}~~ or reversible hats (for uses other than as headgear A42B 1/006)
- WARNING**
Group A42B 1/206 is incomplete pending reclassification of documents from group A42B 1/203.
Group A42B 1/206 is also impacted by reclassification into group A42B 1/006.
Groups A42B 1/203, A42B 1/206 and A42B 1/006 should be considered in order to perform a complete search.
- C A42B 1/208
- - ~~{Hats made from a flat sheet}~~
- WARNING**
Group A42B 1/208 is incomplete pending reclassification of documents from group A42B 1/203.
Group A42B 1/208 is also impacted by reclassification into group A42B 1/0192.
Groups A42B 1/203, A42B 1/208 and A42B 1/0192 should be considered in order to perform a complete search.
- M A42B 1/24
- with means for attaching articles thereto, e.g. memorandum tablets, ~~mirrors, lamps, insignia~~ { or mirrors; Head coverings with pockets}
- M A42B 1/241
- - ~~{Pockets therefor; Headcoverings with pockets}~~ Head coverings with pockets
- M A42B 1/242
- - ~~{Means for mounting detecting, signalling or lighting devices}~~
- M A42B 1/244
- - ~~{Means for mounting lamps}~~
- M A42B 1/245
- - ~~{Means for mounting audio or communication systems}~~
- M A42B 1/247
- - ~~{Means for attaching eyewear (arrangements for supporting by headgear G02C 3/02)}~~
- M A42B 1/248
- - ~~{Insignia, logo emblems or the like}~~ Insignia, logos, emblems or the like
- M A42B 3/00**
- Helmets; Helmet covers {; Other protective head coverings} ({hoods for welders A61F 9/06;} hoods as protection against chemical agents or for use at high altitudes A62B 17/00; gas helmets A62B 18/04; swimming helmets A63B 33/00; } defence protection helmets F41H 1/04)**
- U A42B 3/04
- Parts, details or accessories of helmets
- M A42B 3/30
- - Mounting radio sets or communication systems ~~(methods or devices for transmitting, conducting or directing sound G10K 11/18; electric communication technique H04)~~
- M A42B 3/32
- Collapsible helmets; Helmets made of separable parts ~~{(A42B 3/04 takes precedence)}~~; Helmets with movable parts, e.g. adjustable

Project: MP0496 (A42C)**M A42C****MANUFACTURING OR TRIMMING HATS OR OTHER HEAD COVERINGS HEAD COVERINGS, e.g. HATS****WARNING**

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: MP0496 (A44C)**M A44C****JEWELLERY; BRACELETS; OTHER PERSONAL ADORNMENTS** **PERSONAL ADORNMENTS, e.g. JEWELLERY; COINS****WARNINGS**

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

[A44C 11/02](#) covered by [A44C 5/18](#)

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: MP0496 (A45D)**M A45D****HAIRDRESSING OR SHAVING EQUIPMENT; MANICURING OR OTHER COSMETIC TREATMENT** **HAIRDRESSING OR SHAVING EQUIPMENT** (wigs, toupees, or the like [A41G 3/00](#), [A41G 5/00](#); hairdressers' chairs [A47C 1/04](#); hair cutting appliances, razors [B26B](#)); **EQUIPMENT FOR COSMETICS OR COSMETIC TREATMENTS, e.g. FOR MANICURING OR PEDICURING****WARNING**

The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

[A45D 97/00](#) covered by [A45D 44/00](#)

Project: RP0527 (A45D)**U A45D 7/00****Processes of waving, straightening or curling hair****F A45D 2007/001**
(Frozen)

- {Processes of bleaching or colouring hair for hair dressing purposes}

WARNING

Group [A45D 2007/001](#) is no longer used for the classification of documents as of January 1, 2020.

The content of this group is being reclassified into groups [A45D 19/0066](#), [A45D 19/0075](#), and [A45D 19/0083](#).

All groups listed in this Warning should be considered in order to perform a complete search.

D A45D 2007/008

- {Processes of washing hair for hairdressing purposes}

<administratively transferred to [A45D 19/005](#) INV>

C A45D 8/00**Hair-holding devices {(as hair-curling or hair-waving appliances [A45D 2/00](#))}; Accessories therefor****WARNING**

Group [A45D 8/00](#) is impacted by reclassification into group [A45D 8/001](#).

Groups [A45D 8/00](#) and [A45D 8/001](#) should be considered in order to perform a complete search.

N A45D 8/001

- {Multi-step processes of dressing hair using a hair-holding device}

WARNING

Group [A45D 8/001](#) is incomplete pending reclassification of documents from group [A45D 8/00](#).

Groups [A45D 8/00](#) and [A45D 8/001](#) should be considered in order to perform a complete search.

D A45D 2008/002

- {Accessories therefor}

<administratively transferred to [A45D 8/002](#) INV>

- N A45D 8/002 • {Accessories therefor}
- D A45D 2008/004 • {with special decorative arrangements or form}
<administratively transferred to [A45D 8/004](#) INV>
- N A45D 8/004 • {with decorative arrangements or form}
- D A45D 2008/006 • • {Interchangeable ornaments attached to hair holding devices}
<administratively transferred to [A45D 8/006](#) INV>
- N A45D 8/006 • • {Interchangeable ornaments attached to hair holding devices}
- D A45D 2008/008 • • {Ornaments attached to small strands of hair}
<administratively transferred to [A45D 8/008](#) INV>
- N A45D 8/008 • • {Ornaments specially adapted for being attached to small strands of hair}
- U A45D 8/34 • Hair-braid holders; Hair-plait holders
- D A45D 2008/345 • • {for the end of braids}
<administratively transferred to [A45D 8/34](#) INV>
- M A45D 19/00 - A45D 27/00** **Cleaning the hair or the scalp; Drying the hair; Colouring the hair**
(preparations for treating the hair A61K 8/00, A61Q 5/00 - A61Q 9/00)
- U A45D 19/00** **Devices for washing the hair or the scalp; Similar devices for colouring the hair**
- D A45D 19/0008 • {Devices for colouring or bleaching separated strands of hair, e.g. highlighting (A45D 19/02 and A45D 19/18 take precedence)}
<administratively transferred to [A45D 19/012](#)>
- D A45D 19/0016 • • {comprising an open, flat support for strands of hair or for wrapping foils during the application of the dyeing product}
<administratively transferred to [A45D 19/016](#)>
- D A45D 19/0025 • • {comprising wrapping foils or foldable sheets for enclosing a strand of hair during treatment, e.g. frosting foils}
<administratively transferred to [A45D 19/018](#)>
- M A45D 2019/0033 • {~~Treatment of~~ *Processes for treating* the scalp}
- D A45D 2019/0041 • {Treatment of the hair of the scalp}
<administratively transferred to [A45D 19/0041](#) INV>
- N A45D 19/0041 • {Processes for treating the hair of the scalp}
- D A45D 2019/005 • • {Shampooing}
<administratively transferred to [A45D 19/005](#) INV>
- N A45D 19/005 • • {Shampooing; Conditioning; Washing hair for hairdressing purposes}
- D A45D 2019/0058 • • {Rinsing or spraying}
<administratively transferred to [A45D 19/005](#) INV>
- D A45D 2019/0066 • • {Coloring or bleaching}
<administratively transferred to [A45D 19/0066](#) INV>
- N A45D 19/0066 • • {Coloring or bleaching}
- WARNING**
Groups [A45D 19/0066](#), [A45D 19/0075](#), and [A45D 19/0083](#) are incomplete pending reclassification of documents from group [A45D 2007/001](#). All groups listed in this Warning should be considered in order to perform a complete search.
- D A45D 2019/0075 • • • {Producing special patterns, e.g. by masks}
<administratively transferred to [A45D 19/0075](#) INV>

- N A45D 19/0075 . . . {Producing special patterns, e.g. by masks}
- D A45D 2019/0083 . . . {the roots of the hair}
<administratively transferred to [A45D 19/0083](#) INV>
- N A45D 19/0083 . . . {the roots of the hair}
- D A45D 2019/0091 . . . {strands of hair}
<administratively transferred to [A45D 19/0066](#) INV>
- N A45D 19/012 . {Devices for colouring or bleaching separated strands of hair, e.g. highlighting ([A45D 19/02](#) and [A45D 19/18](#) take precedence)}
- N A45D 19/016 . . {comprising an open, flat support for strands of hair or for wrapping foils during the application of the dyeing product}
- N A45D 19/018 . . {comprising wrapping foils or foldable sheets for enclosing a strand of hair during treatment, e.g. frosting foils}
- C A45D 19/02 . Hand-actuated implements, e.g. hand-actuated spray heads
- WARNING**
Group [A45D 19/02](#) is impacted by reclassification into groups [A45D 19/024](#), [A45D 19/026](#) and [A45D 19/028](#).
Groups [A45D 19/02](#), [A45D 19/024](#), [A45D 19/026](#) and [A45D 19/028](#) should be considered in order to perform a complete search.
- N A45D 19/022 . . {for applying simultaneously two or more substances, e.g. colouring agents, to the hair without prior mixing}
- N A45D 19/024 . . {comprising two clamping surfaces for insertion of hair there between}
- WARNING**
Group [A45D 19/024](#) is incomplete pending reclassification of documents from group [A45D 19/02](#).
Groups [A45D 19/02](#) and [A45D 19/024](#) should be considered in order to perform a complete search.
- D A45D 2019/025 . . {for applying simultaneously two or more substances, e.g. colouring agents, to the hair without prior mixing}
<administratively transferred to [A45D 19/022](#) INV>
- N A45D 19/026 . . {having brush or comb applicators ([A45D 24/22](#) take precedence; brushes with reservoir or other means for applying substances [A46B 11/00](#))}
- WARNING**
Group [A45D 19/026](#) is incomplete pending reclassification of documents from group [A45D 19/02](#).
Groups [A45D 19/02](#) and [A45D 19/026](#) should be considered in order to perform a complete search.
- N A45D 19/028 . . {having applicators other than brushes or combs, e.g. rollers, balls or sponges}
- WARNING**
Group [A45D 19/028](#) is incomplete pending reclassification of documents from group [A45D 19/02](#).
Groups [A45D 19/02](#) and [A45D 19/028](#) should be considered in order to perform a complete search.

- M A45D 33/00 - Containers or accessories specially adapted for handling toilet or cosmetic substances ~~(for applying therapeutic or disinfecting substances A61M, e.g. A61M 35/00; spraying or atomising in general, applying liquids or other fluent materials to surfaces in general B05; containers in general B65D, e.g. for dispensing powdered or granular material B65D 83/06)~~
A45D 40/00

Project: MP0496 (A45D)

- M A45D 42/00 - Other ~~toilet or cosmetic equipment~~ *cosmetic or personal care articles*
A45D 44/00
- M A45D 44/00 Other ~~toilet or cosmetic equipment~~ *cosmetic or personal care articles*, e.g. for hairdressers' rooms

Project: RP0364-F (A47G)

- U A47G 1/00 Mirrors (as optical elements [G02B 5/08](#)); Picture frames or the like, {e.g. provided with heating, lighting or ventilating means}
- U A47G 1/06 • Picture frames (making from paper [B31D](#))
- M A47G 1/10 • • Corner clips or corner-connecting appliances for frames
- WARNING**
Group A47G 1/10 is impacted by reclassification into groups A47G 1/101 and A47G 1/102.
Groups A47G 1/10, A47G 1/101, and A47G 1/102 should be considered in order to perform a complete search.
- M A47G 1/101 • • • {for insertion within frame members}
- WARNING**
Group A47G 1/101 is incomplete pending reclassification of documents from group A47G 1/10.
Groups A47G 1/10 and A47G 1/101 should be considered in order to perform a complete search.
- M A47G 1/102 • • • • {having an aperture to receive a fastener to connect to a frame member}
- WARNING**
Group A47G 1/102 is incomplete pending reclassification of documents from group A47G 1/10.
Groups A47G 1/10 and A47G 1/102 should be considered in order to perform a complete search.

Project: RP0576-F (A47J)

- U A47J 47/00 Miscellaneous kitchen containers, stands, or the like ({bowls for food processors [A47J 43/0727](#)}; containers in general [B65D](#)); Cutting-boards, e.g. for bread (with slicing devices [B26D](#))
- M A47J 47/20 • Grids, racks or other supports removably mounted in, on or over sinks (splash guards for sinks [E03C 1/181](#), [E03C 1/186](#))
- WARNING**
Group A47J 47/20 is impacted by reclassification into groups E03C 1/181 and E03C 1/186.
Groups A47J 47/20, E03C 1/181, and E03C 1/186 should be considered in order to perform a complete search.

Project: RP0697 (A61B)

- M A61B 5/00 **Detecting, measuring or recording** *Measuring* for diagnostic purposes (radiation diagnosis [A61B 6/00](#); diagnosis by ultrasonic, sonic or infrasonic waves [A61B 8/00](#)); Identification of persons

NOTE

In this group, the following term is used with the meaning indicated: "measuring" covers also detecting or recording.

Project: RP0691 (A61B)

- M A61B 5/01 • Measuring temperature of body parts {; {Diagnostic temperature sensing, e.g. for malignant or inflamed tissue} (~~clinical thermometers G01K 5/22; thermometers for special purposes G01K 13/00~~ *clinical contact thermometers G01K 13/20*)

Project: RP0697 (A61B)

- U A61B 5/02 • Detecting, measuring or recording pulse, heart rate, blood pressure or blood flow; Combined pulse/heart-rate/blood pressure determination; Evaluating a cardiovascular condition not otherwise provided for, e.g. using combinations of techniques provided for in this group with electrocardiography or electroauscultation; Heart catheters for measuring blood pressure
- U A61B 5/026 • • Measuring blood flow {([A61B 3/1233](#), [A61B 3/1241](#) take precedence)}
- M A61B 5/0295 • • • using plethysmography, i.e. measuring the variations in the volume of a body part as modified by the circulation of blood therethrough, e.g. impedance plethysmography

WARNING

Group [A61B 5/0295](#) is incomplete pending reclassification of documents from group [A61B 5/0535](#). Groups [A61B 5/0535](#) and [A61B 5/0295](#) should be considered in order to perform a complete search.

- D A61B 5/04 • ~~Measuring bioelectric signals of the body or parts thereof~~
<administratively transferred to [A61B 5/24](#)>
- D A61B 5/04001 • • {adapted to neuroelectric signals, e.g. nerve impulses}
<administratively transferred to [A61B 5/24](#)>
- D A61B 5/04002 • • {Measuring direct current (D.C.) or slowly varying biopotentials}
<administratively transferred to [A61B 5/2415](#)>
- D A61B 5/04004 • • {Input circuits for EEG-, or EMG-signals}
<administratively transferred to [A61B 5/30](#)>
- D A61B 5/04005 • • {Detecting magnetic fields produced by bio-electric currents (measuring magnetic variables in general G01R 33/00)}
<administratively transferred to [A61B 5/242](#)>
- D A61B 5/04007 • • • {specially adapted for magnetocardiographic signals}
<administratively transferred to [A61B 5/243](#)>
- D A61B 5/04008 • • • {specially adapted for magneto-encephalographic signals}
<administratively transferred to [A61B 5/245](#)>
- D A61B 5/04009 • • • • {using evoked response}
<administratively transferred to [A61B 5/246](#)>
- D A61B 5/04011 • • {Vector-cardiography}
<administratively transferred to [A61B 5/341](#)>

- D A61B 5/04012 . . {Analysis of electro-cardiograms, electro-encephalograms, electro-myograms}
<administratively transferred to [A61B 5/316](#)>
- D A61B 5/04014 . . . {by measuring frequency distribution using a set of filters (arrangements for analysing frequency spectra in general G01R 23/00)}
<administratively transferred to [A61B 5/316](#)>
- D A61B 5/04015 {provided with alarm devices}
<administratively transferred to [A61B 5/316](#)>
- D A61B 5/04017 . . . {by using digital filtering}
<administratively transferred to [A61B 5/316](#)>
- D A61B 5/04018 {provided with alarm devices}
<administratively transferred to [A61B 5/316](#)>
- D A61B 5/0402 . . Electrocardiography, i.e. ECG
<administratively transferred to [A61B 5/318](#)>
- D A61B 5/04021 . . . {ECG simulator circuits}
<administratively transferred to [A61B 5/319](#)>
- D A61B 5/04023 . . . {Physical templates or devices for measuring ECG waveforms, e.g. an electrocardiograph ruler or caliper (A61B 5/04525 takes precedence)}
<administratively transferred to [A61B 5/322](#)>
- D A61B 5/04025 . . . {Preparing electrode site, e.g. by abrasion}
<administratively transferred to [A61B 5/325](#)>
- D A61B 5/04026 . . . {Means for providing electrolyte, e.g. syringes}
<administratively transferred to [A61B 5/324](#)>
- D A61B 5/04028 . . . {Generation of artificial ECG signals based on measured signals, e.g. to compensate for missing leads}
<administratively transferred to [A61B 5/327](#)>
- D A61B 5/0404 . . . Hand-held devices
<administratively transferred to [A61B 5/332](#)>
- D A61B 5/0408 . . . Electrodes specially adapted therefor (for foetal cardiography A61B 5/0448; for electroencephalograph signals A61B 5/0478; for electromyography A61B 5/0492)
<administratively transferred to [A61B 5/25](#)>
- D A61B 5/04082 {attached by means of suction}
<administratively transferred to [A61B 5/252](#)>
- D A61B 5/04085 {Multiple electrode holders (A61B 5/04286, A61B 5/0422 take precedence)}
<administratively transferred to [A61B 5/282](#)>
- D A61B 5/04087 {using conductive adhesive means}
<administratively transferred to [A61B 5/259](#)>
- D A61B 5/0416 connected by means of snap fasteners
<administratively transferred to [A61B 5/274](#)>
- D A61B 5/042 for introducing into the body
<administratively transferred to [A61B 5/283](#)>
- D A61B 5/0421 {Endotracheal, oesophageal or gastric probes}
<administratively transferred to [A61B 5/285](#)>

- D A61B 5/0422 {Multiple electrode holders}
<administratively transferred to [A61B 5/287](#)>
- D A61B 5/0424 Protection against electrode failure
<administratively transferred to [A61B 5/276](#)>
- D A61B 5/0428 Input circuits specially adapted therefor
<administratively transferred to [A61B 5/30](#)>
- D A61B 5/04282 {using insulating or floating elements, e.g. transformers, opto-couplers
{transformers for specific applications H01F 38/00; amplifiers H03F;
optocouplers H04B 10/80}}
<administratively transferred to [A61B 5/301](#)>
- D A61B 5/04284 {Capacitive or ionised electrodes, e.g. MOSFET}
<administratively transferred to [A61B 5/302](#)>
- D A61B 5/04286 {Patient cord assembly, e.g. cable harness}
<administratively transferred to [A61B 5/303](#)>
- D A61B 5/04288 {Switching circuits}
<administratively transferred to [A61B 5/304](#)>
- D A61B 5/0432 Recording apparatus specially adapted therefor
<administratively transferred to [A61B 5/333](#)>
- D A61B 5/04325 {using integrated circuit memory devices}
<administratively transferred to [A61B 5/335](#)>
- D A61B 5/0436 Magnetic recording apparatus
<administratively transferred to [A61B 5/336](#)>
- D A61B 5/04365 {Playback at speeds other than the recording speed}
<administratively transferred to [A61B 5/337](#)>
- D A61B 5/044 Displays specially adapted therefor {{arrangements for displaying electric
variables or waveforms, e.g. cathode-ray oscilloscopes, G01R 13/00}}
<administratively transferred to [A61B 5/339](#)>
- D A61B 5/0444 Foetal cardiography
<administratively transferred to [A61B 5/344](#)>
- D A61B 5/0448 Electrodes specially adapted therefor, e.g. scalp electrodes
<administratively transferred to [A61B 5/288](#)>
- D A61B 5/04485 {attached by means of suction}
<administratively transferred to [A61B 5/252](#)>
- D A61B 5/0452 Detecting specific parameters of the electrocardiograph cycle
<administratively transferred to [A61B 5/349](#)>
- D A61B 5/04525 {by template matching}
<administratively transferred to [A61B 5/35](#)>
- D A61B 5/0456 Detecting R peaks, e.g. for synchronising diagnostic apparatus
{(physiological signal analysis for synchronising or triggering a
measurement or image acquisition A61B 5/7285)}
<administratively transferred to [A61B 5/352](#)>
- D A61B 5/046 Detecting fibrillation
<administratively transferred to [A61B 5/361](#)>

- D A61B 5/0464 Detecting tachycardia or bradycardia
<administratively transferred to [A61B 5/363](#)>
- D A61B 5/0468 Detecting abnormal ECG interval {, e.g. extrasystoles, ectopic heartbeats}
<administratively transferred to [A61B 5/364](#)>
- D A61B 5/0472 Detecting abnormal QRS complex {, e.g. widening}
<administratively transferred to [A61B 5/366](#)>
- D A61B 5/0476 . . Electroencephalography {(devices for psychotechnics A61B 5/16)}
<administratively transferred to [A61B 5/369](#)>
- D A61B 5/0478 . . . Electrodes specially adapted therefor
<administratively transferred to [A61B 5/291](#)>
- D A61B 5/048 . . . Detecting the frequency distribution of signals {(analysing frequency spectra in general G01R 23/00)}
<administratively transferred to [A61B 5/374](#)>
- D A61B 5/0482 . . . using biofeedback {(biofeedback per se A61B 5/486)}
<administratively transferred to [A61B 5/375](#)>
- D A61B 5/0484 . . . using evoked response
<administratively transferred to [A61B 5/377](#)>
- D A61B 5/04842 {visually}
<administratively transferred to [A61B 5/378](#)>
- D A61B 5/04845 {acoustically or auditory}
<administratively transferred to [A61B 5/38](#)>
- D A61B 5/04847 {olfactory or gustatory}
<administratively transferred to [A61B 5/381](#)>
- D A61B 5/0488 . . Electromyography
WARNING
Group A61B 5/0488 is incomplete pending reclassification of documents from group A61B 5/04888.
Groups A61B 5/0488 and A61B 5/04888 should be considered in order to perform a complete search.
<administratively transferred to [A61B 5/389](#)>
- D A61B 5/04882 . . . {of genito-urinary organs}
<administratively transferred to [A61B 5/391](#)>
- D A61B 5/04884 . . . {Detecting gastro-intestinal contractions}
<administratively transferred to [A61B 5/392](#)>
- D A61B 5/04886 . . . {specially adapted for electroglottography or electropalatography}
<administratively transferred to [A61B 5/394](#)>
- D A61B 5/04888 . . . {Control of prosthetics}
—(Frozen)
WARNING
Group A61B 5/04888 is no longer used for the classification of documents as of January 1, 2019.
The content of this groups is being reclassified into groups A61B 5/0488, A61B 5/4851, A61F 2002/482 and A61F 2/72.
All groups listed in this Warning should be considered in order to perform a complete search.
<administratively transferred to [A61B 5/389](#)>

- D A61B 5/0492
- • Electrodes specially adapted therefor, e.g. needle electrodes
<administratively transferred to [A61B 5/296](#)>
- D A61B 5/0496
- • Electro-oculography, e.g. detecting nystagmus ~~((measuring or inducing nystagmus A61B 5/4863))~~
<administratively transferred to [A61B 5/398](#)>
- M A61B 5/05
- Detecting, measuring or recording for diagnosis by means of electric currents or magnetic fields; ~~{Measuring using microwaves or radiowaves}~~ *radio waves (A61B 5/02, A61B 5/04, A61B 5/11 take precedence)* *impedance plethysmography A61B 5/0295; measuring movement of the entire body or parts thereof A61B 5/11; detecting, measuring or recording bioelectric or biomagnetic signals of the body or parts thereof A61B 5/24)*
- M A61B 5/0507
- • ~~{using microwaves or terahertz waves}~~
- M A61B 5/0515
- • ~~{Magnetic particle imaging}~~
- M A61B 5/0522
- • ~~{Magnetic induction tomography}~~
- U A61B 5/053
- • Measuring electrical impedance or conductance of a portion of the body
- M A61B 5/0531
- • • ~~{Measuring skin impedance}~~
- M A61B 5/0532
- • • • ~~{specially adapted for acupuncture}~~ *or moxibustion*
- M A61B 5/0533
- • • • ~~{Measuring galvanic skin response, e.g. by lie detector}~~ *Measuring galvanic skin response*
- M A61B 5/0534
- • • ~~{Testing vitality of teeth}~~ *for testing vitality of teeth*
- C A61B 5/0535
- • • ~~{impedance plethysmography}~~ *Impedance plethysmography (for measuring blood flow A61B 5/0295)*
- WARNING**
Group A61B 5/0535 is impacted by reclassification into group A61B 5/0295. Groups A61B 5/0535 and A61B 5/0295 should be considered in order to perform a complete search.
- M A61B 5/0536
- • • ~~{Impedance imaging, e.g. by tomography}~~
- M A61B 5/0537
- • • ~~{Measuring body composition by impedance, e.g. tissue hydration or fat content}~~
- M A61B 5/0538
- • • ~~{invasively, e.g. using a catheter}~~
- T A61B 5/055
- • involving electronic [EMR] or nuclear [NMR] magnetic resonance, e.g. magnetic resonance imaging
- D A61B 5/0555
- • • ~~{Means for positioning of patients (for radiation diagnosis or therapy A61B 6/04)}~~
<administratively transferred to [A61B 5/055](#)>
- M A61B 5/12
- Audiometering ~~{Evaluation of the auditory system, not limited to hearing capacity (A61B 5/04845, A61B 5/4023 take precedence)}~~
- U A61B 5/22
- Ergometry; Measuring muscular strength or the force of a muscular blow ~~((exercising apparatus A63B 21/00))~~ ; measuring of work or force in general [G01L](#))
- U A61B 5/224
- • ~~{Measuring muscular strength}~~
- M A61B 5/228
- • • ~~{of masticatory organs, e.g. detecting dental force (measuring instruments for dentigraphy A61C 19/04)}~~
- N A61B 5/24
- *Detecting, measuring or recording bioelectric or biomagnetic signals of the body or parts thereof*
- N A61B 5/2415
- • ~~{Measuring direct current [DC] or slowly varying biopotentials}~~

- Q A61B 5/242
- • Detecting biomagnetic fields, e.g. magnetic fields produced by bioelectric currents
- WARNING
Group [A61B 5/242](#) is impacted by reclassification into group [A61B 5/248](#). Groups [A61B 5/242](#) and [A61B 5/248](#) should be considered in order to perform a complete search.
- N A61B 5/243
- • • specially adapted for magnetocardiographic [MCG] signals
- N A61B 5/245
- • • specially adapted for magnetoencephalographic [MEG] signals
- N A61B 5/246
- • • • using evoked responses
- N A61B 5/248
- • • specially adapted for magnetoneurographic [MNG] signals, e.g. magnetospinographic [MSG] signals
- WARNING
Group [A61B 5/248](#) is incomplete pending reclassification of documents from group [A61B 5/242](#). Groups [A61B 5/242](#) and [A61B 5/248](#) should be considered in order to perform a complete search.
- Q A61B 5/25
- • Bioelectric electrodes therefor
- WARNING
Group [A61B 5/25](#) is impacted by reclassification into groups [A61B 5/251](#), [A61B 5/254](#), [A61B 5/256](#), [A61B 5/257](#), [A61B 5/26](#), [A61B 5/262](#), [A61B 5/263](#), [A61B 5/265](#), [A61B 5/266](#), [A61B 5/268](#), [A61B 5/27](#), [A61B 5/271](#), [A61B 5/273](#), [A61B 5/274](#), [A61B 5/276](#), [A61B 5/277](#), [A61B 5/279](#), [A61B 5/28](#), [A61B 5/29](#), [A61B 5/293](#), [A61B 5/294](#) and [A61B 5/297](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N A61B 5/251
- • • Means for maintaining electrode contact with the body
- WARNING
Groups [A61B 5/251](#), [A61B 5/254](#), [A61B 5/256](#) and [A61B 5/257](#) are incomplete pending reclassification of documents from group [A61B 5/25](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N A61B 5/252
- • • • by suction
- N A61B 5/254
- • • • by clips
- N A61B 5/256
- • • • Wearable electrodes, e.g. having straps or bands
- N A61B 5/257
- • • • using adhesive means, e.g. adhesive pads or tapes
- N A61B 5/259
- • • • • using conductive adhesive means, e.g. gels
- N A61B 5/26
- • • maintaining contact between the body and the electrodes by the action of the subjects, e.g. by placing the body on the electrodes or by grasping the electrodes
- WARNING
Group [A61B 5/26](#) is incomplete pending reclassification of documents from group [A61B 5/25](#). Groups [A61B 5/25](#) and [A61B 5/26](#) should be considered in order to perform a complete search.
- N A61B 5/262
- • • Needle electrodes
- WARNING
Group [A61B 5/262](#) is incomplete pending reclassification of documents from group [A61B 5/25](#).

Groups [A61B 5/25](#) and [A61B 5/262](#) should be considered in order to perform a complete search.

- N A61B 5/263
- • • characterised by the electrode materials
- WARNING
Groups [A61B 5/263](#) - [A61B 5/27](#) are incomplete pending reclassification of documents from group [A61B 5/25](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A61B 5/265
- • • • containing silver or silver chloride
- N A61B 5/266
- • • • containing electrolytes, conductive gels or pastes
- N A61B 5/268
- • • • containing conductive polymers, e.g. PEDOT:PSS polymers
- N A61B 5/27
- • • • Conductive fabrics or textiles
- N A61B 5/271
- • • Arrangements of electrodes with cords, cables or leads, e.g. single leads or patient cord assemblies
- WARNING
Groups [A61B 5/271](#) - [A61B 5/274](#) are incomplete pending reclassification of documents from group [A61B 5/25](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A61B 5/273
- • • • Connection of cords, cables or leads to electrodes
- N A61B 5/274
- • • • • using snap or button fasteners
- N A61B 5/276
- • • Protection against electrode failure
- WARNING
Group [A61B 5/276](#) is incomplete pending reclassification of documents from group [A61B 5/25](#).
Groups [A61B 5/25](#) and [A61B 5/276](#) should be considered in order to perform a complete search.
- N A61B 5/277
- • • Capacitive electrodes
- WARNING
Group [A61B 5/277](#) is incomplete pending reclassification of documents from group [A61B 5/25](#).
Groups [A61B 5/25](#) and [A61B 5/277](#) should be considered in order to perform a complete search.
- N A61B 5/279
- • • specially adapted for particular uses
- WARNING
Groups [A61B 5/279](#), [A61B 5/28](#), [A61B 5/29](#), [A61B 5/293](#) and [A61B 5/294](#) are incomplete pending reclassification of documents from group [A61B 5/25](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A61B 5/28
- • • • for electrocardiography [ECG]
- N A61B 5/282
- • • • • Holders for multiple electrodes (for introduction into the body [A61B 5/287](#))
- Q A61B 5/283
- • • • • Invasive
- WARNING
Group [A61B 5/283](#) is impacted by reclassification into groups [A61B 5/29](#) and [A61B 5/293](#).

Groups [A61B 5/283](#), [A61B 5/29](#) and [A61B 5/293](#) should be considered in order to perform a complete search.

- N A61B 5/285 Endotracheal, oesophageal or gastric probes
- N A61B 5/287 Holders for multiple electrodes, e.g. electrode catheters for electrophysiological study [EPS]
- N A61B 5/288 for foetal cardiography, e.g. scalp electrodes
- N A61B 5/29 for permanent or long-term implantation

WARNING

Group [A61B 5/29](#) is incomplete pending reclassification of documents from groups [A61B 5/25](#) and [A61B 5/283](#).

Groups [A61B 5/25](#), [A61B 5/283](#) and [A61B 5/29](#) should be considered in order to perform a complete search.

- N A61B 5/291 for electroencephalography [EEG]
- N A61B 5/293 Invasive

WARNING

Group [A61B 5/293](#) is incomplete pending reclassification of documents from groups [A61B 5/25](#) and [A61B 5/283](#).

Groups [A61B 5/25](#), [A61B 5/283](#) and [A61B 5/293](#) should be considered in order to perform a complete search.

- N A61B 5/294 for nerve conduction study [NCS]

WARNING

Group [A61B 5/294](#) is incomplete pending reclassification of documents from groups [A61B 5/25](#).

Groups [A61B 5/25](#) and [A61B 5/294](#) should be considered in order to perform a complete search.

- N A61B 5/296 for electromyography [EMG]
- N A61B 5/297 for electrooculography [EOG]: for electroretinography [ERG]

WARNING

Group [A61B 5/297](#) is incomplete pending reclassification of documents from groups [A61B 5/25](#) and [A61B 5/398](#).

Groups [A61B 5/25](#), [A61B 5/398](#) and [A61B 5/297](#) should be considered in order to perform a complete search.

- Q A61B 5/30 Input circuits therefor

WARNING

Group [A61B 5/30](#) is impacted by reclassification into groups [A61B 5/305](#), [A61B 5/307](#), [A61B 5/308](#), [A61B 5/31](#), [A61B 5/311](#), [A61B 5/313](#) and [A61B 5/315](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A61B 5/301 providing electrical separation, e.g. by using isolating transformers or optocouplers
- N A61B 5/302 for capacitive or ionised electrodes, e.g. metal-oxide-semiconductor field-effect transistors [MOSFET]
- N A61B 5/303 {Patient cord assembly, e.g. cable harness}
- N A61B 5/304 Switching circuits

- N A61B 5/305 . . . Common mode rejection
WARNING
 Group [A61B 5/305](#) is incomplete pending reclassification of documents from group [A61B 5/30](#).
 Groups [A61B 5/30](#) and [A61B 5/305](#) should be considered in order to perform a complete search.
- N A61B 5/307 . . . specially adapted for particular uses
WARNING
 Groups [A61B 5/307](#) - [A61B 5/315](#) are incomplete pending reclassification of documents from group [A61B 5/30](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N A61B 5/308 for electrocardiography [ECG]
 N A61B 5/31 for electroencephalography [EEG]
 N A61B 5/311 for nerve conduction study [NCS]
 N A61B 5/313 for electromyography [EMG]
 N A61B 5/315 for electrooculography [EOG]; for electroretinography [ERG]
 Q A61B 5/316 . . Modalities, i.e. specific diagnostic methods
WARNING
 Group [A61B 5/316](#) is impacted by reclassification into groups [A61B 5/321](#), [A61B 5/329](#), [A61B 5/33](#), [A61B 5/338](#), [A61B 5/343](#), [A61B 5/346](#), [A61B 5/347](#), [A61B 5/353](#), [A61B 5/355](#), [A61B 5/357](#), [A61B 5/358](#), [A61B 5/36](#), [A61B 5/367](#), [A61B 5/388](#), [A61B 5/395](#) and [A61B 5/397](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N A61B 5/318 . . . Heart-related electrical modalities, e.g. electrocardiography [ECG]
 N A61B 5/319 Circuits for simulating ECG signals
 N A61B 5/321 Accessories or supplementary instruments therefor, e.g. cord hangers
WARNING
 Group [A61B 5/321](#) is incomplete pending reclassification of documents from group [A61B 5/316](#).
 Groups [A61B 5/316](#) and [A61B 5/321](#) should be considered in order to perform a complete search.
- N A61B 5/322 Physical templates or devices for measuring ECG waveforms, e.g. electrocardiograph rulers or calipers (by template matching [A61B 5/35](#))
 N A61B 5/324 Means for providing electrolytes, e.g. syringes
 N A61B 5/325 Preparing electrode sites, e.g. by abrasion
 N A61B 5/327 Generation of artificial ECG signals based on measured signals, e.g. to compensate for missing leads
 N A61B 5/329 Load diagnosis, e.g. cardiac stress tests
WARNING
 Group [A61B 5/329](#) is incomplete pending reclassification of documents from group [A61B 5/316](#).
 Groups [A61B 5/316](#) and [A61B 5/329](#) should be considered in order to perform a complete search.

- N A61B 5/33 specially adapted for cooperation with other devices
WARNING
 Group [A61B 5/33](#) is incomplete pending reclassification of documents from group [A61B 5/316](#).
 Groups [A61B 5/316](#) and [A61B 5/33](#) should be considered in order to perform a complete search.
- N A61B 5/332 Portable devices specially adapted therefor
- N A61B 5/333 Recording apparatus especially adapted therefor
- N A61B 5/335 using integrated circuit memory devices
- N A61B 5/336 Magnetic recording apparatus
- N A61B 5/337 {Playback at speeds other than the recording speed}
- N A61B 5/338 Recording by printing on paper
WARNING
 Group [A61B 5/338](#) is incomplete pending reclassification of documents from group [A61B 5/316](#).
 Groups [A61B 5/316](#) and [A61B 5/338](#) should be considered in order to perform a complete search.
- N A61B 5/339 Displays especially adapted therefor
- N A61B 5/341 Vectorcardiography [VCG]
- N A61B 5/343 Potential distribution indication
WARNING
 Group [A61B 5/343](#) is incomplete pending reclassification of documents from group [A61B 5/316](#).
 Groups [A61B 5/316](#) and [A61B 5/343](#) should be considered in order to perform a complete search.
- N A61B 5/344 Foetal cardiography
- N A61B 5/346 Analysis of electrocardiograms
WARNING
 Groups [A61B 5/346](#), [A61B 5/347](#), [A61B 5/353](#), [A61B 5/355](#), [A61B 5/357](#), [A61B 5/358](#) and [A61B 5/36](#) are incomplete pending reclassification of documents from group [A61B 5/316](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N A61B 5/347 Detecting the frequency distribution of signals
- N A61B 5/349 Detecting specific parameters of the electrocardiograph cycle
- N A61B 5/35 by template matching
- N A61B 5/352 Detecting R peaks, e.g. for synchronising diagnostic apparatus;
 Estimating R-R interval
- N A61B 5/353 Detecting P-waves
- N A61B 5/355 Detecting T-waves
- N A61B 5/357 Detecting U-waves
- N A61B 5/358 Detecting ST segments
- N A61B 5/36 Detecting PQ interval, PR interval or QT interval
- N A61B 5/361 Detecting fibrillation
- N A61B 5/363 Detecting tachycardia or bradycardia

- N A61B 5/364 Detecting abnormal ECG interval, e.g. extrasystoles, ectopic heartbeats
- N A61B 5/366 Detecting abnormal QRS complex, e.g. widening
- N A61B 5/367 Electrophysiological study [EPS], e.g. electrical activation mapping or electro-anatomical mapping
- WARNING
Group [A61B 5/367](#) is incomplete pending reclassification of documents from group [A61B 5/316](#).
Groups [A61B 5/316](#) and [A61B 5/367](#) should be considered in order to perform a complete search.
- Q A61B 5/369 Electroencephalography [EEG] (devices for psychotechnics [A61B 5/16](#))
- WARNING
Group [A61B 5/369](#) is impacted by reclassification into groups [A61B 5/37](#), [A61B 5/372](#), [A61B 5/384](#) and [A61B 5/386](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A61B 5/37 Intracranial electroencephalography [IC-EEG], e.g. electrocorticography [ECoG]
- WARNING
Group [A61B 5/37](#) is incomplete pending reclassification of documents from group [A61B 5/369](#).
Groups [A61B 5/369](#) and [A61B 5/37](#) should be considered in order to perform a complete search.
- N A61B 5/372 Analysis of electroencephalograms
- WARNING
Group [A61B 5/372](#) is incomplete pending reclassification of documents from group [A61B 5/369](#).
Groups [A61B 5/369](#) and [A61B 5/372](#) should be considered in order to perform a complete search.
- N A61B 5/374 Detecting the frequency distribution of signals, e.g. detecting delta, theta, alpha, beta or gamma waves
- N A61B 5/375 using biofeedback
- Q A61B 5/377 using evoked responses
- WARNING
Group [A61B 5/377](#) is impacted by reclassification into group [A61B 5/383](#).
Groups [A61B 5/377](#) and [A61B 5/383](#) should be considered in order to perform a complete search.
- N A61B 5/378 Visual stimuli
- N A61B 5/38 Acoustic or auditory stimuli
- N A61B 5/381 Olfactory or gustatory stimuli
- N A61B 5/383 Somatosensory stimuli, e.g. electric stimulation
- WARNING
Group [A61B 5/383](#) is incomplete pending reclassification of documents from group [A61B 5/377](#).
Groups [A61B 5/377](#) and [A61B 5/383](#) should be considered in order to perform a complete search.

- N A61B 5/384 Recording apparatus or displays specially adapted therefor
WARNING
 Group [A61B 5/384](#) is incomplete pending reclassification of documents from group [A61B 5/369](#).
 Groups [A61B 5/369](#) and [A61B 5/384](#) should be considered in order to perform a complete search.
- N A61B 5/386 Accessories or supplementary instruments therefor
WARNING
 Group [A61B 5/386](#) is incomplete pending reclassification of documents from group [A61B 5/369](#).
 Groups [A61B 5/369](#) and [A61B 5/386](#) should be considered in order to perform a complete search.
- N A61B 5/388 Nerve conduction study, e.g. detecting action potential of peripheral nerves
WARNING
 Group [A61B 5/388](#) is incomplete pending reclassification of documents from group [A61B 5/316](#).
 Groups [A61B 5/316](#) and [A61B 5/388](#) should be considered in order to perform a complete search.
- N A61B 5/389 Electromyography [EMG]
 N A61B 5/391 of genito-urinary organs
 N A61B 5/392 Detecting gastrointestinal contractions
 N A61B 5/394 specially adapted for electroglottography or electropalatography
 N A61B 5/395 Details of stimulation, e.g. nerve stimulation to elicit EMG response
WARNING
 Group [A61B 5/395](#) is incomplete pending reclassification of documents from group [A61B 5/316](#).
 Groups [A61B 5/316](#) and [A61B 5/395](#) should be considered in order to perform a complete search.
- N A61B 5/397 Analysis of electromyograms
WARNING
 Group [A61B 5/397](#) is incomplete pending reclassification of documents from group [A61B 5/316](#). Groups [A61B 5/316](#) and [A61B 5/397](#) should be considered in order to perform a complete search.
- Q A61B 5/398 Electrooculography [EOG], e.g. detecting nystagmus; Electroretinography [ERG]
WARNING
 Group [A61B 5/398](#) is impacted by reclassification into group [A61B 5/297](#).
 Groups [A61B 5/398](#) and [A61B 5/297](#) should be considered in order to perform a complete search.
- U A61B 5/40 {Detecting, measuring or recording for evaluating the nervous system ([A61B 5/4806](#), [A61B 5/4821](#), [A61B 5/4824](#) take precedence)}
- M A61B 5/4029 {for evaluating the peripheral nervous systems (~~A61B 5/04001~~ [A61B 5/24](#) takes precedence)}
- U A61B 5/4058 {for evaluating the central nervous system ([A61B 5/4806](#), [A61B 5/4821](#) take precedence)}
- M A61B 5/4064 {Evaluating the brain ([A61B 5/031](#), ~~A61B 5/0476~~ [A61B 5/369](#), [A61B 5/14553](#) take precedence)}

- U A61B 5/45 · {For evaluating or diagnosing the musculoskeletal system or teeth ([A61B 5/1036](#), [A61B 5/1074](#), [A61B 7/006](#) take precedence)}
- M A61B 5/4519 · · {Muscles (~~A61B 5/0488~~[A61B 5/389](#), [A61B 5/224](#) take precedence)}
- U A61B 5/48 · {Other medical applications}
- M A61B 5/4851 · · {Prosthesis assessment or monitoring}
- WARNING**
Group ~~A61B 5/4851~~ is incomplete pending reclassification of documents from group ~~A61B 5/0488~~.
Groups ~~A61B 5/4851~~ and ~~A61B 5/0488~~ should be considered in order to perform a complete search.
- M A61B 5/486 · · {Bio-feedback (~~A61B 5/0482~~[A61B 5/375](#) takes precedence)}
- U A61B 5/68 · {Arrangements of detecting, measuring or recording means, e.g. sensors, in relation to patient}
- U A61B 5/6801 · · {specially adapted to be attached to or worn on the body surface}
- U A61B 5/683 · · · {Means for maintaining contact with the body ([A61B 5/6802](#) takes precedence)}
- M A61B 5/6832 · · · · {using adhesives (~~A61B 5/04087~~[A61B 5/259](#) takes precedence)}
- U A61B 5/72 · {Signal processing specially adapted for physiological signals or for diagnostic purposes (pattern recognition [G06K 9/00](#))}
- M A61B 5/7225 · · {Details of analog processing, e.g. isolation amplifier, gain or sensitivity adjustment, filtering, baseline or drift compensation (~~A61B 5/04004~~[A61B 5/30](#), ~~A61B 5/04012~~,[A61B 5/316](#) ~~A61B 5/0428~~ take precedence; transformers for specific applications [H01F 38/00](#); amplifiers [H03F](#))}
- M A61B 5/7235 · · {Details of waveform analysis (~~A61B 5/0452~~[A61B 5/349](#) takes precedence)}
- M A61B 5/725 · · · {using specific filters therefor, e.g. Kalman or adaptive filters (~~A61B 5/04014~~ and ~~A61B 5/04017~~ take precedence[A61B 5/316](#) take precedence)}
- M A61B 5/7271 · · {Specific aspects of physiological measurement analysis (~~A61B 5/04012~~[A61B 5/316](#), ~~A61B 5/0452~~[A61B 5/349](#) and ~~A61B 5/048~~[A61B 5/374](#) take precedence)}
- M A61B 5/7278 · · · {Artificial waveform generation or derivation, e.g. synthesising signals from measured signals (~~A61B 5/04028~~[A61B 5/327](#) takes precedence)}
- M A61B 5/7282 · · · {Event detection, e.g. detecting unique waveforms indicative of a medical condition ([A61B 5/4094](#), [A61B 5/4818](#), ~~A61B 5/0452~~[A61B 5/349](#), [A61B 5/0823](#) take precedence)}
- U A61B 5/74 · {Details of notification to user or communication with user or patient (indicating measured values [G01D 7/00](#)); user input means (input or output arrangements for computers [G06F 3/00](#))}
- M A61B 5/742 · · {using visual displays (~~A61B 5/044~~[A61B 5/339](#) takes precedence)}
- U A61B 7/00** **Instruments for auscultation**
- U A61B 7/02 · Stethoscopes {(acoustic details thereof [G10K 11/00](#))}
- M A61B 7/023 · · {for introduction into the body, e.g. into the oesophagus (oesophageal ECG probes ~~A61B 5/0421~~[A61B 5/285](#))}
- U A61B 2562/00** **Details of sensors; Constructional details of sensor housings or probes; Accessories for sensors**
- U A61B 2562/02 · Details of sensors specially adapted for in-vivo measurements
- M A61B 2562/0209 · · Special features of electrodes classified in ~~A61B 5/04001~~[A61B 5/24](#), ~~A61B 5/0408~~[A61B 5/25](#), ~~A61B 5/042~~[A61B 5/283](#), ~~A61B 5/0478~~[A61B 5/291](#), ~~A61B 5/0492~~ or [A61B 5/296](#), [A61B 5/053](#)

Project: RP0705 (A61D)

- M A61D 7/00 Devices or methods for introducing solid, liquid, or gaseous remedies or other materials into or onto the bodies of animals (for reproduction or fertilisation [A61D 19/00](#) {; ~~syringes A61M~~; devices for implanting pellets, radon seeds or the like [A61M 37/0069](#)})

Project: RP0705 (A61F)

- D A61F 2/00 - Filters; Devices providing patency to tubular structures; Prostheses;
A61F 4/00 Accessories
- M A61F 2/00 Filters implantable into blood vessels; Prostheses, i.e. artificial substitutes or replacements for parts of the body; Appliances for connecting them with the body; Devices providing patency to, or preventing collapsing of, tubular structures of the body, e.g. stents (as cosmetic articles, see the relevant subclasses, e.g. wigs, hair pieces, [A41G 3/00](#), [A41G 5/00](#), ~~artificial nails A45D 31/00~~; ~~artificial nails A45D 31/00~~; dental prostheses [A61C 13/00](#); materials for prostheses [A61L 27/00](#); artificial hearts ~~A61M 1/10~~[A61M 60/00](#); artificial kidneys [A61M 1/14](#))

Project: RP0697 (A61F)

- U A61F 2/02 • Prostheses implantable into the body {(closure means for urethra or rectum or for artificial body openings therefor [A61F 2/0004](#))}
- U A61F 2002/48 • • {Operating or control means}
- M A61F 2002/482 • • • {electrical}
- WARNING
Group A61F 2002/482 is incomplete pending reclassification of documents from group A61B 5/04888.
Groups A61B 5/04888 and A61F 2002/482 should be considered in order to perform a complete search.
- U A61F 2/50 • Prostheses not implantable in the body {(closure means for urethra or rectum or for artificial body openings therefor [A61F 2/0004](#))}
- M A61F 2/68 • • Operating or control means
- WARNING
Group A61F 2/68 is impacted by reclassification into group A61F 2/70.
Groups A61F 2/68 and A61F 2/70 should be considered in order to perform a complete search.
- M A61F 2/70 • • • electrical
- WARNING
Group A61F 2/70 is incomplete pending reclassification of documents from group A61F 2/68.
Groups A61F 2/70 and A61F 2/68 should be considered in order to perform a complete search.
- M A61F 2/72 • • • Bioelectrical control, e.g. myoelectric
- WARNING
Group A61F 2/72 is incomplete pending reclassification of documents from group A61B 5/04888.
Groups A61B 5/04888 and A61F 2/72 should be considered in order to perform a complete search.

Project: RP0699 (A61F)

- A61F 9/00** **Methods or devices for treatment of the eyes; Devices for putting-in contact lenses; Devices to correct squinting; Apparatus to guide the blind; Protective devices for the eyes, carried on the body or in the hand (caps with means for protecting the eyes ~~A42B 1/06~~[A42B 1/018](#); visors for helmets [A42B 3/22](#); {retractors [A61B 17/02](#); manipulators specially adapted for use in surgery [A61B 34/70](#)}; appliances to aid invalids to move about [A61H 3/00](#); {exercisers for the eyes [A61H 5/00](#)}; eye baths [A61H 35/02](#); sunglasses or goggles having the same features as spectacles [G02C](#))**
- U A61F 9/04 · Eye-masks {; Devices to be worn on the face, not intended for looking through; Eye-pads for sunbathing (eye-bandages [A61F 13/12](#); protective face-masks [A41D 13/11](#); protectors for shampooing [A45D](#))}
- A61F 9/045 · {Eye-shades or visors; Shields beside, between or below the eyes (caps with means for protecting the eyes ~~A42B 1/06~~[A42B 1/018](#))}
- M A61F 11/00** **Methods or devices for treatment of the ears, e.g. surgical; Protective devices for the ears, carried on the body or in the hand (*headwear, e.g. caps or helmets, with means for protecting the ears [A42B 1/0186](#), [A42B 3/16](#)*); {Non-electric hearing aids}**
- U A61F 11/06 · Protective devices for the ears
- M A61F 11/14 · external, e.g. earcaps or earmuffs {(~~headwear, e.g. caps or helmets, with means for protecting the ears [A42B 1/06](#), [A42B 3/16](#), {for hairdresser's rooms [A45D 44/12](#); for hairdresser's rooms [A45D 44/12](#)~~; for sports [A63B 71/10](#); headphones [H04R 1/10](#))}
- NOTE
 {Group [A61F 11/14](#) contains only acoustic protection (other external protectors, see [A61F 11/06](#))}

Project: MP0427 (A61G)

- U A61G 7/00** **Beds specially adapted for nursing; Devices for lifting patients or disabled persons (stretchers with facilities for picking up patients or disabled persons [A61G 1/003](#))**
- M A61G 7/002 · having adjustable mattress frame
- NOTE
 Combinations of adjustments mentioned in the following subgroups are classified in group [A61G 7/002](#)

Project: RP0696 (A61G)

- U A61G 13/00** **Operating tables; Auxiliary appliances therefor (illumination of operating tables [F21L](#), [F21S](#) or [F21V](#) {; adjustability of tables in general [A47B 9/00](#); tables for radiation diagnosis [A61B 6/04](#), drainage or irrigation pans, bags, or attachments [A61G 7/02](#), [A61G 7/0503](#))}**
- U A61G 13/10 · Parts, details or accessories (surgical drape sheets [A61B 46/00](#))
- A61G 13/108 · {Means providing sterile air at a surgical operation table or area (treatment rooms [A61G 10/00](#); instruments or implements for sterile operation [A61B 90/00](#); sterilisation of air [A61L 9/00](#); purification of air in air-conditioning systems [F24F 3/16](#), [F24F 8/00](#))}

Project: RP0705 (A61H)

M A61H 31/00 Artificial respiration or heart stimulation, *e.g. heart massage* (~~blood pumps A61M 1/40;~~ artificial respiration by treatment with gas or air, e.g. mouth-to-mouth respiration [A61M 16/00](#); applying electric currents by contact electrodes for stimulation, e.g. heart pace-makers [A61N 1/36](#) (; teaching or training models, demonstration models for medical purposes [G09B 23/288](#)))

Project: RP0696 (A61L)

A61L 9/00 Disinfection, sterilisation or deodorisation of air (body deodorants [A61Q 15/00](#); purifying air by respirators [A62B](#), [A62D 9/00](#); separating dispersed particles from gases or vapours [B01D 45/00](#) - [B01D 51/00](#), [B03C 3/00](#); chemical or biological purification of waste gases [B01D 53/34](#); production of ozone [C01B 13/10](#); air-conditioning systems incorporating sterilisation [F24F 3/16](#), [F24F 8/20](#))

Project: RP0705 (A61M)

M A61M DEVICES FOR INTRODUCING MEDIA INTO, OR ONTO, THE BODY (introducing media into or onto the bodies of animals [A61D 7/00](#); means for inserting tampons [A61F 13/26](#); devices for administering food or medicines orally [A61J](#); containers for collecting, storing or administering blood or medical fluids [A61J 1/05](#)); DEVICES FOR TRANSDUCING BODY MEDIA OR FOR TAKING MEDIA FROM THE BODY (surgery [A61B](#); chemical aspects of surgical articles [A61L](#)); DEVICES FOR PRODUCING OR ENDING SLEEP OR STUPOR *{(Electrotherapy, e.g. producing anaesthesia by the use of alternating or intermittent currents A61N 1/36021)}*

NOTES

1. This subclass covers suction, pumping or atomising devices for medical use (e.g. cups, breast relievers, irrigators, sprays, powder insufflators, atomisers, inhalers), apparatus for general or local anaesthetics, devices or methods for causing a change in the state of consciousness, catheters, dilators, apparatus for introducing medicines into the body other than orally
2. Void
3. When classifying in this group, classification is also made in group [B01D 15/08](#) insofar as subject matter of general interest relating to chromatography is concerned

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

A61M 1/18	covered by	B01D 63/02 , B01D 63/04
A61M 1/20	covered by	B01D 63/06
A61M 1/22	covered by	B01D 63/08
A61M 1/24	covered by	B01D 63/10
A61M 3/04	covered by	A61M 3/02
A61M 5/175	covered by	A61M 5/168
A61M 5/303	covered by	A61M 5/30
A61M 5/307	covered by	A61M 5/30
A61M 25/08	covered by	A61M 25/0105
A61M 25/082	covered by	A61M 25/0116
A61M 25/085	covered by	A61M 25/0122
A61M 25/088	covered by	A61M 25/01
A61M 25/092	covered by	A61M 25/0133
A61M 25/095	covered by	A61M 25/01 , A61B 5/00 , A61N 1/056

A61M 25/098	covered by	A61M 25/0108
A61M 25/12	covered by	A61M 25/10 , A61M 29/02
A61M 25/14	covered by	A61M 25/0021
A61M 25/16	covered by	A61M 25/0009
A61M 25/18	covered by	A61M 25/0014
A61M 29/04	covered by	A61M 29/02
A61M 36/00	covered by	A61M 37/0069 , A61N 5/10
A61M 36/02	covered by	A61M 37/0069 , A61N 5/10
A61M 36/06	covered by	A61M 37/0069 , A61N 5/10 , A61M 15/02
A61M 36/08	covered by	A61M 5/1785
A61M 36/10	covered by	A61M 37/0069 , A61N 5/10
A61M 36/12	covered by	A61M 37/0069 , A61N 5/10
A61M 36/14	covered by	A61M 37/0069 , A61N 5/10

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: RP0005-F (A61M)

M A61M 1/00

Suction or pumping devices for medical purposes; Devices for carrying-off, for treatment of, or for carrying-over, body-liquids; Drainage systems ({[A61M 3/00](#) - [A61M 5/00](#), [A61M 11/00](#) - [A61M 16/00](#), [A61M 27/00](#) - [A61M 35/00](#) take precedence }); catheters [A61M 25/00](#); tube connectors, tube couplings, valves or branch units specially adapted for medical use [A61M 39/00](#); devices for taking samples of blood [A61B 5/14](#); implements for holding wounds open [A61B 17/02](#); {saliva removers for dentists [A61C 17/06](#) }; filters implantable into blood vessels [A61F 2/01](#); pumps in general [F04](#))

WARNING

Groups [A61M 1/0007](#), [A61M 1/0015](#), [A61M 1/0017](#), [A61M 1/0025](#) - [A61M 1/0029](#), [A61M 1/0033](#), [A61M 1/0035](#), [A61M 1/0045](#), [A61M 1/005](#) - [A61M 1/0054](#), [A61M 1/006](#), [A61M 1/0068](#) - [A61M 1/0072](#), [A61M 1/0082](#), [A61M 1/0086](#), [A61M 1/009](#) - [A61M 1/0098](#), [A61M 1/0204](#), [A61M 1/0213](#) - [A61M 1/0236](#), [A61M 1/0254](#), [A61M 1/0277](#), [A61M 1/0286](#), [A61M 1/0295](#), [A61M 1/062](#) - [A61M 1/068](#), [A61M 1/1001](#) - [A61M 1/1008](#), [A61M 1/1012](#) - [A61M 1/1036](#), [A61M 1/1039](#) - [A61M 1/1044](#), [A61M 1/1048](#) - [A61M 1/1051](#), [A61M 1/1055](#) - [A61M 1/1058](#), [A61M 1/1062](#) - [A61M 1/1065](#), [A61M 1/1074](#) - [A61M 1/1075](#), [A61M 1/1082](#), [A61M 1/1084](#), [A61M 1/1087](#) - [A61M 1/1089](#), [A61M 1/1096](#) - [A61M 1/1098](#), [A61M 1/122](#) - [A61M 1/125](#), [A61M 1/1601](#) - [A61M 1/1652](#), [A61M 1/166](#) - [A61M 1/1676](#), [A61M 1/1682](#) - [A61M 1/1684](#), [A61M 1/1688](#), [A61M 1/262](#) - [A61M 1/267](#), [A61M 1/281](#) - [A61M 1/284](#), [A61M 1/288](#), [A61M 1/301](#) - [A61M 1/309](#), [A61M 1/322](#) - [A61M 1/327](#), [A61M 1/3403](#) - [A61M 1/341](#), [A61M 1/3417](#), [A61M 1/3424](#) - [A61M 1/3437](#), [A61M 1/3444](#) - [A61M 1/3451](#), [A61M 1/3458](#), [A61M 1/3465](#), [A61M 1/3468](#), [A61M 1/3475](#) - [A61M 1/3493](#), [A61M 1/3601](#) - [A61M 1/362](#), [A61M 1/3629](#) - [A61M 1/3632](#), [A61M 1/3635](#) - [A61M 1/3638](#), [A61M 1/3641](#), [A61M 1/3644](#) - [A61M 1/3652](#), [A61M 1/3656](#) - [A61M 1/3661](#), [A61M 1/3667](#), [A61M 1/3673](#), [A61M 1/3676](#), [A61M 1/3678](#), [A61M 1/3683](#), [A61M 1/3686](#), [A61M 1/3689](#), [A61M 1/3692](#), [A61M 1/3695](#) - [A61M 1/3698](#) are incomplete pending reclassification of documents from group [A61M 1/00](#) or respective subgroup.

Until reclassification is complete, groups [A61M 1/00](#) or respective subgroup and [A61M 1/0007](#), [A61M 1/0015](#), [A61M 1/0017](#), [A61M 1/0025](#) - [A61M 1/0029](#), [A61M 1/0033](#), [A61M 1/0035](#), [A61M 1/0045](#), [A61M 1/005](#) - [A61M 1/0054](#), [A61M 1/006](#), [A61M 1/0068](#) - [A61M 1/0072](#), [A61M 1/0082](#), [A61M 1/0086](#), [A61M 1/009](#) - [A61M 1/0098](#), [A61M 1/0204](#), [A61M 1/0213](#) - [A61M 1/0236](#), [A61M 1/0254](#), [A61M 1/0277](#), [A61M 1/0286](#), [A61M 1/0295](#), [A61M 1/062](#) -

~~A61M 1/068, A61M 1/1001 – A61M 1/1008, A61M 1/1012 – A61M 1/1036, A61M 1/1039 – A61M 1/1044, A61M 1/1048 – A61M 1/1051, A61M 1/1055 – A61M 1/1058, A61M 1/1062 – A61M 1/1065, A61M 1/1074 – A61M 1/1075, A61M 1/1082, A61M 1/1084, A61M 1/1087 – A61M 1/1089, A61M 1/1096 – A61M 1/1098, A61M 1/122 – A61M 1/125, A61M 1/1601 – A61M 1/1652, A61M 1/166 – A61M 1/1676, A61M 1/1682 – A61M 1/1684, A61M 1/1688, A61M 1/262 – A61M 1/267, A61M 1/281 – A61M 1/284, A61M 1/288, A61M 1/301 – A61M 1/309, A61M 1/322 – A61M 1/327, A61M 1/3403 – A61M 1/341, A61M 1/3417, A61M 1/3424 – A61M 1/3437, A61M 1/3444 – A61M 1/3451, A61M 1/3458, A61M 1/3465, A61M 1/3468, A61M 1/3475 – A61M 1/3493, A61M 1/3601 – A61M 1/362, A61M 1/3629 – A61M 1/3632, A61M 1/3635 – A61M 1/3638, A61M 1/3641, A61M 1/3644 – A61M 1/3652, A61M 1/3656 – A61M 1/3661, A61M 1/3667, A61M 1/3673, A61M 1/3676, A61M 1/3678, A61M 1/3683, A61M 1/3686, A61M 1/3689, A61M 1/3692, A61M 1/3695 – A61M 1/3698 should be considered in order to perform a complete search.~~

Project: RP0705 (A61M)

- A61M 1/0066
 - {Suction pumps ([A61M 1/0003](#), [A61M 1/0011](#), [A61M 1/0023](#), ~~A61M 1/10~~[A61M 60/00](#) take precedence)}
- D A61M 1/10
 - Blood pumps; Artificial hearts; Devices for mechanical circulatory assistance, e.g. intra-aortic balloon pumps (artificial heart valves A61F 2/24; heart stimulation A61H 31/00)
 - <administratively transferred to [A61M 60/00](#)>
- D A61M 1/1001
 - {General aspects of blood pumps irrespective of pump type}
 - <administratively transferred to [A61M 60/00](#)>
- D A61M 1/1003
 - . . . {skeletal muscle-powered}
 - <administratively transferred to [A61M 60/882](#)>
- D A61M 1/1005
 - . . . {with means for making a blood flow pulsatile (moving filter membranes used for pumping A61M 1/267; piston pumps A61M 1/1081)}
 - <administratively transferred to [A61M 60/562](#)>
- D A61M 1/1006
 - . . . {Blood pumps incorporated within another functional device, e.g. an oxygenator, a dialyser or a blood chamber}
 - <administratively transferred to [A61M 60/113](#)>
- D A61M 1/1008
 - {Tubes; Connections therefor}
 - <administratively transferred to [A61M 60/857](#)>
- D A61M 1/101
 - {Non-positive displacement pumps, e.g. impeller, centrifugal, vane pumps}
 - <administratively transferred to [A61M 60/205](#)>
- D A61M 1/1012
 - . . . {Constructional features thereof}
 - <administratively transferred to [A61M 60/205](#)>
- D A61M 1/1013
 - {Types of bearings}
 - <administratively transferred to [A61M 60/818](#)>
- D A61M 1/1015
 - {Magnetic bearings}
 - <administratively transferred to [A61M 60/82](#)>
- D A61M 1/1017
 - {Hydrodynamic bearings}
 - <administratively transferred to [A61M 60/824](#)>
- D A61M 1/1018
 - {with occluders preventing backflow}
 - <administratively transferred to [A61M 60/833](#)>

- D A61M 1/102 {having a purge fluid supply}
<administratively transferred to [A61M 60/829](#)>
- D A61M 1/1022 {using filtered blood as purge fluid}
<administratively transferred to [A61M 60/831](#)>
- D A61M 1/1024 {having a collapsible rotor}
<administratively transferred to [A61M 60/205](#)>
- D A61M 1/1025 {Details on blood sealings between rotational parts, e.g. sealing by axial forces}
<administratively transferred to [A61M 60/205](#)>
- D A61M 1/1029 . . . {Drive systems therefor}
<administratively transferred to [A61M 60/40](#)>
- D A61M 1/1031 {using a motor with canned rotor, i.e. a motor enclosed within a casing along with the rotor so that the motor bearings are lubricated by the blood that is being pumped}
<administratively transferred to [A61M 60/422](#)>
- D A61M 1/1032 {with hydraulic or pneumatic driving means}
<administratively transferred to [A61M 60/405](#)>
- D A61M 1/1034 {using rotating cables for driving}
<administratively transferred to [A61M 60/414](#)>
- D A61M 1/1036 {using rotating magnets for driving}
<administratively transferred to [A61M 60/419](#)>
- D A61M 1/1037 . . {Pumps having flexible elements, e.g. with membranes, diaphragms, or bladder pumps (Moving membranes in blood filters used for pumping A61M 1/267)}
<administratively transferred to [A61M 60/268](#)>
- D A61M 1/1039 . . . {Peristaltic pumps}
<administratively transferred to [A61M 60/279](#)>
- D A61M 1/1041 {Linear}
<administratively transferred to [A61M 60/284](#)>
- D A61M 1/1043 . . . {Constructional features thereof}
<administratively transferred to [A61M 60/268](#)>
- D A61M 1/1044 {Compliance chamber containing a gas or liquid other than blood to compensate volume variations of a blood chamber}
<administratively transferred to [A61M 60/869](#)>
- D A61M 1/1046 . . . {Drive systems therefor, e.g. mechanically, electromechanically or skeletal muscle drive means}
<administratively transferred to [A61M 60/40](#)>
- D A61M 1/1048 {characterised by way of converting the movement}
<administratively transferred to [A61M 60/40](#)>
- D A61M 1/1049 {with means converting the rotation of a motor into a translational movement of the flexible element}
<administratively transferred to [A61M 60/40](#)>
- D A61M 1/1051 {the axis of both movements being parallel, e.g. roller screw actuator, cylindrical cam transmission}
<administratively transferred to [A61M 60/40](#)>

- D A61M 1/1053 {using non-rotary electrical means}
<administratively transferred to [A61M 60/40](#)>
- D A61M 1/1055 {Electromagnetic means, e.g. solenoids or ferro-fluids, magnetostrictive means}
<administratively transferred to [A61M 60/40](#)>
- D A61M 1/1056 {Thermo-electric means, e.g. shaped memory alloys}
<administratively transferred to [A61M 60/40](#)>
- D A61M 1/1058 {Piezoelectric means}
<administratively transferred to [A61M 60/40](#)>
- D A61M 1/106 {using hydraulic or pneumatic means}
<administratively transferred to [A61M 60/40](#)>
- D A61M 1/1062 {with application of vacuum at the blood pump, e.g. to accelerate filling}
<administratively transferred to [A61M 60/43](#)>
- D A61M 1/1063 {Diastole or systole switching by stopping or reversing a hydraulic or pneumatic pump operating at a much higher cyclical speed than the heart rate}
<administratively transferred to [A61M 60/432](#)>
- D A61M 1/1065 {Diastole or systole switching by valve means between the blood pump and the hydraulic or pneumatic energy source}
<administratively transferred to [A61M 60/435](#)>
- D A61M 1/1067 . . . {using a blood vessel as flexible element (not used, see subgroups)}
<administratively transferred to [A61M 60/268](#)>
- D A61M 1/1068 {using the heart as flexible element}
<administratively transferred to [A61M 60/268](#)>
- D A61M 1/107 . . . {Pulsating membrane pumps without valves, e.g. for counter pulsation, extra-arterial balloon pumps}
<administratively transferred to [A61M 60/274](#)>
- D A61M 1/1072 {Intra-arterial balloon pumps, e.g. intra-aortic (intravascular pumps A61M 1/125)}
<administratively transferred to [A61M 60/135](#)>
- D A61M 1/1074 {Intra-ventricular balloon pumps}
<administratively transferred to [A61M 60/17](#)>
- D A61M 1/1075 . . . {the pump membrane acting as inlet valve}
<administratively transferred to [A61M 60/898](#)>
- D A61M 1/1081 . . {Piston pumps}
<administratively transferred to [A61M 60/258](#)>
- D A61M 1/1082 . . {High-frequency pumps}
<administratively transferred to [A61M 60/577](#)>
- D A61M 1/1084 . . {Venturi or jet pumps}
<administratively transferred to [A61M 60/211](#)>
- D A61M 1/1086 . . {Regulating or controlling systems therefor}
<administratively transferred to [A61M 60/50](#)>
- D A61M 1/1087 . . {Active valves for blood pumps or artificial hearts, i.e. using an external force for actuating the valve}
<administratively transferred to [A61M 60/892](#)>

- D A61M 1/1089
- • {where the valve is formed by a flexible tube element which is clamped for restricting the flow}
- <administratively transferred to [A61M 60/892](#)>
- D A61M 1/1096
- • {Passive valves for blood pumps or artificial hearts, i.e. valves actuated by the fluid}
- <administratively transferred to [A61M 60/894](#)>
- D A61M 1/1098
- • {Valves having flexible or resilient parts, e.g. flap valve}
- <administratively transferred to [A61M 60/896](#)>
- D A61M 1/12
- • implantable into the body {(not used, see subgroups)}
- <administratively transferred to [A61M 60/122](#)>
- D A61M 1/122
- • {Heart assist devices, i.e. for assisting an ailing heart, using additional pumping means in the blood circuit}
- <administratively transferred to [A61M 60/148](#)>
- D A61M 1/125
- • {intravascular, i.e. introduced or implanted in an existing blood vessel}
- <administratively transferred to [A61M 60/135](#)>
- D A61M 1/127
- • {Energy supply devices, converters therefor}
- <administratively transferred to [A61M 60/871](#)>

Project: RP0005-F (A61M)

- M A61M 3/00 **Medical syringes, e.g. enemata; Irrigators ([A61M 5/00](#) takes precedence; pistons [A61M 5/315](#))**

WARNING

Groups [A61M 3/0204](#)–[A61M 3/022](#) are incomplete pending reclassification of documents from group [A61M 3/02](#).

Until reclassification is complete, groups [A61M 3/02](#) and [A61M 3/0204](#)–[A61M 3/022](#) should be considered to perform a complete search.

Project: RP0705 (A61M)

- Q A61M 60/00 **Blood pumps; Devices for mechanical circulatory actuation; Balloon pumps for circulatory assistance (heart stimulation [A61H 31/00](#); heart stimulators for electrotherapy [A61N 1/362](#))**

NOTE

In this main group, it is obligatory to classify all aspects of location, type, medical purpose, driving details, control details, and constructional details other than driving details that are represented in groups [A61M 60/10](#), [A61M 60/20](#), [A61M 60/30](#), [A61M 60/40](#), [A61M 60/50](#) and [A61M 60/80](#). This obligation extends to information that would normally only be considered as additional information.

WARNING

Group [A61M 60/00](#) is impacted by reclassification into groups [A61M 60/10](#) - [A61M 60/90](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A61M 60/10
- Location thereof with respect to the patient's body
- WARNING**
- Groups [A61M 60/10](#), [A61M 60/104](#), [A61M 60/109](#), [A61M 60/113](#), and [A61M 60/117](#) are incomplete pending reclassification of documents from group [A61M 60/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A61M 60/104
 - • Extracorporeal pumps, i.e. the blood being pumped outside the patient's body
- N A61M 60/109
 - • • incorporated within extracorporeal blood circuits or systems
- N A61M 60/113
 - • • • in other functional devices, e.g. dialysers or heart-lung machines
- N A61M 60/117
 - • • for assisting the heart, e.g. transcutaneous or external ventricular assist devices
- Q A61M 60/122
 - • Implantable pumps or pumping devices, i.e. the blood being pumped inside the patient's body

WARNING

Group [A61M 60/122](#) is incomplete pending reclassification of documents from group [A61M 60/00](#).

Group [A61M 60/122](#) is also impacted by reclassification into groups [A61M 60/126](#) - [A61M 60/196](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A61M 60/126
 - • • implantable via, into, inside, in line, branching on, or around a blood vessel

WARNING

Groups [A61M 60/126](#), [A61M 60/13](#), [A61M 60/148](#), [A61M 60/152](#), [A61M 60/157](#), and [A61M 60/161](#) are incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/122](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A61M 60/13
 - • • • by means of a catheter allowing explantation, e.g. catheter pumps temporarily introduced via the vascular system
- Q A61M 60/135
 - • • • inside a blood vessel, e.g. using grafting

WARNING

Group [A61M 60/135](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/122](#).

Group [A61M 60/135](#) is also impacted by reclassification into groups [A61M 60/139](#) and [A61M 60/143](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A61M 60/139
 - • • • • inside the aorta, e.g. intra-aortic balloon pumps

WARNING

Group [A61M 60/139](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#), [A61M 60/122](#), and [A61M 60/135](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A61M 60/143
 - • • • • inside the coronary sinus, e.g. for pressure-controlled intermittent coronary sinus occlusion

WARNING

Group [A61M 60/143](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#), [A61M 60/122](#), and [A61M 60/135](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A61M 60/148
 - • • • in line with a blood vessel using resection or like techniques, e.g. permanent endovascular heart assist devices

- N A61M 60/152 branching on and drawing blood from a blood vessel
- N A61M 60/157 mechanically acting upon the inside of the patient's blood vessel structure, e.g. contractile structures placed inside a vessel
- N A61M 60/161 mechanically acting upon the outside of the patient's blood vessel structure, e.g. compressive structures placed around a vessel
- N A61M 60/165 implantable in, on, or around the heart
- WARNING
Groups [A61M 60/165](#), [A61M 60/178](#), [A61M 60/183](#), [A61M 60/187](#), and [A61M 60/191](#) are incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/122](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q A61M 60/17 inside a ventricle, e.g. intraventricular balloon pumps
- WARNING
Group [A61M 60/17](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/122](#).
Group [A61M 60/17](#) is also impacted by reclassification into group [A61M 60/174](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A61M 60/174 discharging the blood to the ventricle or arterial system via a cannula internal to the ventricle or arterial system
- WARNING
Group [A61M 60/174](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#), [A61M 60/122](#), and [A61M 60/17](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A61M 60/178 drawing blood from a ventricle and returning the blood to the arterial system via a cannula external to the ventricle, e.g. left or right ventricular assist devices
- N A61M 60/183 drawing blood from both ventricles, e.g. bi-ventricular assist devices [BiVAD]
- N A61M 60/187 mechanically acting upon the inside of the patient's native heart, e.g. contractile structures placed inside the heart
- N A61M 60/191 mechanically acting upon the outside of the patient's native heart, e.g. compressive structures placed around the heart
- N A61M 60/196 replacing the entire heart, e.g. total artificial hearts [TAH]
- WARNING
Group [A61M 60/196](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/122](#).
Groups [A61M 60/00](#), [A61M 60/122](#), and [A61M 60/196](#) should be considered in order to perform a complete search.
- N A61M 60/20 . Type thereof
- WARNING
Groups [A61M 60/20](#), [A61M 60/247](#), [A61M 60/253](#), [A61M 60/289](#), and [A61M 60/295](#) are incomplete pending reclassification of documents from group [A61M 60/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.

- Q A61M 60/205
- • Non-positive displacement blood pumps
- WARNING
 Group [A61M 60/205](#) is incomplete pending reclassification of documents from group [A61M 60/00](#).
 Group [A61M 60/205](#) is also impacted by reclassification into groups [A61M 60/211](#) - [A61M 60/242](#), [A61M 60/403](#) - [A61M 60/422](#), and [A61M 60/802](#) - [A61M 60/833](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N A61M 60/211
- • • using a jet, venturi or entrainment effect for pumping the blood
- WARNING
 Group [A61M 60/211](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/205](#).
 Groups [A61M 60/00](#), [A61M 60/205](#), and [A61M 60/211](#) should be considered in order to perform a complete search.
- N A61M 60/216
- • • including a rotating member acting on the blood, e.g. impeller
- WARNING
 Groups [A61M 60/216](#) - [A61M 60/242](#) are incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/205](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N A61M 60/221
- • • • the blood flow through the rotating member having both radial and axial components, e.g. mixed flow pumps
- N A61M 60/226
- • • • the blood flow through the rotating member having mainly radial components
- N A61M 60/232
- • • • • Centrifugal pumps
- N A61M 60/237
- • • • the blood flow through the rotating member having mainly axial components, e.g. axial flow pumps
- N A61M 60/242
- • • • • with the outlet substantially perpendicular to the axis of rotation
- N A61M 60/247
- • Positive displacement blood pumps
- N A61M 60/253
- • • including a displacement member directly acting on the blood
- Q A61M 60/258
- • • • Piston pumps
- WARNING
 Group [A61M 60/258](#) is incomplete pending reclassification of documents from group [A61M 60/00](#).
 Group [A61M 60/258](#) is also impacted by reclassification into group [A61M 60/263](#).
 Groups [A61M 60/00](#), [A61M 60/258](#), and [A61M 60/263](#) should be considered in order to perform a complete search.
- N A61M 60/263
- • • • • having a spherical housing, e.g. cardan pumps
- WARNING
 Group [A61M 60/263](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/258](#).
 Groups [A61M 60/00](#), [A61M 60/258](#), and [A61M 60/263](#) should be considered in order to perform a complete search.

- Q A61M 60/268
- • • • the displacement member being flexible, e.g. membranes, diaphragms or bladders
- WARNING
Group [A61M 60/268](#) is incomplete pending reclassification of documents from group [A61M 60/00](#).
Group [A61M 60/268](#) is also impacted by reclassification into groups [A61M 60/274](#), [A61M 60/279](#), and [A61M 60/284](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A61M 60/274
- • • • • the inlet and outlet being the same, e.g. para-aortic counter-pulsation blood pumps
- WARNING
Group [A61M 60/274](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/268](#).
Groups [A61M 60/00](#), [A61M 60/268](#), and [A61M 60/274](#) should be considered in order to perform a complete search.
- N A61M 60/279
- • • • • Peristaltic pumps, e.g. roller pumps
- WARNING
Groups [A61M 60/279](#) and [A61M 60/284](#) are incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/268](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A61M 60/284
- • • • • • Linear peristaltic pumps
- N A61M 60/289
- • Devices for mechanical circulatory actuation assisting the residual heart function by means mechanically acting upon the patient's native heart or blood vessel structure, e.g. direct cardiac compression [DCC] devices
- N A61M 60/295
- • Balloon pumps for circulatory assistance
- N A61M 60/30
- Medical purposes thereof other than the enhancement of the cardiac output
- WARNING
Groups [A61M 60/30](#), [A61M 60/31](#), [A61M 60/32](#), [A61M 60/33](#), [A61M 60/34](#), [A61M 60/35](#), [A61M 60/36](#), [A61M 60/37](#), [A61M 60/38](#), and [A61M 60/39](#) are incomplete pending reclassification of documents from group [A61M 60/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A61M 60/31
- • for enhancement of *in vivo* organ perfusion, e.g. retroperfusion
- N A61M 60/32
- • • of heart muscle tissues, e.g. using coronary sinus occlusion
- N A61M 60/33
- • • of kidneys
- N A61M 60/34
- • for enhancement of circulation to the extremities, e.g. the feet
- N A61M 60/35
- • for specific surgeries, e.g. for Fontan procedure
- N A61M 60/36
- • for specific blood treatment; for specific therapy
- N A61M 60/37
- • • Haemodialysis, haemofiltration or diafiltration
- N A61M 60/38
- • • Blood oxygenation
- N A61M 60/39
- • for blood transfusion
- Q A61M 60/40
- Details relating to driving
- WARNING
Group [A61M 60/40](#) is incomplete pending reclassification of documents from group [A61M 60/00](#).

Group [A61M 60/40](#) is also impacted by reclassification into groups [A61M 60/403](#) - [A61M 60/497](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A61M 60/403
- • for non-positive displacement blood pumps
- WARNING
Groups [A61M 60/403](#), [A61M 60/405](#), [A61M 60/408](#), [A61M 60/411](#), [A61M 60/414](#), [A61M 60/416](#), [A61M 60/419](#), and [A61M 60/422](#) are incomplete pending reclassification of documents from groups [A61M 60/00](#), [A61M 60/205](#), and [A61M 60/40](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A61M 60/405
- • • the force acting on the blood contacting member being hydraulic or pneumatic
- N A61M 60/408
- • • the force acting on the blood contacting member being mechanical, e.g. transmitted by a shaft or cable
- N A61M 60/411
- • • • generated by an electromotor
- N A61M 60/414
- • • • • transmitted by a rotating cable, e.g. for blood pumps mounted on a catheter
- N A61M 60/416
- • • • • transmitted directly by the motor rotor drive shaft
- N A61M 60/419
- • • the force acting on the blood contacting member being permanent magnetic, e.g. from a rotating magnetic coupling between driving and driven magnets
- N A61M 60/422
- • • the force acting on the blood contacting member being electromagnetic, e.g. using canned motor pumps
- N A61M 60/424
- • for positive displacement blood pumps
- WARNING
Groups [A61M 60/424](#), [A61M 60/427](#), [A61M 60/43](#) - [A61M 60/462](#) are incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/40](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A61M 60/427
- • • the force acting on the blood contacting member being hydraulic or pneumatic
- N A61M 60/43
- • • • using vacuum at the blood pump, e.g. to accelerate filling
- N A61M 60/432
- • • • with diastole or systole switching by stopping or reversing the blood pump operating at a much higher cyclical speed than the heart beat
- N A61M 60/435
- • • • with diastole or systole switching by valve means located between the blood pump and the hydraulic or pneumatic energy source
- N A61M 60/438
- • • the force acting on the blood contacting member being mechanical
- N A61M 60/441
- • • • generated by an electromotor
- N A61M 60/443
- • • • • with means converting the rotation into a translational movement of the displacement member
- N A61M 60/446
- • • • • the axis of both movements being parallel, e.g. roller screw actuators or cylindrical cam transmissions
- N A61M 60/449
- • • • generated by a solenoid
- N A61M 60/451
- • • • generated by electro-thermomechanical actuators, e.g. shape memory alloy actuators

- N A61M 60/454 generated by electro-active actuators, e.g. using electro-active polymers or piezo-electric elements
- N A61M 60/457 . . . the force acting on the blood contacting member being magnetic
- N A61M 60/459 generated by permanent magnets
- N A61M 60/462 Electromagnetic force
- N A61M 60/465 . . for devices for mechanical circulatory actuation
- WARNING
Groups [A61M 60/465](#) - [A61M 60/495](#) are incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/40](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A61M 60/468 . . . the force acting on the actuation means being hydraulic or pneumatic
- N A61M 60/47 . . . the force acting on the actuation means being mechanical, e.g. mechanically driven members clamping a blood vessel
- N A61M 60/473 generated by an electromotor
- N A61M 60/476 with means converting the rotation into a translational movement of the displacement member
- N A61M 60/478 the axis of both movements being parallel, e.g. roller screw actuators or cylindrical cam transmissions
- N A61M 60/481 generated by a solenoid
- N A61M 60/484 generated by electro-thermomechanical actuators, e.g. shape memory alloy actuators
- N A61M 60/486 generated by electro-active actuators, e.g. using electro-active polymers or piezo-electric elements
- N A61M 60/489 . . . the force acting on the blood contacting member being magnetic
- N A61M 60/492 generated by permanent magnets
- N A61M 60/495 Electromagnetic force
- N A61M 60/497 . . for balloon pumps for circulatory assistance
- WARNING
Group [A61M 60/497](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/40](#).
Groups [A61M 60/00](#), [A61M 60/40](#), and [A61M 60/497](#) should be considered in order to perform a complete search.
- Q A61M 60/50 . Details relating to control
- WARNING
Group [A61M 60/50](#) is incomplete pending reclassification of documents from group [A61M 60/00](#).
Group [A61M 60/50](#) is also impacted by reclassification into groups [A61M 60/508](#) - [A61M 60/592](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N A61M 60/508 . . Electronic control means, e.g. for feedback regulation
- WARNING
Groups [A61M 60/508](#), [A61M 60/515](#), [A61M 60/523](#), [A61M 60/531](#), [A61M 60/538](#), [A61M 60/546](#), [A61M 60/554](#), and [A61M 60/577](#) are incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/50](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A61M 60/515
 - • • Regulation using real-time patient data
- N A61M 60/523
 - • • • using blood flow data, e.g. from blood flow transducers
- N A61M 60/531
 - • • • using blood pressure data, e.g. from blood pressure sensors
- N A61M 60/538
 - • • Regulation using real-time blood pump operational parameter data, e.g. motor current
- N A61M 60/546
 - • • • of blood flow, e.g. by adapting rotor speed
- N A61M 60/554
 - • • • of blood pressure
- Q A61M 60/562
 - • • for making blood flow pulsatile in blood pumps that do not intrinsically create pulsatile flow

WARNING

Group [A61M 60/562](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/50](#).

Group [A61M 60/562](#) is also impacted by reclassification into group [A61M 60/569](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A61M 60/569
 - • • • synchronous with the native heart beat

WARNING

Group [A61M 60/569](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#), [A61M 60/50](#), and [A61M 60/562](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A61M 60/577
 - • • High-frequency driving
- N A61M 60/585
 - • User interfaces

WARNING

Group [A61M 60/585](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/50](#).

Groups [A61M 60/00](#), [A61M 60/50](#), and [A61M 60/585](#) should be considered in order to perform a complete search.

- N A61M 60/592
 - • Communication of patient or blood pump data to distant operators for treatment purposes

WARNING

Group [A61M 60/592](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/50](#).

Groups [A61M 60/00](#), [A61M 60/50](#), and [A61M 60/592](#) should be considered in order to perform a complete search.

- N A61M 60/80
 - Constructional details other than related to driving

WARNING

Groups [A61M 60/80](#), [A61M 60/835](#), [A61M 60/837](#) - [A61M 60/898](#) are incomplete pending reclassification of documents from group [A61M 60/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A61M 60/802
 - • of non-positive displacement blood pumps

WARNING

Groups [A61M 60/802](#) - [A61M 60/833](#) are incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/205](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A61M 60/804 . . . Impellers
- N A61M 60/806 Vanes or blades
- N A61M 60/808 specially adapted for deformable impellers, e.g. expandable impellers
- N A61M 60/81 . . . Pump housings
- N A61M 60/812 Vanes or blades, e.g. static flow guides
- N A61M 60/814 Volutes
- N A61M 60/816 Sensors arranged on or in the housing, e.g. ultrasound flow sensors
- Q A61M 60/818 . . . Bearings

WARNING

Group [A61M 60/818](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/205](#).

Group [A61M 60/818](#) is also impacted by reclassification into groups [A61M 60/82](#), [A61M 60/822](#), [A61M 60/824](#), and [A61M 60/825](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- Q A61M 60/82 Magnetic bearings

WARNING

Group [A61M 60/82](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#), [A61M 60/205](#), and [A61M 60/818](#).

Group [A61M 60/82](#) is also impacted by reclassification into group [A61M 60/822](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A61M 60/822 specially adapted for being actively controlled

WARNING

Group [A61M 60/822](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#), [A61M 60/205](#), [A61M 60/818](#), and [A61M 60/82](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A61M 60/824 Hydrodynamic or fluid film bearings

WARNING

Group [A61M 60/824](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#), [A61M 60/205](#), and [A61M 60/818](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A61M 60/825 Contact bearings, e.g. ball-and-cup or pivot bearings

WARNING

Group [A61M 60/825](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#), [A61M 60/205](#), and [A61M 60/818](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A61M 60/827 . . . Sealings between moving parts
- N A61M 60/829 having a purge fluid supply
- N A61M 60/831 using filtered blood as purge fluid

- N A61M 60/833 . . . Occluders for preventing backflow
- N A61M 60/835 . . . of positive displacement blood pumps
- N A61M 60/837 . . . Aspects of flexible displacement members, e.g. shapes or materials
- N A61M 60/839 . . . of devices for mechanical circulatory actuation
- N A61M 60/841 . . . of balloon pumps for circulatory assistance
- N A61M 60/843 . . . Balloon aspects, e.g. shapes or materials
- N A61M 60/845 . . . of extracorporeal blood pumps
- N A61M 60/847 . . . arranged in a cassette
- N A61M 60/849 . . . Disposable parts
- N A61M 60/851 . . . Valves
- N A61M 60/853 the valve being formed by a flexible tube element which is clamped for restricting the flow
- N A61M 60/855 . . . of implantable pumps or pumping devices
- Q A61M 60/857 . . . Implantable blood tubes

WARNING

Group [A61M 60/857](#) is incomplete pending reclassification of documents from group [A61M 60/00](#).

Group [A61M 60/857](#) is also impacted by reclassification into group [A61M 60/859](#).

Groups [A61M 60/00](#), [A61M 60/857](#), and [A61M 60/859](#) should be considered in order to perform a complete search.

- N A61M 60/859 Connections therefor

WARNING

Group [A61M 60/859](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/857](#).

Groups [A61M 60/00](#), [A61M 60/857](#), and [A61M 60/859](#) should be considered in order to perform a complete search.

- N A61M 60/861 . . . Connections or anchorings for connecting or anchoring pumps or pumping devices to parts of the patient's body
- N A61M 60/863 Apex rings
- N A61M 60/865 . . . Devices for guiding or inserting pumps or pumping devices into the patient's body
- N A61M 60/867 using position detection during deployment, e.g. for blood pumps mounted on and driven through a catheter
- N A61M 60/869 . . . Compliance chambers containing a gas or liquid other than blood to compensate volume variations of a blood chamber
- Q A61M 60/871 . . . Energy supply devices; Converters therefor

WARNING

Group [A61M 60/871](#) is incomplete pending reclassification of documents from group [A61M 60/00](#).

Group [A61M 60/871](#) is also impacted by reclassification into groups [A61M 60/873](#) - [A61M 60/888](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N A61M 60/873 specially adapted for wireless or transcutaneous energy transfer [TET], e.g. inductive charging
- WARNING
Groups [A61M 60/873](#) and [A61M 60/875](#) are incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/871](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N A61M 60/875 specially adapted for optimising alignment of external and implantable coils
- N A61M 60/876 Implantable batteries
- WARNING
Group [A61M 60/876](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/871](#). Groups [A61M 60/00](#), [A61M 60/871](#), and [A61M 60/876](#) should be considered in order to perform a complete search.
- N A61M 60/878 Electrical connections within the patient's body
- WARNING
Group [A61M 60/878](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/871](#). Groups [A61M 60/00](#), [A61M 60/871](#), and [A61M 60/878](#) should be considered in order to perform a complete search.
- N A61M 60/88 Percutaneous cables
- WARNING
Group [A61M 60/88](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/871](#). Groups [A61M 60/00](#), [A61M 60/871](#), and [A61M 60/88](#) should be considered in order to perform a complete search.
- N A61M 60/882 Devices powered by the patient, e.g. skeletal muscle powered devices
- WARNING
Group [A61M 60/882](#) is incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/871](#). Groups [A61M 60/00](#), [A61M 60/871](#), and [A61M 60/882](#) should be considered in order to perform a complete search.
- N A61M 60/884 being associated to additional implantable blood treating devices
- WARNING
Groups [A61M 60/884](#) - [A61M 60/888](#) are incomplete pending reclassification of documents from groups [A61M 60/00](#) and [A61M 60/871](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N A61M 60/886 Blood oxygenators
- N A61M 60/888 Blood filters
- N A61M 60/89 Valves
- N A61M 60/892 Active valves, i.e. actuated by an external force
- N A61M 60/894 Passive valves, i.e. valves actuated by the blood
- N A61M 60/896 having flexible or resilient parts, e.g. flap valves
- N A61M 60/898 the blood pump being a membrane blood pump and the membrane acting as inlet valve

N A61M 60/90

- Details not provided for in groups [A61M 60/40](#), [A61M 60/50](#) or [A61M 60/80](#)

WARNING

Group [A61M 60/90](#) is incomplete pending reclassification of documents from group [A61M 60/00](#)

Groups [A61M 60/00](#) and [A61M 60/90](#) should be considered in order to perform a complete search.

Project: RP0057-F (A63C)

M A63C 9/00

Ski bindings

WARNING

Group A63C 9/00 is impacted by reclassification into group A63C 9/005.
Groups A63C 9/00 and A63C 9/005 should be considered in order to perform a complete search.

M A63C 9/005

- {with means for adjusting the position of a shoe holder or of the complete binding relative to the ski}

WARNING

Group A63C 9/005 is incomplete pending reclassification of documents from group A63C 9/00.

Group A63C 9/005 is also impacted by reclassification into groups A63C 9/0053 and A63C 9/0057.

Groups A63C 9/00, A63C 9/005, A63C 9/0053 and A63C 9/0057 should be considered in order to perform a complete search.

M A63C 9/0053

- {for length adjustment}

WARNING

Group A63C 9/0053 is incomplete pending reclassification of documents from group A63C 9/005.

Groups A63C 9/005 and A63C 9/0053 should be considered in order to perform a complete search.

M A63C 9/0057

- {for height adjustment}

WARNING

Group A63C 9/0057 is incomplete pending reclassification of documents from group A63C 9/005.

Groups A63C 9/005 and A63C 9/0057 should be considered in order to perform a complete search.

Project: N/A (B01D)B01D 45/00 -
B01D 59/00

Separating dispersed particles from gases or vapours (suction cleaner filters [A47L 9/10](#); filters for breathing-protection purposes [A62B 23/00](#); filtering air for vehicles [B60H 3/06](#); separating pneumatically-conveyed materials from propelling gas [B65G 53/60](#); exhaust or silencing apparatus for machines or engines having means for removing solid constituents of exhaust [F01N 3/02](#); air cleaners for the intakes of gas-turbine or jet-propulsion plants [F02C 7/05](#), of combustion engines [F02M 35/024](#), of compressors [F04B 39/16](#); filtering in air-conditioning [F24F 3/16](#), [F24F 8/10](#))

Project: MP0427 (B01D)

U B01D 53/00

Separation of gases or vapours; Recovering vapours of volatile solvents from gases; Chemical or biological purification of waste gases, e.g. engine exhaust gases, smoke, fumes, flue gases, aerosols, (recovery of volatile solvents by condensation [B01D 5/00](#); sublimation [B01D 7/00](#); cold traps, cold baffles [B01D 8/00](#); working-up undefined gaseous mixtures obtained by cracking hydrocarbon oils [C10G 70/00](#); cleaning coal gas [C10K](#); working-up of natural gas, or synthetic natural gas, [C10L 3/10](#); separation of difficult-to-condense gases or air by liquefaction [F25J](#); for investigating materials [G01N 30/00](#))

NOTE

Group [B01D 53/34](#) takes precedence over groups [B01D 53/02](#) - [B01D 53/32](#)

U B01D 53/02

- by adsorption, e.g. preparative gas chromatography {(solid sorbent compositions [B01J 20/00](#), preparation of inorganic compounds or elements [C01](#))}

NOTE

In group [B01D 53/02](#) and subgroups it is desirable to add indexing codes relating to adsorbents, components to be removed, main components in the product gas stream or type of gas or vapour treatment chosen from groups [B01D 2253/00](#), [B01D 2256/00](#), [B01D 2257/00](#) or [B01D 2259/00](#)

M B01D 53/04

- • with stationary adsorbents {([B01D 53/025](#) takes precedence)}

NOTE

{In groups [B01D 53/0462](#) and [B01D 53/047](#) - [B01D 53/0476](#) it is desirable to add indexing codes chosen from [B01D 2259/40007](#) - [B01D 2259/40081](#) relating to controlling and processing aspects of pressure or temperature swing adsorption}

M B01D 53/0454

- • • {Controlling adsorption (controlling temperature swing adsorption [B01D 53/0462](#), controlling pressure swing adsorption [B01D 53/047](#))}

NOTE

In-groups [B01D 53/0462](#) and [B01D 53/047](#) - [B01D 53/0476](#) it is desirable to add indexing codes chosen from [B01D 2259/40007](#) - [B01D 2259/40081](#) relating to controlling and processing aspects of pressure or temperature swing adsorption

U B01D 65/00

Accessories or auxiliary operations, in general, for separation processes or apparatus using semi-permeable membranes

M B01D 65/10

- Testing of membranes or membrane apparatus; Detecting or repairing leaks

NOTE

The documents classified in the groups [B01D 67/00](#) - [B01D 71/00](#) are also searchable in a keyword-based electronic off-line database called "MEMBRANE"

Project: RP0696 (B01D)

- U B01D 2279/00** **Filters adapted for separating dispersed particles from gases or vapours specially modified for specific uses**
- B01D 2279/50
- for air conditioning (air-conditioning systems comprising filters ~~F24F 3/1603~~[F24F 8/10](#))

Project: RP0696 (B01L)

- B01L 1/00** **Enclosures; Chambers (fume cupboards [B08B](#); provided with manipulation devices, glove boxes [B25J](#); {industrial clean rooms ~~F24F 3/161~~[F24F 3/167](#)}; cooling chambers [F25D](#))**

WARNING

Group [B01L 1/00](#) is impacted by reclassification into group [B01L 1/52](#). Groups [B01L 1/00](#) and [B01L 1/52](#) should be considered in order to perform a complete search.

- B01L 1/04
- Dust-free rooms or enclosures {(clean rooms suitable for industrial purposes ~~F24F 3/161~~[F24F 3/167](#))}

Project: RP0226-F (B01L)

- U B01L 3/00** **Containers or dishes for laboratory use, e.g. laboratory glassware (bottles [B65D](#); apparatus for enzymology or microbiology {specially adapted for culturing} [C12M 1/00](#)); Droppers (receptacles for volumetric purposes [G01F](#))**

- D B01L 3/14**
—(Frozen)
- Test tubes {(devices for taking samples of blood [A61B 5/15](#))}

WARNING

Group [B01L 3/14](#) is no longer used for the classification of documents as of August 1, 2018. The content of this group is being reclassified into groups [B01L 3/50](#), [B01L 3/502](#), [B01L 3/5021](#), [B01L 3/50215](#), [B01L 3/5023](#), [B01L 3/5025](#), [B01L 3/50255](#), [B01L 3/5027](#), [B01L 3/502707](#), [B01L 3/502715](#), [B01L 3/502723](#), [B01L 3/50273](#), [B01L 3/502738](#), [B01L 3/502746](#), [B01L 3/502753](#), [B01L 3/502761](#), [B01L 3/502769](#), [B01L 3/502776](#), [B01L 3/502784](#), [B01L 3/502792](#), [B01L 3/5029](#), [B01L 3/505](#), [B01L 3/5055](#), [B01L 3/508](#), [B01L 3/5082](#), [B01L 3/50825](#), [B01L 3/5085](#), [B01L 3/50851](#), [B01L 3/50853](#), [B01L 3/50855](#), [B01L 3/50857](#), and [B01L 3/5088](#). All groups listed in this Warning should be considered in order to perform a complete search.

- M B01L 3/50**
- {Containers for the purpose of retaining a material to be analysed, e.g. test tubes (devices for taking samples of blood [A61B 5/15](#))}

WARNING

~~Groups [B01L 3/50](#) – [B01L 3/5088](#) are incomplete pending reclassification of documents from group [B01L 3/14](#). Group [B01L 3/14](#) should also be considered in order to perform a complete search.~~

Project: MP0496 (B05)

- M B05** **SPRAYING OR ATOMISING IN GENERAL; APPLYING LIQUIDS OR OTHER FLUENT MATERIALS TO SURFACES, IN GENERAL**

NOTE

In this class, the following terms are used with the meanings indicated:

- "other fluent materials" includes semiliquids, pastes, melts, solutions, dispersions, suspensions, particulate materials, gases or vapours;
- "particulate materials" includes powders, granules, short fibres or chips;

- "coating" means the materials applied. The coating may be a liquid having become solid after drying, e.g. paint.

Project: MP0496 (B05C)

M B05C

APPARATUS FOR APPLYING ~~LIQUIDS OR OTHER~~ FLUENT MATERIALS TO SURFACES, IN GENERAL (spraying apparatus, atomising apparatus, nozzles [B05B](#); plant for applying liquids or other fluent materials to objects by electrostatic spraying [B05B 5/08](#); ~~processes for applying liquids or other fluent materials to surfaces B05D; {coating of foodstuffs A23P 20/15, A23P 20/17, A23P 20/18, of shaped or preshaped ceramic articles B28B 11/04}~~)

NOTES

1. This subclass covers apparatus or hand tools, in general, for applying liquids or other fluent materials to a surface or a part thereof, by any mechanical or physical method, in particular apparatus for obtaining a uniform distribution of liquids or other fluent materials on a surface.
2. Attention is drawn to the Note following the title of class [B05](#).

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
[B05C 5/04](#) covered by [B05C 5/001](#), [B05C 11/1042](#)
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: MP0496 (B05D)

M B05D

PROCESSES FOR APPLYING ~~LIQUIDS OR OTHER~~ FLUENT MATERIALS TO SURFACES, IN GENERAL (~~apparatus for applying liquids or other fluent materials to surfaces B05B, B05C; {coating of foodstuffs A23P 20/17, A23P 20/15, A23P 20/18}~~ *conveying articles or workpieces through baths of liquid B65G, e.g. B65G 49/02*)

NOTES

1. This subclass covers:
 - processes for applying liquids or other fluent materials to a surface or part of a surface, in general, by any mechanical or physical method and particularly processes producing a uniform distribution of liquids or other fluent materials on a surface;
 - pretreatment of surfaces to which liquids or other fluent materials are to be applied;
 - after-treatment of applied coatings.
2. Attention is drawn to the Note following the title of class [B05](#).

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: MP0496 (B07B)

M B07B

SEPERATINGSEPARATING SOLIDS FROM SOLIDS BY SIEVING, SCREENING, OR SIFTING OR BY USING GAS CURRENTS; OTHER SEPARATING BY OTHER DRY METHODS APPLICABLE TO BULK MATERIAL, e.g. LOOSE ARTICLES FIT TO BE HANDLED LIKE BULK MATERIAL (*wet separating processes, sorting by processes using fluent material in the same way as liquid B03*); combinations of dry separating apparatus with wet separating apparatus [B03B](#); *using liquids B03B, B03D*; *sorting by magnetic or electrostatic separation of solid materials from solid materials or fluids, separation by high voltage electric fields B03C*; *centrifuges or vortex apparatus for carrying out physical processes B04*; hand sorting, postal sorting, sorting by switching or other devices actuated in response to detection or measurement of some feature of articles or samples of material [B07C](#))

NOTE

In this subclass any sorting or grading of bulk material or loose articles fit to be handled like bulk material results automatically from the construction of the apparatus and properties of the material, e.g. by a trap opening under an object of a certain minimum weight, by an aperture of graduated size. Sorting of articles is included in so far as the same conditions apply, e.g. sorting of timber by passing it over successively longer openings; the articles may or may not be orientated for the purpose of sorting.

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

[B07B 1/32](#) covered by [B07B 1/30](#)

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: MP0427 (B07B)

U B07B 1/00

Sieving, screening, sifting, or sorting solid materials using networks, gratings, grids, or the like {(ash-sifters for domestic stoves or ranges [F24B 15/007](#))}

M B07B 1/28

· Moving screens not otherwise provided for, e.g. swinging, reciprocating, rocking, tilting or wobbling screens

NOTE

*Group [B07B 1/40](#) takes precedence over groups [B07B 1/30](#) - [B07B 1/38](#).
{This Note corresponds to IPC Note (1) relating to [B07B 1/30](#) - [B07B 1/40](#).}*

M B07B 1/286

· · {with excentric shafts}

NOTE

~~Group [B07B 1/40](#) takes precedence over groups [B07B 1/30](#)-[B07B 1/38](#)~~

Project: MP0479 (B21C)

M B21C 1/00 -
B21C 19/00

~~Metal- drawing (continuous casting [B22D 11/00](#); pressure welding by means of a rolling mill [B23K 20/04](#))~~

U B21C 1/00

Manufacture of metal sheets, metal wire, metal rods, metal tubes by drawing

U B21C 1/02

· Drawing metal wire or like flexible metallic material by drawing machines or apparatus in which the drawing action is effected by drums

M	B21C 1/12	<ul style="list-style-type: none"> Regulating or controlling speed of drawing drums, e.g. to influence tension; Drives; Stop or relief mechanisms (couplings for drums B21C 1/14; design or construction of electrical equipment, see the relevant classes)
M	B21C 1/14	<ul style="list-style-type: none"> Drums, e.g. capstans (capstans or winches in general B66D); Connection of grippers thereto; Grippers specially adapted for drawing machines or apparatus of the drum type; Couplings specially adapted for these drums
U	B21C 1/16	<ul style="list-style-type: none"> Metal drawing by machines or apparatus in which the drawing action is effected by other means than drums, e.g. by a longitudinally-moved carriage pulling or pushing the work or stock for making metal sheets, bars, or tubes
U	B21C 1/22	<ul style="list-style-type: none"> specially adapted for making tubular articles (bending sheet metal into tubular form by drawing B21D 5/10)
M	B21C 1/24	<ul style="list-style-type: none"> by means of mandrels (mandrels B21C 3/16)
U	B21C 1/27	<ul style="list-style-type: none"> Carriages; Drives
M	B21C 1/28	<ul style="list-style-type: none"> Carriages; Connections of grippers thereto; Grippers (for drawing machines of the drum type B21C 1/14)
U	B21C 3/00	Profiling tools for metal drawing; Combinations of dies and mandrels
M	B21C 3/16	<ul style="list-style-type: none"> Mandrels (separating mandrels from work B21C 45/00); Mounting or adjusting same
M	B21C 23/00 - B21C 43/00	Metal extruding (continuous casting B22D 11/00)
U	B21C 23/00	Extruding metal; Impact extrusion
M	B21C 23/01	<ul style="list-style-type: none"> starting from material of particular form or shape, e.g. mechanically pre-treated (B21C 23/22 takes precedence; heat treatment or combinations thereof with mechanical treatments, see appropriate classes)
M	B21C 23/21	<ul style="list-style-type: none"> Presses specially adapted for extruding metal (extrusion presses in general B30B 11/22)
M	B21C 23/32	<ul style="list-style-type: none"> Lubrication of metal being extruded or of dies, or the like, e.g. physical state of lubricant, location where lubricant is applied (chemical composition, see appropriate classes)
M	B21C 31/00	Control devices, e.g. for regulating the pressing speed or temperature of metal (B21C 25/08 takes precedence); Measuring devices, e.g. for temperature of metal, combined with or specially adapted for use in connection with extrusion presses (measuring devices of more general interest within subclass B21C, see group B21C 51/00)
U	B21C 35/00	Removing work or waste from extruding presses; Drawing-off extruded work (in connection with the extruding of bent tubes or rods B21C 23/12); Cleaning dies, ducts, containers, or mandrels
U	B21C 35/02	<ul style="list-style-type: none"> Removing or drawing-off work {(linear motor pulling devices B21C 1/305)}
M	B21C 35/03	<ul style="list-style-type: none"> Straightening the work (metal straightening in general B21D)
M	B21C 37/00	Manufacture of metal sheets, bars, wire, tubes or like semi-manufactured products, not otherwise provided for (by rolling B21B; by working or processing semi-finished sheet metal, profiles, tubes, or wire B21D or B21F; by casting B22; by material-removing machine tools B23; by welding, e.g. cladding or plating B23K; by grinding or polishing B24; by electroforming C25D 1/00; by drawing or extruding, see the relevant groups); Manufacture of tubes of special shape
M	B21C 37/06	<ul style="list-style-type: none"> of tubes or metal hoses; Combined procedures for making tubes, e.g. for making multi-wall tubes (bending sheets for making tubes B21D 5/00; seaming by folding B21D 39/02)

- M B21C 37/08
 - Making tubes with welded or soldered seams ~~{(involving only a soldering or welding operation B23K {- with helically arranged seams B21C 37/122})}~~
- M B21C 37/0815
 - • {without continuous longitudinal movement of the sheet during the bending operation ~~(sheet bending in general B21D)}~~
- U B21C 37/10
 - Making tubes with riveted seams {or with non-welded and non-soldered seams}
- M B21C 37/108
 - • {without continuous longitudinal movement of the sheet during the bending operation ~~(sheet bending in general B21D)}~~
- U B21C 37/12
 - Making tubes or metal hoses with helically arranged seams
- M B21C 37/122
 - • {with welded or soldered seams ~~(welding and soldering helically arranged seams, per se B23K)}~~
- U B21C 37/15
 - Making tubes of special shape; Making tube fittings ~~{(B21C 37/0803, B21C 37/104, B21C 37/124, take precedence)}~~
- M B21C 37/22
 - • Making finned or ribbed tubes by fixing strip or like material to tubes ~~(making heat exchangers B21D 53/02)~~
- M B21C 47/00**

Winding-up, coiling or winding-off metal wire, metal band or other flexible metal material characterised by features relevant to metal processing only (coiling wire into particular forms B21F 3/00; hot coilers in connection with heat-treatment apparatus C21D 9/68)
- U B21C 47/02
 - Winding-up or coiling
- M B21C 47/04
 - • on or in reels or drums, without using a moving guide ~~(reels or drums B21C 47/28)~~
- M B21C 47/28
 - Drums or other coil-holders ~~(gripping means B21C 47/32)~~

Project: RP0707 (B22F)

- C B22F 3/00** **Manufacture of workpieces or articles from metallic powder characterised by the manner of compacting or sintering; Apparatus specially adapted therefor {- Presses and furnaces}**

WARNING

Group B22F 3/00 is impacted by reclassification into groups B22F 10/00 - B22F 12/90.

Groups B22F 3/00 and B22F 10/00 - B22F 12/90 should be considered in order to perform a complete search.

- U B22F 3/006
 - {Amorphous articles}
- U B22F 3/007
 - • {by diffusion starting from non-amorphous articles prepared by powder metallurgy}
- D B22F 3/008
 - {Selective deposition modelling (B22F 3/1055 takes precedence)}
 - <administratively transferred to [B22F 10/00](#)>
- U B22F 3/10
 - Sintering only
- U B22F 3/105
 - • by using electric current {other than for infra-red radiant energy}, laser radiation or plasma ([B22F 3/11](#) takes precedence){; by ultrasonic bonding ([B22F 3/115](#) takes precedence)}
- U B22F 2003/1054
 - • • {by microwave}
- D B22F 3/1055
 - • • {Selective sintering, i.e. stereolithography (selective sintering of powdered plastics B29C 64/153)}
 - <administratively transferred to [B22F 10/00](#)>
- D B22F 2003/1056
 - • • • {Apparatus components, details or accessories}
 - <administratively transferred to [B22F 10/10](#) INV>

- D B22F 2003/1057 {for control or data processing, e.g. algorithms}
<administratively transferred to [B22F 10/10](#) INV>
- D B22F 2003/1058 {Support structures for the 3D object during manufacturing, e.g. using sacrificial material}
<administratively transferred to [B22F 10/00](#) INV>
- D B22F 2003/1059 {for cleaning or recycling}
<administratively transferred to [B22F 10/00](#) INV>

Q B22F 10/00 Additive manufacturing of workpieces or articles from metallic powder (apparatus or devices therefor [B22F 12/00](#))

WARNING

Group [B22F 10/00](#) is incomplete pending reclassification of documents from group [B22F 3/00](#).

Group [B22F 10/00](#) is also impacted by reclassification into groups [B22F 10/10](#) - [B22F 12/90](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N B22F 10/10 . Formation of a green body
WARNING
Groups [B22F 10/10](#) - [B22F 10/18](#) are incomplete pending reclassification of documents from groups [B22F 3/00](#) and [B22F 10/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N B22F 10/12 . . by photopolymerisation, e.g. stereolithography [SLA] or digital light processing [DLP]
- N B22F 10/14 . . by jetting of binder onto a bed of metal powder
- N B22F 10/16 . . by embedding the binder within the powder bed
- N B22F 10/18 . . by mixing binder with metal in filament form, e.g. fused filament fabrication [FFF]
- N B22F 10/20 . Direct sintering or melting
WARNING
Groups [B22F 10/20](#) - [B22F 10/28](#) are incomplete pending reclassification of documents from groups [B22F 3/00](#) and [B22F 10/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N B22F 10/22 . . Direct deposition of molten metal
- N B22F 10/25 . . Direct deposition of metal particles, e.g. direct metal deposition [DMD] or laser engineered net shaping [LENS]
- N B22F 10/28 . . Powder bed fusion, e.g. selective laser melting [SLM] or electron beam melting [EBM]
- N B22F 10/30 . Process control
WARNING
Groups [B22F 10/30](#) - [B22F 10/39](#) are incomplete pending reclassification of documents from groups [B22F 3/00](#) and [B22F 10/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N B22F 10/31 . . Calibration of process steps or apparatus settings, e.g. before or during manufacturing

- N B22F 10/32 · · of the atmosphere, e.g. composition or pressure in a building chamber
- N B22F 10/322 · · · of the gas flow, e.g. rate or direction
- N B22F 10/34 · · of powder characteristics, e.g. density, oxidation or flowability
- N B22F 10/36 · · of energy beam parameters
- N B22F 10/362 · · · for preheating
- N B22F 10/364 · · · for post-heating, e.g. remelting
- N B22F 10/366 · · · Scanning parameters, e.g. hatch distance or scanning strategy
- N B22F 10/368 · · · Temperature or temperature gradient, e.g. temperature of the melt pool
- N B22F 10/37 · · of powder bed aspects, e.g. density
- N B22F 10/38 · · to achieve specific product aspects, e.g. surface smoothness, density, porosity or hollow structures
- N B22F 10/385 · · · {Overhang structures}
- N B22F 10/39 · · Traceability, e.g. incorporating identifier into a workpiece or article
- N B22F 10/40 · Structures for supporting workpieces or articles during manufacture and removed afterwards

WARNING

Groups [B22F 10/40](#) - [B22F 10/47](#) are incomplete pending reclassification of documents from groups [B22F 3/00](#) and [B22F 10/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N B22F 10/43 · · characterised by material
- N B22F 10/47 · · characterised by structural features
- N B22F 10/50 · Treatment of workpieces or articles during build-up, e.g. treatments applied to fused layers during build-up

WARNING

Group [B22F 10/50](#) is incomplete pending reclassification of documents from groups [B22F 3/00](#) and [B22F 10/00](#).

Groups [B22F 3/00](#), [B22F 10/00](#), and [B22F 10/50](#) should be considered in order to perform a complete search.

- N B22F 10/60 · Treatment of workpieces or articles after build-up

WARNING

Groups [B22F 10/60](#) - [B22F 10/68](#) are incomplete pending reclassification of documents from groups [B22F 3/00](#) and [B22F 10/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N B22F 10/62 · · by chemical means
- N B22F 10/64 · · by thermal means (control of energy beam parameters for post heating [B22F 10/364](#))
- N B22F 10/66 · · by mechanical means
- N B22F 10/68 · · Cleaning or washing
- N B22F 10/70 · Recycling

WARNING

Groups [B22F 10/70](#) - [B22F 10/77](#) are incomplete pending reclassification of documents from groups [B22F 3/00](#) and [B22F 10/00](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N B22F 10/73 · · of powder

- N B22F 10/77 · · of gas
- N B22F 10/80 · Data acquisition or data processing
WARNING
 Groups [B22F 10/80](#) and [B22F 10/85](#) are incomplete pending reclassification of documents from groups [B22F 3/00](#) and [B22F 10/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N B22F 10/85 · · for controlling or regulating additive manufacturing processes
- N B22F 12/00 **Apparatus or devices specially adapted for additive manufacturing; Auxiliary means for additive manufacturing; Combinations of additive manufacturing apparatus or devices with other processing apparatus or devices****
WARNING
 Groups [B22F 12/00](#) - [B22F 12/90](#) are incomplete pending reclassification of documents from groups [B22F 3/00](#) and [B22F 10/00](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N B22F 12/10 · Auxiliary heating means
- N B22F 12/13 · · to preheat the material
- N B22F 12/17 · · to heat the build chamber or platform
- N B22F 12/20 · Cooling means
- N B22F 12/22 · {Driving means}
- N B22F 12/222 · · {for motion along a direction orthogonal to the plane of a layer}
- N B22F 12/224 · · {for motion along a direction within the plane of a layer}
- N B22F 12/226 · · {for rotary motion}
- N B22F 12/30 · Platforms or substrates
- N B22F 12/33 · · translatory in the deposition plane
- N B22F 12/37 · · Rotatable
- N B22F 12/38 · {Housings, e.g. machine housings}
- N B22F 12/40 · Radiation means
- N B22F 12/41 · · characterised by the type, e.g. laser or electron beam
- N B22F 12/42 · · · Light-emitting diodes [LED]
- N B22F 12/43 · · · pulsed; frequency modulated
- N B22F 12/44 · · characterised by the configuration of the radiation means
- N B22F 12/45 · · · Two or more
- N B22F 12/46 · · with translatory movement
- N B22F 12/47 · · · parallel to the deposition plane
- N B22F 12/48 · · · in height, e.g. perpendicular to the deposition plane
- N B22F 12/49 · · Scanners
- N B22F 12/50 · Means for feeding of material, e.g. heads
- N B22F 12/52 · · Hoppers
- N B22F 12/53 · · Nozzles
- N B22F 12/55 · · Two or more means for feeding material
- N B22F 12/57 · · Metering means
- N B22F 12/58 · · for changing the material composition, e.g. by mixing

- N B22F 12/60 · Planarisation devices; Compression devices
- N B22F 12/63 · · Rollers
- N B22F 12/67 · · Blades
- N B22F 12/70 · Gas flow means
- N B22F 12/80 · Plants, production lines or modules
- N B22F 12/82 · · Combination of additive manufacturing apparatus or devices with other processing apparatus or devices
- N B22F 12/84 · · · Parallel processing within single device
- N B22F 12/86 · · · Serial processing with multiple devices grouped
- N B22F 12/88 · · Handling of additively manufactured products, e.g. by robots
- N B22F 12/90 · Means for process control, e.g. cameras or sensors

Project: RP0240 (B23B)

- C B23B 31/00** Chucks {(allowing axial oscillation of percussion tool bits [B25D 17/08](#)); Expansion mandrels; Adaptations thereof for remote control (faceplates [B23Q 1/50](#); ~~devices for securing work or tools to spindles in general [B23Q 3/12](#)~~; rotary devices holding by magnetic and/or electrical force acting directly on work [B23Q 3/152](#))

WARNING

Group [B23B 31/00](#) is impacted by reclassification into groups [B23B 2231/56](#), [B23B 2231/565](#), and [B23B 2231/58](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- U B23B 31/008 · {with arrangements for transmitting torque}
- C B23B 31/02 · Chucks

WARNING

Group [B23B 31/02](#) is impacted by reclassification into groups [B23B 31/0261](#), [B23B 2231/56](#), [B23B 2231/565](#), and [B23B 2231/58](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- C B23B 31/026 · · {the radial or angular position of the tool being adjustable (boring heads with tools moving radially [B23B 29/034](#); holding tools yieldably [B23B 31/08](#); with means for adjusting the chuck with respect to the working spindle [B23B 31/36](#))}

WARNING

Group [B23B 31/026](#) is impacted by reclassification into group [B23B 31/0261](#). Groups [B23B 31/026](#) and [B23B 31/0261](#) should be considered in order to perform a complete search.

- N B23B 31/0261 · · · {for centering the tool}

WARNING

Group [B23B 31/0261](#) is incomplete pending reclassification of documents from groups [B23B 31/02](#) and [B23B 31/026](#).

Groups [B23B 31/02](#), [B23B 31/026](#), and [B23B 31/0261](#) should be considered in order to perform a complete search.

- U B23B 31/10
- characterised by the retaining or gripping devices or their immediate operating means
- NOTE
Group [B23B 31/12](#) takes precedence over groups {[B23B 31/101](#), [B23B 31/102](#),} [B23B 31/103](#) - [B23B 31/117](#)
- M B23B 31/101
- • {Chucks with separately-acting jaws movable radially ([B23B 31/1602](#), [B23B 31/16062](#), [B23B 31/161](#), [B23B 31/16137](#), [B23B 31/16175](#), [B23B 31/16212](#), [B23B 31/1625](#) and [B23B 31/16283](#) take precedence; ~~chucks with simultaneously-acting jaws moving radially B23B 31/16~~; *Chucks with simultaneously acting jaws moving radially B23B 31/16*)}
- C B23B 31/107
- • Retention by laterally-acting detents, e.g. pins, screws, wedges; Retention by loose elements, e.g. balls
- WARNING
*Group B23B 31/107 is impacted by reclassification into group B23B 31/1079.
Groups B23B 31/107 and B23B 31/1079 should be considered in order to perform a complete search.*
- C B23B 31/1072
- • • {Retention by *axially or circumferentially oriented* cylindrical elements (cylindrical elements acting as jaws [B23B 31/22](#))}
- WARNING
*Group B23B 31/1072 is impacted by reclassification into groups B23B 31/10741 and B23B 31/1079.
Groups B23B 31/1072, B23B 31/10741, and B23B 31/1079 should be considered in order to perform a complete search.*
- U B23B 31/1073
- • • {Retention by conical elements (conical elements acting as jaws [B23B 31/22](#))}
- D B23B 31/1074
- • • {Retention by pins}
- <administratively transferred to [B23B 31/1072](#)>
- N [B23B 31/10741](#)
- • • {Retention by substantially radially oriented pins}
- WARNING
*Group B23B 31/10741 is incomplete pending reclassification of documents from group [B23B 31/1072](#).
Groups [B23B 31/1072](#) and [B23B 31/10741](#) should be considered in order to perform a complete search.*
- U B23B 31/1078
- • • {Retention by wedges}
- N [B23B 31/1079](#)
- • • {Retention by spring or wire}
- WARNING
*Group B23B 31/1079 is incomplete pending reclassification of documents from groups [B23B 31/107](#) and [B23B 31/1072](#).
Groups [B23B 31/107](#), [B23B 31/1072](#), and [B23B 31/1079](#) should be considered in order to perform a complete search.*
- U B23B 31/12
- • Chucks with simultaneously-acting jaws, whether or not also individually adjustable
- C B23B 31/14
- • • involving the use of a centrifugal force
- WARNING
Group B23B 31/14 is impacted by reclassification into groups [B23B 31/141](#) and [B23B 31/142](#).

Groups [B23B 31/14](#), [B23B 31/141](#) and [B23B 31/142](#) should be considered in order to perform a complete search.

- N [B23B 31/141](#) {To counterbalance the jaws}
WARNING
Group [B23B 31/141](#) is incomplete pending reclassification of documents from group [B23B 31/14](#).
Groups [B23B 31/14](#) and [B23B 31/141](#) should be considered in order to perform a complete search.
- N [B23B 31/142](#) {To grip a tool or workpiece}
WARNING
Group [B23B 31/142](#) is incomplete pending reclassification of documents from group [B23B 31/14](#).
Groups [B23B 31/14](#) and [B23B 31/142](#) should be considered in order to perform a complete search.
- C [B23B 31/20](#) Longitudinally-split sleeves, e.g. collet chucks
WARNING
Group [B23B 31/20](#) is impacted by reclassification into groups [B23B 31/2012](#), [B23B 31/20125](#), [B23B 31/2025](#), [B23B 31/206](#), [B23B 31/2072](#), and [B23B 31/2073](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- C [B23B 31/201](#) {characterised/Characterized by features relating primarily to remote control of the gripping means}
WARNING
Group [B23B 31/201](#) is impacted by reclassification into groups [B23B 31/2012](#), [B23B 31/20125](#), [B23B 31/206](#), [B23B 31/2072](#), and [B23B 31/2073](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N [B23B 31/2012](#) {Threaded cam actuator}
WARNING
Groups [B23B 31/2012](#) and [B23B 31/20125](#) are incomplete pending reclassification of documents from groups [B23B 31/20](#) and [B23B 31/201](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N [B23B 31/20125](#) {Axially fixed cam, moving jaws}
- C [B23B 31/202](#) {Details of the jaws}
WARNING
Group [B23B 31/202](#) is impacted by reclassification into group [B23B 31/2025](#).
Groups [B23B 31/202](#) and [B23B 31/2025](#) should be considered in order to perform a complete search.
- N [B23B 31/2025](#) {Wherein the sleeve is split into two relatively movable parts}
WARNING
Group [B23B 31/2025](#) is incomplete pending reclassification of documents from groups [B23B 31/20](#) and [B23B 31/202](#).

Groups [B23B 31/20](#), [B23B 31/202](#), and [B23B 31/2025](#) should be considered in order to perform a complete search.

- M B23B 31/204 {using fluid-pressure means to actuate the gripping means ([B23B 31/207](#) take precedence)}
- D B23B 31/205 {using mechanical transmission through the spindle}
<administratively transferred to [B23B 31/207](#)>
- N [B23B 31/206](#) {Reciprocating cam actuator ([B23B 31/207](#) takes precedence)}
WARNING
Group [B23B 31/206](#) is incomplete pending reclassification of documents from groups [B23B 31/20](#) and [B23B 31/201](#). Groups [B23B 31/20](#), [B23B 31/201](#), and [B23B 31/206](#) should be considered in order to perform a complete search.
- C B23B 31/207 {using mechanical transmission through the spindle (~~[B23B 31/205](#) takes precedence~~)}
WARNING
Group [B23B 31/207](#) is impacted by reclassification into groups [B23B 31/2072](#), [B23B 31/2073](#), [B23B 2270/025](#), and [B23B 2270/027](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N [B23B 31/2072](#) {Axially moving cam, fixed jaws}
WARNING
Group [B23B 31/2072](#) is incomplete pending reclassification of documents from groups [B23B 31/20](#), [B23B 31/201](#), and [B23B 31/207](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N [B23B 31/2073](#) {Axially fixed cam, moving jaws ([B23B 31/20125](#) takes precedence)}
WARNING
Group [B23B 31/2073](#) is incomplete pending reclassification of documents from groups [B23B 31/20](#), [B23B 31/201](#), and [B23B 31/207](#). All groups listed in this Warning should be considered in order to perform a complete search.
- U **B23B 2231/00** **Details of chucks, toolholder shanks or tool shanks**
- C B23B 2231/34 . Jaws
WARNING
Group [B23B 2231/34](#) is impacted by reclassification into groups [B23B 2231/341](#) and [B23B 2231/342](#). Groups [B23B 2231/34](#), [B23B 2231/341](#), and [B23B 2231/342](#) should be considered in order to perform a complete search.
- N [B23B 2231/341](#) . . Jaws with hard inserts
WARNING
Group [B23B 2231/341](#) is incomplete pending reclassification of documents from group [B23B 2231/34](#). Groups [B23B 2231/34](#) and [B23B 2231/341](#) should be considered in order to perform a complete search.

- N B23B 2231/342
- Padded or cushioned jaws
- WARNING
Group [B23B 2231/342](#) is incomplete pending reclassification of documents from group [B23B 2231/34](#).
Groups [B23B 2231/34](#) and [B23B 2231/342](#) should be considered in order to perform a complete search.
- U B23B 2231/54
- Chucks for taps
- N B23B 2231/56
- Chucks with more than one set of gripping means
- WARNING
Groups [B23B 2231/56](#) and [B23B 2231/565](#) are incomplete pending reclassification of documents from groups [B23B 31/00](#) and [B23B 31/02](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N B23B 2231/565
- Wherein only one means is usable at a time
- N B23B 2231/58
- Self-grasping, i.e., automatic grasping upon insertion of tool or workpiece
- WARNING
Group [B23B 2231/58](#) is incomplete pending reclassification of documents from groups [B23B 31/00](#) and [B23B 31/02](#).
Groups [B23B 31/00](#), [B23B 31/02](#), and [B23B 2231/58](#) should be considered in order to perform a complete search.
- U B23B 2270/00** **Details of turning, boring or drilling machines, processes or tools not otherwise provided for**
- U B23B 2270/02
- Use of a particular power source
- M B23B 2270/025
- Hydraulics
- WARNING
Group [B23B 2270/025](#) is incomplete pending reclassification of documents from group [B23B 31/207](#).
Groups [B23B 31/207](#) and [B23B 2270/025](#) should be considered in order to perform a complete search.

Project: MP0496 (B23P)

- M B23P
- OTHER WORKING OF METAL METAL-WORKING NOT OTHERWISE PROVIDED FOR; COMBINED OPERATIONS; UNIVERSAL MACHINE TOOLS (arrangements for copying or controlling [B23Q](#))**

NOTES

1. This subclass covers:
 - combinations of work-modifying operations covered by different subclasses of classes [B21](#) - [B24](#);
 - combinations of metal-working operations with non-mechanical treatments of metal not provided for elsewhere, for example in [C21D](#), [C22C](#), [C22F](#) or [C23](#).
2. This subclass does not cover
 - non-mechanical operations on non-metallic materials unless such operations are specially mentioned in this subclass;
 - subsidiary operations performed in conjunction with main operations covered by a single subclass, e.g. assembling of parts as an essential

feature of a following metal-working operation, since they are not regarded as operations per se.

3. Attention is drawn to the Notes following the title of class [B23](#).

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: MP0427 (B23Q)

U B23Q 1/00 **Members which are comprised in the general build-up of a form of machine, particularly relatively large fixed members ([B23Q 37/00](#) takes precedence {; positioning supports for measuring arrangements [G01B 5/0004](#); motorised alignment for optical elements [G02B 7/005](#); handling of mask or wafer [G03F 7/70691](#); adjusting or compensating devices for optical apparatuses [G12B 5/00](#); piezoelectric or electrostrictive positioners [H01L 41/09](#))**

U B23Q 1/25 • Movable or adjustable work or tool supports

U B23Q 1/26 • • characterised by constructional features relating to the co-operation of relatively movable members; Means for preventing relative movement of such members {(bearings for linearly moving parts [F16C 29/00](#))}

M B23Q 1/42 • • • using T-, V-, dovetail-section or like guides ([B23Q 1/40](#) takes precedence)

NOTES

1. In groups [B23Q 1/44](#) - [B23Q 1/62](#), the following expressions are used with the meaning indicated:

- "sliding pair" means a pair consisting of two elements operating in such a way that only straight line movement between both elements is possible;
- "rotating pair" means a pair consisting of two elements operating in such a way that only rotary movement between both elements is possible;
- "screw pair" means a pair consisting of two elements operating in such a way as to produce simultaneous rotation and axial translation between both elements.

2. In groups [B23Q 1/44](#) - [B23Q 1/62](#), where more than one pair of elements is provided on the same axis for the same kind of movement, the pairs are regarded as a single pair for the purposes of classification.

M B23Q 1/44 • • using particular mechanisms ([B23Q 1/26](#) takes precedence)

NOTES

1. In this group, the following expressions are used with the meaning indicated:

- "sliding pair" means a pair consisting of two elements operating in such a way that only straight line movement between both elements is possible;
- "rotating pair" means a pair consisting of two elements operating in such a way that only rotary movement between both elements is possible;
- "screw pair" means a pair consisting of two elements operating in such a way as to produce simultaneous rotation and axial translation between both elements.

2. In this group, where more than one pair of elements is provided on the same axis for the same kind of movement, the pairs are regarded as a single pair for the purposes of classification.

Project: MP0496 (B28B)**M B28B**

SHAPING CLAY OR OTHER CERAMIC COMPOSITIONS; SHAPING SLAG; SHAPING CLAY OR OTHER CERAMIC COMPOSITIONS, SLAG, OR MIXTURES CONTAINING CEMENTITIOUS MATERIAL, e.g. PLASTER (foundry moulding [B22C](#); working stone or stone-like material [B28D](#); shaping of substances in a plastic state, in general [B29C](#); making layered products not composed wholly of these substances [B32B](#); shaping *in situ*, [see see](#) the relevant classes of section [E](#))

NOTE

In this subclass, the following term is used with the meaning indicated:

- "the material" means:
 - a. clay or other ceramic compositions;
 - b. slag;
 - c. mixtures with water-setting properties given by clay, cementitious material, or slag.

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

[B28B 23/08](#) covered by [B28B 21/60](#), [B28B 23/06](#)

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: RP0707 (B28B)**U B28B 1/00**

Producing shaped {prefabricated} articles from the material (using presses [B28B 3/00](#); shaping on moving conveyors [B28B 5/00](#); producing tubular articles [B28B 21/00](#) {; producing articles with embedded elements [B28B 23/00](#)})

B28B 1/001

· {Rapid manufacturing of 3D objects by additive depositing, agglomerating or laminating of material (selective deposition modelling of metallic powder [B22F 3/008](#)[B22F 10/00](#); rapid manufacturing of 3D objects in general and in particular of plastics [B29C 64/00](#))}

Project: MP0377 (B32B)**M B32B**

LAYERED PRODUCTS, i.e. PRODUCTS BUILT-UP OF STRATA OF FLAT OR NON-FLAT, e.g. CELLULAR OR HONEYCOMB, FORM

NOTES

1. This subclass covers:

- layered products comprising different kinds of material or layered products not characterised by the particular kind of material used;
- a product similar to a layered product but comprising only material in the form of a sheet or network embedded in a mass of plastics or of physically-similar substances which mass penetrates the said sheet or network and lies on both sides of the latter (e.g. so that the sheet or network reinforces the plastics substance) PROVIDED THAT the embedded sheet or network extends coherently or connectedly over substantially the whole area of the product; thus the embedded sheet or network may be a fabric or a series of rods connected by cross wires. The manner of making such a product is, however, classified in this subclass only if it is essentially a process of building-up an assembly of layers of which at least one outer layer is preformed. If the embedded material comprises only a series of unconnected rods, the product is not classified in this subclass.

2. This subclass does not cover:

- processes or apparatus used in, or in connection with, the production or treatment of any product, if the process or apparatus is fully classifiable in a single other class or subclass for processes or apparatus, e.g. [B05](#), [B29](#), [B44D](#), [C08J](#), [C09J](#), [C23](#);
 - compositions or preparation or treatment thereof, unless they are essentially restricted to layered products and cannot be fully classified in another class without ignoring this restriction;
 - etched metallic pattern on the surface of a printed circuit board.
3. In this subclass:
- a film formed on a layer by spreading a substance thereon is not considered to constitute a layer itself if it serves only as an adhesive or its purpose is merely to finish a surface of a product;
 - *{with exclusion to [B32B 15/01](#) - [B32B 15/018](#), a coating formed directly onto a substrate layer is not considered to constitute a layer when at the moment of its contact with the substrate it does not have the form of a layer with the exception of layers that come under the meaning of Note (4).}*
 - {groups designating products cover also methods or apparatus specially adapted for producing such products.-}
4. In this subclass, the following terms or expressions are used with the meanings indicated:
- "layer" is a sheet or strip or anything else having a small thickness relatively to its other dimensions which, together with at least one other layer, exists in a product, whether it pre-existed, e.g. as a separate sheet or strip, or was formed during the production of the layered product. ~~It may~~ *{, e.g. formed in-situ as with casting, extrusion or moulding. It may be deformed out of the flat plane to form a three-dimensional shape}. It may* or may not be homogeneous or cohesive; it may be an assembly of fibres or pieces of material. It may be discontinuous, e.g. in the form of a grating, honeycomb, or frame. It may or may not be in complete contact with the next layer, e.g. a corrugated layer against a flat layer;
 - "layered product" comprises at least two layers secured together. The term "secured" includes any method of uniting layers, e.g. needling, stitching, gluing, nailing, dovetailing or the interposition of an adhesive or adhesive impregnated support. It may also be an intermediate stage in the production of an article which is not layered in its final form, e.g. a panel with a protective layer ~~which~~ *{that}* is stripped off when the panel is placed in its position of use. The layers are preformed layers or layers formed ~~IN-SITU~~ *IN SITU* on a preformed layer and may consist of coherent solid materials, including honeycombs and other cellular materials or of non-coherent solid materials composed of assemblies of strands, strips, fibres, tiles or the like;
 - "filamentary layer" means a layer of threads or filaments of any substance (e.g. wires) of more or less unlimited length placed in an orderly arrangement and secured together; it may be woven, knitted, braided, or netted, or formed of threads crossed or laid side by side and bonded together;
 - "fibrous layer" means a random assembly of fibres *or filaments, usually* of limited length, e.g. felt, fleece; the fibres {being} interengaged or connected, e.g. by adhesive.
- 5. If a layered product is characterised by the way it is produced and not by its structure or composition, the production method should be classified in groups [B32B 37/00](#) or [B32B 38/00](#), or in subclass [B29C](#), for example in groups [B29C 45/16](#) or [B29C 48/18](#).*
- ~~5.6.~~ *{In this subclass,-}*
- The classification of layered products is provided for in many classes, most of which are confined to a particular kind of material. However, in order that this subclass may provide a basis for making a complete search with

respect to layered products, all relevant subject matter is classified in this subclass even though it may also be classified in other classes.

7. {In groups [B32B 37/00](#), [B32B 38/00](#), [B32B 41/00](#) and [B32B 39/00](#), the following expressions are used with the meaning indicated:

- "lay-up" is considered to be the action of combining separate layers, one on top of the other, in order to form a half-product for entering the laminating process
- "laminating" means the action of combining previously unconnected but possibly laid up layers to become one product whose layers will remain together;
- "partial laminating" occurs when one layer does not fully cover a surface of another layer, whereby the layer with the greater surface area is laminated on only part of its surface or when two coextensive layers are bonded on only part of their facing surfaces;
- "adhesive" means a substance applied in any state or in any manner, which has bonding properties.

}

8. {In this subclass, combination sets [C-Sets] are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the definitions of [B32B](#).}

WARNING

The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

[B32B 3/24](#) covered by [B32B 3/266](#)
[B32B 17/12](#) covered by [B32B 17/067](#)

- U B32B 3/00** Layered products comprising a layer with external or internal discontinuities or unevennesses, or a layer of non-planar form (fibrous or filamentary layer [B32B 5/02](#); particulate layer [B32B 5/16](#); foamed layer [B32B 5/18](#)); Layered products having particular features of form (receptacles or tubular products [B32B 1/00](#))
- M B32B 3/10** - characterised by a discontinuous layer, i.e. formed of separate pieces of material
- NOTE**
In this group, a series of spaced separate elements forming in effect a broken surface should *{not}* be regarded as a layer.
- M B32B 9/00** Layered products comprising a *{layer of a}* particular substance not covered by groups [B32B 11/00](#) - [B32B 29/00](#)
- M B32B 9/04** - comprising such *{particular}* substance as the main or only constituent of a layer, *{which is}* next to another layer of *{the same or of a}* *a* *{different material (B32B 17/06 takes precedence; next to a glass layer B32B 17/06; layered products with at least two ceramic layers composed mainly of ceramic B32B 18/00)}*
- U B32B 11/00** Layered products comprising *{a layer of}* bituminous or tarry substances
- M B32B 11/04** - comprising such *{bituminous or tarry}* substance as the main or only constituent of a layer, *{which is}* next to another layer of *{the same or of a}* *a* *{different material (B32B 17/06 takes precedence next to a glass layer B32B 17/06)}*
- U B32B 13/00** Layered products comprising a *{a layer of}* water-setting substance, e.g. concrete, plaster, asbestos cement, or like builders' material

M B32B 13/04 • comprising such {water setting} substance as the main or only constituent of a layer, {which is} next to another layer of {the same or of ~~a~~} a {different material (~~B32B 17/06 takes precedence~~ next to a glass layer B32B 17/06)}

U B32B 15/00 Layered products comprising {a layer of} metal

M B32B 15/04 • comprising metal as the main or only constituent of a layer, {which is} next to another layer of {the same or of ~~a~~} a {different material (~~B32B 17/061 and B32B 23/042 take precedence~~; next to a bituminous or tarry layer B32B 11/08; next to a water-setting substance layer B32B 13/06; next to a glass layer B32B 17/061; next to a cellulosic plastic layer B32B 23/042)}

Project: RP0266 (B32B)

M B32B 17/00 Layered products essentially comprising sheet glass, or glass, slag, or like fibres

NOTE

{In this group, a layer of organic glass is not considered as a glass layer but as a synthetic resin layer.}

M B32B 17/06 • comprising glass as the main or only constituent of a layer, next to another layer of a specific {material (~~coating on glass C03C 17/00; safety glazings B32B 17/08 or B32B 17/10; fire protective glazing with intumescent layers B32B 17/069~~)}

M B32B 17/061 • • {of metal}

M B32B 17/062 • • {of wood}

M B32B 17/063 • • {of rubber}

F B32B 17/064 • • {synthetic resin (B32B 17/10 takes precedence)}

(Frozen)

WARNING

Group B32B 17/064 is no longer used for the classification of documents as of January 1, 2021.

The content of this group is being reclassified into groups B32B 17/10 - B32B 17/1099.

Groups B32B 17/064 and B32B 17/10 - B32B 17/1099 should be considered in order to perform a complete search.

M B32B 17/065 • • {of paper or cardboard}

M B32B 17/066 • • {of foam}

M B32B 17/067 • • {of fibres or filaments}

M B32B 17/068 • • {~~particulate matter~~ of particles}

M B32B 17/069 • • {~~intumescent layers~~ of intumescent material (B32B 17/10311 takes precedence)}

C B32B 17/10 • • of synthetic resin (~~{producing optical elements from plastics B29D 11/00; constructional form of optical elements G02B}~~)

NOTES

1. ~~In this group a layer of organic glass is not considered as a glass layer but as a synthetic resin layer;~~

2. ~~[N: Inventions related to safety glazings (laminated glazings) are classified in all appropriate subgroups B32B 17/10009 - B32B 17/10807, whereby transparent polymeric layers other than the interlayer (B32B 17/1055) are classified using indexing codes~~

WARNING

Group B32B 17/10 is impacted by reclassification into groups B32B 17/10005 - B32B 17/1099.

Groups B32B 17/10 and B32B 17/10005 - B32B 17/1099 should be considered in order to perform a complete search.

- N B32B 17/10005 . . . {laminated safety glass or glazing}
- NOTE
{In this group, C-Sets are used. The detailed information about the C-Sets construction and the associated syntax rules is present in the Definitions of B32B.}
- WARNING
Groups B32B 17/10005 - B32B 17/1099 are incomplete pending reclassification of documents from groups B32B 17/064 and B32B 17/10. All groups listed in this warning should be considered in order to perform a complete search.
- T B32B 17/10009 . . . {characterized by the number, the constitution or treatment of glass sheets}
- T B32B 17/10018 {comprising only one glass sheet}
- T B32B 17/10027 {the glass sheet not being an outer layer}
- T B32B 17/10036 {comprising two outer glass sheet~~sheets~~}
- T B32B 17/10045 {with at least one intermediate layer consisting of a glass sheet}
- T B32B 17/10055 {with at least one intermediate air space (~~IG window units comprising two or more parallel glass panes E06B 3/66~~)}
- T B32B 17/10064 {comprising at least two glass sheets, only one of which being an outer layer}
- T B32B 17/10073 {comprising at least two glass sheets, neither of which being an outer layer}
- T B32B 17/10082 {Properties of the bulk of a glass sheet}
- T B32B 17/10091 {thermally hardened (~~chemical strengthening B32B 17/10137~~)}
- T B32B 17/101 {having a predetermined coefficient of thermal expansion [CTE]}
- T B32B 17/1011 {having predetermined tint or excitation purity}
- T B32B 17/10119 {having a composition deviating from the basic composition of soda-lime glass, e.g. borosilicate}
- T B32B 17/10128 {Treatment of at least one glass sheet (~~cutting of laminated glass C03B 33/076~~)}
- T B32B 17/10137 {Chemical strengthening}
- T B32B 17/10146 {Face treatment, e.g. etching, grinding or sand blasting}
- T B32B 17/10155 {Edge treatment; ~~or~~ chamfering}
- T B32B 17/10165 {~~particular functional features of the laminated~~ Functional features of the laminated safety glass or glazing}
- T B32B 17/10174 {Coatings of a metallic or dielectric material on a constituent layer of glass or polymer}
- T B32B 17/10183 {being not continuous, e.g. in edge regions}
- T B32B 17/10192 {patterned in the form of columns or grids}
- T B32B 17/10201 {Dielectric coatings}
- T B32B 17/10211 {Doped dielectric layer, electrically conductive, e.g. SnO₂:F}
- T B32B 17/1022 {Metallic coatings}
- T B32B 17/10229 {Metallic layers sandwiched by dielectric layers}
- T B32B 17/10238 {in the form of particles}

- T B32B 17/10247 ~~{Laminated safety glass or glazing containing decorations or patterns for aesthetic reasons (containing metal wires for aesthetic reasons B32B 17/10422)}~~; metal-wires for this purpose B32B-17/10422}
- T B32B 17/10256 {created by printing techniques}
- T B32B 17/10266 {on glass pane}
- T B32B 17/10275 {on interlayer}
- T B32B 17/10284 {on intermediate layer}
- T B32B 17/10293 {Edge features, e.g. inserts or holes}
- T B32B 17/10302 {Edge sealing}
- T B32B 17/10311 {Intumescent layers for fire protection}
- T B32B 17/10321 {Laminated safety glass or glazing containing liquid layers}
- T B32B 17/10333 {Laminated safety glass or glazing containing temporary protective coatings or layers}
- T B32B 17/10339 {Specific parts of the laminated safety glass or glazing being colored or tinted (tinted glass sheet B32B 17/1011; tinted interlayer B32B 17/10651)}
- T B32B 17/10348 {comprising an obscuration band}
- T B32B 17/10357 {comprising a tinted intermediate film}
- T B32B 17/10366 {Reinforcements of the laminated safety glass or glazing against impact or intrusion (containing metal wires for reinforcement B32B 17/10412)}; metal-wires for this purpose B32B-17/10412}
- T B32B 17/10376 {Laminated safety glass or glazing containing metal wires}
- T B32B 17/10385 {for Ohmic resistance heating ohmic resistance heating}(Ohmic resistance heating in general H05B-3/84)}
- T B32B 17/10394 {Alarm wires (burglar alarms by breaking glass G08B-13/04)}
- T B32B 17/10403 {for radiation shielding (radiation shielding in general H05K-9/00)}
- T B32B 17/10412 {for reinforcement}
- T B32B 17/10422 {for aesthetic reasons}
- T B32B 17/10431 {Devices Specific parts for the modulation of light incorporated into the laminated glazing safety glass or glazing}(metallic or dielectric coatings B32B-17/10174; coating on glass in general C03C-17/00)}
- T B32B 17/10444 {Invariable transmission}
- T B32B 17/10449 {Wavelength selective transmission (filters per se G02B-5/20)}
- T B32B 17/10458 {Polarization selective transmission (polarizing elements per se G02B-5/30)}
- T B32B 17/10467 {Variable transmission}
- T B32B 17/10477 {thermochromic}
- T B32B 17/10486 {photochromic}
- T B32B 17/10495 {optoelectronic, i.e. optical valve}
- T B32B 17/10504 ~~liquid crystal layer-Liquid crystal layer}(devices for the control of the intensity of the light based on liquid crystals G02F-1/13)}~~
- T B32B 17/10513 ~~electrochromic layer-Electrochromic layer}(devices for the control of the intensity of the light based on electrochromic elements G02F-1/15)}~~
- T B32B 17/10522 ~~electrophoretic layer-Electrophoretic layer}(devices for the control of the intensity of the light based on electrophoresis G02F-1/167)}~~

- T B32B 17/10532 ~~■~~ {~~suspended particle layer~~ *Suspended particle layer*} {~~devices for the control of the intensity of the light based on suspension of oriented dipolar particles G02F 1/172~~}
- T B32B 17/10541 ■ {~~the laminated glazing acting as an illumination device, i.e. comprising a light source or a light guide (lighting devices for vehicle interior B60Q 3/20; structural combinations of lighting devices with other articles F21V 33/00; light guides in general G02B 6/00)~~}
- T B32B 17/1055 ■ {characterized by the resin layer, i.e. interlayer}
- T B32B 17/10559 ■ {Shape of the cross-section}
- T B32B 17/10568 ■ {varying in thickness}
- T B32B 17/10577 ■ {Surface roughness}
- T B32B 17/10587 ■ {created by embossing}
- T B32B 17/10596 ■ {created by melt fracture}
- T B32B 17/10605 ■ {Type of ~~plasticizer~~ *plasticiser*}
- T B32B 17/10614 ■ {comprising ~~particulate matter~~ *particles* for purposes other than dyeing}
- T B32B 17/10623 ■ {Whitening agents reflecting visible light}
- T B32B 17/10633 ■ {Infrared radiation absorbing or reflecting agents}
- T B32B 17/10642 ■ {Thermally conductive agents}
- T B32B 17/10651 ■ {comprising colorants, e.g. dyes or pigments}
- T B32B 17/1066 ■ {imparting a tint in certain regions only, i.e. shade band}
- T B32B 17/10669 ■ {Luminescent agents (~~luminescent materials C09K 11/00; optical brightening agents C08K 5/0041~~)}
- T B32B 17/10678 ■ {comprising UV absorbers or stabilizers, e.g. antioxidants}
- T B32B 17/10688 ■ {Adjustment of the adherence to the glass layers}
- T B32B 17/10697 ■ {being cross-linked}
- T B32B 17/10706 ■ {being photo-polymerized}
- T B32B 17/10715 ■ {containing polyether}
- T B32B 17/10724 ■ {containing polyamide}
- T B32B 17/10733 ■ {containing epoxy}
- T B32B 17/10743 ■ {containing acrylate (co)polymers or salts thereof}
- T B32B 17/10752 ■ {containing polycarbonate}
- T B32B 17/10761 ■ {containing vinyl acetal}
- T B32B 17/1077 ■ {containing polyurethane}
- T B32B 17/10779 ■ {containing polyester}
- T B32B 17/10788 ■ {containing ethylene vinylacetate}
- T B32B 17/10798 ■ {containing silicone}
- T B32B 17/10807 ■ {Making ~~layered products containing glass and synthetic resin layers~~ *laminated safety glass or glazing*; ~~apparatus~~ *Apparatus* therefor}
- T B32B 17/10816 ■ {by pressing}
- T B32B 17/10825 ■ {~~isostatic~~ *sostatic* pressing, i.e. using non rigid pressure-exerting members against rigid parts (~~isostatic presses in general B30B 11/001~~)}
- T B32B 17/10834 ■ {using a fluid}
- T B32B 17/10844 ■ {using a membrane between the layered product and the fluid}
- T B32B 17/10853 ■ {the membrane being bag-shaped}
- T B32B 17/10862 ■ {using pressing-rolls}

- T B32B 17/10871 {in combination with particular heat treatment}
- T B32B 17/1088 {by superposing a plurality of layered products}
- T B32B 17/10889 {shaping the sheets, e.g. by using a mould ([B32B 17/10816](#) takes precedence)}
- T B32B 17/10899 {by introducing interlayers of synthetic resin}
- T B32B 17/10908 {in liquid form}
- T B32B 17/10917 {between two pre-positioned glass layers-~~(spacing elements for window units comprising two or more parallel panes E06B-3/663)~~}
- T B32B 17/10926 {by spraying-~~(spraying in general B05)~~}
- T B32B 17/10935 {as a preformed layer, e.g. formed by extrusion}
- T B32B 17/10944 {in powder form}
- T B32B 17/10954 {by using an aligning laminating device}
- T B32B 17/10963 {specially adapted for repairing the layered products}
- T B32B 17/10972 {Degassing during the lamination ([B32B 17/10816](#) takes precedence; ~~during molding B29C-37/006~~)}
- T B32B 17/10981 {Pre-treatment of the layers}
- T B32B 17/1099 {After-treatment of the layered product, e.g. cooling}

Project: MP0377 (B32B)

M B32B 18/00 Layered products essentially comprising ceramics, e.g. refractory products

NOTE

{In group [B32B 18/00](#), ~~from 01-10-2008 onwards~~, features relating to interlayers, additional compositional information or further processing are indexed with ~~codes~~**symbols** chosen from [C04B 2237/00](#) - [C04B 2237/88](#)}

U B32B 19/00 Layered products comprising {a layer of} natural mineral fibres or particles, e.g. asbestos, mica

- M B32B 19/04 . next to another layer ~~{of of {the same or of a} a {different material (B32B-17/067 takes precedence next to a glass layer B32B 17/067)}~~

U B32B 21/00 Layered products comprising {a layer of} wood, e.g. wood board, veneer, wood particle board

- M B32B 21/04 . comprising wood as the main or only constituent of a layer-~~{, which is next to another layer of the same or of a, {which is} next to another layer of {the same or of} a {different material (B32B-17/062 and B32B-23/044 take precedence; next to a layer of a particular substance B32B 9/042; next to a bituminous or tarry layer B32B 11/042; next to a water setting substance layer B32B 13/10; next to a metal layer B32B 15/10; next to a glass layer B32B 17/062; next to a layer formed of natural mineral fibres or particles B32B 19/042; next to a cellulosic plastic layer B32B 23/044)}~~

U B32B 23/00 Layered products comprising {a layer of} cellulosic plastic substances {, i.e. substances obtained by chemical modification of cellulose, e.g. cellulose ethers, cellulose esters, viscose}

- M B32B 23/04 . comprising such {cellulosic plastic} substance as the main or only constituent of a layer, {which is} next to another layer of {the same or of a} a {different material (~~B32B-17/08 takes precedence next to a glass layer B32B 17/08~~)}
- M B32B 23/046 . . {of natural rubber or synthetic rubber-~~(all layers being polymeric B32B-2250/24)~~}
- M B32B 23/08 . . of synthetic resin-~~{(all layers being polymeric B32B-2250/24)}~~

- M B32B 25/00** Layered products comprising {a layer of} natural or synthetic rubber ~~{{(B32B 5/02, B32B 5/16, B32B 5/18 take precedence; thermoplastic elastomer B32B 2274/00 fibrous or filamentary layer made of a natural or synthetic rubber B32B 5/02; particulate layer made of a natural or synthetic rubber B32B 5/16; foamed layer made of a natural or synthetic rubber B32B 5/18)}~~
- M B32B 25/04
- comprising rubber as the main or only constituent of a layer, {which is} next to another layer of {the same or of a} a {different material (B32B 17/063 takes precedence; next to a layer of a particular substance B32B 9/043; next to a bituminous or tarry layer B32B 11/044; next to a water setting substance layer B32B 13/042; next to a metal layer B32B 15/06; next to a glass layer B32B 17/063; next to a layer formed of natural mineral fibres or particles B32B 19/043; next to a wood layer B32B 21/045; next to a cellulosic plastic layer B32B 23/046)}
- M B32B 25/042
- {of natural rubber or synthetic rubber ~~(all layers being made of natural or synthetic rubber B32B 2250/248)}~~}
- M B32B 25/08
- {of synthetic resin ~~(all layers being polymeric B32B 2250/24)}~~}
- M B32B 27/00** Layered products comprising {a layer of} synthetic resin ~~{{(B32B 5/02, B32B 5/16, B32B 5/18 take precedence; thermoplastic elastomer B32B 2274/00 fibrous or filamentary layer made of a synthetic resin B32B 5/02; particulate layer made of a synthetic resin B32B 5/16; foamed layer made of a synthetic resin B32B 5/18)}~~

NOTE

This group covers all synthetic resins except those covered by [B32B 25/00](#) or [B32B 23/00](#)

- M B32B 27/06
- as the main or only constituent of a layer, {which is} next to another layer of {the same or of a} a {different material (B32B 17/064 takes precedence; next to a layer of a particular substance B32B 9/045; next to a bituminous or tarry layer B32B 11/046; next to a water setting substance layer B32B 13/12; next to a metal layer B32B 15/08; next to a glass layer B32B 17/10; next to a layer formed of natural mineral fibres or particles B32B 19/045; next to a wood layer B32B 21/08; next to a cellulosic plastic layer B32B 23/08; next to a natural or synthetic rubber layer B32B 25/08)}
- M B32B 27/08
- {of synthetic resin ~~(all layers being polymeric, made of polymers belonging to those covered by B32B 27/32, by B32B 27/36, or by B32B 27/30 and B32B 27/32, B32B 2250/24 – B32B 2250/246)}~~}
- M B32B 27/16
- specially treated, e.g. irradiated ~~(B32B 2255/10 takes precedence)}~~
- M B32B 27/32
- comprising polyolefins ~~{(B32B 27/30 takes precedence comprising vinyl (co)polymers or acrylic (co)polymers B32B 27/30)}~~
- U B32B 29/00** Layered products comprising {a layer of} paper or cardboard
- M B32B 29/002
- {as the main or only constituent of a layer, which is next to another layer of the same or of a different material (B32B 17/065 takes precedence; next to a layer of a particular substance B32B 9/06; next to a bituminous or tarry layer B32B 11/06; next to a water-setting substance layer B32B 13/08; next to a metal layer B32B 15/12; next to a glass layer B32B 17/065; next to a layer formed of natural mineral fibres or particles B32B 19/046; next to a wood layer B32B 21/06; next to a cellulosic plastic layer B32B 23/06; next to a natural or synthetic rubber layer B32B 25/06; next to a synthetic resin layer B32B 27/10)}
- M B32B 29/005
- {next to another layer of paper or cardboard layer ~~(all layers being made of paper or paperboard B32B 2250/26)}~~}
- M B32B 29/06
- specially treated, e.g. surfaced, parchmentised ~~(B32B 2255/12; B32B 2260/028 take precedence)}~~

- U B32B 37/00** **Methods or apparatus for laminating, e.g. by curing or by ultrasonic bonding**
- U B32B 37/14 · characterised by the properties of the layers
- M B32B 37/144 · · {using layers with different mechanical or chemical conditions or properties, e.g. layers with different thermal shrinkage, layers under tension during bonding (*constructional features for tensioning B32B 38/1825 takes precedence* *constructional features for tensioning B32B 38/1825*)}
- U B32B 38/00** **Ancillary operations in connection with laminating processes**
- NOTE
{In this group, the following expression is used with the meaning indicated:
· "in connection with laminating processes" means ancillary operations are carried out either
 a. as steps of the lamination processes, or
 b. in line with the lamination processes, just before or immediately after.
}
- M B32B 38/0008 · {Electrical discharge treatment, e.g. corona, plasma treatment; wave energy or particle radiation (*B32B 38/0036 and B29C 59/00 take precedence* *heat treatment B32B 38/0036*)}
- NOTE
Laminate treatment is further indexed in group B32B 2310/00
- M B32B 38/0012 · {Mechanical treatment, e.g. roughening, deforming, stretching}
- NOTE
When classifying in group B32B 38/0012, the treatment can be further classified into indexing codes chosen from B32B 2038/0016-B32B 2038/0028
- M B32B 38/0036 · {Heat treatment (for heating or cooling of layers during lamination [B32B 37/06](#), [B32B 37/08](#))}
- NOTE
When classifying in group B32B 38/0036, the heat treatment can be further indexed by using the indexing codes chosen from B32B 38/0036 and subgroups
- M B32B 38/04 · Punching, slitting or perforating
- NOTE
When classifying in group B32B 38/04, the operation can be further indexed by using the indexing codes chosen from B32B 38/04 and subgroups
- U B32B 38/16 · Drying; Softening; Cleaning
- M B32B 38/164 · · {Drying}
- NOTE
When classifying in group B32B 38/164, the drying operation can be further indexed by using the indexing codes chosen from B32B 38/164 and subgroups

- N** B32B 2250/00 - B32B 2274/00 Layer arrangements; Coating, impregnation or embedding of layers; Composition of fibres, particles or foam present on a layer; Resin or rubber layer containing a blend of polymers or recycled material
- D** B32B 2255/00 - B32B 2274/00 Layer arrangements; Coating, impregnation or embedding of layers; Composition of fibres, particles or foam present on a layer; Resin or rubber layer containing a blend of polymers or recycled material
- M** B32B 2260/00 Impregnation or embedding of a layer; Bonding a fibrous, filamentary or particulate layer by using a binder Layered product comprising an impregnated, embedded, or bonded layer wherein the layer comprises an impregnation, embedding, or binder material
- M** B32B 2260/04 · Impregnation, embedding, or binder material
- N** B32B 2305/00 - B32B 2307/00 Condition, form, state or properties of the layers or laminate
- D** B32B 2307/00 - B32B 2307/00 Condition, form, state or properties of the layers or laminate
- N** B32B 2309/00 - B32B 2310/00 Operating procedures; Apparatus details
- D** B32B 2310/00 - B32B 2310/00 Operating procedures; Apparatus details
- N** B32B 2311/00 - B32B 2315/00 Inorganic materials used for the layers, laminate or apparatus components
- D** B32B 2313/00 - B32B 2315/00 Inorganic materials used for the layers, laminate or apparatus components
- N** B32B 2317/00 - B32B 2318/00 Other natural products or their composites used for the layers, laminate or apparatus components not provided for in groups [B32B 2311/00 - B32B 2315/18](#) and [B32B 2319/00 - B32B 2398/20](#)
- D** B32B 2318/00 - B32B 2318/00 Other natural products or their composites used for the layers, laminate or apparatus components not provided for in groups [B32B 2311/00 - B32B 2315/12](#) and [B32B 2319/00 - B32B 2398/20](#)
- N** B32B 2319/00 - B32B 2398/00 Organic materials used for the layers, laminate or apparatus components

Project: RP0266, MP0377 (B32B)

- M** B32B 2319/00 Synthetic rubber (natural rubber [B32B 2317/22](#))

NOTE

In groups [B32B 2319/00 - B32B 2386/00](#), C-Sets are used. Detailed information about C-Sets construction and the associated syntax rules is found in the Definitions.

Project: MP0377 (B32B)

D B32B 2323/00 - Organic materials used for the layers, laminate or apparatus components
B32B 2398/00

Project: RP0446 (B41J)

- M B41J 11/00 Devices or arrangements {of selective printing mechanisms, e.g. ink-jet printers, thermal printers,} for supporting or handling copy material in sheet or web form (~~{printing on both faces B41J 3/60;}~~ specially adapted for supporting or handling copy material in short lengths B41J 13/00; in continuous form B41J 15/00; holders for text to be copied B41J 29/00 ~~;~~ ~~handling sheets or webs in general B65H; apparatus for electrographic processes using a charge pattern, e.g. copying machines, G03G 15/00~~)
- M B41J 11/0005 • {Curl smoothing, i.e. smoothing down corrugated printing material, e.g. by pressing means acting on wrinkled printing material ~~(means for tensioning webs in general B41J 15/16; tensioning webs by using redirecting rollers or redirecting nonrevolving guides B41J 15/165; smoothers in general B65H 5/36 or B65H 29/52; taking out curl from webs B65H 23/34; decurling sheets G03G 15/6576)}~~
- M B41J 11/001 • {Handling wide copy materials, ~~(wide cut sheets B41J 13/0072)}~~}
- M B41J 11/0015 • {for treating before, during or after printing or for uniform coating or laminating the copy material before or after printing (selective coating B41J 2/2114; ~~application of ink fixing material by inkjet printers B41M 5/0011; after-treatment of prints relating to the nature of material B41M 7/00; after-treatment of prints using protective coatings or layers B41M 7/0027)}~~}
- C B41J 11/002 • • {~~Heating or irradiating, e.g. by UV or IR, or drying of copy material~~ *Curing or drying the ink on the copy materials, e.g. by heating or irradiating*}
- WARNING**
*Group B41J 11/002 is impacted by reclassification into groups B41J 11/0021, B41J 11/00212, B41J 11/00214, B41J 11/00216, B41J 11/00218, B41J 11/0022, B41J 11/00222, B41J 11/00224, B41J 11/0024, B41J 11/00242, and B41J 11/00244.
All groups listed in this Warning should be considered in order to perform a complete search.*
- N B41J 11/0021 • • • {using irradiation}
- WARNING**
*Groups B41J 11/0021 - B41J 11/00218 are incomplete pending reclassification of documents from group B41J 11/002.
All groups listed in this Warning should be considered in order to perform a complete search.*
- N B41J 11/00212 • • • • {Controlling the irradiation means, e.g. image-based controlling of the irradiation zone or control of the duration or intensity of the irradiation}
- N B41J 11/00214 • • • • {using UV radiation}
- N B41J 11/00216 • • • • {using infrared [IR] radiation or microwaves}
- N B41J 11/00218 • • • • {Constructional details of the irradiation means, e.g. radiation source attached to reciprocating print head assembly or shutter means provided on the radiation source}
- N B41J 11/0022 • • • {using convection means, e.g. by using a fan for blowing or sucking air}
- WARNING**
Groups B41J 11/0022 - B41J 11/00224 are incomplete pending reclassification of documents from group B41J 11/002.

All groups listed in this Warning should be considered in order to perform a complete search.

- N B41J 11/00222 {Controlling the convection means}
- N B41J 11/00224 {comprising movable shutters, e.g. for redirection of an air flow}
- N B41J 11/0024 {using conduction means, e.g. by using a heated platen}

WARNING

Groups [B41J 11/0024](#) - [B41J 11/00244](#) are incomplete pending reclassification of documents from group [B41J 11/002](#).
All groups listed in this Warning should be considered in order to perform a complete search.

- N B41J 11/00242 {Controlling the temperature of the conduction means}
- N B41J 11/00244 {Means for heating the copy materials before or during printing}

Project: MP0496 (B41L)

**M B41L APPARATUS OR DEVICES FOR MANIFOLDING, DUPLICATING;
OR PRINTING FOR OFFICE OR OTHER COMMERCIAL PURPOSES;
ADDRESSING MACHINES OR LIKE SERIES-PRINTING MACHINES (printing
presses or machines for industrial purposes [B41F](#); stamps, stamping or
numbering devices [B41K](#))**

NOTES

1. This subclass does not cover constituent parts common to manifolding by means of pressure-sensitive layers or intermediaries, to apparatus or machines for duplicating or printing for office or other commercial purposes, or to addressing machines or like series-printing machines, which are covered by subclass [B41F](#).
2. In this subclass, as indicated by the references, groups [B41L 15/00](#) and [B41L 17/00](#) are intended to cover letterpress and lithographic printing apparatus only in so far as it is specially adapted for office or other commercial purposes; the general constructions or features of apparatus of these types are classified in subclass [B41F](#). Constructions or features determining classification in these groups are, for example: ease of operation by clerical staff, cleanliness of operation in non-industrial environments, the use of printing surfaces constructed for the production of a limited number of copies.
3. In this subclass, the following terms are used with the meanings indicated:
 - "manifolding" means the obtaining of several copies simultaneously by means of pressure-sensitive layers when making an original;
 - "duplicating" means the obtaining of successive copies from a master, e.g. a hectographic image;
 - "stencilling" involves the use of a printing surface which is perforated to form the image, the ink flowing through the perforations on the copy material.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: MP0480 (B60C)

- M B60C** **VEHICLE TYRES *TYRE INFLATION*(~~manufacture B29~~); ~~TYRE INFLATION~~; ~~TYRE CHANGING OR REPAIRING~~; ~~REPAIRING, OR CONNECTING VALVES TO, INFLATABLE ELASTIC BODIES IN GENERAL~~; ~~DEVICES OR ARRANGEMENTS RELATED TO TYRES~~ (~~testing of tyres G01M-17/02~~)**
- NOTES**
1. In this subclass, the term "tyre" is to be understood as a separate ground-engaging, continuous element outside the periphery of the wheel rim and includes the tyre casing, cover, or jacket and any insert, e.g. inner tube. In the groups relating to repair or connection of valves, the term "tyre" is to be understood to include also inflatable elastic bodies other than tyres or inner tubes
 2. Attention is drawn to the note following the title of class [B60](#).
- WARNINGS**
1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
[B60C 11/113](#) covered by [B60C 11/0311](#)
[B60C 11/117](#) covered by [B60C 11/032](#)
 2. {In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}
- M B60C 3/00** **Tyres characterised by the transverse section (~~characterised by rail-engaging elements B60B-17/00~~)**
- M B60C 3/08** **· collapsible into storage or non-use condition, e.g. space-saving spare tyres (~~run-flat tyres B60C-17/08~~)**
- U B60C 5/00** **Inflatable pneumatic tyres or inner tubes ([B60C 1/00](#), [B60C 9/00](#) - [B60C 17/00](#) take precedence)**
- M B60C 5/20** **· having multiple separate inflatable chambers (~~with additional tubes which become load supporting in emergency B60C-17/02~~)**
- M B60C 7/00** **Non-inflatable or solid tyres ([B60C 1/00](#) takes precedence; ~~tyres or rims characterised by rail engaging elements B60B-17/00~~)**
- M B60C 7/10** **· characterised by means for increasing resiliency (~~highly resilient wheels B60B-9/00~~)**
- M B60C 7/12** **· using enclosed chambers, e.g. gas-filled (~~inflatable tyres B60C-5/00~~)**
- M B60C 9/00** **Reinforcements or ply arrangement of pneumatic tyres (inserts having reinforcing means [B60C 5/08](#); bead structure, e.g. turnup or overlap construction, [B60C 15/00](#); ~~tyre cords per se D02G-3/48~~; ~~fabrics per se D03D, D04H~~; ~~metal ropes or cables per se D07B-1/06~~)(B)**
- NOTE**
- When classifying in this group, classification is also made in subclass [B32B](#) insofar as any layered product is concerned
- U B60C 11/00** **Tyre tread bands; Tread patterns; Anti-skid inserts**
- M B60C 11/01** **· Shape of the shoulders between tread and sidewall, e.g. rounded, stepped; ~~cantilevered~~ or *cantilevered* (~~arrangements of grooves or ribs on the sidewalls B60C-13/02~~)**
- U B60C 15/00** **Tyre beads, e.g. ply turn-up or overlap**
- M B60C 15/02** **· Seating or securing beads on rims (sealing means between beads and rims of tubeless tyres [B60C 5/16](#); means for securing solid tyres on rims [B60C 7/24](#); ~~rims B60B-21/00~~)**

- M B60C 15/024
- • Bead contour, e.g. lips, grooves, or ribs
- M B60C 15/028
- • Spacers between beads (~~emergency load supporting means B60C 17/00~~ *emergency load supporting means B60C 17/00*)
- M B60C 15/04
- Bead cores (~~producing bead-rings or bead-cores for tyres B29D 30/48~~)
- M B60C 17/00**
- Tyres characterised by means enabling restricted operation in damaged or deflated condition; Accessories therefor (~~having multiple separate inflatable chambers B60C 5/20~~ {; ~~additional shear belt layers B60C 9/18~~)**
- M B60C 17/01
- utilising additional inflatable supports which become load-supporting in emergency
- M B60C 17/08
- Means facilitating folding of sidewalls, e.g. run-flat sidewalls (~~for storage purposes B60C 3/08~~)
- U B60C 19/00**
- Tyre parts or constructions not otherwise provided for**
- M B60C 19/04
- Tyres *Tyre* with openings closeable by means other than the rim; Closing means therefor
- M B60C 19/08
- Electric ~~charge~~ *charge*-dissipating arrangements
- M B60C 19/12
- Puncture preventing arrangements (~~B60C 9/00 takes precedence; inflatable inserts having reinforcing means B60C 5/08~~ {; ~~sealing compositions per se B29C 73/163; devices for introducing sealing compositions into the tyre B29C 73/166~~)
- M B60C 23/00**
- Devices for measuring, signalling, controlling, or distributing tyre pressure or temperature, specially adapted for mounting on vehicles (~~measuring in general G01, e.g. G01L 17/00; remote signalling in general G08~~); Arrangement of tyre inflating devices on vehicles, e.g. of pumps, or of tanks (~~air pumps per se F04; tanks per se F17C~~); Tyre cooling arrangements**
- M B60C 23/06
- Signalling devices actuated by deformation of the tyre, { {, e.g. tyre mounted deformation sensors or indirect determination of tyre deformation based on wheel speed, wheel-centre to ground distance or inclination of wheel axle}
- M B60C 23/10
- ~~Arrangements~~ *Arrangement* of tyre-inflating pumps mounted on vehicles
- M B60C 23/16
- ~~Arrangements~~ *Arrangement* of air tanks mounted on vehicles
- M B60C 25/00**
- Apparatus or tools adapted for mounting, removing, ~~repairing~~ or inspecting tyres (~~apparatus or tools characterised by the means for holding wheels or parts thereof B60B 30/00~~ *testing of tyres G01M 17/02*)**
- M B60C 25/01
- for ~~manually~~ removing tyres from or mounting tyres on wheels
- M B60C 25/02
- • Tyre levers or the like, *i.e.g.* hand-held (~~machine operated B60C 25/05~~)
- M B60C 25/05
- • Machines {, *i.e.* motorized devices, e.g. for mounting, demounting (~~matching of tyres with rims, i.e. conjoint balancing G01M 1/30~~)
- U B60C 25/125
- • • for only breaking the beads
- M B60C 25/128
- • • acting axially on the whole circumference of the bead or *sidewall* *side wall*
- M B60C 25/13
- • • acting axially on a part of the bead or *sidewall* *side wall* only at localised regions of the bead or side wall
- M B60C 25/14
- Apparatus or tools for spreading {or locating} tyre beads
- U B60C 27/00**
- Non-skid devices temporarily attachable to resilient tyres or resiliently-tyred wheels**
- M B60C 27/02
- extending over restricted arcuate ~~parts of the circumference of the~~ *part of* tread (*B60C 27/20* takes precedence)
- M B60C 27/20
- ~~comprising~~ *having* ground-engaging plate-like elements
- M B60C 27/22
- for tandem tyres (~~endless-track features~~ {~~B62D 55/24~~)

- M B60C 29/00 Arrangements of tyre-inflating valves to tyres or rims; Accessories for tyre-inflating valves, not otherwise provided for (tools for mounting or demounting valves ~~B60C 25/18; valves per se; valve dust caps F16K~~)

Project: MP0496 (B60H)

- M B60H ARRANGEMENTS ~~OR ADAPTATIONS~~ OF HEATING, COOLING, VENTILATING, OR OTHER AIR-TREATING DEVICES SPECIALLY **ADAPTED** FOR PASSENGER OR GOODS SPACES OF VEHICLES

NOTE

Attention is drawn to the Note following the title of class [B60](#)

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: RP0442-F (B60K)

- U B60K 2370/00 Details of arrangements or adaptations of instruments specially adapted for vehicles, not covered by groups [B60K 35/00](#), [B60K 37/00](#)

- M B60K 2370/10 • Input devices or features thereof

WARNING

~~Group B60K 2370/10 is impacted by reclassification into groups B60K 2370/18, B60K 2370/182, B60K 2370/191, B60K 2370/197 and B60K 2370/199. All groups listed in this Warning should be considered in order to perform a complete search.~~

- M B60K 2370/11 • Graphical user interfaces or menu aspects

WARNING

~~Group B60K 2370/11 is impacted by reclassification into groups B60K 2370/111, B60K 2370/113, B60K 2370/115, B60K 2370/117 and B60K 2370/119.~~

~~All groups listed in this Warning should be considered in order to perform a complete search.~~

- M B60K 2370/111 • • for controlling multiple devices

WARNING

~~Group B60K 2370/111 is incomplete pending reclassification of documents from group B60K 2370/11.~~

~~Groups B60K 2370/11 and B60K 2370/111 should be considered in order to perform a complete search.~~

- M B60K 2370/113 • • Scrolling through menu items

WARNING

~~Group B60K 2370/113 is incomplete pending reclassification of documents from group B60K 2370/11.~~

~~Groups B60K 2370/11 and B60K 2370/113 should be considered in order to perform a complete search.~~

- M B60K 2370/115 • • Selection of menu items

WARNING

~~Group B60K 2370/115 is incomplete pending reclassification of documents from group B60K 2370/11.~~

Groups B60K 2370/11 and B60K 2370/115 should be considered in order to perform a complete search.

M B60K 2370/117

- • • Cursors

WARNING

Group B60K 2370/117 is incomplete pending reclassification of documents from group B60K 2370/11.
Groups B60K 2370/11 and B60K 2370/117 should be considered in order to perform a complete search.

M B60K 2370/119

- • • Icons

WARNING

Group B60K 2370/119 is incomplete pending reclassification of documents from group B60K 2370/11.
Groups B60K 2370/11 and B60K 2370/119 should be considered in order to perform a complete search.

M B60K 2370/12

- • Input devices or input features

WARNING

Group B60K 2370/12 is impacted by reclassification into groups B60K 2370/128, B60K 2370/131, B60K 2370/133, B60K 2370/137, B60K 2370/139 and B60K 2370/149.
All groups listed in this Warning should be considered in order to perform a complete search.

M B60K 2370/128

- • • Axially displaceable input devices

WARNING

Group B60K 2370/128 is incomplete pending reclassification of documents from group B60K 2370/12.
Groups B60K 2370/12 and B60K 2370/128 should be considered in order to perform a complete search.

M B60K 2370/131

- • • Pivotal input devices

WARNING

Group B60K 2370/131 is incomplete pending reclassification of documents from group B60K 2370/12.
Groups B60K 2370/12 and B60K 2370/131 should be considered in order to perform a complete search.

M B60K 2370/133

- • • Multidirectional input devices

WARNING

Group B60K 2370/133 is incomplete pending reclassification of documents from group B60K 2370/12.
Groups B60K 2370/12 and B60K 2370/133 should be considered in order to perform a complete search.

M B60K 2370/137

- • • Jog-dials

WARNING

Group B60K 2370/137 is incomplete pending reclassification of documents from group B60K 2370/12.
Groups B60K 2370/12 and B60K 2370/137 should be considered in order to perform a complete search.

M	B60K 2370/139	<ul style="list-style-type: none"> • • • Clusters of input devices <p style="color: red; margin-top: 10px;"><u>WARNING</u> Group B60K 2370/139 is incomplete pending reclassification of documents from group B60K 2370/12. Groups B60K 2370/12 and B60K 2370/139 should be considered in order to perform a complete search.</p>
M	B60K 2370/143	<ul style="list-style-type: none"> • • • Touch sensitive input devices <p style="color: red; margin-top: 10px;"><u>WARNING</u> Group B60K 2370/143 is impacted by reclassification into group B60K 2370/1434. Groups B60K 2370/143 and B60K 2370/1434 should be considered in order to perform a complete search.</p>
M	B60K 2370/1434	<ul style="list-style-type: none"> • • • • Touch panels <p style="color: red; margin-top: 10px;"><u>WARNING</u> Group B60K 2370/1434 is incomplete pending reclassification of documents from group B60K 2370/143. Groups B60K 2370/143 and B60K 2370/1434 should be considered in order to perform a complete search.</p>
M	B60K 2370/146	<ul style="list-style-type: none"> • • • Input by gesture <p style="color: red; margin-top: 10px;"><u>WARNING</u> Group B60K 2370/146 is impacted by reclassification into groups B60K 2370/1464, B60K 2370/1468, B60K 2370/1472 and B60K 2370/1476. All groups listed in this Warning should be considered in order to perform a complete search.</p>
M	B60K 2370/1464	<ul style="list-style-type: none"> • • • • 3D-gesture <p style="color: red; margin-top: 10px;"><u>WARNING</u> Group B60K 2370/1464 is incomplete pending reclassification of documents from group B60K 2370/146. Groups B60K 2370/146 and B60K 2370/1464 should be considered in order to perform a complete search.</p>
M	B60K 2370/1468	<ul style="list-style-type: none"> • • • • Touch gesture <p style="color: red; margin-top: 10px;"><u>WARNING</u> Group B60K 2370/1468 is incomplete pending reclassification of documents from group B60K 2370/146. Groups B60K 2370/146 and B60K 2370/1468 should be considered in order to perform a complete search.</p>
M	B60K 2370/1472	<ul style="list-style-type: none"> • • • • Multi-touch gesture <p style="color: red; margin-top: 10px;"><u>WARNING</u> Group B60K 2370/1472 is incomplete pending reclassification of documents from group B60K 2370/146. Groups B60K 2370/146 and B60K 2370/1472 should be considered in order to perform a complete search.</p>
M	B60K 2370/1476	<ul style="list-style-type: none"> • • • • Handwriting <p style="color: red; margin-top: 10px;"><u>WARNING</u> Group B60K 2370/1476 is incomplete pending reclassification of documents from group B60K 2370/146.</p>

Groups B60K 2370/146 and B60K 2370/1476 should be considered in order to perform a complete search.

M B60K 2370/149

- • • Input by detecting viewing direction

WARNING

Group B60K 2370/149 is incomplete pending reclassification of documents from group B60K 2370/12.
Groups B60K 2370/12 and B60K 2370/149 should be considered in order to perform a complete search.

M B60K 2370/15

- Output devices or features thereof

WARNING

Group B60K 2370/15 is impacted by reclassification into groups B60K 2370/156, B60K 2370/157, B60K 2370/1575, and B60K 2370/158. All groups listed in this Warning should be considered in order to perform a complete search.

M B60K 2370/152

- • Displays

WARNING

Group B60K 2370/152 is impacted by reclassification into groups B60K 2370/1523, B60K 2370/1526, B60K 2370/1529, B60K 2370/1531, B60K 2370/1533, B60K 2370/1534 and B60K 2370/1537. All groups listed in this Warning should be considered in order to perform a complete search.

M B60K 2370/1523

- • • Matrix displays

WARNING

Group B60K 2370/1523 is incomplete pending reclassification of documents from group B60K 2370/152.
Groups B60K 2370/152 and B60K 2370/1523 should be considered in order to perform a complete search.

M B60K 2370/1526

- • • Dual-view displays

WARNING

Group B60K 2370/1526 is incomplete pending reclassification of documents from group B60K 2370/152.
Groups B60K 2370/152 and B60K 2370/1526 should be considered in order to perform a complete search.

M B60K 2370/1529

- • • Head-up displays

WARNING

Group B60K 2370/1529 is incomplete pending reclassification of documents from group B60K 2370/152.
Groups B60K 2370/152 and B60K 2370/1529 should be considered in order to perform a complete search.

M B60K 2370/1531

- • • Three-dimensional displays

WARNING

Group B60K 2370/1531 is incomplete pending reclassification of documents from group B60K 2370/152.
Groups B60K 2370/152 and B60K 2370/1531 should be considered in order to perform a complete search.

M	B60K 2370/1533	<ul style="list-style-type: none"> • • • Flexible displays <p style="color: red; margin-top: 10px;"><u>WARNING</u> Group B60K 2370/1533 is incomplete pending reclassification of documents from group B60K 2370/152. Groups B60K 2370/152 and B60K 2370/1533 should be considered in order to perform a complete search.</p>
M	B60K 2370/1534	<ul style="list-style-type: none"> • • • Simultaneous multiple use of display matrix, e.g. to display information and to illuminate pointer <p style="color: red; margin-top: 10px;"><u>WARNING</u> Group B60K 2370/1534 is incomplete pending reclassification of documents from group B60K 2370/152. Groups B60K 2370/152 and B60K 2370/1534 should be considered in order to perform a complete search.</p>
M	B60K 2370/1537	<ul style="list-style-type: none"> • • • Displays on a manual operation element <p style="color: red; margin-top: 10px;"><u>WARNING</u> Group B60K 2370/1537 is incomplete pending reclassification of documents from group B60K 2370/152. Groups B60K 2370/152 and B60K 2370/1537 should be considered in order to perform a complete search.</p>
M	B60K 2370/156	<ul style="list-style-type: none"> • • Variable gauge scales <p style="color: red; margin-top: 10px;"><u>WARNING</u> Group B60K 2370/156 is incomplete pending reclassification of documents from group B60K 2370/15. Groups B60K 2370/15 and B60K 2370/156 should be considered in order to perform a complete search.</p>
M	B60K 2370/157	<ul style="list-style-type: none"> • • Acoustic output <p style="color: red; margin-top: 10px;"><u>WARNING</u> Group B60K 2370/157 is incomplete pending reclassification of documents from group B60K 2370/15. Groups B60K 2370/15 and B60K 2370/157 should be considered in order to perform a complete search.</p>
M	B60K 2370/1575	<ul style="list-style-type: none"> • • • Voice <p style="color: red; margin-top: 10px;"><u>WARNING</u> Group B60K 2370/1575 is incomplete pending reclassification of documents from group B60K 2370/15. Groups B60K 2370/15 and B60K 2370/1575 should be considered in order to perform a complete search.</p>
M	B60K 2370/158	<ul style="list-style-type: none"> • • Haptic output <p style="color: red; margin-top: 10px;"><u>WARNING</u> Group B60K 2370/158 is incomplete pending reclassification of documents from group B60K 2370/15. Groups B60K 2370/15 and B60K 2370/158 should be considered in order to perform a complete search.</p>
M	B60K 2370/16	<ul style="list-style-type: none"> • Type of information <p style="color: red; margin-top: 10px;"><u>WARNING</u> Group B60K 2370/16 is impacted by reclassification into groups B60K 2370/162, B60K 2370/163, B60K 2370/164, B60K 2370/165, B60K 2370/166, B60K 2370/167, B60K 2370/168, B60K 2370/169,</p>

~~B60K 2370/171, B60K 2370/172, B60K 2370/175, B60K 2370/176,
B60K 2370/177 and B60K 2370/178.~~

~~All groups listed in this Warning should be considered in order to perform a complete search.~~

- M B60K 2370/162 • Visual feedback on control action

WARNING

~~Group B60K 2370/162 is incomplete pending reclassification of documents from group B60K 2370/16.
Groups B60K 2370/16 and B60K 2370/162 should be considered in order to perform a complete search.~~

- M B60K 2370/163 • Language

WARNING

~~Group B60K 2370/163 is incomplete pending reclassification of documents from group B60K 2370/16.
Groups B60K 2370/16 and B60K 2370/163 should be considered in order to perform a complete search.~~

- M B60K 2370/164 • Infotainment

WARNING

~~Group B60K 2370/164 is incomplete pending reclassification of documents from group B60K 2370/16.
Groups B60K 2370/16 and B60K 2370/164 should be considered in order to perform a complete search.~~

- M B60K 2370/165 • Videos and animations

WARNING

~~Group B60K 2370/165 is incomplete pending reclassification of documents from group B60K 2370/16.
Groups B60K 2370/16 and B60K 2370/165 should be considered in order to perform a complete search.~~

- M B60K 2370/166 • Navigation

WARNING

~~Group B60K 2370/166 is incomplete pending reclassification of documents from group B60K 2370/16.
Groups B60K 2370/16 and B60K 2370/166 should be considered in order to perform a complete search.~~

- M B60K 2370/167 • Vehicle dynamics information

WARNING

~~Group B60K 2370/167 is incomplete pending reclassification of documents from group B60K 2370/16.
Groups B60K 2370/16 and B60K 2370/167 should be considered in order to perform a complete search.~~

- M B60K 2370/168 • Target or limit values

WARNING

~~Group B60K 2370/168 is incomplete pending reclassification of documents from group B60K 2370/16.
Groups B60K 2370/16 and B60K 2370/168 should be considered in order to perform a complete search.~~

M	B60K 2370/169	<ul style="list-style-type: none">• Remaining operating distance or charge <p><u>WARNING</u> Group B60K 2370/169 is incomplete pending reclassification of documents from group B60K 2370/16. Groups B60K 2370/16 and B60K 2370/169 should be considered in order to perform a complete search.</p>
M	B60K 2370/171	<ul style="list-style-type: none">• Vehicle or relevant part thereof displayed <p><u>WARNING</u> Group B60K 2370/171 is incomplete pending reclassification of documents from group B60K 2370/16. Groups B60K 2370/16 and B60K 2370/171 should be considered in order to perform a complete search.</p>
M	B60K 2370/172	<ul style="list-style-type: none">• Driving mode indication <p><u>WARNING</u> Group B60K 2370/172 is incomplete pending reclassification of documents from group B60K 2370/16. Groups B60K 2370/16 and B60K 2370/172 should be considered in order to perform a complete search.</p>
M	B60K 2370/175	<ul style="list-style-type: none">• Autonomous driving <p><u>WARNING</u> Group B60K 2370/175 is incomplete pending reclassification of documents from group B60K 2370/16. Groups B60K 2370/16 and B60K 2370/175 should be considered in order to perform a complete search.</p>
M	B60K 2370/176	<ul style="list-style-type: none">• Camera images <p><u>WARNING</u> Group B60K 2370/176 is incomplete pending reclassification of documents from group B60K 2370/16. Groups B60K 2370/16 and B60K 2370/176 should be considered in order to perform a complete search.</p>
M	B60K 2370/177	<ul style="list-style-type: none">• Augmented reality <p><u>WARNING</u> Group B60K 2370/177 is incomplete pending reclassification of documents from group B60K 2370/16. Groups B60K 2370/16 and B60K 2370/177 should be considered in order to perform a complete search.</p>
M	B60K 2370/178	<ul style="list-style-type: none">• Warnings <p><u>WARNING</u> Group B60K 2370/178 is incomplete pending reclassification of documents from group B60K 2370/16. Groups B60K 2370/16 and B60K 2370/178 should be considered in order to perform a complete search.</p>
M	B60K 2370/18	<ul style="list-style-type: none">• Information management <p><u>WARNING</u> Group B60K 2370/18 is incomplete pending reclassification of documents from group B60K 2370/10.</p>

Groups B60K 2370/10 and B60K 2370/18 should be considered in order to perform a complete search.

- M B60K 2370/182 • • Distributing information between displays

WARNING

Group B60K 2370/182 is incomplete pending reclassification of documents from group B60K 2370/10.
Groups B60K 2370/10 and B60K 2370/182 should be considered in order to perform a complete search.

- M B60K 2370/186 • • Displaying Information according to relevancy

WARNING

Group B60K 2370/186 is impacted by reclassification into group B60K 2370/1876.
Groups B60K 2370/186 and B60K 2370/1876 should be considered in order to perform a complete search.

- M B60K 2370/1876 • • • according to vehicle situations

WARNING

Group B60K 2370/1876 is incomplete pending reclassification of documents from group B60K 2370/186.
Groups B60K 2370/186 and B60K 2370/1876 should be considered in order to perform a complete search.

- M B60K 2370/191 • • Highlight information

WARNING

Group B60K 2370/191 is incomplete pending reclassification of documents from group B60K 2370/10.
Groups B60K 2370/10 and B60K 2370/191 should be considered in order to perform a complete search.

- M B60K 2370/193 • • for improving awareness

WARNING

Group B60K 2370/193 is impacted by reclassification into group B60K 2370/194.
Groups B60K 2370/193 and B60K 2370/194 should be considered in order to perform a complete search.

- M B60K 2370/194 • • • by directing line of sight

WARNING

Group B60K 2370/194 is incomplete pending reclassification of documents from group B60K 2370/193.
Groups B60K 2370/193 and B60K 2370/194 should be considered in order to perform a complete search.

- M B60K 2370/197 • • Blocking or enabling of input functions

WARNING

Group B60K 2370/197 is incomplete pending reclassification of documents from group B60K 2370/10.
Groups B60K 2370/10 and B60K 2370/197 should be considered in order to perform a complete search.

- M B60K 2370/199
- for avoiding maloperation
- WARNING
Group B60K 2370/199 is incomplete pending reclassification of documents from group B60K 2370/10.
Groups B60K 2370/10 and B60K 2370/199 should be considered in order to perform a complete search.
- M B60K 2370/20
- Optical features of instruments
- WARNING
Group B60K 2370/20 is impacted by reclassification into group B60K 2370/23.
Groups B60K 2370/20 and B60K 2370/23 should be considered in order to perform a complete search.
- M B60K 2370/23
- using reflectors
- WARNING
Group B60K 2370/23 is incomplete pending reclassification of documents from group B60K 2370/20.
Groups B60K 2370/20 and B60K 2370/23 should be considered in order to perform a complete search.
- M B60K 2370/33
- Illumination features
- WARNING
Group B60K 2370/33 is impacted by reclassification into groups B60K 2370/332, B60K 2370/336, B60K 2370/338, B60K 2370/341, B60K 2370/343, and B60K 2370/345.
All groups listed in this Warning should be considered in order to perform a complete search.
- M B60K 2370/332
- • Light emitting diodes
- WARNING
Group B60K 2370/332 is incomplete pending reclassification of documents from group B60K 2370/33.
Groups B60K 2370/33 and B60K 2370/332 should be considered in order to perform a complete search.
- M B60K 2370/336
- • Light guides
- WARNING
Group B60K 2370/336 is incomplete pending reclassification of documents from group B60K 2370/33.
Groups B60K 2370/33 and B60K 2370/336 should be considered in order to perform a complete search.
- M B60K 2370/338
- • Light strips
- WARNING
Group B60K 2370/338 is incomplete pending reclassification of documents from group B60K 2370/33.
Groups B60K 2370/33 and B60K 2370/338 should be considered in order to perform a complete search.
- M B60K 2370/341
- • Illumination of dials
- WARNING
Group B60K 2370/341 is incomplete pending reclassification of documents from group B60K 2370/33.

~~Groups B60K 2370/33 and B60K 2370/341 should be considered in order to perform a complete search.~~

- M B60K 2370/343
 - • • Illumination of matrix displays

WARNING

~~Group B60K 2370/343 is incomplete pending reclassification of documents from group B60K 2370/33.
Groups B60K 2370/33 and B60K 2370/343 should be considered in order to perform a complete search.~~

- M B60K 2370/345
 - • • Illumination of controls

WARNING

~~Group B60K 2370/345 is incomplete pending reclassification of documents from group B60K 2370/33.
Groups B60K 2370/33 and B60K 2370/345 should be considered in order to perform a complete search.~~

- M B60K 2370/40
 - Hardware adaptations for dashboards or instruments

WARNING

~~Group B60K 2370/40 is impacted by reclassification into groups B60K 2370/47 and B60K 2370/48.
Groups B60K 2370/40, B60K 2370/47 and B60K 2370/48 should be considered in order to perform a complete search.~~

- U B60K 2370/46
 - • Electrical connections
- M B60K 2370/47
 - • • using wireless power transfer or transmission.

WARNING

~~Group B60K 2370/47 is incomplete pending reclassification of documents from group B60K 2370/40.
Groups B60K 2370/40 and B60K 2370/47 should be considered in order to perform a complete search.~~

- M B60K 2370/48
 - • Sensors

WARNING

~~Group B60K 2370/48 is incomplete pending reclassification of documents from group B60K 2370/40.
Groups B60K 2370/40 and B60K 2370/48 should be considered in order to perform a complete search.~~

- M B60K 2370/50
 - Control arrangements; Data network features

WARNING

~~Group B60K 2370/50 is impacted by reclassification into groups B60K 2370/58, B60K 2370/583, B60K 2370/586, B60K 2370/5894, B60K 2370/5899, B60K 2370/5905, B60K 2370/5911, B60K 2370/5915, B60K 2370/592 and B60K 2370/595.
All groups listed in this Warning should be considered in order to perform a complete search.~~

- M B60K 2370/55
 - • Remote controls

WARNING

~~Group B60K 2370/55 is impacted by reclassification into groups B60K 2370/56, B60K 2370/563, B60K 2370/566, B60K 2370/569, B60K 2370/573 and B60K 2370/577.~~

All groups listed in this Warning should be considered in order to perform a complete search.

- M B60K 2370/56
 - • using mobile devices

WARNING

Group B60K 2370/56 is incomplete pending reclassification of documents from group B60K 2370/55.
Groups B60K 2370/55 and B60K 2370/56 should be considered in order to perform a complete search.

- M B60K 2370/563
 - • • Vehicle displaying mobile device information

WARNING

Group B60K 2370/563 is incomplete pending reclassification of documents from group B60K 2370/55.
Groups B60K 2370/55 and B60K 2370/563 should be considered in order to perform a complete search.

- M B60K 2370/566
 - • • Mobile devices displaying vehicle information

WARNING

Group B60K 2370/566 is incomplete pending reclassification of documents from group B60K 2370/55.
Groups B60K 2370/55 and B60K 2370/566 should be considered in order to perform a complete search.

- M B60K 2370/569
 - • • Vehicle controlling mobile device functions

WARNING

Group B60K 2370/569 is incomplete pending reclassification of documents from group B60K 2370/55.
Groups B60K 2370/55 and B60K 2370/569 should be considered in order to perform a complete search.

- M B60K 2370/573
 - • • Mobile devices controlling vehicle functions

WARNING

Group B60K 2370/573 is incomplete pending reclassification of documents from group B60K 2370/55.
Groups B60K 2370/55 and B60K 2370/573 should be considered in order to perform a complete search.

- M B60K 2370/577
 - • • Mirror link with mobile devices

WARNING

Group B60K 2370/577 is incomplete pending reclassification of documents from group B60K 2370/55.
Groups B60K 2370/55 and B60K 2370/577 should be considered in order to perform a complete search.

- M B60K 2370/58
 - • Data transfers

WARNING

Group B60K 2370/58 is incomplete pending reclassification of documents from group B60K 2370/50.
Groups B60K 2370/50 and B60K 2370/58 should be considered in order to perform a complete search.

- M B60K 2370/583 • • • between instruments
- WARNING
Group B60K 2370/583 is incomplete pending reclassification of documents from group B60K 2370/50. Groups B60K 2370/50 and B60K 2370/583 should be considered in order to perform a complete search.
- M B60K 2370/586 • • • Wired data transfers
- WARNING
Group B60K 2370/586 is incomplete pending reclassification of documents from group B60K 2370/50. Groups B60K 2370/50 and B60K 2370/586 should be considered in order to perform a complete search.
- U B60K 2370/589 • • • Wireless
- M B60K 2370/5894 • • • • SIM cards
- WARNING
Group B60K 2370/5894 is incomplete pending reclassification of documents from group B60K 2370/50. Groups B60K 2370/50 and B60K 2370/5894 should be considered in order to perform a complete search.
- M B60K 2370/5899 • • • • Internet
- WARNING
Group B60K 2370/5899 is incomplete pending reclassification of documents from group B60K 2370/50. Groups B60K 2370/50 and B60K 2370/5899 should be considered in order to perform a complete search.
- M B60K 2370/5905 • • • • Wi-fi
- WARNING
Group B60K 2370/5905 is incomplete pending reclassification of documents from group B60K 2370/50. Groups B60K 2370/50 and B60K 2370/5905 should be considered in order to perform a complete search.
- M B60K 2370/5911 • • • • Bluetooth
- WARNING
Group B60K 2370/5911 is incomplete pending reclassification of documents from group B60K 2370/50. Groups B60K 2370/50 and B60K 2370/5911 should be considered in order to perform a complete search.
- M B60K 2370/5915 • • • • Inter vehicle communication
- WARNING
Group B60K 2370/5915 is incomplete pending reclassification of documents from group B60K 2370/50. Groups B60K 2370/50 and B60K 2370/5915 should be considered in order to perform a complete search.
- M B60K 2370/592 • • • External database involved
- WARNING
Group B60K 2370/592 is incomplete pending reclassification of documents from group B60K 2370/50.

Groups B60K 2370/50 and B60K 2370/592 should be considered in order to perform a complete search.

- M B60K 2370/595
 - Internal database involved

WARNING

Group B60K 2370/595 is incomplete pending reclassification of documents from group B60K 2370/50.
Groups B60K 2370/50 and B60K 2370/595 should be considered in order to perform a complete search.

- M B60K 2370/60
 - Structural details of dashboards or instruments

WARNING

Group B60K 2370/60 is impacted by reclassification into groups B60K 2370/61, B60K 2370/62, B60K 2370/63, B60K 2370/65, B60K 2370/654, B60K 2370/66, B60K 2370/68, B60K 2370/688, B60K 2370/691, and B60K 2370/692.
All groups listed in this Warning should be considered in order to perform a complete search.

- M B60K 2370/61
 - Specially adapted for utility vehicles

WARNING

Group B60K 2370/61 is incomplete pending reclassification of documents from group B60K 2370/60.
Groups B60K 2370/60 and B60K 2370/61 should be considered in order to perform a complete search.

- M B60K 2370/62
 - Anti-theft arrangements

WARNING

Group B60K 2370/62 is incomplete pending reclassification of documents from group B60K 2370/60.
Groups B60K 2370/60 and B60K 2370/62 should be considered in order to perform a complete search.

- M B60K 2370/63
 - Crash protection features

WARNING

Group B60K 2370/63 is incomplete pending reclassification of documents from group B60K 2370/60.
Groups B60K 2370/60 and B60K 2370/63 should be considered in order to perform a complete search.

- M B60K 2370/65
 - Features of dashboards

WARNING

Group B60K 2370/65 is incomplete pending reclassification of documents from group B60K 2370/60.
Groups B60K 2370/60 and B60K 2370/65 should be considered in order to perform a complete search.

- M B60K 2370/654
 - Dashboard panels

WARNING

Group B60K 2370/654 is incomplete pending reclassification of documents from group B60K 2370/60.
Groups B60K 2370/60 and B60K 2370/654 should be considered in order to perform a complete search.

- M B60K 2370/66
- • Projection screens or combiners
- WARNING
Group B60K 2370/66 is incomplete pending reclassification of documents from group B60K 2370/60. Groups B60K 2370/60 and B60K 2370/66 should be considered in order to perform a complete search.
- M B60K 2370/68
- • Features of instruments
- WARNING
Group B60K 2370/68 is incomplete pending reclassification of documents from group B60K 2370/60. Groups B60K 2370/60 and B60K 2370/68 should be considered in order to perform a complete search.
- M B60K 2370/688
- • • Frames or decorative parts
- WARNING
Group B60K 2370/688 is incomplete pending reclassification of documents from group B60K 2370/60. Groups B60K 2370/60 and B60K 2370/688 should be considered in order to perform a complete search.
- M B60K 2370/691
- • • Housings
- WARNING
Group B60K 2370/691 is incomplete pending reclassification of documents from group B60K 2370/60. Groups B60K 2370/60 and B60K 2370/691 should be considered in order to perform a complete search.
- M B60K 2370/692
- • • Sealings
- WARNING
Group B60K 2370/692 is incomplete pending reclassification of documents from group B60K 2370/60. Groups B60K 2370/60 and B60K 2370/692 should be considered in order to perform a complete search.
- M B60K 2370/698
- • • Pointers of combined instruments
- WARNING
Group B60K 2370/698 is impacted by reclassification into groups B60K 2370/6985 and B60K 2370/6992. Groups B60K 2370/698, B60K 2370/6985 and B60K 2370/6992 should be considered in order to perform a complete search.
- M B60K 2370/6985
- • • with only part of pointer being visible
- WARNING
Group B60K 2370/6985 is incomplete pending reclassification of documents from group B60K 2370/698. Groups B60K 2370/698 and B60K 2370/6985 should be considered in order to perform a complete search.
- M B60K 2370/6992
- • • Light conducting pointers
- WARNING
Group B60K 2370/6992 is incomplete pending reclassification of documents from group B60K 2370/698.

Groups B60K 2370/698 and B60K 2370/6992 should be considered in order to perform a complete search.

- U B60K 2370/70
 - M B60K 2370/73
- Arrangements of instruments in the vehicle
 - • with special adaptation to the user or to the vehicle

WARNING

Group B60K 2370/73 is impacted by reclassification into groups B60K 2370/731, B60K 2370/741 and B60K 2370/744. All groups listed in this Warning should be considered in order to perform a complete search.

- M B60K 2370/731
- • user programmable systems

WARNING

Group B60K 2370/731 is incomplete pending reclassification of documents from group B60K 2370/73. Groups B60K 2370/73 and B60K 2370/731 should be considered in order to perform a complete search.

- M B60K 2370/741
- • User detection

WARNING

Group B60K 2370/741 is incomplete pending reclassification of documents from group B60K 2370/73. Groups B60K 2370/73 and B60K 2370/741 should be considered in order to perform a complete search.

- M B60K 2370/744
- • Position adjustable by user

WARNING

Group B60K 2370/744 is incomplete pending reclassification of documents from group B60K 2370/73. Groups B60K 2370/73 and B60K 2370/744 should be considered in order to perform a complete search.

- M B60K 2370/77
- • characterised by locations other than the dashboard

WARNING

Group B60K 2370/77 is impacted by reclassification into groups B60K 2370/785, B60K 2370/788, B60K 2370/791, and B60K 2370/794. All groups listed in this Warning should be considered in order to perform a complete search.

- M B60K 2370/777
- • on or in sun visors

WARNING

Group B60K 2370/777 is impacted by reclassification into group B60K 2370/779. Groups B60K 2370/777 and B60K 2370/779 should be considered in order to perform a complete search.

- M B60K 2370/779
- • on or in rear view mirrors

WARNING

Group B60K 2370/779 is incomplete pending reclassification of documents from group B60K 2370/777. Groups B60K 2370/777 and B60K 2370/779 should be considered in order to perform a complete search.

- M B60K 2370/785
- • • on or in relation to the windshield or windows
- WARNING
Group B60K 2370/785 is incomplete pending reclassification of documents from group B60K 2370/77. Groups B60K 2370/77 and B60K 2370/785 should be considered in order to perform a complete search.
- M B60K 2370/788
- • • on or in side pillars
- WARNING
Group B60K 2370/788 is incomplete pending reclassification of documents from group B60K 2370/77. Groups B60K 2370/77 and B60K 2370/788 should be considered in order to perform a complete search.
- M B60K 2370/791
- • • on or in the transmission tunnel or parking brake lever
- WARNING
Group B60K 2370/791 is incomplete pending reclassification of documents from group B60K 2370/77. Groups B60K 2370/77 and B60K 2370/791 should be considered in order to perform a complete search.
- M B60K 2370/794
- • • on or in doors
- WARNING
Group B60K 2370/794 is incomplete pending reclassification of documents from group B60K 2370/77. Groups B60K 2370/77 and B60K 2370/794 should be considered in order to perform a complete search.
- M B60K 2370/80
- Mounting or fastening arrangements; Mounting or fastening processes
- WARNING
Group B60K 2370/80 is impacted by reclassification into groups B60K 2370/84, B60K 2370/90, B60K 2370/91, B60K 2370/92, B60K 2370/95 and B60K 2370/98. All groups listed in this Warning should be considered in order to perform a complete search.
- M B60K 2370/81
- • Fastening of instruments, e.g. to dashboard
- WARNING
Group B60K 2370/81 is impacted by reclassification into groups B60K 2370/816 and B60K 2370/822. Groups B60K 2370/81, B60K 2370/816 and B60K 2370/822 should be considered in order to perform a complete search.
- M B60K 2370/816
- • • Fastening of displays or touch screens
- WARNING
Group B60K 2370/816 is incomplete pending reclassification of documents from group B60K 2370/81. Groups B60K 2370/81 and B60K 2370/816 should be considered in order to perform a complete search.
- M B60K 2370/822
- • • Adjustment of instruments during mounting
- WARNING
Group B60K 2370/822 is incomplete pending reclassification of documents from group B60K 2370/81.

Groups B60K 2370/81 and B60K 2370/822 should be considered in order to perform a complete search.

- M B60K 2370/84
- Mounting of dashboard components

WARNING

Group B60K 2370/84 is incomplete pending reclassification of documents from group B60K 2370/80.
Groups B60K 2370/80 and B60K 2370/84 should be considered in order to perform a complete search.

- M B60K 2370/90
- Calibration, testing or manufacturing aspects

WARNING

Group B60K 2370/90 is incomplete pending reclassification of documents from group B60K 2370/80.
Groups B60K 2370/80 and B60K 2370/90 should be considered in order to perform a complete search.

- M B60K 2370/91
- Assembly of instruments

WARNING

Group B60K 2370/91 is incomplete pending reclassification of documents from group B60K 2370/80.
Groups B60K 2370/80 and B60K 2370/91 should be considered in order to perform a complete search.

- M B60K 2370/92
- Calibration of instruments

WARNING

Group B60K 2370/92 is incomplete pending reclassification of documents from group B60K 2370/80.
Groups B60K 2370/80 and B60K 2370/92 should be considered in order to perform a complete search.

- M B60K 2370/95
- Testing of instruments

WARNING

Group B60K 2370/95 is incomplete pending reclassification of documents from group B60K 2370/80.
Groups B60K 2370/80 and B60K 2370/95 should be considered in order to perform a complete search.

- M B60K 2370/98
- Manufacturing of instruments

WARNING

Group B60K 2370/98 is incomplete pending reclassification of documents from group B60K 2370/80.
Groups B60K 2370/80 and B60K 2370/98 should be considered in order to perform a complete search.

Project: RP0695 (B60L)

- U B60L 50/00 **Electric propulsion with power supplied within the vehicle (with power supply from force of nature, e.g. sun or wind, [B60L 8/00](#); for monorail vehicles, suspension vehicles or rack railways [B60L 13/00](#))**

- U B60L 50/50
- using propulsion power supplied by batteries or fuel cells

WARNING

Group [B60L 50/50](#) is impacted by reclassification into groups [B60L 50/60](#), [B60L 50/64](#), [B60L 50/70](#), and [B60L 50/75](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- U B60L 50/60
 - using power supplied by batteries (in combination with fuel cells [B60L 50/75](#))

WARNING

Group [B60L 50/60](#) is incomplete pending reclassification from group [B60L 50/50](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- M B60L 50/64
 - • Constructional details of batteries specially adapted for electric vehicles

NOTE

This group covers adaptation of battery structures of electric vehicles, e.g. integration into control or safety systems, crash-resistant casings or vibration-damping means.

WARNING

Group [B60L 50/64](#) is incomplete pending reclassification of documents from ~~group~~groups [B60L 50/50](#) and [H01M 50/20](#).

Groups [B60L 50/50](#), [H01M 50/20](#) and [B60L 50/64](#) should be considered in order to perform a complete search.

Project: MP0427 (B61D)

- M B61D 17/00 **Construction details of vehicle bodies (for tank wagons [B61D 5/00](#); for hopper cars [B61D 7/00](#); body details specially adapted for tipping wagons [B61D 9/06](#); for mine cars [B61D 11/00](#))**

NOTE

{B61D 17/005 takes precedence over B61D 17/048 - B61D 17/16}

- U B61D 17/04
 - with bodies of metal; with composite, e.g. metal and wood body structures
- U B61D 17/043
 - {connections between superstructure sub-units (for road vehicles [B62D 27/00](#))}
- M B61D 17/046
 - • {readily releasable, i.e. dismantlable or collapsible sub-units, e.g. for shipping (convertible wagons [B61D 3/005](#))}

NOTE

B61D 17/005 takes precedence over B61D 17/048-B61D 17/16

Project: MP0496 (B61H)

- M B61H** **BRAKES OR OTHER RETARDING APPARATUS PECULIAR TO DEVICES SPECIALLY ADAPTED FOR RAIL VEHICLES; ARRANGEMENTS OR DISPOSITIONS OF BRAKES OR OTHER RETARDING APPARATUS ARRANGEMENT OR DISPOSITION THEREOF IN RAIL VEHICLES** (electrodynamic braking of vehicles [B60L](#), in general [H02K](#); arrangements in rail vehicles for adjusting wheel-braking force to meet varying vehicular or permanent-way conditions [B60T 8/00](#); transmitting braking action from initiating means to ultimate brake actuator with power assistance or drive, brake systems incorporating such transmitting means, e.g. air-pressure brake systems, [B60T 13/00](#)–[B60T 17/00](#); ~~brakes per se [F16D](#)~~; ~~construction, arrangement or operation of valves incorporated in power brake systems [B60T 15/00](#)~~; ~~component parts, details or accessories of brake systems [B60T 17/00](#)~~; ~~brakes in general [F16D](#)~~)

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: MP0496 (B61K)

- M B61K** **OTHER AUXILIARY EQUIPMENT FOR RAILWAYS AUXILIARY EQUIPMENT SPECIALLY ADAPTED FOR RAILWAYS, NOT OTHERWISE PROVIDED FOR** (~~energy-storing brakes [B61H](#)~~; ~~energy-storing brakes [B61H](#)~~; protection of permanent way against weather influences [E01B](#); rail cleaning, snow ploughs [E01H](#))

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: RP0283-F (B64G)

- U B64G 1/00** **Cosmonautic vehicles**
- U B64G 1/22** • Parts of, or equipment specially adapted for fitting in or to, cosmonautic vehicles
- M B64G 1/24** • • Guiding or controlling apparatus, e.g. for attitude control (jet-propulsion plants [F02K](#); navigation or navigational instruments, see the relevant subclass, e.g. [G01C](#); automatic pilots [G05D 1/00](#))

WARNING

~~Group B64G 1/24 is impacted by reclassification into group B64G 1/244. Groups B64G 1/24 and B64G 1/244 should be considered in order to perform a complete search.~~

- M B64G 1/244** • • • {Attitude control}

WARNING

~~Group B64G 1/244 is incomplete pending reclassification of documents from group B64G 1/24. Groups B64G 1/24 and B64G 1/244 should be considered in order to perform a complete search.~~

Project: RP0687 (B66C)

- U B66C 23/00 **Cranes comprising essentially a beam, boom, or triangular structure acting as a cantilever and mounted for translatory of swinging movements in vertical or horizontal planes or a combination of such movements, e.g. jib-cranes, derricks, tower cranes (base supporting structures with legs [B65C 5/00](#))**
- U B66C 23/54 · {with pneumatic or hydraulic motors, e.g. for actuating jib-cranes on tractors}
- D B66C 23/56 · · {of the reciprocating type}
- <administratively transferred to [B66C 23/54](#)>

Project: MP0497 (B82Y)

- M B82Y **SPECIFIC USES OR APPLICATIONS OF NANOSTRUCTURES; MEASUREMENT OR ANALYSIS OF NANOSTRUCTURES; MANUFACTURE OR TREATMENT OF NANOSTRUCTURES**

NOTES

1. This subclass covers applications and aspects of nanostructures which are produced by any method, and is not restricted to those that are formed by manipulation of individual atoms or molecules.
2. Attention is drawn to the Note following the title of class [B82](#), which defines the meaning of the terms "nanosize", "nanoscale" and "nanostructure" in this subclass.
3. This subclass is intended to enable a comprehensive search of subject matter related to nanostructures by combination of classification symbols of this subclass with classification symbols from other subclasses. Therefore this subclass covers aspects of nanostructures that might also be entirely or partially covered elsewhere in the IPC.
4. This subclass is for secondary classification, i.e. obligatory supplementary classification of subject matter already classified as such in other classification places, e.g. :

B82B	Nanostructures formed by individual manipulation of atoms, molecules, or limited collections of atoms or molecules as discrete units; manufacture or treatment thereof
A61K 9/51	Nanocapsules for medicinal preparations
B05D 1/20	Langmuir-Blodgett films
C01B 32/05	Carbon nanostructures, e.g. bucky-balls, nanotubes, nanocoils, nanodoughnuts or nanoonions
G01Q	Scanning probe techniques
G02F 1/017	Optical quantum wells or boxes
H01F 10/32	Nanostructured thin magnetic films
H01F 41/30	Molecular beam epitaxy [MBE]
H01L 29/775	Quantum wire FETs

5. The classification symbols of this subclass are not listed first when assigned to patent documents.

~~6. In this subclass, multi-aspects classification is applied, so that aspects of subject matter that are covered by more than one of its groups should be classified in each of those groups.~~

Project: RP0401-F (C01B)

- U C01B 32/00 **Carbon; Compounds thereof ([C01B 21/00](#), [C01B 23/00](#) take precedence; percarbonates [C01B 15/10](#); carbon black [C09C 1/48](#))**
- U C01B 32/15 · Nano-sized carbon materials

- M C01B 32/152
- • Fullerenes
- WARNING
Group C01B 32/152 is impacted by reclassification into groups C01B 32/154 and C01B 32/156.
All groups listed in this Warning should be considered in order to perform a complete search.
- M C01B 32/154
- • • Preparation
- WARNING
Group C01B 32/154 is incomplete pending reclassification of documents from group C01B 32/152.
Groups C01B 32/152 and C01B 32/154 should be considered in order to perform a complete search.
- M C01B 32/156
- • • After-treatment
- WARNING
Group C01B 32/156 is incomplete pending reclassification of documents from group C01B 32/152.
Groups C01B 32/152 and C01B 32/156 should be considered in order to perform a complete search.
- M C01B 32/158
- • Carbon nanotubes
- NOTE
{In groups [C01B 32/158](#) - [C01B 32/18](#), it is desirable to add indexing codes of [C01B 2202/00](#) - [C01B 2202/36](#) for structural aspects or properties of carbon nanotubes.}
- WARNING
Group C01B 32/158 is impacted by reclassification into group C01B 32/159.
Groups C01B 32/158 and C01B 32/159 should be considered in order to perform a complete search.
- M C01B 32/159
- • • single-walled
- WARNING
Group C01B 32/159 is incomplete pending reclassification of documents from group C01B 32/158.
Groups C01B 32/158 and C01B 32/159 should be considered in order to perform a complete search.
- M C01B 32/182
- • Graphene
- WARNING
Group C01B 32/182 is impacted by reclassification into group C01B 32/198.
Groups C01B 32/182 and C01B 32/198 should be considered in order to perform a complete search.
- M C01B 32/198
- • • Graphene oxide
- WARNING
Group C01B 32/198 is incomplete pending reclassification of documents from group C01B 32/182.
Groups C01B 32/182 and C01B 32/198 should be considered in order to perform a complete search.

- M C01B 32/20
- Graphite
- NOTE
{In groups [C01B 32/20](#) - [C01B 32/196](#), it is desirable to add indexing codes of [C01B 2204/00](#) - [C01B 2204/32](#) for structural aspects or properties of graphene.}
- WARNING
Group C01B 32/20 is impacted by reclassification into groups C01B 32/205 and C01B 32/21.
All groups listed in this Warning should be considered in order to perform a complete search.
- M C01B 32/205
- Preparation
- WARNING
Group C01B 32/205 is incomplete pending reclassification of documents from group C01B 32/20.
Groups C01B 32/20 and C01B 32/205 should be considered in order to perform a complete search.
- M C01B 32/21
- After-treatment
- WARNING
Group C01B 32/21 is incomplete pending reclassification of documents from group C01B 32/20.
Groups C01B 32/20 and C01B 32/21 should be considered in order to perform a complete search.
- M C01B 32/25
- Diamond
- WARNING
Group C01B 32/25 is impacted by reclassification into group C01B 32/26.
Groups C01B 32/25 and C01B 32/26 should be considered in order to perform a complete search.
- M C01B 32/26
- Preparation (by using ultra-high pressure [B01J 3/06](#); by crystal growth [C30B 29/04](#))
- WARNING
Group C01B 32/26 is incomplete pending reclassification of documents from group C01B 32/25.
Groups C01B 32/25 and C01B 32/26 should be considered in order to perform a complete search.
- M C01B 32/30
- Active carbon
- WARNING
Group C01B 32/30 is impacted by reclassification into groups C01B 32/312 and C01B 32/318.
All groups listed in this Warning should be considered in order to perform a complete search.
- M C01B 32/312
- Preparation
- WARNING
Groups C01B 32/312 and C01B 32/318 are incomplete pending reclassification of documents from group C01B 32/30.
All groups listed in this Warning should be considered in order to perform a complete search.

- M C01B 32/354
- • After-treatment
- WARNING
Group C01B 32/354 is impacted by reclassification into group C01B 32/378.
Groups C01B 32/354 and C01B 32/378 should be considered in order to perform a complete search.
- M C01B 32/378
- • • Purification
- WARNING
Group C01B 32/378 is incomplete pending reclassification of documents from group C01B 32/354.
Groups C01B 32/354 and C01B 32/378 should be considered in order to perform a complete search.
- U C01B 32/90
- Carbides
- U C01B 32/914
- • Carbides of single elements
- M C01B 32/956
- • • Silicon carbide
- WARNING
Group C01B 32/956 is impacted by reclassification into groups C01B 32/963- C01B 32/991.
All groups listed in this Warning should be considered in order to perform a complete search.
- M C01B 32/963
- • • • Preparation from compounds containing silicon
- WARNING
Group C01B 32/963 is incomplete pending reclassification of documents from group C01B 32/956.
Groups C01B 32/956 and C01B 32/963 should be considered in order to perform a complete search.
- M C01B 32/97
- • • • • Preparation from SiO or SiO₂
- WARNING
Groups C01B 32/97, C01B 32/977 and C01B 32/984 are incomplete pending reclassification of documents from group C01B 32/956.
All groups listed in this Warning should be considered in order to perform a complete search.
- M C01B 32/991
- • • Boron carbide
- WARNING
Group C01B 32/991 is incomplete pending reclassification of documents from group C01B 32/956.
Groups C01B 32/956 and C01B 32/991 should be considered in order to perform a complete search.

Project: MP0496 (C03C)

M C03C CHEMICAL COMPOSITION OF GLASSES, GLAZES, OR VITREOUS ENAMELS; SURFACE TREATMENT OF GLASS; SURFACE TREATMENT OF FIBRES OR FILAMENTS MADE FROM GLASS, MINERALS OR SLAGS; JOINING GLASS TO GLASS OR OTHER MATERIALS

NOTES

1. This subclass covers compositions of polycrystalline fibres
2. This subclass does not cover the preparation of single-crystal fibres, which is covered by subclass [C30B](#)

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

[C03C 6/00](#) - [C03C 6/10](#) covered by [C03C 1/00](#) - [C03C 1/105](#)

[C03C 10/02](#) - [C03C 10/14](#) covered by [C03C 10/00](#)

[C03C 13/02](#) covered by [C03C 13/00](#)

[C03C 27/12](#) covered by [B32B 17/00](#)

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: MP0493 (C03C)

M C03C 8/00 Enamels; Glazes (~~cold glazes for ceramics {C04B 41/48}~~); Fusion seal compositions being frit compositions having non-frit additions

Project: RP0488-F (C03C)

U C03C 25/00 Surface treatment of fibres or filaments made from glass, minerals or slags

NOTES

1. In groups [C03C 25/24](#) - [C03C 25/48](#), the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place.
2. A coating composition, i.e. a mixture of two or more constituents, is classified in the last of groups [C03C 25/25](#) - [C03C 25/42](#) that provides for at least one of these constituents.
3. When classifying in groups [C03C 25/24](#) - [C03C 25/42](#), any individual constituent, i.e. compound or ingredient of a coating composition, which is not identified by the classification according to Note (2), and which itself is determined to be novel and non-obvious, must also be classified in the last appropriate place in groups [C03C 25/24](#) - [C03C 25/42](#).
4. When classifying in groups [C03C 25/24](#) - [C03C 25/42](#), any individual constituent of a coating composition which is not identified by the classification according to Note (2) or (3), and which is considered to represent information of interest for search, may also be classified in groups [C03C 25/24](#) - [C03C 25/42](#). This can, for example, be the case when it is considered of interest to enable searching of coating compositions using a combination of classification symbols. Such non-obligatory classification should be given as "additional information".
5. When classifying in groups [C03C 25/1025](#) - [C03C 25/1095](#), the composition of the coatings must also be classified in one or more of groups [C03C 25/24](#) - [C03C 25/54](#), according to Notes (1) to (4).
6. When classifying in group [C03C 25/48](#), any individual coating which itself is determined to be novel and non-obvious must also be classified in groups [C03C 25/24](#) - [C03C 25/42](#), according to Notes (1) to (4).

U C03C 25/10 - Coating

- U C03C 25/104 • • to obtain optical fibres
- D C03C 25/1045 • • • {with organic coatings or claddings}
—(Frozen)
- WARNING
Group C03C 25/1045 is no longer used for the classification of documents as of January 1, 2018. The content of this group is being reclassified into groups C03C 25/105, C03C 25/106, and C03C 25/1065.
All groups listed in this Warning should be considered in order to perform a complete search.
- M C03C 25/105 • • • Organic claddings
- WARNING
Group C03C 25/105 is incomplete pending reclassification of documents from group C03C 25/1045.
Groups C03C 25/1045 and C03C 25/105 should be considered in order to perform a complete search.
- D C03C 25/1055 • • • • {Organic coatings}
—(Frozen)
- WARNING
Group C03C 25/1055 is no longer used for the classification of documents as of January 1, 2018.
The content of this group is being reclassified into groups C03C 25/106 and C03C 25/1065.
Groups C03C 25/1055, C03C 25/106, and C03C 25/1065 should be considered in order to perform a complete search
- M C03C 25/106 • • • Single coatings
- WARNING
Group C03C 25/106 is incomplete pending reclassification of documents from groups C03C 25/1045 and C03C 25/1055.
Groups C03C 25/1045, C03C 25/1055, and C03C 25/106 should be considered in order to perform a complete search.
- M C03C 25/1065 • • • Multiple coatings
- WARNING
Group C03C 25/106 is incomplete pending reclassification of documents from groups C03C 25/1045 and C03C 25/1055.
Groups C03C 25/1045, C03C 25/1055, and C03C 25/1065 should be considered in order to perform a complete search.
- U C03C 25/12 • • General methods of coating; Devices therefor
- U C03C 25/14 • • • Spraying
- M C03C 25/143 • • • • onto continuous fibres
- WARNING
Group C03C 25/143 is incomplete pending reclassification of documents from group C03C 25/146.
Groups C03C 25/146 and C03C 25/143 should be considered in order to perform a complete search.
- M C03C 25/146 • • • • onto fibres in suspension in a gaseous medium (C03C 25/143 takes precedence)
- WARNING
Group C03C 25/146 is impacted by reclassification into group C03C 25/143.

Groups C03C 25/146 and C03C 25/143 should be considered in order to perform a complete search.

Project: MP0427 (C04B)

- U C04B 40/00** Processes, in general, for influencing or modifying the properties of mortars, concrete or artificial stone compositions, e.g. their setting or hardening ability (active ingredients [C04B 22/00](#) - [C04B 24/00](#); hardening of a well-defined composition [C04B 26/00](#) - [C04B 28/00](#); making porous, cellular or lightening [C04B 38/00](#); mechanical aspects [B28](#), e.g. conditioning the materials prior to shaping [B28B 17/02](#))
- U C04B 40/06** • Inhibiting the setting, e.g. mortars of the deferred action type containing water in breakable containers {; Inhibiting the action of active ingredients}
- NOTE**
Compositions with prolonged pot-life are not classified here.
They are classified as other compositions and the symbol [C04B 2111/00086](#) is allocated in Combination Set.
- M C04B 40/0691** • • {Thermally activated mortars, e.g. by melting ingredients}
- NOTE**
In group C04B 41/00, the following terms or expressions are used with the meanings indicated:
- "mortars", "concrete" and "artificial stone" cover materials after primary shaping
- M C04B 41/00** After-treatment of mortars, concrete, artificial stone or ceramics; Treatment of natural stone (conditioning of the materials prior to shaping [C04B 40/00](#); applying liquids or other fluent materials to surfaces, in general [B05](#); grinding or polishing [B24](#); apparatus or processes for treating or working shaped articles of clay or other ceramic compositions, slag or mixtures containing cementitious material [B28B 11/00](#); working stone or stone-like materials [B28D](#); glazes, other than cold glazes, [C03C 8/00](#); etching, surface-brightening or pickling compositions [C09K 13/00](#))
- NOTES**
1. In this group, the following terms or expressions are used with the meanings indicated:
- "mortars", "concrete" and "artificial stone" cover materials after primary shaping.
1. 2. In this group, multiple classification is made according to the following rules: Treating, e.g. coating or impregnating, a material with the same material or with a substance that ultimately is transformed into the same material is not considered aftertreatment for this group but is classified as preparation of the material, e.g. a carbon body impregnated with a carbonisable substance is classified in [C04B 35/52](#).
- when the substrate to be treated is of the artificial stone type, e.g. concrete, classification is made in the range C04B 41/00 - C04B 41/5392 as well as in the range C04B 41/60 - C04B 41/72
 - when the substrate to be treated is of the ceramic type, classification is made in the range C04B 41/00 - C04B 41/5392 as well as in the range C04B 41/80 - C04B 41/91

- when the substrate to be treated is a specific, classification is made only in the range C04B 41/00 - C04B 41/5392

~~2.~~ ~~3.~~ In groups ~~C04B 41/0018~~ ~~C04B 41/45~~ - ~~C04B 41/53~~ ~~C04B 41/80~~, the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place.

~~3.~~ ~~4.~~ Treating, e.g. coating or impregnating, a material with the same material or with a substance which ultimately is transformed into the same material is not considered after treatment for this group but is classified as preparation of the material, e.g. a carbon body impregnated with a carbonisable substance is classified in ~~{In this group, multiple classification is made according to the C04B 35/52: following rules:~~

- when the substrate to be treated is of the artificial stone type, e.g. concrete, classification is made in the range C04B 41/00 - C04B 41/5392 as well as in the range C04B 41/60 - C04B 41/72
- when the substrate to be treated is of the ceramic type, classification is made in the range C04B 41/00 - C04B 41/5392 as well as in the range C04B 41/80 - C04B 41/91
- when the substrate to be treated is aspecific, classification is made only in the range C04B 41/00 - C04B 41/5392

}

~~5.~~ {In groups ~~C04B 41/0018~~ - ~~C04B 41/53~~, in the absence of an indication to the contrary, classification is made in the last appropriate place.}

~~4.~~ ~~6.~~ {In groups ~~C04B 41/00~~ - ~~C04B 41/53~~, it is desirable to add the indexing codes relating to the nature of the substrate being treated. The indexing codes, which ~~that~~ are chosen from groups ~~C04B 26/00~~ - ~~C04B 38/00~~ should be unlinked.}

~~5.~~ ~~7.~~ {In groups ~~C04B 41/00~~ - ~~C04B 41/53~~, it is desirable to add the indexing codes relating to aspects of the coating composition or to the method of application. The indexing codes, ~~which that~~ are chosen from groups ~~C04B 41/00~~ - ~~C04B 41/5392~~ should be unlinked.}

~~6.~~ ~~8.~~ {Attention is drawn to internal Note (2) following the title of subclass ~~C04B.~~}

Project: MP0498 (C05G)

M C05G

MIXTURES OF FERTILISERS COVERED INDIVIDUALLY BY DIFFERENT SUBCLASSES OF CLASS C05; MIXTURES OF ONE OR MORE FERTILISERS WITH MATERIALS NOT HAVING A SPECIFIC FERTILISING ACTIVITY, e.g. PESTICIDES, SOIL-CONDITIONERS, WETTING AGENTS (organic fertilisers containing added bacterial cultures, mycelia, or the like [C05F 11/08](#); organic fertilisers containing plant vitamins or hormones [C05F 11/10](#)); FERTILISERS CHARACTERISED BY THEIR FORM

NOTES

1. This subclass covers mixtures of fertilisers with soil-conditioning or soil-stabilising materials characterised by their ~~fertilising~~ ~~fertilizing~~ activity.

2. This subclass does not cover mixtures of fertilisers with soil-conditioning or soil-stabilising materials characterised by their soil-conditioning or soil-stabilising activity, which are covered by group [C09K 17/00](#).

~~3. In this subclass, multi-aspect classification is applied, so that subject matter characterised by aspects covered by more than one of its groups, which is considered to represent information of interest for search, may also be classified in each of those groups.~~

WARNING

The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

C05G 1/02 - C05G 1/10 covered by [C05](#) (see internal note after the title of class [C05](#))

Project: N/A (C07C)

U C07C 65/00

Compounds having carboxyl groups bound to carbon atoms of six—
membered aromatic rings and containing any of the groups OH, O—metal,
—CHO, keto, ether, $\text{>C} \begin{array}{l} \diagup \text{O}- \\ \diagdown \text{O}-\text{C} \end{array}$ groups, $\text{-C} \begin{array}{l} \diagup \text{O}- \\ \diagdown \text{O}-\text{C} \end{array}$ groups, or $\text{C} \begin{array}{l} \diagup \text{O}- \\ \diagdown \text{O}-\text{C} \\ \diagdown \text{O}-\text{C} \\ \diagdown \text{O}-\text{C} \end{array}$ groups

(cyclic anhydrides [C07D](#))

- U C07C 65/01 · containing hydroxy or O-metal groups
- U C07C 65/03 · · monocyclic and having all hydroxy or O-metal groups bound to the ring
- C07C 65/05 · · · o-HydroxyHydroxy carboxylic acids

Project: RP0579-F (C07D)

U C07D 241/00

Heterocyclic compounds containing 1,4-diazine or hydrogenated 1,4-diazine rings

NOTE

Piperazines with only hydrogen atoms directly attached to ring carbon atoms are classified in group [C07D 295/00](#)

- U C07D 241/02 · not condensed with other rings
- U C07D 241/10 · · having three double bonds between ring members or between ring members and non-ring members
- U C07D 241/14 · · · with hetero atoms or with carbon atoms having three bonds to hetero atoms with at the most one bond to halogen, e.g. ester or nitrile radicals, directly attached to ring carbon atoms
- U C07D 241/24 · · · · Carbon atoms having three bonds to hetero atoms with at the most one bond to halogen, e.g. ester or nitrile radicals
- U C07D 241/26 · · · · · with nitrogen atoms directly attached to ring carbon atoms
- M C07D 241/28 · · · · · in which said hetero-bound carbon atoms have double bonds to oxygen, sulfur or nitrogen atoms

WARNING

Group C07D 241/28 is impacted by reclassification into group C07D 241/34.
Groups C07D 241/28 and C07D 241/34 should be considered in order to perform a complete search.

M C07D 241/34

- · · · · (Amino-pyrazine carbonamido) guanidines

WARNING

Group C07D 241/34 is incomplete pending reclassification of documents from group C07D 241/28.
Groups C07D 241/28 and C07D 241/34 should be considered in order to perform a complete search.

Project: N/A (C08F)

- U C08F 230/00** Copolymers of compounds having one or more unsaturated aliphatic radicals, each having only one carbon-to-carbon double bond, and containing phosphorus, selenium, tellurium or a metal (metal salts, e.g. phenolates or alcoholates, see the parent compounds)

NOTE

{In this group, C-Sets are used. The detailed information about the C-Sets construction and the associated syntax rules is present in the Definitions of [C08F](#).}

- U C08F 230/04 • containing a metal
C08F 230/06 • • containing boron

WARNING

Group [C08F 230/06](#) is impacted by reclassification into group [C08F 230/065](#). Groups [C08F 230/06](#) and ~~C08F 230/065~~[C08F 230/065](#) should be considered in order to perform a complete search.

Project: RP0670 (C08F)

- U C08F 2400/00** **Characteristics for processes of polymerization**
- U C08F 2400/02 • Control or adjustment of polymerization parameters
- N C08F 2400/04 • High pressure, i.e. $P > 50 \text{ MPa}$, 500 bars or 7250 psi
- M C08F 2410/00** **Catalyst preparation** *Features related to the catalyst preparation, the catalyst use or to the deactivation of the catalyst*
- U C08F 2410/05 • Transitioning, i.e. transition from one catalyst to another with use of a deactivating agent
- N C08F 2410/06 • Catalyst characterized by its size
- N C08F 2410/07 • Catalyst support treated by an anion, e.g. Cl, F, SO_4^{2-}
- N C08F 2410/08 • Presence of a deactivator
- U C08F 2420/00** **Metallocene catalysts**
- M C08F 2420/05 • Cp or analog where at least one of the carbon ~~atom of the Cp~~*atoms of the coordinating* ring is replaced by a heteroatom
- M C08F 2420/06 • Cp ~~or~~*analog* where at least one of the carbon atoms of the *non-coordinating part of the condensed* ring is replaced by a heteroatom
- N C08F 2420/07 • Heteroatom-substituted Cp, i.e. Cp or analog where at least one of the substituent of the Cp or analog ring is or contains a heteroatom
- N C08F 2420/08 • Heteroatom bridge, i.e. Cp or analog where the bridging atom linking the two Cps or analogs is a heteroatom different from Si
- N C08F 2420/09 • Cyclic bridge, i.e. Cp or analog where the bridging unit linking the two Cps or analogs is part of a cyclic group
- N C08F 2420/10 • Heteroatom-substituted bridge, i.e. Cp or analog where the bridge linking the two Cps or analogs is substituted by at least one group that contains a heteroatom
- N C08F 2420/11 • Non-aromatic cycle-substituted bridge, i.e. Cp or analog where the bridge linking the two Cps or analogs is substituted by a non-aromatic cycle
- N C08F 2420/12 • Long bridge, i.e. Cp or analog where the bridging unit linking the two Cps or analogs is composed of at least two atoms which are not part of a cycle and which are not an ethylene bridge

M	C08F 2500/00	Characteristics or properties of obtained polymerspolyolefins; Use thereof
		<u>NOTE</u>
		{ C08F 2500/01 - C08F 2500/26 C08F 2500/39 groups only are used in C-Sets as subsequent symbol(s) and are not allocated as single symbol(s). The detailed information about the C-Sets construction and the associated syntax rules is present in the Definitions of C08F .}
M	C08F 2500/01	• High molecular weight, <i>e.g. >800,000 Da.</i>
M	C08F 2500/02	• Low molecular weight, <i>e.g. <100,000 Da.</i>
M	C08F 2500/03	• Narrow molecular weight distribution, <i>i.e. Mw/Mn < 3</i>
M	C08F 2500/04	• Broad molecular weight distribution, <i>i.e. Mw/Mn > 6</i>
U	C08F 2500/05	• Bimodal or multimodal molecular weight distribution
N	C08F 2500/055	• <i>Monomodal/unimodal molecular weight distribution</i>
M	C08F 2500/06	• Narrow composition distribution <i>Comonomer distribution, e.g. normal, reverse or narrow</i>
M	C08F 2500/07	• High density, <i>i.e. > 0.95 g/cm³</i>
M	C08F 2500/08	• Low density, <i>i.e. < 0.91 g/cm³</i>
U	C08F 2500/26	• Use as polymer for film forming
N	C08F 2500/27	• <i>Amount of comonomer in wt% or mol%</i>
N	C08F 2500/28	• <i>Internal unsaturations</i>
N	C08F 2500/29	• <i>Terminal unsaturations, e.g. vinyl or vinylidene</i>
N	C08F 2500/30	• <i>Flexural modulus; Elasticity modulus</i>
N	C08F 2500/31	• <i>Impact strength or impact resistance, e.g. Izod, Charpy or notched</i>
N	C08F 2500/32	• <i>Glass transition temperature [T_g]</i>
N	C08F 2500/33	• <i>Crystallisation temperature [T_c]</i>
N	C08F 2500/34	• <i>Melting point [T_m]</i>
N	C08F 2500/35	• <i>Crystallinity, e.g. soluble or insoluble content as determined by the extraction of the polymer with a solvent</i>
N	C08F 2500/36	• <i>Terpolymer with exactly three olefinic monomers</i>
N	C08F 2500/37	• <i>Elution or crystallisation fractionation, e.g. as determined by. TREF or Crystaf</i>
N	C08F 2500/38	• <i>Branching index [g_{vis}], i.e. ratio of the intrinsic viscosity of the branched polymer to the intrinsic viscosity of a linear polymer of equal molecular weight and same composition</i>
N	C08F 2500/39	• <i>Tensile storage modulus E'; Shear storage modulus G'; Tensile loss modulus E"; Shear loss modulus G"; Tensile complex modulus E*; Shear complex modulus G*</i>

Project: RP0663 (C08G)

M	C08G 2101/00	 Foams Manufacture of cellular products
D	C08G 2101/0008	• {flexible} <administratively transferred to C08G 2110/0008 ADD>
D	C08G 2101/0016	• {semi-rigid} <administratively transferred to C08G 2110/0016 ADD>
D	C08G 2101/0025	• {rigid} <administratively transferred to C08G 2110/0025 ADD>

- D C08G 2101/0033 · {having integral skins}
<administratively transferred to [C08G 2110/0033](#) ADD>
- D C08G 2101/0041 · {Having specified density}
<administratively transferred to [C08G 2110/0041](#) ADD>
- D C08G 2101/005 · · {<50kg/m³}
<administratively transferred to [C08G 2110/005](#) ADD>
- D C08G 2101/0058 · · {≥50 and <150kg/m³}
<administratively transferred to [C08G 2110/0058](#) ADD>
- D C08G 2101/0066 · · {≥ 150kg/m³}
<administratively transferred to [C08G 2110/0066](#) ADD>
- D C08G 2101/0075 · {prepared with an isocyanate index of 60 or lower}
<administratively transferred to [C08G 2110/0075](#) ADD>
- D C08G 2101/0083 · {prepared using water as the sole blowing agent}
<administratively transferred to [C08G 2110/0083](#) ADD>
- D C08G 2101/0091 · {Aerogels; Xerogels}
<administratively transferred to [C08G 2110/0091](#) ADD>
- D C08G 2105/00 Oligomerisation**
<administratively transferred to [C08G 2115/00](#) ADD>
- D C08G 2105/02 · to isocyanurate groups
<administratively transferred to [C08G 2115/02](#) ADD>
- D C08G 2105/06 · to carbodiimide or uretone-imine groups
<administratively transferred to [C08G 2115/06](#) ADD>
- N C08G 2110/00 Foam properties**
- N C08G 2110/0008 · flexible
- N C08G 2110/0016 · semi-rigid
- N C08G 2110/0025 · rigid
- N C08G 2110/0033 · having integral skins
- N C08G 2110/0041 · having specified density
- N C08G 2110/005 · · < 50kg/m³
- N C08G 2110/0058 · · ≥50 and <150kg/m³
- N C08G 2110/0066 · · ≥ 150kg/m³
- N C08G 2110/0075 · prepared with an isocyanate index of 60 or lower
- N C08G 2110/0083 · prepared using water as the sole blowing agent
- N C08G 2110/0091 · Aerogels; Xerogels
- N C08G 2115/00 Oligomerisation**
- N C08G 2115/02 · to isocyanurate groups
- N C08G 2115/06 · to carbodiimide or uretone-imine groups

Project: MP0427 (C08J)

M C08J 9/00 Working-up of macromolecular substances to porous or cellular articles or materials; After-treatment thereof (mechanical aspects [B29C 44/00](#); foamed polymeric products of isocyanates or isothiocyanates characterised by the monomers or catalysts used [C08G 18/00](#))

NOTE

In groups [C08J 9/16](#) - [C08J 9/22](#), the following term is used with the meaning indicated:

- "expandable" includes also expanding, pre-expanded or expanded.
- {This Note corresponds to IPC Note (1) relating to [C08J 9/16](#) - [C08J 9/22](#).}*

U C08J 9/04 • using blowing gases generated by a previously added blowing agent

U C08J 9/12 • • by a physical blowing agent

U C08J 9/14 • • • organic

M C08J 9/149 • • • • {Mixtures of blowing agents covered by more than one of the groups [C08J 9/141](#) - [C08J 9/143](#)}

NOTE

~~In groups [C08J 9/16](#) - [C08J 9/232](#), the following term is used with the meaning indicated:~~

- ~~• "expandable" includes also expanding, pre-expanded or expanded~~

Project: RP0418 (C08K)

M C08K Use of inorganic or non-macromolecular organic substances as compounding ingredients (paints, inks, varnishes, dyes, polishes, adhesives [C09](#))

NOTES

1. In this subclass, in the absence of an indication to the contrary, an ingredient is classified in the last appropriate place.
2. In this subclass:
 - a mixture of ingredients is classified in the most indented group covering all the essential ingredients of the mixture, e.g.:
 - a mixture of a monohydric and a polyhydric alcohol [C08K 5/05](#)
 - a mixture of two polyhydric alcohols [C08K 5/053](#)
 - a mixture of an alcohol and an ether [C08K 5/04](#)
 - a mixture of an ether and an amine [C08K 5/00](#)
 - a mixture of an amine and a metal [C08K 13/02](#)

{This note is applied only for mixtures with more than three essential ingredients. Mixtures with two or three ingredients are classified in the appropriate groups of [C08K](#), e.g. a mixture of Al₂O₃, an ether and an amine is classified in [C08K 3/22](#), [C08K 5/06](#) and [C08K 5/17](#)}
 - ammonium salts are classified in the same way as metal salts
3. In this subclass, any ingredient of a mixture which is not identified by the classification according to Note (2) above, and the use of which is determined to be novel and non-obvious, must also be classified in this subclass according to Note (1). The ingredient can be either a single compound or a composition in itself. ".{This IPC Note does not apply in CPC}
4. Any ingredient of a mixture which is not identified by the classification according to Notes (2) or (3) above, and which is considered to represent information of interest for search, may also be classified in this subclass according to Note (1). This can, for example, be the case when it is considered of interest to enable searching of mixtures using a combination of classification

symbols. Such non-obligatory classification should be given as "additional information". {This IPC Note does not apply in CPC}

5. {In this subclass, combination sets [C-Sets] are used. The detailed information about the C-Sets construction and the associated syntax rules is present in the definitions of [C08K](#)}

6. {In this subclass, organic acid salts, alcoholates, phenolates or mercaptides are classified in the groups or subgroups of the parent compounds}

WARNING

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

[C08K 5/5445](#) covered by [C08K 5/544](#)

2. 1. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

U C08K 5/00

Use of organic ingredients

NOTE

In this group, C-Sets are used. The detailed information about the C-Sets construction and the associated syntax rules is present in the Definitions of [C08K](#).

U C08K 5/54

• Silicon-containing compounds {{[C08K 5/0091](#) takes precedence}}

C C08K 5/544

• • containing nitrogen

WARNING

Group [C08K 5/544](#) is impacted by reclassification into group [C08K 5/5445](#). Groups [C08K 5/544](#) and [C08K 5/5445](#) should be considered in order to perform a complete search.

D C08K 5/5442

• • • {containing nitrogen in a heterocyclic ring}
<administratively transferred to [C08K 5/5477](#)>

N C08K 5/5445

• • • containing at least one Si-N bond

WARNING

Group [C08K 5/5445](#) is incomplete pending reclassification of documents from group [C08K 5/544](#). Groups [C08K 5/544](#) and [C08K 5/5445](#) should be considered in order to perform a complete search.

M C08K 5/5455

• • • containing at least one $\begin{array}{c} \square \\ | \\ >N-C- \end{array}$ group {{[C08K 5/5442](#) takes precedence}}

M C08K 5/5465

• • • containing at least one C=N bond {{[C08K 5/5442](#) takes precedence}}

M C08K 5/5475

• • • containing at least one C-N {triple} bond {=N bond {[C08K 5/5442](#) takes precedence}}

N C08K 5/5477

• • • {containing nitrogen in a heterocyclic ring}

M C08K 5/548

• • containing sulfur {{[C08K 5/5442](#) [C08K 5/5477](#) takes precedence}}

Project: MP0427 (C08L)

M C08L

COMPOSITIONS OF MACROMOLECULAR COMPOUNDS (compositions based on polymerisable monomers [C08F](#), [C08G](#); artificial filaments or fibres [D01F](#); textile treating compositions [D06](#))

NOTES

1. In this subclass, the following term is used with the meaning indicated:
• Rubber includes:
a. natural or conjugated diene rubbers;

- b. rubber in general (for a specific rubber, other than a natural rubber or a conjugated diene rubber, see the group provided for compositions of such macromolecular compounds).
2. In this subclass:
- compositions are classified according to the mutual proportions by weight of only the macromolecular constituents;
 - compositions are classified according to the macromolecular constituent or constituents present in the highest proportion: if all these constituents are present in equal proportions the composition is classified according to each of these constituents.
3. Any macromolecular constituent of a composition which is not identified by the classification according to Note (2) above, and the use of which is determined to be novel and non-obvious, must also be classified in this subclass. For example, a composition containing 80 parts polyethene and 20 parts polyvinyl chloride is classified in both groups [C08L 23/06](#) and [C08L 27/06](#), if the use of polyvinyl chloride is determined to be novel and non-obvious. {This IPC Note does not apply in CPC}
4. Any macromolecular constituent of a composition which is not identified by the classification according to Notes (2) or (3) above, and which is considered to represent information of interest for search, may also be classified in this subclass. This can, for example, be the case when it is considered of interest to enable searching of compositions using a combination of classification symbols. Such non-obligatory classification should be given as "additional information". {This IPC Note does not apply in CPC}
- 5. In groups [C08L 65/00](#) - [C08L 85/00](#), in the absence of an indication to the contrary, compositions of macromolecular compounds obtained by reactions forming two different linkages in the main chain are classified only according to the linkage present in excess. {This Note corresponds to IPC Note (1) relating to [C08L 65/00](#) - [C08L 85/00](#).}*
- ~~5-6.~~ {Compositions classified in [C08K](#) according to note 3 of [C08K](#), are not classified in [C08L](#).}
- ~~6-7.~~ {In this subclass, combination sets [C-Sets] are used. The detailed information about the C-Sets construction and the associated syntax rules is present in the definitions of [C08L](#)}
- ~~7-8.~~ {[C08L 2666/00](#) indexing codes were used for C-Sets classification of documents before April 2012. In addition to note (6), for searching documents classified before April 2012, see also [C08L 2666/00](#) in the definitions of [C08L](#).}

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
- | | | |
|---|------------|----------------------------|
| C08L 61/08 - C08L 61/10 | covered by | C08L 61/06 |
| C08L 63/02 | covered by | C08L 63/00 |
| C08L 83/05 | covered by | C08L 83/04 |
| C08L 83/07 | covered by | C08L 83/04 |
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

U C08L 63/00

Compositions of epoxy resins; Compositions of derivatives of epoxy resins

NOTE

In this group, C-Sets are used.
The detailed information about the C-Sets construction and the associated syntax rules is present in the Definitions of [C08L](#).

M C08L 63/10

- Epoxy resins modified by unsaturated compounds

NOTE

~~In groups C08L 65/00 – C08L 85/00, in the absence of an indication to the contrary, compositions of macromolecular compounds, obtained by reactions forming two different linkages in the main chain, are classified only according to the linkage present in excess~~

Project: MP0427 (C09D)

M C09D

COATING COMPOSITIONS, e.g. PAINTS, VARNISHES OR LACQUERS; FILLING PASTES; CHEMICAL PAINT OR INK REMOVERS; INKS; CORRECTING FLUIDS; WOODSTAINS; PASTES OR SOLIDS FOR COLOURING OR PRINTING; USE OF MATERIALS THEREFOR (cosmetics [A61K](#); processes for applying liquids or other fluent materials to surfaces, in general, [B05D](#); staining wood [B27K 5/02](#); glazes or vitreous enamels [C03C](#); natural resins, French polish, drying-oils, driers, turpentine, per se, [C09F](#); polishing compositions other than French polish, ski waxes [C09G](#); adhesives or use of materials as adhesives [C09J](#); materials for sealing or packing joints or covers [C09K 3/10](#); materials for stopping leaks [C09K 3/12](#); processes for the electrolytic or electrophoretic production of coatings [C25D](#))

NOTES

1. In this subclass, the following terms or expressions are used with the meanings indicated:

- "use of materials for coating compositions" means the use of known or new polymers or products;
- "rubber" includes:
 - a. natural or conjugated diene rubbers;
 - b. rubber in general (for a specific rubber, other than a natural rubber or a conjugated diene rubber, see the group provided for coating compositions based on such macromolecular compounds);
 - *"based on" is defined by means of Note (3), below;*
 - *"filling pastes" means materials used to fill up the holes or cavities of a substrate in order to smooth its surface prior to coating.*
 - c. ~~based on" is defined by means of Note 3, below;~~
 - d. ~~filling pastes" means materials used to fill up the holes or cavities of a substrate in order to smooth its surface prior to coating.~~

2. In this subclass, coating compositions, containing specific **organic** macromolecular substances are classified only according to the macromolecular substance, non-macromolecular substances not being taken into account.

Example: a coating composition containing polyethene and amino-propyltrimethoxysilane is classified in group [C09D 123/06](#).

However, coating compositions containing combinations of organic non-macromolecular compounds having at least one polymerisable carbon-to-carbon unsaturated bond with prepolymers or polymers other than unsaturated polymers of groups [C09D 159/00](#) - [C09D 187/00](#) are classified according to the unsaturated non-macromolecular component in group [C09D 4/00](#).

Example: a coating composition containing polyethene and styrene monomer is classified in group ~~C09D 4/06~~[C09D 4/00](#).

Aspects relating to the physical nature of the coating compositions or to the effects produced, as defined in group [C09D 5/00](#), if clearly and explicitly stated, are also classified in this subclass.

Coating compositions characterised by other features, e.g. additives, are classified in group [C09D 7/00](#), unless the macromolecular constituent is specified.

3. In this subclass, coating compositions comprising two or more macromolecular constituents are classified according to the macromolecular constituent or constituents present in the highest proportion, i.e. the constituent on which the composition is based. If the composition is based on two or more constituents, present in equal proportions, the composition is classified according to each of these constituents.

Examples:

~~A coating composition containing 80 parts of polyethene and 20 parts of polyvinylchloride is classified in group [C09D 123/06](#);~~

~~A coating composition containing 40 parts of polyethene and 40 parts of polyvinylchloride is classified in groups~~ *Example: a coating composition containing 80 parts of polyethene and 20 parts of polyvinylchloride is classified in group [C09D 123/06](#). A coating composition containing 40 parts of polyethene and 40 parts of polyvinylchloride is classified in groups [C09D 123/06](#) and [C09D 127/06](#).*

4. In groups [C09D 101/00](#) - [C09D 201/00](#), any macromolecular constituent of a coating composition which is not identified by the classification according to Note (3) after the title of subclass [C09D](#), and the use of which is determined to be novel and non-obvious, must also be classified in a group chosen from groups [C09D 101/00](#) - [C09D 201/00](#).

{This Note corresponds to IPC Note (1) relating to [C09D 101/00](#) - [C09D 201/00](#).}

5. Any macromolecular constituent of a coating composition which is not identified by the classification according to Note (3) after the title of subclass [C09D](#) or Note (1) above, and which is considered to represent information of interest for search, may also be classified in a group chosen from groups [C09D 101/00](#) - [C09D 201/00](#). This can for example be the case when it is considered of interest to enable searching of coating compositions using a combination of classification symbols. Such non-obligatory classification should be given as "additional information." {This Note corresponds to IPC Note (2) relating to [C09D 101/00](#) - [C09D 201/00](#).}

6. In groups [C09D 165/00](#) - [C09D 185/00](#), in the absence of an indication to the contrary, coating compositions based on macromolecular compounds obtained by reactions forming two different linkages in the main chain are classified only according to the linkage present in excess.

{This Note corresponds to IPC Note (1) relating to [C09D 165/00](#) - [C09D 185/00](#).}

~~4.7.~~ -{In this subclass, combination sets [C-Sets] are used. Detailed information about the ~~C-Sets~~ *CSets* construction and the associated syntax rules is found in the definitions for [C09D](#).}

~~5.8.~~ -{In addition to Note (4) above [C08L 2666/00](#) indexing codes were used for C-Sets classification of documents before April 2012. See C-Sets Search Rules in [C08L](#), in [C09D](#), or in [C09J](#) Definitions.}

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

C09D 4/02	covered by	C09D 4/00
C09D 4/04	covered by	C09D 4/00
C09D 5/25	covered by	H01B 3/30
C09D 5/33	covered by	C09D 5/004
C09D 5/46	covered by	C09D 5/03
C09D 161/08 , C09D 161/10	covered by	C09D 161/06
C09D 163/02	covered by	C09D 163/00
C09D 183/05	covered by	C09D 183/04

C09D 183/07 covered by [C09D 183/04](#), [C09D 183/06](#)

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

U C09D 163/00 Coating compositions based on epoxy resins; Coating compositions based on derivatives of epoxy resins

NOTE

{In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules are found in the Definitions of [C09D](#)}

M C09D 163/10 · Epoxy resins modified by unsaturated compounds

NOTE

~~In groups C09D 165/00 - C09D 185/00, in the absence of an indication to the contrary, adhesives based on macromolecular compounds obtained by reactions forming two different linkages in the main chain are classified according to the linkage present in excess.~~

Project: MP0496 (C09G)

M C09G **POLISHING COMPOSITIONS ~~OTHER THAN FRENCH POLISH~~ (*French polish C09F 11/00*); SKI WAXES**

Project: MP0427 (C09J)

M C09J **ADHESIVES; NON-MECHANICAL ASPECTS OF ADHESIVE PROCESSES IN GENERAL; ADHESIVE PROCESSES NOT PROVIDED FOR ELSEWHERE; USE OF MATERIAL AS ADHESIVES (surgical adhesives [A61L 24/00](#); adhesives on the basis of non- specified organic macromolecular compounds used as bonding agents in layered products [B32B](#); organic labelling fabrics or comparable materials or articles with deformable surface using adhesives and thermo-activatable adhesives respectively [B65C 5/02](#), [B65C 5/04](#); preparation of glue or gelatine [C09H](#); adhesive labels, tag tickets or similar identification of indication means [G09F 3/10](#))**

NOTES

1. In this subclass, the following terms or expressions are used with the meanings indicated:

2. "use of materials as adhesives" means the use of known or new polymers or products;

- "rubber" includes:
 - a. natural or conjugated diene rubbers;
 - b. rubber in general (for a specific rubber, other than a natural rubber or a conjugated diene rubber, see the group provided for adhesives based on such macromolecular compounds);
- "based on" is defined by means of Note 3, below.

3. In this subclass, adhesives containing specific macromolecular substances are classified only according to the macromolecular substance, non-macromolecular substances not being taken into account.

- Example: an adhesive containing polyethene and amino-propyltrimethoxysilane is classified in group [C09J 123/06](#).
- However, adhesives containing combinations of organic non-macromolecular compounds having at least one polymerisable carbon-to-carbon unsaturated bond with prepolymers or polymers other than unsaturated polymers of groups [C09J 159/00](#) - [C09J 187/00](#) are classified according to the unsaturated non-macromolecular component in group [C09J 4/00](#).

- Example: an adhesive containing polyethene and styrene monomer is classified in group [C09J 4/06](#).
- Aspects relating to the physical nature of the adhesives or to the effects produced, as defined in group [C09J 9/00](#), if clearly and explicitly stated, are also classified in this subclass.
- Adhesives characterised by other features, e.g. additives, are classified in group [C09J 11/00](#), unless the macromolecular constituent is specified.

4. In this subclass, adhesives comprising two or more macromolecular constituents are classified according to the macromolecular constituent or constituents present in the highest proportion, i.e. the constituent on which the adhesive is based. If the adhesive is based on two or more constituents, present in equal proportions, the adhesive is classified according to each of these constituents.

- Examples: An adhesive containing 80 parts of polyethene and 20 parts of polyvinylchloride is classified in group [C09J 123/06](#); a n adhesive containing 40 parts of polyethene and 40 parts of polyvinylchloride is classified in groups [C09J 123/06](#) and [C09J 127/06](#).

5. Any macromolecular constituent of an adhesive composition which is not identified by the classification according to Note (3) after the title of subclass [C09J](#) or Note (1) above, and which is considered to represent information of interest for search, may also be classified in a group chosen from groups [C09J 101/00](#) - [C09J 201/00](#). This can, for example, be the case when it is considered of interest to enable searching of adhesive compositions using a combination of classification symbols. Such non-obligatory classification should be given as "additional information". {This Note corresponds to IPC Note (2) relating to [C09J 101/00](#) - [C09J 201/00](#).}

6. In groups [C09J 165/00](#) - [C09J 185/00](#), in the absence of an indication to the contrary, adhesives based on macromolecular compounds obtained by reactions forming two different linkages in the main chain are classified only according to the linkage present in excess. {This Note corresponds to IPC Note (1) relating to [C09J 165/00](#) - [C09J 185/00](#).}

~~5-7.~~ {In this subclass, combination sets [C-Sets] are used. The detailed information about the C-Sets construction and the associated syntax rules are found in the Definitions of [C09J](#) }

~~6-8.~~ {In addition to note (5), [C08L 2666/00](#) indexing codes were used for C-Sets classification of documents before April 2012 (see also C-Sets search rules in [C08L](#), [C09D](#), in [C09J](#) definition) }

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

C09J 4/02	covered by	C09J 4/00
C09J 4/04	covered by	C09J 4/00
C09J 161/08 - C09J 161/10	covered by	C09J 161/06
C09J 163/02	covered by	C09J 163/00
C09J 183/05	covered by	C09J 183/04
C09J 183/07	covered by	C09J 183/04

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: MP0498 (C09J)**M C09J 7/00****Adhesives in the form of films or foils**NOTE

~~1. In this main group, multi-aspect classification is applied, so that subject matter characterised by aspects covered by more than one of its subgroups should be classified in each of those groups.~~

~~2. 1.~~ {In this group, the indexing codes [C09J 2203/00](#) - [C09J 2499/008](#) are used.}

WARNING

Group [C09J 7/00](#) is impacted by reclassification into group [C09J 7/10](#). Groups [C09J 7/00](#) and [C09J 7/10](#) should be considered in order to perform a complete search.

Project: MP0427 (C09J)**U C09J 163/00****Adhesives based on epoxy resins; Adhesives based on derivatives of epoxy resins**NOTE

{In this group, C-Sets are used for classification. The detailed information about the C-Sets construction and the associated syntax rules are found in the Definitions of [C09J](#)}

M C09J 163/10

- Epoxy resins modified by unsaturated compounds

NOTE

~~In groups [C09J 165/00](#) - [C09J 185/00](#), in the absence of an indication to the contrary, adhesives based on macromolecular compounds obtained by reactions forming two different linkages in the main chain are classified according to the linkage present in excess.~~

Project: RP0360 (C09K)**U C09K 11/00****Luminescent, e.g. electroluminescent, chemiluminescent materials****U C09K 11/02**

- Use of particular materials as binders, particle coatings or suspension media therefor

M C09K 11/025

- ~~{Use of non-luminescent materials other than binders~~ *non-luminescent particle coatings or suspension media*}

M C09K 11/06

- containing organic luminescent materials

NOTE

~~{When classifying in groups *this* [C09K 11/06](#) and *group it* [C09K 11/07](#) the chemical nature of the luminescent material can be further indexed by using indexing codes chosen from *is desirable to add the indexing codes of groups* [C09K 2211/00](#) - [C09K 2211/188](#) relating to the chemical nature of the luminescent material}~~

U C09K 11/08

- containing inorganic luminescent materials

NOTES

1. In groups [C09K 11/08](#) - [C09K 11/897](#), in the absence of an indication to the contrary, classification of materials is made in the last appropriate place
2. { In this group, magnesium is considered as an alkaline earth metal }

WARNING

Groups [C09K 11/0805](#) - [C09K 11/0894](#), with the exception of [C09K 11/0883](#) for classifying nitrides, are no longer used for classification of new documents.

The backlog of this group is being continuously reclassified to subgroups
[C09K 11/54](#) - [C09K 11/897](#)

- U C09K 11/0805 . . {Chalcogenides}
- M C09K 11/0811 . . . {with ~~Zn or Cd~~ *zinc or cadmium*}
- M C09K 11/0827 . . {Halogenides ([C09K 11/0805](#); ~~C09K 11/0838 - C09K 11/0894~~ *take takes* precedence)}
- U C09K 11/61 . . containing fluorine, chlorine, bromine, iodine or unspecified halogen elements
- M C09K 11/615 . . . {Halogenides (~~C09K 11/617 and C09K 11/618~~ *take precedence*)}
- U C09K 11/63 . . containing boron
- M C09K 11/632 . . . {Halogenides (~~C09K 11/636 and C09K 11/638~~ *take precedence*)}
- U C09K 11/64 . . containing aluminium
- M C09K 11/644 . . . {Halogenides ([C09K 11/641](#); ~~C09K 11/646 - C09K 11/648~~ *take takes* precedence)}
- U C09K 11/66 . . containing germanium, tin or lead
- M C09K 11/664 . . . {Halogenides ([C09K 11/661](#); ~~C09K 11/666 - C09K 11/668~~ *take takes* precedence)}
- U C09K 11/67 . . containing refractory metals
- M C09K 11/674 . . . {Halogenides ([C09K 11/671](#); ~~C09K 11/676 - C09K 11/679~~ *take takes* precedence)}
- U C09K 11/70 . . containing phosphorus
- U C09K 11/701 . . . {Chalcogenides}
- M C09K 11/703 {with zinc ~~and/or~~ *and/or* cadmium}
- M C09K 11/705 . . . {Halogenides ([C09K 11/701](#); ~~C09K 11/706 and C09K 11/708~~ *take takes* precedence)}
- U C09K 11/71 . . . also containing alkaline earth metals
- M C09K 11/712 {Halogenides (~~C09K 11/717~~ *takes precedence*)}
- U C09K 11/74 . . containing arsenic, antimony or bismuth
- M C09K 11/7428 . . . {Halogenides ([C09K 11/7407](#); ~~C09K 11/7442 - C09K 11/7492~~ *take takes* precedence)}
- U C09K 11/75 . . . containing antimony
- M C09K 11/755 {Halogenides ([C09K 11/751](#); ~~C09K 11/757 and C09K 11/758~~ *take takes* precedence)}
- U C09K 11/77 . . containing rare earth metals
- U C09K 11/7701 . . . {Chalcogenides}
- U C09K 11/7703 {with alkaline earth metals}
- M C09K 11/7704 . . . {Halogenides ([C09K 11/7701](#); ~~C09K 11/7706 - C09K 11/7714~~ *take takes* precedence)}
- C C09K 11/7706 . . . {Aluminates}; ~~Silicates}~~

WARNING

Group [C09K 11/7706](#) is impacted by reclassification into groups [C09K 11/77062](#) - [C09K 11/77068](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N C09K 11/77062 . . . {Silicates}

WARNING

Group [C09K 11/77062](#) is incomplete pending reclassification of documents from group [C09K 11/7706](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N C09K 11/77064
 - . . . {Aluminosilicates}
 - WARNING
 - Group [C09K 11/77064](#) is incomplete pending reclassification of documents from group [C09K 11/7706](#).
 - All groups listed in this Warning should be considered in order to perform a complete search.*

- N C09K 11/77066
 - . . . {Aluminium Nitrides or Aluminium Oxynitrides}
 - WARNING
 - Group [C09K 11/77066](#) is incomplete pending reclassification of documents from group [C09K 11/7706](#).
 - All groups listed in this Warning should be considered in order to perform a complete search.*

- N C09K 11/77067
 - . . . {Silicon Nitrides or Silicon Oxynitrides}
 - WARNING
 - Group [C09K 11/77067](#) is incomplete pending reclassification of documents from group [C09K 11/7706](#).
 - All groups listed in this Warning should be considered in order to perform a complete search.*

- N C09K 11/77068
 - . . . {Silicon Aluminium Nitrides or Silicon Aluminium Oxynitrides}
 - WARNING
 - Group [C09K 11/77068](#) is incomplete pending reclassification of documents from group [C09K 11/7706](#).
 - All groups listed in this Warning should be considered in order to perform a complete search.*

- U C09K 11/7715
 - . . . {containing cerium}
- U C09K 11/7716
 - {Chalcogenides}
- U C09K 11/7718
 - {with alkaline earth metals}
- M C09K 11/7719
 - {Halogenides ([C09K 11/7716](#); ~~C09K 11/7721~~ - ~~C09K 11/7727~~ take takes precedence)}
- C C09K 11/7721
 - {Aluminates}; ~~Silicates~~
 - WARNING
 - Group [C09K 11/7721](#) is impacted by reclassification into groups [C09K 11/77212](#) - [C09K 11/77218](#).
 - All groups listed in this Warning should be considered in order to perform a complete search.*

- N C09K 11/77212
 - {Silicates}
 - WARNING
 - Group [C09K 11/77212](#) is incomplete pending reclassification of documents from group [C09K 11/7721](#).
 - All groups listed in this Warning should be considered in order to perform a complete search.*

- N C09K 11/77214
 - {Aluminosilicates}
 - WARNING
 - Group [C09K 11/77214](#) is incomplete pending reclassification of documents from group [C09K 11/7721](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N C09K 11/77216 . . . {Aluminium Nitrides or Aluminium Oxynitrides}
WARNING
Group [C09K 11/77216](#) is incomplete pending reclassification of documents from group [C09K 11/7721](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N C09K 11/77217 . . . {Silicon Nitrides or Silicon Oxynitrides}
WARNING
Group [C09K 11/77217](#) is incomplete pending reclassification of documents from group [C09K 11/7721](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N C09K 11/77218 . . . {Silicon Aluminium Nitrides or Silicon Aluminium Oxynitrides}
WARNING
Group [C09K 11/77218](#) is incomplete pending reclassification of documents from group [C09K 11/7721](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- M C09K 11/7728 . . . {**comprising****containing** europium}
U C09K 11/7729 . . . {Chalcogenides}
M C09K 11/773 . . . {with zinc **and****or** cadmium}
C C09K 11/7734 . . . {Aluminates}; **Silicates}**
WARNING
Group [C09K 11/7734](#) is impacted by reclassification into groups [C09K 11/77342](#) - [C09K 11/77348](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N C09K 11/77342 . . . {Silicates}
WARNING
Group [C09K 11/77342](#) is incomplete pending reclassification of documents from group [C09K 11/7734](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N C09K 11/77344 . . . {Aluminosilicates}
WARNING
Group [C09K 11/77344](#) is incomplete pending reclassification of documents from group [C09K 11/7734](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N C09K 11/77346 . . . {Aluminium Nitrides or Aluminium Oxynitrides}
WARNING
Group [C09K 11/77346](#) is incomplete pending reclassification of documents from group [C09K 11/7734](#).
All groups listed in this Warning should be considered in order to perform a complete search.

- N C09K 11/77347 {Silicon Nitrides or Silicon Oxynitrides}
WARNING
 Group [C09K 11/77347](#) is incomplete pending reclassification of documents from group [C09K 11/7734](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N C09K 11/77348 {Silicon Aluminium Nitrides or Silicon Aluminium Oxynitrides}
WARNING
 Group [C09K 11/77348](#) is incomplete pending reclassification of documents from group [C09K 11/7734](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- U C09K 11/7743 . . . {containing terbium}
- U C09K 11/7744 {Chalcogenides}
- U C09K 11/7746 {with alkaline earth metals}
- M C09K 11/7747 {Halogenides ([C09K 11/7744](#); ~~C09K 11/7749~~ – ~~C09K 11/7755~~ take takes precedence)}
- C C09K 11/7749 {Aluminates}; ~~Silicates}~~
WARNING
 Group [C09K 11/7749](#) is impacted by reclassification into groups [C09K 11/77492](#) - [C09K 11/77498](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N C09K 11/77492 {Silicates}
WARNING
 Group [C09K 11/77492](#) is incomplete pending reclassification of documents from group [C09K 11/7749](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N C09K 11/77494 {Aluminosilicates}
WARNING
 Group [C09K 11/77494](#) is incomplete pending reclassification of documents from group [C09K 11/7749](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N C09K 11/77496 {Aluminium Nitrides or Aluminium Oxynitrides}
WARNING
 Group [C09K 11/77496](#) is incomplete pending reclassification of documents from group [C09K 11/7749](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N C09K 11/77497 {Silicon Nitrides or Silicon Oxynitrides}
WARNING
 Group [C09K 11/77497](#) is incomplete pending reclassification of documents from group [C09K 11/7749](#).
 All groups listed in this Warning should be considered in order to perform a complete search.

- N C09K 11/77498 {Silicon Aluminium Nitrides or Silicon Aluminium Oxynitrides}
WARNING
 Group [C09K 11/77498](#) is incomplete pending reclassification of documents from group [C09K 11/7749](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- U C09K 11/7756 . . . {containing neodymium}
- M C09K 11/7757 {Halogenides (~~C09K 11/7758 takes precedence~~)}
- U C09K 11/7759 . . . {containing samarium}
- M C09K 11/7762 {Halogenides ([C09K 11/776](#); ~~C09K 11/7764 and C09K 11/7765 take~~[takes](#) precedence)}
- M C09K 11/7766 . . . {containing two or more rare earth metals (~~containing europium C09K 11/7783~~)}
- M C09K 11/7772 {Halogenides ([C09K 11/7767](#); ~~C09K 11/7774 - C09K 11/7782 take~~[takes](#) precedence)}
- C C09K 11/7774 {Aluminates}; ~~Silicates~~
WARNING
 Group [C09K 11/7774](#) is impacted by reclassification into groups [C09K 11/77742](#) - [C09K 11/77748](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N C09K 11/77742 {Silicates}
WARNING
 Group [C09K 11/77742](#) is incomplete pending reclassification of documents from group [C09K 11/7774](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N C09K 11/77744 {Aluminosilicates}
WARNING
 Group [C09K 11/77744](#) is incomplete pending reclassification of documents from group [C09K 11/7774](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N C09K 11/77746 {Aluminium Nitrides or Aluminium Oxynitrides}
WARNING
 Group [C09K 11/77746](#) is incomplete pending reclassification of documents from group [C09K 11/7774](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N C09K 11/77747 {Silicon Nitrides or Silicon Oxynitrides}
WARNING
 Group [C09K 11/77747](#) is incomplete pending reclassification of documents from group [C09K 11/7774](#).
 All groups listed in this Warning should be considered in order to perform a complete search.

- N C09K 11/77748 {Silicon Aluminium Nitrides or Silicon Aluminium Oxynitrides}
WARNING
 Group [C09K 11/77748](#) is incomplete pending reclassification of documents from group [C09K 11/7774](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- U C09K 11/77783 {containing two or more rare earth metals one of which being europium}
- U C09K 11/77784 {Chalcogenides}
- M C09K 11/77785 {with zinc **and** or cadmium}
- M C09K 11/77787 {Oxides ([C09K 11/77785](#); ~~C09K 11/77786~~ **take** [takes](#) precedence)}
- M C09K 11/7779 {Halogenides ([C09K 11/77784](#); ~~C09K 11/77792~~–~~C09K 11/77798~~ **take** [takes](#) precedence)}
- U C09K 11/7791 {with alkali or alkaline earth metals}
- C C09K 11/7792 {Aluminates}; ~~Silicates}~~
- WARNING
 Group [C09K 11/7792](#) is impacted by reclassification into groups [C09K 11/77922](#) - [C09K 11/77928](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N C09K 11/77922 {Silicates}
WARNING
 Group [C09K 11/77922](#) is incomplete pending reclassification of documents from group [C09K 11/7792](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N C09K 11/77924 {Aluminosilicates}
WARNING
 Group [C09K 11/77924](#) is incomplete pending reclassification of documents from group [C09K 11/7792](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N C09K 11/77926 {Aluminium Nitrides or Aluminium Oxynitrides}
WARNING
 Group [C09K 11/77926](#) is incomplete pending reclassification of documents from group [C09K 11/7792](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N C09K 11/77927 {Silicon Nitrides or Silicon Oxynitrides}
WARNING
 Group [C09K 11/77927](#) is incomplete pending reclassification of documents from group [C09K 11/7792](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N C09K 11/77928 {Silicon Aluminium Nitrides or Silicon Aluminium Oxynitrides}
WARNING
 Group [C09K 11/77928](#) is incomplete pending reclassification of documents from group [C09K 11/7792](#).

All groups listed in this Warning should be considered in order to perform a complete search.

U C09K 2211/00 Chemical nature of organic luminescent or tenebrescent compounds

U C09K 2211/10 · Non-macromolecular compounds

U C09K 2211/1018 · · Heterocyclic compounds

M C09K 2211/1025 · · · characterised by ligands

NOTE

In groups C09K 2211/1025 – C09K 2211/1074 indexing is made in the last appropriate place

U C09K 2211/14 · Macromolecular compounds

M C09K 2211/1441 · · Heterocyclic

NOTE

In groups C09K 2211/1441 – C09K 2211/1483 indexing is made in the last appropriate place

Project: MP0427 (C10L)

M C10L FUELS NOT OTHERWISE PROVIDED FOR (fuels for generating pressure gas, e.g. for rockets [C06D 5/00](#); candles [C11C](#); nuclear fuel [G21C 3/00](#)); NATURAL GAS; SYNTHETIC NATURAL GAS OBTAINED BY PROCESSES NOT COVERED BY SUBCLASSES [C10G](#), [C10K](#); LIQUEFIED PETROLEUM GAS; ADDING MATERIALS TO FUELS OR FIRES TO REDUCE SMOKE OR UNDESIRABLE DEPOSITS OR TO FACILITATE SOOT REMOVAL; FIRELIGHTERS

NOTE

{In subclass [C10L](#) it is desirable to give indexing codes for information about components of solid, liquid and gaseous fuels or firelighters, their additives and constituents and their preparation and use. The indexing codes are taken from [C10L 2200/00](#) - [C10L 2290/60](#).}

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

M C10L 1/00 Liquid carbonaceous fuels

NOTES

1. In groups [C10L 1/12](#) - [C10L 1/14](#), the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, a compound is classified in the last appropriate place.

{This Note corresponds to IPC Note (1) relating to [C10L 1/12](#) - [C10L 1/14](#).}

2. If an additive is a mixture of compounds, classification is made for each compound of interest. {This Note corresponds to IPC Note (2) relating to [C10L 1/12](#) - [C10L 1/14](#).}

3. A metal salt or an ammonium salt of a compound is classified as that compound, e.g. a chromium sulfonate is classified as a sulfonate in group [C10L 1/24](#) and not in group [C10L 1/30](#).

{This Note corresponds to IPC Note (3) relating to C10L 1/12 - C10L 1/14.}

4. {When classifying in this group, it is desirable to classify the individual additional components using Combination Sets with symbols chosen from groups C10L 1/12 - C10L 1/308.}

5. {Mixtures of additives are classified in the corresponding main group. Individual additives can be classified using Combination Sets according to the Note above.}

6. {When several alternatives for the same individual additive are mentioned, e.g. as a Markush-formula, classification may be done in the corresponding main group only, the alternatives being classified using Combination Sets, according to the Note above.}

7. {Documents classified until April 2003, have been classified with Combination Sets as explained in the Notes above, however using symbols chosen from groups C10L 1/10 - C10L 1/308.}

U C10L 1/10

• containing additives

M C10L 1/106

• • {mixtures of inorganic compounds with organic macromolecular compounds}

NOTES

1. In groups C10L 1/12 - C10L 1/30{C10L 1/308}, in the absence of an indication to the contrary, a compound is always classified in the last appropriate place.

2. A metal salt or an ammonium salt of a compound is classified as that compound, e.g. a chromium sulfonate is classified as a sulfonate in group C10L 1/24 and not in group C10L 1/30.

3. When classifying in this group, it is desirable to classify the individual additional components using Combination Sets with symbols chosen from groups C10L 1/12 - C10L 1/308

4. Mixtures of additives are classified in the corresponding main group. Individual additives can be classified using Combination Sets according to the Note above

5. When several alternatives for the same individual additive are mentioned, e.g. as a Markush-formula, classification may be done in the corresponding main group only, the alternatives being classified using Combination Sets, according to the Note above.

6. Documents classified until April 2003, have been classified with Combination Sets as explained in the Notes above, however using symbols chosen from groups C10L 1/10 - C10L 1/308.

Project: MP0484 (C11B)

M C11B

PRODUCING (~~PRESSING, EXTRACTION~~), REFINING AND PRESERVING FATS, FATTY SUBSTANCES (e.g. LANOLIN), FATTY OILS AND WAXES, INCLUDING EXTRACTION FROM WASTE MATERIALS, e.g. BY PRESSING RAW MATERIALS OR BY EXTRACTION FROM WASTE MATERIALS, REFINING OR PRESERVING FATS, FATTY SUBSTANCES, e.g. LANOLIN, FATTY OILS OR WAXES; ESSENTIAL OILS; PERFUMES (drying-oils [C09F](#))

NOTE

In this subclass, boron and silicon are considered as metals

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

M C11B 9/00

Essential oils; Perfumes (~~synthesis of chemical substances C07~~)

- M C11B 11/00 Recovery or refining of other fatty substances, e.g. lanolin, ~~waxes or waxes~~ (synthetic waxes C07, C08; mineral waxes C10G)
- M C11B 13/00 Recovery of fats, fatty oils, or fatty acids from waste materials ~~(mechanical separation from waste water C02F, E03F)~~

Project: MP0427 (C11D)

- M C11D DETERGENT COMPOSITIONS (preparations specially adapted for washing the hair [A61Q 5/02](#), [A61K 8/00](#); methods or apparatus for disinfection or sterilisation [A61L](#); special washing compositions for cleaning semi-permeable membranes [B01D 65/06](#)); USE OF SINGLE SUBSTANCES AS DETERGENTS; SOAP OR SOAP-MAKING; RESIN SOAPS; RECOVERY OF GLYCEROL

NOTE

1. When classifying in the mixture groups of this subclass, any individual ingredient of a composition which is not identified by such classification, and which itself is determined to be novel and non-obvious, must also be classified in groups [C11D 1/00](#) - [C11D 9/00](#). The individual ingredient can be either a single substance or a composition in itself.

2. Any ingredient of a composition which is not identified by the classification according to Note (1) above, and which is considered to represent information of interest for search, may also be classified in groups [C11D 1/00](#) - [C11D 9/00](#). This can, for example, be the case when it is considered of interest to enable searching of compositions using a combination of classification symbols. Such non-obligatory classification should be given as "additional information".

~~1-3.~~ {Documents classified in groups [C11D 1/37](#), [C11D 1/645](#) - [C11D 1/655](#), [C11D 1/825](#) - [C11D 1/86](#), [C11D 1/94](#) - [C11D 1/945](#) and [C11D 10/00](#) - [C11D 10/047](#), are indexed using codes chosen from [C11D 1/00](#) - [C11D 1/92](#) to provide information on the individual ingredients on the compositions.}

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

C11D 1/68	covered by	C11D 3/2003
C11D 1/70	covered by	C11D 3/2003
C11D 3/44	covered by	C11D 3/43
C11D 3/46	covered by	C11D 3/2079 , C11D 9/48
C11D 3/60	covered by	C11D 3/00
C11D 7/18	covered by	C11D 3/39
C11D 7/38	covered by	C11D 3/39
C11D 7/42	covered by	C11D 3/386
C11D 7/52	covered by	C11D 7/50
C11D 7/54	covered by	C11D 3/395
C11D 7/56	covered by	C11D 3/395
C11D 7/60	covered by	C11D 7/00
C11D 9/50	covered by	C11D 3/48
C11D 9/60	covered by	C11D 9/00
C11D 10/02	covered by	C11D 3/00
C11D 10/06	covered by	C11D 9/00

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

M C11D 1/00 Detergent compositions based essentially on surface-active compounds; Use of these compounds as a detergent

NOTE

In groups [C11D 1/02](#) - ~~C11D 1/94~~[C11D 1/88](#), *the last place priority rule is applied, i.e. at each hierarchical level*, in the absence of an indication to the contrary, a compound is classified in the last appropriate place.

{This Note corresponds to IPC Note (1) relating to [C11D 1/02](#) - [C11D 1/88](#).}

M C11D 3/00 Other compounding ingredients of detergent compositions covered in group [C11D 1/00](#)

NOTE

1. In groups [C11D 3/02](#) - [C11D 3/39](#), the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, a compound is classified in the last appropriate place.

{This Note corresponds to IPC Note (1) relating to [C11D 3/02](#) - [C11D 3/39](#).}

~~1.~~ *2. {Documents classified in group [C11D 3/0005](#) are also classified in other groups of subclass [C11D](#) according to the chemical nature of the compounds as such.}*

U C11D 3/0005 · {Other compounding ingredients characterised by their effect}

M C11D 3/0078 · · {Compositions for cleaning contact lenses, spectacles, lenses (disinfecting contact lenses [A61L 2/00](#); mechanical cleaning [G02C 13/00](#))}

NOTE

In groups [C11D 3/02](#) - [C11D 3/39](#), in the absence of an indication to the contrary, a compound is classified in the last appropriate place.

M C11D 9/00 Compositions of detergents based essentially on soap (compositions containing resin soap [C11D 15/04](#))

NOTE

In groups [C11D 9/06](#) - [C11D 9/42](#), the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, a compound is classified in the last appropriate place. {This Note corresponds to IPC Note (1) relating to [C11D 9/06](#) - [C11D 9/42](#).}

U C11D 9/04 · containing compounding ingredients other than soaps

M C11D 9/045 · · {containing substances which prevent the deterioration of soaps, e.g. light or heat stabilisers, antioxidants}

NOTE

In groups [C11D 9/06](#) - [C11D 9/42](#), in the absence of an indication to the contrary, a compound is classified in the last appropriate place.

Project: MP0496 (C13K)

M C13K SACCHARIDES, ~~OTHER THAN SUCROSE~~, OBTAINED FROM NATURAL SOURCES OR BY HYDROLYSIS OF NATURALLY OCCURRING ~~DI-~~, **OLIGO-DISACCHARIDES, OLIGOSACCHARIDES** OR POLYSACCHARIDES (chemically synthesised sugars or sugar derivatives [C07H](#); polysaccharides, e.g. starch, derivatives thereof [C08B](#); malt [C12C](#); fermentation or enzyme-using processes for preparing compounds containing saccharide radicals [C12P 19/00](#); *production of sucrose [C13B](#)*)

Project: MP0496 (C21D)

M C21D

MODIFYING THE PHYSICAL STRUCTURE OF FERROUS METALS; GENERAL DEVICES FOR HEAT TREATMENT OF FERROUS OR NON-FERROUS METALS OR ALLOYS; MAKING METAL MALLEABLE ~~BY DECARBURISATION, TEMPERING OR OTHER TREATMENTS, e.g. BY DECARBURISATION OR TEMPERING~~ (cementation by diffusion processes ~~C23G~~; surface treatment of metallic material involving at least one process provided for in class [C23](#) and at least one process covered by this subclass; [C23F 17/00](#); unidirectional solidification of eutectic materials or unidirectional demixing of eutectoid materials [C30B](#))

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: MP0427 (C22C)

M C22C

ALLOYS (flints [C06C 15/00](#); treatment of alloys [C21D](#), [C22F](#))

NOTES

1. In this subclass, the following terms or expressions are used with the meanings indicated:

- "alloys" includes also:
 - a. metallic composite materials containing a substantial proportion of fibres or other somewhat larger particles;
 - b. ceramic compositions containing free metal bonded to carbides, diamond, oxides, borides, nitrides or silicides, e.g. cermets, or other metal compounds, e.g. oxynitrides or sulfides, other than as macroscopic reinforcing agents;
- "based on" requires at least 50% by weight of the specified constituent or of the specified group of constituents.

2. Groups [C22C 43/00](#) - [C22C 49/00](#) take precedence over groups [C22C 1/00](#) - [C22C 38/00](#).

{This Note corresponds to IPC Note (1) relating to [C22C 1/00](#) - [C22C 38/00](#).}

~~2-3.~~ *In the groups [C22C 37/00](#) and [C22C 38/00](#), the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, in groups ~~[C22C 5/00](#) - [C22C 32/00](#)~~ an alloy is classified in the last appropriate place: *that provides for one of the alloying components. {This Note corresponds to IPC Note (1) relating to [C22C 37/00](#) - [C22C 38/00](#).}**

~~3-4.~~ *{In this subclass it is desirable to classify the individual aspects of combinations of processes or materials for powder metallurgy using Combination Sets with symbols chosen from groups [C22C 1/00](#) - [C22C 43/00](#) or from groups [B22F 1/00](#) - [B22F 9/00](#).}*

~~4-5.~~ *{In this subclass the special database "ALLOYS" is used. This system includes patent documents classified in groups [C22C 1/04](#) and [C22C 5/00](#) - [C22C 49/14](#) and provides information on the composition of the alloys, their uses and characteristics.-}*

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

C22C 101/00 , C22C 101/20	covered by	C04B 35/62227
C22C 101/02	covered by	C04B 35/62231
C22C 101/04	covered by	C04B 35/62236
C22C 101/06	covered by	C04B 35/62245
C22C 101/08	covered by	C04B 35/62272
C22C 101/10	covered by	D01F 9/12

C22C 101/12	covered by	C04B 35/62277
C22C 101/14	covered by	C04B 35/62281
C22C 101/16	covered by	C04B 35/62286
C22C 101/18	covered by	C04B 35/62295
C22C 101/22	covered by	C04B 35/6229
C22C 111/00-C22C 111/02	covered by	C22C 47/00 , C22C 49/00
C22C 121/00-C22C 121/02	covered by	C22C 47/02 - C22C 47/068 , C22C 49/00

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

M C22C 21/00 Alloys based on aluminium

NOTE

In groups [C22C 21/14](#) - [C22C 21/18](#), the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, an alloy is classified in the last appropriate place.

{This Note corresponds to IPC Note (1) relating to [C22C 21/14](#) - [C22C 21/18](#).}

M C22C 30/00 Alloys containing less than 50% by weight of each constituent

NOTE

In groups [C22C 30/02](#) - [C22C 30/06](#), the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, an alloy is classified in the last appropriate place.

{This Note corresponds to IPC Note (1) relating to [C22C 30/02](#) - [C22C 30/06](#).}

U C22C 35/00 Master alloys for iron or steel

M C22C 35/005 · {based on iron, e.g. ferro-alloys}

NOTE

In the absence of an indication to the contrary, in groups [C22C 37/00](#) - [C22C 38/00](#) an alloy is classified in the last appropriate place that provides for one of the alloying components.

Project: MP0498 (C23C)

U C23C 4/00 Coating by spraying the coating material in the molten state, e.g. by flame, plasma or electric discharge (build-up welding [B23K](#), e.g. [B23K 5/18](#), [B23K 9/04](#))

M C23C 4/12 · characterised by the method of spraying

NOTE

In this group, multi-aspect classification is applied, so that subject matter characterised by aspects covered by more than one of its subgroups should be classified in each of those subgroups.

Project: RP0690 (C25B)

M C25B ELECTROLYTIC OR ELECTROPHORETIC PROCESSES FOR THE PRODUCTION OF COMPOUNDS OR NON-METALS; APPARATUS THEREFOR (anodic or cathodic protection [C23F 13/00](#); single-crystal growth [C30B](#))

NOTE

~~1. In this subclass, in the absence of an indication to the contrary, classification is made in the last appropriate place.~~

~~2. 1.~~ Compounds of particular interest are also classified in the relevant classes, e.g. in [C01](#), [C07](#), [C08](#).

WARNINGS

~~1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:~~

~~C25B 11/06 covered by C25B 11/0442~~

~~C25B 11/08 covered by C25B 11/0473~~

~~C25B 11/10 covered by C25B 11/0442~~

~~2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.~~

C C25B 1/00 Electrolytic production of inorganic compounds or non-metals

WARNING

Group [C25B 1/00](#) is impacted by reclassification into groups [C25B 1/01](#), [C25B 1/135](#), [C25B 1/23](#), [C25B 1/27](#), and [C25B 1/50](#).

All groups listed in this Warning should be considered in order to perform a complete search.

D C25B 1/003 • {by photo-electrolysis with or without external current source}
<administratively transferred to [C25B 1/55](#)>

D C25B 1/006 • {of silicon}
<administratively transferred to [C25B 1/33](#)>

N C25B 1/01 • Products

WARNING

Group [C25B 1/01](#) is incomplete pending reclassification of documents from group [C25B 1/00](#).

Groups [C25B 1/00](#) and [C25B 1/01](#) should be considered in order to perform a complete search.

M C25B 1/02 • ~~of hydrogen~~ **Hydrogen** or oxygen

C C25B 1/04 • • by electrolysis of water

WARNING

Group [C25B 1/04](#) is incomplete pending reclassification of documents from groups [C25B 9/70](#) and [C25B 9/73](#).

Group [C25B 1/04](#) is also impacted by reclassification into groups [C25B 1/042](#), [C25B 1/044](#), [C25B 11/00](#), and [C25B 11/02](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N C25B 1/042 • • • of steam

WARNING

Group [C25B 1/042](#) is incomplete pending reclassification of documents from group [C25B 1/04](#).

Groups [C25B 1/04](#) and [C25B 1/042](#) should be considered in order to perform a complete search.

- N C25B 1/044
- • • of mixed hydrogen and oxygen gas, e.g. Brown's gas [HHO]
- WARNING
Group [C25B 1/044](#) is incomplete pending reclassification of documents from group [C25B 1/04](#).
Groups [C25B 1/04](#) and [C25B 1/044](#) should be considered in order to perform a complete search.
- D C25B 1/06
- • • in-cells with flat or platelike electrodes
- <administratively transferred to [C25B 1/04](#) and [C25B 11/00](#)>
- D C25B 1/08
- • • of the filter-press type
- <administratively transferred to [C25B 1/04](#) and [C25B 9/73](#)>
- D C25B 1/10
- • • in diaphragm-cells
- <administratively transferred to [C25B 1/04](#) and [C25B 9/73](#)>
- D C25B 1/12
- • • in pressure-cells
- <administratively transferred to [C25B 1/04](#) and [C25B 9/05](#)>
- M C25B 1/13
- **of ozone** *Ozone*
- N C25B 1/135
- Carbon
- WARNING
Group [C25B 1/135](#) is incomplete pending reclassification of documents from group [C25B 1/00](#).
Groups [C25B 1/00](#) and [C25B 1/135](#) should be considered in order to perform a complete search.
- M C25B 1/14
- **of alkali** *Alkali* metal compounds
- C C25B 1/16
- • **Hydroxides (by simultaneous production of alkali metal hydroxides and chlorine, oxyacids or salts of chlorine C25B 1/34)**
- WARNING
Group [C25B 1/16](#) is impacted by reclassification into group [C25B 1/34](#).
Groups [C25B 1/16](#) and [C25B 1/34](#) should be considered in order to perform a complete search.
- M C25B 1/18
- **of alkaline** *Alkaline* earth metal compounds or magnesium compounds
- M C25B 1/20
- • **Hydroxides**
- M C25B 1/21
- **of manganese** *Manganese* oxides
- M C25B 1/22
- **of inorganic** *Inorganic* acids
- N C25B 1/23
- Carbon monoxide or syngas
- WARNING
Group [C25B 1/23](#) is incomplete pending reclassification of documents from group [C25B 1/00](#).
Groups [C25B 1/00](#) and [C25B 1/23](#) should be considered in order to perform a complete search.
- M C25B 1/24
- **of halogens** *Halogens* or compounds thereof
- M C25B 1/245
- • **{Fluorine; -Compounds thereof}**
- C C25B 1/26
- • **Chlorine; Compounds thereof (by simultaneous production of alkali metal hydroxides and chlorine, oxyacids or salts of chlorine C25B 1/34)**
- WARNING
Group [C25B 1/26](#) is impacted by reclassification into group [C25B 1/34](#).

Groups [C25B 1/26](#) and [C25B 1/34](#) should be considered in order to perform a complete search.

- M C25B 1/265 • • • [Cl](#) {Chlorates}
- N C25B 1/27 • • Ammonia
- WARNING
Group [C25B 1/27](#) is incomplete pending reclassification of documents from group [C25B 1/00](#).
Groups [C25B 1/00](#) and [C25B 1/27](#) should be considered in order to perform a complete search.
- M C25B 1/28 • • [O](#) of perPer-compounds
- D C25B 1/285 • • {Persulfates}
- <administratively transferred to [C25B 1/29](#)>
- N C25B 1/29 • • • Persulfates
- M C25B 1/30 • • [O](#) Peroxides
- M C25B 1/32 • • [B](#) Perborates
- N C25B 1/33 • • Silicon
- T C25B 1/34 • • Simultaneous production of alkali metal hydroxides and chlorine, **its oxyacids or salts oxyacids or salts of chlorine, e.g. by chlor-alkali electrolysis**
- WARNING
Group [C25B 1/34](#) is incomplete pending reclassification of documents from groups [C25B 1/16](#) and [C25B 1/26](#).
Groups [C25B 1/16](#), [C25B 1/26](#), and [C25B 1/34](#) should be considered in order to perform a complete search.
- T C25B 1/36 • • [Hg](#) in mercury cathode cells
- D C25B 1/38 • • • with vertical mercury cathode
- <administratively transferred to [C25B 1/36](#)>
- D C25B 1/40 • • • with horizontal mercury cathode
- <administratively transferred to [C25B 1/36](#)>
- M C25B 1/42 • • • [Hg](#) Decomposition of amalgams
- M C25B 1/44 • • • • [Hg](#) with the aid of catalysts
- M C25B 1/46 • • [Hg](#) in diaphragm cells
- N C25B 1/50 • Processes
- WARNING
Group [C25B 1/50](#) is incomplete pending reclassification of documents from group [C25B 1/00](#).
Groups [C25B 1/00](#) and [C25B 1/50](#) should be considered in order to perform a complete search.
- N C25B 1/55 • • Photoelectrolysis
- C C25B 3/00 Electrolytic production of organic compounds**

WARNING

Group [C25B 3/00](#) is impacted by reclassification into groups [C25B 3/01](#), [C25B 3/03](#), [C25B 3/05](#), [C25B 3/07](#), [C25B 3/09](#), [C25B 3/11](#), [C25B 3/13](#), [C25B 3/20](#), [C25B 3/21](#), [C25B 3/23](#), [C25B 3/25](#), and [C25B 3/26](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N C25B 3/01
- Products
- WARNING
Groups [C25B 3/01](#) - [C25B 3/13](#) are incomplete pending reclassification of documents from groups [C25B 3/00](#), [C25B 3/23](#), [C25B 3/25](#), [C25B 3/27](#), [C25B 3/28](#), [C25B 3/29](#), and [C25B 3/295](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- D C25B 3/02
- by oxidation
- <administratively transferred to [C25B 3/23](#)>
- N C25B 3/03
- • Acyclic or carbocyclic hydrocarbons
- D C25B 3/04
- by reduction
- <administratively transferred to [C25B 3/25](#)>
- N C25B 3/05
- • Heterocyclic compounds
- D C25B 3/06
- by halogenation
- <administratively transferred to [C25B 3/27](#)>
- N C25B 3/07
- • Oxygen containing compounds
- D C25B 3/08
- by fluorination
- <administratively transferred to [C25B 3/28](#)>
- N C25B 3/09
- • Nitrogen containing compounds
- D C25B 3/10
- by coupling reactions, e.g. dimerisation
- <administratively transferred to [C25B 3/29](#)>
- D C25B 3/105
- {hydrodimerisation}
- <administratively transferred to [C25B 3/295](#)>
- N C25B 3/11
- • Halogen containing compounds
- D C25B 3/12
- of organo-metallic compounds
- <administratively transferred to [C25B 3/13](#)>
- N C25B 3/13
- • Organo-metallic compounds
- N C25B 3/20
- Processes
- WARNING
Group [C25B 3/20](#) is incomplete pending reclassification of documents from group [C25B 3/00](#).
Groups [C25B 3/00](#) and [C25B 3/20](#) should be considered in order to perform a complete search.
- N C25B 3/21
- • Photoelectrolysis
- WARNING
Group [C25B 3/21](#) is incomplete pending reclassification of documents from groups [C25B 3/00](#), [C25B 3/23](#), [C25B 3/25](#), [C25B 3/27](#), [C25B 3/28](#), [C25B 3/29](#), and [C25B 3/295](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q C25B 3/23
- • Oxidation (halogenation [C25B 3/27](#))
- WARNING
Group [C25B 3/23](#) is incomplete pending reclassification of documents from group [C25B 3/00](#).
Group [C25B 3/23](#) is also impacted by reclassification into groups [C25B 3/01](#), [C25B 3/03](#), [C25B 3/05](#), [C25B 3/07](#), [C25B 3/09](#), [C25B 3/11](#), [C25B 3/13](#), [C25B 3/21](#), [C25B 3/27](#), and [C25B 3/28](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q C25B 3/25

- • Reduction

WARNING

Group [C25B 3/25](#) is incomplete pending reclassification of documents from group [C25B 3/00](#).

Group [C25B 3/25](#) is also impacted by reclassification into groups [C25B 3/01](#), [C25B 3/03](#), [C25B 3/05](#), [C25B 3/07](#), [C25B 3/09](#), [C25B 3/11](#), [C25B 3/13](#), [C25B 3/21](#), and [C25B 3/26](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N C25B 3/26

- • • of carbon dioxide

WARNING

Group [C25B 3/26](#) is incomplete pending reclassification of documents from groups [C25B 3/00](#) and [C25B 3/25](#).

Groups [C25B 3/00](#), [C25B 3/25](#), and [C25B 3/26](#) should be considered in order to perform a complete search.

Q C25B 3/27

- • Halogenation

WARNING

Group [C25B 3/27](#) is incomplete pending reclassification of documents from group [C25B 3/23](#).

Group [C25B 3/27](#) is also impacted by reclassification into groups [C25B 3/01](#), [C25B 3/03](#), [C25B 3/05](#), [C25B 3/07](#), [C25B 3/09](#), [C25B 3/11](#), [C25B 3/13](#), and [C25B 3/21](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q C25B 3/28

- • • Fluorination

WARNING

Group [C25B 3/28](#) is incomplete pending reclassification of documents from group [C25B 3/23](#).

Group [C25B 3/28](#) is also impacted by reclassification into groups [C25B 3/01](#), [C25B 3/03](#), [C25B 3/05](#), [C25B 3/07](#), [C25B 3/09](#), [C25B 3/11](#), [C25B 3/13](#), and [C25B 3/21](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q C25B 3/29

- • Coupling reactions

WARNING

Group [C25B 3/29](#) is impacted by reclassification into groups [C25B 3/01](#), [C25B 3/03](#), [C25B 3/05](#), [C25B 3/07](#), [C25B 3/09](#), [C25B 3/11](#), [C25B 3/13](#), and [C25B 3/21](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Q C25B 3/295

- • • {hydrodimerisation}

WARNING

Group [C25B 3/295](#) is impacted by reclassification into groups [C25B 3/01](#), [C25B 3/03](#), [C25B 3/05](#), [C25B 3/07](#), [C25B 3/09](#), [C25B 3/11](#), [C25B 3/13](#), and [C25B 3/21](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- M C25B 5/00 Electrogenerative processes, i.e. processes for producing compounds in which **simultaneously** electricity is generated **simultaneously**
- M C25B 7/00 **Electrophoretic****Electrophoretic** production of compounds or non-metals (separation or purification of peptides, e.g. of proteins, by electrophoresis [C07K 1/26](#))
- C C25B 9/00 Cells or assemblies of cells; Constructional parts of cells; Assemblies of constructional parts, e.g. electrode-diaphragm assemblies; **Process-related cell features**
- WARNING**
Group [C25B 9/00](#) is impacted by reclassification into groups [C25B 9/01](#), [C25B 9/015](#), [C25B 9/05](#), [C25B 9/07](#), [C25B 9/09](#), [C25B 9/13](#), [C25B 9/15](#), [C25B 9/17](#), [C25B 9/23](#), [C25B 9/40](#), [C25B 9/50](#), [C25B 9/60](#), and [C25B 9/67](#). All groups listed in this Warning should be considered in order to perform a complete search.
- M C25B 9/005
- {Amalgam decomposition cells}
- WARNING**
Group [C25B 9/005](#) is incomplete pending reclassification of documents from group [C25B 9/70](#). Groups [C25B 9/70](#) and [C25B 9/005](#) should be considered in order to perform a complete search.
- N C25B 9/01
- *Electrolytic cells characterised by shape or form*
- WARNING**
Groups [C25B 9/01](#) and [C25B 9/015](#) are incomplete pending reclassification of documents from group [C25B 9/00](#). Groups [C25B 9/00](#), [C25B 9/01](#), and [C25B 9/015](#) should be considered in order to perform a complete search.
- N C25B 9/015
- • *Cylindrical cells*
- D C25B 9/02
- Holders for electrodes
- <administratively transferred to [C25B 9/63](#)>
- D C25B 9/04
- Devices for current supply (electrical connections in general H01R); Electrode connections; Electric inter-cell connections
- <administratively transferred to [C25B 9/65](#)>
- D C25B 9/045
- • {Electric inter-cell connections including jumper switches}
- <administratively transferred to [C25B 9/66](#)>
- N C25B 9/05
- *Pressure cells*
- WARNING**
Group [C25B 9/05](#) is incomplete pending reclassification of documents from groups [C25B 9/00](#) and [C25B 9/70](#). Groups [C25B 9/00](#), [C25B 9/70](#), and [C25B 9/05](#) should be considered in order to perform a complete search.
- D C25B 9/06
- Cells comprising dimensionally-stable non-movable electrodes; Assemblies of constructional parts thereof
- <administratively transferred to [C25B 9/17](#)>
- D C25B 9/063
- • {including bipolar electrodes}
- <administratively transferred to [C25B 11/036](#)>

- D C25B 9/066
- • • {and diaphragms}
 - <administratively transferred to [C25B 9/19](#)>
- N C25B 9/07
- *Common duct cells*
 - WARNING
 - Group [C25B 9/07](#) is incomplete pending reclassification of documents from group [C25B 9/00](#).*
 - Groups [C25B 9/00](#) and [C25B 9/07](#) should be considered in order to perform a complete search.*
- D C25B 9/08
- • with diaphragms
 - <administratively transferred to [C25B 9/19](#)>
- N C25B 9/09
- *Fused bath cells*
 - WARNING
 - Group [C25B 9/09](#) is incomplete pending reclassification of documents from group [C25B 9/00](#).*
 - Groups [C25B 9/00](#) and [C25B 9/09](#) should be considered in order to perform a complete search.*
- D C25B 9/10
- • • including an ion-exchange membrane in or on which electrode material is embedded
 - <administratively transferred to [C25B 9/23](#)>
- D C25B 9/12
- Cells or assemblies of cells comprising at least one movable electrode, e.g. rotary electrodes; Assemblies of constructional parts thereof
 - <administratively transferred to [C25B 9/30](#) and [C25B 11/02](#)>
- D C25B 9/125
- • {Rotary electrodes}
 - <administratively transferred to [C25B 9/30](#) and [C25B 11/034](#)>
- N C25B 9/13
- *Single electrolytic cells with circulation of an electrolyte*
 - WARNING
 - Groups [C25B 9/13](#) and [C25B 9/15](#) are incomplete pending reclassification of documents from group [C25B 9/00](#).*
 - Groups [C25B 9/00](#), [C25B 9/13](#), and [C25B 9/15](#) should be considered in order to perform a complete search.*
- D C25B 9/14
- • Liquid electrodes, e.g. mercury electrodes
 - <administratively transferred to [C25B 11/033](#)>
- D C25B 9/142
- • • {of the horizontal type}
 - <administratively transferred to [C25B 9/303](#), [C25B 9/70](#), and [C25B 11/033](#) simultaneously>
- D C25B 9/144
- • • • {Grouping of such cells into batteries}
 - <administratively transferred to [C25B 9/303](#), [C25B 9/70](#), and [C25B 11/033](#) simultaneously>
- D C25B 9/146
- • • {of the vertical type}
 - <administratively transferred to [C25B 9/305](#), [C25B 9/70](#), and [C25B 11/033](#) simultaneously>
- D C25B 9/148
- • • • {Grouping of such cells into batteries}
 - <administratively transferred to [C25B 9/305](#), [C25B 9/70](#), and [C25B 11/033](#) simultaneously>
- N C25B 9/15
- • *Flow-through cells*

- D C25B 9/16
- Cells or assemblies of cells comprising at least one electrode made of particles; Assemblies of constructional parts thereof
- <administratively transferred to [C25B 9/40](#)>
- D C25B 9/162
- • {comprising fluidised bed electrodes}
- <administratively transferred to [C25B 9/40](#)>
- D C25B 9/164
- • • {Grouping of such cells into batteries}
- <administratively transferred to [C25B 9/70](#) and [C25B 9/40](#)>
- D C25B 9/166
- • {comprising static bed electrodes}
- <administratively transferred to [C25B 9/40](#)>
- D C25B 9/168
- • • {Grouping of such cells into batteries}
- <administratively transferred to [C25B 9/70](#) and [C25B 9/40](#)>
- N C25B 9/17
- Cells comprising dimensionally-stable non-movable electrodes; Assemblies of constructional parts thereof
- WARNING**
Group [C25B 9/17](#) is incomplete pending reclassification of documents from group [C25B 9/00](#).
Groups [C25B 9/00](#) and [C25B 9/17](#) should be considered in order to perform a complete search.
- D C25B 9/18
- Assemblies comprising a plurality of cells ({C25B 9/005 takes precedence}; assemblies of cells with movable electrodes C25B 9/12; assemblies of cells with electrodes made of particles C25B 9/16)
- <administratively transferred to [C25B 9/70](#)>
- Q C25B 9/19
- • with diaphragms
- WARNING**
Group [C25B 9/19](#) is impacted by reclassification into group [C25B 9/21](#).
Groups [C25B 9/19](#) and [C25B 9/21](#) should be considered in order to perform a complete search.
- D C25B 9/20
- • of the filter-press type
- <administratively transferred to [C25B 9/73](#)>
- D C25B 9/203
- • • {with bipolar electrodes}
- <administratively transferred to [C25B 9/75](#) and [C25B 11/036](#)>
- D C25B 9/206
- • • • {with diaphragms}
- <administratively transferred to [C25B 9/77](#)>
- N C25B 9/21
- • • two or more diaphragms
- WARNING**
Group [C25B 9/21](#) is incomplete pending reclassification of documents from group [C25B 9/19](#).
Groups [C25B 9/19](#) and [C25B 9/21](#) should be considered in order to perform a complete search.
- N C25B 9/23
- • • comprising ion-exchange membranes in or on which electrode material is embedded
- WARNING**
Group [C25B 9/23](#) is incomplete pending reclassification of documents from group [C25B 9/00](#).
Groups [C25B 9/00](#) and [C25B 9/23](#) should be considered in order to perform a complete search.

- Q C25B 9/30
- Cells comprising movable electrodes, e.g. rotary electrodes; Assemblies of constructional parts thereof
- WARNING
Group [C25B 9/30](#) is impacted by reclassification into groups [C25B 11/00](#), [C25B 11/02](#), [C25B 11/033](#), and [C25B 11/034](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N C25B 9/303
- • {comprising horizontal-type liquid electrode}
- N C25B 9/305
- • {comprising vertical-type liquid electrode}
- Q C25B 9/40
- Cells or assemblies of cells comprising electrodes made of particles; Assemblies of constructional parts thereof
- WARNING
Group [C25B 9/40](#) is incomplete pending reclassification of documents from group [C25B 9/00](#).
Group [C25B 9/40](#) is also impacted by reclassification into groups [C25B 9/43](#), [C25B 9/47](#), [C25B 11/02](#), and [C25B 11/037](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N C25B 9/43
- • {comprising fluidised bed electrodes}
- WARNING
Group [C25B 9/43](#) is incomplete pending reclassification of documents from group [C25B 9/40](#).
Groups [C25B 9/40](#) and [C25B 9/43](#) should be considered in order to perform a complete search.
- N C25B 9/47
- • {comprising static bed electrodes}
- WARNING
Group [C25B 9/47](#) is incomplete pending reclassification of documents from group [C25B 9/40](#).
Groups [C25B 9/40](#) and [C25B 9/47](#) should be considered in order to perform a complete search.
- N C25B 9/50
- Cells or assemblies of cells comprising photoelectrodes; Assemblies of constructional parts thereof
- WARNING
Group [C25B 9/50](#) is incomplete pending reclassification of documents from group [C25B 9/00](#).
Groups [C25B 9/00](#) and [C25B 9/50](#) should be considered in order to perform a complete search.
- N C25B 9/60
- Constructional parts of cells
- WARNING
Group [C25B 9/60](#) is incomplete pending reclassification of documents from group [C25B 9/00](#).
Groups [C25B 9/00](#) and [C25B 9/60](#) should be considered in order to perform a complete search.
- N C25B 9/63
- • Holders for electrodes; Positioning of the electrodes
- N C25B 9/65
- • Means for supplying current; Electrode connections; Electric inter-cell connections
- N C25B 9/66
- • • {Electric inter-cell connections including jumper switches}

- N C25B 9/67
- • Heating or cooling means
- WARNING
Group [C25B 9/67](#) is incomplete pending reclassification of documents from group [C25B 9/00](#).
Groups [C25B 9/00](#) and [C25B 9/67](#) should be considered in order to perform a complete search.
- Q C25B 9/70
- Assemblies comprising two or more cells
- WARNING
Group [C25B 9/70](#) is impacted by reclassification into groups [C25B 1/04](#), [C25B 9/05](#), [C25B 9/005](#), [C25B 11/00](#), and [C25B 11/02](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q C25B 9/73
- • of the filter-press type
- WARNING
Group [C25B 9/73](#) is impacted by reclassification into groups [C25B 1/04](#), [C25B 9/75](#), and [C25B 9/77](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N C25B 9/75
- • • having bipolar electrodes
- WARNING
Group [C25B 9/75](#) is incomplete pending reclassification of documents from group [C25B 9/73](#).
Groups [C25B 9/73](#) and [C25B 9/75](#) should be considered in order to perform a complete search.
- N C25B 9/77
- • • having diaphragms
- WARNING
Group [C25B 9/77](#) is incomplete pending reclassification of documents from group [C25B 9/73](#).
Groups [C25B 9/73](#) and [C25B 9/77](#) should be considered in order to perform a complete search.
- M C25B 11/00
- Electrodes; Manufacture thereof not otherwise provided for**
- WARNING
Group [C25B 11/00](#) is incomplete pending reclassification of documents from groups [C25B 1/04](#), [C25B 9/30](#), and [C25B 9/70](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- M C25B 11/02
- characterised by shape or form
- WARNING
Group [C25B 11/02](#) is incomplete pending reclassification of documents from groups [C25B 1/04](#), [C25B 9/30](#), [C25B 9/40](#), and [C25B 9/70](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- U C25B 11/03
- • perforated or foraminous
- Q C25B 11/031
- • • Porous electrodes
- WARNING
Group [C25B 11/031](#) is impacted by reclassification into group [C25B 11/032](#).

Groups [C25B 11/031](#) and [C25B 11/032](#) should be considered in order to perform a complete search.

- N C25B 11/032
- • • Gas diffusion electrodes
- WARNING
Group [C25B 11/032](#) is incomplete pending reclassification of documents from group [C25B 11/031](#).
Groups [C25B 11/031](#) and [C25B 11/032](#) should be considered in order to perform a complete search.
- N C25B 11/033
- • Liquid electrodes
- WARNING
Group [C25B 11/033](#) is incomplete pending reclassification of documents from group [C25B 9/30](#).
Groups [C25B 9/30](#) and [C25B 11/033](#) should be considered in order to perform a complete search.
- N C25B 11/034
- • Rotary electrodes
- WARNING
Group [C25B 11/034](#) is incomplete pending reclassification of documents from group [C25B 9/30](#).
Groups [C25B 9/30](#) and [C25B 11/034](#) should be considered in order to perform a complete search.
- D C25B 11/035
- • {Porous electrodes}
- <administratively transferred to [C25B 11/031](#)>
- N C25B 11/036
- • Bipolar electrodes
- N C25B 11/037
- • Electrodes made of particles
- WARNING
Group [C25B 11/037](#) is incomplete pending reclassification of documents from group [C25B 9/40](#).
Groups [C25B 9/40](#) and [C25B 11/037](#) should be considered in order to perform a complete search.
- C C25B 11/04
- characterised by the material
- WARNING
Group [C25B 11/04](#) is impacted by reclassification into groups [C25B 11/042](#), [C25B 11/046](#), [C25B 11/047](#), [C25B 11/048](#), and [C25B 11/049](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- D C25B 11/0405
- • {of electrodes having a substrate and a coating}
- <administratively transferred to [C25B 11/051](#)>
- D C25B 11/041
- • {characterised by the material of the substrate}
- <administratively transferred to [C25B 11/055](#)>
- D C25B 11/0415
- • • {consisting of one single element or compound}
- <administratively transferred to [C25B 11/057](#)>
- N C25B 11/042
- • Electrodes formed of a single material
- WARNING
Group [C25B 11/042](#) is incomplete pending reclassification of documents from group [C25B 11/04](#).

Groups [C25B 11/042](#) and [C25B 11/04](#) should be considered in order to perform a complete search.

- D C25B 11/0421 {Silicon}
<administratively transferred to [C25B 11/059](#)>
- D C25B 11/0426 . . . {consisting of plurality elements or compounds}
<administratively transferred to [C25B 11/069](#)>
- Q C25B 11/043 . . . Carbon, e.g. diamond or graphene
WARNING
Group [C25B 11/043](#) is impacted by reclassification into group [C25B 11/044](#).
Groups [C25B 11/043](#) and [C25B 11/044](#) should be considered in order to perform a complete search.
- D C25B 11/0431 {Metal alloys}
<administratively transferred to [C25B 11/061](#)>
- D C25B 11/0436 {comprising metal powder and a non-metallic binder}
<administratively transferred to [C25B 11/071](#)>
- N C25B 11/044 Impregnation of carbon
WARNING
Group [C25B 11/044](#) is incomplete pending reclassification of documents from group [C25B 11/043](#).
Groups [C25B 11/043](#) and [C25B 11/044](#) should be considered in order to perform a complete search.
- D C25B 11/0442 . . {characterised by the material of the coating}
<administratively transferred to [C25B 11/073](#)>
- D C25B 11/0447 . . . {Coatings consisting of a single component}
<administratively transferred to [C25B 11/075](#)>
- N C25B 11/045 . . . Mercury or amalgam
- D C25B 11/0452 {Non-noble metal oxides}
<administratively transferred to [C25B 11/077](#)>
- D C25B 11/0457 {of the spinel type}
<administratively transferred to [C25B 11/0771](#)>
- N C25B 11/046 . . . Alloys
WARNING
Group [C25B 11/046](#) is incomplete pending reclassification of documents from group [C25B 11/04](#).
Groups [C25B 11/046](#) and [C25B 11/04](#) should be considered in order to perform a complete search.
- D C25B 11/0463 {of the perovskite type}
<administratively transferred to [C25B 11/0773](#)>
- D C25B 11/0468 {of the rutile type}
<administratively transferred to [C25B 11/0775](#)>
- N C25B 11/047 . . . Ceramics
WARNING
Group [C25B 11/047](#) is incomplete pending reclassification of documents from group [C25B 11/04](#).

Groups [C25B 11/047](#) and [C25B 11/04](#) should be considered in order to perform a complete search.

- D C25B 11/0473 . . . {Noble metals}
<administratively transferred to [C25B 11/081](#)>
- D C25B 11/0478 . . . {Coatings consisting of two or more components}
<administratively transferred to [C25B 11/091](#)>
- N C25B 11/048 . . . Organic compounds
WARNING
Group [C25B 11/048](#) is incomplete pending reclassification of documents from group [C25B 11/04](#).
Groups [C25B 11/048](#) and [C25B 11/04](#) should be considered in order to perform a complete search.
- D C25B 11/0484 . . . {comprising at least a noble metal or noble metal oxide and a non-noble metal oxide}
<administratively transferred to [C25B 11/093](#)>
- D C25B 11/0489 . . . {at least one of the components being an organic compound}
<administratively transferred to [C25B 11/095](#)>
- N C25B 11/049 . . . Photocatalysts
WARNING
Group [C25B 11/049](#) is incomplete pending reclassification of documents from group [C25B 11/04](#).
Groups [C25B 11/049](#) and [C25B 11/04](#) should be considered in order to perform a complete search.
- D C25B 11/0494 . . . {comprising two or more noble metals or noble metal alloys}
<administratively transferred to [C25B 11/097](#)>
- Q C25B 11/051 . . . Electrodes formed of electrocatalysts on a substrate or carrier
WARNING
Group [C25B 11/051](#) is impacted by reclassification into groups [C25B 11/052](#), [C25B 11/053](#), [C25B 11/054](#), [C25B 11/055](#), [C25B 11/056](#), [C25B 11/057](#), [C25B 11/065](#), [C25B 11/067](#), [C25B 11/069](#), [C25B 11/073](#), [C25B 11/075](#), [C25B 11/077](#), [C25B 11/079](#), [C25B 11/083](#), [C25B 11/085](#), [C25B 11/087](#), [C25B 11/089](#), and [C25B 11/097](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N C25B 11/052 . . . Electrodes comprising one or more electrocatalytic coatings on a substrate
WARNING
Groups [C25B 11/052](#) and [C25B 11/053](#) are incomplete pending reclassification of documents from group [C25B 11/051](#).
Groups [C25B 11/051](#), [C25B 11/052](#), and [C25B 11/053](#) should be considered in order to perform a complete search.
- N C25B 11/053 . . . characterised by multilayer electrocatalytic coatings
- N C25B 11/054 . . . Electrodes comprising electrocatalysts supported on a carrier
WARNING
Group [C25B 11/054](#) is incomplete pending reclassification of documents from group [C25B 11/051](#).
Groups [C25B 11/051](#) and [C25B 11/054](#) should be considered in order to perform a complete search.

- N C25B 11/055 . . . characterised by the substrate or carrier material
WARNING
 Group [C25B 11/055](#) is incomplete pending reclassification of documents from group [C25B 11/051](#).
 Groups [C25B 11/051](#) and [C25B 11/055](#) should be considered in order to perform a complete search.
- N C25B 11/056 consisting of textile or non-woven fabric
WARNING
 Group [C25B 11/056](#) is incomplete pending reclassification of documents from group [C25B 11/051](#).
 Groups [C25B 11/051](#) and [C25B 11/056](#) should be considered in order to perform a complete search.
- N C25B 11/057 consisting of a single element or compound
WARNING
 Group [C25B 11/057](#) is incomplete pending reclassification of documents from group [C25B 11/051](#).
 Groups [C25B 11/051](#) and [C25B 11/057](#) should be considered in order to perform a complete search.
- N C25B 11/059 Silicon
 Q C25B 11/061 Metal or alloy
WARNING
 Group [C25B 11/061](#) is impacted by reclassification into group [C25B 11/063](#).
 Groups [C25B 11/061](#) and [C25B 11/063](#) should be considered in order to perform a complete search.
- N C25B 11/063 Valve metal, e.g. titanium
WARNING
 Group [C25B 11/063](#) is incomplete pending reclassification of documents from group [C25B 11/061](#).
 Groups [C25B 11/061](#) and [C25B 11/063](#) should be considered in order to perform a complete search.
- N C25B 11/065 Carbon
WARNING
 Group [C25B 11/065](#) is incomplete pending reclassification of documents from group [C25B 11/051](#).
 Groups [C25B 11/051](#) and [C25B 11/065](#) should be considered in order to perform a complete search.
- N C25B 11/067 Inorganic compound e.g. ITO, silica or titania
WARNING
 Group [C25B 11/067](#) is incomplete pending reclassification of documents from group [C25B 11/051](#).
 Groups [C25B 11/051](#) and [C25B 11/067](#) should be considered in order to perform a complete search.

- N C25B 11/069 consisting of at least one single element and at least one compound;
consisting of two or more compounds
- WARNING
Group [C25B 11/069](#) is incomplete pending reclassification of documents from group [C25B 11/051](#).
Groups [C25B 11/051](#) and [C25B 11/069](#) should be considered in order to perform a complete search.
- N C25B 11/071 comprising metal or alloy powder and non-metallic binders
- N C25B 11/073 characterised by the electrocatalyst material
- WARNING
Group [C25B 11/073](#) is incomplete pending reclassification of documents from group [C25B 11/051](#).
Groups [C25B 11/051](#) and [C25B 11/073](#) should be considered in order to perform a complete search.
- N C25B 11/075 consisting of a single catalytic element or catalytic compound
- WARNING
Group [C25B 11/075](#) is incomplete pending reclassification of documents from group [C25B 11/051](#).
Groups [C25B 11/051](#) and [C25B 11/075](#) should be considered in order to perform a complete search.
- N C25B 11/077 the compound being a non-noble metal oxide
- WARNING
Group [C25B 11/077](#) is incomplete pending reclassification of documents from group [C25B 11/051](#).
Groups [C25B 11/051](#) and [C25B 11/077](#) should be considered in order to perform a complete search.
- N C25B 11/0771 {of the spinel type}
- N C25B 11/0773 {of the perovskite type}
- N C25B 11/0775 {of the rutile type}
- N C25B 11/079 Manganese dioxide; Lead dioxide
- WARNING
Group [C25B 11/079](#) is incomplete pending reclassification of documents from group [C25B 11/051](#).
Groups [C25B 11/051](#) and [C25B 11/079](#) should be considered in order to perform a complete search.
- N C25B 11/081 the element being a noble metal
- N C25B 11/083 Diamond
- WARNING
Group [C25B 11/083](#) is incomplete pending reclassification of documents from group [C25B 11/051](#).
Groups [C25B 11/051](#) and [C25B 11/083](#) should be considered in order to perform a complete search.
- N C25B 11/085 Organic compound
- WARNING
Group [C25B 11/085](#) is incomplete pending reclassification of documents from group [C25B 11/051](#).

Groups [C25B 11/051](#) and [C25B 11/085](#) should be considered in order to perform a complete search.

N C25B 11/087 Photocatalytic compound

WARNING

Group [C25B 11/087](#) is incomplete pending reclassification of documents from group [C25B 11/051](#).

Groups [C25B 11/051](#) and [C25B 11/087](#) should be considered in order to perform a complete search.

N C25B 11/089 Alloys

WARNING

Group [C25B 11/089](#) is incomplete pending reclassification of documents from group [C25B 11/051](#).

Groups [C25B 11/051](#) and [C25B 11/089](#) should be considered in order to perform a complete search.

N C25B 11/091 consisting of at least one catalytic element and at least one catalytic compound; consisting of two or more catalytic elements or catalytic compounds

N C25B 11/093 at least one noble metal or noble metal oxide and at least one non-noble metal oxide

N C25B 11/095 at least one of the compounds being organic

N C25B 11/097 comprising two or more noble metals or noble metal alloys

WARNING

Group [C25B 11/097](#) is incomplete pending reclassification of documents from group [C25B 11/051](#).

Groups [C25B 11/051](#) and [C25B 11/097](#) should be considered in order to perform a complete search.

D C25B 11/12 . . Electrodes based on carbon (carbon masses in general C04B 35/52)
 {{C25B 11/0405 takes precedence}}
<administratively transferred to [C25B 11/043](#)>

D C25B 11/14 . . . Impregnation of carbon electrodes {{C25B 11/0405 takes precedence}}
<administratively transferred to [C25B 11/044](#)>

D C25B 11/16 . . Electrodes based on manganese dioxide or lead dioxide {{C25B 11/0405 takes precedence}}
<administratively transferred to [C25B 11/04](#) and [C25B 11/054](#)>

D C25B 11/18 . . Mercury or amalgam electrodes {{C25B 11/0405 takes precedence}}
<administratively transferred to [C25B 11/045](#)>

U C25B 13/00 Diaphragms; Spacing elements

M C25B 13/02 . characterised by ~~form or shape~~ *shape or form*

C C25B 13/04 . characterised by the material

WARNING

Group [C25B 13/04](#) is impacted by reclassification into groups [C25B 13/05](#) and [C25B 13/07](#).

Groups [C25B 13/04](#), [C25B 13/05](#), and [C25B 13/07](#) should be considered in order to perform a complete search.

- N C25B 13/05
- • based on inorganic materials
- WARNING
Group [C25B 13/05](#) is incomplete pending reclassification of documents from group [C25B 13/04](#).
Groups [C25B 13/04](#) and [C25B 13/05](#) should be considered in order to perform a complete search.
- M C25B 13/06
- • based on asbestos
- N C25B 13/07
- • • based on ceramics
- WARNING
Group [C25B 13/07](#) is incomplete pending reclassification of documents from group [C25B 13/04](#).
Groups [C25B 13/04](#) and [C25B 13/07](#) should be considered in order to perform a complete search.
- M C25B 15/00**
- C C25B 15/02**
- Operating or servicing of cells**
- Process control or regulation (~~controlling or regulating in general G05~~)
- WARNING
Group [C25B 15/02](#) is impacted by reclassification into groups [C25B 15/021](#), [C25B 15/023](#), [C25B 15/025](#), [C25B 15/027](#), [C25B 15/029](#), [C25B 15/031](#), and [C25B 15/033](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N C25B 15/021
- • of heating or cooling
- WARNING
Group [C25B 15/021](#) is incomplete pending reclassification of documents from group [C25B 15/02](#).
Groups [C25B 15/02](#) and [C25B 15/021](#) should be considered in order to perform a complete search.
- N C25B 15/023
- • Measuring, analysing or testing during electrolytic production
- WARNING
Groups [C25B 15/023](#) - [C25B 15/033](#) are incomplete pending reclassification of documents from group [C25B 15/02](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N C25B 15/025
- • • of electrolyte parameters
- N C25B 15/027
- • • • Temperature
- N C25B 15/029
- • • • Concentration
- N C25B 15/031
- • • • • pH
- N C25B 15/033
- • • • Conductivity
- M C25B 15/04
- Regulation of the inter-electrode distance (~~electro-machining B23P~~)
- C C25B 15/08
- Supplying or removing reactants or electrolytes; Regeneration of electrolytes
- WARNING
Group [C25B 15/08](#) is impacted by reclassification into groups [C25B 15/081](#), [C25B 15/083](#), [C25B 15/085](#), and [C25B 15/087](#).
All groups listed in this Warning should be considered in order to perform a complete search.

- N C25B 15/081
- {Supplying products to non-electrochemical reactors that are combined with the electrochemical cell, e.g. Sabatier reactor}
- WARNING
Group [C25B 15/081](#) is incomplete pending reclassification of documents from group [C25B 15/08](#).
Groups [C25B 15/08](#) and [C25B 15/081](#) should be considered in order to perform a complete search.
- N C25B 15/083
- {Separating products}
- WARNING
Group [C25B 15/083](#) is incomplete pending reclassification of documents from group [C25B 15/08](#).
Groups [C25B 15/08](#) and [C25B 15/083](#) should be considered in order to perform a complete search.
- N C25B 15/085
- {Removing impurities}
- WARNING
Group [C25B 15/085](#) is incomplete pending reclassification of documents from group [C25B 15/08](#).
Groups [C25B 15/08](#) and [C25B 15/085](#) should be considered in order to perform a complete search.
- N C25B 15/087
- {Recycling of electrolyte to electrochemical cell}
- WARNING
Group [C25B 15/087](#) is incomplete pending reclassification of documents from group [C25B 15/08](#).
Groups [C25B 15/08](#) and [C25B 15/087](#) should be considered in order to perform a complete search.

Project: MP0498 (C30B)

- M C30B
- SINGLE-CRYSTAL-GROWTH (by using ultra-high pressure, e.g. for the formation of diamonds [B01J 3/06](#)); UNIDIRECTIONAL SOLIDIFICATION OF EUTECTIC MATERIAL OR UNIDIRECTIONAL DEMIXING OF EUTECTOID MATERIAL; REFINING BY ZONE-MELTING OF MATERIAL (zone-refining of metals or alloys [C22B](#)); PRODUCTION OF A HOMOGENEOUS POLYCRYSTALLINE MATERIAL WITH DEFINED STRUCTURE (casting of metals, casting of other substances by the same processes or devices [B22D](#); working of plastics [B29](#); modifying the physical structure of metals or alloys [C21D](#), [C22F](#)); SINGLE CRYSTALS OR HOMOGENEOUS POLYCRYSTALLINE MATERIAL WITH DEFINED STRUCTURE; AFTER-TREATMENT OF SINGLE CRYSTALS OR A HOMOGENEOUS POLYCRYSTALLINE MATERIAL WITH DEFINED STRUCTURE (for producing semiconductor devices or parts thereof [H01L](#)); APPARATUS THEREFOR**

NOTES

1. In this subclass, the following expressions are used with the meaning indicated:

- "single-crystal" includes also twin crystals and a predominantly single crystal product;
- "homogeneous polycrystalline material" means a material with crystal particles, all of which have the same chemical composition;
- "defined structure" means the structure of a material with grains which are oriented in a preferential way or have larger dimensions than normally obtained.

2. In this subclass:

- the preparation of **single** crystals or a homogeneous polycrystalline material with defined structure of particular materials or shapes is classified in the group for the process as well as in group [C30B 29/00](#);
- an apparatus specially adapted for a specific process is classified in the appropriate group for the process. Apparatus to be used in more than one kind of process is classified in group [C30B 35/00](#).

~~3. After the notation of C30B and separated therefrom by a + sign, notations concerning the particular composition or shape of the material may be added. These notations are selected from C30B 29/00.
Example: A crystal-growth process by zone-melting directly related to Al₂O₃ crystal material is classified in C30B 13/00 + C30B 29/20~~

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: MP0481 (D01F)

M D01F CHEMICAL FEATURES IN THE MANUFACTURE OF ARTIFICIAL FILAMENTS, THREADS, FIBRES, BRISTLES OR RIBBONS; APPARATUS SPECIALLY ADAPTED FOR THE MANUFACTURE OF CARBON FILAMENTS

WARNING

~~In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.~~

U D01F 1/00 General methods for the manufacture of artificial filaments or the like

M D01F 1/02 • Addition of substances to the spinning solution or to the melt (addition of substances to viscose [D01F 2/08](#)–~~D01F 2/20~~)

U D01F 2/00 Monocomponent artificial filaments or the like of cellulose or cellulose derivatives; Manufacture thereof

M D01F 2/06 • from viscose (~~preparation of alkali cellulose C08B~~)

M D01F 2/08 • Composition of the spinning solution or the bath (~~preparing or dissolving cellulose xanthate C08B~~)

Project: MP0427 (D01F)

M D01F 6/00 Monocomponent artificial filaments or the like of synthetic polymers; Manufacture thereof

NOTE

In this group, the percentage for determining the major constituent is expressed in mole percent.

M D01F 6/28 • from copolymers obtained by reactions only involving carbon-to-carbon unsaturated bonds

NOTE

~~For the purposes of groups D01F 6/30 – D01F 6/96, the percentage for determining the major constituent is expressed in mole percent.~~

Project: MP0481 (D01F)

U D01F 9/00 Artificial filaments or the like of other substances; Manufacture thereof; Apparatus specially adapted for the manufacture of carbon filaments

- M D01F 9/08 · of inorganic material (*working or processing of metal wire B21F*; from softened glass, minerals or slags [C03B 37/00](#); ~~obtaining ceramic fibres C04B 35/62227~~; incandescent bodies [F21H](#), [H01K 1/02](#), [H01K 3/02](#))
- M D01F 9/12 · · Carbon filaments; Apparatus specially adapted for the manufacture thereof ~~{(with fullerene structure, e.g. carbon nanotubes C01B 32/15)}~~
- M D01F 11/00 **Chemical after-treatment of artificial filaments or the like during manufacture** ~~{(of artificial filaments from softened glass, minerals or slags C03C; from ceramics C04B); finishing D06M}~~

Project: RP0666 (D01H)

- U D01H 1/00 **Spinning or twisting machines in which the product is wound-up continuously (open-end spinning machines [D01H 4/00](#) {; doubling of yarns [B65H 54/00+T](#); doubled, plied or cabled threads [D02G 3/28](#), e.g. using hollow spindles [D02G 3/283](#); spin-twisting [D02G 3/281](#); threads with alternately "S" and "Z" direction of twist, e.g. self-twist process, [D02G 3/286](#); wrapping strands of filaments or staple fibres by a binder yarn [D02G 3/38](#)})**
- C D01H 1/10 · for imparting multiple twist, e.g. two-for-one twisting

WARNING

Group D01H 1/10 is impacted by reclassification into group D07B 3/022. Groups [D01H 1/10](#) and [D07B 3/022](#) should be considered in order to perform a complete search.

Project: RP0696 (D01H)

- D01H 11/00 **Arrangements for confining or removing dust, fly, or the like (cleaning of running surfaces in open-end spinning machines [D01H 4/22](#); separation in general [B01D](#); cleaning in general [B08B](#); air-conditioning [F24F](#), e.g. by filtering [F24F 3/16](#), [F24F 8/10](#))**

Project: RP0692 (D02G)

- U D02G 3/00 **Yarns or threads, e.g. fancy yarns; Processes or apparatus for the production thereof, not otherwise provided for (for producing crimped or curled yarns [D02G 1/00](#))**
- NOTE
In this main group, further classification in indexing scheme [D10B](#) for aspects relating to yarns is required.
- U D02G 3/44 · Yarns or threads characterised by the purpose for which they are designed ~~{(protective gloves [A41D 19/00](#); protective clothing [A62B 17/00](#); ropes [D07B 1/02](#))}~~
- D02G 3/441 · · {Yarns or threads with antistatic, conductive or radiation-shielding properties (electroconductive, anti-static or radiation-shielding filaments [D01F 1/09](#), [D01F 1/106](#); anti-static fabrics ~~D03D 15/0005~~ [D03D 15/533](#); conducting, insulating or anti-static layers for floor coverings [D06N 7/0042](#))}
- D02G 3/443 · · {Heat-resistant, fireproof or flame-retardant yarns or threads (fire- or flame-proof filaments [D01F 1/07](#); woven fabrics using heat-resistant or fireproof threads ~~D03D 15/12~~ [D03D 15/513](#))}

Project: RP0666 (D03D)

- C D03D 13/00** Woven fabrics characterised by the special disposition of the warp or weft threads, e.g. with curved weft threads, with discontinuous warp threads, with diagonal warp or weft

WARNING

Group D03D 13/00 is impacted by reclassification into group D07B 7/021. Groups D03D 13/00 and D07B 7/021 should be considered in order to perform a complete search.

Project: RP0692 (D03D)

- C D03D 15/00** Woven fabrics characterised by the material **or construction of the yarn, structure or properties of the fibres, filaments, yarns, threads** or other warp or weft elements used

WARNING

Group D03D 15/00 is impacted by reclassification into groups D03D 15/20, D03D 15/208, D03D 15/217, D03D 15/225, D03D 15/233, D03D 15/242, D03D 15/25, D03D 15/275, D03D 15/283, D03D 15/30, D03D 15/37, D03D 15/40, D03D 15/41, D03D 15/50, D03D 15/52, D03D 15/527, D03D 15/547, D03D 15/553, D03D 15/573, D03D 15/587, D03D 15/60, D03D 15/62, and D03D 15/67.

All groups listed in this Warning should be considered in order to perform a complete search.

- D D03D 15/0005 • {Antistatic fabrics}
<administratively transferred to [D03D 15/533](#)>
- D D03D 15/0011 • {~~using glass fibres~~}
<administratively transferred to [D03D 15/267](#)>
- D D03D 15/0016 • {~~using threads comprising a mineral~~}
<administratively transferred to [D03D 15/247](#)>
- D D03D 15/0022 • {~~using threads with beads~~}
<administratively transferred to [D03D 15/69](#)>
- D D03D 15/0027 • {~~using bicomponent threads~~}
<administratively transferred to [D03D 15/47](#)>
- D D03D 15/0033 • {~~using coloured threads~~}
<administratively transferred to [D03D 15/54](#)>
- D D03D 15/0038 • {~~using threads made of delicate fibers~~}
<administratively transferred to [D03D 15/235](#)>
- D D03D 15/0044 • {~~using knitted threads~~}
<administratively transferred to [D03D 15/497](#)>
- D D03D 15/005 • {~~using leather threads~~}
<administratively transferred to [D03D 15/63](#)>
- D D03D 15/0055 • {~~using magnetic threads~~}
<administratively transferred to [D03D 15/507](#)>
- D D03D 15/0061 • {~~using threads with microdenier fibers~~}
<administratively transferred to [D03D 15/33](#)>
- D D03D 15/0066 • {~~using threads with a noble metal~~}
<administratively transferred to [D03D 15/258](#)>

- D D03D 15/0072
- {using paper threads}
 - <administratively transferred to [D03D 15/65](#)>
- D D03D 15/0077
- {using fancy or textured threads (chenille yarns are in D03D 27/18)}
 - <administratively transferred to [D03D 15/49](#)>
- D D03D 15/0083
- {using threads having a particular sectional shape}
 - <administratively transferred to [D03D 15/44](#)>
- D D03D 15/0088
- • {Flat threads}
 - <administratively transferred to [D03D 15/46](#)>
- D D03D 15/0094
- {using threads with different diameters}
 - <administratively transferred to [D03D 15/43](#)>
- D D03D 15/02
- the warp or weft elements being of stiff material, e.g. wire, cane, slat
 - <administratively transferred to [D03D 15/593](#)>
- D D03D 15/04
- woven to produce shapes or effects upon differential shrinkage
 - <administratively transferred to [D03D 15/567](#)>
- D D03D 15/06
- using scaffolding threads, i.e. threads removed after weaving
 - <administratively transferred to [D03D 15/68](#)>
- D D03D 15/08
- using stretchable or elastic threads (woven fabrics whose elastic or stretch properties are due to the manner of weaving D03D 17/00)
 - <administratively transferred to [D03D 15/56](#)>
- D D03D 15/10
- using threads having high or low coefficients of friction
 - <administratively transferred to [D03D 15/58](#)>
- D D03D 15/12
- using heat-resistant or fireproof threads
 - <administratively transferred to [D03D 15/513](#)>
- N D03D 15/20
- *characterised by the material of the fibres or filaments constituting the yarns or threads*
- WARNING**
Groups [D03D 15/20](#), [D03D 15/208](#), [D03D 15/217](#), [D03D 15/225](#), [D03D 15/242](#), [D03D 15/25](#), [D03D 15/275](#), and [D03D 15/283](#) are incomplete pending reclassification of documents from group [D03D 15/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N D03D 15/208
- • cellulose-based
- N D03D 15/217
- • • natural from plants, e.g. cotton
- N D03D 15/225
- • • artificial, e.g. viscose
- N D03D 15/233
- • protein-based, e.g. wool or silk
- WARNING**
Group [D03D 15/233](#) is incomplete pending reclassification of documents from groups [D03D 15/00](#) and [D03D 15/63](#).
Groups [D03D 15/00](#), [D03D 15/63](#) and [D03D 15/233](#) should be considered in order to perform a complete search.
- N D03D 15/235
- • • {Cashmere or silk}
- N D03D 15/242
- • inorganic, e.g. basalt
- N D03D 15/247
- • • {Mineral}
- N D03D 15/25
- • • Metal
- N D03D 15/258
- • • • Noble metal

- N D03D 15/267 . . . Glass
- N D03D 15/275 . . . Carbon fibres
- N D03D 15/283 . . synthetic polymer-based, e.g. polyamide or polyester fibres (cellulose-based artificial fibres [D03D 15/225](#))
- N D03D 15/292 . . Conjugate, i.e. bi- or multicomponent, fibres or filaments
- WARNING
Group [D03D 15/292](#) is incomplete pending reclassification of documents from group [D03D 15/47](#).
Groups [D03D 15/47](#) and [D03D 15/292](#) should be considered in order to perform a complete search.
- N D03D 15/30 . characterised by the structure of the fibres or filaments
- WARNING
Group [D03D 15/30](#) is incomplete pending reclassification of documents from group [D03D 15/00](#).
Groups [D03D 15/00](#) and [D03D 15/30](#) should be considered in order to perform a complete search.
- N D03D 15/33 . . Ultrafine fibres, e.g. microfibrils or nanofibrils
- N D03D 15/37 . . with specific cross-section or surface shape
- WARNING
Group [D03D 15/37](#) is incomplete pending reclassification of documents from groups [D03D 15/00](#) and [D03D 15/44](#).
Groups [D03D 15/00](#), [D03D 15/44](#), and [D03D 15/37](#) should be considered in order to perform a complete search.
- N D03D 15/40 . characterised by the structure of the yarns or threads
- WARNING
Groups [D03D 15/40](#) and [D03D 15/41](#) are incomplete pending reclassification of documents from group [D03D 15/00](#).
Groups [D03D 15/00](#), [D03D 15/40](#), and [D03D 15/41](#) should be considered in order to perform a complete search.
- N D03D 15/41 . . with specific twist
- N D03D 15/43 . . with differing diameters
- Q D03D 15/44 . . with specific cross-section or surface shape
- WARNING
Group [D03D 15/44](#) is impacted by reclassification into group [D03D 15/37](#).
Groups [D03D 15/44](#) and [D03D 15/37](#) should be considered in order to perform a complete search.
- N D03D 15/46 . . Flat yarns, e.g. tapes or films
- Q D03D 15/47 . . multicomponent, e.g. blended yarns or threads (multicomponent fibres or filaments [D03D 15/292](#))
- WARNING
Group [D03D 15/47](#) is impacted by reclassification into group [D03D 15/292](#).
Groups [D03D 15/47](#) and [D03D 15/292](#) should be considered in order to perform a complete search.
- N D03D 15/49 . . textured (chenille [D03D 27/18](#)); curled; crimped
- N D03D 15/497 . . {Knitted threads}

- N D03D 15/50
- characterised by the properties of the yarns or threads
- WARNING
Groups [D03D 15/50](#), [D03D 15/527](#), [D03D 15/547](#), [D03D 15/553](#), [D03D 15/573](#), and [D03D 15/587](#) are incomplete pending reclassification of documents from group [D03D 15/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N D03D 15/507
- • magnetic
- Q D03D 15/513
- • heat-resistant or fireproof
- WARNING
Group [D03D 15/513](#) is impacted by reclassification into group [D03D 15/52](#).
Groups [D03D 15/513](#) and [D03D 15/52](#) should be considered in order to perform a complete search.
- N D03D 15/52
- • thermal insulating, e.g. heating or cooling
- WARNING
Group [D03D 15/52](#) is incomplete pending reclassification of documents from groups [D03D 15/00](#) and [D03D 15/513](#).
Groups [D03D 15/00](#), [D03D 15/513](#), and [D03D 15/52](#) should be considered in order to perform a complete search.
- N D03D 15/527
- • waterproof or water repellent
- N D03D 15/533
- • antistatic; electrically conductive
- N D03D 15/54
- • coloured
- N D03D 15/547
- • with optical functions other than colour, e.g. comprising light-emitting fibres
- N D03D 15/553
- • • with metallic effect (metal [D03D 15/25](#))
- N D03D 15/56
- • elastic
- N D03D 15/567
- • Shapes or effects upon shrinkage
- N D03D 15/573
- • Tensile strength
- N D03D 15/58
- • characterised by the coefficients of friction
- N D03D 15/587
- • adhesive; fusible
- Q D03D 15/593
- • Stiff materials, e.g. cane or slat
- WARNING
Group [D03D 15/593](#) is impacted by reclassification into group [D03D 15/67](#).
Groups [D03D 15/593](#) and [D03D 15/67](#) should be considered in order to perform a complete search.
- N D03D 15/60
- characterised by the warp or weft elements other than yarns or threads
- WARNING
Groups [D03D 15/60](#) and [D03D 15/62](#) are incomplete pending reclassification of documents from group [D03D 15/00](#).
Groups [D03D 15/00](#), [D03D 15/60](#), and [D03D 15/62](#) should be considered in order to perform a complete search.
- N D03D 15/62
- • Cords or ropes
- Q D03D 15/63
- • Straps, e.g. leather straps
- WARNING
Group [D03D 15/63](#) is impacted by reclassification into group [D03D 15/233](#).
Groups [D03D 15/63](#) and [D03D 15/233](#) should be considered in order to perform a complete search.

- N D03D 15/65 • • Paper
- N D03D 15/67 • • Metal wires
- WARNING
Group [D03D 15/67](#) is incomplete pending reclassification of documents from groups [D03D 15/00](#) and [D03D 15/593](#).
Groups [D03D 15/00](#), [D03D 15/593](#), and [D03D 15/67](#) should be considered in order to perform a complete search.
- N D03D 15/68 • • Scaffolding threads, i.e. threads removed after weaving
- N D03D 15/69 • • {Threads with beads}
- M D03D 17/00 **Woven fabrics having elastic or stretch properties due to manner of weaving (fabrics using stretchable or elastic threads ~~D03D 15/08~~[D03D 15/56](#))**

Project: MP0427 (D06B)

- M D06B 15/00 **Removing liquids, gases or vapours from textile materials in association with treatment of the materials by liquids, gases or vapours**
- NOTE
Group [D06B 15/12](#) takes precedence over groups [D06B 15/02](#) - [D06B 15/10](#).
{This Note corresponds to IPC Note (1) relating to [D06B 15/02](#) - [D06B 15/10](#).}
- M D06B 15/005 • {by squeezing, otherwise than by rollers}
- NOTE
~~Group [D06B 15/12](#) takes precedence over groups [D06B 15/02](#) - [D06B 15/10](#)~~

Project: RP0666 (D07B)

- C D07B 1/00 **Constructional features of ropes or cables**
- WARNING
Group [D07B 1/00](#) is impacted by reclassification into group [D07B 1/24](#).
Groups [D07B 1/00](#) and [D07B 1/24](#) should be considered in order to perform a complete search.
- C D07B 1/14 • Ropes or cables with incorporated auxiliary elements, e.g. for marking, extending throughout the length of the rope or cable
- WARNING
Group [D07B 1/14](#) is impacted by reclassification into group [D07B 1/24](#).
Groups [D07B 1/14](#) and [D07B 1/24](#) should be considered in order to perform a complete search.
- C D07B 1/145 • • {comprising elements for indicating or detecting the rope or cable status}
- WARNING
Group [D07B 1/145](#) is impacted by reclassification into group [D07B 1/24](#).
Groups [D07B 1/145](#) and [D07B 1/24](#) should be considered in order to perform a complete search.
- C D07B 1/22 • Flat or flat-sided ropes; Sets of ropes consisting of a series of parallel ropes
- WARNING
Group [D07B 1/22](#) is impacted by reclassification into group [D07B 5/045](#).
Groups [D07B 1/22](#) and [D07B 5/045](#) should be considered in order to perform a complete search.

- N D07B 1/24
- {Ropes or cables with a prematurely failing element}
- WARNING
Group [D07B 1/24](#) is incomplete pending reclassification of documents from groups [D07B 1/00](#), [D07B 1/14](#), and [D07B 1/145](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- U D07B 3/00** **General-purpose machines or apparatus for producing twisted ropes or cables from component strands of the same or different material**
- C D07B 3/02
- in which the supply reels rotate about the axis of the rope or cable (or in which a guide member rotates about the axis of the rope or cable to guide the component strands away from the supply reels in fixed position)
- WARNING
Group [D07B 3/02](#) is impacted by reclassification into group [D07B 3/022](#).
Groups [D07B 3/02](#) and [D07B 3/022](#) should be considered in order to perform a complete search.
- N D07B 3/022
- {with provision for imparting two or more twists to the filaments for each revolution of the guide member}
- WARNING
Group [D07B 3/022](#) is incomplete pending reclassification of documents from groups [D07B 3/02](#) and [D01H 1/10](#).
Groups [D07B 3/02](#), [D01H 1/10](#), and [D07B 3/022](#) should be considered in order to perform a complete search.
- U D07B 5/00** **Making ropes or cables from special materials or of particular form**
- C D07B 5/04
- Rope bands
- WARNING
Group [D07B 5/04](#) is impacted by reclassification into group [D07B 5/045](#).
Groups [D07B 5/04](#) and [D07B 5/045](#) should be considered in order to perform a complete search.
- N D07B 5/045
- {Belts comprising additional filaments for laterally interconnected load bearing members}
- WARNING
Group [D07B 5/045](#) is incomplete pending reclassification of documents from groups [D07B 1/22](#) and [D07B 5/04](#).
Groups [D07B 1/22](#), [D07B 5/04](#), and [D07B 5/045](#) should be considered in order to perform a complete search.
- U D07B 7/00** **Details of, or auxiliary devices incorporated in, rope- or cable-making machines; Auxiliary apparatus associated with such machines**
- C D07B 7/02
- Machine details; Auxiliary devices
- WARNING
Group [D07B 7/02](#) is impacted by reclassification into group [D07B 7/021](#).
Groups [D07B 7/02](#) and [D07B 7/021](#) should be considered in order to perform a complete search.
- N D07B 7/021
- {Guiding means for filaments, strands, ropes or cables}
- WARNING
Group [D07B 7/021](#) is incomplete pending reclassification of documents from groups [D07B 7/02](#) and [D03D 13/00](#).

Groups [D07B 7/02](#), [D03D 13/00](#), and [D07B 7/021](#) should be considered in order to perform a complete search.

C D07B 9/00 Binding or sealing ends, e.g. to prevent unravelling

WARNING

Group [D07B 9/00](#) is impacted by reclassification into group [D07B 9/001](#). Groups [D07B 9/00](#) and [D07B 9/001](#) should be considered in order to perform a complete search.

N D07B 9/001 · {combined with cutting or severing}

WARNING

Group [D07B 9/001](#) is incomplete pending reclassification of documents from group [D07B 9/00](#). Groups [D07B 9/00](#) and [D07B 9/001](#) should be considered in order to perform a complete search.

Project: N/A (D10B)

U D10B 2321/00 Fibres made from polymers obtained by reactions only involving carbon-to-carbon unsaturated bonds

U D10B 2321/02 · polyolefins

U D10B 2321/021 · · polyethylene

D10B 2321/0211 · · · high-strength or high-molecular-weight polyethylene, e.g. **dyneema**; **spectra** *ultra-high molecular weight polyethylene [UHMWPE]*

Project: MP0427 (E02D)

M E02D FOUNDATIONS; EXCAVATIONS; EMBANKMENTS (specially adapted for hydraulic engineering [E02B](#)); UNDERGROUND OR UNDERWATER STRUCTURES {(tunnels, tunnelling, mining [E21](#))}

NOTES

1. This subclass *covers* underground structures made by foundation engineering, i.e. involving disturbance of the ground surface.
2. This subclass *does not cover* underground spaces, made by underground mining methods only, i.e. not involving disturbance of the ground surface, which are covered by subclass [E21D](#).

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

[E02D 29/09](#) covered by [E02D 29/06](#)

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

U E02D 5/00 Bulkheads, piles, or other structural elements specially adapted to foundation engineering (engineering elements in general [F16](#))

U E02D 5/22 · Piles (sheet piles, {i.e. elements shaped to mutually lock or mate} [E02D 5/02](#); {pile shoes [E02D 5/72](#); foundations on piles [E02D 27/12](#), [E02D 27/20](#)})

U E02D 5/34 · · Concrete or concrete-like piles cast in position {; Apparatus for making same ([E02D 5/50](#) takes precedence; moulds [E02D 5/665](#); placing, removing moulds [E02D 7/00](#) - [E02D 11/00](#); placing the concrete [E02D 15/04](#))}

- M E02D 5/36 . . . making without use of mouldpipes or other moulds

NOTE

Documents covered both by E02D 5/34 – E02D 5/46 and by one or several of the groups E02D 5/48 – E02D 5/64 are classified in all relevant groups unless specific priority rules to the contrary are given

Project: RP0576-F (E03C)

- U E03C 1/00 **Domestic plumbing installations for fresh water or waste water; Sinks {(work tops [A47B 77/022](#))}**
- U E03C 1/12 . Plumbing installations for waste water; Basins or fountains connected thereto (drainage devices in floors [E03F 5/04](#)); Sinks {(wash-basins not connected to the waste-pipe [A47K 1/04](#))}
- U E03C 1/18 . . Sinks, whether or not connected to the waste-pipe
- M E03C 1/181 . . . Anti-splash devices in sinks, e.g. splash guards (jet regulators [E03C 1/08](#))

WARNING

Group E03C 1/181 is incomplete pending reclassification of documents from group A47J 47/20.
Groups A47J 47/20 and E03C 1/181 should be considered in order to perform a complete search.

- M E03C 1/186 . . . Separate partition walls, lids, protecting borders, or the like, for sinks

WARNING

Group E03C 1/186 is incomplete pending reclassification of documents from group A47J 47/20.
Groups A47J 47/20 and E03C 1/186 should be considered in order to perform a complete search.

Project: MP0427 (E04B)

- M E04B **GENERAL BUILDING CONSTRUCTIONS; WALLS, e.g. PARTITIONS; ROOFS; FLOORS; CEILINGS; INSULATION OR OTHER PROTECTION OF BUILDINGS (border constructions of opening in walls, floors or ceilings [E06B 1/00](#); {electromagnetic shielding [H05K 9/0001](#))}**

NOTE

1. This subclass covers working methods used in constructing new buildings and analogous working methods on existing buildings. Other working methods on existing buildings, except those for insulating, are classified in group [E04G 23/00](#).

- 1-2. In this subclass, the following term is used with the meaning indicated:
- "ceiling" includes all the finishing material concealing the underside of the ~~load-carrying~~ *loadcarrying* ceiling structure or roof structure.

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

E04B 1/682	covered by	E04B 1/68
E04B 1/684	covered by	E04B 1/68
E04B 1/686	covered by	E04B 1/68

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

- U E04B 1/00** Constructions in general; Structures which are not restricted either to walls, e.g. partitions, or floors or ceilings or roofs (scaffolds, shutterings [E04G](#); structures specially adapted for buildings for special purposes, general layout of buildings, e.g. modular co-ordination, [E04H](#); the particular parts of buildings, see the relevant groups for those parts)
- M E04B 1/18** · Structures comprising elongated load-supporting parts, e.g. columns, girders, skeletons ([E04B 1/32](#) - [E04B 1/36](#) take precedence; elongated load-supporting parts as elements, trusses, truss-like structures [E04C 3/00](#))
- NOTE**
Group [E04B 1/19](#) takes precedence over groups [E04B 1/20](#) - [E04B 1/30](#).
{This Note corresponds to IPC Note (1) relating to [E04B 1/19](#), [E04B 1/20](#) - [E04B 1/30](#).}
- U E04B 1/19** · · Three-dimensional framework structures {(folded structures and grid-like formations acting as shell structures [E04B 7/10](#))}
- U E04B 1/1903** · · · {Connecting nodes specially adapted therefor}
- M E04B 1/1912** · · · · {with central cubical connecting element}
- NOTE**
~~Subgroup [E04B 1/19](#) takes precedence over subgroups [E04B 1/20](#) - [E04B 1/30](#)~~

Project: MP0427 (E04D)

- M E04D 3/00** **Roof covering by making use of flat or curved slabs or stiff sheets**
([E04D 1/00](#) takes precedence; built-up roofs [E04D 11/02](#))
- NOTE**
In groups [E04D 3/361](#) - [E04D 3/368](#), additional small fastening elements, e.g. nails, screws, are not to be considered to be separate connecting elements.
{This Note corresponds to IPC Note (1) relating to [E04D 3/361](#) - [E04D 3/368](#).}
- U E04D 3/36** · Connecting; Fastening
- M E04D 3/3608** · · {for double roof covering or overroofing}
- NOTE**
~~In groups [E04D 3/361](#) - [E04D 3/368](#), additional small fastening elements, e.g. nails, screws, are not to be considered to be separate connecting elements.~~

Project: MP0496 (E04G)

- M E04G** **SCAFFOLDING; FORMS; SHUTTERING; BUILDING IMPLEMENTS OR OTHER BUILDING AIDS, OR THEIR USE; HANDLING BUILDING MATERIALS ON THE SITE; REPAIRING, BREAKING-UP OR OTHER WORK ON EXISTING BUILDINGS**
- NOTE**
In this subclass the word "scaffolding" includes other supports for like purposes
- WARNINGS**
1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:
[E04G 23/03](#) covered by [E04G 23/0266](#)
2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: RP0291 (E04H)

- C E04H 17/00 **Fencing, e.g. fences, enclosures, corrals (features peculiar to electrified fences [A01K 3/00](#), [H05C](#); means for allowing passage through fences, barriers, or the like [E06B 11/00](#))**
- WARNING**
Group [E04H 17/00](#) is impacted by reclassification into groups [E04H 17/004](#), [E04H 17/006](#), [E04H 17/009](#), [E04H 17/013](#), and [E04H 17/017](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- C E04H 17/003 • {Anti-climbing devices, e.g. fixed ~~or rotary~~ spikes}
- WARNING**
Group [E04H 17/003](#) is impacted by reclassification into group [E04H 17/004](#).
Groups [E04H 17/003](#) and [E04H 17/004](#) should be considered in order to perform a complete search.
- N E04H 17/004 • • {Unstable, e.g. rotatory or resiliently mounted fence panels, spikes}
- WARNING**
Group [E04H 17/004](#) is incomplete pending reclassification of documents from groups [E04H 17/00](#) and [E04H 17/003](#).
Groups [E04H 17/00](#), [E04H 17/003](#), and [E04H 17/004](#) should be considered in order to perform a complete search.
- D E04H 2017/006 • {Caps for posts}
<administratively transferred to [E04H 17/006](#) INV>
- N E04H 17/006 • {Caps or covers for posts}
- WARNING**
Group [E04H 17/006](#) is incomplete pending reclassification of documents from group [E04H 17/00](#).
Groups [E04H 17/00](#) and [E04H 17/006](#) should be considered in order to perform a complete search.
- N E04H 17/009 • {Footing elements for fence posts or fence sections}
- WARNING**
Group [E04H 17/009](#) is incomplete pending reclassification of documents from groups [E04H 17/00](#) and [E04H 17/22](#).
Groups [E04H 17/00](#), [E04H 17/22](#), and [E04H 17/009](#) should be considered in order to perform a complete search.
- N E04H 17/013 • {in combination with gates}
- WARNING**
Group [E04H 17/013](#) is incomplete pending reclassification of documents from group [E04H 17/00](#).
Groups [E04H 17/00](#) and [E04H 17/013](#) should be considered in order to perform a complete search.

- N E04H 17/017
- {Fencing provided with electric elements or components, e.g. fencing member or component, such as fence strands, post, panel or rail, provided with electric elements or components}
- NOTE
{When classifying in this group, aspects of electrified wire fencing for animal pasturing should also be classified in group [A01K 3/005](#)}
- WARNING
Group [E04H 17/017](#) is incomplete pending reclassification of documents from group [E04H 17/00](#).
Groups [E04H 17/00](#) and [E04H 17/017](#) should be considered in order to perform a complete search.
- C E04H 17/02
- Wire fencing, e.g. made of wire mesh ([E04H 17/14](#) takes precedence; working or processing of wire [B21F](#), e.g. making wire nets [B21F 27/00](#))
- WARNING
Group [E04H 17/02](#) is impacted by reclassification into groups [E04H 17/045](#), [E04H 17/05](#), and [E04H 17/055](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- C E04H 17/04
- • using wire, barbed wire, wire mesh, toothed strips, characterised by the use of specially adapted wire, e.g. barbed wire {, wire mesh, toothed strip or the like; Coupling means therefor-} (wire netting [B21F 27/00](#); other metallic fabrics see the relevant classes; {turnbuckles [F16G 11/12](#)})
- WARNING
Group [E04H 17/04](#) is impacted by reclassification into groups [E04H 17/045](#), [E04H 17/05](#), and [E04H 17/055](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N E04H 17/045
- • • {Barbed wire or toothed strip}
- WARNING
Group [E04H 17/045](#) is incomplete pending reclassification of documents from groups [E04H 17/02](#) and [E04H 17/04](#).
Groups [E04H 17/02](#), [E04H 17/04](#), and [E04H 17/045](#) should be considered in order to perform a complete search.
- N E04H 17/05
- • • {Wire mesh or wire fabric}
- WARNING
Group [E04H 17/05](#) is incomplete pending reclassification of documents from groups [E04H 17/02](#) and [E04H 17/04](#).
Groups [E04H 17/02](#), [E04H 17/04](#), and [E04H 17/05](#) should be considered in order to perform a complete search.
- N E04H 17/055
- • {Pickets for wire fencing}
- WARNING
Group [E04H 17/055](#) is incomplete pending reclassification of documents from groups [E04H 17/02](#) and [E04H 17/04](#).
Groups [E04H 17/02](#), [E04H 17/04](#), and [E04H 17/055](#) should be considered in order to perform a complete search.
- C E04H 17/06
- • Parts for wire fences
- WARNING
Group [E04H 17/06](#) is impacted by reclassification into groups [E04H 17/127](#), [E04H 17/131](#), [E04H 17/133](#), [E04H 17/135](#), and [E04H 17/139](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- U E04H 17/063
 - • • {Fence liners; Vegetation prevention barriers}
- U E04H 17/066
 - • • {Slats for chain link fences}
- U E04H 17/08
 - • • Anchoring means therefor, e.g. specially-shaped parts entering the ground; Struts or the like (for towers or masts [E04H 12/20](#); sockets for posts [E04H 12/22](#))
- NOTE
Parts entering the ground are classified in [E04H 12/22](#)
- C E04H 17/10
 - • characterised by the way of connecting wire to posts; Droppers
- WARNING
Group [E04H 17/10](#) is impacted by reclassification into groups [E04H 17/124](#), [E04H 17/127](#), [E04H 17/131](#), [E04H 17/133](#), [E04H 17/135](#), and [E04H 17/139](#). All groups listed in this Warning should be considered in order to perform a complete search.
- U E04H 17/12
 - • • the wire being placed in slots, grooves, or the like
- N E04H 17/124
 - • • {connecting by one or more clamps, clips, screws, wedges or ties}
- WARNING
Group [E04H 17/124](#) is incomplete pending reclassification of documents from group [E04H 17/10](#).
Groups [E04H 17/10](#) and [E04H 17/124](#) should be considered in order to perform a complete search.
- N E04H 17/127
 - • {Stretcher-type wire fencing; Tensioning devices for wire fencing}
- WARNING
Group [E04H 17/127](#) is incomplete pending reclassification of documents from groups [E04H 17/06](#), [E04H 17/10](#), and [E04H 17/266](#).
Groups [E04H 17/06](#), [E04H 17/266](#), and [E04H 17/127](#) should be considered in order to perform a complete search.
- N E04H 17/131
 - • • {the wire being tensioned by one or more springs}
- WARNING
Group [E04H 17/131](#) is incomplete pending reclassification of documents from groups [E04H 17/06](#) and [E04H 17/10](#).
Groups [E04H 17/06](#), [E04H 17/10](#), and [E04H 17/131](#) should be considered in order to perform a complete search.
- N E04H 17/133
 - • • {the wire being tensioned by one or more winders}
- WARNING
Groups [E04H 17/133](#), [E04H 17/135](#), and [E04H 17/139](#) are incomplete pending reclassification of documents from groups [E04H 17/06](#) and [E04H 17/10](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N E04H 17/135
 - • • • {winder fixed to post via a bracket}
- N E04H 17/139
 - • • • {winder internal to post}

- C E04H 17/14
- Fences constructed of rigid elements, e.g. with ~~posts, with additional wire fillings~~ *additional wire fillings or with posts*
- WARNING**
 Group [E04H 17/14](#) is impacted by reclassification into groups [E04H 17/21](#) and [E04H 17/23](#).
 Groups [E04H 17/14](#), [E04H 17/21](#), and [E04H 17/23](#) should be considered in order to perform a complete search.
- M E04H 17/1404
- • {using building blocks, e.g. *from concrete or stone*}
- U E04H 17/1408
- • {using woven slats}
- M E04H 17/1413
- • {Post-and-rail fences, e.g. without vertical cross-members}
- T E04H 17/1417
- • • {~~Post-and-rail fences~~ with vertical cross-members}
- D E04H 17/1421
- • • {~~Connections between rail and post~~
 - <administratively transferred to [E04H 17/1417](#) and [E04H 17/1447](#)>
- M E04H 17/1426
- • • {~~Picket fences~~}
- T E04H 17/143
- • • • {with separate pickets attached to the side of the horizontal members}
- D E04H 17/1434
- • • • {~~Connections between horizontal members and post~~
 - <administratively transferred to [E04H 17/143](#) and [E04H 17/1447](#)>
- T E04H 17/1439
- • • • {with separate pickets going through the horizontal members}
- D E04H 17/1443
- • • • {~~Connections between horizontal members and post~~
 - <administratively transferred to [E04H 17/1439](#) and [E04H 17/1447](#)>
- N E04H 17/1445
- • • {*Fences with pivotable slats for reduced wind resistance or for adjusting visibility*}
- D E04H 2017/1447
- • {~~Details of connections between rails and posts~~
 - <administratively transferred to [E04H 17/1447](#) INV>
- Q E04H 17/1447
- • • {*Details of connections between rails and posts*}
- WARNING**
 Group [E04H 17/1447](#) is impacted by reclassification into groups [E04H 17/1448](#), [E04H 17/145](#), and [E04H 17/1488](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N E04H 17/1448
- • • • {*Adjustable, angled or hinged connections*}
- WARNING**
 Group [E04H 17/1448](#) is incomplete pending reclassification of documents from group [E04H 17/1447](#).
 Groups [E04H 17/1447](#) and [E04H 17/1448](#) should be considered in order to perform a complete search.
- N E04H 17/145
- • • • {*being welded, bonded or deformed in-situ*}
- WARNING**
 Group [E04H 17/145](#) is incomplete pending reclassification of documents from group [E04H 17/1447](#).
 Groups [E04H 17/1447](#) and [E04H 17/145](#) should be considered in order to perform a complete search.
- D E04H 2017/1452
- • • {~~the ends of the rails are fixed on the lateral sides of the posts~~
 - <administratively transferred to [E04H 17/1452](#) INV>
- N E04H 17/1452
- • • • {*the ends of the rails are fixed on the lateral sides of the posts*}

- D E04H 2017/1456 {the ends of the rails being located in vertical channels extending along a substantial portion of the length of the post}
<administratively transferred to [E04H 17/1456](#) INV>
- N E04H 17/1456 {the ends of the rails being located in vertical channels extending along a substantial portion of the length of the post}
- D E04H 2017/146 . . . {the rails being attached to the front faces of the posts}
<administratively transferred to [E04H 17/146](#) INV>
- N E04H 17/146 {the rails being attached to the front faces of the posts}
- D E04H 2017/1465 . . . {the rails being supported within blind or through holes of the posts}
<administratively transferred to [E04H 17/1465](#) INV>
- N E04H 17/1465 {the rails being supported within blind or through holes of the posts}
- D E04H 2017/1469 {Snap connections}
<administratively transferred to [E04H 17/1469](#) INV>
- N E04H 17/1469 {Snap connections}
- D E04H 2017/1473 . . . {using fixing devices encircling, partially or fully, the post}
<administratively transferred to [E04H 17/1473](#) INV>
- N E04H 17/1473 {using fixing devices encircling, partially or fully, the post}
- D E04H 2017/1478 . . . {the posts extending through apertures or cut-outs in the rails}
<administratively transferred to [E04H 17/1478](#) INV>
- N E04H 17/1478 {the posts extending through apertures or cut-outs in the rails}
- D E04H 2017/1482 . . . {the rails being attached to the tops of the posts}
<administratively transferred to [E04H 17/1482](#) INV>
- N E04H 17/1482 {the rails being attached to the tops of the posts}
- D E04H 2017/1486 . . . {the rails being positioned between the uprights of double posts}
<administratively transferred to [E04H 17/1486](#) INV>
- N E04H 17/1486 {the rails being positioned between the uprights of double posts}
- N E04H 17/1488 {Brackets for connections between rails and posts ([E04H 17/1448](#)-[E04H 17/1486](#) take precedence)}
- WARNING
Group [E04H 17/1488](#) is incomplete pending reclassification of documents from group [E04H 17/1447](#).
Groups [E04H 17/1447](#) and [E04H 17/1488](#) should be considered in order to perform a complete search.
- D E04H 2017/1491 . . . {Hinged connections between rails and posts}
<administratively transferred to [E04H 17/1448](#) INV>
- D E04H 2017/1495 . . {Fences with pivotable slats for reduced wind resistance or for adjusting visibility}
<administratively transferred to [E04H 17/1445](#) INV>
- C E04H 17/16 . . using prefabricated panel-like elements, e.g. wired frames
- WARNING
Group [E04H 17/16](#) is impacted by reclassification into groups [E04H 17/1602](#), [E04H 17/17](#), and [E04H 17/185](#).
All groups listed in this Warning should be considered in order to perform a complete search.

- N E04H 17/1602 . . . {Using wooden, plastic or composite-material panel-like elements}
WARNING
 Group [E04H 17/1602](#) is incomplete pending reclassification of documents from group [E04H 17/16](#).
 Groups [E04H 17/16](#) and [E04H 17/1602](#) should be considered in order to perform a complete search.
- C E04H 17/161 . . . {using ~~wired panels without frame~~ *wire panels*}
WARNING
 Group [E04H 17/161](#) is impacted by reclassification into group [E04H 17/164](#).
 Groups [E04H 17/161](#) and [E04H 17/164](#) should be considered in order to perform a complete search.
- C E04H 17/163 . . . {using wired panels with frame}
WARNING
 Group [E04H 17/163](#) is impacted by reclassification into group [E04H 17/164](#).
 Groups [E04H 17/163](#) and [E04H 17/164](#) should be considered in order to perform a complete search.
- N E04H 17/164 . . . {occultation devices therefor, e.g. slats, fence liners or panels blocking view therethrough}
WARNING
 Group [E04H 17/164](#) is incomplete pending reclassification of documents from groups [E04H 17/161](#) and [E04H 17/163](#).
 Groups [E04H 17/161](#), [E04H 17/163](#), and [E04H 17/164](#) should be considered in order to perform a complete search.
- M E04H 17/165 . . . {using panels with ~~frame rigid filling and frame~~ (E04H 17/163 takes precedence)}
- U E04H 17/166 . . . {with cross-members}
- T E04H 17/168 . . . {using panels ~~without frames and~~ fitted in grooves of posts}
WARNING
 Group [E04H 17/168](#) is incomplete pending reclassification of documents from groups [E04H 17/163](#), [E04H 17/165](#) and [E04H 17/166](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N E04H 17/17 . . . {brackets for the connection between panels and posts}
WARNING
 Group [E04H 17/17](#) is incomplete pending reclassification of documents from group [E04H 17/16](#).
 Groups [E04H 17/16](#) and [E04H 17/17](#) should be considered in order to perform a complete search.
- U E04H 17/18 . . . Corrals, i.e. easily transportable or demountable enclosures
- N E04H 17/185 . . . {hinged or tied prefabricated panel-like elements}
WARNING
 Group [E04H 17/185](#) is incomplete pending reclassification of documents from group [E04H 17/16](#).
 Groups [E04H 17/16](#) and [E04H 17/185](#) should be considered in order to perform a complete search.

- C E04H 17/20
- • Posts therefor
- WARNING**
Group E04H 17/20 is impacted by reclassification into group E04H 17/21. Groups E04H 17/20 and E04H 17/21 should be considered in order to perform a complete search.
- N E04H 17/21
- • • {with hollow cross sections}
- WARNING**
Group E04H 17/21 is incomplete pending reclassification of documents from groups E04H 17/14 and E04H 17/20. Groups E04H 17/14, E04H 17/20, and E04H 17/21 should be considered in order to perform a complete search.
- C E04H 17/22
- • • **Anchoring means therefor** *anchoring means therefore*, e.g. specially-shaped parts entering the ground; **Struts** *struts* or the like (for towers or masts E04H 12/20; sockets for posts E04H 12/22)
- NOTE**
 Parts entering the ground are classified in E04H 12/22
- WARNING**
Group E04H 17/22 is impacted by reclassification into group E04H 17/009. Groups E04H 17/22 and E04H 17/009 should be considered in order to perform a complete search.
- N E04H 17/23
- • • {lateral supporting elements, e.g. braces, tie downs, or cables}
- WARNING**
Group E04H 17/23 is incomplete pending reclassification of documents from group E04H 17/14. Groups E04H 17/14 and E04H 17/23 should be considered in order to perform a complete search.
- U E04H 17/24
- • Connections for attaching additional wire to frames, posts or railings
- U E04H 17/26
- Devices for erecting or removing fences {(hand-operated hammers having the impact head in form of a sleeve slidable on a shaft B25D 1/16)}
- U E04H 17/261
- • {for post and wire handling}
- U E04H 17/265
- • • {for removing posts}
- C E04H 17/266
- • • {for stretching or winding wire or wire mesh (*stretcher-type wire fencing or tensioning devices for wire fencing E04H 17/127*)}
- WARNING**
Group E04H 17/266 is impacted by reclassification into group E04H 17/127. Groups E04H 17/266 and E04H 17/127 should be considered in order to perform a complete search.

Project: MP0496 (E05D)

M E05D **HINGES OR OTHER SUSPENSION DEVICES FOR DOORS, WINDOWS OR WINGS** (~~foldable tables A47B 3/00; hinged panels A47B 5/00; foldable chairs A47C 4/00; making hinges B21D 53/40, B21K 13/02; making holes for taking-up fittings B27F 5/12; for vehicle tailboards B60P 1/26; for refuse receptacles B65F 1/1646~~); pivotal connections in general [F16C 11/00](#) {; mounting of stove or range doors [F24C 15/023](#); for folding flat displays of portable computers [G06F 1/1616](#)})

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: RP0703 (F01L)

M F01L **CYCLICALLY OPERATING VALVES FOR MACHINES OR ENGINES** (~~valves in general F16K~~)

NOTES

1. Groups [F01L 1/00](#) - [F01L 13/00](#) cover only valve-gear or valve arrangements without provision for variable fluid distribution.
2. Valve gear or valve arrangements specially adapted for steam engines are covered by groups [F01L 15/00](#) - [F01L 35/00](#).
3. Valve-gear arrangements specially adapted for machines or engines with variable working-fluid distribution are covered by groups [F01L 15/00](#) - [F01L 35/00](#).
4. Attention is drawn to the notes preceding class [F01](#), especially Note (3).
5. As regards the above-mentioned Note (3), attention is drawn to [F01B 3/10](#), [F01B 15/06](#), [F01C 21/18](#), [F02B 53/06](#), [F03C 1/08](#), [F04B 1/18](#), [F04B 7/00](#), [F04B 39/08](#), [F04B 39/10](#), and [F04C 15/06](#), [F04C 29/12](#).

WARNING

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

F01L 31/20	covered by	F01L 31/08 - F01L 31/18
F01L 31/22	covered by	F01L 31/08 - F01L 31/18
F01L 31/24	covered by	F01L 31/08 - F01L 31/18

~~2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.~~

M F01L 1/00 - F01L 13/00 ~~Valve-gear for internal combustion piston engines or for other machines or engines with positive working-fluid displacement or valve arrangements for positive-displacement machines or engines other than steam engines, e.g. for internal-combustion piston engines, without provision for variable fluid distribution~~ (~~valve gear specially for steam engines or specially for other machines or engines with variable fluid distribution F01L 15/00 - F01L 35/00~~)

U F01L 1/00 Valve-gear or valve arrangements, e.g. lift-valve gear (lift-valve and valve-seat assemblies per se [F01L 3/00](#); slide-valve gear [F01L 5/00](#); actuated non-mechanically [F01L 9/00](#); valve arrangements in working piston or piston rod [F01L 11/00](#); modifications of valve-gear to facilitate reversing, braking, starting, changing compression ratio, or other specific operations [F01L 13/00](#))

U F01L 1/02 • Valve drive (transmitting-gear between valve drive and valve [F01L 1/12](#))

U F01L 1/04 • • by means of cams, camshafts, cam discs, eccentrics or the like ([F01L 1/10](#) takes precedence)

- C F01L 1/044 . . . {Reciprocating cams}
- WARNING**
Group F01L 1/044 is impacted by reclassification into group F01L 1/10. Groups F01L 1/044 and F01L 1/10 should be considered in order to perform a complete search.
- U F01L 1/047 . . . Camshafts
- M F01L 2001/0475 {Hollow camshafts ~~(F01L 2001/0473 takes precedence)~~}
- T F01L 1/10 . . by means of crank-or eccentric-driven rods ~~{(F01L 1/044 takes precedence)}~~
- WARNING**
Group F01L 1/10 is incomplete pending reclassification of documents from group F01L 1/044. Groups F01L 1/044 and F01L 1/10 should be considered in order to perform a complete search.
- U F01L 1/36 . peculiar to machines or engines of specific type other than four-stroke cycle
- M F01L 1/40 . . for engines with scavenging charge near top dead centre position, e.g. by overlapping inlet and exhaust time ~~(scavenging aspects F02B)~~
- U F01L 3/00** **Lift-valve, i.e. cut-off apparatus with closure members having at least a component of their opening and closing motion perpendicular to the closing faces; Parts or accessories thereof**
- U F01L 3/12 . Cooling of valves
- M F01L 3/16 . . by means of a fluid flowing through or along valve, e.g. air ~~(for sealing only F01L 3/08)~~
- U F01L 5/00** **Slide valve-gear or valve-arrangements (with pure rotary or oscillatory movement [F01L 7/00](#))**
- M F01L 5/20 . specially for two-stroke engines ([F01L 5/06](#) and [F01L 5/14](#) take precedence)
- M F01L 5/22 . Multiple-valve arrangements (with valves surrounding working cylinder or piston [F01L 5/06](#) [F01L 5/08](#); with reciprocatory and other slide valves [F01L 5/18](#); specially for two-stroke engines [F01L 5/20](#))
- U F01L 7/00** **Rotary or oscillatory slide valve-gear or valve arrangements (slide valves with combined rotary and non-rotary movements, combinations of rotary and non-rotary slide valves [F01L 5/00](#))**
- U F01L 9/00** **Valve-gear or valve arrangements actuated non-mechanically**
- D F01L 9/02 . by fluid means, e.g. hydraulic
<administratively transferred to [F01L 9/10](#)>
- D F01L 9/021 . . {the action of a cam being transmitted to a valve by a fluid column, e.g. a fluid conduit}
<administratively transferred to [F01L 9/11](#)>
- D F01L 9/023 . . . {Hydraulic lifters, i.e. fluid chamber comprised between a piston actuated by a cam and a piston acting on a valve stem}
<administratively transferred to [F01L 9/12](#)>
- D F01L 9/025 {the volume of the chamber being variable, e.g. for varying the lift or the timing of a valve}
<administratively transferred to [F01L 9/14](#)>
- D F01L 9/026 . . {Pneumatic}
<administratively transferred to [F01L 9/16](#)>

- D F01L 2009/028
 - • {Boost means, i.e. means for increasing initial opening force of the valve}
 - <administratively transferred to [F01L 9/18](#) INV>
- D F01L 9/04
 - by electric means
 - <administratively transferred to [F01L 9/20](#)>
- D F01L 2009/0401
 - • {Driving circuits therefor}
 - <administratively transferred to [F01L 9/26](#) INV>
- D F01L 2009/0403
 - • {Electromagnetic actuators comprising one coil}
 - <administratively transferred to [F01L 2009/2103](#) ADD>
- D F01L 2009/0405
 - • {Electromagnetic actuators comprising two or more coils}
 - <administratively transferred to [F01L 2009/2105](#) ADD>
- D F01L 2009/0407
 - • • {The two coils being disposed coaxially to the armature shaft}
 - <administratively transferred to [F01L 2009/2107](#) ADD>
- D F01L 2009/0409
 - • • {The armature being articulated perpendicularly to the coils axes}
 - <administratively transferred to [F01L 2009/2109](#) ADD>
- D F01L 2009/0411
 - • {Electromagnetic actuators using a rotary motor}
 - <administratively transferred to [F01L 9/22](#) INV>
- D F01L 2009/0413
 - • {Piezo electric actuators}
 - <administratively transferred to [F01L 9/24](#) INV>
- D F01L 2009/0415
 - • {Moving coil actuators}
 - <administratively transferred to [F01L 2009/2115](#) ADD>
- D F01L 2009/0417
 - • {Floating actuators for varying the valve stroke}
 - <administratively transferred to [F01L 2009/2117](#) ADD>
- D F01L 2009/0419
 - • {Actuator position setting device, e.g. initial setting}
 - <administratively transferred to [F01L 9/30](#) INV>
- D F01L 2009/0421
 - • {Mixed arrangement with both mechanically and electromagnetically actuated valves}
 - <administratively transferred to [F01L 2009/25](#) ADD>
- D F01L 2009/0423
 - • {Electromagnetic actuators construction details}
 - <administratively transferred to [F01L 9/21](#) INV>
- D F01L 2009/0425
 - • • {Shaft and armature construction}
 - <administratively transferred to [F01L 2009/2125](#) ADD>
- D F01L 2009/0426
 - • • • {Arrangements for amplifying the armature stroke}
 - <administratively transferred to [F01L 2009/2126](#) ADD>
- D F01L 2009/0428
 - • • {Core and coil construction}
 - <administratively transferred to [F01L 2009/2128](#) ADD>
- D F01L 2009/043
 - • • {Casing construction}
 - <administratively transferred to [F01L 2009/213](#) ADD>
- D F01L 2009/0432
 - • • {Biasing means}
 - <administratively transferred to [F01L 2009/2132](#) ADD>
- D F01L 2009/0434
 - • • • {Helical springs}
 - <administratively transferred to [F01L 2009/2134](#) ADD>
- D F01L 2009/0436
 - • • • • {Two opposed springs for intermediate resting position of the armature}
 - <administratively transferred to [F01L 2009/2136](#) ADD>

- D F01L 2009/0438 {Forsion springs}
<administratively transferred to [F01L 2009/2138](#) ADD>
- D F01L 2009/044 {Pneumatic springs}
<administratively transferred to [F01L 2009/214](#) ADD>
- D F01L 2009/0442 {Means for varying the spring bias}
<administratively transferred to [F01L 2009/2142](#) ADD>
- D F01L 2009/0444 {Means for connecting springs to valve or anchor}
<administratively transferred to [F01L 2009/2144](#) ADD>
- D F01L 2009/0446 . . . {Latching means}
<administratively transferred to [F01L 2009/2146](#) ADD>
- D F01L 2009/0448 {using permanent magnet}
<administratively transferred to [F01L 2009/2148](#) ADD>
- D F01L 2009/0449 . . . {Means for varying the air gap}
<administratively transferred to [F01L 2009/2149](#) ADD>
- D F01L 2009/0451 . . . {Damping means}
<administratively transferred to [F01L 2009/2151](#) ADD>
- D F01L 2009/0453 . . . {Means for counteracting cylinder pressure}
<administratively transferred to [F01L 2009/2153](#) ADD>
- D F01L 2009/0455 . . . {Lash adjusting means}
<administratively transferred to [F01L 2009/2155](#) ADD>
- D F01L 2009/0457 . . . {Actor cooling means}
<administratively transferred to [F01L 2009/2157](#) ADD>
- D F01L 2009/0459 . . . {Means for facilitating assembly}
<administratively transferred to [F01L 2009/2159](#) ADD>
- D F01L 2009/0461 . . . {Wiring}
<administratively transferred to [F01L 2009/2161](#) ADD>
- D F01L 2009/0463 {Connectors}
<administratively transferred to [F01L 2009/2163](#) ADD>
- D F01L 2009/0465 {Harnesses}
<administratively transferred to [F01L 2009/2165](#) ADD>
- D F01L 2009/0467 . . . {Sensing means}
<administratively transferred to [F01L 2009/2167](#) ADD>
- D F01L 2009/0469 {Position sensors}
<administratively transferred to [F01L 2009/2169](#) ADD>
- D F01L 2009/0471 {Vibration sensors}
<administratively transferred to [F01L 2009/2171](#) ADD>
- D F01L 2009/0473 {Temperature sensors}
<administratively transferred to [F01L 2009/2173](#) ADD>
- D F01L 2009/0474 {Flux sensors}
<administratively transferred to [F01L 2009/2174](#) ADD>
- D F01L 2009/0476 {Spring force sensors}
<administratively transferred to [F01L 2009/2176](#) ADD>

- D F01L 2009/0478 . . {~~Electromagnetic actuators; Method of operation thereof~~
<administratively transferred to [F01L 9/40](#) INV>
- D F01L 2009/048 . . . {~~Engine starting~~
<administratively transferred to [F01L 2009/408](#) ADD>
- D F01L 2009/0482 {~~in normal conditions~~
<administratively transferred to [F01L 2009/4082](#) ADD>
- D F01L 2009/0484 {~~Cold start~~
<administratively transferred to [F01L 2009/4084](#) ADD>
- D F01L 2009/0486 . . . {~~Soft landing, e.g. applying braking current; Levitation of armature close to core surface~~
<administratively transferred to [F01L 2009/4086](#) ADD>
- D F01L 2009/0488 . . . {~~Fail safe, e.g. valve kept closed if not opening properly~~
<administratively transferred to [F01L 2009/4088](#) ADD>
- D F01L 2009/049 . . . {~~Determination of valve speed~~
<administratively transferred to [F01L 2009/409](#) ADD>
- D F01L 2009/0492 . . . {~~Determination of valve timing during particular working conditions, e.g. deceleration~~
<administratively transferred to [F01L 2009/4092](#) ADD>
- D F01L 2009/0494 . . . {~~Engine stopping; Engine stall~~
<administratively transferred to [F01L 2009/4094](#) ADD>
- D F01L 2009/0496 . . . {~~relating to sticking duration~~
<administratively transferred to [F01L 2009/4096](#) ADD>
- D F01L 2009/0498 . . . {~~relating to gap between armature shaft and valve stem end~~
<administratively transferred to [F01L 2009/4098](#) ADD>
- N F01L 9/10 . . *by fluid means, e.g. hydraulic*
- N F01L 9/11 . . *in which the action of a cam is being transmitted to a valve by a liquid column*
- N F01L 9/12 . . . *with a liquid chamber between a piston actuated by a cam and a piston acting on a valve stem*
- N F01L 9/14 *the volume of the chamber being variable, e.g. for varying the lift or the timing of a valve*
- N F01L 9/16 . . *Pneumatic means*
- N F01L 9/18 . . *Means for increasing the initial opening force on the valve*
- N F01L 9/20 . . *by electric means*
- N F01L 9/21 . . *actuated by solenoids*
- N F01L 2009/2103 . . . {*comprising one coil*}
- N F01L 2009/2105 . . . {*comprising two or more coils*}
- N F01L 2009/2107 {*being disposed coaxially to the armature shaft*}
- N F01L 2009/2109 {*The armature being articulated perpendicularly to the coils axes*}
- N F01L 2009/2115 . . . {*Moving coil actuators*}
- N F01L 2009/2117 . . . {*Floating actuators for varying the valve stroke*}
- N F01L 2009/2125 . . . {*Shaft and armature construction*}
- N F01L 2009/2126 {*Arrangements for amplifying the armature stroke*}
- N F01L 2009/2128 . . . {*Core and coil construction*}
- N F01L 2009/213 . . . {*Casing construction*}

- N F01L 2009/2132 . . . {*Biasing means*}
- N F01L 2009/2134 {*Helical springs*}
- N F01L 2009/2136 {*Two opposed springs for intermediate resting position of the armature*}
- N F01L 2009/2138 {*Torsion springs*}
- N F01L 2009/214 {*Pneumatic springs*}
- N F01L 2009/2142 {*Means for varying the spring bias*}
- N F01L 2009/2144 {*Means for connecting springs to valve or anchor*}
- N F01L 2009/2146 . . . {*Latching means*}
- N F01L 2009/2148 {*using permanent magnet*}
- N F01L 2009/2149 . . . {*Means for varying the air gap*}
- N F01L 2009/2151 . . . {*Damping means*}
- N F01L 2009/2153 . . . {*Means for counteracting cylinder pressure*}
- N F01L 2009/2155 . . . {*Lash adjusting means*}
- N F01L 2009/2157 . . . {*Actuator cooling means*}
- N F01L 2009/2159 . . . {*Means for facilitating assembly*}
- N F01L 2009/2161 . . . {*Wiring*}
- N F01L 2009/2163 {*Connectors*}
- N F01L 2009/2165 {*Harnesses*}
- N F01L 2009/2167 . . . {*Sensing means*}
- N F01L 2009/2169 {*Position sensors*}
- N F01L 2009/2171 {*Vibration sensors*}
- N F01L 2009/2173 {*Temperature sensors*}
- N F01L 2009/2174 {*Flux sensors*}
- N F01L 2009/2176 {*Spring force sensors*}
- N F01L 9/22 . . . actuated by rotary motors
- N F01L 9/24 . . . Piezo-electric actuators
- N F01L 2009/25 . . {*Mixed arrangement with both mechanically and electromagnetically actuated valves*}
- N F01L 9/26 . . . Driving circuits therefor
- N F01L 9/30 . . . Arrangements for setting the actuator position, e.g. the initial position
- N F01L 9/40 . . . Methods of operation thereof; Control of valve actuation, e.g. duration or lift
- N F01L 2009/408 . . . {*Engine starting*}
- N F01L 2009/4082 {*in normal conditions*}
- N F01L 2009/4084 {*Cold start*}
- N F01L 2009/4086 . . . {*Soft landing, e.g. applying braking current; Levitation of armature close to core surface*}
- N F01L 2009/4088 . . . {*Fail safe, e.g. valve kept closed if not opening properly*}
- N F01L 2009/409 . . . {*Determination of valve speed*}
- N F01L 2009/4092 . . . {*Determination of valve timing during particular working conditions, e.g. deceleration*}
- N F01L 2009/4094 . . . {*Engine stopping; Engine stall*}
- N F01L 2009/4096 . . . {*relating to sticking duration*}
- N F01L 2009/4098 . . . {*relating to gap between armature shaft and valve stem end*}

- M F01L 15/00 - F01L 31/00 **Valve-gear or valve arrangements, e.g. with reciprocatory slide valves, specially for steam engine, or specially for other specially adapted for steam engines, or specially adapted for other positive-displacement machines or engines with variable working-fluid distribution**
- NOTE**
1. The groups under this guide heading do not fully embrace subject matter restricted to rotary, oscillatory, or lift *Groups F01L 15/00* -valve-gear or valve arrangements, classified in groups F01L 33/00 and F01L 35/00. However, the present groups do embrace the following subject-matter thereof; valves drives or means external to valves for adjustment during operation, tripping-gear, reversing-gear, use of pistons or piston-rods as valves or as valve-supporting elements, valve-gear or valve arrangements peculiar to free-piston machines or engines *F01L 31/00* cover:
- valve drive or means external to valves for adjustment during operation;
 - tripping-gear;
 - reversing-gear;
 - use of pistons or piston-rods as valves or as valve-supporting elements;
 - valve-gear or valve arrangements peculiar to free-piston machines or engines.
2. Groups *F01L 15/00 - F01L 31/00* do not fully cover subject matter restricted to rotary, oscillatory, or lift-valve gear or valve arrangements, which is covered by group *F01L 33/00* or *F01L 35/00*.
- M F01L 15/00 **Valve-gear or valve arrangements, e.g. with reciprocatory slide valves, other than provided for in groups F01L 17/00 - F01L 29/00 (valve drive or external valve-adjustment during operation, see the relevant groups, e.g. F01L 31/00; tripping-gear or tripping of valves F01L 31/00 valve drive or external valve-adjustment during operation, tripping-gear or tripping of valves F01L 31/00)**
- M F01L 23/00 **Valves controlled by impact by piston, e.g. in free-piston machines ((F01L 25/063 takes precedence))**
- M F01L 29/00 **Reversing-gear (equally usable for control of degree of working-fluid admission and reversing being of secondary-importance F01L 31/00)**
- M F01L 31/00 **Valve drive, valve adjustment during operation, or other valve control, not provided for in groups F01L 15/00 - F01L 29/00 (sensing elements measuring the variable or condition to be controlled or regulated F01B F01B 25/04)**

Project: RP0711 (F02B)

- M F02B **INTERNAL-COMBUSTION PISTON ENGINES; COMBUSTION ENGINES IN GENERAL (cyclically operating valves therefor F01L; lubricating internal-combustion engines F01M; gas-flow silencers or exhaust apparatus therefor F01N; cooling of internal-combustion engines F01P; internal-combustion turbines F02C; plants in which engines use combustion products F02C, F02G gas-turbine plants F02C; hot-gas or combustion-product positive-displacement engine plants F02G)**

NOTES

1. In this subclass, the following terms or expressions are used with the meanings indicated:
- "positive ignition" means ignition by a source external to the working fluid, e.g. by spark or incandescent source;
 - "charging" means forcing air or fuel-air mixture into engine cylinders and thus embraces super-charging, and thus includes supercharging;

- "scavenging" means forcing the combustion residues from the cylinders other than by movement of the working pistons ~~and thus embraces, and thus includes~~ tuned exhaust systems.

2. Attention is drawn to the Notes preceding class [F01](#), ~~specially~~*especially* as regards Note (1).

3. Engines with specified cycles or number of cylinders are classified in group [F02B 75/02](#) or [F02B 75/16](#), unless other classifying features predominate.

WARNING

{In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

M F02B 1/00 -
F02B 11/00

Engines characterised by the working fluid to be compressed, or characterised by the type of ignition ~~(with both fuel-air mixture compression and air compression, or with both positive ignition and compression ignition F02B 11/00; with pre-combustion chambers F02B 19/00; having air storage chambers F02B 21/00; with special shape or construction of other combustion chambers F02B 23/00)~~

M F02B 1/00

Engines characterised by fuel-air mixture compression (characterised by both fuel-air mixture compression and air compression, or characterised by both positive ignition and compression ignition [F02B 11/00](#); ~~characterised by precombustion chambers F02B 19/00; characterised by air-storage chambers F02B 21/00; characterised by special shape or construction of combustion chambers F02B 23/00)~~

NOTE

in this group the following indexing codes are used:

[F02B 2700/02](#) - [F02B 2720/30](#)

M F02B 3/00

Engines characterised by air compression and subsequent fuel addition (characterised by both fuel-air mixture compression and air compression, or characterised by both positive ignition and compression ignition [F02B 11/00](#); ~~characterised by precombustion chambers F02B 19/00; characterised by air-storage chambers F02B 21/00; characterised by special shape or construction of combustion chambers F02B 23/00)~~

NOTE

in this group the following indexing codes are used:

[F02B 2700/02](#) - [F02B 2720/30](#)

M F02B 3/06

- with compression ignition (~~F02B 13/02 takes precedence; with fuel-air charge ignited by compression ignition of an additional fuel F02B 7/00~~*compression ignition engines using air or gas for blowing fuel into compressed air in cylinder F02B 13/02*)

M F02B 5/00

Engines characterised by positive ignition (~~F02B 1/02, F02B 3/02 take precedence; engines characterised by fuel-air mixture compression with positive ignition F02B 1/02; engines characterised by air compression and subsequent fuel addition with positive ignition F02B 3/02~~; with non-timed positive ignition [F02B 9/06](#); characterised by both fuel-air mixture compression and air compression, or characterised by both positive ignition and compression ignition [F02B 11/00](#); ~~characterised by precombustion chambers F02B 19/00; characterised by air-storage chambers F02B 21/00; characterised by special shape or construction of combustion chambers F02B 23/00)~~

- M F02B 7/00 Engines characterised by the fuel-air charge being ignited by compression ignition of an additional fuel (characterised by both fuel-air mixture compression and air compression, or characterised by both positive ignition and compression ignition [F02B 11/00](#); ~~characterised by precombustion chambers F02B 19/00; characterised by air-storage chambers F02B 21/00; characterised by special shape or construction of combustion chambers F02B 23/00~~)
- M F02B 9/00 Engines characterised by other types of ignition (characterised by both fuel-air mixture compression and air compression, or characterised by both positive ignition and compression ignition [F02B 11/00](#); ~~characterised by precombustion chambers F02B 19/00; characterised by air-storage chambers F02B 21/00; characterised by special shape or construction of combustion chambers F02B 23/00~~)
- NOTE
- in this group the following indexing codes are used:
[F02B 2700/02](#) - [F02B 2720/30](#)
- M F02B 9/02
- with compression ignition (~~F02B 1/12, F02B 3/06 take precedence~~ *engines characterised by fuel-air mixture compression with compression ignition [F02B 1/12](#); engines characterised by air compression and subsequent fuel addition with compression ignition [F02B 3/06](#)*)
- M F02B 11/00 Engines characterised by both fuel-air mixture compression and air compression, or characterised by both positive ignition and compression ignition, e.g. in different cylinders (~~characterised by recombustion chambers F02B 19/00; characterised by air-storage chambers F02B 21/00; characterised by special shape or construction of combustion chambers F02B 23/00~~)
- M F02B 13/00 - F02B 17/00 Engines characterised by the method of introducing *liquid* fuel into cylinders (~~characterised by use of gaseous or solid fuels F02B 43/00, F02B 45/00; carburettors, fuel-injection apparatus F02M~~)
- M F02B 19/00 - F02B 23/00 Engines characterised by ~~having pre-combustion chambers or air~~ *precombustion chambers or air-storage* chambers, or characterised by *special* shape or construction of combustion chambers to improve operation (~~engines with incandescent chambers F02B 9/08~~)
- M F02B 19/00 Engines characterised by precombustion chambers (~~engines with incandescent chambers F02B 9/08~~)
- M F02B 19/10
- with fuel introduced partly into pre-combustion chamber, and partly into cylinder (~~F02B 19/02 - F02B 19/08 take precedence~~)
- M F02B 19/12
- with positive ignition (~~F02B 19/02 - F02B 19/10 take precedence~~ *engines with non-timed positive ignition, and with incandescent chambers [F02B 9/08](#)*)
- M F02B 19/14
- with compression ignition (~~F02B 19/02 - F02B 19/10 take precedence~~)
- M F02B 25/00 - F02B 31/00 Engines characterised by *provisions* *provision* for charging or scavenging (~~aspects concerned with driven charging or scavenging pumps F02B 33/00 - F02B 39/00~~)
- M F02B 25/00 Engines characterised by using fresh charge for scavenging cylinders (~~aspects characterised by provision of driven charging or scavenging pumps F02B 33/00 - F02B 39/00~~)

NOTE

- in this group the following indexing codes are used:
[F02B 2700/02](#) - [F02B 2700/038](#)

- M F02B 25/26
- Multi-cylinder engines other than those provided for in, or of interest apart from, groups [F02B 25/02](#) - [F02B 25/24](#) (internal-combustion aspects of rotary engines ~~with movable cylinders~~ [F02B 57/00](#))
- M F02B 27/00
- Use of kinetic or wave energy of charge in induction systems, or of combustion residues in exhaust systems, for improving quantity of charge or for increasing removal of combustion residues (~~aspects characterised by provision of driven charging or scavenging pumps F02B 33/00 - F02B 39/00; e.g. use of driven apparatus for immediate conversion of combustion gas pressure into pressure of fresh charge F02B 33/42~~)
- U F02B 29/00
- Engines characterised by provision for charging or scavenging not provided for in groups [F02B 25/00](#), [F02B 27/00](#) or [F02B 33/00](#) - [F02B 39/00](#); Details thereof
- M F02B 29/02
- Other fluid-dynamic features of induction systems for improving quantity of charge (for also imparting a rotation to the charge in the cylinder [F02B 31/00](#); ~~structural features of induction systems F02M~~)
- M F02B 29/08
- Modifying distribution valve timing for charging purposes ([F02B 29/06](#) takes precedence; ~~valve gear therefor F01L~~)
- M F02B 31/00
- Modifying induction systems for imparting a rotation to the charge in the cylinder (~~structural features of induction systems F02M~~ *air intakes or induction systems for internal-combustion engines F02M 35/10*)
- M F02B 33/00 - F02B 41/00
- ~~Engines characterised by provision of driven charging or scavenging pumps (introducing fuel into cylinders by air-pressure F02B 13/00; after-charging F02B 29/06; arrangements of such pumps or other auxiliary apparatus on engines F02B 67/00; combined engine and pump control; control dependent on variables other than those generic to pump F02D {Details or constructional aspects of turbines F01D; turbochargers F02C; pumps F04})~~
- M F02B 33/00
- Engines characterised by provision of pumps for charging or scavenging (~~characterised by the introduction of liquid fuel into cylinders by use of auxiliary fluid F02B 13/00; characterised by after-charging F02B 29/06; characterised by provision of pumps for sucking combustion residues from cylinders F02B 35/00; characterised by provision of exhaust-driven pumps F02B 37/00~~)
- U F02B 33/02
- Engines with reciprocating-piston pumps; Engines with crankcase pumps
- U F02B 33/28
- Component parts, details or accessories of crankcase pumps, not provided for in, or of interest apart from, subgroups [F02B 33/02](#) - [F02B 33/26](#)
- M F02B 33/30
- Control of inlet or outlet ports (~~controlling only working-cylinder inlets F01L~~)
- U F02B 33/32
- Engines with pumps other than of reciprocating-piston type (with crankcase pumps [F02B 33/02](#))
- M F02B 33/42
- with driven apparatus for immediate conversion of combustion gas pressure into pressure of fresh charge, e.g. with cell-type pressure exchangers (~~pressure exchangers per se F04F 13/00~~)
- M F02B 33/44
- Passages conducting the charge from the pump to the engine inlet, e.g. reservoirs (~~cooling of charge after leaving pumps F02B 29/04~~)
- M F02B 37/00
- Engines characterised by provision of pumps driven at least for part of the time by exhaust (~~characterised by the introduction of liquid fuel into cylinders by use of auxiliary fluid F02B 13/00; characterised by after-charging F02B 29/06; characterised by passages conducting the charge from the pump to the engine inlet F02B 33/44~~)
- U F02B 37/12
- Control of the pumps

- M F02B 37/22
- by varying cross-section of exhaust passages or air passages, ~~{ e.g. by throttling turbine inlets or outlets or by varying effective number of guide conduits}~~ (F02B 37/24 takes precedence)}
- U F02B 39/00 **Component parts, details, or accessories relating to, driven charging or scavenging pumps, not provided for in groups F02B 33/00 - F02B 37/00**
- M F02B 39/02
- Drives of pumps (exhaust drives or combined exhaust and other drives F02B 37/00); Varying pump drive gear ratio ~~(control acting both on engine and on pump drive gear ratio F02D)~~
- U F02B 41/00 **Engines characterised by special means for improving conversion of heat or pressure energy into mechanical power**
- U F02B 41/02
- Engines with prolonged expansion
- M F02B 41/10
- in exhaust turbines (use of exhaust turbines for charging F02B 37/00; ~~turbines constructions F01D; gas turbine plant F02C)~~
- M F02B 43/00 - F02B 45/00 **Engines operating on non-liquid fuels; Plants including such engines, i.e. combinations of the engines engine with fuel-generating apparatus (engines having gas-air charge ignited by compression-ignition of an additional fuel F02B 7/06; engines convertible from gas to other fuel consumption F02B 69/04; apparatus for generating fuel, e.g. gas, see the relevant classes, e.g. C10)**
- M F02B 47/00 - F02B 51/00 **Methods of operating engines involving specific pre-treating of, or adding specific substances to, combustion air, fuel or fuel air-mixture, of the engines-air mixture of the engines, and not otherwise provided for (apparatus for performing such pre-treatment or additions F02M)**
- U F02B 53/00 **Internal-combustion aspects of rotary-piston or oscillating-piston engines (internal-combustion aspects of rotary pistons or outer members for co-operation therewith F02B 55/00)**
- NOTE
- in this group the following indexing codes are used:
F02B 2730/01 - F02B 2730/09
- M F02B 53/14
- Adaptations of engines for driving, or engine combinations with, other devices ~~(aspects predominantly concerning such devices, see the relevant classes for the devices)~~
- M F02B 61/00 - F02B 65/00 **Adaptations of engines for special use; Combinations of engines with devices other than engine parts or auxiliaries (of rotary-piston or oscillating-piston engines F02B 53/14; aspects predominantly concerning such devices, see the relevant classes for the devices)**
- M F02B 61/00 **Adaptations of engines for driving vehicles or for driving propellers; Combinations of engines with gearing (the engine torque being divided by a differential gear for driving a scavenging or charging pump and the engine output shaft F02B 39/06; adaptations or combinations of rotary-piston or oscillating-piston engines F02B 53/14; ~~arrangements in vehicles, see the relevant classes for vehicles)~~**
- U F02B 71/00 **Free-piston engines; Engines without rotary main shaft**
- M F02B 71/04
- Adaptations of such engines for special use; Combinations of such engines with apparatus driven thereby ~~(aspects predominantly concerning driven apparatus, see the relevant classes for such apparatus)~~
- U F02B 75/00 **Other engines**
- M F02B 75/06
- Engines with means for equalising torque ~~(compensations of inertial forces; suppression of vibration in systems F16F)~~

- M F02B 75/10 · Engines with means for rendering exhaust gases innocuous (apparatus per se ~~F04N~~F01N 3/00)
- U F02B 77/00 **Component parts, details or accessories, not otherwise provided for**
- M F02B 77/02 · Surface coverings of combustion-gas-swept parts (~~of pistons or cylinders only~~ F02F of pistons F02F 3/10; of cylinders and cylinder heads F02F 1/00)
- M F02B 79/00 **Running-in of internal-combustion engines (lubrication thereof**
~~F01M~~F01M 7/00)

Project: MP0485 (F02F)

- M F02F **CYLINDERS, PISTONS OR CASINGS, FOR COMBUSTION ENGINES; ARRANGEMENTS OF SEALINGS IN COMBUSTION ENGINES (~~specially adapted for rotary-piston or oscillating-piston internal-combustion engines F02B; specially adapted for gas-turbine plants F02C; specially adapted for jet-propulsion plants F02K~~)**

NOTES

1. Attention is drawn to the notes preceding class [F01](#).
2. In considering the relationship between class [F16](#) and subclass [F02F](#), class [F16](#) will take precedence unless the subject-matter is specific to combustion engines.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

- M F02F 1/00 **Cylinders; Cylinder heads (~~in general F16J~~)**
- U F02F 1/18 · Other cylinders
- M F02F 1/186 · {for use in engines with two or more pistons reciprocating within same cylinder (~~such engines per se F02B 75/28~~)}
- U F02F 1/24 · Cylinder heads
- U F02F 1/26 · · having cooling means
- U F02F 1/28 · · · for air cooling
- U F02F 1/30 · · · · Finned cylinder heads
- M F02F 1/34 · · · · · with means for directing or distributing cooling medium (~~F02F 1/32 takes precedence~~)
- U F02F 1/36 · · · for liquid cooling
- M F02F 1/40 · · · · cylinder heads with means for directing, guiding, or distributing liquid stream (~~F02F 1/38 takes precedence~~)
- U F02F 1/42 · · Shape or arrangement of intake or exhaust channels in cylinder heads
- U F02F 1/4214 · · · {specially adapted for four or more valves per cylinder}
- M F02F 1/4221 · · · · {particularly for three or more inlet valves (~~mechanisms for driving such valves F01L 1/265~~)}
- M F02F 1/4228 · · · {Helically-shaped channels (~~F02B 31/00 takes precedence~~ imparting a rotation to the charge in the cylinder F02B 31/00)}
- M F02F 3/00 **Pistons (~~in general F16J~~)**
- M F02F 7/00 **Casings, e.g. crankcases {or frames} (~~engine casings in general F16M~~) {or frames}**
- M F02F 7/006 · {Camshaft or pushrod housings (~~oil sumps F01M 11/0004~~)}
- U F02F 7/0065 · {Shape of casings for other machine parts and purposes, e.g. utilisation purposes, safety}

M F02F 7/008 . . {Sound insulation ~~(see also F02B 77/13)~~}

M F02F 11/00 Arrangements of sealings in combustion engines (~~piston rings F02F 5/00 (not used, see F16J 9/00); sealings per se F16J~~*piston rings {F16J 9/00}*)

Project: MP0486 (F02G)

M F02G HOT GAS OR COMBUSTION-PRODUCT POSITIVE-DISPLACEMENT ENGINE PLANTS (steam engine plants, special vapour plants, plants operating on either hot gas or combustion-product gases together with other fluid [F01K](#); gas-turbine plants [F02C](#); jet-propulsion plants [F02K](#)); USE OF WASTE HEAT OF COMBUSTION ENGINES; NOT OTHERWISE PROVIDED FOR

NOTE

Attention is drawn to the notes preceding class [F01](#).

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme:

M F02G 1/00 Hot gas positive-displacement engine plants (~~positive-displacement engine plants characterised by the working gas being generated by combustion in the plant F02G 3/00~~)

M F02G 3/00 ~~Positive-displacement engine plants characterised by the working gas being generated by combustion in the plant~~*Combustion-product positive-displacement engine plants*

Project: RP0672 (F02M)

M F02M 1/00 Carburettors with means for facilitating engine's starting or its idling below operational temperatures

NOTE

-in this group the following indexing codes are used: F02M 2700/4302

M F02M 21/00 Apparatus for supplying engines with non-liquid fuels, e.g. gaseous fuels stored in liquid form

NOTE

-in this group the following indexing codes are used: F02M 2700/12 - F02M 2700/13

M F02M 41/00 Fuel-injection apparatus with two or more injectors fed from a common pressure-source sequentially by means of a distributor

NOTE

-in this group the following indexing codes are used: F02M 2700/1329

M F02M 53/00 Fuel-injection apparatus characterised by having heating, cooling or thermally-insulating means

NOTE

-in this group the following indexing codes are used: F02M 2700/077

M F02M 57/00 Fuel-injectors combined or associated with other devices

NOTE

in this group the following indexing codes are used: F02M 2700/1335

- M F02M 59/00** Pumps specially adapted for fuel-injection and not provided for in groups [F02M 39/00](#) -[F02M 57/00](#) {, e.g. rotary cylinder-block type of pumps}
- NOTE**
-in this group the following indexing codes are used: [F02M 2700/1323](#), [F02M 2700/1341](#), [F02M 2700/1352](#), [F02M 2700/1388](#)
- M F02M 61/00** Fuel-injectors not provided for in groups [F02M 39/00](#) - [F02M 57/00](#) or [F02M 67/00](#)
- NOTE**
-in this group the following indexing codes are used: [F02M 2700/07](#), [F02M 2700/074](#)
- M F02M 63/00** Other fuel-injection apparatus having pertinent characteristics not provided for in groups [F02M 39/00](#) - [F02M 57/00](#) or [F02M 67/00](#); Details, component parts, or accessories of fuel-injection apparatus, not provided for in, or of interest apart from, the apparatus of groups [F02M 39/00](#) - [F02M 61/00](#) or [F02M 67/00](#); {Combination of fuel pump with other devices, e.g. lubricating oil pump}
- NOTE**
-in this group the following indexing codes are used: [F02M 2700/05](#), [F02M 2700/072](#)
- M F02M 71/00** Combinations of carburettors and low-pressure fuel-injection apparatus
- NOTE**
-in this group the following indexing codes are used: [F02M 2700/1347](#)
- WARNING**
Groups [F02M 71/00](#), [F02M 71/02](#), and [F02M 71/04](#) are incomplete pending reclassification of documents from groups [F02M 7/06](#), [F02M 7/08](#), [F02M 7/083](#), [F02M 7/087](#), and [F02M 7/093](#).
All groups listed in this Warning should be considered in order to perform a complete search.

Project: MP0487 (F02N)

- M F02N** **STARTING OF COMBUSTION ENGINES** (~~starting of free-piston combustion engines F02B 71/02; starting of gas-turbine plants F02C 7/26~~); **STARTING AIDS FOR SUCH ENGINES, NOT OTHERWISE PROVIDED FOR**
- NOTES**
1. Attention is drawn to the notes preceding class [F01](#).
 2. The starting of engines which are not explicitly stated to be combustion engines will be classified in this subclass insofar as their starting is equivalent to that of combustion engines.
- WARNING**
In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme:
- M F02N 11/00** **Starting of engines by means of electric motors** (~~arrangement or mounting of prime-movers consisting of electric motors and internal combustion engines for mutual or common propulsion B60K 6/20~~)
- U F02N 11/10** • Safety devices ([F02N 11/08](#) takes precedence)

- M F02N 11/101 · · {for preventing engine starter actuation or engagement (~~preventing unauthorised use or theft of vehicles B60R 25/04~~)}
- U F02N 13/00 **Starting of engines, or driving of starting apparatus by use of explosives, e.g. stored in cartridges**
- M F02N 13/02 · Cartridges specially adapted therefor (~~gas cartridges in general F42B 3/04~~)
- U F02N 19/00 **Starting aids for combustion engines, not otherwise provided for**
- M F02N 19/02 · Aiding engine start by thermal means, e.g. using lighted wicks (~~using electrically-heated glow-plugs F02P 19/02~~)
- M F02N 19/04 · · by heating of fluids used in engines (~~heating of lubricants F01M 5/02~~)

Project: MP0427 (F15C)**M F15C 1/00 Circuit elements having no moving parts****NOTE**

*Group F15C 1/22 takes precedence over groups F15C 1/08 - F15C 1/20.
{This Note corresponds to IPC Note (1) relating to F15C 1/08 - F15C 1/20.}*

- U F15C 1/02 · Details {, e.g. special constructional devices for circuits with fluid elements, such as resistances, capacitive circuit elements; devices preventing reaction coupling in composite elements (servomotor systems adapted for maintaining constant speed F15B 11/05); Switch boards; Programme devices (hydraulic programme control F15B 21/02)}
- M F15C 1/06 · · Constructional details; Selection of specified materials {Constructional realisation of one single element; Canal shapes; Jet nozzles; Assembling an element with other devices, only if the element forms the main part (F15C 5/00 takes precedence)}

NOTE

~~Group F15C 1/22 takes precedence over groups F15C 1/08 - F15C 1/20.~~

Project: RP0462 (F16D)**U F16D 2300/00 Special features for couplings or clutches**

- U F16D 2300/02 · Overheat protection, i.e. means for protection against overheating
- U F16D 2300/021 · · Cooling features not provided for in group F16D 13/72 or F16D 25/123, e.g. heat transfer details
- T F16D 2300/0214 · · · Oil or fluid cooling
- N F16D 2300/04 · Heating means
- T F16D 2300/18 · Sensor Sensors; Details or arrangements thereof
- N F16D 2300/20 · Auxiliary indicators or alarms

Project: MP0427 (F16H)**U F16H 3/00 Toothed gearings for conveying rotary motion with variable gear ratio or for reversing rotary motion (speed-changing or reversing mechanisms F16H 59/00 - F16H 63/00)**

- U F16H 3/02 · without gears having orbital motion
- M F16H 3/06 · · with worm and worm-wheel or gears essentially having helical or herring-bone teeth

NOTE

~~In groups F16H 3/08, F16H 3/16 and F16H 3/20, gears which can be put out of mesh are not taken into consideration if they are used for reversal only.~~

- M F16H 3/08
- exclusively or essentially with continuously meshing gears, that can be disengaged from their shafts
- NOTE**
In this group, gears which can be put out of mesh are not taken into consideration if they are used for reversal only.
- M F16H 3/16
- essentially with both gears that can be put out of gear and continuously-meshing gears that can be disengaged from their shafts
- NOTE**
In this group, gears which can be put out of mesh are not taken into consideration if they are used for reversal only.
- M F16H 3/20
- exclusively or essentially using gears that can be moved out of gear
- NOTE**
In this group, gears which can be put out of mesh are not taken into consideration if they are used for reversal only.

Project: RP0693, RP0695 (F16K)**F16K****VALVES; TAPS; COCKS; ACTUATING-FLOATS; DEVICES FOR VENTING OR AERATING {(devices for emptying and evacuating the excess liquid in valves or conduits [F16L 55/07](#))}****NOTE**

Attention is drawn to the following places:

A47J 27/09	Safety devices for pressure cookers
A47J 31/46	Dispensing spouts, drain valves or like beverage-making apparatus
A61B 5/0235	Valves specially adapted for measuring pressure in heart or blood vessels
A61F 2/24	Heart valves
A61M 16/20	Valves specially adapted for medical respiratory devices
A61M 39/00	Tube connectors, tube couplings, valves or branch units specially adapted for medical use in general
A62B 9/02	Valves for respiratory apparatus
A62B 18/10	Valves for breathing masks or helmets
A62C	Fire extinguishers
{ B01D 35/04 }	{Plug, tap, or cock filters}
B05B	Nozzles, spray heads or other discharge apparatus for spraying or atomising
B60C 29/00	Arrangements of tyre-inflating valves relative to tyres or wheel rims; Connection of valves to wheel rims, tyres or other inflatable elastic bodies
B60G 17/048	Valves specially adapted for adjusting vehicle fluid-spring characteristics
B60T	Valves specially adapted for vehicle brake control systems
B62D 5/08	Vehicle power-assisted steering characterised by the type of valve used
B63B 7/00 , B63C 9/00	Arrangement of inflating valves for floatable life-saving equipment
B65D 47/04	Container closures with discharging valves
B65D 90/32	Safety valves for large containers
B65D 90/54	Gates or closures on large containers
B67C 3/28	Flow control devices for bottling liquids

B67D	Dispensing, delivering or transferring liquids
{C21B 9/12}	{Hot-blast valves for blast furnaces}
E02B 8/00	Details, e.g. valves, of barrages or weirs
E02B 13/02	Closures for irrigation conduits
{E03C 1/04}	{Water-basin installations specially adapted for wash-basins or baths}
{E03C 1/05}	{Arrangements on wash-basins for the remote control of taps}
E03D	Flushing valves for water-closets or urinals
{E03F 7/04}	{Valves for preventing return flow in sewer systems}
E05F 3/12	Valve arrangements in door closers
E21B 21/10	Valve arrangements in drilling-fluid circulation systems
E21B 34/00	Valve arrangements for boreholes or wells
{E21D 15/51}	{Arrangement of relief valves in hydraulic mine props}
F01B 25/10	Working-fluid valves for controlling machines or engines in general or of positive-displacement type
F01D 17/10	Final actuators for controlling non-positive displacement machines or engines
F01L	Cyclically operated valves for machines or engines
F02D 9/08	Throttle valves for controlling combustion engines
F02K 9/58	Propellant feed valves for rocket-engines
F02M	Carburettors, fuel injection
F02M 59/46	Valves for fuel injection pumps
F04	Pumps
F16F 9/34	Valves for shock absorbers
F16L 29/00, F16L 37/28	Pipe joints or quick-acting couplings with fluid cut-off means
F16L 55/00	Arrangement of valves in pipes
F16L 55/055	Valves specially adapted to prevent or minimise the effect of water hammer
F16L 55/46	Launching devices for pigs or moles
F16N 23/00	Check valves for lubrication systems
{F16T}	{Draining-off liquids from steam traps}
F17C 13/04	Arrangement of valves in pressure vessels
F22B 37/44	Arrangement of safety valves on steam boilers
F22D 5/34	Application of valves to automatic water-feed in boiler
F23L 13/00	Valves for air supply control to burners
{F23Q 2/16}	{Valves for lighters with gaseous fuel and adjustable flame}
F24C 3/12, F24C 5/16	Arrangement of valves on stoves or ranges
F24F	Air conditioning; Ventilation
F25B 41/04 F25B 41/20	Disposition of fluid circulation valves in refrigeration machines
G05D	Controlling non-electric variables
G10B 3/06	Valves for organs
G10D 9/04	Valves for other wind-actuated musical instruments
{G21C 9/06}	{Safety valves structurally associated with nuclear reactors}
{H01M 2/12 H01M 50/30}	{Vent plugs in batteries or cells}

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

F16K 31/11	covered by	F16K 31/06 , F16K 31/08 , F16K 31/10
F16K 31/64	covered by	F16K 31/002 , G05D 23/00
F16K 31/66	covered by	F16K 31/06 , G05D 23/00
F16K 31/68	covered by	F16K 31/001 , G05D 23/00
F16K 31/70	covered by	F16K 31/002 , G05D 23/08
F16K 31/72	covered by	F16K 31/00

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: MP0496 (F16M)

M F16M

FRAMES, CASINGS, OR BEDS OF ENGINES ~~OR OTHER~~, MACHINES OR APPARATUS, NOT SPECIFIC TO ~~AN ENGINE, MACHINE, ENGINES, MACHINES~~ OR APPARATUS PROVIDED FOR ELSEWHERE; STANDS ~~OR SUPPORTS~~; ~~SUPPORTS~~

NOTE

Attention is drawn to the following places:

B21B 31/02	Metal-rolling stand frames
G01D 11/30	Supports specially adapted for indicating or recording instruments.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: RP0709 (F24B)

M F24B

DOMESTIC STOVES OR RANGES FOR SOLID FUELS *(for solid fuels in combination with gaseous fuels, liquid fuels or other kinds of energy supply F24C 1/02)*; IMPLEMENTS FOR USE IN CONNECTION WITH STOVES OR RANGES

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

U F24B 1/00

Stoves or ranges

U F24B 1/02

• Closed stoves

T F24B 1/04

• • built-up from glazed tiles ~~(F24B 1/08, F24B 1/14 take precedence)~~

WARNING

Groups F24B 1/04 and F24B 1/06 are incomplete pending reclassification of documents from groups F24B 1/08, F24B 1/10, F24B 1/14, and F24B 1/16. All groups listed in this Warning should be considered in order to perform a complete search.

T F24B 1/06

• • • Construction of tiles ~~and/or~~ bracing means therefor, e.g. shim liner ~~(forming of tiles B28B; glazing of tiles C04B)~~

C F24B 1/08

• • with fuel storage in a single undivided hopper within stove or range

WARNING

Group F24B 1/08 is impacted by reclassification into groups F24B 1/04 and F24B 1/06. Groups F24B 1/08, F24B 1/04, and F24B 1/06 should be considered in order to perform a complete search.

- C F24B 1/10
- • with combustion in horizontal direction (~~F24B 1/14 takes precedence with predistillation in the hopper F24B 1/14~~)
- WARNING**
Group F24B 1/10 is impacted by reclassification into groups F24B 1/04 and F24B 1/06.
Groups F24B 1/10, F24B 1/04, and F24B 1/06 should be considered in order to perform a complete search.
- C F24B 1/14
- • with predistillation in the hopper
- WARNING**
Group F24B 1/14 is impacted by reclassification into groups F24B 1/04 and F24B 1/06.
Groups F24B 1/14, F24B 1/04, and F24B 1/06 should be considered in order to perform a complete search.
- C F24B 1/16
- • with fuel storage in multiple or divided hoppers within the stove or range
- WARNING**
Group F24B 1/16 is impacted by reclassification into groups F24B 1/04 and F24B 1/06.
Groups F24B 1/16, F24B 1/04, and F24B 1/06 should be considered in order to perform a complete search.
- U F24B 1/18
- Stoves with open fires, e.g. fireplaces
- M F24B 1/1802
- {adapted for the use of both solid fuel and another type of fuel or energy supply (~~for stoves F24C 1/02 for stoves without open fires F24C 1/02~~)}
- M F24B 1/182
- • with additional provisions for cooking (~~other stoves with additional provisions for cooking F24B 1/26~~)
- M F24B 1/185
- • with air-handling means, heat exchange means, or additional provisions for convection heating (~~F24B 1/183 takes precedence; with additional provisions for heating water F24B 1/183~~; component parts or accessories having air-handling means, heat exchange means, or additional provisions for convection heating F24B 1/191); Controlling combustion
- M F24B 1/187
- • Condition responsive controls for regulating combustion (~~valves or dampers for air supply F23L; regulating or controlling combustion F23N; controlling or regulating in general G05~~)
- M F24B 1/188
- • characterised by use of heat exchange means, ~~{~~ e.g. using a particular heat exchange medium, e.g. oil, gas} (~~F24B 1/187 takes precedence condition responsive controls for regulating combustion F24B 1/187~~)
- M F24B 1/189
- • characterised by air-handling means, i.e. of combustion-air, heated-air, or flue-gases, e.g. draught control dampers (~~F24B 1/187, F24B 1/188 take precedence condition responsive controls for regulating combustion F24B 1/187; by use of heat exchange means F24B 1/188~~)
- M F24B 1/191
- • Component parts; Accessories
- WARNING**
Group F24B 1/191 is incomplete pending reclassification of documents from groups F24B 13/00 and F24B 13/002.
Groups F24B 13/00, F24B 13/002, and F24B 1/191 should be considered in order to perform a complete search.
- M F24B 3/00
- Heaters not covered by group F24B 1/00, e.g. charcoal ~~brazier braziers (for cooking A47J 27/00 -- A47J 37/00)~~

- U F24B 5/00** Combustion-air or flue-gas circulation in or around stoves or ranges (stoves with open fires with air-handling means [F24B 1/185](#))
- U F24B 5/02 · in or around stoves
- M F24B 5/021 · · {combustion-air circulation ~~(regulating combustion F23N; air supply for combustion apparatus F23L)~~}
- M F24B 7/00** Stoves, ranges or flue-gas ducts, with additional provisions for convection heating (stoves with open fires characterised by use of heat exchange means [F24B 1/185](#) [F24B 1/188](#); ~~air heaters having heat generating means F24H 3/00~~)
- M F24B 9/00** Stoves, ranges or flue-gas ducts, with additional provisions for heating water (~~F24B 1/182, F24B 1/183 take precedence~~ [stoves with open fires with additional provisions for cooking F24B 1/182](#); [for heating water F24B 1/183](#))
- C F24B 13/00** Details solely applicable to stoves or ranges burning solid fuels (component parts or accessories for stoves with open-fires [F24B 1/191](#); ~~removing ash, clinker or slag from combustion chambers F23J 1/00; removing solid residues from passages or chambers beyond the fire F23J 3/00; joints or connections for chimneys or flues F23J 13/04; mouths or inlet holes for chimneys or flues F23J 13/06; means for supervising combustion F23M 11/04~~)
- WARNING
Group [F24B 13/00](#) is impacted by reclassification into group [F24B 1/191](#). Groups [F24B 13/00](#) and [F24B 1/191](#) should be considered in order to perform a complete search.
- C F24B 13/002 · {Surrounds}
- WARNING
Group [F24B 13/002](#) is impacted by reclassification into group [F24B 1/191](#). Groups [F24B 13/002](#) and [F24B 1/191](#) should be considered in order to perform a complete search.
- M F24B 13/02 · Arrangement or mountings of fire-grate assemblies ~~(grates F23H)~~; Arrangement or mountings of linings for fire-boxes, e.g. fire ~~backbacks~~ [\(ceramic materials C04B 33/00, C04B 35/00; casings, linings, walls for combustion chambers F23M\)](#)
- M F24B 13/04 · Arrangements for feeding solid fuel, e.g. hoppers ~~(feeding solid fuel to combustion apparatus in general F23K)~~
- M F24B 15/00** Implements for use in connection with stoves or ranges ~~(ash sieves (in general) B07B; fire lighters C10L 11/00; removal of ashes F23J; other devices for igniting F23Q)~~
- M F24B 15/005 · {Igniting devices; Fire-igniting fans ~~(bellows F04B 45/02; gas pokers F23Q 13/02)~~}

Project: RP0710 (F24C)

- M F24C** **OTHER DOMESTIC STOVES OR RANGES** [\(exclusively for solid fuels F24B\)](#); **DETAILS OF DOMESTIC STOVES OR RANGES, OF GENERAL APPLICATION** ~~(radiator stoves of the fluid-circulating type F24H)~~
- WARNING
{In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.}

- U F24C 1/00** Stoves or ranges in which the fuel or energy supply is not restricted to solid fuel or to a type covered by a single one of the following groups [F24C 3/00](#) - [F24C 9/00](#); Stoves or ranges in which the type of fuel or energy supply is not specified
- C F24C 1/02** • adapted for the use of two or more kinds of fuel or energy supply (~~F24C 1/16 takes precedence~~; combinations of two or more stoves or ranges each having a different kind of fuel or energy supply [F24C 11/00](#))
- WARNING**
Group [F24C 1/02](#) is incomplete pending reclassification of documents from groups [F24C 1/16](#), [F24C 3/00](#), and [F24C 5/00](#).
Group [F24C 1/02](#) is also impacted by reclassification into group [F24C 1/14](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- C F24C 1/04** • • simultaneously
- WARNING**
Group [F24C 1/04](#) is incomplete pending reclassification of documents from group [F24C 1/16](#).
Group [F24C 1/04](#) is also impacted by reclassification into group [F24C 1/14](#).
Groups [F24C 1/16](#), [F24C 1/04](#), and [F24C 1/14](#) should be considered in order to perform a complete search.
- C F24C 1/06** • • by replacing parts, e.g. replacing ~~burner by electric heater~~ burners by electric heaters
- WARNING**
Group [F24C 1/06](#) is incomplete pending reclassification of documents from group [F24C 1/16](#).
Group [F24C 1/06](#) is also impacted by reclassification into group [F24C 1/14](#).
Groups [F24C 1/16](#), [F24C 1/06](#), and [F24C 1/14](#) should be considered in order to perform a complete search.
- T F24C 1/08** • solely adapted for radiation heating (~~F24C 1/16 takes precedence~~)
- WARNING**
Group [F24C 1/08](#) is incomplete pending reclassification of documents from group [F24C 1/16](#).
Groups [F24C 1/16](#) and [F24C 1/08](#) should be considered in order to perform a complete search.
- T F24C 1/14** • Radiation heating stoves and ranges, with additional provision for convection heating (~~F24C 1/02, F24C 1/16 take precedence; solely adapted for convection heating F24H~~)
- WARNING**
Group [F24C 1/14](#) is incomplete pending reclassification of documents from groups [F24C 1/02](#), [F24C 1/04](#), [F24C 1/06](#), [F24C 1/16](#), and [F24C 3/00](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- C F24C 1/16** • with special adaptation for travelling, e.g. collapsible
- WARNING**
Group [F24C 1/16](#) is impacted by reclassification into groups [F24C 1/02](#), [F24C 1/04](#), [F24C 1/06](#), [F24C 1/08](#), and [F24C 1/14](#).
All groups listed in this Warning should be considered in order to perform a complete search.

- C F24C 3/00** **Stoves ~~and/or~~ ranges for gaseous fuels (stoves or ranges specially adapted for the use of two or more kinds of fuel or energy supply F24C 1/02)**
- WARNING**
Group F24C 3/00 is impacted by reclassification into groups F24C 1/02 and F24C 1/14.
Groups F24C 3/00, F24C 1/02, and F24C 1/14 should be considered in order to perform a complete search.
- T F24C 3/02** • with heat produced solely by flame ~~(F24C 3/14 takes precedence)~~
- WARNING**
Groups F24C 3/02, F24C 3/022, F24C 3/025, and F24C 3/027 are incomplete pending reclassification of documents from group F24C 3/14.
All groups listed in this Warning should be considered in order to perform a complete search.
- M F24C 3/04** • with heat produced wholly or partly by a radiant body, e.g. by a perforated plate ~~(F24C 3/14 takes precedence)~~
- WARNING**
Groups F24C 3/04, F24C 3/042, F24C 3/045, F24C 3/047, and F24C 3/06 are incomplete pending reclassification of documents from group F24C 3/14.
All groups listed in this Warning should be considered in order to perform a complete search.
- M F24C 3/08** • Arrangement or mounting of burners ~~(burners per se F23D)~~
- M F24C 3/10** • Arrangement or mounting of ignition devices ~~(ignition devices per se F23Q)~~
- M F24C 3/12** • Arrangement ~~for or~~ mounting of control ~~and/or~~ safety devices ~~(control valves F16K; safety devices for burners F23D; regulating or controlling combustion F23N)~~
- C F24C 3/14** • with special adaptation for travelling, e.g. collapsible
- WARNING**
Group F24C 3/14 is impacted by reclassification into groups F24C 3/02, F24C 3/022, F24C 3/025, F24C 3/027, F24C 3/04, F24C 3/042, F24C 3/045, F24C 3/047, and F24C 3/06.
All groups listed in this Warning should be considered in order to perform a complete search.
- C F24C 5/00** **Stoves ~~and/or~~ ranges for liquid fuels (stoves or ranges specially adapted for the use of two or more kinds of fuel or energy supply F24C 1/02)**
- WARNING**
Group F24C 5/00 is impacted by reclassification into group F24C 1/02.
Groups F24C 5/00 and F24C 1/02 should be considered in order to perform a complete search.
- T F24C 5/02** • with evaporation burners, e.g. dish type ~~(F24C 5/20 takes precedence)~~
- WARNING**
Groups F24C 5/02, F24C 5/04, F24C 5/06, and F24C 5/08 are incomplete pending reclassification of documents from group F24C 5/20.
All groups listed in this Warning should be considered in order to perform a complete search.

- T F24C 5/10
- with atomising burners (~~F24C 5/20 takes precedence~~)
- WARNING**
*Group F24C 5/10 is incomplete pending reclassification of documents from group F24C 5/20.
 Groups F24C 5/20 and F24C 5/10 should be considered in order to perform a complete search.*
- M F24C 5/12
- Arrangement or mounting of burners (~~burners per se F23D~~)
- M F24C 5/14
- Arrangement or mounting of ignition devices (~~ignition devices per se F23Q~~)
- M F24C 5/16
- Arrangement **and/or** mounting of control **and/or** safety devices (~~control valves F16K; safety devices for burners F23D; regulating or controlling combustion F23N~~)
- M F24C 5/18
- Liquid-fuel supply arrangements forming parts of stoves or ranges (~~feeding liquid fuel to combustion apparatus in general F23K~~)
- C F24C 5/20
- with special adaptation for travelling, e.g. collapsible
- WARNING**
*Group F24C 5/20 is impacted by reclassification into groups F24C 5/02, F24C 5/04, F24C 5/06, F24C 5/08, and F24C 5/10.
 All groups listed in this Warning should be considered in order to perform a complete search.*
- M F24C 7/00**
- Stoves or ranges heated by **electrical** energy (**electric heating elements or arrangements H05B stoves or ranges specially adapted for the use of two or more kinds of fuel or energy supply F24C 1/02**)**
- M F24C 7/02
- using microwaves (~~heating using microwaves in general H05B 6/64~~)
- C F24C 7/04
- with heat radiated directly from the heating element (~~F24C 7/10 takes precedence~~)
- WARNING**
*Group F24C 7/04 is incomplete pending reclassification of documents from group F24C 7/10.
 Group F24C 7/04 is also impacted by reclassification into groups F24C 7/043 and F24C 7/046.
 All groups listed in this Warning should be considered in order to perform a complete search.*
- M F24C 7/043
- • {Stoves}
- WARNING**
*Group F24C 7/043 is incomplete pending reclassification of documents from group F24C 7/04.
 Groups F24C 7/04 and F24C 7/043 should be considered in order to perform a complete search.*
- M F24C 7/046
- • {Ranges}
- WARNING**
*Group F24C 7/046 is incomplete pending reclassification of documents from group F24C 7/04.
 Groups F24C 7/04 and F24C 7/046 should be considered in order to perform a complete search.*
- M F24C 7/08
- Arrangement or mounting of control or safety devices (~~switches H01H; circuit arrangements for electric heating H05B~~)

- C F24C 7/10
- with special adaptation for travelling, e.g. collapsible
- WARNING**
Group *F24C 7/10* is impacted by reclassification into groups *F24C 7/04* and *F24C 7/105*.
Groups *F24C 7/04*, *F24C 7/10*, and *F24C 7/105* should be considered in order to perform a complete search.
- M F24C 7/105
- • {Stoves}
- WARNING**
Group *F24C 7/105* is incomplete pending reclassification of documents from group *F24C 7/10*.
Groups *F24C 7/10* and *F24C 7/105* should be considered in order to perform a complete search.
- M F24C 9/00
- Stoves or ranges heated by a single type of energy supply not covered by groups [F24C 3/00](#) - [F24C 7/00](#) or subclass [F24B](#) (**using the heat from an exothermal reaction not involving a supply of free oxygen gas, {using special gaseous fuel, e.g. acetylene, hydrogen,} using solar energy [F24S 20/30](#); using the heat from an exothermal reaction not involving a supply of free oxygen gas [F24V 30/00](#) solar heat collectors for heating objects, e.g. solar cookers [F24S 20/30](#))**)
- M F24C 14/00
- Stoves or ranges having self-cleaning provisions, e.g. continuous **or catalytic cleaning, catalytic cleaning or** electrostatic cleaning
- U F24C 15/00
- Details
- M F24C 15/02
- Doors specially adapted for stoves or ranges (~~in general [E06B](#); for combustion chambers [F23M](#)~~)
- M F24C 15/06
- Ornamental features, e.g. grate ~~front, surround~~ *fronts or surrounds*
- M F24C 15/08
- Foundations or supports plates; Legs or pillars; Casings; Wheels (~~[F24C 15/10](#) takes precedence~~ *tops, e.g. hot plates [F24C 15/10](#)*)
- M F24C 15/10
- Tops, e.g. hot ~~plate~~ *plates*; Rings (~~[F24C 15/12](#), [F24C 15/14](#) take precedence~~ *cover lids or splash guards [F24C 15/12](#); spillage trays or grooves [F24C 15/14](#)*)
- M F24C 15/16
- Shelves, racks, ~~{rotisserie spits,}~~ or trays inside ovens; Supports therefor
- M F24C 15/18
- Arrangement of compartments additional to cooking compartments, e.g. for warming; **or** for storing utensils or fuel containers; **Arrangements** *Arrangement* of additional heating or cooking apparatus, e.g. grills ~~{additional cooking arrangements on stoves}~~

Project: RP0696 (F24F)

- M F24F
- AIR-CONDITIONING; AIR-HUMIDIFICATION; VENTILATION; USE OF AIR CURRENTS FOR SCREENING** (removing dirt or fumes from areas where they are produced [B08B 15/00](#); vertical ducts for carrying away waste gases from buildings [E04F 17/02](#); tops for chimneys or ventilating shafts, terminals for flues [F23L 17/02](#))

NOTES

1. This subclass covers treatment, e.g. purification, of air supplied to human living or working spaces in air conditioning systems or in room units.

~~1.~~ 2. In this subclass:

- air-humidification as auxiliary treatment in air-conditioning, i.e. in units wherein the air is also either cooled or heated, is covered by groups [F24F 1/00](#) or [F24F 3/14](#);

- air-humidification per se, e.g. "room humidifiers", is covered by group [F24F 6/00](#).

~~2.~~ **3.** In this subclass, the following terms or expressions are used with the meanings indicated:

- "air-conditioning" means the supply of air to or the treatment of air in rooms or spaces by means of cooling or a combination of cooling and a further kind of air treatment, e.g. humidification, heating or air purification;
- "ventilation" means the supply of air to, or its extraction from, rooms or spaces, and systems for circulating air within rooms or spaces, but does not cover the mere treatment of air being supplied to, extracted from, or circulated within, rooms or spaces.

~~3.~~ **4.** In this subclass, control or safety arrangements are classified in *group* [F24F 11/00](#). In order to indicate the type of air-treatment system in which these arrangements are used, further classification may be made in *main*-groups [F24F 1/00](#) - [F24F 9/00](#).

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: RP0437-F (F24F)

U F24F 3/00

Air-conditioning systems in which conditioned primary air is supplied from one or more central stations to distributing units in the rooms or spaces where it may receive secondary treatment; Apparatus specially designed for such systems (room units [F24F 1/00](#))

M F24F 3/02

- characterised by the pressure or velocity of the primary air

WARNING

Group F24F 3/02 is incomplete pending reclassification of documents from groups F24F 3/044 - F24F 3/056.

Group F24F 3/02 is also impacted by reclassification into groups F24F 3/06 - F24F 3/10 and F24F 3/12 - F24F 2003/1696.

All groups listed in this Warning should be considered in order to perform a complete search.

M F24F 3/04

- operating with high pressure or high velocity

WARNING

Group F24F 3/04 is incomplete pending reclassification of documents from groups F24F 3/044 - F24F 3/056.

Group F24F 3/04 is also impacted by reclassification into groups F24F 3/06 - F24F 3/10 and F24F 3/12 - F24F 2003/1696.

All groups listed in this Warning should be considered in order to perform a complete search.

M F24F 3/044

- Systems in which all treatment is given in the central station, i.e. all-air systems

WARNING

Group F24F 3/044 is impacted by reclassification into groups F24F 3/02 and F24F 3/04.

Groups F24F 3/044, F24F 3/02, and F24F 3/04 should be considered in order to perform a complete search.

M F24F 3/0442

- {with volume control at a constant temperature}

WARNING

Group F24F 3/0442 is impacted by reclassification into groups F24F 3/02 and F24F 3/04.

~~Groups F24F 3/0442, F24F 3/02, and F24F 3/04 should be considered in order to perform a complete search.~~

- M F24F 3/0444
- {in which two airstreams are conducted from the central station via independent conduits to the space to be treated, of which one has a constant volume and a season-adapted temperature to compensate for the fluctuating heat transfer losses of the building, while the other varies in volume and is always cold in order to compensate for the interior fluctuations and variable solar heating effects, i.e. so-called "Dual Conduit System"; this system is similar to a high-pressure air-water system}
- WARNING
~~Group F24F 3/0444 is impacted by reclassification into groups F24F 3/02 and F24F 3/04.~~
~~Groups F24F 3/0444, F24F 3/02, and F24F 3/04 should be considered in order to perform a complete search.~~
- M F24F 2003/0446
- {with a single air duct for transporting treated air from the central station to the rooms}
- WARNING
~~Group F24F 2003/0446 is impacted by reclassification into groups F24F 3/02 and F24F 3/04.~~
~~Groups F24F 2003/0446, F24F 3/02, and F24F 3/04 should be considered in order to perform a complete search.~~
- M F24F 2003/0448
- {with two air ducts for separately transporting treated hot and cold air from the central station to the rooms}
- WARNING
~~Groups F24F 2003/0448 is impacted by reclassification into groups F24F 3/02 and F24F 3/04.~~
~~Groups F24F 2003/0448, F24F 3/02, and F24F 3/04 should be considered in order to perform a complete search.~~
- M F24F 3/048
- with temperature control at constant rate of air-flow
- WARNING
~~Group F24F 3/048 is incomplete pending reclassification of documents from group F24F 3/056.~~
~~Group F24F 3/048 is also impacted by reclassification into groups F24F 3/02 and F24F 3/04.~~
~~All groups listed in this Warning should be considered in order to perform a complete search.~~
- M F24F 3/052
- Multiple duct systems, e.g. systems in which hot and cold air are supplied by separate circuits from the central station to mixing chambers in the spaces to be conditioned
- WARNING
~~Group F24F 3/052 is incomplete pending reclassification of documents from group F24F 3/056.~~
~~Group F24F 3/052 is also impacted by reclassification into groups F24F 3/02 and F24F 3/04.~~
~~All groups listed in this Warning should be considered in order to perform a complete search.~~

- M F24F 3/0522
- • • {in which warm or cold air from the central station is delivered via individual pipes to mixing chambers in the space to be treated, the cold air/warm air ratio being controlled by a thermostat in the space concerned, i.e. so-called Dual-duct System}
- WARNING**
 Group F24F 3/0522 is incomplete pending reclassification of documents from group F24F 3/056.
 Group F24F 3/0522 is also impacted by reclassification into groups F24F 3/02 and F24F 3/04.
 All groups listed in this Warning should be considered in order to perform a complete search.
- M F24F 3/0525
- • • {in which the air treated in the central station is reheated; this may take place near the central station upon arrival, in the space to be treated, in a branch pipe to zone in a multi-zone system or in the warm pipe in a system having separate supply conduits for warm and cold air}
- WARNING**
 Group F24F 3/0525 is incomplete pending reclassification of documents from group F24F 3/056.
 Group F24F 3/0525 is also impacted by reclassification into groups F24F 3/02 and F24F 3/04.
 All groups listed in this Warning should be considered in order to perform a complete search.
- M F24F 3/0527
- • • {in which treated air having differing temperatures is conducted through independent conduits from the central station to various spaces to be treated, i.e. so-called "multi-Zone" system; (F24F 3/0525 takes precedence)}
- WARNING**
 Group F24F 3/0527 is incomplete pending reclassification of documents from group F24F 3/056.
 Group F24F 3/0527 is also impacted by reclassification into groups F24F 3/02 and F24F 3/04.
 All groups listed in this Warning should be considered in order to perform a complete search.
- M F24F 3/056
- the air at least partially flowing over lighting fixtures, the heat of which is dissipated or used (outlets for directing or distributing air into rooms or spaces combined with lighting fixtures [F24F 13/078](#))
- WARNING**
 Group F24F 3/056 is impacted by reclassification into groups F24F 3/02, F24F 3/04, F24F 3/048, F24F 3/052, F24F 3/0522, F24F 3/0525, F24F 3/0527, and F24F 13/078.
 All groups listed in this Warning should be considered in order to perform a complete search.
- M F24F 3/06
- characterised by the arrangements for the supply of heat-exchange fluid for the subsequent treatment of primary air in the room units
- WARNING**
 Group F24F 3/06 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 11/83, F24F 11/84, and F24F 11/85.
 Group F24F 3/06 is also impacted by reclassification into groups F24F 3/12 - F24F 2003/1696.
 All groups listed in this Warning should be considered in order to perform a complete search.

- M F24F 3/065
- {with a plurality of evaporators or condensers}
- WARNING**
Group F24F 3/065 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 11/83, F24F 11/84, and F24F 11/85.-
Group F24F 3/065 is also impacted by reclassification into groups F24F 3/12 -F24F 2003/1696.-
All groups listed in this Warning should be considered in order to perform a complete search.
- M F24F 3/08
- with separate supply and return lines for hot and cold heat-exchange fluids {i.e. so-called "4-conduit" system}
- WARNING**
Group F24F 3/08 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 11/83, F24F 11/84, and F24F 11/85.-
Group F24F 3/08 is also impacted by reclassification into groups F24F 3/12 -F24F 2003/1696.-
All groups listed in this Warning should be considered in order to perform a complete search.
- M F24F 3/10
- with separate supply lines and common return line for hot and cold heat-exchange fluids {i.e. so-called "3-conduit" system}
- WARNING**
Group F24F 3/10 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 11/83, F24F 11/84, and F24F 11/85.-
Group F24F 3/10 is also impacted by reclassification into groups F24F 3/12 -F24F 2003/1696.-
All groups listed in this Warning should be considered in order to perform a complete search.

Project: RP0437-F, RP0696 (F24F)

- M F24F 3/12
- characterised by the treatment of the air otherwise than by heating and cooling
- WARNING**
Group F24F 3/12 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.-
All groups listed in this Warning should be considered in order to perform a complete search.

Project: RP0437-F (F24F)

- M F24F 3/14
- by humidification; by dehumidification
- WARNING**
Group F24F 3/14 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.-
All groups listed in this Warning should be considered in order to perform a complete search.
- M F24F 3/1405
- {in which the humidity of the air is exclusively affected by contact with the evaporator of a closed-circuit cooling system or heat pump circuit}
- WARNING**
Group F24F 3/1405 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.-

All groups listed in this Warning should be considered in order to perform a complete search.

- M F24F 3/1411 . . . {by absorbing or adsorbing water, e.g. using an hygroscopic desiccant}

WARNING

Group F24F 3/1411 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.

All groups listed in this Warning should be considered in order to perform a complete search.

- M F24F 3/1417 . . . {with liquid hygroscopic desiccants}

WARNING

Group F24F 3/1417 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.

All groups listed in this Warning should be considered in order to perform a complete search.

- M F24F 3/1423 . . . {with a moving bed of solid desiccants, e.g. a rotary wheel supporting solid desiccants}

WARNING

Group F24F 3/1423 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.

All groups listed in this Warning should be considered in order to perform a complete search.

- M F24F 3/1429 . . . {alternatively operating a heat exchanger in an absorbing/adsorbing mode and a heat exchanger in a regeneration mode}

WARNING

Group F24F 3/1429 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.

All groups listed in this Warning should be considered in order to perform a complete search.

- M F24F 2003/1435 . . . {comprising semi-permeable membrane}

WARNING

Group F24F 2003/1435 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.

All groups listed in this Warning should be considered in order to perform a complete search.

- M F24F 2003/144 . . . {by dehumidification only}

WARNING

Group F24F 2003/144 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.

All groups listed in this Warning should be considered in order to perform a complete search.

- M F24F 2003/1446 . . . {by condensing}
- WARNING**
Group F24F 2003/1446 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.
- M F24F 2003/1452 . . . {heat extracted from the humid air for condensing is returned to the dried air}
- WARNING**
Group F24F 2003/1452 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.
- M F24F 2003/1458 . . {using regenerators}
- WARNING**
Group F24F 2003/1458 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.
- M F24F 2003/1464 . . . {using rotating regenerators}
- WARNING**
Group F24F 2003/1464 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.
- M F24F 3/147 . . . with both heat and humidity transfer between supplied and exhausted air
- WARNING**
Group F24F 3/147 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.
- M F24F 3/153 . . . with subsequent heating, i.e. with the air, given the required humidity in the central station, passing a heating element to achieve the required temperature
- WARNING**
Group F24F 3/153 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.

Project: RP0696 (F24F)

- C F24F 3/16 . . . by purification, e.g. by filtering; by sterilisation; by ozonisation ~~{{(ion sources H01J 27/02, H01J 37/08; treatment rooms or enclosures for medical purposes A61G 10/00)}}~~

WARNING

~~Group F24F 3/16 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.~~

~~All groups listed in this Warning should be considered in order to perform a complete search.~~

Group F24F 3/16 is impacted by reclassification into groups F24F 8/00, F24F 8/20, F24F 8/22, F24F 8/24, F24F 8/26, F24F 8/28, F24F 8/30, F24F 8/40, F24F 8/50, F24F 8/60, F24F 8/70, F24F 8/80, and F24F 8/95. All groups listed in this Warning should be considered in order to perform a complete search.

Project: RP0437-F, RP0696 (F24F)

- D F24F 3/1603 . . . {by filtering (arrangements or mounting of filters F24F 13/28)}

WARNING

~~Group F24F 3/1603 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.~~

~~All groups listed in this Warning should be considered in order to perform a complete search.~~

- D F24F 3/1607 . . . {Clean air work stations, i.e. selected areas within a space to which filtered air is passed (means providing sterile air at a surgical operation table or area A61G 13/108)}

WARNING

~~Group F24F 3/1607 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.~~

~~All groups listed in this Warning should be considered in order to perform a complete search.~~

- D F24F 3/161 . . . {Clean rooms, i.e. enclosed spaces in which a uniform flow of filtered air is distributed (air distribution by perforated walls F24F 7/10; dust-free rooms or enclosures applicable solely to laboratory purposes B01L 1/04)}

WARNING

~~Group F24F 3/161 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.~~

~~All groups listed in this Warning should be considered in order to perform a complete search.~~

- D F24F 2003/1614 . . . {using a dry filtering element}

WARNING

~~Group F24F 2003/1614 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.~~

~~All groups listed in this Warning should be considered in order to perform a complete search.~~

- D F24F 2003/1617 {using wet filtering methods}
- WARNING
Group F24F 2003/1617 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.
- D F24F 2003/1621 {using chemical filtering methods}
- WARNING
Group F24F 2003/1621 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.
- D F24F 2003/1625 {using active carbon}
- WARNING
Group F24F 2003/1625 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.
- D F24F 2003/1628 {using catalytic reaction}
- WARNING
Group F24F 2003/1628 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.

Project: RP0696 (F24F)

- N F24F 3/163 *Clean air work stations, i.e. selected areas within a space which filtered air is passed*

Project: RP0437-F, RP0696 (F24F)

- D F24F 2003/1632 {using vortex}
- WARNING
Group F24F 2003/1632 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.
- D F24F 2003/1635 {using high voltage}
- WARNING
Group F24F 2003/1635 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.

- D F24F 2003/1639 {with filter cleaning}
- WARNING
Group F24F 2003/1639 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.
- D F24F 2003/1642 {of pollen, to avoid allergies}
- WARNING
Group F24F 2003/1642 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.
- D F24F 2003/1646 {of tobacco smoke}
- WARNING
Group F24F 2003/1646 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.
- D F24F 2003/165 {of ozone}
- WARNING
Group F24F 2003/165 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.
- D F24F 2003/1653 {using biofilters, plants or microorganisms}
- WARNING
Group F24F 2003/1653 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.
- D F24F 2003/1657 {the air pollution of a street or a city}
- WARNING
Group F24F 2003/1657 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.
- D F24F 3/166 {using electric means, e.g. applying electrostatic field (using thermo-electric means F24F 5/0042)}
- WARNING
Group F24F 3/166 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.

All groups listed in this Warning should be considered in order to perform a complete search.

- D F24F 2003/1664 . . . {by sterilisation}

WARNING

Group F24F 2003/1664 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.

All groups listed in this Warning should be considered in order to perform a complete search.

- D F24F 2003/1667 . . . {using UV light}

WARNING

Group F24F 2003/1667 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.

All groups listed in this Warning should be considered in order to perform a complete search.

Project: RP0696 (F24F)

- N F24F 3/167 . . . Clean rooms, i.e. enclosed spaces in which a uniform flow of filtered air is distributed (air distribution by perforated walls [F24F 7/10](#))

Project: RP0437-F, RP0696 (F24F)

- D F24F 2003/1671 . . . {using ozone}

WARNING

Group F24F 2003/1671 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.

All groups listed in this Warning should be considered in order to perform a complete search.

- D F24F 2003/1675 . . . {using a sterilising medium}

WARNING

Group F24F 2003/1675 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.

All groups listed in this Warning should be considered in order to perform a complete search.

- D F24F 2003/1678 . . . {to avoid the Legionella bacteria}

WARNING

Group F24F 2003/1678 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.

All groups listed in this Warning should be considered in order to perform a complete search.

- D F24F 2003/1682 . . . {by ionisation}

WARNING

Group F24F 2003/1682 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.

All groups listed in this Warning should be considered in order to perform a complete search.

- D F24F 2003/1685 • • • {by ozonisation}
- WARNING
Group F24F 2003/1685 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.
- D F24F 2003/1689 • • • {by odorising}
- WARNING
Group F24F 2003/1689 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.
- D F24F 2003/1692 • • • {by adding oxygen}
- WARNING
Group F24F 2003/1692 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.
- D F24F 2003/1696 • • • {by removing radon}
- WARNING
Group F24F 2003/1696 is incomplete pending reclassification of documents from groups F24F 3/02, F24F 3/04, F24F 3/06, F24F 3/065, F24F 3/08, and F24F 3/10.
All groups listed in this Warning should be considered in order to perform a complete search.

Project: RP0696 (F24F)

- C F24F 7/00 **Ventilation {, e.g. by means of wall-ducts or systems using window or roof apertures}**
- WARNING
Group F24F 7/00 is impacted by reclassification into group F24F 7/003. Groups F24F 7/00 and F24F 7/003 should be considered in order to perform a complete search.
- C F24F 2007/001 • {with exhausting air ducts}
- WARNING
Group F24F 2007/001 is impacted by reclassification into group F24F 7/003. Groups F24F 2007/001 and F24F 7/003 should be considered in order to perform a complete search.
- C F24F 2007/002 • • {Junction box, e.g. for ducts from kitchen, toilet or bathroom}
- WARNING
Group F24F 2007/002 is impacted by reclassification into group F24F 7/003.

Groups [F24F 2007/002](#) and [F24F 7/003](#) should be considered in order to perform a complete search.

- Q F24F 2007/0025
- {using vent ports in a wall}
- WARNING
Group [F24F 2007/0025](#) is impacted by reclassification into group [F24F 7/003](#). Groups [F24F 2007/0025](#) and [F24F 7/003](#) should be considered in order to perform a complete search.
- D F24F 2007/003
- {using vent ports in a wall}
- <administratively transferred to [F24F 2007/0025](#) ADD>
- N F24F 7/003
- in combination with air cleaning
- WARNING
Group [F24F 7/003](#) is incomplete pending reclassification of documents from groups [F24F 7/00](#), [F24F 2007/001](#), [F24F 2007/002](#), [F24F 2007/0025](#), [F24F 2007/004](#), and [F24F 2007/005](#). All groups listed in this Warning should be considered in order to perform a complete search.
- C F24F 2007/004
- {Natural ventilation using convection}
- WARNING
Group [F24F 2007/004](#) is impacted by reclassification into group [F24F 7/003](#). Groups [F24F 2007/004](#) and [F24F 7/003](#) should be considered in order to perform a complete search.
- C F24F 2007/005
- {Cyclic ventilation, e.g. alternating air supply volume or reversing flow direction (~~F24F 2012/008 takes precedence when there is heat exchange between exhaust and supply air~~)}
- WARNING
Group [F24F 2007/005](#) is impacted by reclassification into group [F24F 7/003](#). Groups [F24F 2007/005](#) and [F24F 7/003](#) should be considered in order to perform a complete search.

Project: RP0437-F (F24F)

- M F24F 7/007
- with forced flow (using ducting systems [F24F 7/06](#))
- WARNING
Group [F24F 7/007](#) is impacted by reclassification into groups [F24F 7/02](#) and [F24F 7/025](#). Groups [F24F 7/007](#), [F24F 7/02](#), and [F24F 7/025](#) should be considered in order to perform a complete search.
- M F24F 7/013
- using wall or window fans, displacing air through the wall or window
- WARNING
Group [F24F 7/013](#) is incomplete pending reclassification of documents from group [F24F 13/08](#). Group [F24F 7/013](#) is also impacted by reclassification into groups [F24F 7/02](#) and [F24F 7/025](#). All groups listed in this Warning should be considered in order to perform a complete search.

- M F24F 7/02
- Roof ventilation (ventilation of roof coverings [E04D](#))
- WARNING**
Group F24F 7/02 is incomplete pending reclassification of documents from groups F24F 7/007 and F24F 7/013.
Groups F24F 7/007, F24F 7/013, and F24F 7/02 should be considered in order to perform a complete search.
- M F24F 7/025
- {with forced air circulation by means of a built-in ventilator}
- WARNING**
Group F24F 7/025 is incomplete pending reclassification of documents from groups F24F 7/007 and F24F 7/013.
Groups F24F 7/007, F24F 7/013, and F24F 7/025 should be considered in order to perform a complete search.

Project: RP0696 (F24F)

- N F24F 8/00**
- Treatment, e.g. purification, of air supplied to human living or working spaces otherwise than by heating, cooling, humidifying or drying***
- WARNING**
Groups [F24F 8/00](#), [F24F 8/20](#), [F24F 8/22](#), [F24F 8/24](#), [F24F 8/26](#), [F24F 8/28](#), [F24F 8/30](#), [F24F 8/40](#), [F24F 8/50](#), [F24F 8/60](#), [F24F 8/70](#), [F24F 8/80](#), and [F24F 8/95](#) are incomplete pending reclassification of documents from group [F24F 3/16](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q F24F 8/10
- by separation, e.g. by filtering
- WARNING**
Group [F24F 8/10](#) is impacted by reclassification into groups [F24F 8/108](#), [F24F 8/117](#), [F24F 8/125](#), [F24F 8/133](#), [F24F 8/142](#), [F24F 8/15](#), [F24F 8/158](#), [F24F 8/167](#), [F24F 8/175](#), [F24F 8/183](#), [F24F 8/90](#), [F24F 8/96](#), [F24F 8/97](#), [F24F 8/98](#), and [F24F 8/99](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N F24F 8/108
- using dry filter elements
- WARNING**
Group [F24F 8/108](#) is incomplete pending reclassification of documents from group [F24F 8/10](#).
Groups [F24F 8/10](#) and [F24F 8/108](#) should be considered in order to perform a complete search.
- Q F24F 8/117
- using wet filtering
- WARNING**
Group [F24F 8/117](#) is incomplete pending reclassification of documents from group [F24F 8/10](#).
Group [F24F 8/117](#) is also impacted by reclassification into groups [F24F 8/125](#), [F24F 8/133](#), and [F24F 8/142](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N F24F 8/125
- using wet filter elements
- WARNING**
Group [F24F 8/125](#) is incomplete pending reclassification of documents from groups [F24F 8/10](#) and [F24F 8/117](#).

Groups [F24F 8/10](#), [F24F 8/117](#), and [F24F 8/125](#) should be considered in order to perform a complete search.

N F24F 8/133

- • • by direct contact with liquid, e.g. with sprayed liquid

WARNING

Group [F24F 8/133](#) is incomplete pending reclassification of documents from groups [F24F 8/10](#) and [F24F 8/117](#).

Groups [F24F 8/10](#), [F24F 8/117](#), and [F24F 8/133](#) should be considered in order to perform a complete search.

N F24F 8/142

- • • Treatment of used liquid, e.g. cleaning for recycling

WARNING

Group [F24F 8/142](#) is incomplete pending reclassification of documents from groups [F24F 8/10](#) and [F24F 8/117](#).

Groups [F24F 8/10](#), [F24F 8/117](#), and [F24F 8/142](#) should be considered in order to perform a complete search.

N F24F 8/15

- • • by chemical means

WARNING

Groups [F24F 8/15](#) - [F24F 8/167](#) are incomplete pending reclassification of documents from group [F24F 8/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N F24F 8/158

- • • using active carbon

N F24F 8/167

- • • using catalytic reactions

N F24F 8/175

- • • using biological materials, plants or microorganisms

WARNING

Group [F24F 8/175](#) is incomplete pending reclassification of documents from group [F24F 8/10](#).

Groups [F24F 8/10](#) and [F24F 8/175](#) should be considered in order to perform a complete search.

N F24F 8/183

- • • by centrifugal separation, e.g. using vortices

WARNING

Group [F24F 8/183](#) is incomplete pending reclassification of documents from group [F24F 8/10](#).

Groups [F24F 8/10](#) and [F24F 8/183](#) should be considered in order to perform a complete search.

N F24F 8/192

- • • by electrical means, e.g. by applying electrostatic fields or high voltages

N F24F 8/194

- • • {by filtering using high voltage}

N F24F 8/20

- • • by sterilisation

N F24F 8/22

- • • using UV light

N F24F 8/24

- • • using sterilising media

N F24F 8/26

- • • using ozone

N F24F 8/28

- • • specially adapted for combatting or avoiding *Legionella* bacteria

N F24F 8/30

- • • by ionisation

N F24F 8/40

- • • by ozonisation (for sterilisation [F24F 8/26](#))

N F24F 8/50

- • • by odourisation

N F24F 8/60

- • • by adding oxygen

N F24F 8/70

- • • by removing radon

- N F24F 8/80 • Self-contained air purifiers
- N F24F 8/90 • Cleaning of purification apparatus
WARNING
 Group [F24F 8/90](#) is incomplete pending reclassification of documents from group [F24F 8/10](#).
 Groups [F24F 8/10](#) and [F24F 8/90](#) should be considered in order to perform a complete search.
- N F24F 8/95 • specially adapted for specific purposes
- N F24F 8/96 • • for removing pollen
WARNING
 Group [F24F 8/96](#) is incomplete pending reclassification of documents from group [F24F 8/10](#).
 Groups [F24F 8/10](#) and [F24F 8/96](#) should be considered in order to perform a complete search.
- N F24F 8/97 • • for removing tobacco smoke
WARNING
 Group [F24F 8/97](#) is incomplete pending reclassification of documents from group [F24F 8/10](#).
 Groups [F24F 8/10](#) and [F24F 8/97](#) should be considered in order to perform a complete search.
- N F24F 8/98 • • for removing ozone
WARNING
 Group [F24F 8/98](#) is incomplete pending reclassification of documents from group [F24F 8/10](#).
 Groups [F24F 8/10](#) and [F24F 8/98](#) should be considered in order to perform a complete search.
- N F24F 8/99 • • for treating air sourced from urban areas, e.g. from streets
WARNING
 Group [F24F 8/99](#) is incomplete pending reclassification of documents from group [F24F 8/10](#).
 Groups [F24F 8/10](#) and [F24F 8/99](#) should be considered in order to perform a complete search.

Project: RP0437-F (F24F)

- U F24F 11/00 **Control or safety arrangements**
NOTE
 In this group, it is desirable to add the indexing codes of groups [F24F 2110/00](#) – [F24F 2140/00](#).
- U F24F 11/70 • Control systems characterised by their outputs; Constructional details thereof
WARNING
 Groups [F24F 11/70](#) – [F24F 11/875](#) are incomplete pending reclassification of documents from group [F24F 11/30](#).
 Group [F24F 11/70](#) is also impacted by reclassification into groups [F24F 11/80](#) – [F24F 11/875](#).
 All groups listed in this warning should be considered in order to perform a complete search.

- U F24F 11/80
- for controlling the temperature of the supplied air
- WARNING
Groups [F24F 11/80](#) – [F24F 11/875](#) are incomplete pending reclassification of documents from groups [F24F 11/30](#) and [F24F 11/70](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- M F24F 11/83
- • by controlling the supply of heat-exchange fluids to heat-exchangers
- WARNING
Group [F24F 11/83](#) is incomplete pending reclassification of documents from groups [F24F 11/30](#) and [F24F 11/70](#).
Group [F24F 11/83](#) is also impacted by reclassification into groups [F24F 3/06](#), [F24F 3/065](#), [F24F 3/08](#), [F24F 3/10](#), [F24F 11/84](#), and [F24F 11/85](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- M F24F 11/84
- • • using valves
- WARNING
Group [F24F 11/84](#) is incomplete pending reclassification of documents from groups [F24F 11/30](#), [F24F 11/70](#) and [F24F 11/83](#).
Group [F24F 11/84](#) is also impacted by reclassification into groups [F24F 3/06](#), [F24F 3/065](#), [F24F 3/08](#), and [F24F 3/10](#).
All groups listed in this warning should be considered in order to perform a complete search.
- M F24F 11/85
- • • using variable-flow pumps
- WARNING
Group [F24F 11/85](#) is incomplete pending reclassification of documents from groups [F24F 11/30](#), [F24F 11/70](#) and [F24F 11/83](#).
Group [F24F 11/85](#) is also impacted by reclassification into groups [F24F 3/06](#), [F24F 3/065](#), [F24F 3/08](#), and [F24F 3/10](#).
All groups listed should be considered in order to perform a complete search.

Project: RP0696 (F24F)

- U F24F 12/00 **Use of energy recovery systems in air conditioning, ventilation or screening (with both heat and humidity transfer between supplied and exhausted air [F24F 3/147](#))**
- U F24F 12/001
- {with heat-exchange between supplied and exhausted air}
- M F24F 2012/008
- • {cyclic routing supply and exhaust air (~~F24F 2007/005 takes precedence when there is no heat exchange~~)}

Project: RP0437-F (F24F)

- U F24F 13/00 **Details common to, or for air-conditioning, air-humidification, ventilation or use of air currents for screening**
- U F24F 13/02
- Ducting arrangements
- U F24F 13/06
- • Outlets for directing or distributing air into rooms or spaces, e.g. ceiling air diffuser
- M F24F 13/062
- • • having one or more bowls or cones diverging in the flow direction
- WARNING
Group ~~F24F 13/062~~ is incomplete pending reclassification of documents from group ~~F24F 13/072~~.

~~Groups F24F 13/072 and F24F 13/062 should be considered in order to perform a complete search.~~

- M F24F 13/065
- • formed as cylindrical or spherical bodies which are rotatable

WARNING

~~Group F24F 13/065 is incomplete pending reclassification of documents from group F24F 13/072.
Groups F24F 13/072 and F24F 13/065 should be considered in order to perform a complete search.~~

- M F24F 13/072
- • of elongated shape, e.g. between ceiling panels

WARNING

~~Group F24F 13/072 is impacted by reclassification into groups F24F 13/062 and F24F 13/065.
Groups F24F 13/072, F24F 13/062, and F24F 13/065 should be considered in order to perform a complete search.~~

- M F24F 13/078
- • combined with lighting fixtures

WARNING

~~Group F24F 13/078 is incomplete pending reclassification of documents from group F24F 3/056.
Groups F24F 3/056 and F24F 13/078 should be considered in order to perform a complete search.~~

- M F24F 13/08
- Air-flow control members, e.g. louvres, grilles, flaps or guide plates ([F24F 7/013](#), [F24F 13/06](#) take precedence)

WARNING

~~Group F24F 13/08 is impacted by reclassification into group F24F 7/013.
Groups F24F 13/08 and F24F 7/013 should be considered in order to perform a complete search.~~

- M F24F 13/10
- • movable, e.g. dampers

WARNING

~~Group F24F 13/10 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 13/10 should be considered in order to perform a complete search.~~

- M F24F 13/105
- • {composed of diaphragms or segments}

WARNING

~~Group F24F 13/105 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 13/105 should be considered in order to perform a complete search.~~

- M F24F 13/12
- • built up of sliding members

WARNING

~~Group F24F 13/12 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 13/12 should be considered in order to perform a complete search.~~

- M F24F 13/14 • • • built up of tilting members, e.g. louvre
- WARNING
Group F24F 13/14 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 13/14 should be considered in order to perform a complete search.
- M F24F 13/1406 • • • {characterised by sealing means}
- WARNING
Group F24F 13/1406 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 13/1406 should be considered in order to perform a complete search.
- M F24F 13/1413 • • • {using more than one tilting member, e.g. with several pivoting blades (F24F 13/15 takes precedence)}
- WARNING
Group F24F 13/1413 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 13/1413 should be considered in order to perform a complete search.
- M F24F 13/142 • • • {using pivoting blades with intersecting axles}
- WARNING
Group F24F 13/142 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 13/142 should be considered in order to perform a complete search.
- M F24F 13/1426 • • • {characterised by actuating means}
- WARNING
Group F24F 13/1426 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 13/1426 should be considered in order to perform a complete search.
- M F24F 2013/1433 • • • • {with electric motors}
- WARNING
Group F24F 2013/1433 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 2013/1433 should be considered in order to perform a complete search.
- M F24F 2013/144 • • • • {with thermoactuators}
- WARNING
Group F24F 2013/144 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 2013/144 should be considered in order to perform a complete search.
- M F24F 2013/1446 • • • • {with gearings}
- WARNING
Group F24F 2013/1446 is incomplete pending reclassification of documents from group F24F 13/18.

Groups F24F 13/18 and F24F 2013/1446 should be considered in order to perform a complete search.

M F24F 2013/1453 {with cables, e.g. bowden cables}

WARNING

Group F24F 2013/1453 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 2013/1453 should be considered in order to perform a complete search.

M F24F 2013/146 {with springs}

WARNING

Group F24F 2013/146 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 2013/146 should be considered in order to perform a complete search.

M F24F 2013/1466 {with pneumatic means}

WARNING

Group F24F 2013/1466 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 2013/1466 should be considered in order to perform a complete search.

M F24F 2013/1473 {with cams or levers}

WARNING

Group F24F 2013/1473 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 2013/1473 should be considered in order to perform a complete search.

M F24F 2013/148 {with magnets}

WARNING

Group F24F 2013/148 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 2013/148 should be considered in order to perform a complete search.

M F24F 13/1486 {characterised by bearings, pivots or hinges}

WARNING

Group F24F 13/1486 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 13/1486 should be considered in order to perform a complete search.

M F24F 2013/1493 {using an elastic membrane}

WARNING

Group F24F 2013/1493 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 2013/1493 should be considered in order to perform a complete search.

- M F24F 13/15
- • • with parallel simultaneously tiltable lamellae
- WARNING**
Group F24F 13/15 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 13/15 should be considered in order to perform a complete search.
- M F24F 13/16
- • • built up of parallelly-movable plates
- WARNING**
Group F24F 13/16 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 13/16 should be considered in order to perform a complete search.
- M F24F 13/18
- • specially adapted for insertion in flat panels, e.g. in door or window-pane
- WARNING**
Group F24F 13/18 is impacted by reclassification into groups F24F 13/10–F24F 13/16.
All groups listed in this Warning should be considered in order to perform a complete search.

Project: RP0693 (F25B)

- M F25B 41/00 **Fluid-circulation arrangements, e.g. for transferring liquid from evaporator to boiler (pumps per se, sealings therefor F04)**
- D F25B 41/003
- {fluid line arrangements}
- <administratively transferred to [F25B 41/40](#)>
- U F25B 41/006
- {optical fluid control arrangements}
- D F25B 41/02
- using electro-osmosis
- <administratively transferred to [F25B 41/10](#)>
- D F25B 41/04
- Disposition of valves (valves per se F16K)
- <administratively transferred to [F25B 41/20](#)>
- D F25B 41/043
- {in the circuit between evaporator and compressor}
- <administratively transferred to [F25B 41/22](#)>
- D F25B 41/046
- • {of fluid flow reversing valves}
- <administratively transferred to [F25B 41/26](#)>
- D F25B 41/06
- Flow restrictors, e.g. capillary tubes; Disposition thereof
- <administratively transferred to [F25B 41/30](#)>
- D F25B 41/062
- • {Expansion valves (regulating valves per se G05D)}
- <administratively transferred to [F25B 41/31](#)>
- D F25B 41/065
- • • {Float control valves}
- <administratively transferred to [F25B 41/315](#)>
- D F25B 41/067
- • {capillary tubes}
- <administratively transferred to [F25B 41/37](#)>
- N F25B 41/10
- using electro-osmosis

- Q F25B 41/20
- Disposition of valves, e.g. of on-off valves or flow control valves (expansion valves [F25B 41/31](#))
- WARNING
Group [F25B 41/20](#) is impacted by reclassification into groups [F25B 41/24](#) and [F25B 41/28](#).
Groups [F25B 41/20](#), [F25B 41/24](#), and [F25B 41/28](#) should be considered in order to perform a complete search.
- Q F25B 41/22
- between evaporator and compressor
- WARNING
Group [F25B 41/22](#) is impacted by reclassification into group [F25B 41/28](#).
Groups [F25B 41/22](#) and [F25B 41/28](#) should be considered in order to perform a complete search.
- N F25B 41/24
- Arrangement of shut-off valves for disconnecting a part of the refrigerant cycle, e.g. an outdoor part
- WARNING
Group [F25B 41/24](#) is incomplete pending reclassification of documents from group [F25B 41/20](#).
Groups [F25B 41/20](#) and [F25B 41/24](#) should be considered in order to perform a complete search.
- Q F25B 41/26
- of fluid flow reversing valves
- WARNING
Group [F25B 41/26](#) is impacted by reclassification into group [F25B 41/28](#).
Groups [F25B 41/26](#) and [F25B 41/28](#) should be considered in order to perform a complete search.
- N F25B 41/28
- specially adapted for sorption cycles
- WARNING
Group [F25B 41/28](#) is incomplete pending reclassification of documents from groups [F25B 41/20](#), [F25B 41/22](#) and [F25B 41/26](#).
Groups [F25B 41/20](#), [F25B 41/22](#), [F25B 41/26](#) and [F25B 41/28](#) should be considered in order to perform a complete search.
- Q F25B 41/30
- Expansion means; Dispositions thereof
- WARNING
Group [F25B 41/30](#) is impacted by reclassification into groups [F25B 41/38](#), [F25B 41/385](#), and [F25B 41/39](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q F25B 41/31
- Expansion valves
- WARNING
Group [F25B 41/31](#) is impacted by reclassification into groups [F25B 41/32](#), [F25B 41/325](#), [F25B 41/33](#), [F25B 41/335](#), [F25B 41/34](#), [F25B 41/345](#), [F25B 41/347](#), [F25B 41/35](#), [F25B 41/355](#), and [F25B 41/36](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N F25B 41/315
- • actuated by floats

- N F25B 41/32
- • • having flow rate limiting means other than the valve member, e.g. having bypass orifices in the valve body
- WARNING
Group [F25B 41/32](#) is incomplete pending reclassification of documents from group [F25B 41/31](#).
Groups [F25B 41/31](#) and [F25B 41/32](#) should be considered in order to perform a complete search.
- N F25B 41/325
- • • having two or more valve members
- WARNING
Group [F25B 41/325](#) is incomplete pending reclassification of documents from group [F25B 41/31](#).
Groups [F25B 41/31](#) and [F25B 41/325](#) should be considered in order to perform a complete search.
- N F25B 41/33
- • • with the valve member being actuated by the fluid pressure, e.g. by the pressure of the refrigerant
- WARNING
Groups [F25B 41/33](#) and [F25B 41/335](#) are incomplete pending reclassification of documents from group [F25B 41/31](#).
Groups [F25B 41/31](#), [F25B 41/33](#), and [F25B 41/335](#) should be considered in order to perform a complete search.
- N F25B 41/335
- • • • via diaphragms
- N F25B 41/34
- • • with the valve member being actuated by electric means, e.g. by piezo-electric actuators
- WARNING
Groups [F25B 41/34](#), [F25B 41/345](#), [F25B 41/347](#), [F25B 41/35](#), and [F25B 41/355](#) are incomplete pending reclassification of documents from group [F25B 41/31](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N F25B 41/345
- • • • by solenoids
- N F25B 41/347
- • • • {with the valve member being opened and closed cyclically, e.g. with pulse width modulation}
- N F25B 41/35
- • • • by rotary motors, e.g. by stepping motors
- N F25B 41/355
- • • • by electric heating of bimetal elements, shape memory elements or heat expanding elements
- N F25B 41/36
- • • with the valve member being actuated by bimetal elements or shape-memory elements influenced by fluids, e.g. by the refrigerant
- WARNING
Group [F25B 41/36](#) is incomplete pending reclassification of documents from group [F25B 41/31](#).
Groups [F25B 41/31](#) and [F25B 41/36](#) should be considered in order to perform a complete search.
- Q F25B 41/37
- • Capillary tubes
- WARNING
Group [F25B 41/37](#) is impacted by reclassification into group [F25B 41/375](#).
Groups [F25B 41/37](#) and [F25B 41/375](#) should be considered in order to perform a complete search.

- N F25B 41/375
- • characterised by a variable restriction, e.g. restrictors made of shape memory alloy
- WARNING
Group [F25B 41/375](#) is incomplete pending reclassification of documents from group [F25B 41/37](#).
Groups [F25B 41/37](#) and [F25B 41/375](#) should be considered in order to perform a complete search.
- N F25B 41/38
- • specially adapted for reversible cycles, e.g. bidirectional expansion restrictors
- WARNING
Group [F25B 41/38](#) is incomplete pending reclassification of documents from group [F25B 41/30](#).
Groups [F25B 41/30](#) and [F25B 41/38](#) should be considered in order to perform a complete search.
- N F25B 41/385
- • Dispositions with two or more expansion means arranged in parallel on a refrigerant line leading to the same evaporator
- WARNING
Group [F25B 41/385](#) is incomplete pending reclassification of documents from group [F25B 41/30](#).
Groups [F25B 41/30](#) and [F25B 41/385](#) should be considered in order to perform a complete search.
- N F25B 41/39
- • Dispositions with two or more expansion means arranged in series, i.e. multi-stage expansion, on a refrigerant line leading to the same evaporator
- WARNING
Group [F25B 41/39](#) is incomplete pending reclassification of documents from group [F25B 41/30](#).
Groups [F25B 41/30](#) and [F25B 41/39](#) should be considered in order to perform a complete search.
- Q F25B 41/40
- Fluid line arrangements
- WARNING
Group [F25B 41/40](#) is impacted by reclassification into groups [F25B 41/42](#), [F25B 41/45](#), and [F25B 41/48](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N F25B 41/42
- • Arrangements for diverging or converging flows, e.g. branch lines or junctions
- WARNING
Groups [F25B 41/42](#), [F25B 41/45](#), and [F25B 41/48](#) are incomplete pending reclassification of documents from group [F25B 41/40](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N F25B 41/45
- • • for flow control on the upstream side of the diverging point, e.g. with spiral structure for generating turbulence
- N F25B 41/48
- • • for flow path resistance control on the downstream side of the diverging point, e.g. by an orifice
- U F25B 2341/00** **Details of ejectors not being used as compression device; Details of flow restrictors or expansion valves**
- U F25B 2341/06
- Details of flow restrictors or expansion valves
- D F25B 2341/061
- • Bidirectional expansion restrictors
- <administratively transferred to [F25B 41/38](#) INV>

- U F25B 2341/062 • • Capillary expansion valves
- U F25B 2341/063 • • Feed forward expansion valves
- U F25B 2341/064 • • Superheater expansion valves
- D F25B 2341/065 • • Electric expansion valves
 <administratively transferred to [F25B 41/34](#) INV>
- D F25B 2341/0651 • • • actuated by electric heating means, e.g. a heated bimetallic element
 <administratively transferred to [F25B 41/355](#) INV>
- D F25B 2341/0652 • • • being opened and closed cyclically, e.g. with pulse width modulation
 <administratively transferred to [F25B 41/347](#) INV>
- D F25B 2341/0653 • • • actuated by an electric motor
 <administratively transferred to [F25B 41/35](#) INV>
- D F25B 2341/066 • • Refrigeration circuits using more than one expansion valve
 <administratively transferred to [F25B 41/385](#) INV and [F25B 41/39](#) INV>
- D F25B 2341/0661 • • • arranged in parallel
 <administratively transferred to [F25B 41/385](#) INV>
- D F25B 2341/0662 • • • arranged in series
 <administratively transferred to [F25B 41/39](#) INV>
- T F25B 2341/067 • • Expansion valves having a pilot valve
- D F25B 2341/0671 • • • the pilot valve is electrically actuated
 <administratively transferred to [F25B 41/34](#) INV and [F25B 2341/067](#) ADD>
- U F25B 2341/068 • • Expansion valves combined with a sensor

Project: MP0496 (F25D)

- M F25D REFRIGERATORS; COLD ROOMS; ICE-BOXES; COOLING OR FREEZING APPARATUS NOT ~~COVERED BY ANY OTHER SUBCLASS~~ OTHERWISE PROVIDED FOR (refrigerated show cases [A47F 3/04](#); refrigerated showcases [A47F 3/04](#); thermally-insulated vessels for domestic use [A47J 41/00](#); refrigerated vehicles, ~~see~~ the appropriate subclasses of classes [B60](#)–[B64](#); containers with thermal insulation in general [B65D 81/38](#); heat-transfer, heat-exchange or heat-storage materials, e.g. refrigerants, or materials for the production of heat or cold by chemical reactions other than by combustion [C09K 5/00](#); thermally-insulated vessels for liquefied or solidified gases [F17C](#); air-conditioning or air-humidification [F24F](#); refrigeration machines, plants, or systems [F25B](#); cooling of instruments ~~and~~ comparable apparatus without refrigeration [G12B](#); cooling of engines or pumps, ~~see~~ the relevant classes)**

NOTES

1. In this subclass, the following term is used with the meaning indicated:
 - "device" means an enclosed space to be cooled; such devices being associated either with refrigerating machinery, e.g. in a refrigerator, or with other cold sources, e.g. in an ice-box.
2. Attention is drawn to Note (2) following the title of subclass [F24F](#).

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: MP0451 (G01B)

M	G01B	<p>MEASURING LENGTH, THICKNESS OR SIMILAR LINEAR DIMENSIONS; MEASURING ANGLES; MEASURING AREAS; MEASURING IRREGULARITIES OF SURFACES OR CONTOURS {{measuring human body, see the relevant places, where such exist, e.g. A41H 1/00, A43D 1/02, A61B 5/103; measuring appliances combined with walking-sticks A45B 3/08; sorting according to dimensions B07; tool-setting or drawing instruments not specially modified for measuring B23B 49/00, B23Q 15/00 - B23Q 17/00, B43L; combinations of measuring devices with writing-appliances B43K 29/08; geodetical, nautical or aeronautical measuring, surveying, rangefinding G01C; photogrammetry G01C 11/00; measuring force or stress, in general G01L 1/00; investigating or analysing particle size, investigating or analysing surface area of porous material G01N; measuring position, distance or direction, in general, by reception or emission of radiowaves or other waves and based on propagation effects, e.g. Doppler effect, propagation time, direction of propagation G01S; geophysical measuring G01V; measuring length or roll diameter of film in cameras or projectors G03B 1/60; combinations of measuring devices with means for controlling or regulating G05; methods or arrangements for converting the position of a manually-operated writing or tracing member into an electrical signal G06K 11/00; measuring elapsed travel of recording medium in recording and playback equipment, sensing diameter of record in autochange gramophones G11B; means structurally associated with electric rotary current collectors for indicating brush wear H01R 39/58; indicating consumption of electrodes in arc lamps H05B 31/34}}</p> <p>NOTES</p> <ol style="list-style-type: none"> 1. This subclass <u>covers</u> measuring of position or displacement in terms of linear or angular dimensions. 2. In this subclass, the groups are distinguished by the means of measurement which is of major importance. Thus the mere application of other means for giving a final indication does not affect the classification. 3. Attention is drawn to the Notes following the title of class G01. 4. Machines operated on similar principles to the hand-held devices specified in this subclass are classified with these devices. 5. Measuring arrangements or details thereof covered by two or more of groups G01B 3/00 - G01B 17/00 are classified in group G01B 21/00 if no single other group can be selected as being predominantly applicable. <p>WARNING</p> <p>In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.</p>
U	G01B 3/00	<p>Instruments as specified in the subgroups and characterised by the use of mechanical measuring means (arrangements for measuring particular parameters G01B 5/00; devices of general interest specially adapted or mounted for storing and repeatedly paying-out and re-storing lengths of material B65H 75/34)</p>
M	G01B 3/22	<ul style="list-style-type: none"> • Feeler-pin gauges, e.g. dial gauges (for determining profiles G01B 5/20 <i>for measuring contours or curvatures G01B 5/20</i>)
U	G01B 5/00	<p>Measuring arrangements characterised by the use of mechanical means (instruments of the types covered by group G01B 3/00 per se G01B 3/00)</p>
M	G01B 5/24	<ul style="list-style-type: none"> • for measuring angles or tapers; for testing <i>the</i> alignment of axes
U	G01B 7/00	<p>Measuring arrangements characterised by the use of electric or magnetic means</p>

- M G01B 7/16 · for measuring *the* deformation in a solid, e.g. by resistance strain gauge
- U G01B 9/00** **Instruments as specified in the subgroups and characterised by the use of optical measuring means (arrangements for measuring particular parameters [G01B 11/00](#))**
- M G01B 9/04 · Measuring microscopes (~~microscopes in general G02B 21/00~~)
- M G01B 9/06 · Measuring telescopes (~~telescopes in general G02B 23/00~~)
- U G01B 11/00** **Measuring arrangements characterised by the use of optical means (instruments of the types covered by group [G01B 9/00](#) per se [G01B 9/00](#))**
- U G01B 11/02 · for measuring length, width or thickness ([G01B 11/08](#) takes precedence)
- M G01B 11/06 · · *for measuring thickness* {; ~~for measuring thickness~~; e.g. of sheet material (thickness measurement by thermal means [G01B 21/085](#))}
- M G01B 11/14 · for measuring distance or clearance between spaced objects or spaced apertures ([G01B 11/26](#) takes precedence; rangefinders ~~G01C~~[G01C 3/00](#))
- U G01B 11/24 · for measuring contours or curvatures
- M G01B 11/25 · · by projecting a pattern, e.g. {one or more lines,} moiré fringes on the object ([G01B 11/255](#) takes precedence {; image analysis for depth or shape recovery [G06T 7/50](#)})
- U G01B 13/00** **Measuring arrangements characterised by the use of fluids {(pressure regulation [G05D 16/00](#))}**
- U G01B 13/02 · for measuring length, width or thickness ([G01B 13/08](#) takes precedence)
- M G01B 13/06 · · for measuring thickness, ~~e.g. of sheet material~~

Project: N/A (G01F)

- U G01F 1/00** **Measuring the volume flow or mass flow of fluid or fluent solid material wherein the fluid passes through the meter in a continuous flow (measuring a proportion of the volume flow [G01F 5/00](#))**
- NOTE
[G01F 1/72](#), [G01F 1/74](#) and [G01F 1/76](#) take precedence over [G01F 1/05](#) - [G01F 1/68](#)
- U G01F 1/05 · by using mechanical effects
- U G01F 1/20 · · by detection of dynamic effects of the fluid flow
- G01F 1/32 · · · by swirl flowmeter, e.g. using ~~Karman~~[KarmannKarman](#) vortices
- G01F 1/3209 · · · · {using ~~Karman~~[KarmannKarman](#) vortices}

Project: RP0691 (G01J)

- M G01J 5/00** **Radiation pyrometry (~~photometry in general G01J 1/00; spectrometry in general G01J 3/00 {measuring temperature in general, i.e. with a contacting sensor G01K; calorimetry of radiation beams G01K 17/00; direction finders for radiant sources G01S; intrusion detection by radiation G08B}~~)**

Project: RP0691 (G01K)

- M G01K** **MEASURING TEMPERATURE; MEASURING QUANTITY OF HEAT; THERMALLY-SENSITIVE ELEMENTS NOT OTHERWISE PROVIDED FOR** (~~sensing temperature changes for compensating measurements of other variables for compensating readings of instruments for variation in temperature, see G01D or relevant subclasses for variable measured; radiation pyrometry G01J G01J 5/00; investigating or analysing materials by use of thermal means G01N 25/00; compound sensitive elements, e.g. bimetallic, G12B 1/02~~)
- NOTES**
- In this subclass, the following term is used with the meaning indicated :
 - "thermometer" includes thermally-sensitive elements not provided for in other subclasses.
 - Attention is drawn to the Notes following the title of class [G01](#).
 - Attention is drawn to the Notes following the titles of class [B81](#) and subclass [B81B](#) relating to "microstructural devices" and "microstructural systems".
- WARNING**
- In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.
- U G01K 1/00** **Details of thermometers not specially adapted for particular types of thermometer (circuits for reducing thermal inertia [G01K 7/42](#))**
- M G01K 1/02** • ~~Special applications of indicating or recording means, e.g. for remote indications~~ *Means for indicating or recording specially adapted for thermometers*
- M G01K 1/022** • • ~~{recording means}~~ *for recording*
- M G01K 1/024** • • ~~{for remote indication (remote indication per se G08C)}~~
- U G01K 1/08** • Protective devices, e.g. casings
- D G01K 1/083** • • ~~{for clinical thermometers, e.g. contamination preventing sleeves}~~
<administratively transferred to [G01K 13/25](#)>
- D G01K 1/086** • • • ~~{for tympanic thermometers}~~
<administratively transferred to [G01K 13/252](#)>
- M G01K 1/14** • Supports; Fastening devices; *Mounting Arrangements for mounting* thermometers in particular locations
- M G01K 1/143** • • ~~{for measuring surface temperatures, e.g. of pipe walls}~~ *for measuring surface temperatures*
- M G01K 5/00** **Measuring temperature based on the expansion or contraction of a material ([G01K 9/00](#) takes precedence; giving other than momentary value of temperature [G01K 3/00](#); ~~of vapour arising from a liquid G01K 11/02; thermally-actuated switches H01H~~)**
- U G01K 5/02** • the material being a liquid (contained in a hollow body having parts which are deformable or displaceable under the pressure developed by the material [G01K 5/32](#))
- C G01K 5/22** • • with provision for expansion indicating over not more than a few degrees, ~~e.g. clinical thermometer~~

WARNING

Group [G01K 5/22](#) is impacted by reclassification into groups [G01K 13/20](#), [G01K 13/25](#), and [G01K 13/252](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- M G01K 7/00** Measuring temperature based on the use of electric or magnetic elements directly sensitive to heat (giving results other than momentary value of temperature [G01K 3/00](#); ~~measuring electric or magnetic variables G01R~~) ~~{~~; ~~{Power supply *therefor*, e.g. *by using* thermoelectric elements}~~
- M G01K 7/02
- using thermoelectric elements, e.g. thermocouples ~~{{cooling arrangements in electronic devices using the Peltier effect H01L 23/38;}~~ thermo-electric or thermo-magnetic devices per se H01L 35/00, H01L 37/00)
- M G01K 7/026
- ~~{Arrangements for signalling *rupture or disconnection of the thermocouple*}~~*failure or disconnection of thermocouples*
- M G01K 7/04
- the object to be measured not forming one of the ~~thermo-~~*electricthermoelectric* materials
- M G01K 7/06
- the ~~thermo-~~*electricthermoelectric* materials being arranged one within the other with the junction at one end exposed to the object, e.g. sheathed type
- M G01K 7/08
- the object to be measured forming one of the ~~thermo-~~*electricthermoelectric* materials, e.g. pointed type
- M G01K 7/42
- Circuits ~~for reducing~~*effecting compensation of* thermal inertia; Circuits for predicting the stationary value of *a* temperature
- U G01K 11/00** Measuring temperature based upon physical or chemical changes not covered by groups [G01K 3/00](#), [G01K 5/00](#), [G01K 7/00](#) or [G01K 9/00](#)
- M G01K 11/12
- using ~~change of colour or translucency~~*changes in colour, translucency or reflectance*(G01K 11/32 takes precedence; ~~heat-sensitive sheets for use in thermography B41M 5/00; {tenebrescent compositions C09K 9/00}~~)
- M G01K 11/125
- ~~{using change in reflectance}~~*using changes in reflectance*
- M G01K 11/14
- of inorganic materials
- WARNING**
Group [G01K 11/14](#) is incomplete pending reclassification of documents from group [G01K 11/165](#).
Groups [G01K 11/165](#) and [G01K 11/14](#) should be considered in order to perform a complete search.
- U G01K 11/16
- of organic materials
- C G01K 11/165
- ~~{of organic liquid crystals (liquid crystal compositions C09K 19/00; electro-optic liquid crystals G02F 1/13)}~~
- WARNING**
Group [G01K 11/165](#) is impacted by reclassification into group [G01K 11/14](#).
Groups [G01K 11/165](#) and [G01K 11/14](#) should be considered in order to perform a complete search.
- M G01K 11/32
- using changes in ~~transmission~~*transmittance*, scattering or ~~fluorescence~~*luminescence* in optical fibres ~~{{(in general G01D 5/268)}~~
- M G01K 11/3206
- ~~{at discrete locations in the fibre, e.g. *by means of Bragg gratings*}~~*using Bragg scattering*
- M G01K 11/3213
- ~~{using changes in fluorescence~~*luminescence*, e.g. at the distal end of the ~~fibre}~~*fibres*
- D G01K 2011/322
- ~~{using Brillouin scattering}~~
- <administratively transferred to [G01K 11/322](#) INV>
- N G01K 11/322
- *using Brillouin scattering*
- D G01K 2011/324
- ~~{using Raman scattering}~~
- <administratively transferred to [G01K 11/324](#) INV>
- N G01K 11/324
- *using Raman scattering*

- M G01K 13/00** **Adaptations of thermometers** *Thermometers specially adapted* for specific purposes
- D G01K 13/002 • {for measuring body temperature (G01K 5/22 takes precedence; for prediction aspects G01K 7/42; diagnostic temperature sensing A61M 39/0247)}
<administratively transferred to [G01K 13/20](#)>
- D G01K 13/004 • {Infrared clinical thermometers, e.g. tympanic}
<administratively transferred to [G01K 13/223](#)>
- U G01K 13/02 • for measuring temperature of moving fluids or granular materials capable of flow
- D G01K 2013/024 • {Moving gas}
<administratively transferred to [G01K 13/024](#) INV>
- N G01K 13/024 • • of moving gases
- D G01K 2013/026 • {Moving liquid}
<administratively transferred to [G01K 13/026](#) INV>
- N G01K 13/026 • • {of moving liquids}
- N G01K 13/20 • *Clinical contact thermometers for use with humans or animals*
- WARNING**
Groups [G01K 13/20](#), [G01K 13/25](#), and [G01K 13/252](#) are incomplete pending reclassification of documents from group [G01K 5/22](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N G01K 13/223 • • {Infrared clinical thermometers, e.g. tympanic}
- N G01K 13/25 • • Protective devices therefor, e.g. sleeves preventing contamination
- N G01K 13/252 • • • {for tympanic thermometers}

Project: RP0694 (G01N)

- M G01N** **INVESTIGATING OR ANALYSING MATERIALS BY DETERMINING THEIR CHEMICAL OR PHYSICAL PROPERTIES** (measuring or testing processes other than immunoassay, involving enzymes or microorganisms [C12M](#), [C12Q](#) {- testing electrographic developer properties [G03G 15/0848](#); controlling or regulating non-electric variables [G05D](#); measuring degree of ionisation of ionised gases, i.e. plasma [H05H 1/0006](#)})
- NOTES**
- In this subclass, the following terms are used with the meanings indicated :
 - "investigating" means testing or determining;
 - "materials" includes solid, liquid or gaseous media, e.g. the atmosphere.
 - Attention is drawn to the Notes following the title of class [G01](#).
 - ~~Inventions relating to investigating~~ *Investigating* the properties of materials, specially adapted for use in processes covered by subclass [B23K](#), *are is* classified in group [B23K 31/12](#).
- WARNING**
- In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: MP0495 (G01N)

- M G01N 21/00 Investigating or analysing materials by the use of optical means, i.e. using ~~infra-red, visible or ultra-violet~~ *sub-millimetre waves, infrared, visible or ultraviolet* light ([G01N 3/00](#) - [G01N 19/00](#) take precedence)

NOTE

This group does not cover the investigation of spectral properties of light per se, or measurements of the properties of materials where spectral properties of light are sensed and primary emphasis is placed on creating, detecting or analysing the spectrum providing that the properties of the materials to be investigated are of minor importance. Those subjects are covered by group [G01J 3/00](#).

- M G01N 22/00 Investigating or analysing materials by the use of microwaves *or radio waves, i.e. electromagnetic waves with a wavelength of one millimetre or more* ([G01N 3/00](#) - [G01N 17/00](#), [G01N 24/00](#) take precedence)

Project: RP0694 (G01N)

- M G01N 27/00 Investigating or analysing materials by the use of electric, ~~electro-chemical~~ *electrochemical*, or magnetic means ([G01N 3/00](#) - [G01N 25/00](#) take precedence; measurement or testing *of* electric or magnetic variables or of electric or magnetic properties of materials [G01R](#))
- M G01N 27/02 . by investigating ~~the impedance of the material~~ *impedance*
- M G01N 27/04 . . by investigating resistance ~~{(for measuring the amount of particles G01N 15/0656)}~~
- U G01N 27/14 . . . of an electrically-heated body in dependence upon change of temperature
- M G01N 27/16 caused by burning or catalytic oxidation of ~~a~~ surrounding material to be tested, e.g. of gas
- U G01N 27/26 . by investigating electrochemical variables; by using electrolysis or electrophoresis
- M G01N 27/27 . . Association of two or more measuring systems or cells, each measuring a different parameter, where the measurement results may be either used independently, the systems or cells being physically associated, or combined to produce a value for a further parameter ~~{, e.g. electrochemical electrode arrays (gas sensor arrays G01N 33/0031)}~~
- U G01N 27/28 . . Electrolytic cell components
- U G01N 27/30 . . . Electrodes, e.g. test electrodes; Half-cells ([G01N 27/414](#) takes precedence)
- M G01N 27/327 Biochemical electrodes ~~{electrical and mechanical details of, e.g. electrical or mechanical details for in vitro measurements (chemical and biological details C12Q 1/00, G01N 33/543; in vivo A61B 5/00)}~~
- U G01N 27/403 . . Cells and electrode assemblies
- U G01N 27/406 . . . Cells and probes with solid electrolytes
- M G01N 27/411 for investigating *or analysing of* liquid metals
- M G01N 27/416 . . Systems ([G01N 27/27](#) takes precedence ~~{; for testing batteries G01R 31/36}~~)
- U G01N 27/417 . . . using cells {, i.e. more than one cell} and probes with solid electrolytes
- M G01N 27/419 Measuring voltages or currents *with a combination* of oxygen pumping cells and oxygen concentration cells
- U G01N 27/42 . . . Measuring deposition or liberation of materials from an electrolyte; Coulometry, i.e. measuring coulomb-equivalent of material in an electrolyte
- M G01N 27/44 using electrolysis to *regenerate/generate* a reagent, e.g. for titration
- M G01N 27/447 . . . using electrophoresis ~~{(aspects concerning peptides or proteins G07K 1/26; for non-analytical purposes B01D 57/02; separating particles by dielectrophoresis B03C 5/00)}~~

- M G01N 27/48
- • • ~~Polarography~~ *using polarography*, i.e. measuring changes in current under a slowly-varying voltage
- C G01N 27/62
- by investigating the ionisation of gases, *e.g. aerosols*; by investigating electric discharges, e.g. emission of cathode
- WARNING
1. Group [G01N 27/62](#) is incomplete pending reclassification of documents from group [G01N 23/2258](#). Groups [G01N 23/2258](#) and [G01N 27/62](#) should be considered in order to perform a complete search.
 2. Group [G01N 27/62](#) is impacted by reclassification into group [G01N 27/623](#). Groups [G01N 27/62](#) and [G01N 27/623](#) should be considered in order to perform a complete search.
- C G01N 27/622
- • ~~{separating and identifying ionized molecules based on their mobility in a carrier gas, i.e. ion mobility~~ *ion mobility* spectrometry ~~{mass spectrometry H01J 49/26}~~
- WARNING
- Group G01N 27/622 is impacted by reclassification into group G01N 27/623. Groups G01N 27/622 and G01N 27/623 should be considered in order to perform a complete search.*
- N G01N 27/623
- • • *combined with mass spectrometry*
- WARNING
- Group G01N 27/623 is incomplete pending reclassification of documents from groups G01N 27/62 and G01N 27/622. Groups G01N 27/62, G01N 27/622, and G01N 27/623 should be considered in order to perform a complete search.*
- M G01N 27/624
- • • *Differential mobility spectrometry [DMS]*; ~~{using a non-uniform electric field, i.e. differential mobility spectrometry [DMS] or high-field asymmetric-waveform ion-mobility spectrometry [FAIMS]}~~ *Field asymmetric-waveform ion mobility spectrometry [FAIMS]*
- M G01N 27/626
- • ~~{using heat to ionise a gas}~~
- M G01N 27/64
- • using wave or particle radiation to ionise a gas, e.g. in an ionisation chamber ~~{{discharge tubes for measuring pressure of introduced gas or for detecting presence of gas H01J 41/02}}~~
- U G01N 27/72
- by investigating magnetic variables
- U G01N 27/74
- • of fluids ([G01N 24/00](#) takes precedence)
- M G01N 27/76
- • • by investigating susceptibility ~~{{(measuring susceptibility G01R 33/16)}~~
- U G01N 27/82
- • for investigating the presence of flaws
- M G01N 27/90
- • • using eddy currents ~~{{(for measuring thickness G01B 7/06)}~~
- T G01N 27/9006
- • • • {Details, *e.g. in the structure or functioning of sensors*}
- M G01N 27/9013
- • • • • ~~▪~~ *{specially adapted for scanning} Arrangements for scanning*
- M G01N 27/902
- • • • • ~~▪~~ {by moving the sensors}
- M G01N 27/9026
- • • • • ~~▪~~ {by moving the material}
- D G01N 27/9033
- • • • • {Sensors}
- <administratively transferred to [G01N 27/9006](#)>
- M G01N 27/904
- • • • ~~{and more than one sensor}~~ *with two or more sensors*
- M G01N 27/9073
- • • • {Recording measured data ~~(in general G01D)}~~}

- M G01N 27/9093 ~~Arrangements for supporting the sensor; {arrangements for supporting or marking or rejecting, e.g. machines-Combinations of eddy-current sensors and auxiliary arrangements for marking or for rejecting (sorting individual articles or bulk material fit to be sorted piece-meal, controlled indirectly by devices which detect or measure some feature of the article or material to be sorted B07C 5/00)}~~

Project: MP0427 (G01N)

- M G01N 33/00 Investigating or analysing materials by specific methods not covered by groups [G01N 1/00](#) - [G01N 31/00](#)

NOTE

*In groups [G01N 33/52](#) - [G01N 33/98](#), the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place.
{This Note corresponds to IPC Note (1) relating to [G01N 33/52](#) - [G01N 33/98](#).}*

- U G01N 33/48 . Biological material, e.g. blood, urine ([G01N 33/02](#), [G01N 33/26](#), [G01N 33/44](#), [G01N 33/46](#) take precedence); Haemocytometers (counting blood corpuscles distributed over a surface by scanning the surface [G06M 11/02](#))
- U G01N 33/50 . . Chemical analysis of biological material, e.g. blood, urine; Testing involving biospecific ligand binding methods; Immunological testing (measuring or testing processes involving enzymes or microorganisms, compositions or test papers therefor; processes for forming such compositions, condition responsive control in microbiological or enzymological processes [C12Q](#))

NOTES

1. In this group, the following expression is used with the meaning indicated: "involving", when used in relation to a material, includes the testing for the material as well as employing the material as a determinant or reactant in a test for a different material.
2. In groups [G01N 33/52](#) – [G01N 33/98](#), the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place.
3. Documents relating to new peptides or new DNA or its corresponding mRNA, encoding for the peptides, and their use in measuring or testing processes are classified in subclass [C07K](#) or in group [C12N 9/00](#) according to the peptides, with the appropriate indexing codes relating to their use in diagnostics. However, if the investigating or analysing aspects are of interest, the documents are classified in this group.

- M G01N 33/579 . . . involving limulus lysate

NOTE

~~Groups [G01N 33/53](#) – [G01N 33/576](#) take precedence over groups [G01N 33/58](#) – [G01N 33/98](#)~~

- M G01N 33/98 . . . involving alcohol, e.g. ethanol in breath

NOTE

~~In groups [G01N 35/00](#) – [G01N 35/085](#), the indexing codes of G01N are added~~

U G01N 2333/00 Assays involving biological materials from specific organisms or of a specific nature

NOTE

In groups [G01N 2333/47](#) - [G01N 2333/994](#) indexing codes are assigned according to the chemical nature of the materials irrespective of the source organism.

U G01N 2333/435 · from animals; from humans

U G01N 2333/46 · · from vertebrates

M G01N 2333/465 · · · from birds

NOTE

~~In groups [G01N 2333/47](#) - [G01N 2333/994](#) indexing codes are assigned irrespective of the source of the indicated proteins.~~

Project: MP0427 (G01R)

M G01R MEASURING ELECTRIC VARIABLES; MEASURING MAGNETIC VARIABLES (measuring physical variables of any kind by conversion into electric variables, see Note (4) following the title of class [G01](#); measuring diffusion of ions in an electric field, e.g. electrophoresis, electro-osmosis [G01N](#); investigating non-electric or non-magnetic properties of materials by using electric or magnetic methods [G01N](#); indicating correct tuning of resonant circuits [H03J 3/12](#); monitoring electronic pulse counters [H03K 21/40](#); monitoring operation of communication systems [H04](#))

NOTES

1. This subclass covers:

- measuring all kinds of electric or magnetic variables directly or by derivation from other electric or magnetic variables;
- measuring all kinds of electric or magnetic properties of materials;
- testing electric or magnetic devices, apparatus or networks, (e.g. discharge tubes, amplifiers) or measuring their characteristics;
- indicating presence or sign of current or voltage;
- NMR, EPR or other spin-effect apparatus, not specially adapted for a particular application;
- equipment for generating signals to be used for carrying out such tests and measurements.

2. In this subclass, the following terms or expressions are used with the meanings indicated :

- "measuring" includes investigating;
- "instruments" or "measuring instruments" means electro-mechanical measuring mechanisms;
- "arrangements for measuring" means apparatus, circuits, or methods for measuring;

3. Attention is drawn to the Notes following the title of class [G01](#).

~~4. In this subclass, group [G01R 17/00](#) takes precedence over groups [G01R 19/00](#) - [G01R 31/00](#).~~

4. In this subclass, instruments or arrangements for measuring electric variables are classified in the following way:

- *Electromechanical instruments where the measured electric variables directly effect the indication of the measured value, including combined effects of two or more values, are classified in groups [G01R 5/00](#) - [G01R 11/00](#).*
- *Details common to different types of the instruments covered by groups [G01R 5/00](#) - [G01R 11/00](#) are classified in group [G01R 1/00](#).*

- Arrangements involving circuitry to obtain an indication of a measured value by deriving, calculating or otherwise processing electric variables, e.g. by comparison with another value, are classified in groups [G01R 17/00](#) - [G01R 29/00](#).
- Details common to different types of arrangements covered by groups [G01R 17/00](#) - [G01R 29/00](#) are classified in group [G01R 15/00](#).

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

M G01R 11/00

Electromechanical arrangements for measuring time integral of electric power {, i.e. electric energy} or current, e.g. of consumption ({other arrangements for measuring time integral of electric power or current [G01R 22/00](#); boards, panels, desks for energy meters, [H02B 1/03](#)}; monitoring electric consumption of electrically-propelled vehicles [B60L 3/00](#))

NOTE

1. Groups [G01R 11/48](#) - [G01R 11/56](#) take precedence over groups [G01R 11/30](#) - [G01R 11/46](#).

{This Note corresponds to IPC Note (1) relating to [G01R 11/30](#) - [G01R 11/46](#).}

~~1-2.~~ For the definition of "arrangement" see Note (2) under [G01R](#)

U G01R 11/02

- Constructional details (applicable to electric measuring instruments in general [G01R 1/00](#))

M G01R 11/25

- Arrangements for indicating or signalling faults (seals [G09F 3/03](#); preventing tampering with detection circuits in signalling or alarm circuits [G08B 29/046](#))

NOTE

~~Groups [G01R 11/48](#) - [G01R 11/66](#) take precedence over groups [G01R 11/30](#) - [G01R 11/46](#).~~

Project: RP0697 (G01R)

G01R 19/00

Arrangements for measuring currents or voltages or for indicating presence or sign thereof ([G01R 5/00](#) takes precedence {; {voltage measurements using secondary electron emission when testing electronic circuits [G01R 31/305](#)}; for measuring bioelectric currents or voltages [A61B 5/04](#)[A61B 5/24](#))

NOTE

Within groups [G01R 19/02](#) - [G01R 19/32](#), group [G01R 19/28](#) takes precedence. Groups [G01R 19/18](#) - [G01R 19/257](#) take precedence over groups [G01R 19/02](#) - [G01R 19/17](#) and [G01R 19/30](#).

Project: MP0451 (G01S)

M G01S 3/00

Direction-finders for determining the direction from which infrasonic, sonic, ultrasonic, or electromagnetic waves, or particle emission, not having a directional significance, are being received (~~position fixing by co-ordinating a plurality of determinations of direction or position lines [G01S 5/00](#); for geophysical measurement [G01C](#); telescope mountings [G02B](#)~~ **position-fixing by co-ordinating a plurality of determinations of direction or position lines [G01S 5/00](#))**

Project: RP0698 (G01S)

U G01S 3/02

- using radio waves

- U G01S 3/14
 - • Systems for determining direction or deviation from predetermined direction {(aerial arrangements for changing or varying the orientation or the shape of the directional pattern [H01Q 3/00](#); combinations of different interacting aerial units for giving a desired directional characteristic [H01Q 21/29](#); aerials or aerial systems providing at least two radiation patterns [H01Q 25/00](#))}
- M G01S 3/146
 - • • {by comparing linear polarisation components ~~(polarisation details of antenna systems per se [H01Q 21/245](#))~~}

Project: MP0451 (G01S)

- U G01S 3/58
 - • • Rotating or oscillating beam systems using continuous analysis of received signal for determining direction in the plane of rotation or oscillation or for determining deviation from a predetermined direction in such a plane ([G01S 3/14](#) takes precedence)
- U G01S 3/66
 - • • • Narrow-beam systems producing in the receiver a pulse-type envelope signal of the carrier wave of the beam, the timing of which is dependent upon the angle between the direction of the transmitter from the receiver and a reference direction from the receiver; Overlapping broad-beam systems defining in the receiver a narrow zone and producing a pulse-type envelope signal of the carrier wave of the beam, the timing of which is dependent upon the angle between the direction of the transmitter from the receiver and a reference direction from the receiver
- M G01S 3/68
 - • • • wherein the timing of the pulse-type envelope signal is indicated by cathode-ray tube ~~(radar cathode-ray tube indicators providing co-ordinated display of distance and direction [G01S 7/10](#))~~
- U G01S 3/78
 - using electromagnetic waves other than radio waves
- U G01S 3/782
 - • Systems for determining direction or deviation from predetermined direction
- U G01S 3/785
 - • • using adjustment of orientation of directivity characteristics of a detector or detector system to give a desired condition of signal derived from that detector or detector system
- M G01S 3/786
 - • • • the desired condition being maintained automatically ~~{, i.e. tracking systems; ([G01S 3/783](#) takes precedence)}~~
- M G01S 3/787
 - • • using rotating reticles producing a direction-~~dependant~~[dependent](#) modulation characteristic
- U G01S 3/80
 - using ultrasonic, sonic or infrasonic waves
- M G01S 3/802
 - • Systems for determining direction or deviation from predetermined direction ~~(sound-focusing or directing using electrical steering of transducer arrays; e.g. beam steering, in general [G10K 11/34](#))~~

- U **G01S 5/00**

Position-fixing by co-ordinating two or more direction or position line determinations; Position-fixing by co-ordinating two or more distance determinations {(using active systems [G01S 13/00](#), [G01S 15/00](#), [G01S 17/00](#))}

WARNING

Group [G01S 5/00](#) is impacted by reclassification into groups [G01S 5/01](#), [G01S 5/011](#), [G01S 5/012](#), [G01S 5/013](#), [G01S 5/014](#), [G01S 5/015](#), [G01S 5/016](#), [G01S 5/017](#), [G01S 5/018](#), and [G01S 5/019](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- U G01S 5/02
 - using radio waves (using satellite radio beacon systems for determining position [G01S 19/00](#))

WARNING

Group [G01S 5/02](#) is impacted by reclassification into groups [G01S 5/01](#), [G01S 5/011](#), [G01S 5/012](#), [G01S 5/013](#), [G01S 5/014](#), [G01S 5/015](#), [G01S 5/016](#),

[G01S 5/017](#), [G01S 5/018](#), [G01S 5/019](#), [G01S 5/0244](#), [G01S 5/0246](#),
[G01S 5/0249](#), [G01S 5/02524](#), [G01S 5/02525](#), [G01S 5/02526](#), [G01S 5/02527](#),
[G01S 5/02529](#), [G01S 5/0269](#), [G01S 5/02695](#), [G01S 5/0295](#), [G01S 5/02955](#),
[G01S 2205/01](#), [G01S 2205/02](#), [G01S 2205/03](#), [G01S 2205/04](#), [G01S 2205/05](#),
[G01S 2205/06](#), [G01S 2205/07](#), [G01S 2205/08](#), [G01S 2205/09](#), and
[G01S 2205/10](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- M G01S 5/12
 - • by co-ordinating position lines of different shape, e.g. hyperbolic, circular, elliptical, ~~radial or radial~~ (radar indicators providing co-ordinated display of direction and distance G01S 7/10)
- U G01S 5/18
 - using ultrasonic, sonic, or infrasonic waves
- M G01S 5/28
 - • by co-ordinating position lines of different shape, e.g. hyperbolic, circular, elliptical, ~~radial or radial~~ (sonar indicators providing co-ordinated display of direction and distance G01S 7/62)

Project: RP0698 (G01S)

- U G01S 7/00 Details of systems according to groups [G01S 13/00](#), [G01S 15/00](#), [G01S 17/00](#)
- M G01S 7/003
 - {Transmission of data between radar, sonar or lidar systems and remote stations ~~(in general G08C)~~}
- U G01S 7/02
 - of systems according to group [G01S 13/00](#)
- M G01S 7/021
 - • {Auxiliary means for detecting or identifying radar signals or the like, e.g. radar jamming signals ~~(multi-channel PRF analysers, per se G01R 23/155)~~}
- U G01S 7/03
 - • Details of HF subsystems specially adapted therefor, e.g. common to transmitter and receiver
- U G01S 7/034
 - • • {Duplexers (switching devices for waveguides [H01P 1/10](#); transmit-receive switching in transceivers [H04B 1/44](#))}
- M G01S 7/036
 - • • • {involving a transfer mixer ~~(mixers in general, H03D 7/00)~~}
- U G01S 7/04
 - • Display arrangements
- M G01S 7/046
 - • • {using an intermediate storage device, e.g. a recording/reproducing device ~~(video recording in general H04N)~~}
- M G01S 7/06
 - • • Cathode-ray tube displays {or other two-dimensional or three-dimensional displays ~~(cathode ray oscilloscopes in general G01R 13/20)~~}

WARNING

Groups G01S 7/062 – G01S 7/24 are not complete pending a reorganization. See provisionally G01S 7/06

Project: MP0451 (G01S)

- M G01S 7/36
 - • Means for anti-jamming {, e.g. ~~electronic counter-counter measures [EGCM] ECCM, i.e. electronic counter-counter measures~~ {G01S 7/2813 takes precedence; identification of radar jamming signals G01S 7/021; random interference pulse cancellers G01S 7/2928}}
- M G01S 7/38
 - • Jamming means, e.g. producing false echoes ~~{(identification of radar signals G01S 7/021)}~~

Project: RP0698 (G01S)

- U G01S 7/40
 - • Means for monitoring or calibrating
- M G01S 7/4004
 - • • {of parts of a radar system ~~(see provisionally also G01S 7/40)~~}
- M G01S 7/4052
 - • • {by simulation of echoes ~~(analogue simulators in general G06G 7/78)~~}
- U G01S 7/52
 - of systems according to group [G01S 15/00](#)

- M G01S 7/52001 . . {Auxiliary means for detecting or identifying sonar signals or the like, e.g. sonar jamming signals ~~(multi-channel PRF-analysers per se G01R-23/155)}~~}
- M G01S 7/52003 . . {Techniques for enhancing spatial resolution of targets (~~beam formers in general G10K-11/34~~; G01S 7/52046 takes precedence)}
- U G01S 7/52017 . . {particularly adapted to short-range imaging (G01S 7/53 takes precedence)}
- U G01S 7/52046 . . . {Techniques for image enhancement involving transmitter or receiver (image enhancement by image data processing G06T 5/00)}
- M G01S 7/52047 {for elimination of side lobes or of grating lobes; for increasing resolving power ~~(beam formers in general G10K-11/34)}~~}
- U G01S 7/52053 . . . {Display arrangements}
- M G01S 7/52057 {Cathode ray tube displays ~~(cathode ray oscilloscopes in general G01R-13/20)}~~}

Project: MP0451 (G01S)

- M G01S 7/521 . . Constructional features ~~{{(constructional features of transducers B06B; mounting transducers G10K-11/00)}~~}
 - M G01S 7/537 . . Counter-measures or counter-counter-measures, e.g. jamming, anti-jamming ~~{{(in general H04K)}~~}
 - U G01S 7/56 . . Display arrangements ~~{{(short-range imaging G01S 7/52053)}~~}
 - M G01S 7/62 . . . Cathode-ray tube displays ~~{(or other two-dimensional or three-dimensional displays)}~~
- M G01S 11/00 Systems for determining distance or velocity not using reflection or reradiation (~~direction finders G01S 3/00~~; position-fixing by co-ordinating two or more distance determinations G01S 5/00)**
- U G01S 11/02 . . using radio waves (G01S 19/00 takes precedence)
 - M G01S 11/08 . . using synchronised clocks ~~(synchronisation of electronic clocks G04G 7/02)~~

Project: RP0698 (G01S)

- U G01S 13/00 **Systems using the reflection or reradiation of radio waves, e.g. radar systems; Analogous systems using reflection or reradiation of waves whose nature or wavelength is irrelevant or unspecified**
- NOTES**
1. This group covers :
 - systems for detecting the presence of an object, e.g. by reflection or reradiation from the object itself, or from a transponder associated with the object, for determining the distance or relative velocity of an object, for providing a co-ordinated display of the distance and direction of an object or for obtaining an image thereof;
 - systems arranged for mounting on a moving craft or vehicle and using the reflection of waves from an extended surface external to the craft, e.g. the surface of the earth, to determine the velocity and direction of motion of the craft relative to the surface.
 2. This group does not cover :
 - systems for determining the direction of an object by means not employing reflection or reradiation, which are covered by groups G01S 1/00 or G01S 3/00;
 - systems for determining distance or velocity of an object by means not employing reflection or reradiation, which are covered by group G01S 11/00.
- U G01S 13/02 . . Systems using reflection of radio waves, e.g. primary radar systems; Analogous systems

- M G01S 13/04 . . Systems determining ~~the~~ presence of a target (based on relative movement of target [G01S 13/56](#))
- U G01S 13/06 . . Systems determining position data of a target
- U G01S 13/08 . . . Systems for measuring distance only (indirect measurement [G01S 13/46](#))
- M G01S 13/10 using transmission of interrupted, pulse modulated waves (determination of distance by phase measurement [G01S 13/32](#))
- M G01S 13/32 using transmission of continuous ~~unmodulated~~ waves, *whether* amplitude-, frequency-, or phase-modulated ~~waves, or unmodulated~~
- M G01S 13/34 using transmission of *continuous*, frequency-modulated waves *and while heterodyning* the received signal, or a signal derived therefrom, ~~being heterodyned~~ with a locally-generated signal related to the ~~contemporaneous transmitted signal to give a beat-frequency signal~~ *contemporaneously transmitted signal*
- U G01S 13/50 . . Systems of measurement based on relative movement of target
- M G01S 13/505 . . . {using Doppler effect for determining closest range to a target or corresponding time, e.g. miss-distance indicator (~~proximity fuze see F42C 13/04; miss-distance indicators in general F41J 5/12~~)}
- M G01S 13/52 . . . Discriminating between fixed and moving objects or between objects moving at different speeds (~~coherent receivers G01S 7/288~~)

Project: MP0451 (G01S)

- U G01S 13/522 using transmissions of interrupted pulse modulated waves
- M G01S 13/524 based upon the phase or frequency shift resulting from movement of objects, with reference to the transmitted signals, e.g. coherent ~~MTI~~ *MTI* (~~coherent receivers G01S 7/288~~)

Project: RP0698 (G01S)

- M G01S 13/58 . . . Velocity or trajectory determination systems; Sense-of-movement determination systems (~~systems applied to the controlling of traffic G01S 13/92~~)
- U G01S 13/585 {processing the video signal in order to evaluate or display the velocity value}
- M G01S 13/587 {using optical means (~~optical computing devices in general G06E~~)}
- M G01S 13/66 . . Radar-tracking systems; Analogous systems ~~where the wavelength or the kind of wave is irrelevant~~
- U G01S 13/74 . . Systems using reradiation of radio waves, e.g. secondary radar systems; Analogous systems
- U G01S 13/76 . . wherein pulse-type signals are transmitted
- M G01S 13/78 . . . discriminating between different kinds of targets, e.g. IFF-radar, i.e. identification of friend or foe ([G01S 13/75](#), ~~G01S 13/767~~ [G01S 13/79](#) take precedence)
- M G01S 13/79 . . Systems using random coded signals or random pulse repetition ~~frequencies;~~ *frequencies* {, e.g. "Separation and Control of Aircraft using Non synchronous Techniques" [SECANT]}
- M G01S 13/86 . . Combinations of radar systems with non-radar systems, e.g. sonar, direction finder (~~combination of sonar systems with non-sonar or non-radar systems G01S 15/86; combination of lidar systems with systems other than lidar, radar or sonar G01S 17/86~~)

U G01S 15/00 Systems using the reflection or reradiation of acoustic waves, e.g. sonar systems

NOTES

1. This group covers :
 - systems for detecting the presence of an object, e.g. by reflection or reradiation from the object itself, or from a transponder associated with the object, for determining the distance or relative velocity of an object, for providing a co-ordinated display of the distance and direction of an object or for obtaining an image thereof;
 - systems arranged for mounting on a moving craft or vehicle and using the reflection of waves from an extended surface external to the craft, e.g. the surface of the earth, to determine the velocity and direction of motion of the craft relative to the surface.
2. This group does not cover :
 - systems for determining the direction of an object by means not employing reflection or reradiation, which are covered by groups [G01S 1/00](#) or [G01S 3/00](#);
 - systems for determining distance or velocity of an object by means not employing reflection or reradiation, which are covered by group [G01S 11/00](#).

- | | | |
|---|--------------|---|
| U | G01S 15/02 | • using reflection of acoustic waves (G01S 15/66 takes precedence) |
| U | G01S 15/06 | • • Systems determining the position data of a target |
| U | G01S 15/08 | • • • Systems for measuring distance only (indirect measurement G01S 15/46) |
| M | G01S 15/10 | • • • • using transmission of interrupted, pulse-modulated waves (determination of distance by phase measurement G01S 15/32) |
| M | G01S 15/32 | • • • • using transmission of continuous unmodulated waves, <i>whether</i> amplitude-, frequency-, or phase-modulated waves , <i>or unmodulated</i> |
| M | G01S 15/34 | • • • • • using transmission of <i>continuous</i> , frequency-modulated waves <i>and while heterodyning</i> the received signal, or a signal derived therefrom, being heterodyned with a locally-generated signal related to the contemporaneous transmitted signal to give a beat-frequency signal <i>contemporaneously transmitted signal</i> |
| U | G01S 15/88 | • Sonar systems specially adapted for specific applications (seismic or acoustic prospecting or detecting G01V 1/00) |
| U | G01S 15/89 | • • for mapping or imaging |
| U | G01S 15/8906 | • • • {Short-range imaging systems; Acoustic microscope systems using pulse-echo techniques} |
| M | G01S 15/8909 | • • • • {using a static transducer configuration (sound-focusing or directing per se G10K 11/26) } |
| M | G01S 15/8934 | • • • • {using a dynamic transducer configuration (mounting transducers; e.g. provided with mechanical moving or orienting device per se G10K 11/004) } |
| U | G01S 15/8965 | • • • • {using acousto-optical or acousto-electronic conversion techniques} |
| M | G01S 15/897 | • • • • • {using application of holographic techniques (holography per se G03H) } |
| M | G01S 15/8977 | • • • • • {using special techniques for image reconstruction, e.g. FFT, geometrical transformations, spatial deconvolution, time deconvolution (digital image processing per se G06T 1/00) } |

M G01S 17/00 Systems using the reflection or reradiation of electromagnetic waves other than radio waves, e.g. lidar systems

NOTE

1. The note after group G01S 13/00 also applies to this group.

1. This group covers:

- systems for detecting the presence of an object, e.g. by reflection or reradiation from the object itself, or from a transponder associated with the object, for determining the distance or relative velocity of an object, for providing a coordinated display of the distance and direction of an object or for obtaining an image thereof;
- systems arranged for mounting on a moving craft or vehicle and using the reflection of waves from an extended surface external to the craft, e.g. the surface of the earth, to determine the velocity and direction of motion of the craft relative to the surface.

2. This subclass does not cover:

- systems for determining the direction of an object by means not employing reflection or reradiation which are covered by groups G01S 1/00 or G01S 3/00;
- systems for determining distance or velocity of an object by means not employing reflection or reradiation, which are covered by group G01S 11/00.

Project: MP0451 (G01S)

- U G01S 17/02 • Systems using the reflection of electromagnetic waves other than radio waves (G01S 17/66 takes precedence)
- U G01S 17/06 • • Systems determining position data of a target
- M G01S 17/08 • • • for measuring distance only (indirect measurement G01S 17/46; active triangulation systems G01S 17/48; ~~passive systems using a parallactic triangle G01C 3/10, G01C 3/22, G01C 3/24, G01C 3/26~~)

Project: RP0698 (G01S)

- M G01S 17/10 • • • using transmission of interrupted, pulse-modulated waves (determination of distance by phase measurements G01S 17/32)
- M G01S 17/32 • • • using transmission of continuous ~~unmodulated~~ waves, whether amplitude-, frequency-, or phase-modulated ~~waves~~, or unmodulated
- M G01S 17/34 • • • • using transmission of continuous, frequency-modulated waves and while heterodyning the received signal, or a signal derived therefrom, ~~being heterodyned~~ with a locally-generated signal related to the ~~contemporaneous transmitted signal to give a beat-frequency signal~~ contemporaneously transmitted signal

Project: MP0451 (G01S)

- U G01S 17/46 • • • Indirect determination of position data
- M G01S 17/48 • • • • Active triangulation systems, i.e. using the transmission and reflection of electromagnetic waves other than radio waves (~~passive systems using a parallactic triangle G01C 3/10, G01C 3/22, G01C 3/24, G01C 3/26~~; ~~active systems for automatic generation of focusing signals G02B 7/32~~)

Project: RP0698 (G01S)

- M G01S 19/00** **Satellite radio beacon positioning systems; Determining position, velocity or attitude using signals transmitted by such systems**
- NOTE**
In this group, or in the patent documents classified in this group, the following abbreviations are often used:
- PDOP = Position Dilution of Precision
 - RAIM = Receiver Autonomous Integrity Monitoring
 - DGPS = Differential GPS
 - Pseudolite = Pseudolite is a contraction of the term "pseudo-satellite," used to refer to the mimicing of GPS satellites (or of other navigation satellites) by other transceivers.
 - WAAS = Wide Area Augmentation System
- U G01S 19/01 • Satellite radio beacon positioning systems transmitting time-stamped messages, e.g. GPS [Global Positioning System], GLONASS [Global Orbiting Navigation Satellite System] or GALILEO
- U G01S 19/03 • Cooperating elements; Interaction or communication between different cooperating elements or between cooperating elements and receivers
- NOTE**
The term "cooperating elements" designates additional elements or subsystems, including receivers of other users, which interact or communicate with the receiver or the satellite positioning system.
- M G01S 19/05 • • providing aiding **information data**
- M G01S 19/07 • • providing data for correcting measured positioning data, e.g. **DGPS [differential GPS] or ionosphere corrections**
- WARNING**
Group [G01S 19/07](#) is impacted by reclassification into groups [G01S 19/071](#), [G01S 19/072](#), [G01S 19/073](#), and [G01S 19/074](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- U G01S 19/13 • Receivers
- M G01S 19/21 • • Interference related issues **{; {Issues related to cross-correlation, spoofing or other methods of denial of service (~~interference-related aspects in spread spectrum receivers per se H04B 1/7097~~)}**
- U G01S 19/24 • • Acquisition or tracking {or demodulation} of signals transmitted by the system {(synchronisation aspects of direct sequence spread spectrum modulation [H04B 1/7073](#))}
- M G01S 19/29 • • • carrier; {including Doppler,} related {([G01S 19/246](#) takes precedence)}
- U G01S 19/38 • Determining a navigation solution using signals transmitted by a satellite radio beacon positioning system
- U G01S 19/39 • the satellite radio beacon positioning system transmitting time-stamped messages, e.g. GPS [Global Positioning System], GLONASS [Global Orbiting Navigation Satellite System] or GALILEO
- WARNING**
Group [G01S 19/39](#) is impacted by reclassification into groups [G01S 19/393](#) and [G01S 19/396](#).
Groups [G01S 19/39](#), [G01S 19/393](#), and [G01S 19/396](#) should be considered in order to perform a complete search.
- U G01S 19/42 • • Determining position

- U G01S 19/45 by combining measurements of signals from the satellite radio beacon positioning system with a supplementary measurement
- M G01S 19/47 the supplementary measurement being an inertial measurement, e.g. tightly coupled inertial

NOTE

~~This group does not adequately cover combining inertial navigation measurements with a non-inertial navigation instrument; also see G01C 21/165.~~

- U G01S 19/48 by combining or switching between position solutions derived from the satellite radio beacon positioning system and position solutions derived from a further system

WARNING

Group [G01S 19/48](#) is impacted by reclassification into groups [G01S 5/01](#), [G01S 5/011](#), [G01S 5/012](#), [G01S 5/013](#), [G01S 5/014](#), [G01S 5/015](#), [G01S 5/016](#), [G01S 5/017](#), [G01S 5/018](#), [G01S 5/019](#), and [G01S 19/485](#). All groups listed in this Warning should be considered in order to perform a complete search.

- M G01S 19/49 whereby the further system is an inertial position system, e.g. loosely-coupled

NOTE

~~This group does not adequately cover combining inertial navigation measurements with a non-inertial navigation instrument; also see G01C 21/165.~~

WARNING

Group [G01S 19/49](#) is impacted by reclassification into groups [G01S 5/01](#), [G01S 5/011](#), [G01S 5/012](#), [G01S 5/013](#), [G01S 5/014](#), [G01S 5/015](#), [G01S 5/016](#), [G01S 5/017](#), [G01S 5/018](#), [G01S 5/019](#), and [G01S 19/485](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- M G01S 19/50 whereby the position solution is constrained to lie upon a particular curve or surface, e.g. for locomotives on railway tracks

NOTE

~~This group does not adequately cover regarding map or contour matching also; see G01C 21/005 and G01C 21/30.~~

Project: MP0451 (G01T)

M G01T

MEASUREMENT OF NUCLEAR OR X-RADIATION (radiation analysis of materials, mass spectrometry ~~G01N G01N 23/00~~; ~~counters per se G06M, H03K~~; ~~electric discharge tubes for analysing radiation or particles H01J 40/00, H01J 47/00, H01J 49/00~~; ~~tubes for determining the presence, intensity, density or energy of radiation or particles H01J 47/00~~)

NOTES

1. This subclass covers the measurement of X-radiation, gamma radiation, corpuscular radiation, cosmic radiation or neutron radiation.
2. Attention is drawn to the Notes following the title of class [G01](#).

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

- U G01T 1/00** Measuring X-radiation, gamma radiation, corpuscular radiation, or cosmic radiation (**G01T 3/00, G01T 5/00** take precedence)
- M G01T 1/02 • Dosimeters (**G01T 1/15** takes precedence, ~~measuring exposure time to X-rays H05G 1/28~~)
- M G01T 1/08 • • Photographic dosimeters ~~{{(sensitive materials, processing thereof G03C; {photometry G01J 1/52})}}~~
- M G01T 1/15 • Instruments in which pulses generated by a radiation detector are integrated, e.g. by a diode pump circuit ~~(pulse rate meters in general G01R 23/02)~~
- U G01T 1/16 • Measuring radiation intensity (**G01T 1/29** takes precedence {; self-powered detectors **G01T 3/006**; using an ionisation chamber filled with a liquid or solid, e.g. frozen liquid, dielectric **G01T 3/008**)}
- U G01T 1/161 • • Applications in the field of nuclear medicine, e.g. *in vivo* counting ~~{{(apparatus for radiation diagnosis A61B 6/00)}~~
- M G01T 1/164 • • • Scintigraphy ~~(radioisotopes G21G 4/00; tracers G21H 5/00; {measurement of spatial distribution G01T 1/2914; apparatus for radiation diagnosis in different planes A61B 6/02})}~~
- M G01T 1/169 • • Exploration, location of contaminated surface areas ~~(prospecting by the use of nuclear radiation, e.g. of natural or induced radioactivity G01V 5/00){; in situ measurement, e.g. floor contamination monitor (directional detectors G01T 1/2907)}~~
- U G01T 1/17 • • Circuit arrangements not adapted to a particular type of detector ~~{{(pulse-selection circuits H03K, G01R)}~~
- M G01T 1/175 • • • Power supply circuits ~~(power supply circuits per se H02J; converters H02M)~~
- M G01T 1/185 • • with ionisation chamber arrangements ~~(construction of ionisation chambers H01J 47/02; {gas analysis by ionisation G01N 27/66; measuring pressure G01L 9/00; leak detection G01M 3/00; tele-measurements G08C})}~~
- M G01T 1/24 • • with semiconductor detectors ~~(semiconductor devices per se H01L 31/00)~~
- M G01T 1/28 • • with secondary-emission detectors ~~(secondary electron emitting electrodes in general H01J 1/32){; optionally combined with scintillation counters (secondary emission tubes H01J 43/00)}~~
- M G01T 1/29 • Measurement performed on radiation beams, e.g. position or section of the beam; Measurement of spatial distribution of radiation ~~(scintigraphy G01T 1/164; mass-spectrometers H01J 49/025)~~
- U G01T 1/36 • Measuring spectral distribution of X-rays or of nuclear radiation {spectrometry (pulse selection circuits per se H03K; investigation of materials by radiation diffraction **G01N 23/20**; spectrometer tubes **H01J 49/00**)}
- M G01T 1/40 • • Stabilisation of spectrometers ~~{{(circuits specially adapted for scintillation detectors G01T 1/208)}~~
- M G01T 3/00** Measuring neutron radiation (**G01T 5/00** takes precedence ~~{; tubes therefor H01J 47/12; circuits with such tubes G01T 1/18; measuring short time intervals G04F 10/00; measuring pulse characteristics G01R 29/02; neutron choppers G21K 1/04; polarimeters G01T 1/32}~~)
- M G01T 3/08 • with semiconductor detectors ~~(semiconductor detectors per se H01L 31/00)~~
- U G01T 7/00** Details of radiation-measuring instruments
- M G01T 7/08 • Means for conveying samples received ~~{{(, i.e. sample changers G01N 35/00)}~~

Project: MP0451 (G01V)

M G01V **GEOPHYSICS; GRAVITATIONAL MEASUREMENTS; ~~DETECTING MASSES OR OBJECTS~~; ~~DETECTING MASSES OR OBJECTS TAGS~~ (detecting or locating foreign bodies for diagnostic, surgical or person-identification purposes ~~A61B~~; means for indicating the location of accidentally buried, e.g. snow-buried persons ~~A63B 29/02~~; investigating or analysing earth materials by determining their chemical or physical properties ~~G01N~~; measuring electric or magnetic variables in general, other than direction or magnitude of the earth's field ~~G01R~~; electronic or nuclear magnetic resonance arrangements ~~G01R 33/20~~; radar, sonar or analogous methods in general, detecting masses or objects involving these methods ~~G01S~~)**

NOTES

1. This subclass *covers* radar, sonar, lidar or analogous systems specifically designed for geophysical use. Radar, sonar, lidar or analogous systems, or details of such systems, if of a general interest, are also classified in subclass *G01S*.

2. In this subclass, the following term is used with the meaning indicated:

- "tags" means arrangements cooperating with a detecting field, e.g. near field, and designed to produce a specific detectable effect; "tags" also means active markers capable of generating a detectable field.

~~1-3~~. In this subclass, the geophysical methods apply both to the earth and to other celestial objects, e.g. planets.

~~2-4~~. Attention is drawn to the Notes following the title of class [G01](#).

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

[G01V 3/11](#) covered by [G01V 3/101](#), [G01V 3/104](#)

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

U G01V 1/00 **Seismology; Seismic or acoustic prospecting or detecting**

NOTE

Groups [G01V 1/44](#) - [G01V 1/52](#) take precedence over groups [G01V 1/001](#) - [G01V 1/393](#) [G01V 1/42](#)

- M G01V 1/02** • Generating seismic energy ~~{([G01V 1/003](#) takes precedence -); blasting in general ~~F42~~; nuclear explosives ~~G21J~~}~~
- M G01V 1/157** • • using spark discharges; using exploding wires ~~(spark gaps, {non-enclosed} discharge apparatus, not otherwise provided for ~~H01T~~)~~
- M G01V 1/16** • Receiving elements for seismic signals ~~(electromechanical transducers ~~H04R~~)~~; Arrangements or adaptations of receiving elements
- M G01V 1/22** • Transmitting seismic signals to recording or processing apparatus ~~(signal transmitting systems in general ~~G08C~~; transmission systems in general ~~H04B~~)~~
- M G01V 1/24** • Recording seismic data ~~(transforming one recording into another ~~G01V 1/32~~; recording measured values in general ~~G01D~~)~~
- M G01V 3/00** **Electric or magnetic prospecting or detecting ~~(by optical means ~~G01V 8/00~~)~~; Measuring magnetic field characteristics of the earth, e.g. declination, deviation ~~(for navigation, for surveying ~~G01C~~; {measuring direction or magnitude of magnetic fields or magnetic flux in general ~~G01R 33/02~~)~~**

- M G01V 3/08 · operating with magnetic or electric fields produced or modified by objects or geological structures or by detecting devices (with electromagnetic waves [G01V 3/12](#); ~~measuring the magnetic field characteristics of the earth G01V 3/40~~)
- M G01V 3/38 · Processing data, e.g. for analysis, for interpretation, for correction (~~computing in general G06~~)
- M G01V 5/00 **Prospecting or detecting by the use of nuclear radiation, e.g. of natural or induced radioactivity (~~determining the properties of materials G01N; measuring nuclear radiation G01T~~)**
- U G01V 7/00 **Measuring gravitational fields or waves; Gravimetric prospecting or detecting**
- M G01V 7/08 · using balances (~~balances in general G01G~~)
- M G01V 8/00 **Prospecting or detecting by optical means (~~measurement of characteristics of light G01J; optical scanning systems G02B 26/10; discharge tubes detecting the presence of radiation H01J 40/00, H01J 47/00; semiconductor devices sensitive to light H01L 31/00~~)**
- NOTE
This group covers the use of {millimetre waves,} infra-red, visible or ultra-violet light.
- M G01V 8/10 · Detecting, e.g. by using light barriers (by reflection from the object [G01S 17/00](#); ~~counting of objects carried by a conveyor G06M 7/00; signalling or calling arrangements G08B; detecting movement of traffic to be counted or controlled G08G 1/01; proximity switches H03K 17/945, H03K 17/965~~)
- M G01V 13/00 **Manufacturing, calibrating, cleaning, or repairing instruments or devices covered by ~~the preceding groups~~ [groups G01V 1/00 – G01V 11/00](#)**
- M G01V 15/00 **Tags attached to, or associated with, an object, in order to enable detection of the object (record carriers for use with machines [having a detectable tag or marker G06K 19/00](#); ~~signs, labels G09F~~)**

Project: RP0700 (G02B)

- C G02B 7/00 **Mountings, adjusting means, or light-tight connections, for optical elements**
- C G02B 7/02 · for lenses {{(supports for magnifying lenses [G02B 25/002](#))}}
- C G02B 7/021 · · {for more than one lens}
- C G02B 7/022 · · {lens and mount having complementary engagement means, e.g. screw/thread}
- C G02B 7/023 · · {permitting adjustment}
- C G02B 7/027 · · {the lens being in the form of a sphere or ball}
- C G02B 7/028 · · {with means for compensating for changes in temperature or for controlling the temperature; thermal stabilisation}
- C G02B 7/04 · · with mechanism for focusing or varying magnification
- C G02B 7/06 · · · Focusing binocular pairs
- C G02B 7/09 · · · adapted for automatic focusing or varying magnification (automatic generation of focusing signals [G02B 7/28](#))
- C G02B 7/10 · · · by relative axial movement of several lenses, e.g. of varifocal objective lens
- C G02B 7/102 · · · · {controlled by a microcomputer (cameras with interchangeable lenses [G03B 17/14](#))}
- C G02B 7/105 · · · · with movable lens means specially adapted for focusing at close distances

U G02B 13/00 **Optical objectives specially designed for the purposes specified below (with variable magnification {in general} [G02B 15/00](#))**

NOTE

Unless specified in the title of the subgroups, this group and its subgroups do not cover objectives comprising reflecting surfaces, which are covered by [G02B 17/06](#), [G02B 17/08](#) and their subgroups

- C G02B 13/001 • {Miniaturised objectives for electronic devices, e.g. portable telephones, webcams, PDAs, small digital cameras ([G02B 23/243](#) takes precedence)}
- C G02B 13/0015 • {characterised by the lens design}
- C G02B 13/002 • • {having at least one aspherical surface ~~{aspherical lenses per se G02B 3/02}~~}

NOTE

When classifying in this group, a lens is deemed to be a simple lens or a compound lens

- C G02B 13/0025 • • • {having one lens only}
- C G02B 13/003 • • • {having two lenses}
- C G02B 13/0035 • • • {having three lenses}
- C G02B 13/004 • • • {having four lenses}
- C G02B 13/0045 • • • {having five or more lenses}
- C G02B 13/005 • • {having spherical lenses only}
- C G02B 13/0055 • {employing a special optical element}
- C G02B 13/006 • • {at least one element being a compound optical element, e.g. cemented elements}
- C G02B 13/0065 • • {having a beam-folding prism or mirror}
- C G02B 13/007 • • • {the beam folding prism having at least one curved surface}
- C G02B 13/0075 • • {having an element with variable optical properties}
- C G02B 13/008 • {designed for infrared light}
- C G02B 13/0085 • {employing wafer level optics ~~{lens arrays per se G02B 3/0006}~~}
- C G02B 13/009 • {having zoom function ~~{zoom lenses per se G02B 15/00}~~}

Project: RP0428 (G02F)

- M G02F 1/00** **Devices or arrangements for the control of the intensity, colour, phase, polarisation or direction of light arriving from an independent light source, e.g. switching, gating, or modulating; Non-linear optics ~~{thermometers using change of colour or translucency G01K 11/12; using changes in fluorescence G01K 11/32; light guide devices G02B 6/00; optical devices or arrangements using movable or deformable elements for controlling light independent of the light source G02B 26/00; control of light in general G05D 25/00; visible signalling systems G08B 5/00; indicating arrangements for variable information by selection or combination of individual elements G09F 9/00; control arrangements or circuits for visual indicators other than cathode-ray tubes G09G 3/00; control of light sources H01S 3/10; H05B 33/08, H05B 35/00 – H05B 47/00}; photochromic filters G02B 5/23; optical logic elements G02F 3/00}~~**

NOTE

This group covers only :

- devices or arrangements, e.g. cells, the optical operation of which is modified by changing the optical properties of the medium of the devices or arrangements by the influence or control of physical parameters, e.g.

- M G02F 1/0126 . . {~~by another light beam, i.e. opto-optical modulation~~ *Opto-optical modulation, i.e. control of one light beam by another light beam, not otherwise provided for in this subclass*} (~~G02F 1/01716, G02F 1/0338, G02F 1/0533, G02F 1/0541, G02F 1/0558, G02F 1/135, G02F 1/293 take precedence~~)
- U G02F 1/0128 . . {based on electro-mechanical, magneto-mechanical, elasto-optic effects}
- M G02F 1/0131 . . . {based on ~~elasto-optic, i.e. photoelastic effect~~ *photo-elastic effects*, e.g. mechanically induced birefringence (~~acousto-optic devices G02F 1/11~~)}
- U G02F 1/0136 . . {for the control of polarisation, e.g. state of polarisation [SOP] control, polarisation scrambling, TE-TM mode conversion or separation ([G02F 1/0353](#) takes precedence)}
- D G02F 2001/0139 . . . {Polarisation scrambling; Depolarisers}
<administratively transferred to [G02F 1/0139](#)>
- N G02F 1/0139 . . . {Polarisation scrambling devices; Depolarisers}
- D G02F 2001/0142 . . . {TE-TM mode conversion}
<administratively transferred to [G02F 1/0142](#)>
- N G02F 1/0142 . . . {TE-TM mode conversion}
- D G02F 2001/0144 . . . {TE-TM mode separation}
<administratively transferred to [G02F 1/0144](#)>
- N G02F 1/0144 . . . {TE-TM mode separation}
- M G02F 1/0147 . . {based on thermo-optic effects ([G02F 1/132](#) takes precedence; ~~tenebrescent compositions G09K 9/00; radiation pyrometry G01J 5/00; thermometers using change of colour or translucency G01K 11/12~~)}
- U G02F 1/015 . . based on semiconductor elements with at least one potential jump barrier, e.g. PN, PIN junction ([G02F 1/03](#) takes precedence)
- D G02F 2001/0151 . . . {modulating the refractive index}
<administratively transferred to [G02F 1/0151](#)>
- N G02F 1/0151 . . . {modulating the refractive index}
- D G02F 2001/0152 {by free carrier effects (~~Plasma~~)}
<administratively transferred to [G02F 1/0152](#)>
- N G02F 1/0152 {using free carrier effects, e.g. plasma effect}
- D G02F 2001/0153 {by electro-refraction (~~Kramers-Kronig relation~~)}
<administratively transferred to [G02F 1/0153](#)>
- N G02F 1/0153 {using electro-refraction, e.g. Kramers-Kronig relation}
- D G02F 2001/0154 {by electro-optic effects (~~LEO=Pockels, QEO=Kerr~~)}
<administratively transferred to [G02F 1/0154](#)>
- N G02F 1/0154 {using electro-optic effects, e.g. linear electro optic [LEO], Pockels, quadratic electro optical [QEO] or Kerr effect}
- D G02F 2001/0155 . . . {modulating the optical absorption}
<administratively transferred to [G02F 1/0155](#)>
- N G02F 1/0155 . . . {modulating the optical absorption}
- D G02F 2001/0156 {by free carrier absorption}
<administratively transferred to [G02F 1/0156](#)>
- N G02F 1/0156 {using free carrier absorption}
- D G02F 2001/0157 {by electro-absorption effects (~~FK, Stark, QCSE~~)}
<administratively transferred to [G02F 1/0157](#)>

- N G02F 1/0157 {using electro-absorption effects, e.g. Franz-Keldysh [FK] effect or quantum confined stark effect [QCSE]}
- D G02F 2001/0158 {with blue-shift of the absorption band}
<administratively transferred to [G02F 1/0158](#)>
- N G02F 1/0158 {Blue-shift of the absorption band}
- D G02F 2001/0159 {with red-shift of the absorption band}
<administratively transferred to [G02F 1/0159](#)>
- N G02F 1/0159 {Red-shift of the absorption band}
- U G02F 1/017 . . . Structures with periodic or quasi periodic potential variation, e.g. superlattices, quantum wells
- M G02F 1/01725 {with a non-rectangular quantum well structure, e.g. coupled, graded, Non-rectangular quantum well structures, e.g. graded or stepped quantum wells}
- D G02F 2001/01733 {Coupled or double quantum wells}
<administratively transferred to [G02F 1/01733](#)>
- N G02F 1/01733 {Coupled or double quantum wells}
- D G02F 2001/01741 {Asymmetrically coupled or double quantum wells}
<administratively transferred to [G02F 1/01741](#)>
- N G02F 1/01741 {Asymmetrically coupled or double quantum wells}
- D G02F 2001/0175 {with a spatially varied well profile, e.g. graded, stepped quantum wells}
<administratively transferred to [G02F 1/0175](#)>
- N G02F 1/0175 {with a spatially varied well profile, e.g. graded or stepped quantum wells}
- D G02F 2001/01758 {with an asymmetric well profile, e.g. asymmetrically stepped quantum wells}
<administratively transferred to [G02F 1/01758](#)>
- N G02F 1/01758 {with an asymmetric well profile, e.g. asymmetrically stepped quantum wells}
- D G02F 2001/01766 {Strained superlattice or quantum well devices}
<administratively transferred to [G02F 1/01766](#)>
- N G02F 1/01766 {Strained superlattice devices; Strained quantum well devices}
- D G02F 2001/01775 {involving an intersubband transition in one well, e.g. $e_1 \rightarrow e_2$ }
<administratively transferred to [G02F 1/01775](#)>
- N G02F 1/01775 {involving an inter-subband transition in one well, e.g. $e_1 \rightarrow e_2$ }
- D G02F 2001/01783 {Quantum wire}
<administratively transferred to [G02F 1/01783](#)>
- N G02F 1/01783 {Quantum wires}
- D G02F 2001/01791 {Quantum box or dot}
<administratively transferred to [G02F 1/01791](#)>
- N G02F 1/01791 {Quantum boxes or quantum dots}
- U G02F 1/03 . . based on ceramics or electro-optical crystals, e.g. exhibiting Pockels effect or Kerr effect ([G02F 1/061](#) takes precedence)
- M G02F 1/0333 . . . {addressed by a beam of charged particles, e.g. directed to an adjacent layer exhibiting secondary emission or bombardment-induced conductivity effect ([G02F 1/05](#) takes precedence; electrography, electrophotography G03G; screens for cathode ray tubes acting as light valves H01J 29/12)}

- U G02F 1/05 . . . with ferro-electric properties ([G02F 1/035](#), [G02F 1/055](#) take precedence)
- M G02F 1/0525 {addressed by a beam of charged particles, ~~e.g. directed to an adjacent layer exhibiting secondary emission or bombardment-induced conductivity effect (electrography, electrophotography G03G; screens for cathode-ray tubes acting as light valves H01J 29/12)}~~
- M G02F 1/0541 {using ~~photo-refractive effects~~ *photorefractive effects*} (~~holography G03H; electro-optical digital static stores using an interference pattern G11C 13/044~~)
- U G02F 1/09 . . based on magneto-optical elements, e.g. exhibiting Faraday effect
- D G02F 2001/094 . . . {Based on magnetophoretic effect}
<administratively transferred to [G02F 1/094](#)>
- N G02F 1/094 . . . {based on magnetophoretic effect}
- M G02F 1/11 . . based on acousto-optical elements, e.g. using variable diffraction by sound or like mechanical waves (~~{elasto-optic effect without wave propagation G02F 1/0131; }~~ acousto-optical deflection [G02F 1/33](#))
- U G02F 1/13 . . based on liquid crystals, e.g. single liquid crystal display cells
- U G02F 1/1306 . . . {Details}
- M G02F 1/1309 {Repairing; Testing (~~testing of optical apparatus G01M 11/00; electronic testing of displays or display drivers, e.g. of LCDs, G09G 3/006~~)}
- D G02F 2001/1316 . . . {Cleaning methods or materials for cleaning part of liquid crystal cell components during the manufacturing process}
<administratively transferred to [G02F 1/1316](#)>
- N G02F 1/1316 . . . {Methods for cleaning the liquid crystal cells, or components thereof, during manufacture: Materials therefor}
- M G02F 1/132 . . . {Thermal activation of liquid crystals exhibiting a thermo-optic effect (~~thermometers using change of colour or translucency of liquid crystals G01K 11/165; thermally addressed liquid crystal elements in a matrix G09G 3/3603~~)}
- M G02F 1/133 Constructional arrangements; Operation of liquid crystal cells; Circuit arrangements (arrangements or circuits for control of liquid crystal elements in a ~~segment display or a~~ matrix, not structurally associated with these elements, ~~respectively G09G 3/18 and } G09G 3/36~~)
- U G02F 1/13306 {Circuit arrangements or driving methods for the control of single liquid crystal cells ([G02F 1/132](#), [G02F 1/133382](#) take precedence)}
- D G02F 2001/13312 {Circuits comprising a photodetector not for feedback}
<administratively transferred to [G02F 1/13312](#)>
- N G02F 1/13312 {Circuits comprising photodetectors for purposes other than feedback}
- D G02F 2001/13324 {Circuits comprising a solar cell}
<administratively transferred to [G02F 1/13324](#)>
- N G02F 1/13324 {Circuits comprising solar cells}
- U G02F 1/1333 Constructional arrangements; {Manufacturing methods} ([G02F 1/135](#), [G02F 1/136](#) take precedence)
- D G02F 2001/133302 {rigid substrate, e.g. inorganic}
<administratively transferred to [G02F 1/133302](#)>
- N G02F 1/133302 {Rigid substrates, e.g. inorganic substrates}
- M G02F 1/133308 {LCD panel immediate support structure, e.g. front and back frame or bezel} *Support structures for LCD panels, e.g. frames or bezels*
- D G02F 2001/133311 {Environmental protection, e.g. dust, humidity}
<administratively transferred to [G02F 1/133311](#)>

- N G02F 1/133311 {*Environmental protection, e.g. against dust or humidity*}
- D G02F 2001/133314 {*Back frame*}
<administratively transferred to [G02F 1/133314](#)>
- N G02F 1/133314 {*Back frames*}
- D G02F 2001/133317 {*Intermediate frame, e.g. between backlight housing and front frame*}
<administratively transferred to [G02F 1/133317](#)>
- N G02F 1/133317 {*Intermediate frames, e.g. between backlight housing and front frame*}
- D G02F 2001/13332 {*Front frame*}
<administratively transferred to [G02F 1/13332](#)>
- N G02F 1/13332 {*Front frames*}
- D G02F 2001/133322 {*Mechanical guiding and alignment of LCD panel support components*}
<administratively transferred to [G02F 1/133322](#)>
- N G02F 1/133322 {*Mechanical guidance or alignment of LCD panel support components*}
- D G02F 2001/133325 {*Method of assembling (G02F 2201/465 takes precedence)*}
<administratively transferred to [G02F 1/133325](#)>
- N G02F 1/133325 {*Assembling processes*}
- D G02F 2001/133328 {*Segmented frame*}
<administratively transferred to [G02F 1/133328](#)>
- N G02F 1/133328 {*Segmented frames*}
- D G02F 2001/133331 {*Cover glass*}
<administratively transferred to [G02F 1/133331](#)>
- N G02F 1/133331 {*Cover glasses*}
- D G02F 2001/133334 {*Electromagnetic shield*}
<administratively transferred to [G02F 1/133334](#)>
- N G02F 1/133334 {*Electromagnetic shields*}
- D G02F 2001/133337 {*Ion-diffusion preventing or absorbing layer*}
<administratively transferred to [G02F 1/133337](#)>
- N G02F 1/133337 {*Layers preventing ion diffusion, e.g. by ion absorption*}
- M G02F 1/13334 {*Plasma addressed liquid crystal cells [PALC] (plasma panels H01J 17/49)*}
- D G02F 2001/133342 {*for double side displays*}
<administratively transferred to [G02F 1/133342](#)>
- N G02F 1/133342 {*for double-sided displays*}
- M G02F 1/133348 {*Charged particles, e.g. electron-beam, addressed liquid crystals cells particles addressed liquid crystal cells, e.g. controlled by an electron beam (screen for cathode ray tubes acting as light valves H01J 29/12; electrography, electrophotography G03G)*}
- D G02F 2001/133354 {*Arrangements for aligning or assembling the substrates*}
<administratively transferred to [G02F 1/133354](#)>
- N G02F 1/133354 {*Arrangements for aligning or assembling substrates*}
- D G02F 2001/133357 {*Planarisation layer*}
<administratively transferred to [G02F 1/133357](#)>
- N G02F 1/133357 {*Planarisation layers*}

- M G02F 1/133365 {Cells in which the active layer comprises a liquid crystalline polymer
(~~liquid crystalline polymers in general G09K 19/38~~)}
- D G02F 2001/133368 {cell having two substrates with different characteristic, e.g. hickness or
material}
<administratively transferred to [G02F 1/133368](#)>
- N G02F 1/133368 {Cells having two substrates with different characteristics, e.g. different
thickness or material}
- D G02F 2001/133374 {for displaying permanent signs or marks}
<administratively transferred to [G02F 1/133374](#)>
- N G02F 1/133374 {for displaying permanent signs or marks}
- M G02F 1/13338 {Input devices, e.g. touch-panels ~~panels~~}(specially adapted as input
devices to computers G06F 3/033; touch-panels per se G06K 11/06;
keyboard switches per se H01H 13/70)}
- D G02F 2001/133388 {Constructional difference between the display region and the
peripheral region}
<administratively transferred to [G02F 1/133388](#)>
- N G02F 1/133388 {with constructional differences between the display region and the
peripheral region}
- D G02F 2001/133391 {Constructional arrangement for sub-divided displays}
<administratively transferred to [G02F 1/133391](#)>
- N G02F 1/133391 {Constructional arrangement for sub-divided displays}
- D G02F 2001/133394 {Piezoelectric element associated with the cell}
<administratively transferred to [G02F 1/133394](#)>
- N G02F 1/133394 {Piezoelectric elements associated with the cells}
- D G02F 2001/133397 {for suppressing after-image or image-sticking}
<administratively transferred to [G02F 1/133397](#)>
- N G02F 1/133397 {for suppressing after-image or image-sticking}
- M G02F 1/1334 based on polymer dispersed liquid crystals, e.g. microencapsulated
liquid crystals ~~((compositions G09K 19/544))~~
- D G02F 2001/13345 {Network or three-dimensional gel}
<administratively transferred to [G02F 1/13345](#)>
- N G02F 1/13345 {Network or three-dimensional gels}
- D G02F 2001/13347 {Reverse mode, i.e. clear in the off-state and scattering in the on-
state}
<administratively transferred to [G02F 1/13347](#)>
- N G02F 1/13347 {working in reverse mode, i.e. clear in the off-state and scattering in
the on-state}
- U G02F 1/1335 Structural association of cells with optical devices, e.g. polarisers or
reflectors
- U G02F 1/133504 {Diffusing, scattering, diffracting elements (associated to illuminating
devices [G02F 1/133606](#))}
- D G02F 2001/133507 {Luminance enhancement films}
<administratively transferred to [G02F 1/133507](#)>
- N G02F 1/133507 {Films for enhancing the luminance}
- M G02F 1/133509 {Filters, e.g. light shielding masks ~~(optical filters G02B 5/20)~~}
- M G02F 1/133514 {Colour filters ~~(luminescent elements G02F 1/133617)~~}

- M G02F 1/133516 {Methods ~~of making thereof for their manufacture~~,
e.g. printing, electro-deposition, ~~photolithography or
photolithography~~ {~~photomechanical production of textured or
patterned surfaces G03F~~}
- D G02F 2001/133519 {overcoating}
<administratively transferred to [G02F 1/133519](#)>
- N G02F 1/133519 {Overcoatings}
- D G02F 2001/133521 {Interference filters}
<administratively transferred to [G02F 1/133521](#)>
- N G02F 1/133521 {Interference filters}
- M G02F 1/133526 {Lenses, e.g. microlenses, ~~Fresnel lenses or Fresnel lenses~~ {~~lenses
in general G02B 3/00~~}
- M G02F 1/133528 {Polarisers ~~(polarisers per se G02B 5/30)~~}
- D G02F 2001/133531 {Special arrangement of polariser or analyser axes}
<administratively transferred to [G02F 1/133531](#)>
- N G02F 1/133531 {characterised by the arrangement of polariser or analyser axes}
- D G02F 2001/133538 {with a spatial distribution of the polarisation direction}
<administratively transferred to [G02F 1/133538](#)>
- N G02F 1/133538 {with spatial distribution of the polarisation direction}
- D G02F 2001/133541 {Circular polarisers}
<administratively transferred to [G02F 1/133541](#)>
- N G02F 1/133541 {Circular polarisers}
- D G02F 2001/133543 {Cholesteric polarisers}
<administratively transferred to [G02F 1/133543](#)>
- N G02F 1/133543 {Cholesteric polarisers}
- D G02F 2001/133545 {Dielectric stack polarisers}
<administratively transferred to [G02F 1/133545](#)>
- N G02F 1/133545 {Dielectric stack polarisers}
- D G02F 2001/133548 {Wire-grid polarisers}
<administratively transferred to [G02F 1/133548](#)>
- N G02F 1/133548 {Wire-grid polarisers}
- D G02F 2001/13355 {Polarising beam splitters [PBS]}
<administratively transferred to [G02F 1/13355](#)>
- N G02F 1/13355 {Polarising beam splitters [PBS]}
- U G02F 1/133553 {Reflecting elements (associated to illuminating devices
[G02F 1/133605](#))}
- U G02F 1/133555 {Transflectors}
- D G02F 2001/133557 {Half-mirror}
<administratively transferred to [G02F 1/133557](#)>
- N G02F 1/133557 {Half-mirrors}
- D G02F 2001/13356 {Particular location of the optical element}
<administratively transferred to [G02F 1/13356](#)>
- N G02F 1/13356 {characterised by the placement of the optical elements}
- D G02F 2001/133562 {on the viewer side}
<administratively transferred to [G02F 1/133562](#)>

- N G02F 1/133562 {on the viewer side}
- D G02F 2001/133565 {inside the LC element, i.e. between the cell substrates}
<administratively transferred to [G02F 1/133565](#)>
- N G02F 1/133565 {inside the LC elements, i.e. between the cell substrates}
- D G02F 2001/133567 {on the back side}
<administratively transferred to [G02F 1/133567](#)>
- N G02F 1/133567 {on the back side}
- M G02F 1/1336 {Illuminating devices (in general F21V; associated with display devices for electronic watches G04G 9/0041)}
- D G02F 2001/133601 {for spatial active dimming}
<administratively transferred to [G02F 1/133601](#)>
- N G02F 1/133601 {for spatial active dimming}
- U G02F 1/133602 {Direct backlight}
- U G02F 1/133606 {including a specially adapted diffusing, scattering or light controlling members}
- D G02F 2001/133607 {the light controlling member including light directing or refracting elements, e.g. prisms or lenses}
<administratively transferred to [G02F 1/133607](#)>
- N G02F 1/133607 {the light controlling member including light directing or refracting elements, e.g. prisms or lenses}
- D G02F 2001/133612 {Electrical details}
<administratively transferred to [G02F 1/133612](#)>
- N G02F 1/133612 {Electrical details}
- D G02F 2001/133613 {including a particular sequence of light sources}
<administratively transferred to [G02F 1/133613](#)>
- N G02F 1/133613 {characterized by the sequence of light sources}
- D G02F 2001/133614 {the light is generated by photoluminescence, e.g. a phosphor is illuminated by UV or blue light}
<administratively transferred to [G02F 1/133614](#)>
- N G02F 1/133614 {using photoluminescence, e.g. phosphors illuminated by UV or blue light}
- D G02F 2001/133616 {Front illuminating devices}
<administratively transferred to [G02F 1/133616](#)>
- N G02F 1/133616 {Front illuminating devices}
- D G02F 2001/133618 {for ambient light}
<administratively transferred to [G02F 1/133618](#)>
- N G02F 1/133618 {for ambient light}
- M G02F 1/13362 {providing polarised polarized light, e.g. by converting a polarisation component into another one (optical systems for polarising G02B 27/28)}
- U G02F 1/133621 {providing coloured light ([G02F 1/133617](#), [G02F 1/133533](#) take precedence)}
- D G02F 2001/133622 {colour sequential illumination}
<administratively transferred to [G02F 1/133622](#)>
- N G02F 1/133622 {Colour sequential illumination}

D	G02F 2001/133623	. . . . . {Inclined coloured light beams}
		<administratively transferred to G02F 1/133623 >
N	G02F 1/133623	. . . . . {Inclined coloured light beams}
D	G02F 2001/133624	. . . . . {having a particular spectral emission}
		<administratively transferred to G02F 1/133624 >
N	G02F 1/133624	. . . . . {characterised by their spectral emissions}
D	G02F 2001/133625	. . . . . {Electron stream lamps}
		<administratively transferred to G02F 1/133625 >
N	G02F 1/133625	. . . . . {Electron stream lamps}
D	G02F 2001/133626	. . . . . {providing two modes of illumination, e.g. day-night}
		<administratively transferred to G02F 1/133626 >
N	G02F 1/133626	. . . . . {providing two modes of illumination, e.g. day-night}
D	G02F 2001/133627	. . . . . {Projection-direct viewing}
		<administratively transferred to G02F 1/133627 >
N	G02F 1/133627	. . . . . {Projection-direct viewing}
D	G02F 2001/133628	. . . . . {with cooling means}
		<administratively transferred to G02F 1/133628 >
N	G02F 1/133628	. . . . . {with cooling means}
U	G02F 1/13363	. . . . . Birefringent elements, e.g. for optical compensation
D	G02F 2001/133631	. . . . . {with a spatial distribution of the retardation value}
		<administratively transferred to G02F 1/133631 >
N	G02F 1/133631	. . . . . {with a spatial distribution of the retardation value}
D	G02F 2001/133633	. . . . . {using mesogenic materials}
		<administratively transferred to G02F 1/133633 >
N	G02F 1/133633	. . . . . {using mesogenic materials}
D	G02F 2001/133635	. . . . . {Multifunctional compensators}
		<administratively transferred to G02F 1/133635 >
N	G02F 1/133635	. . . . . {Multifunctional compensators}
D	G02F 2001/133637	. . . . . {characterized by the wavelength dispersion}
		<administratively transferred to G02F 1/133637 >
N	G02F 1/133637	. . . . . {characterised by the wavelength dispersion}
D	G02F 2001/133638	. . . . . {Waveplates, i.e. plates with a retardation value of λ/n }
		<administratively transferred to G02F 1/133638 >
N	G02F 1/133638	. . . . . {Waveplates, i.e. plates with a retardation value of λ/n }
U	G02F 1/1337	. . . . . Surface-induced orientation of the liquid crystal molecules, e.g. by alignment layers
U	G02F 1/133711	. . . . . {by organic films, e.g. polymeric films}
D	G02F 2001/133715	. . . . . {by first depositing a monomer}
		<administratively transferred to G02F 1/133715 >
N	G02F 1/133715	. . . . . {by first depositing a monomer}
D	G02F 2001/133726	. . . . . {made of a mesogenic material}
		<administratively transferred to G02F 1/133726 >
N	G02F 1/133726	. . . . . {made of a mesogenic material}

- D G02F 2001/13373 {Disclination line; Reverse tilt}
<administratively transferred to [G02F 1/13373](#)>
- N G02F 1/13373 {Disclination line; Reverse tilt}
- D G02F 2001/133738 {for homogeneous alignment}
<administratively transferred to [G02F 1/133738](#)>
- N G02F 1/133738 {for homogeneous alignment}
- D G02F 2001/133742 {for homeotropic alignment}
<administratively transferred to [G02F 1/133742](#)>
- N G02F 1/133742 {for homeotropic alignment}
- D G02F 2001/133746 {for high pretilt angle, i.e. > 15 degrees}
<administratively transferred to [G02F 1/133746](#)>
- N G02F 1/133746 {for high pretilt angles, i.e. higher than 15 degrees}
- D G02F 2001/133749 {for low pretilt angle, i.e. < 15 degrees}
<administratively transferred to [G02F 1/133749](#)>
- N G02F 1/133749 {for low pretilt angles, i.e. lower than 15 degrees}
- U G02F 1/133753 {with different alignment orientations or pretilt angles on a same surface, e.g. for grey scale or improved viewing angle}
- D G02F 2001/133757 {with different alignment orientations}
<administratively transferred to [G02F 1/133757](#)>
- N G02F 1/133757 {with different alignment orientations}
- D G02F 2001/133761 {with different pretilt angles}
<administratively transferred to [G02F 1/133761](#)>
- N G02F 1/133761 {with different pretilt angles}
- D G02F 2001/133765 {without a surface treatment}
<administratively transferred to [G02F 1/133765](#)>
- N G02F 1/133765 {without a surface treatment}
- D G02F 2001/133769 {comprising an active, e.g. switchable alignment layer}
<administratively transferred to [G02F 1/133769](#)>
- N G02F 1/133769 {comprising an active, e.g. switchable, alignment layer}
- D G02F 2001/133773 {The alignment material or treatment is different for the two opposite substrates}
<administratively transferred to [G02F 1/133773](#)>
- N G02F 1/133773 {the alignment material or treatment being different for the two opposite substrates}
- D G02F 2001/133776 {having structures, i.e. unevenness locally influencing the alignment}
<administratively transferred to [G02F 1/133776](#)>
- N G02F 1/133776 {having structures locally influencing the alignment, e.g. unevenness}
- M G02F 1/13378 {by treatment of the surface, e.g. embossing, rubbing; **or** light irradiation ([G02F 1/133711](#), [G02F 1/133734](#), [G02F 1/133753](#) take precedence)}
- D G02F 2001/133792 {by etching}
<administratively transferred to [G02F 1/133792](#)>
- N G02F 1/133792 {by etching}
- D G02F 2001/133796 {having conducting property}
<administratively transferred to [G02F 1/133796](#)>

N	G02F 1/133796	. . . . . {having conducting property}
U	G02F 1/1339	. . . . . Gaskets; Spacers; Sealing of cells
D	G02F 2001/13396	. . . . . {Spacers having different sizes} <administratively transferred to G02F 1/13396 >
N	G02F 1/13396	. . . . . {Spacers having different sizes}
D	G02F 2001/13398	. . . . . {Materials and properties of the spacer} <administratively transferred to G02F 1/13398 >
N	G02F 1/13398	. . . . . {Spacer materials; Spacer properties}
U	G02F 1/1341	. . . . . Filling or closing of cells
D	G02F 2001/13415	. . . . . {Drop filling process} <administratively transferred to G02F 1/13415 >
N	G02F 1/13415	. . . . . {Drop filling process}
U	G02F 1/1343	. . . . . Electrodes {(reflective electrodes G02F 1/133553)}
M	G02F 1/134309	. . . . . {characterised by their geometrical arrangement (G09F 9/302 takes precedence)}
D	G02F 2001/134318	. . . . . {having a patterned common electrode} <administratively transferred to G02F 1/134318 >
N	G02F 1/134318	. . . . . {having a patterned common electrode}
D	G02F 2001/134345	. . . . . {Subdivided pixels, e.g. grey scale, redundancy} <administratively transferred to G02F 1/134345 >
N	G02F 1/134345	. . . . . {Subdivided pixels, e.g. for grey scale or redundancy}
D	G02F 2001/134354	. . . . . {the sub-pixels being capacitively coupled} <administratively transferred to G02F 1/134354 >
N	G02F 1/134354	. . . . . {the sub-pixels being capacitively coupled}
D	G02F 2001/134372	. . . . . {for fringe field switching [FFS] where the common electrode is not patterned, e.g. planar} <administratively transferred to G02F 1/134372 >
N	G02F 1/134372	. . . . . {for fringe field switching [FFS] where the common electrode is not patterned}
D	G02F 2001/134381	. . . . . {Hybrid switching mode, i.e. for applying an electric field both parallel and orthogonal to the substrates} <administratively transferred to G02F 1/134381 >
N	G02F 1/134381	. . . . . {Hybrid switching mode, i.e. for applying an electric field with components parallel and orthogonal to the substrates}
U	G02F 1/1345	. . . . . Conductors connecting electrodes to cell terminals
D	G02F 2001/13456	. . . . . {cell terminals on one side of the display only} <administratively transferred to G02F 1/13456 >
N	G02F 1/13456	. . . . . {Cell terminals located on one side of the display only}
U	G02F 1/1347	. . . . . Arrangement of liquid crystal layers or cells in which the final condition of one light beam is achieved by the addition of the effects of two or more layers or cells
D	G02F 2001/13478	. . . . . {based on selective reflection} <administratively transferred to G02F 1/13478 >
N	G02F 1/13478	. . . . . {based on selective reflection}

- U G02F 1/135 Liquid crystal cells structurally associated with a photoconducting or a ferro-electric layer, the properties of which can be optically or electrically varied (([G02F 1/133348](#) takes precedence))
- D G02F 2001/1351 {~~light-absorbing or blocking layer~~}
<administratively transferred to [G02F 1/1351](#)>
- N G02F 1/1351 {*Light-absorbing or blocking layers*}
- D G02F 2001/1352 {~~light-reflecting layer~~}
<administratively transferred to [G02F 1/1352](#)>
- N G02F 1/1352 {*Light-reflecting layers*}
- U G02F 1/1354 {having a particular photoconducting structure or material}
- D G02F 2001/1355 {~~material or manufacturing process thereof~~}
<administratively transferred to [G02F 1/1355](#)>
- N G02F 1/1355 {*Materials or manufacture processes thereof*}
- D G02F 2001/1357 {~~electrode structure~~}
<administratively transferred to [G02F 1/1357](#)>
- N G02F 1/1357 {*Electrode structure*}
- U G02F 1/136 Liquid crystal cells structurally associated with a semi-conducting layer or substrate, e.g. cells forming part of an integrated circuit ([G02F 1/135](#) takes precedence)
- D G02F 2001/13606 {~~having means for reducing parasitic capacitance~~}
<administratively transferred to [G02F 1/13606](#)>
- N G02F 1/13606 {*having means for reducing parasitic capacitance*}
- D G02F 2001/13613 {~~the semiconductor element is formed on a first substrate and thereafter transferred to the final cell substrate~~}
<administratively transferred to [G02F 1/13613](#)>
- N G02F 1/13613 {*the semiconductor element being formed on a first substrate and thereafter transferred to the final cell substrate*}
- U G02F 1/1362 Active matrix addressed cells (([G02F 1/134336](#), [G02F 1/134363](#) take precedence))
- D G02F 2001/136218 {~~Shield electrode~~}
<administratively transferred to [G02F 1/136218](#)>
- N G02F 1/136218 {*Shield electrodes*}
- D G02F 2001/136222 {~~Color filter incorporated in the active matrix substrate~~}
<administratively transferred to [G02F 1/136222](#)>
- N G02F 1/136222 {*Colour filters incorporated in the active matrix substrate*}
- D G02F 2001/136231 {~~for reducing the number of lithographic steps~~}
<administratively transferred to [G02F 1/136231](#)>
- N G02F 1/136231 {*for reducing the number of lithographic steps*}
- D G02F 2001/136236 {~~using a gray or half tone lithographic process~~}
<administratively transferred to [G02F 1/136236](#)>
- N G02F 1/136236 {*using a grey or half tone lithographic process*}
- U G02F 1/13624 {having more than one switching element per pixel}
- D G02F 2001/136245 {~~having complementary transistors~~}
<administratively transferred to [G02F 1/136245](#)>
- N G02F 1/136245 {*having complementary transistors*}

- D G02F 2001/13625 {Patterning using a multi-mask exposure}
<administratively transferred to [G02F 1/13625](#)>
- N G02F 1/13625 {Patterning using multi-mask exposure}
- D G02F 2001/136254 {Checking; Testing}
<administratively transferred to [G02F 1/136254](#)>
- N G02F 1/136254 {Checking; Testing}
- U G02F 1/136259 {Repairing; Defects}
- D G02F 2001/136263 {Line defect}
<administratively transferred to [G02F 1/136263](#)>
- N G02F 1/136263 {Line defects}
- D G02F 2001/136268 {Switch defect}
<administratively transferred to [G02F 1/136268](#)>
- N G02F 1/136268 {Switch defects}
- D G02F 2001/136272 {Auxiliary line}
<administratively transferred to [G02F 1/136272](#)>
- N G02F 1/136272 {Auxiliary lines}
- M G02F 1/136277 {formed on a semiconductor substrate, e.g. of silicon}
- D G02F 2001/136281 {having a transmissive semiconductor substrate}
<administratively transferred to [G02F 1/136281](#)>
- N G02F 1/136281 {having a transmissive semiconductor substrate}
- U G02F 1/136286 {Wiring, e.g. gate line, drain line}
- D G02F 2001/13629 {Multi-layer wirings}
<administratively transferred to [G02F 1/13629](#)>
- N G02F 1/13629 {Multilayer wirings}
- D G02F 2001/136295 {Materials; Compositions; Methods of manufacturing}
<administratively transferred to [G02F 1/136295](#)>
- N G02F 1/136295 {Materials; Compositions; Manufacture processes}
- U G02F 1/1368 in which the switching element is a three-electrode device
{([G02F 1/136277](#) takes precedence)}
- D G02F 2001/13685 {Top gate}
<administratively transferred to [G02F 1/13685](#)>
- N G02F 1/13685 {Top gates}
- U G02F 1/137 . . . characterised by the electro-optical or magneto-optical effect, e.g. field-induced phase transition, orientation effect, guest-host interaction or dynamic scattering
- D G02F 2001/13706 {the LC having positive dielectric anisotropy}
<administratively transferred to [G02F 1/13706](#)>
- N G02F 1/13706 {the liquid crystal having positive dielectric anisotropy}
- D G02F 2001/13712 {the LC having negative dielectric anisotropy}
<administratively transferred to [G02F 1/13712](#)>
- N G02F 1/13712 {the liquid crystal having negative dielectric anisotropy}
- D G02F 2001/13756 {the liquid crystal selectively assuming a light-scattering state
{G02F 1/1334, G02F 1/13718 take precedence}
<administratively transferred to [G02F 1/13756](#)>

- N G02F 1/13756 {the liquid crystal selectively assuming a light-scattering state (G02F 1/1334, G02F 1/13718 take precedence)}
- M G02F 1/13762 {containing luminescent or electroluminescent additives (luminescent materials in general G09K 11/00; compositions of liquid crystals comprising additives G09K 19/52 – G09K 19/603; electroluminescent light sources H05B 33/00)}
- D G02F 2001/13775 {Polymer-stabilized liquid crystal layers}
<administratively transferred to G02F 1/13775>
- N G02F 1/13775 {Polymer-stabilized liquid crystal layers}
- D G02F 2001/13787 {Hybrid-alignment cells (G02F 1/1393 takes precedence)}
<administratively transferred to G02F 1/13787>
- N G02F 1/13787 {Hybrid-alignment cells (G02F 1/1393 takes precedence)}
- D G02F 2001/13793 {Blue phases}
<administratively transferred to G02F 1/13793>
- N G02F 1/13793 {Blue phases}
- U G02F 1/139 based on orientation effects in which the liquid crystal remains transparent
- U G02F 1/1396 {the liquid crystal being selectively controlled between a twisted state and a non-twisted state, e.g. TN-LC cell (G02F 1/141 takes precedence)}
- D G02F 2001/1398 {the twist being below 90°C}
<administratively transferred to G02F 1/1398>
- N G02F 1/1398 {the twist being below 90°}
- U G02F 1/141 using ferroelectric liquid crystals
- D G02F 2001/1412 {Antiferroelectric liquid crystals}
<administratively transferred to G02F 1/1412>
- N G02F 1/1412 {Antiferroelectric liquid crystals}
- D G02F 2001/1414 {Deformed helix ferroelectric [DHL]}
<administratively transferred to G02F 1/1414>
- N G02F 1/1414 {Deformed helix ferroelectric [DHL]}
- U G02F 1/21 by interference
- D G02F 2001/211 {Sagnac type}
<administratively transferred to G02F 1/211>
- N G02F 1/211 {Sagnac type}
- D G02F 2001/212 {Mach-Zehnder type}
<administratively transferred to G02F 1/212>
- N G02F 1/212 {Mach-Zehnder type}
- D G02F 2001/213 {Fabry-Perot type}
<administratively transferred to G02F 1/213>
- N G02F 1/213 {Fabry-Perot type}
- D G02F 2001/215 {Michelson type}
<administratively transferred to G02F 1/215>
- N G02F 1/215 {Michelson type}
- D G02F 2001/217 {Multi-mode interference type}
<administratively transferred to G02F 1/217>

- N G02F 1/217 . . . {Multimode interference type}
- U G02F 1/29 . for the control of the position or the direction of light beams, i.e. deflection
- D G02F 2001/291 . . {Two-dimensional analog deflection}
<administratively transferred to [G02F 1/291](#)>
- N G02F 1/291 . . {Two-dimensional analogue deflection}
- D G02F 2001/294 . . {Variable focal length device}
<administratively transferred to [G02F 1/294](#)>
- N G02F 1/294 . . {Variable focal length devices}
- U G02F 1/31 . . Digital deflection, {i.e. optical switching}([G02F 1/33](#) takes precedence)
- D G02F 2001/311 . . . {Cascade arrangement of plural switches}
<administratively transferred to [G02F 1/311](#)>
- N G02F 1/311 . . . {Cascade arrangement of plural switches}
- U G02F 1/313 . . . in an optical waveguide structure
- M G02F 1/3132 {of directional coupler type (~~all-optical modulation, gating or switching using a non-linear directional coupler G02F 1/3521~~)}
- D G02F 2001/3135 {vertical structure}
<administratively transferred to [G02F 1/3135](#)>
- N G02F 1/3135 {Vertical structure}
- U G02F 1/35 . Non-linear optics
- M G02F 1/3501 . . {Constructional *details* or arrangements of non-linear optical devices, e.g. shape of non-linear crystals (~~constructional arrangements of electro-optic devices G02F 1/0305~~)}
- D G02F 2001/3503 . . . {Structural association of optical elements, e.g. lenses, with the nonlinear optical device}
<administratively transferred to [G02F 1/3503](#)>
- N G02F 1/3503 . . . {Structural association of optical elements, e.g. lenses, with the non-linear optical device}
- D G02F 2001/3505 . . . {Coatings; Housings; Supports}
<administratively transferred to [G02F 1/3505](#)>
- N G02F 1/3505 . . . {Coatings; Housings; Supports}
- D G02F 2001/3507 . . . {Arrangements comprising two or more nonlinear optical devices}
<administratively transferred to [G02F 1/3507](#)>
- N G02F 1/3507 . . . {Arrangements comprising two or more nonlinear optical devices}
- D G02F 2001/3509 . . . {Shape, e.g. shape of end face}
<administratively transferred to [G02F 1/3509](#)>
- N G02F 1/3509 . . . {Shape, e.g. shape of end face}
- M G02F 1/3511 . . {Self-focusing or self-trapping of light; Light-induced birefringence; Induced optical Kerr-effect (~~photorefractive effects of electro-optic crystals G02F 1/0338, G02F 1/0541, of ceramics G02F 1/0558; opto-optical modulation G02F 1/0126; opto-optical deflection G02F 1/293~~)}
- M G02F 1/3523 . . {Non-linear absorption changing by light, e.g. bleaching (~~laser Q-switching using bleachable media H01S 3/113~~)}
- M G02F 1/3526 . . {using two-photon emission or absorption processes (~~Raman effect H01S 3/30~~)}
- D G02F 2001/3528 . . {for producing a supercontinuum}
<administratively transferred to [G02F 1/3528](#)>

- N G02F 1/3528 . . . {for producing a supercontinuum}
- M G02F 1/353 . . . {Frequency conversion, i.e. wherein a light beam *is generated* with frequency components different from those of the incident light beams *is generated* (second harmonic generation G02F 1/37; optical parametric generation or amplification G02F 1/39; transferring the modulation of modulated light G02F 2/004; optical pumping of a laser by another laser H01S 3/094; nonlinear optical devices inside a laser cavity H01S 3/108)}
- D G02F 2001/354 . . . {Third or higher harmonic generation}
<administratively transferred to [G02F 1/354](#)>
- N G02F 1/354 . . . {Third or higher harmonic generation}
- D G02F 2001/3542 . . . {Multi-pass arrangements, i.e. arrangements to pass light a plurality of times through the same element, e.g. by using an enhancement cavity}
<administratively transferred to [G02F 1/3542](#)>
- N G02F 1/3542 . . . {Multipass arrangements, i.e. arrangements to make light pass multiple times through the same element, e.g. using an enhancement cavity}
- U G02F 1/3544 . . . {Particular phase matching techniques}
- D G02F 2001/3546 . . . {Active phase matching, e.g. by electro- or thermo-optic tuning}
<administratively transferred to [G02F 1/3546](#)>
- N G02F 1/3546 . . . {Active phase matching, e.g. by electro- or thermo-optic tuning}
- D G02F 2001/3548 . . . {Quasi-phase-matching [QPM], e.g. using a periodic domain inverted structure}
<administratively transferred to [G02F 1/3548](#)>
- N G02F 1/3548 . . . {Quasi phase matching [QPM], e.g. using a periodic domain inverted structure}
- U G02F 1/37 . . . for second-harmonic generation (([G02F 1/3532](#) takes precedence))
- D G02F 2001/372 . . . {means for homogenizing the output beam}
<administratively transferred to [G02F 1/372](#)>
- N G02F 1/372 . . . {Means for homogenizing the output beam}
- D G02F 2001/374 . . . {Cherenkov radiation}
<administratively transferred to [G02F 1/374](#)>
- N G02F 1/374 . . . {Cherenkov radiation}
- M G02F 1/39 . . . for parametric generation or amplification of light, infra-red; or ultra-violet waves ((arrangements of plural nonlinear devices for generating multi-colour light beams G02F 1/3532))
- D G02F 2001/392 . . . {Parametric amplification}
<administratively transferred to [G02F 1/392](#)>
- N G02F 1/392 . . . {Parametric amplification}
- U G02F 2/00 Demodulating light; Transferring the modulation of modulated light; Frequency-changing of light ([G02F 1/35](#) takes precedence)**
- M G02F 2/002 . . . {using optical mixing (homodyne systems H04B 10/63; heterodyne systems H04B 10/64)}
- U G02F 2/004 . . . {Transferring the modulation of modulated light, i.e. transferring the information from one optical carrier of a first wavelength to a second optical carrier of a second wavelength, e.g. all-optical wavelength converter}
- D G02F 2002/006 . . . {All-optical wavelength conversion}
<administratively transferred to [G02F 2/006](#)>
- N G02F 2/006 . . . {All-optical wavelength conversion}

- D G02F 2002/008 · {Opto-electronic wavelength conversion, i.e. involving photo-detection of the first optical carrier}
<administratively transferred to [G02F 2/008](#)>
- N G02F 2/008 · {Opto-electronic wavelength conversion, i.e. involving photo-electric conversion of the first optical carrier}
- U G02F 2202/00 Materials and properties**
- D G02F 2202/99 · Test HW
<administratively transferred to [G02F 2202/00](#) ADD>
- U G02F 2413/00 Indexing scheme related to [G02F 1/13363](#), i.e. to birefringent elements, e.g. for optical compensation, characterised by the number, position, orientation or value of the compensation plates**
- D G02F 2413/09 · with a spatial distribution of the retardation value
<administratively transferred to [G02F 1/133631](#)>
- D G02F 2413/11 · The refractive index N_z perpendicular to the element surface being different from in-plane refractive indices N_x and N_y , e.g. C plate
<administratively transferred to [G02F 1/133634](#)>

Project: RP0700 (G03B)

- M G03B APPARATUS OR ARRANGEMENTS FOR TAKING PHOTOGRAPHS OR FOR PROJECTING OR VIEWING THEM; APPARATUS OR ARRANGEMENTS EMPLOYING ANALOGOUS TECHNIQUES USING WAVES OTHER THAN OPTICAL WAVES; ACCESSORIES THEREFOR (optical parts of such apparatus [G02B](#); photosensitive materials or processes for photographic purposes [G03C](#); apparatus for processing exposed photographic materials [G03D](#))**

NOTE

1. This subclass **covers covers**, as far as processes are concerned, only processes characterised by the use or manipulation of apparatus classifiable **per se per se** in this subclass.

2. In this subclass, the following term is used with the meaning indicated:
"camera" means apparatus or arrangements for taking photographs.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

- C G03B 5/00 Adjustment of optical system relative to image or object surface other than for focusing**

Project: N/A (G03B)

G03B 7/00 -
G03B 29/00
G03B 30/00

Details common to cameras**Project: RP0700 (G03B)**

- U G03B 15/00 Special procedures for taking photographs; Apparatus therefor**
- C G03B 15/006 · {Apparatus mounted on flying objects}
- U G03B 17/00 Details of cameras or camera bodies; Accessories therefor (lens hoods or caps [G03B 11/04](#))**
- C G03B 17/02 · Bodies

- C G03B 17/04 · · collapsible, foldable or extensible, e.g. book type
- C G03B 17/08 · · Waterproof bodies or housings
- C G03B 17/55 · with provision for heating or cooling, e.g. in aircraft

N G03B 30/00 **Camera modules comprising integrated lens units and imaging units, specially adapted for being embedded in other devices, e.g. mobile phones or vehicles**

NOTE

When classification is made in this main group, further classification should be made in other groups of subclass [G03B](#) or in group [G02B 7/00](#) according to the functional aspects of the camera. The classification symbol of this group is not listed first when assigned to patent documents.

WARNING

Group [G03B 30/00](#) is incomplete pending reclassification of documents from groups [G02B 7/00](#), [G02B 7/02](#), [G02B 7/021](#), [G02B 7/022](#), [G02B 7/023](#), [G02B 7/027](#), [G02B 7/028](#), [G02B 7/04](#), [G02B 7/06](#), [G02B 7/09](#), [G02B 7/10](#), [G02B 7/102](#), [G02B 7/105](#), [G02B 13/001](#), [G02B 13/0015](#), [G02B 13/002](#), [G02B 13/0025](#), [G02B 13/003](#), [G02B 13/0035](#), [G02B 13/004](#), [G02B 13/0045](#), [G02B 13/005](#), [G02B 13/0055](#), [G02B 13/006](#), [G02B 13/0065](#), [G02B 13/007](#), [G02B 13/0075](#), [G02B 13/008](#), [G02B 13/0085](#), [G02B 13/009](#), [G03B 5/00](#), [G03B 17/02](#), [G03B 17/04](#), [G03B 17/08](#), and [G03B 17/55](#).

All groups listed in this Warning should be considered in order to perform a complete search.

Project: RP0323 (G03G)

U G03G 13/00 **Electrographic processes using a charge pattern ([G03G 15/00](#), [G03G 16/00](#), [G03G 17/00](#) take precedence)**

NOTE

Group [G03G 15/00](#) also deals with processes in so far as they are characterised by the use or manipulation of apparatus classifiable *per se* in group [G03G 15/00](#) and therefor takes precedence

- U G03G 13/01 · for multicoloured copies {(colour correction on photography [G03B 27/725](#); picture communication systems [H04N 1/46](#))}
- C G03G 13/013 · · {characterised by the developing step, e.g. the properties of the colour developers}

WARNING

Group [G03G 13/013](#) is impacted by reclassification into groups [G03G 13/0131](#), [G03G 13/0133](#), [G03G 13/0135](#), [G03G 13/0137](#) and [G03G 13/0139](#).

All groups listed in this warning should be considered in order to perform a complete search.

- N G03G 13/0131 · · · {developing using a step for liquid development, e.g. plural liquid color developers}

WARNING

Group [G03G 13/0131](#) is incomplete pending reclassification of documents from group [G03G 13/013](#).

Groups [G03G 13/013](#) and [G03G 13/0131](#) should be considered in order to perform a complete search.

- N G03G 13/0133
- • • {developing using a step for deposition of subtractive colorant developing compositions, e.g. cyan, magenta and yellow}
- WARNING
Group [G03G 13/0133](#) is incomplete pending reclassification of documents from group [G03G 13/013](#).
Groups [G03G 13/013](#) and [G03G 13/0133](#) should be considered in order to perform a complete search.
- N G03G 13/0135
- • • {developing using a step for deposition of five or more developing compositions of different colors, excluding black, e.g. pentachrome printing or hexachrome printing}
- WARNING
Group [G03G 13/0135](#) is incomplete pending reclassification of documents from group [G03G 13/013](#).
Groups [G03G 13/013](#) and [G03G 13/0135](#) should be considered in order to perform a complete search.
- N G03G 13/0137
- • • {developing using a step for deposition of security developing composition, e.g. fluorescent colorants, decolorizable colorants or magnetic ink character recognition toners [MICR]}
- WARNING
Group [G03G 13/0137](#) is incomplete pending reclassification of documents from group [G03G 13/013](#).
Groups [G03G 13/013](#) and [G03G 13/0137](#) should be considered in order to perform a complete search.
- N G03G 13/0139
- • • {developing using a step for clear toner deposition, e.g. for regulating gloss or supplying protective coatings}
- WARNING
Group [G03G 13/0139](#) is incomplete pending reclassification of documents from group [G03G 13/013](#).
Groups [G03G 13/013](#) and [G03G 13/0139](#) should be considered in order to perform a complete search.
- U G03G 15/00
- Apparatus for electrographic processes using a charge pattern (G03G 16/00, G03G 17/00 take precedence {; xerographic printers for data processors per se G06K 15/14})**
- C G03G 15/20
- for fixing, e.g. by using heat
- WARNING
Group [G03G 15/20](#) is impacted by reclassification into group [G03G 15/2098](#).
Groups [G03G 15/20](#) and [G03G 15/2098](#) should be considered in order to perform a complete search.
- U G03G 15/2096
- • {using a solvent}
- N G03G 15/2098
- • {using light, e.g. UV photohardening}
- WARNING
Group [G03G 15/2098](#) is incomplete pending reclassification of documents from group [G03G 15/20](#).
Groups [G03G 15/20](#) and [G03G 15/2098](#) should be considered in order to perform a complete search.

Project: RP0283-F (G05D)

- U G05D 1/00** Control of position, course or altitude of land, water, air, or space vehicles, e.g. automatic pilot (radio navigation systems or analogous systems using other waves [G01S](#))
- U G05D 1/04 · Control of altitude or depth
- M G05D 1/06 · · Rate of change of altitude or depth
- WARNING**
Group G05D 1/06 is impacted by reclassification into group G05D 1/0688. Groups G05D 1/06 and G05D 1/0688 should be considered in order to perform a complete search.
- M G05D 1/0607 · · · {specially adapted for aircraft}
- WARNING**
Group G05D 1/0607 is impacted by reclassification into group G05D 1/0688. Groups G05D 1/0607 and G05D 1/0688 should be considered in order to perform a complete search.
- M G05D 1/0688 · · · · {Emergency descent}
- WARNING**
Group G05D 1/0688 is incomplete pending reclassification of documents from groups G05D 1/06 and G05D 1/0607. Groups G05D 1/06, G05D 1/0607 and G05D 1/0688 should be considered in order to perform a complete search.
- M G05D 1/10 · Simultaneous control of position or course in three dimensions ([G05D 1/12](#) takes precedence)
- WARNING**
Group G05D 1/10 is impacted by reclassification into groups G05D 1/106, G05D 1/1062 and G05D 1/1064. All groups listed in this Warning should be considered in order to perform a complete search.
- M G05D 1/101 · · {specially adapted for aircraft}
- WARNING**
Group G05D 1/101 is impacted by reclassification into groups G05D 1/106, G05D 1/1062 and G05D 1/1064. All groups listed in this Warning should be considered in order to perform a complete search.
- M G05D 1/105 · · · {specially adapted for unpowered flight, e.g. glider, parachuting, forced landing (parachutes per se [B64D 17/00](#))}
- WARNING**
Group G05D 1/105 is impacted by reclassification into groups G05D 1/106, G05D 1/1062 and G05D 1/1064. All groups listed in this Warning should be considered in order to perform a complete search.
- M G05D 1/106 · · · · {Change initiated in response to external conditions, e.g. avoidance of elevated terrain or of no-fly zones}
- WARNING**
Group G05D 1/106 is incomplete pending reclassification of documents from groups G05D 1/10, G05D 1/101 and G05D 1/105.

All groups listed in this Warning should be considered in order to perform a complete search.

- M G05D 1/1062 . . . {specially adapted for avoiding bad weather conditions}

WARNING

Group G05D 1/1062 is incomplete pending reclassification of documents from groups G05D 1/10, G05D 1/101 and G05D 1/105. All groups listed in this Warning should be considered in order to perform a complete search.

- M G05D 1/1064 . . . {specially adapted for avoiding collisions with other aircraft}

WARNING

Group G05D 1/1064 is incomplete pending reclassification of documents from groups G05D 1/10, G05D 1/101 and G05D 1/105. All groups listed in this Warning should be considered in order to perform a complete search.

Project: MP0427 (G05D)

- M G05D 1/12 . Target-seeking control

NOTE

Within groups G05D 3/00 – G05D 3/20, in the absence of an indication of the contrary, an invention is classified in the last appropriate place

Project: MP0497 (G05D)

- M G05D 16/00 **Control of fluid pressure**

NOTE

{Note: In this group, multi-aspect classification is applied, so that subject matter characterised by aspects covered by more than one of its subgroups, which is considered to represent information of interest for search, should be classified in each of those subgroups.}

WARNING

Group [G05D 16/00](#) is impacted by reclassification into groups [G05D 16/024](#) and [G05D 16/028](#).

Groups [G05D 16/00](#), [G05D 16/024](#), and [G05D 16/028](#) should be considered in order to perform a complete search.

- U G05D 23/00 **Control of temperature (automatic switching arrangements for electric heating apparatus [H05B 1/02](#))**

NOTE

Within groups [G05D 23/01](#) - [G05D 23/32](#), an invention is classified in the last appropriate place in the absence of an indication of the contrary

- M G05D 23/19 . characterised by the use of electric means {([G05D 23/1393](#) takes precedence)}

NOTE

In this group, multi-aspect classification is applied, so that subject matter characterised by aspects covered by more than one of its subgroups, which is considered to represent information of interest for search, should be classified in each of those subgroups. Temperature control arrangements are classified in subgroups G05D 23/20 – G05D 23/275 on the base of the type of temperature sensor and in the subgroups directly under G05D 23/19 for each aspect related to temperature control in general.

Project: RP0695 (G06F)

- U G06F 1/00** **Details not covered by groups [G06F 3/00](#) – [G06F 13/00](#) and [G06F 21/00](#) (architectures of general purpose stored program computers [G06F 15/76](#))**
- U G06F 1/16 · Constructional details or arrangements
- U G06F 1/1613 · · {for portable computers (cooling arrangements therefor [G06F 1/203](#); constructional details or arrangements for pocket calculators, electronic agendas or books [G06F 15/0216](#); constructional details of portable telephone sets: with several bodies [H04M 1/0202](#))}
- U G06F 1/1633 · · · {Constructional details or arrangements of portable computers not specific to the type of enclosures covered by groups [G06F 1/1615](#) - [G06F 1/1626](#)}
- G06F 1/1635 · · · · {Details related to the integration of battery packs and other power supplies such as fuel cells or integrated AC adapter (details of mounting batteries in general [H01M 2/1022](#)[H01M 50/247](#))}

Project: MP0497 (G06F)

- U G06F 3/00** **Input arrangements for transferring data to be processed into a form capable of being handled by the computer; Output arrangements for transferring data from processing unit to output unit, e.g. interface arrangements**
- U G06F 3/01 · Input arrangements or combined input and output arrangements for interaction between user and computer ([G06F 3/16](#) takes precedence)
- M G06F 3/048 · · Interaction techniques based on graphical user interfaces [GUI]

NOTE

1. This group covers subject matter where the focus is placed on the way the user can interact with the displayed data. The mere presence of a standard GUI in the context of the disclosure of a specific software application or a specific device capable of processing data related to its specific function, should be in general classified in the appropriate subclasses related to those software applications or specific devices.

2. In this group, multi-aspect classification is applied, so that subject matter characterised by aspects covered by more than one of its groups, which is considered to represent information of interest for search, should be classified in each of those groups.

Project: MP0424 (G06K)

- M G06K 1/00** **Methods or arrangements for marking the record carrier in digital fashion (~~interpreting G06K 3/02~~)**
- M G06K 1/02 · by punching (~~punching in general B26F~~)
- M G06K 1/025 · · {Details, e.g. construction of the punching ~~mecanism~~[mechanism](#)}
- M G06K 1/04 · · controlled by sensing markings on the record carrier being punched (~~sensing of record carriers G06K 7/00~~)
- U G06K 1/06 · · Manually-controlled devices
- M G06K 1/10 · · · Tape punches (~~specially adapted for a particular purpose, see the relevant subclass, e.g. for telegraphy H04L~~)
- M G06K 1/12 · otherwise than by punching (~~printing in general B41, e.g. B41J~~)
- M G06K 7/00** **Methods or arrangements for sensing record carriers, {e.g. for reading patterns} ([G06K 9/00](#) takes precedence; [methods or arrangements for marking the record carrier in digital fashion G06K 1/00](#))**
- U G06K 7/01 · Details

- M G06K 7/015 • • Aligning or centering of the sensing device with respect to the record carrier
(~~in general G11B~~)
- M G06K 7/016 • • Synchronisation of sensing process (~~in general G11B~~)

Project: MP0427 (G06K)

- M G06K 9/00 **Methods or arrangements for reading or recognising printed or written characters or for recognising patterns, e.g. fingerprints (processing or analysis of tracks of nuclear particles [G01T 5/02](#) {; information retrieval [G06F 16/00](#); radio frequency identification [G06K 7/00](#); recognition of barcodes and similar code images [G06K 7/10](#); computer systems based on specific computational models [G06N](#); image analysis, inspection, positioning or tracking [G06T 7/00](#); recognition of acoustic speech signals [G10L 15/00](#); acoustic speaker identification [G10L 17/00](#))**

NOTES

*1. Group [G06K 9/58](#) takes precedence over groups [G06K 9/38](#) - [G06K 9/54](#).
{This Note corresponds to IPC Note (1) relating to [G06K 9/38](#) - [G06K 9/54](#).}*

~~1-2.~~ {In this group, the following term is used with the meaning indicated: –
"recognising" includes several functions such as extracting features, clustering,
classifying or matching.}

- "recognising" includes several functions such as extracting features,
clustering, classifying or matching.

~~2-3.~~ {IPC subgroups [G06K 9/20](#), [G06K 9/36](#), [G06K 9/62](#) and [G06K 9/74](#) refer to methods or arrangements that can be applied to a pattern independently of its nature or to that are applied to specific patterns not included in the subgroups in the range [G06K 9/00006](#) - [G06K 9/00852](#). The CPC subgroups in the range [G06K 9/00006](#) - [G06K 9/00852](#) refer to the same methods or arrangements when applied or specially adapted to the specific patterns to which these subgroups relate.}

~~3-4.~~ {The present group does not cover the use of recognised patterns in specific applications, e.g. the use of traced gestures recognised as commands to be input to a computer is covered by the groups under [G06F 3/00](#).}

Project: RP0697 (G06K)

- U G06K 9/00496 • {Recognising patterns in signals and combinations thereof (signature verification [G06K 9/00154](#); analysing specific medical signals, e.g. bioelectric signals, blood pressure [A61B 5/00](#); processing radar and similar signals [G01S](#); analysis of chromatographic signals [G01N 30/86](#); processing seismic signals [G01V 1/28](#), [G01V 1/46](#); acoustic speech processing [G10L](#); transmission systems [H04B 1/00](#))}
- G06K 9/0057 • • {Source localisation; Inverse modelling (electroencephalography ~~[A61B 5/0476](#)~~ [A61B 5/369](#); source separation [G06K 9/624](#); image reconstruction from projection, e.g. tomography [G06T 11/003](#); beam formers in general [G10K 11/34](#); radio transmission systems for beam forming [H04B 7/04](#))}

Project: MP0427 (G06K)

- M G06K 9/36 • Image preprocessing, i.e. processing the image information without deciding about the identity of the image (image data processing or generation, in general [G06T](#))

NOTE

~~Group [G06K 9/58](#) takes precedence over groups [G06K 9/38](#) - [G06K 9/54](#)~~

Project: MP0424 (G06K)

- M G06K 13/00** Conveying record carriers from one station to another, e.g. from stack to punching mechanism (~~transport devices in general B65G; handling thin or filamentary material in general B65H~~conveying record carriers combined with another operation, e.g. with reading G06K 17/00)
- U G06K 13/02 · the record carrier having longitudinal dimension comparable with transverse dimension, e.g. punched card
- U G06K 13/08 · · Feeding or discharging cards
- M G06K 13/14 · · · Card magazines, e.g. pocket, hopper ~~((card magazines in general B42F))~~
- M G06K 13/18 · the record carrier being longitudinally extended, e.g. punched tape ~~(features of interest apart from data processing G11B; magnetic-tape drive G11B-15/00)~~
- M G06K 15/00** Arrangements for producing a permanent visual presentation of the output data {, e.g. computer output printers} (printing or plotting combined with another operation, e.g. with conveying, G06K 17/00 ~~}; construction of printing heads B41J-2/00; special arrangements for scanning and reproduction of pictures involving their transmission, e.g. facsimile H04N-1/00; for photocomposing B41B-19/00)~~
- M G06K 17/00** Methods or arrangements for effecting co-operative working between equipments covered by two or more of ~~the preceding~~ main groups G06K 1/00 - G06K 15/00, e.g. automatic card files incorporating conveying and reading operations
- M G06K 19/00** Record carriers for use with machines and with at least a part designed to carry digital markings ~~(record carriers adapted for controlling specific machines, see the appropriate subclass for the machine, e.g. B23Q, D03C, G10F, H04L; form printing B41; file cards B42F-19/00; record carriers in general G11)~~
- U G06K 19/06 · characterised by the kind of the digital marking, e.g. shape, nature, code
- U G06K 19/067 · · Record carriers with conductive marks, printed circuits or semiconductor circuit elements, e.g. credit or identity cards {also with resonating or responding marks without active components}
- U G06K 19/07 · · · with integrated circuit chips
- M G06K 19/073 · · · · Special arrangements for circuits, e.g. for protecting identification code in memory (protection against unauthorised use of computer ~~memories~~memory G06F 12/14)
- U G06K 19/08 · · using markings of different kinds {or more than one marking of the same kind} in the same record carrier, e.g. one marking being sensed by optical and the other by magnetic means
- M G06K 19/10 · · · at least one kind of marking being used for authentication, e.g. of credit or identity cards (~~{identification cards not to be read by a machine B42D-25/00; }~~verification of coded identity or credit cards in mechanisms actuated by them G07F 7/12 ~~}; printed identity or similar identification-bearing cards not for use with a machine B42D-25/00)~~
- M G06K 21/00** Information retrieval from punched cards designed for manual use or handling by machine (G06K 19/00 takes precedence; detection or correction of errors by rescanning patterns G06K 9/03; checking correct operation of card-conveying mechanisms G06K 13/06); Apparatus for handling such cards, e.g. marking or correcting
- M G06K 21/06 · Apparatus or tools adapted for slotting or otherwise marking information-retrieval cards ~~(tools for perforating in general B26F)~~

Project: MP0497 (G06T)

- U G06T 7/00** **Image analysis**
- M G06T 7/10** • Segmentation; Edge detection (motion-based segmentation [G06T 7/215](#))
- NOTE
 In this group, multi-aspect classification is applied, so that subject matter characterised by aspects covered by groups *When classifying in groups* [G06T 7/11](#); [G06T 7/12](#) or [G06T 7/13](#) should also be classified in any of the relevant groups, classification is also made in relevant groups of [G06T 7/136](#) - [G06T 7/194](#).

Project: MP0476 (G07C)

- M G07C** **TIME OR ATTENDANCE REGISTERS; REGISTERING OR INDICATING THE WORKING OF MACHINES; GENERATING RANDOM NUMBERS; VOTING OR LOTTERY APPARATUS; ARRANGEMENTS, SYSTEMS OR APPARATUS FOR CHECKING NOT PROVIDED FOR ELSEWHERE** ~~(identification of persons [A61B 5/117](#); indicating or recording apparatus for measuring in general, analogous apparatus but in which the input is not a variable to be measured, e.g. a hand operation, [G01D](#); clocks, clock mechanisms [G04B](#), [G04C](#); time-interval measuring [G04F](#); counting mechanisms per se [G06M](#))~~
- WARNING
 In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.
- U G07C 1/00** **Registering, indicating or recording the time of events or elapsed time, e.g. time-recorders for work people (registering or indicating the working of machines or vehicles** [G07C 3/00](#), [G07C 5/00](#))
- NOTE
 Subgroups [G07C 1/20](#) - [G07C 1/32](#) take precedence over subgroups [G07C 1/02](#) - [G07C 1/18](#)
- M G07C 1/10** • together with the recording, indicating or registering of other data, e.g. of signs of identity ~~(together with the recording of a continuously-varying variable [G01D](#) or the appropriate other subclass of [G01](#), dependent on the variable)~~
- U G07C 1/22** • in connection with sports or games
- M G07C 1/24** • • Race time-recorders ~~(race-finish cameras [G03B 41/00](#))~~
- M G07C 1/32** • Time-recording locks ~~(locks giving indication of unauthorised unlocking [E05B 39/00](#))~~
- M G07C 3/00** **Registering or indicating the condition or the working of machines or other apparatus, other than vehicles** ~~(engine indicators [G01L](#); testing apparatus incident to its manufacture [G01M](#); signalling arrangements per se, indicating undesired or abnormal working conditions [G08B](#))~~
- U G07C 3/08** • Registering or indicating the production of the machine either with or without registering working or idle time
- M G07C 3/10** • • using counting means ~~(counting mechanisms per se [G06M](#))~~
- M G07C 5/00** **Registering or indicating the working of vehicles** ~~(for measuring distance travelled or combinations of speed and distance [G01C](#); engine indicators [G01L](#); devices for measuring speed or acceleration [G01P](#))~~
- M G07C 5/02** • Registering or indicating driving, working, idle, or waiting time only (apparatus forming part of taximeters [G07B](#) [G07B 13/00](#))

- M G07C 11/00 Arrangements, systems; or apparatus for checking, e.g. the occurrence of a condition, not provided for elsewhere ~~(signalling or alarm arrangements G08B)~~
- M G07C 15/00 Generating random numbers; Lottery apparatus ~~{{games in general A63F; } digital computer arrangements for generating random or pseudo-random numbers G06F 7/58; generating electric pulses at random intervals H03K 3/84}~~

Project: MP0467 (G08B)

- M G08B **SIGNALLING OR CALLING SYSTEMS; ORDER TELEGRAPHS; ALARM SYSTEMS** ~~{{(signalling arrangements on vehicles B60Q, B62D 41/00; railway signalling systems or devices B61L; on cycles B62J 3/00, B62J 6/00; signalling or alarm devices in mines E21F 17/18; lamps or shutters therefor F21; sensitive measuring elements, see the appropriate subclasses of G01; traffic control systems G08G; visual indicating means G09; sound-producing devices G10; radio or near-field calling systems H04B 5/00, H04B 7/00; selecting arrangements H04Q 5/00, H04Q 9/00; loudspeakers, microphones, gramophone pick-ups or like acoustic electromechanical transducers H04R)}~~

NOTES

1. This subclass covers also means for identifying or incapacitating burglars or the like.
2. This subclass does not cover:
 - the mere provision of an audible or visible signalling device on measuring or switching apparatus;
 - alarm systems for indicating that a specific variable has exceeded, or fallen below, a predetermined value, which are covered by the relevant subclasses of class **G01** for the measurement of that variable.
 - alarms for specific processes or types of machines or apparatus, which are covered by the relevant subclasses for the processes, machines, or apparatus.
3. In this subclass, the following term is used with the meaning indicated:
 - "systems" may cover also devices peculiar thereto.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

- M G08B 3/00 **Audible signalling systems; Audible personal calling systems** ~~{{(signalling devices actuated by tyre pressure B60C 23/02; alarm locks E05B 45/00, e.g. with mechanically-operated bells E05B 45/02, electric E05B 45/06; sound producing devices, e.g. hooter, buzzer, G10K; telephonic systems provided with personal calling arrangements H04M 11/022)}~~
- M G08B 3/10 • using electric transmission; using electromagnetic transmission ~~{{(intercoms H04M 11/02; distributing signals to two or more loudspeakers H04R 3/12; loudspeakers for public address systems H04R 27/00)}~~
- M G08B 5/00 **Visible signalling systems, e.g. personal calling systems, remote indication of seats occupied** ~~{{(locks with visible signalling devices E05B 39/00; electro-, magneto- or acousto-optic display devices G02F; display tubes H01J 17/49, H01K 7/04; electro-luminescent devices H05B 33/00)}~~
- U G08B 5/22 • using electric transmission; using electromagnetic transmission

- M G08B 5/24
- with indicator element moving about a pivot, e.g. hinged flap or rotating vane ~~{{signalling devices for telephones H04M 19/04; telecontrolling indicating devices, e.g. hinged flap, G08C 19/30; signalling systems for auctioneering devices H04L 12/1804}}~~
- U G08B 5/36
- using visible light sources
- M G08B 5/38
- using flashing light ~~{{circuit arrangements for flashing lamps H05B 41/30; H05B 39/09; arrangements on vehicles B60Q 1/34, B60Q 1/46}}~~
- M G08B 5/40
- using smoke, fire or coloured gases ~~{{for personal calling arrangements G08B 3/1008, G08B 3/1016; smoke producers for aircraft B64D 1/16- B64D 1/20; chemical compositions C06B; missiles, e.g. of tracer, illuminating, signal or smoke producing type F42B}}~~
- M G08B 6/00**
- Tactile signalling systems, e.g. personal calling systems ~~{{apparatus for generating mechanical vibrations B06B 1/045; motors converting reciprocating into rotary movement or vice-versa H02K 7/06; motors with reciprocating, oscillating, or vibrating magnet, armature, or coil system H02K 33/00; telephone hand set vibration alarms H04M 19/047}}~~**
- M G08B 7/00**
- Signalling systems according to more than one of groups [G08B 3/00](#) - [G08B 6/00](#); Personal calling systems according to more than one of groups [G08B 3/00](#) - [G08B 6/00](#) ~~{{combinations of display devices with advertising G09F}}~~**
- M G08B 7/06
- using electric transmission {, e.g. involving audible and visible signalling through the use of sound and light sources ~~{{walking aids for blind persons A61H 3/06; facilitating escape from buildings A62B 3/00}}~~
- M G08B 9/00**
- Order telegraph apparatus, i.e. means for transmitting one of a finite number of different orders at the discretion of the user, e.g. bridge to engine room orders in ships ~~{{signaling devices in mines E21F 17/18}}~~**
- U G08B 9/08
- mechanical
- M G08B 9/10
- using ratchet ~~{{see provisionally G08B 9/08}}~~
- M G08B 9/12
- using rotary shaft ~~{{see provisionally G08B 9/08}}~~
- U G08B 9/14
- hydraulic; pneumatic
- M G08B 9/16
- using ratchet ~~{{see provisionally G08B 9/14}}~~
- M G08B 9/18
- by varying displacement of the fluid ~~{{see provisionally G08B 9/14}}~~
- M G08B 9/20
- by varying pressure of the fluid ~~{{see provisionally G08B 9/14}}~~
- M G08B 13/00**
- Burglar, theft or intruder alarms ~~{{fire or police telegraphic systems G08B 25/00, G08B 26/00, H04M 11/04; vehicle theft alarms B60R 25/10; cycle theft alarms B62H 5/00}}~~**
- U G08B 13/02
- Mechanical actuation
- M G08B 13/06
- by tampering with fastening ~~{{alarm locks E05B 45/00; alarm devices on safes E05G 1/10}}~~
- M G08B 13/10
- by pressure on floors, floor coverings, stair treads, counters, or tills ~~{{contact cables, contact carpets H01B 7/10; electrical switches operated by change of a non-electrical or thermal condition H01H 9/00; treadles for traffic control G08G 1/02}}~~
- M G08B 13/14
- by lifting or attempted removal of hand-portable articles ~~{{devices to prevent theft or loss of purses, luggage or hand carried bags A45C 13/18}}~~
- M G08B 13/18
- Actuation by interference with heat, light or radiation of shorter wavelength; Actuation by intruding sources of heat, light or radiation of shorter wavelength ~~{{signalling devices using photo-electric devices in general G09F}}~~
- U G08B 13/181
- using active radiation detection systems

M	G08B 13/183	<ul style="list-style-type: none"> • • • by interruption of a radiation beam or barrier {{(industrial safety devices with photocells F16P 3/14)}}
U	G08B 13/189	<ul style="list-style-type: none"> • • using passive radiation detection systems
M	G08B 13/19	<ul style="list-style-type: none"> • • • using infra-red radiation detection systems {{(G08B 13/194 takes precedence; lighting devices activated by motion detection F21V 23/0442; radiation pyrometry per se G01J 5/00; controlling circuits for electric light sources activated by motion detection H05B 47/105)}}
U	G08B 13/194	<ul style="list-style-type: none"> • • • using image scanning and comparing systems
M	G08B 13/196	<ul style="list-style-type: none"> • • • • using television cameras {{(recognition of scenes under surveillance G06K 9/00771; image analysis per se G06T 7/00; television cameras H04N 5/225; CCTV systems H04N 7/18)}}
U	G08B 13/22	<ul style="list-style-type: none"> • Electrical actuation {{(G08B 13/2494 takes precedence)}}
M	G08B 13/24	<ul style="list-style-type: none"> • • by interference with electromagnetic field distribution {{(signals actuated by trains B61L; metal detectors using induction coils G01V 3/10; metal detectors combined with record carrier readers G06K 7/085)}}
M	G08B 15/00	Identifying, scaring or incapacitating burglars, thieves or intruders, e.g. by explosives {{(devices to prevent loss of bags, trunks or travelling baskets by producing sound, piercing, gas-discharging or the like A45C 13/24; alarm locks E05B 45/00, e.g. with detonating alarm E05B 45/04)}}
M	G08B 17/00	Fire alarms; Alarms responsive to explosion {{(automatic fire-extinguishing and alarm devices A62C 35/00, A62C 37/00; structural combination of lighting devices with smoke detectors F21V 33/0076; arrangement of safety devices on stoves F24C 7/08)}}
M	G08B 17/06	<ul style="list-style-type: none"> • Electric actuation of the alarm, e.g. using a thermally-operated switch {{(thermally-operated electric switches per se H01H 37/00)}}
M	G08B 17/10	<ul style="list-style-type: none"> • Actuation by presence of smoke or gases {{, e.g. automatic alarm devices for analysing flowing fluid materials by the use of optical means (turbidimetric analysis of gases, e.g. of smoke G01N 21/534)}}
M	G08B 17/117	<ul style="list-style-type: none"> • • by using a detection device for specific gases, e.g. combustion products, produced by the fire {{(G08B 17/103, G08B 17/11 take precedence-; investigating or analysing gases in general G01N, e.g. by using electric means G01N 27/00; particle spectrometers per se H01J 49/00)}}
M	G08B 17/12	<ul style="list-style-type: none"> • Actuation by presence of radiation or particles, e.g. of infra-red radiation or of ions {{(flame detection in burners F23N 5/00; alarm or controlling circuits using ionisation chamber, proportional counters or Geiger-Müller tubes also functioning as u-v detectors G01T 7/125)}}
U	G08B 19/00	Alarms responsive to two or more different undesired or abnormal conditions, e.g. burglary and fire, abnormal temperature and abnormal rate of flow
M	G08B 19/02	<ul style="list-style-type: none"> • Alarm responsive to formation or anticipated formation of ice {{(indicating weather conditions G01W 1/00)}}
M	G08B 21/00	Alarms responsive to a single specified undesired or abnormal operating condition and not elsewhere provided for {{(alarms on gas pipes F17D 3/01)}}
U	G08B 21/02	<ul style="list-style-type: none"> • Alarms for ensuring the safety of persons
M	G08B 21/06	<ul style="list-style-type: none"> • • indicating a condition of sleep, e.g. anti-dozing alarms {{(psychotechnic analysis of vehicle drivers A61B 5/18; safety devices for propulsion-unit control of vehicles responsive to incapacity of driver B60K 28/06)}}
M	G08B 25/00	Alarm systems in which the location of the alarm condition is signalled to a central station, e.g. fire or police telegraphic systems {{(signalling systems in general G08C)}}

- U G08B 25/01 · characterised by the transmission medium
- M G08B 25/08 · · using communication transmission lines ~~{{(G08B 13/19658, G08B 21/0286, G08B 25/016 take precedence; specific aspects of telephone communication systems adapted for combination with alarm systems H04M 11/04)}}~~
- M G08B 27/00 **Alarm systems in which the alarm condition is signalled from a central station to a plurality of substations** ~~{{(signalling systems in general G08C)}}~~
- M G08B 29/00 **Checking or monitoring of signalling or alarm systems; Prevention or correction of operating errors, e.g. preventing unauthorised operation** ~~{{(arrangements for testing electric properties, arrangements for locating electric faults G01R 31/00)}}~~
- U G08B 29/02 · Monitoring continuously signalling or alarm systems
- M G08B 29/06 · · Monitoring of the line circuits, e.g. signalling of line faults ~~{{(testing or locating faults in cables or lines in general G01R 31/55, G01R 31/08)}}~~
- U G08B 29/12 · Checking intermittently signalling or alarm systems
- M G08B 29/123 · · {of line circuits ~~(testing or locating faults in cables or lines in general G01R 31/50, G01R 31/08)}~~

Project: MP0496 (G09C)

- M G09C **CODING OR CIPHERING CIPHERING OR DECIPHERING APPARATUS FOR CRYPTOGRAPHIC OR OTHER PURPOSES INVOLVING THE NEED FOR SECRECY** ~~(secret transmission H04K; arrangements for secret telegraphic communication H04L 9/00)~~

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: MP0497 (G10B)

- M G10B **ORGANS, HARMONIUMS OR SIMILAR WIND MUSICAL INSTRUMENTS WITH ASSOCIATED BLOWING APPARATUS** (accordions, concertinas or the like or keyboards therefor [G10D 11/00](#); automatic wind instruments [G10F 1/12](#))

NOTE

~~1. In this subclass, multi-aspect classification is applied, so that subject matter characterised by aspects covered by more than one of its groups should be classified in each of those groups.~~

2-1. In this subclass, the type of instrument is classified in group [G10B 1/00](#), while details or accessories thereof are classified in group [G10B 3/00](#).

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: MP0497 (G10C)

M G10C PIANOS, HARPSICHORDS, SPINETS OR SIMILAR STRINGED MUSICAL INSTRUMENTS WITH ONE OR MORE KEYBOARDS (automatic musical instruments [G10F](#))

NOTE

~~1. In groups [G10C 1/00](#), [G10C 3/00](#) and [G10C 9/00](#), multi-aspect classification is applied, so that subject matter characterised by aspects covered by more than one of their subgroups should be classified in each of those subgroups.~~

~~2.~~ **1.** In this subclass, the specific types of musical instruments are covered by group [G10C 1/00](#), while aspects relevant to the details thereof or the accessories therefor are covered by groups [G10C 3/00](#)-[G10C 9/00](#).

Project: MP0497 (G10D)

M G10D STRINGED MUSICAL INSTRUMENTS; WIND MUSICAL INSTRUMENTS; ACCORDIONS OR CONCERTINAS; PERCUSSION MUSICAL INSTRUMENTS; AEOLIAN HARPS; SINGING-FLAME MUSICAL INSTRUMENTS; MUSICAL INSTRUMENTS NOT OTHERWISE PROVIDED FOR (organs, harmoniums or similar wind musical instruments with associated blowing apparatus [G10B](#); pianos, harpsichords, spinets or similar stringed musical instruments with one or more keyboards [G10C](#); automatic musical instruments [G10F](#); electrophonic musical instruments in which tones are generated by electromechanical means [G10H](#))

NOTES

~~1. In this subclass, multi-aspect classification is applied for each of groups [G10D 1/00](#)-[G10D 9/00](#), [G10D 13/00](#), so that subject matter characterised by aspects covered by more than one of its groups should be classified in each of those groups.~~

~~2.~~ **1.** In this subclass, the specific types of musical instruments are covered in groups [G10D 1/00](#), [G10D 7/00](#) or [G10D 13/01](#), while aspects relevant to the arrangements thereof or the accessories therefor are covered in groups [G10D 3/00](#), [G10D 9/00](#) or [G10D 13/10](#).

~~3.~~ **2.** This subclass does not cover pianos, harpsichords, spinets or similar stringed musical instruments with keyboards that cause the strings to be struck or plucked, which are covered by subclass [G10C](#).

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: MP0496 (G10G)

M G10G ~~AIDS FOR REPRESENTATION OF MUSIC (teaching music [G09B 15/00](#)); SUPPORTS FOR MUSICAL INSTRUMENTS RECORDING MUSIC IN NOTATION FORM; OTHER AUXILIARY DEVICES OR ACCESSORIES FOR MUSIC OR MUSICAL INSTRUMENTS NOT OTHERWISE PROVIDED FOR, e.g. SUPPORTS (music stands [A47B](#); non-musical aspects of musical toy instruments [A63H 5/00](#); metronomes [G04F 5/02](#); teaching music [G09B 15/00](#))~~

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: MP0451 (G11B)

M G11B

INFORMATION STORAGE BASED ON RELATIVE MOVEMENT BETWEEN RECORD CARRIER AND TRANSDUCER (~~{producing carriers of sound records for needle playback B29C 39/00}~~; recording measured values in a way that does not require playback through a transducer ~~G01D G01D 9/00~~; ~~photosensitive materials or processes for photographic purposes G03C~~; ~~electrography, electrophotography, magnetography G03G~~; recording or playback apparatus using mechanically marked tape, e.g. punched paper tape, or using unit records, e.g. punched or magnetically marked cards; ~~G06K~~; transferring data from one type of record carrier to another ~~G06K 1/18~~; ~~printing of data from record carriers G06K 3/00~~; ~~arrangements for producing a permanent visual presentation of the output data G06K 15/00~~; ~~arrangements or circuits for control of indicating devices using static means to present variable information G09G~~; ~~coding, decoding or code conversion, in general H03M~~; circuits for coupling output of reproducer to radio receiver ~~H04B 1/20~~; ~~circuits {or arrangements} specially adapted for {pictorial or} television signal recording {H04N 1/21}~~, ~~H04N 5/76~~, ~~H04N 9/79~~; ~~loudspeakers, microphones, gramophone pick-ups or like acoustic electromechanical transducers or circuits therefor H04R~~; ~~gramophone pick-ups or like acoustic electromechanical transducers or circuits therefor H04R~~)

NOTES

1. This subclass covers :

- recording or playback of information by relative movement between a record track and a transducer, the transducer directly producing, or being directly actuated by, modulation in the track being recorded or played-back, and the extent of modulation corresponding to the signal being recorded or played-back;
- apparatus and machines for recording or playback, and parts thereof such as heads;
- record carriers for use with such apparatus and machines;
- associated working of other apparatus with such apparatus and machines;
- {relative positioning or movement of transducers and record carriers before, during or after transducing operation, e.g. for accessing record carriers or parts thereof, or for track change, selection or acquisition or for track following or for accessing parts of tracks;}
- {driving or moving of heads or record carriers or both heads and record carriers for increasing, maintaining or decreasing the relative speed before, during or after transducing operation}

2. In this subclass, the following terms or expressions are used with the meanings indicated :

- "head" includes any means for converting sinusoidal or non-sinusoidal electric wave-forms into variations of the physical condition of at least the adjacent surface of the record carrier, or vice versa;
- "record carrier" means a body, such as a cylinder, disc, card, tape, or wire, capable of permanently holding information, which can be read-off by a sensing element movable relatively to the record carrier.

3. Documents concerning relative positioning or movement of transducers and record carriers are classified in groups [G11B 3/00](#) - [G11B 7/00](#) and [G11B 21/00](#) when only the transducer is controlled and in groups [G11B 15/00](#), [G11B 17/00](#) and [G11B 19/00](#) when only the record carrier is controlled. When both record carrier and head are controlled, the documents are classified in [G11B 15/1808](#), [G11B 15/1816](#), [G11B 19/00](#) and [G11B 27/002](#).

When a plurality of record carriers are controlled, the documents are classified in [G11B 15/68](#), [G11B 17/08](#), [G11B 17/22](#) and [G11B 27/002](#).

4. By "access" is meant an operation including a relative movement for positioning between record carrier and head before, during or after transducing;

this operation including "seek", "select", "change", "acquire" and "follow" functions for at least a part of a track on at least one record carrier. By "programmed access" is meant a sequence of access operations the result of the sequence being to acquire a wanted sequence of parts of tracks or a wanted sequence of tracks. Relative movement between head and record carrier also covers the movement of a coupling beam such as a light beam between the head and a stationary record carrier.

5. "Movement of the head" also covers any virtual movement or any physical movement such as obtained by switching between successive transducing parts of the head or by moving the transducing zone of the head, i.e. by "scanning". If different transducing parts of the head are switchable, the number of transducing parts should be much smaller than the number of individual storage areas of the record carrier.

6. Attention is drawn to the notes of subclass [G11C](#).

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

- M G11B 3/00** **Recording by mechanical cutting, deforming or pressing, e.g. of grooves or pits; Reproducing by mechanical sensing; Record carriers therefor ([G11B 11/00](#), {[G11B 13/00](#)} take precedence; ~~recording by cutting or deforming using laser beam G11B 7/00, using electron beam G11B 9/10~~)**
- M G11B 3/02
 - Arrangements of heads ~~(styli G11B 3/44)~~
- U G11B 3/44
 - Styli, e.g. sapphire, diamond
- M G11B 3/54
 - Storing; Manipulating, e.g. feeding styli to and from heads ~~(needle boxes; receptacles for needles B65D 85/24)~~
- M G11B 3/58
 - Cleaning record carriers or styli, e.g. removing shavings or dust {or electrostatic charges} ~~(brushes A46B; cleaning in general B08B; {carrying-off electrostatic charges in general H05F 3/00})~~
- M G11B 3/60
 - Turntables for record carriers ~~(forming rotor of dynamo-electric motor H02K)~~
- NOTE
contains no documents, see [G11B 19/2009](#)
- U G11B 3/68
 - Record carriers
- M G11B 3/70
 - characterised by the selection of material or structure; Processes or apparatus specially adapted for manufacturing record carriers ~~(processes involving a single technical art and for which provision exists elsewhere, see the relevant places, e.g. B29D 17/00)~~
- U G11B 5/00** **Recording by magnetisation or demagnetisation of a record carrier; Reproducing by magnetic means; Record carriers therefor ([G11B 11/00](#) {and [G11B 13/00](#)} take precedence)**
- NOTE
Subgroups [G11B 5/02](#) - [G11B 5/86](#) take precedence over subgroups [G11B 5/004](#) - [G11B 5/016](#)
- M G11B 5/02
 - Recording, reproducing, or erasing methods; Read, write or erase circuits therefor ~~(timing or synchronising arrangements G11B 27/10)~~
- U G11B 5/127
 - Structure or manufacture of heads, e.g. inductive
- U G11B 5/187
 - Structure or manufacture of the surface of the head in physical contact with, or immediately adjacent to the recording medium; Pole pieces; Gap features ([G11B 5/265](#), {[G11B 5/29](#)}, [G11B 5/31](#) take precedence)

- M G11B 5/245
- • comprising means for controlling the reluctance of the magnetic circuit {in a head with single gap, for co-operation with one track} ([G11B 5/255 takes precedence](#)); (~~G11B 5/255 takes precedence; for plural gaps or plural tracks G11B 5/127, G11B 5/265, G11B 5/29, G11B 5/49 and subgroups~~)
- M G11B 5/455
- Arrangements for functional testing of heads (~~testing of the manufacturing process G11B 5/127~~); Measuring arrangements for heads (~~measuring electric or magnetic properties G01R; measuring properties for shaping or assembling elements G11B 5/127~~)
- M G11B 5/465
- Arrangements for demagnetisation of heads (~~demagnetisation in general H01F 13/00~~)
- U G11B 5/48
- Disposition or mounting of heads {or head supports} relative to record carriers {(mounting of head within housing [G11B 5/105](#)); arrangements of heads, e.g. for scanning the record carrier to increase the relative speed (driving of both record carriers and head [G11B 15/18](#); guiding record carriers [G11B 15/60](#); head selecting circuits [G11B 15/12](#))}
- M G11B 5/54
- • with provision for moving the head into or out of its operative position or across tracks (~~G11B 5/58 takes precedence~~)
- M G11B 5/56
- • with provision for moving the head {support} for the purpose of adjusting the position of the head relative to the record carrier, e.g. manual adjustment for azimuth correction or track centering (~~{G11B 5/52,} G11B 5/54, G11B 5/58 take precedence~~)
- U G11B 5/62
- Record carriers characterised by the selection of the material (selection of magnetic materials in general [H01F 1/00](#); thin magnetic films [H01F 10/00](#))
- NOTE**
- This group does not cover compositions, materials or processes, per se, which are covered by the relevant subclasses of section [B](#) or [C](#).
- M G11B 5/627
- • of leaders for magnetic tapes, e.g. non-magnetic strips on the tapes or for connection (~~constructional features G11B 23/26~~)
- M G11B 5/84
- Processes or apparatus specially adapted for manufacturing record carriers (~~processes involving a single technical art, in general, and for which provision exists elsewhere, see the relevant places, e.g. B29, G23, G25D; apparatus or processes for applying homogeneous magnetic films to substrates in general H01F 41/14~~)
- M G11B 7/00**
- Recording or reproducing by optical means, e.g. recording using a thermal beam of optical radiation {by modifying optical properties or the physical structure}, reproducing using an optical beam at lower power {by sensing optical properties}; Record carriers therefor; [Record carriers therefor G11B 11/00, G11B 13/00](#) take precedence**
- U G11B 7/08
- Disposition or mounting of heads or light sources relatively to record carriers
- M G11B 7/085
- • with provision for moving the light beam into, or out of, its operative position {or across tracks, otherwise than during the transducing operation, e.g. for adjustment or preliminary positioning or track change or selection} (~~modulating by information signals G11B 7/12; controlling the position or direction of light beams, i.e. deflection, G02F 1/29~~)
- U G11B 7/12
- Heads, e.g. forming of the optical beam spot or modulation of the optical beam (disposition or mounting of head elements within housing or with provision for moving of light source, optical beam or detector, irrelevant to the transducing method [G11B 7/08](#) {; modulating lasers [H01S 3/10](#); controlling the intensity, colour, phase, polarisation or direction of light beams arriving from an independent light source, e.g. switching gating or modulating [G02F 1/00](#))
- U G11B 7/123
- • Integrated head arrangements, e.g. with source and detectors mounted on the same substrate

- U G11B 7/124 . . . the integrated head arrangements including waveguides
- M G11B 7/1245 the waveguides including means for electro-optical or acousto-optical deflection ~~{{(electro- or acousto-optical deflection in general G02F 1/29; G02F 1/33)}}~~
- M G11B 7/125 . . Optical beam sources therefor, e.g. laser control circuitry specially adapted for optical storage devices; Modulators, e.g. means for controlling the size or intensity of optical spots or optical traces ~~{{(electro-, magneto-, or acousto-optical modulators G02F 1/00; optical diaphragms G03B 9/02)}}~~
- M G11B 7/13 . . Optical detectors therefor ~~{{(optical detectors per se G01J; demodulating light; transferring the modulation of modulated light, frequency changing of light G02F 2/00)}}~~

Project: MP0497 (G11B)

- U G11B 7/24 . Record carriers characterised by shape, structure or physical properties, or by the selection of the material (characterised by the arrangement of information on the carrier [G11B 7/007](#))
- U G11B 7/241 . . characterised by the selection of the material
- M G11B 7/252 . . . of layers other than recording layers

NOTE

In-group G11B 7/252, multi-aspect classification is applied, so that if subject matter is characterised by aspects covered by more than one of its subgroups, the subject matter should be classified in each of those subgroups.

Project: MP0451 (G11B)

- M G11B 7/26 . . Apparatus or processes specially adapted for the manufacture of record carriers ~~(processes involving a single technical art and for which provision exists elsewhere, see the relevant class, e.g. B29, G03 (manufacture of intermediate mediums, e.g. matrixes for processing G11B 23/0057))~~
- U **G11B 15/00** **Driving, starting or stopping record carriers of filamentary or web form; Driving both such record carriers and heads; Guiding such record carriers or containers therefor; Control thereof; Control of operating function (driving or guiding heads [G11B 3/00](#) - [G11B 7/00](#), [G11B 21/00](#))**
- M G11B 15/18 . Driving; Starting; Stopping; Arrangements for control or regulation thereof ~~{{(G11B 15/56 takes precedence; handling tapes or filamentary material in general B65H 23/00)}}~~
- M G11B 15/22 . . Stopping means ~~{{(G11B 15/06 takes precedence;}}~~ slowing-down preparatory to stopping or speed-changing [G11B 15/48](#); speed-controlling by mechanical linkage [G11B 15/50](#) ~~{{; brake constructions in general F16D (G11B-15/06 takes precedence; inside container [G11B 23/04](#))}}~~
- M G11B 15/43 . . Control or regulation of mechanical tension of record carrier, e.g. tape tension ~~(controlling tension in filamentary material in general B65H 59/00 (by speed regulation G11B 15/46; by using reserve loops G11B 15/56))~~
- U G11B 15/46 . . Controlling, regulating, or indicating speed ~~{{(dependent on position of tape in reserve, loop [G11B 15/56](#), [G11B 15/58](#))}}~~
- M G11B 15/54 . . . by stroboscope; by tachometer ~~(speedometers or tachometers G01P)~~
- M **G11B 19/00** **Driving, starting, stopping record carriers not specifically of filamentary or web form, or of supports therefor; Control thereof; Control of operating function ~~{{(guiding such record carriers G11B 17/00)}~~; ~~{{(Driving both disc and head}}~~**
- U G11B 19/20 . Driving; Starting; Stopping; Control thereof

- M G11B 19/22
- Brakes other than speed-regulating brakes (~~brake constructions in general F16D~~)
- M G11B 19/28
- Speed controlling, regulating, or indicating ([G11B 19/24](#) takes precedence; ~~speedometers or tachometers G01P~~)
- U G11B 20/00**
- Signal processing not specific to the method of recording or reproducing; Circuits therefor**
- U G11B 20/02
- Analogue recording or reproducing
- M G11B 20/06
- Angle-modulation recording *or reproducing* (~~angle modulation H03C; demodulation of angle modulated oscillations H03D~~)
- M G11B 20/08
- Pulse-modulation recording or reproducing (pulse-code-modulation recording [G11B 20/10](#); ~~pulse modulation or pulse demodulation H03K~~)
- M G11B 20/10
- Digital recording or reproducing (~~digital computers in which at least part of the computation is effected electrically, arrangements for handling digital data G06F; transmission of digital information H04L~~)
- U G11B 23/00**
- Record carriers not specific to the method of recording or reproducing; Accessories, e.g. containers, specially adapted for co-operation with the recording or reproducing apparatus {Intermediate mediums; Apparatus or processes specially adapted for their manufacture (processes involving a single technical art and for which provision exists elsewhere, see the relevant class, e.g. [B29](#), [B41M](#), [B05D](#), [C08L](#), [F16N](#))}**
- NOTE
- In group [G11B 23/00](#), recording or reproducing apparatus does not include the record carriers.
- M G11B 23/02
- Containers; Storing means {both adapted to cooperate with the recording or reproducing means} (~~cabinets, cases, stands, modified to store record carriers G11B 33/04; storing webs, tapes, or filamentary material in general B65H 75/00~~)
- M G11B 23/30
- with provision for auxiliary signals (~~sensing such signals G11B 15/06~~)
- M G11B 23/50
- Reconditioning of record carriers; Cleaning of record carriers *{; {Carrying-off electrostatic charges}* ([G11B 3/58](#) takes precedence; ~~carrying off electrostatic charges in general H05F 3/00~~)
- M G11B 25/00**
- Apparatus characterised by the shape of record carrier employed but not specific to the method of recording or reproducing *{, e.g. dictating apparatus (individual parts of apparatus G11B 3/00 – G11B 23/00; G11B 33/00), {e.g. dictating apparatus; Combinations of such apparatus}***
- U G11B 27/00**
- Editing; Indexing; Addressing; Timing or synchronising; Monitoring; Measuring tape travel**
- M G11B 27/02
- Editing, e.g. varying the order of information signals recorded on, or reproduced from, record carriers (~~arrangements for sorting or merging computer data on continuous record carriers G06F 7/22; mixing of video signals H04N 5/265~~)
- U G11B 27/10
- Indexing; Addressing; Timing or synchronising; Measuring tape travel
- U G11B 27/19
- by using information detectable on the record carrier
- M G11B 27/24
- by sensing features on the record carrier other than the transducing track *{(for controlling purposes G11B 15/00, G11B 17/00); {sensing signals or marks recorded by another method than the main recording}*
- M G11B 33/00**
- Constructional parts, details or accessories not provided for in the preceding groups *other groups of this subclass* (containers, packaging elements or packages specially adapted for record carriers B65D 85/00)**

- M G11B 33/02
- Cabinets; Cases; Stands; Disposition of apparatus therein or thereon (~~furniture aspects A47B, e.g. A47B 81/06; {showing stands, hangers or shelves adapted for particular articles A47F 7/00; albums for record carriers, e.g. discs B42F 5/005; suspended filing appliances for record carriers, e.g. discs B42F 15/0005; fastening devices for wings, e.g. covers E05C; for holding wings in one or more opened positions E05C 17/00; hinges E05D; closers or openers of wings, e.g. with braking or counter-balancing devices E05F}~~)

Project: MP0427 (G11C)

- M G11C 11/00
- Digital stores characterised by the use of particular electric or magnetic storage elements; Storage elements therefor ([G11C 14/00](#) - [G11C 21/00](#) take precedence)

NOTE

Group G11C 11/56 takes precedence over groups G11C 11/02 - G11C 11/54. {This Note corresponds to IPC Note (1) relating to G11C 11/02 - G11C 11/56.}

- M G11C 11/005
- {comprising combined but independently operative RAM-ROM, RAM-PROM, RAM-EPROM cells}

NOTE

~~Group G11C 11/56 takes precedence over groups G11C 11/02 - G11C 11/54~~

Project: MP0427 (H01C)

- U H01C 7/00
- Non-adjustable resistors formed as one or more layers or coatings; Non-adjustable resistors made from powdered conducting material or powdered semi-conducting material with or without insulating material (consisting of loose powdered or granular material [H01C 8/00](#); {measuring deformation in a solid state using the change in resistance formed by printed-circuit technique [G01B 7/20](#); insulating materials [H01B 3/00](#); passive thin-film or thick-film semiconductor or solid state devices [H01L 27/00](#); resistors without a potential-jump or surface barrier specially adapted for integrated circuits, details thereof, multistep manufacturing processes therefor [H01L 28/20](#)}; resistors with a potential-jump barrier or surface barrier, e.g. field effect resistors [H01L 29/00](#); semiconductor devices sensitive to electromagnetic or corpuscular radiation, e.g. photoresistors, [H01L 31/00](#); devices using superconductivity [H01L 39/00](#); devices using galvanomagnetic or similar magnetic effects, e.g. magnetic-field-controlled resistors, [H01L 43/00](#); solid state devices for rectifying, amplifying, oscillating or switching without a potential-jump barrier or surface barrier [H01L 45/00](#); bulk negative resistance effect devices [H01L 47/00](#); {ohmic resistance heating [H05B 3/00](#); printed circuits [H05K](#)})

- M H01C 7/04
- having negative temperature coefficient {(thermometers using resistive elements [G01K 7/16](#))}

NOTE

{In groups H01C 7/043 - H01C 7/049, the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place.}

- M H01C 7/042
- {mainly consisting of inorganic non-metallic substances ([H01C 7/041](#) takes precedence)}

NOTE

~~In groups H01C 7/043 - H01C 7/049, in the absence of an indication to the contrary, classification is made in the last appropriate place~~

Project: MP0427 (H01F)

- M H01F 1/00** **Magnets or magnetic bodies characterised by the magnetic materials therefor; Selection of materials for their magnetic properties**
- NOTES
- 1. Attention is drawn to Note (3) after the title of section C, which Note indicates to which version of the periodic table of chemical elements the IPC refers. In this group, the Periodic System used is the 8 group system indicated by Roman numerals in the Periodic Table thereunder.*
- 2. {Group H01F 1/0036 takes precedence over groups H01F 1/09, H01F 1/11, H01F 1/20, H01F 1/33 and H01F 1/36}*
- M H01F 1/0027** · {Thick magnetic films (forming thick magnetic films [H01F 41/16](#))}
- NOTE
- {In groups H01F 1/09, H01F 1/11, H01F 1/20, H01F 1/33, and H01F 1/36, the group H01F 1/0036 takes precedence}*
- M H01F 41/00** **Apparatus or processes specially adapted for manufacturing or assembling magnets, inductances or transformers; Apparatus or processes specially adapted for manufacturing materials characterised by their magnetic properties**
- NOTE
- Group H01F 41/30 takes precedence over groups H01F 41/16 - H01F 41/24 {, and over group H01F 41/32. This Note corresponds to IPC Note (1) relating to H01F 41/16 - H01F 41/24, H01F 41/32.}*
- M H01F 41/14** · for applying magnetic films to substrates
- NOTE
- In groups H01F 41/16 -- H01F 41/24, -- and H01F 41/32, the group H01F 41/30 takes precedence*

Project: RP0598 (H01G)

- M H01G** **CAPACITORS; CAPACITORS, RECTIFIERS, DETECTORS, SWITCHING DEVICES OR LIGHT-SENSITIVE DEVICES, OF THE ELECTROLYTIC TYPE (selection of specified materials as dielectric [H01B 3/00](#); ~~ceramics C04B~~); *capacitors with potential-jump or surface barrier H01L 29/00*)**
- WARNING
- In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.
- U H01G 2/00** **Details of capacitors not covered by a single one of groups [H01G 4/00-H01G 11/00](#)**
- M H01G 2/10** · Housing; Encapsulation
- WARNING
- Not complete, see also H01G 4/224*
- U H01G 4/00** **Fixed capacitors; Processes of their manufacture (electrolytic capacitors [H01G 9/00](#))**
- U H01G 4/002** · Details
- U H01G 4/018** · · Dielectrics
- U H01G 4/06** · · · Solid dielectrics

- U H01G 4/08 Inorganic dielectrics
 - M H01G 4/12 Ceramic dielectrics ~~{(H01G 4/085 takes precedence; ceramic materials per se G04B 35/00)}~~
 - M H01G 4/40 . Structural combinations of fixed capacitors with other electric elements, the structure mainly consisting of a capacitor, e.g. RC combinations ~~(thin or thick film circuits H01L 27/00; {capacitors without a potential jump or surface barrier specially adapted for integrated circuits, details thereof, multistep manufacturing processes therefor H01L 28/40})~~

 - U H01G 5/00 Capacitors in which the capacitance is varied by mechanical means, e.g. by turning a shaft; Processes of their manufacture**
 - M H01G 2005/02 . {IPC5-having air, gas, or vacuum as the dielectric}
 - M H01G 5/40 . Structural combinations of variable capacitors with other electric elements not covered by this subclass, the structure mainly consisting of a capacitor, e.g. RC combinations ~~(RC filters H03H)~~

 - M H01G 7/00 Capacitors in which the capacitance is varied by non-mechanical means; Processes of their manufacture ~~(capacitors with potential jump or surface barrier H01L 29/00)~~**

 - U H01G 9/00 Electrolytic capacitors, rectifiers, detectors, switching devices, light-sensitive or temperature-sensitive devices; Processes of their manufacture**
 - D H01G 2009/0007 . {Double layer capacitors}
<administratively transferred to [H01G 11/00](#)>
 - D H01G 2009/001 . {Temperature sensitive devices}
<administratively transferred to [H01G 9/21](#)>
 - D H01G 2009/0014 . {Solid electrolytic capacitors}
<administratively transferred to [H01G 9/15](#)>
 - D H01G 2009/0018 . . {with wound foil electrodes}
<administratively transferred to [H01G 9/151](#)>
 - D H01G 2009/0021 . . {Skin fibre}
<administratively transferred to [H01G 9/153](#)>
 - D H01G 2009/0025 . {Liquid electrolytic capacitors}
<administratively transferred to [H01G 9/145](#)>
 - U H01G 9/0029 . {Processes of manufacture}
 - M H01G 9/0032 . . {formation of the dielectric layer ~~(anodisation in general G25D)}~~}
 - U H01G 9/004 . Details
 - U H01G 9/008 . . Terminals
 - D H01G 9/016 . . . {specially adapted for double-layer capacitors}
<administratively transferred to [H01G 11/74](#)>
 - M H01G 9/022 . . Electrolytes, ~~absorbents (electrolytic or electrophoretic processes, apparatus therefor G25; for primary, secondary or fuel cells H01M); Absorbents~~
 - F H01G 9/038 . . . {Electrolytes specially adapted for double-layer capacitors}
(Frozen)
- WARNING**
This group [H01G 9/038](#) is no longer used for the classification of new documents as from documents as of October 1, 2012/January 1, 2021. The backfile is being continuously reclassified to group content of this group is being reclassified into groups [H01G 11/54](#) - [H01G 11/64](#). Groups [H01G 9/038](#) and [H01G 11/54](#) - [H01G 11/64](#) should be considered in order to perform a complete search.

- U H01G 9/04 • • Electrodes {or formation of dielectric layers thereon}
- D H01G 2009/0404 • • • {characterised by the material (alloys in general see C22C)}
 <administratively transferred to [H01G 9/042](#)>
- D H01G 2009/0408 • • • • {on Al basis}
 <administratively transferred to [H01G 9/045](#)>
- D H01G 2009/0412 • • • {characterised by the structure}
 <administratively transferred to [H01G 9/048](#)>
- D H01G 2009/0416 • • • • {Etched foil electrodes (etching of metal in general C23F; electro-etching
 of metal in general C25F)}
 <administratively transferred to [H01G 9/055](#)>
- U H01G 9/048 • • • characterised by their structure ([H01G 11/22](#) takes precedence)
- U H01G 2009/05 • • • • {consisting of tantalum, niobium, or sintered material; Combinations of
 such electrodes with solid semiconductive electrolytes, e.g. manganese
 dioxide}
- U H01G 9/052 • • • • Sintered electrodes
- M H01G 9/0525 • • • • • {Powder therefor (~~metallic powder in general B22F~~)}
- D H01G 9/058 • • • {specially adapted for double-layer capacitors}
WARNING
This group is no longer used for classification of new documents as from
October 1, 2012. The backfile is being continuously reclassified to group
H01G 11/22

 <administratively transferred to [H01G 11/22](#)>
- M H01G 9/06 • • • Mounting in containers

WARNING
This group is no longer used for classification of new documents as from
October 1, 2012. The backfile is being continuously reclassified to groups
H01G 11/66 - H01G 11/74
- M H01G 9/14 • • Structural combinations {or circuits} for modifying, or compensating for,
 electric characteristics of electrolytic capacitors (~~impedance networks H03H~~)
- F H01G 9/155 • {Double-layer capacitors}
 (Frozen)
WARNING
This group *Group H01G 9/155* is no longer used for *the* classification of *new*
documents as from documents as of October 1, 2012 January 1, 2021. The
backfile is being continuously reclassified to group *content of this group is being*
reclassified into groups H01G 11/00 and its subgroups - H01G 11/86. All groups
listed in this Warning should be considered in order to perform a complete
search.
- M H01G 11/00 **Hybrid capacitors, i.e. capacitors having different positive and negative
 electrodes; Electric double-layer [EDL] capacitors [EDLCs]; Processes
 specially adapted for the manufacture thereof or of parts thereof**

NOTE
Group [H01G 11/02](#) takes precedence over groups [H01G 11/04](#) - [H01G 11/14](#)

WARNING
Groups Group H01G 11/00 -is H01G-11/86 are incomplete pending
reclassification of documents from *groups group H01M 12/00 and*
H01M 12/005 H01G 9/155.

All groups listed in this Warning Groups [H01G 9/155](#) and [H01G 11/00](#) should be considered in order to perform a complete search.

- M H01G 11/02
- using combined reduction-oxidation reactions, e.g. redox arrangement or solion
- WARNING**
*Group [H01G 11/02](#) is incomplete pending reclassification of documents from group [H01G 9/155](#).
Groups [H01G 9/155](#) and [H01G 11/02](#) should be considered in order to perform a complete search.*
- M H01G 11/04
- Hybrid capacitors
- WARNING**
*Group [H01G 11/04](#) is incomplete pending reclassification of documents from group [H01G 9/155](#).
Groups [H01G 9/155](#) and [H01G 11/04](#) should be considered in order to perform a complete search.*
- M H01G 11/06
- with one of the electrodes allowing ions or anions to be reversibly doped thereinto, e.g. lithium-ion capacitors [LICs]
- WARNING**
*Group [H01G 11/06](#) is incomplete pending reclassification of documents from group [H01G 9/155](#).
Groups [H01G 9/155](#) and [H01G 11/06](#) should be considered in order to perform a complete search.*
- M H01G 11/08
- Structural combinations, e.g. assembly or connection, of hybrid or EDL capacitors with other electric components, at least one hybrid or EDL capacitor being the main component
- WARNING**
*Group [H01G 11/08](#) is incomplete pending reclassification of documents from group [H01G 9/155](#).
Groups [H01G 9/155](#) and [H01G 11/08](#) should be considered in order to perform a complete search.*
- M H01G 11/10
- Multiple hybrid or EDL capacitors, e.g. arrays or modules (housings, cases or mountings thereof [H01G 11/78](#))
- WARNING**
*Group [H01G 11/10](#) is incomplete pending reclassification of documents from group [H01G 9/155](#).
Groups [H01G 9/155](#) and [H01G 11/10](#) should be considered in order to perform a complete search.*
- M H01G 11/12
- Stacked hybrid or EDL capacitors
- WARNING**
*Group [H01G 11/12](#) is incomplete pending reclassification of documents from group [H01G 9/155](#).
Groups [H01G 9/155](#) and [H01G 11/12](#) should be considered in order to perform a complete search.*

- M H01G 11/14
- Arrangements or processes for adjusting or protecting hybrid or EDL capacitors (emergency protective circuit arrangements specially adapted for capacitors, and effecting automatic switching in the event of an undesired change from normal working conditions [H02H 7/16](#); emergency protective circuit arrangements for limiting excess current or voltages without disconnection [H02H 9/00](#))
- WARNING**
*Group H01G 11/14 – H01G 11/20 are incomplete pending reclassification of documents from group H01G 9/155.
 Groups H01G 9/155 and H01G 11/14 – H01G 11/20 should be considered in order to perform a complete search.*
- M H01G 11/22
- Electrodes
- WARNING**
*Group H01G 11/22 is incomplete pending reclassification of documents from group H01G 9/155.
 Groups H01G 9/155 and H01G 11/22 should be considered in order to perform a complete search.*
- M H01G 11/24
- • characterised by structural features, e.g. forms, shapes, surface areas, porosities or dimensions, of the materials making up or comprised in the electrodes; characterised by the structural features of powders or particles used therefor
- WARNING**
*Group H01G 11/24 is incomplete pending reclassification of documents from group H01G 9/155.
 Groups H01G 9/155 and H01G 11/24 should be considered in order to perform a complete search.*
- M H01G 11/26
- • characterised by the structures of the electrodes, e.g. multi-layered, shapes, dimensions, porosities or surface features
- WARNING**
*Groups H01G 11/26 – H01G 11/28 are incomplete pending reclassification of documents from group H01G 9/155.
 Groups H01G 9/155 and H01G 11/26 – H01G 11/28 should be considered in order to perform a complete search.*
- M H01G 11/30
- • characterised by their materials
- WARNING**
*Group H01G 11/30 is incomplete pending reclassification of documents from group H01G 9/155.
 Groups H01G 9/155 and H01G 11/30 should be considered in order to perform a complete search.*
- M H01G 11/32
- • • Carbon-based, e.g. activated carbon materials
- WARNING**
*Groups H01G 11/32 – H01G 11/44 are incomplete pending reclassification of documents from group H01G 9/155.
 Groups H01G 9/155 and H01G 11/32 – H01G 11/44 should be considered in order to perform a complete search.*
- M H01G 11/46
- • • Metal oxides, e.g. ruthenium oxide
- WARNING**
Group H01G 11/46 is incomplete pending reclassification of documents from group H01G 9/155.

Groups H01G 9/155 and H01G 11/46 should be considered in order to perform a complete search.

M H01G 11/48

- • • Conductive polymers

WARNING

*Group H01G 11/48 is incomplete pending reclassification of documents from group H01G 9/155.
Groups H01G 9/155 and H01G 11/48 should be considered in order to perform a complete search.*

M H01G 11/50

- • • specially adapted for lithium-ion capacitors, e.g. for lithium-doping or for intercalation

WARNING

*Group H01G 11/50 is incomplete pending reclassification of documents from group H01G 9/155.
Groups H01G 9/155 and H01G 11/50 should be considered in order to perform a complete search.*

M H01G 11/52

- Separators

WARNING

*Group H01G 11/52 is incomplete pending reclassification of documents from group H01G 9/155.
Groups H01G 9/155 and H01G 11/52 should be considered in order to perform a complete search.*

M H01G 11/54

- Electrolytes

WARNING

*Group H01G 11/54 is incomplete pending reclassification of documents from groups H01G 9/038 and H01G 9/155.
Groups H01G 9/038, H01G 9/155, and H01G 11/54 should be considered in order to perform a complete search.*

M H01G 11/56

- • Solid electrolytes, e.g. gels; Additives therein

WARNING

*Group H01G 11/56 is incomplete pending reclassification of documents from groups H01G 9/038 and H01G 9/155.
Groups H01G 9/038, H01G 9/155, and H01G 11/56 should be considered in order to perform a complete search.*

M H01G 11/58

- • Liquid electrolytes

WARNING

*Groups H01G 11/58 – H01G 11/64 are incomplete pending reclassification of documents from groups H01G 9/038 and H01G 9/155.
Groups H01G 9/038, H01G 9/155, and H01G 11/58 – H01G 11/64 should be considered in order to perform a complete search.*

M H01G 11/66

- Current collectors

WARNING

*Group H01G 11/66 is incomplete pending reclassification of documents from group H01G 9/155.
Groups H01G 9/155 and H01G 11/66 should be considered in order to perform a complete search.*

- M H01G 11/68
- characterised by their materials
- WARNING
*Group H01G 11/68 is incomplete pending reclassification of documents from group H01G 9/155.
Groups H01G 9/155 and H01G 11/68 should be considered in order to perform a complete search.*
- M H01G 11/70
- characterised by their structures
- WARNING
*Group H01G 11/70 is incomplete pending reclassification of documents from group H01G 9/155.
Groups H01G 9/155 and H01G 11/70 should be considered in order to perform a complete search.*
- M H01G 11/72
- specially adapted for integration in multiple or stacked hybrid or EDL capacitors
- WARNING
*Group H01G 11/72 is incomplete pending reclassification of documents from group H01G 9/155.
Groups H01G 9/155 and H01G 11/72 should be considered in order to perform a complete search.*
- M H01G 11/74
- Terminals, e.g. extensions of current collectors
- WARNING
*Group H01G 11/74 is incomplete pending reclassification of documents from group H01G 9/155.
Groups H01G 9/155 and H01G 11/74 should be considered in order to perform a complete search.*
- M H01G 11/76
- specially adapted for integration in multiple or stacked hybrid or EDL capacitors
- WARNING
*Group H01G 11/76 is incomplete pending reclassification of documents from group H01G 9/155.
Groups H01G 9/155 and H01G 11/76 should be considered in order to perform a complete search.*
- M H01G 11/78
- Cases; Housings; Encapsulations; Mountings
- WARNING
*Group H01G 11/78 is incomplete pending reclassification of documents from group H01G 9/155.
Groups H01G 9/155 and H01G 11/78 should be considered in order to perform a complete search.*
- M H01G 11/80
- Gaskets; Sealings
- WARNING
*Group H01G 11/80 is incomplete pending reclassification of documents from group H01G 9/155.
Groups H01G 9/155 and H01G 11/80 should be considered in order to perform a complete search.*

- M H01G 11/82
- Fixing or assembling a capacitive element in a housing, e.g. mounting electrodes, current collectors or terminals in containers or encapsulations
- WARNING**
Group [H01G 11/82](#) is incomplete pending reclassification of documents from group [H01G 9/155](#).
Groups [H01G 9/155](#) and [H01G 11/82](#) should be considered in order to perform a complete search.
- M H01G 11/84
- Processes for the manufacture of hybrid or EDL capacitors, or components thereof
- WARNING**
Group [H01G 11/84](#) is incomplete pending reclassification of documents from group [H01G 9/155](#).
Groups [H01G 9/155](#) and [H01G 11/84](#) should be considered in order to perform a complete search.
- M H01G 11/86
- specially adapted for electrodes (carbonisation or activation of carbon for the manufacture of electrodes [H01G 11/34](#))
- WARNING**
Group [H01G 11/86](#) is incomplete pending reclassification of documents from group [H01G 9/155](#).
Groups [H01G 9/155](#) and [H01G 11/86](#) should be considered in order to perform a complete search.
- U H01G 13/00** Apparatus specially adapted for manufacturing capacitors; Processes specially adapted for manufacturing capacitors not provided in groups [H01G 4/00](#) - [H01G 11/00](#)
- M H01G 13/02
- Machines for winding capacitors (~~winding in general B65H~~)
- M H01G 13/04
- Drying (~~in general F26B~~); Impregnating
- M H01G 17/00** Structural combinations of capacitors or other devices covered by at least two different main groups of this subclass with other electric elements, not covered by this subclass, e.g. RC combinations (~~thin- or thick-film circuits H01L 27/00; RC-filters H03H~~)

Project: MP0427 (H01J)

- U H01J 29/00** Details of cathode-ray tubes or of electron-beam tubes of the types covered by group [H01J 31/00](#)
- M H01J 29/46
- Arrangements of electrodes and associated parts for generating or controlling the ray or beam, e.g. electron-optical arrangement {(transit time tubes [H01J 23/00](#), [H01J 25/00](#); X-ray tubes [H01J 35/00](#); beam tubes for examining ions, e.g. electron or ion microscopes, or processing of objects or materials, e.g. electron or ion beam tubes [H01J 37/04](#); electron multipliers [H01J 43/04](#); handling of radiation or particles, e.g. focusing, deviating, not otherwise provided for [G21K 1/00](#))}
- NOTE**
[H01J 29/48](#) takes precedence over groups [H01J 29/52](#) - [H01J 29/58](#).
- M H01J 29/467
- {Control electrodes for flat display tubes, e.g. of the type covered by group [H01J 31/123](#)}
- NOTE**
~~[H01J 29/48](#) - [H01J 29/51](#) take precedence over groups [H01J 29/52](#) - [H01J 29/68](#).~~

Project: MP0451 (H01L)

- M H01L 21/00 Processes or apparatus adapted for the manufacture or treatment of semiconductor or solid state devices or of parts thereof ~~{(testing or measuring during manufacture or treatment, or reliability measurements H01L 22/00; multistep manufacturing processes for passive two-terminal components without a potential-jump or surface barrier for integrated circuits H01L 28/00;) processes or apparatus peculiar to the manufacture or treatment of devices provided for in groups H01L 31/00 – H01L 51/00 or of parts thereof, see these groups; single-step processes covered by other subclasses, see the relevant subclasses, e.g. C23C, C30B; photomechanical production of textured or patterned surfaces, materials or originals therefor, apparatus specially adapted therefor, in general G03F)}~~

Project: MP0427 (H01L)

- U H01L 21/02 · Manufacture or treatment of semiconductor devices or of parts thereof
- U H01L 21/04 · · the devices having at least one potential-jump barrier or surface barrier, e.g. PN junction, depletion layer or carrier concentration layer {(multistep manufacturing processes for semiconductor bodies of said devices [H01L 29/02](#); multistep manufacturing processes for electrodes of said devices [H01L 29/401](#); multistep manufacturing processes for said devices [H01L 29/66007](#))}
- U H01L 21/18 · · · the devices having semiconductor bodies comprising elements of Group IV of the Periodic System or $A_{III}B_V$ compounds with or without impurities, e.g. doping materials {([H01L 21/041](#) - [H01L 21/0425](#), [H01L 21/045](#) - [H01L 21/048](#) take precedence)}
- NOTE**
This group covers also processes and apparatus which, by using the appropriate technology, are clearly suitable for manufacture or treatment of devices whose bodies comprise elements of Group IV of the Periodic System or $A_{III}B_V$ compounds, even if the material used is not explicitly specified.
- U H01L 21/22 · · · · Diffusion of impurity materials, e.g. doping materials, electrode materials, into or out of a semiconductor body, or between semiconductor regions; {Interactions between two or more impurities; Redistribution of impurities}
- U H01L 21/225 · · · · · using diffusion into or out of a solid from or into a solid phase, e.g. a doped oxide layer {([H01L 21/221](#) - [H01L 21/222](#) take precedence)}
- M H01L 21/2251 · · · · · · {Diffusion into or out of group IV semiconductors}
- NOTE**
{In groups [H01L 21/2254](#) - [H01L 21/2257](#) one should consider the main compositional parts of the applied layer just before the diffusion step}
- U H01L 21/2252 · · · · · · {using predeposition of impurities into the semiconductor surface, e.g. from a gaseous phase}
- M H01L 21/2253 · · · · · · · {by ion implantation}

NOTE

In groups [H01L 21/2254](#) - [H01L 21/2257](#) one should consider the main compositional parts of the applied layer just before the diffusion step

Project: MP0451 (H01L)

- U H01L 21/26 · · · · Bombardment with radiation {([H01L 21/3105](#) takes precedence)}

- U H01L 21/263 with high-energy radiation ([H01L 21/261](#) takes precedence)
- M H01L 21/265 producing ion implantation (~~ion beam tubes for localised treatment H01J 37/30~~)
- U H01L 21/30 Treatment of semiconductor bodies using processes or apparatus not provided for in groups [H01L 21/20](#) - [H01L 21/26](#) (manufacture of electrodes thereon [H01L 21/28](#))
- M H01L 21/31 to form insulating layers thereon, e.g. for masking or by using photolithographic techniques (~~layers forming electrodes H01L 21/28~~; encapsulating layers [H01L 21/56](#)); After treatment of these layers; *Selection of materials for these layers*
- U H01L 21/34 . . . the devices having semiconductor bodies not provided for in groups {[H01L 21/0405](#), [H01L 21/0445](#)}, [H01L 21/06](#), [H01L 21/16](#) and [H01L 21/18](#) with or without impurities, e.g. doping materials
- U H01L 21/42 Bombardment with radiation
- U H01L 21/423 with high-energy radiation
- M H01L 21/425 producing ion implantation (~~ion beam tubes for localized treatment H01J 37/30~~)
- U H01L 21/46 Treatment of semiconductor bodies using processes or apparatus not provided for in groups [H01L 21/428](#) (manufacture of electrodes thereon [H01L 21/44](#))
- U H01L 21/461 to change their surface-physical characteristics or shape, e.g. etching, polishing, cutting
- M H01L 21/469 to form insulating layers thereon, e.g. for masking or by using photolithographic techniques (~~layers forming electrodes H01L 21/44~~; encapsulating layers [H01L 21/56](#)); After-treatment of these layers
- M H01L 21/48 . . . Manufacture or treatment of parts, e.g. containers, prior to assembly of the devices, using processes not provided for in a single one of the subgroups [H01L 21/06](#) - [H01L 21/326](#) (~~apparatus therefor H01L 21/67005; insulative sealing of leads in bases H01L 21/50~~); containers, encapsulations, fillings, mountings *per se* [H01L 23/00](#); (~~marking of parts H01L 23/544~~)
- NOTE
In this group, the expression "treatment" covers also the removal of leads from parts
- U H01L 21/67 . Apparatus specially adapted for handling semiconductor or electric solid state devices during manufacture or treatment thereof; Apparatus specially adapted for handling wafers during manufacture or treatment of semiconductor or electric solid state devices or components {; Apparatus not specifically provided for elsewhere (processes *per se* [H01L 21/30](#), [H01L 21/46](#), [H01L 23/00](#); simple temporary support means, e.g. using adhesives, electric or magnetic means [H01L 21/68](#), [H01L 21/302](#); apparatus for manufacturing arrangements for connecting or disconnecting semiconductor or solid-state bodies and for methods related thereto [H01L 24/74](#);)}
- NOTE
In this subgroup the term substrate designates a semiconductor or electric solid state device or component, or a wafer
- M H01L 21/68 . . for positioning, orientation or alignment (~~for conveying H01L 21/677~~)

- U H01L 23/00** Details of semiconductor or other solid state devices (**H01L 25/00** takes precedence {; structural arrangements for testing or measuring during manufacture or treatment, or for reliability measurements **H01L 22/00**; arrangements for connecting or disconnecting semiconductor or solid-state bodies, or methods related thereto **H01L 24/00**; finger print sensors **G06K 9/00006**})
- NOTE
This group does not cover:
- details of semiconductor bodies or of electrodes of devices provided for in group **H01L 29/00**, which details are covered by that group;
 - details peculiar to devices provided for in a single main group of groups **H01L 31/00** - **H01L 51/00**, which details are covered by those groups.
- M H01L 23/32** • Holders for supporting the complete device in operation, i.e. detachable fixtures (**H01L 23/40** takes precedence; ~~connectors, {e.g. sockets}, in general H01R; for printed circuits H05K~~)
- U H01L 23/34** • Arrangements for cooling, heating, ventilating or temperature compensation {; Temperature sensing arrangements (thermal treatment apparatus **H01L 21/00**)}
- M H01L 23/42** • • Fillings or auxiliary members in containers {or encapsulations} selected or arranged to facilitate heating or cooling (~~{heating H01L 23/345}; characterised by selection of materials for the device H01L 23/373~~)
- M H01L 23/48** • Arrangements for conducting electric current to or from the solid state body in operation, e.g. leads, terminal arrangements ~~{(in general H01R); {Selection of materials therefor}~~
- NOTE
Arrangements for connecting or disconnecting semiconductor or other solid state bodies, or methods related thereto, other than those arrangements or methods covered by the following subgroups, are covered by **H01L 24/00**
- U H01L 23/58** • Structural electrical arrangements for semiconductor devices not otherwise provided for {, e.g. in combination with batteries (**H01L 23/49593**, **H01L 23/49596** take precedence)}
- M H01L 23/60** • • Protection against electrostatic charges or discharges, e.g. Faraday shields (~~in general H05F~~)

Project: MP0497 (H01L)

- U H01L 27/00** **Devices consisting of a plurality of semiconductor or other solid-state components formed in or on a common substrate (details thereof **H01L 23/00**, **H01L 29/00** - **H01L 51/00**; assemblies consisting of a plurality of individual solid state devices **H01L 25/00**)**
- NOTES
1. In this group, with the exception of groups **H01L 27/115** - **H01L 27/11597**, the last place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the last appropriate place.
 2. When classifying in this group, subject matter relating to electrically programmable read-only memories is classified in group **H01L 27/115**, irrespective of the last place priority rule.
- U H01L 27/02** • including semiconductor components specially adapted for rectifying, oscillating, amplifying or switching and having at least one potential-jump barrier or surface barrier; including integrated passive circuit elements with at least one potential-jump barrier or surface barrier
- U H01L 27/04** • • the substrate being a semiconductor body
- U H01L 27/10** • • • including a plurality of individual components in a repetitive configuration

- U H01L 27/105 including field-effect components

NOTE

In this group and its subgroups classification is made in any appropriate place

- M H01L 27/108 Dynamic random access memory structures

NOTE

In this group and its subgroups classification is made in any appropriate place

Project: MP0427 (H01L)

- U H01L 29/00** **Semiconductor devices adapted for rectifying, amplifying, oscillating or switching, or capacitors or resistors with at least one potential-jump barrier or surface barrier, e.g. PN junction depletion layer or carrier concentration layer; Details of semiconductor bodies or of electrodes thereof; {Multistep manufacturing processes therefor}(H01L 31/00 - H01L 47/00, H01L 51/05 take precedence; processes or apparatus adapted for the manufacture or treatment thereof or of parts thereof H01L 21/00; details other than of semiconductor bodies or of electrodes thereof H01L 23/00; devices consisting of a plurality of solid state components formed in or on a common substrate H01L 27/00; {passive two-terminal components without a potential-jump or surface barrier for integrated circuits, details thereof and multistep manufacturing processes therefor H01L 28/00; } resistors in general H01C; capacitors in general H01G, {e.g. ceramic barrier-layer capacitors H01G 4/1272})**

NOTE

In this main group, classification is made both in groups [H01L 29/02](#) - [H01L 29/51](#) and in groups [H01L 29/66](#) - [H01L 29/94](#) if both of these sets of groups are relevant.

- U H01L 29/66 . Types of semiconductor device {; Multistep manufacturing processes therefor}
- U H01L 29/68 . . controllable by only the electric current supplied, or only the electric potential applied, to an electrode which does not carry the current to be rectified, amplified or switched
- U H01L 29/76 . . . Unipolar devices {, e.g. field effect transistors}
- U H01L 29/772 Field effect transistors
- U H01L 29/78 with field effect produced by an insulated gate {([H01L 29/7725](#), [H01L 29/775](#), [H01L 29/778](#) take precedence)}
- M H01L 29/786 Thin film transistors, {i.e. transistors with a channel being at least partly a thin film (transistors having only the source or the drain region on an insulator layer [H01L 29/0653](#); thin film FinFETs [H01L 29/785](#))}

NOTE

In groups [H01L 29/78651](#) - [H01L 29/78696](#), the materials specified for the transistors are the material of the channel region

- M H01L 29/78645 {with multiple gate}

NOTE

In groups [H01L 29/78651](#) - [H01L 29/78696](#), the materials specified for the transistors are the material of the channel region

Project: MP0451 (H01L)

- M H01L 31/00 Semiconductor devices sensitive to infra-red radiation, light, electromagnetic radiation of shorter wavelength or corpuscular radiation and *especially* adapted either for the conversion of the energy of such radiation into electrical energy or for the control of electrical energy by such radiation; Processes or apparatus *peculiar to especially adapted for* the manufacture or treatment thereof or of parts thereof; Details thereof ([H01L 51/42](#) takes precedence; devices consisting of a plurality of solid state components formed in, or on, a common substrate, other than combinations of radiation-sensitive components with one or more electric light sources, [H01L 27/00](#); ~~measurement of X-radiation, gamma radiation, corpuscular radiation or cosmic radiation with semiconductor detectors G01T 1/24, with resistance detectors G01T 1/26; measurement of neutron radiation with semiconductor detectors G01T 3/08; couplings of light guides with optoelectronic elements G02B 6/42; obtaining energy from radioactive sources G21H~~)
- M H01L 31/18 · Processes or apparatus *peculiar to especially adapted for* the manufacture or treatment of these devices or of parts thereof (~~not peculiar thereto H01L 21/00~~)
- M H01L 35/00 Thermoelectric devices comprising a junction of dissimilar materials, i.e. exhibiting Seebeck or Peltier effect with or without other thermoelectric effects or thermomagnetic effects; Processes or apparatus peculiar to the manufacture or treatment thereof or of parts thereof; Details thereof (devices consisting of a plurality of solid state components formed in or on a common substrate [H01L 27/00](#); ~~refrigerating machines using electric or magnetic effects F25B 21/00; thermometers using thermoelectric or thermomagnetic elements G01K 7/00; obtaining energy from radioactive sources G21H~~)
- M H01L 35/34 · Processes or apparatus *especially adapted for* peculiar to the manufacture or treatment of these devices or of parts thereof (~~not peculiar thereto H01L 21/00~~)
- M H01L 37/00 Thermoelectric devices without a junction of dissimilar materials; Thermomagnetic devices, e.g. using Nernst-Ettinghausen effect; Processes or apparatus peculiar to the manufacture or treatment thereof or of parts thereof (devices consisting of a plurality of solid state components formed in or on a common substrate [H01L 27/00](#); ~~{radiation pyrometers using pyroelectric detectors G01J 5/34} thermometers using thermoelectric or thermomagnetic elements G01K 7/00; selection of materials for magnetography, e.g. for Curie-point writing G03G 5/00~~)
- M H01L 43/00 Devices using galvano-magnetic or similar magnetic effects; Processes or apparatus *peculiar to especially adapted for* the manufacture or treatment thereof or of parts thereof (devices consisting of a plurality of solid state components formed in or on a common substrate [H01L 27/00](#); ~~devices with potential-jump barrier, or surface barrier controllable by variation of a magnetic field H01L 29/82~~)
- M H01L 43/12 · Processes or apparatus *peculiar to especially adapted for* the manufacture or treatment of these devices or of parts thereof (~~not peculiar thereto H01L 21/00~~)

Project: RP0695 (H01M)

- D H01M 2/00 ~~Constructional details or processes of manufacture of the non-active parts~~
<administratively transferred to [H01M 50/00](#)>
- D H01M 2/02 · Cases, jackets or wrappings
<administratively transferred to [H01M 50/10](#)>

- D H01M 2/0202 . . {for small-sized cells or batteries, e.g. miniature battery or power cells, batteries or cells for portable equipment (H01M 2/025 takes precedence)}
<administratively transferred to [H01M 50/10](#)>
- D H01M 2002/0205 . . . {Cases with a shape not covered by groups H01M 2/0207 – H01M 2/0235}
<administratively transferred to [H01M 50/10](#)>
- D H01M 2/0207 . . . {Flat-shaped cells or batteries of flat cells (H01M 2/0222 takes precedence)}
<administratively transferred to [H01M 50/10](#)>
- D H01M 2/021 {with both terminals passing through the case or cover}
<administratively transferred to [H01M 50/543](#)>
- D H01M 2/0212 {with plate-like or sheet-like terminals (H01M 2/0215 takes precedence)}
<administratively transferred to [H01M 50/557](#)>
- D H01M 2/0215 {with window-shaped terminals}
<administratively transferred to [H01M 50/555](#)>
- D H01M 2/0217 . . . {Cases of prismatic shape}
<administratively transferred to [H01M 50/103](#)>
- D H01M 2/022 . . . {Cases of cylindrical or round shape}
<administratively transferred to [H01M 50/107](#)>
- D H01M 2/0222 {Button or coin-cell cases}
<administratively transferred to [H01M 50/109](#)>
- D H01M 2/0225 {with cup-shaped terminals}
<administratively transferred to [H01M 50/56](#)>
- D H01M 2/0227 {with both cup-shaped terminals}
<administratively transferred to [H01M 50/56](#)>
- D H01M 2/023 {with one cup-shaped terminal}
<administratively transferred to [H01M 50/56](#)>
- D H01M 2/0232 {with a passing-through terminal (H01M 2/0235 takes precedence)}
<administratively transferred to [H01M 50/174](#)>
- D H01M 2/0235 {with a collector centrally disposed in the active mass, e.g. Leclanché cells}
<administratively transferred to [H01M 50/182](#)>
- D H01M 2/0237 . . {for large-sized cells or batteries, e.g. starting, lighting or ignition [SLI] batteries, traction or motive power type or standby power batteries (H01M 2/025 takes precedence)}
<administratively transferred to [H01M 50/10](#)>
- D H01M 2/024 . . . {Details}
<administratively transferred to [H01M 50/10](#)>
- D H01M 2/0242 . . . {Monobloc manufactured cases comprising multiple compartments}
<administratively transferred to [H01M 50/112](#)>
- D H01M 2/0245 . . . {Assembly of different cases, i.e. modular battery or cases particularly provided with means for assembling}
<administratively transferred to [H01M 50/258](#)>
- D H01M 2/0247 {sealed to each other in a non-detachable manner}
<administratively transferred to [H01M 50/26](#)>

- D H01M 2/025 . . {for cells or batteries working under specific conditions such as high temperature, gas diffusion, external electrolyte circulation, external supply of reactants}
<administratively transferred to [H01M 50/138](#)>
- D H01M 2/0252 . . . {High-temperature cells or batteries, e.g. Na-S cells, Li-Cl₂ cells}
<administratively transferred to [H01M 50/138](#)>
- D H01M 2/0255 . . . {Hybrid cells or batteries (H01M 2/0222 takes precedence)}
<administratively transferred to [H01M 50/1385](#)>
- D H01M 2/0257 . . {characterised by the material}
<administratively transferred to [H01M 50/116](#)>
- D H01M 2/026 . . . {for small-sized cells or batteries, batteries or cells for portable equipment}
<administratively transferred to [H01M 50/116](#)>
- D H01M 2/0262 . . . {for large-sized cells or batteries, batteries or cells for traction or motive power or standby power}
<administratively transferred to [H01M 50/116](#)>
- D H01M 2/0265 . . . {for high-temperature cells}
<administratively transferred to [H01M 50/116](#)>
- D H01M 2/0267 . . . {of wrappings, outside coatings, jackets around completely closed cell elements}
<administratively transferred to [H01M 50/116](#)>
- D H01M 2/027 . . . {Casing material forming terminal of the cell}
<administratively transferred to [H01M 50/545](#)>
- D H01M 2/0272 {characterized by the internal coating or internal conductive layer}
<administratively transferred to [H01M 50/116](#) and [H01M 50/1243](#)>
- D H01M 2/0275 . . . {of flexible envelopes or bags around open cell elements}
<administratively transferred to [H01M 50/116](#)>
- D H01M 2/0277 . . . {Insulating material (H01M 2/029 takes precedence)}
<administratively transferred to [H01M 50/116](#)>
- D H01M 2/028 {being one layer}
<administratively transferred to [H01M 50/116](#)>
- D H01M 2/0282 {having particulate or reinforced material}
<administratively transferred to [H01M 50/116](#)>
- D H01M 2/0285 . . . {Conductive material}
<administratively transferred to [H01M 50/116](#)>
- D H01M 2/0287 . . . {comprising layers}
<administratively transferred to [H01M 50/124](#)>
- D H01M 2/029 {consisting only of insulating material}
<administratively transferred to [H01M 50/116](#)>
- D H01M 2/0292 {characterised by the external coating on the casing}
<administratively transferred to [H01M 50/124](#) and [H01M 50/1245](#)>
- D H01M 2/0295 . . . {Composite material consisting of mixed or dispersed phases}
<administratively transferred to [H01M 50/116](#)>
- D H01M 2002/0297 . . . {characterised by physical parameters}
<administratively transferred to [H01M 50/131](#)>

- D H01M 2/04
 - • Lids or covers
 - <administratively transferred to [H01M 50/147](#)>
- D H01M 2/0404
 - • • {for small-sized cells or batteries, e.g. miniature battery or power cells, batteries or cells for portable equipment (H01M 2/0443 takes precedence)}
 - <administratively transferred to [H01M 50/147](#)>
- D H01M 2/0408
 - • • • {Crimp-sealed cells or batteries; Cells or batteries with turned-over edges}
 - <administratively transferred to [H01M 50/166](#)>
- D H01M 2/0413
 - • • • • {provided with an intermediary sealing member between the crimped or curled edges (H01M 2/0417 takes precedence)}
 - <administratively transferred to [H01M 50/166](#) and [H01M 50/171](#)>
- D H01M 2/0417
 - • • • • {comprising an insulating cover provided with an axial bore for receiving a central current collector}
 - <administratively transferred to [H01M 50/154](#)>
- D H01M 2/0421
 - • • • • • {with an external conductive cover}
 - <administratively transferred to [H01M 50/154](#)>
- D H01M 2/0426
 - • • • {with a metallic cover of which the borders are soldered or welded with the case}
 - <administratively transferred to [H01M 50/169](#)>
- D H01M 2/043
 - • • {for large-sized cells or batteries, e.g. LIS batteries, traction or motive power type or standby power batteries (H01M 2/0443 takes precedence)}
 - <administratively transferred to [H01M 50/147](#)>
- D H01M 2/0434
 - • • • {Methods for assembling case and cover}
 - <administratively transferred to [H01M 50/166](#)>
- D H01M 2/0439
 - • • • • {without provisions for disassembling}
 - <administratively transferred to [H01M 50/166](#)>
- D H01M 2/0443
 - • • {for cells or batteries working under specific conditions such as high temperature, gas diffusion, external electrolyte circulation, external supply of reactants}
 - <administratively transferred to [H01M 50/1535](#)>
- D H01M 2/0447
 - • • • {High-temperature cells or batteries}
 - <administratively transferred to [H01M 50/1535](#)>
- D H01M 2/0452
 - • • • • {Hybrid cells or batteries}
 - <administratively transferred to [H01M 50/1537](#)>
- D H01M 2/0456
 - • • {characterised by the shape}
 - <administratively transferred to [H01M 50/148](#)>
- D H01M 2/046
 - • • • • {Disk-like lids for cylindrical batteries}
 - <administratively transferred to [H01M 50/152](#)>
- D H01M 2/0465
 - • • • • • {Button-cell lids}
 - <administratively transferred to [H01M 50/153](#)>
- D H01M 2/0469
 - • • • • {Lids for flat or sheet-like batteries}
 - <administratively transferred to [H01M 50/148](#)>
- D H01M 2/0473
 - • • • • {Lids for prismatic cells}
 - <administratively transferred to [H01M 50/15](#)>
- D H01M 2/0478
 - • • {characterised by the material}
 - <administratively transferred to [H01M 50/155](#)>

- D H01M 2/0482 {Insulating materials}
<administratively transferred to [H01M 50/155](#)>
- D H01M 2/0486 {Conducting materials}
<administratively transferred to [H01M 50/155](#)>
- D H01M 2/0491 {characterised by the coating}
<administratively transferred to [H01M 50/155](#)>
- D H01M 2/0495 {Conductive coating material}
<administratively transferred to [H01M 50/155](#)>
- D H01M 2/06 . . Arrangements for introducing electric connectors into or through cases
<administratively transferred to [H01M 50/172](#)>
- D H01M 2/065 . . . {using glass or ceramic sealing material}
<administratively transferred to [H01M 50/186](#) and [H01M 50/191](#)>
- D H01M 2/08 . . Sealing materials
<administratively transferred to [H01M 50/183](#)>
- D H01M 2/10 . Mountings; Suspension devices; Shock absorbers; Transport or carrying devices; Holders (structural combination of accumulators with charging apparatus H01M 10/46)
<administratively transferred to [H01M 50/20](#)>
- D H01M 2/1005 . . {Carrying devices}
<administratively transferred to [H01M 50/256](#)>
- D H01M 2/1011 . . . {using the terminals or connecting links}
<administratively transferred to [H01M 50/256](#)>
- D H01M 2/1016 . . {Cabinets, cases, fixing devices, adapters, racks or battery packs}
<administratively transferred to [H01M 50/20](#)>
- D H01M 2/1022 . . . {for miniature batteries or batteries for portable equipment (batteries in portable systems H01M 2220/30)}
<administratively transferred to [H01M 50/20](#)>
- D H01M 2/1027 {with the possibility of incorporating batteries of different sizes}
<administratively transferred to [H01M 50/267](#)>
- D H01M 2/1033 {providing adapters around the batteries}
<administratively transferred to [H01M 50/267](#)>
- D H01M 2/1038 {for button cells}
<administratively transferred to [H01M 50/216](#)>
- D H01M 2/1044 {forming a whole with or incorporated in or fixed to the electronic appliance}
<administratively transferred to [H01M 50/216](#)>
- D H01M 2/105 {for cells of cylindrical configuration}
<administratively transferred to [H01M 50/213](#)>
- D H01M 2/1055 {forming a whole with or incorporated in or fixed to the electronic appliance}
<administratively transferred to [H01M 50/213](#)>
- D H01M 2/1061 {for cells of prismatic configuration or for sheet-like batteries}
<administratively transferred to [H01M 50/209](#)>

- D H01M 2/1066 {forming a whole with or incorporated in or fixed to the electronic appliance}
<administratively transferred to [H01M 50/209](#)>
- D H01M 2/1072 . . . {for starting, lighting or ignition batteries; Vehicle traction batteries; Stationary or load leading batteries (batteries in stationary systems H01M 2220/10, batteries in motive systems H01M 2220/20)}
<administratively transferred to [H01M 50/20](#)>
- D H01M 2/1077 {Racks, groups of several batteries (H01M 2/1088 takes precedence)}
<administratively transferred to [H01M 50/20](#)>
- D H01M 2/1083 {Fixing on vehicles}
<administratively transferred to [H01M 50/20](#)>
- D H01M 2/1088 {for accumulators working at high temperature}
<administratively transferred to [H01M 50/20](#)>
- D H01M 2/1094 . . {Particular characteristics of materials used to isolate the battery from its environment, e.g. thermal insulation, corrosion resistance, pressure resistance, electrolyte leakage}
<administratively transferred to [H01M 50/24](#)>
- D H01M 2/12 . . Vent plugs or other mechanical arrangements for facilitating escape of gases
<administratively transferred to [H01M 50/30](#)>
- D H01M 2/1205 . . {Vent arrangements incorporated in vent plugs or multiplug systems detachable from the battery or cell}
<administratively transferred to [H01M 50/308](#)>
- D H01M 2/1211 . . . {Multiplug systems or arrangements; Plurality of plugs surrounded by a common cover}
<administratively transferred to [H01M 50/308](#)>
- D H01M 2/1217 {in the shape of a one-piece member}
<administratively transferred to [H01M 50/308](#)>
- D H01M 2/1223 . . {Vent arrangements of resealable design (H01M 2/1205, H01M 2/1247-H01M 2/1294 take precedence)}
<administratively transferred to [H01M 50/317](#)>
- D H01M 2/1229 {comprising a deformable, elastic or flexible valve member}
<administratively transferred to [H01M 50/325](#)>
- D H01M 2/1235 . . {Emergency or safety arrangements of non-resealable design (H01M 2/1205, H01M 2/1247-H01M 2/1294 take precedence)}
<administratively transferred to [H01M 50/342](#)>
- D H01M 2/1241 {in the form of rupturable membranes or weakened parts, e.g. pierced with the aid of a sharp member}
<administratively transferred to [H01M 50/3425](#)>
- D H01M 2/1247 . . {Explosion- or splash-preventing means contained in the head space of the battery, e.g. means floating on the electrolyte}
<administratively transferred to [H01M 50/383](#)>
- D H01M 2/1252 . . {comprising elongated, tortuous or labyrinth-shaped exhaust passages in the battery cover or case; Double cover vent systems}
<administratively transferred to [H01M 50/35](#)>
- D H01M 2/1258 . . {containing electrolyte neutralising or absorbing means}
<administratively transferred to [H01M 50/392](#)>

- D H01M 2/1264
- • {comprising gas-pervious parts or elements}
 - <administratively transferred to [H01M 50/394](#)>
- D H01M 2/127
- • • {as flame arrester or ignition preventing means}
 - <administratively transferred to [H01M 50/383](#) and [H01M 50/394](#)>
- D H01M 2/1276
- • {Spring-loaded vent valves}
 - <administratively transferred to [H01M 50/333](#)>
- D H01M 2/1282
- • {Thermally responsive or sensitive vent means}
 - <administratively transferred to [H01M 50/375](#)>
- D H01M 2/1288
- • {Film- or sheet-like elastic valve members optionally coated with non-drying glue}
 - <administratively transferred to [H01M 50/342](#)>
- D H01M 2/1294
- • {Slit, perforated or punctured elastic valve members}
 - <administratively transferred to [H01M 50/342](#)>
- D H01M 2/14
- Separators; Membranes; Diaphragms; Spacing elements
 - <administratively transferred to [H01M 50/40](#)>
- D H01M 2/145
- • {Manufacturing processes}
 - <administratively transferred to [H01M 50/403](#)>
- D H01M 2/16
- • characterised by the material
 - <administratively transferred to [H01M 50/409](#)>
- D H01M 2/1606
- • • {comprising fibrous material}
 - <administratively transferred to [H01M 50/44](#)>
- D H01M 2/1613
- • • • {Inorganic fibrous material}
 - <administratively transferred to [H01M 50/431](#) and [H01M 50/44](#)>
- D H01M 2/162
- • • • {Organic fibrous material}
 - <administratively transferred to [H01M 50/411](#) and [H01M 50/44](#)>
- D H01M 2/1626
- • • • • {Natural fibres, e.g. cotton, cellulose}
 - <administratively transferred to [H01M 50/4295](#) and [H01M 50/44](#)>
- D H01M 2/1633
- • • • {Mixtures of inorganic and organic fibres}
 - <administratively transferred to [H01M 50/446](#)>
- D H01M 2/164
- • • {comprising non-fibrous material (H01M 2/1606 takes precedence)}
 - <administratively transferred to [H01M 50/409](#)>
- D H01M 2/1646
- • • • {Inorganic non-fibrous material}
 - <administratively transferred to [H01M 50/431](#)>
- D H01M 2/1653
- • • • {Organic non-fibrous material}
 - <administratively transferred to [H01M 50/411](#)>
- D H01M 2/166
- • • • {Mixtures of inorganic and organic non-fibrous material}
 - <administratively transferred to [H01M 50/446](#)>
- D H01M 2/1666
- • • {comprising a non-fibrous layer and a fibrous layer superimposed on one another}
 - <administratively transferred to [H01M 50/449](#)>
- D H01M 2/1673
- • • {Electrode-separator combination}
 - <administratively transferred to [H01M 50/46](#)>

- D H01M 2/168
 - • • {with adhesive layers between electrodes and separators}
 - <administratively transferred to [H01M 50/461](#)>
- D H01M 2/1686
 - • • {Separators having two or more layers of either fibrous or non-fibrous materials}
 - <administratively transferred to [H01M 50/449](#)>
- D H01M 2/1693
 - • • {Wood}
 - <administratively transferred to [H01M 50/4295](#)>
- D H01M 2/18
 - • characterised by the shape
 - <administratively transferred to [H01M 50/463](#)>
- D H01M 2/185
 - • • {Separators made of one single microscopic fiber}
 - <administratively transferred to [H01M 50/463](#)>
- D H01M 2/20
 - Current conducting connections for cells
 - <administratively transferred to [H01M 50/50](#)>
- D H01M 2/202
 - • {Interconnectors for or interconnection of the terminals of adjacent or distinct batteries or cells}
 - <administratively transferred to [H01M 50/502](#)>
- D H01M 2/204
 - • • {of small-sized cells or batteries, e.g. miniature battery or power cells; batteries or cells for portable equipment}
 - <administratively transferred to [H01M 50/502](#)>
- D H01M 2/206
 - • • {of large-sized cells or batteries, e.g. starting, lighting or ignition [SLI] batteries, traction or motive power type or standby power batteries}
 - <administratively transferred to [H01M 50/502](#)>
- D H01M 2/208
 - • • {for cells or batteries working under specific conditions such as high temperature, gas diffusion, external electrolyte circulation, external supply of reactants}
 - <administratively transferred to [H01M 50/502](#)>
- D H01M 2/22
 - • Fixed connections, i.e. not intended for disconnection
 - <administratively transferred to [H01M 50/528](#)>
- D H01M 2/24
 - • • Intercell connections through partitions, e.g. in a battery case
 - <administratively transferred to [H01M 50/529](#)>
- D H01M 2/26
 - • • Electrode connections
 - <administratively transferred to [H01M 50/531](#)>
- D H01M 2/263
 - • • • {Electrode connections overlying wound or folded electrode stacks}
 - <administratively transferred to [H01M 50/538](#)>
- D H01M 2/266
 - • • • {Interconnections of several platelike electrodes in parallel, e.g. electrode pole straps or bridges}
 - <administratively transferred to [H01M 50/54](#)>
- D H01M 2/28
 - • • • for lead-acid accumulators
 - <administratively transferred to [H01M 50/541](#)>
- D H01M 2/30
 - • Terminals
 - <administratively transferred to [H01M 50/543](#)>
- D H01M 2/302
 - • • {Terminal post members on carbon electrodes; Machines or processes for applying said terminal post members, e.g. capping of carbon rods}
 - <administratively transferred to [H01M 50/543](#)>

- D H01M 2/305 . . . {Poles or terminals for starting, lighting or ignition [SLI] batteries, traction or motive power type or standby power batteries}
<administratively transferred to [H01M 50/543](#)>
- D H01M 2/307 {the poles being connected and passing through hollow metallic terminals, e.g. terminal bushings}
<administratively transferred to [H01M 50/561](#)>
- D H01M 2/32 . . . Methods or arrangements for affording protection against corrosion; Selection of materials therefor
<administratively transferred to [H01M 50/571](#)>
- D H01M 2/34 . . . with provision for preventing undesired use or discharge {, e.g. complete cut of current (safety devices H01M 2200/00)}
<administratively transferred to [H01M 50/572](#)>
- D H01M 2/341 . . . {Anti-theft provisions}
<administratively transferred to [H01M 50/576](#)>
- D H01M 2/342 . . . {Protection against polarity reversal}
<administratively transferred to [H01M 50/597](#)>
- D H01M 2/344 . . . {Guarantee labels or covers}
<administratively transferred to [H01M 50/598](#)>
- D H01M 2/345 . . . {in response to pressure}
<administratively transferred to [H01M 50/578](#)>
- D H01M 2/347 . . . {in response to shock}
<administratively transferred to [H01M 50/579](#)>
- D H01M 2/348 . . . {in response to temperature}
<administratively transferred to [H01M 50/581](#)>
- D H01M 2/36 . . . Arrangements for filling, topping-up or emptying cases with or of liquid, e.g. for filling with electrolytes, for washing-out
<administratively transferred to [H01M 50/60](#)>
- D H01M 2/361 . . . {Filling of small-sized cells or batteries, e.g. miniature battery or power cells, batteries or cells for portable equipment}
<administratively transferred to [H01M 50/60](#)>
- D H01M 2/362 . . . {Filling or topping up of large-sized cells or batteries, e.g. starting, lighting or ignition [SLI] batteries, traction or motive power type or standby power batteries}
<administratively transferred to [H01M 50/60](#)>
- D H01M 2/364 . . . {Removing or drainage of electrolyte; Cleaning battery or cell cases}
<administratively transferred to [H01M 50/691](#)>
- D H01M 2/365 . . . {means or methods for closing or sealing the liquid supply hole}
<administratively transferred to [H01M 50/636](#)>
- D H01M 2/367 . . . {with means for preventing spilling of liquid or electrolyte, e.g. when the battery is tilted or turned over}
<administratively transferred to [H01M 50/668](#)>
- D H01M 2/368 {by closing the vent passages with a valve}
<administratively transferred to [H01M 50/636](#)>
- D H01M 2/38 . . . Arrangements for moving electrolytes
<administratively transferred to [H01M 50/70](#)>

- D H01M 2/385
- {Electrolyte stirring by action of gases on or in the electrolyte}
 - <administratively transferred to [H01M 50/73](#)>
- D H01M 2/40
- with external circulating path (H01M 8/04 takes precedence)
 - <administratively transferred to [H01M 50/77](#)>
- U H01M 6/00 Primary cells; Manufacture thereof**
- NOTE
- In this group, primary cells are electrochemical generators in which the cell energy is present in chemical form and is not regenerated.
- U H01M 6/005
- {Devices for making primary cells}
- M H01M 6/02
- Details (~~of non-active parts H01M 2/00~~; of electrodes [H01M 4/00](#); *of non-active parts H01M 50/00*)
- U H01M 6/14
- Cells with non-aqueous electrolyte {(H01M 10/05 takes precedence)}
- U H01M 6/16
- with organic electrolyte (H01M 6/18, {H01M 10/05 take precedence})
- U H01M 6/162
- {characterised by the electrolyte}
- M H01M 6/164
- {by the solvent (~~organic electrolyte solvents H01M 2300/0028~~)}
- U H01M 6/18
- with solid electrolyte
- M H01M 6/181
- {with polymeric electrolytes (~~organic polymers electrolytes H01M 2300/0082~~)}
- M H01M 6/182
- {with halogenide as solid electrolyte (~~halide solid electrolytes H01M 2300/008~~)}
- M H01M 6/185
- {with oxides, hydroxides or oxysalts as solid electrolytes (~~oxides solid electrolyte H01M 2300/0071~~)}
- M H01M 6/187
- {Solid electrolyte characterised by the form (~~layered solid electrolytes H01M 2300/0094~~)}
- C H01M 6/50
- Methods or arrangements for servicing or maintenance, e.g. maintaining operating temperature {(~~cells or batteries combined with safety devices H01M 2200/00~~ *constructional details of current conducting connections for detecting conditions inside cells or batteries, e.g. of voltage sensing terminals H01M 50/569*)}
- WARNING**
- Group H01M 6/50 is impacted by reclassification into group H01M 50/569. Groups H01M 6/50 and H01M 50/569 should be considered in order to perform a complete search.*
- C H01M 6/5044
- {Cells or batteries structurally combined with cell condition indicating means (~~H01M 2/34 takes precedence~~)}
- WARNING**
- Group H01M 6/5044 is incomplete pending reclassification of documents from group H01M 50/572. Group H01M 6/5044 is also impacted by reclassification into group H01M 50/569. Groups H01M 50/572, H01M 6/5044, and H01M 50/569 should be considered in order to perform a complete search.*
- C H01M 6/505
- {Cells combined with indicating means for ~~externally visualisation~~ *external visualization* of the condition, e.g. by change of colour or of light intensity}
- WARNING**
- Group H01M 6/505 is impacted by reclassification into group H01M 50/569.*

Groups H01M 6/505 and H01M 50/569 should be considered in order to perform a complete search.

- C H01M 6/5055 . . . {End of discharge indicated by a voltage step}

WARNING

Group H01M 6/5055 is impacted by reclassification into group H01M 50/569.

Groups H01M 6/5055 and H01M 50/569 should be considered in order to perform a complete search.

- C H01M 6/5061 . . . {cells Cells combined with sound indicating means}

WARNING

Group H01M 6/5061 is impacted by reclassification into group H01M 50/569.

Groups H01M 6/5061 and H01M 50/569 should be considered in order to perform a complete search.

Project: MP0497 (H01M)

- U H01M 8/00 Fuel cells; Manufacture thereof**

NOTE

Fuel cells are electrochemical generators wherein the reactants are supplied from outside

- M H01M 8/04 . Auxiliary arrangements, e.g. for control of pressure or for circulation of fluids

NOTE

In this group, multi-aspect classification is applied, so that subject matter characterised by aspects covered by more than one of its subgroups should be classified in each of those subgroups.

Project: RP0695 (H01M)

- U H01M 10/00 Secondary cells; Manufacture thereof**

NOTE

Secondary cells are accumulators receiving and supplying electrical energy by means of reversible electrochemical reactions.

- M H01M 10/02 . Details (of non-active parts H01M 2/00; of electrodes H01M 4/00; of non-active parts H01M 50/00)

- U H01M 10/42 . Methods or arrangements for servicing or maintenance of secondary cells or secondary half-cells (H01M 10/60 takes precedence)

- C H01M 10/48 . . Accumulators combined with arrangements for measuring, testing or indicating condition, e.g. level or density of the electrolyte (constructional details of current conducting connections for detecting conditions inside cells or batteries, e.g. of voltage sensing terminals H01M 50/569)

WARNING

Group H01M 10/48 is impacted by reclassification into group H01M 50/569. Groups H01M 10/48 and H01M 50/569 should be considered in order to perform a complete search.

- C H01M 10/482 . . . {for several batteries or cells simultaneously or sequentially}

WARNING

Group H01M 10/482 is impacted by reclassification into group H01M 50/569.

Groups H01M 10/482 and H01M 50/569 should be considered in order to perform a complete search.

- C H01M 10/484 . . . {for measuring electrolyte level, electrolyte density or electrolyte conductivity}

WARNING

Group H01M 10/484 is impacted by reclassification into group H01M 50/569.

Groups H01M 10/484 and H01M 50/569 should be considered in order to perform a complete search.

- C H01M 10/486 . . . {for measuring temperature}

WARNING

Group H01M 10/486 is impacted by reclassification into group H01M 50/569.

Groups H01M 10/486 and H01M 50/569 should be considered in order to perform a complete search.

- C H01M 10/488 . . . {Cells or batteries combined with indicating means for **externally visualisation** *external visualization* of the condition, e.g. by change of colour or of light **intensity density**}

WARNING

Group H01M 10/488 is impacted by reclassification into group H01M 50/569.

Groups H01M 10/488 and H01M 50/569 should be considered in order to perform a complete search.

- H01M 10/52 . . . Removing gases inside the secondary cell, e.g. by absorption (vent plugs or other mechanical arrangements for facilitating escape of gases **H01M 2/42** *H01M 50/30*)

- U H01M 10/60 . Heating or cooling; Temperature control

- U H01M 10/63 . . . Control systems (measurement of temperature [H01M 10/486](#); charging or discharging in response to temperature [H01M 10/443](#))

- U H01M 10/635 . . . based on ambient temperature

- M H01M 10/637 . . . characterised by the use of reversible temperature-sensitive devices, e.g. NTC, PTC or bimetal devices; characterised by control of the internal current flowing through the cells, e.g. by switching (**H01M 2/34** *takes precedence means for preventing undesired use or discharge H01M 50/572*)

- U H01M 12/00 Hybrid cells; Manufacture thereof (hybrid capacitors [H01G 11/00](#))**

NOTES

1. This group does not cover hybrid cells comprising capacitor electrodes and battery electrodes, which are covered by group [H01G 11/00](#)

2. In this group, hybrid cells are electrochemical generators having two different types of half-cells, the half-cell being an electrode-electrolyte combination of either a primary, a secondary or a fuel cell.

WARNING

Group [H01M 12/00](#) is impacted by reclassification into group [H01G 11/00](#) – [H01G 11/86](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- M H01M 12/02 . Details (**of non-active parts H01M 2/00**; of electrodes [H01M 4/00](#); *of non-active parts H01M 50/00*)

- N H01M 50/00** **Constructional details or processes of manufacture of the non-active parts of electrochemical cells other than fuel cells, e.g. hybrid cells**
- Q H01M 50/10** • Primary casings, jackets or wrappings of a single cell or a single battery
WARNING
 Group [H01M 50/10](#) is impacted by reclassification into groups [H01M 50/102](#), [H01M 50/103](#), [H01M 50/105](#), [H01M 50/107](#), [H01M 50/109](#), [H01M 50/11](#), [H01M 50/14](#), [H01M 50/141](#), [H01M 50/143](#), and [H01M 50/145](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/102** • • characterised by their shape or physical structure
WARNING
 Groups [H01M 50/102](#), [H01M 50/103](#), [H01M 50/105](#), [H01M 50/107](#), [H01M 50/109](#), and [H01M 50/11](#) are incomplete pending reclassification of documents from group [H01M 50/10](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/103** • • • prismatic or rectangular ([H01M 50/109](#), [H01M 50/11](#) take precedence)
- N H01M 50/105** • • • Pouches or flexible bags
- N H01M 50/107** • • • having curved cross-section, e.g. round or elliptic ([H01M 50/103](#), [H01M 50/109](#), [H01M 50/11](#) take precedence)
- N H01M 50/109** • • • of button or coin shape
- N H01M 50/11** • • • having a structure in the form of a chip
- Q H01M 50/112** • • • Monobloc comprising multiple compartments
WARNING
 Group [H01M 50/112](#) is impacted by reclassification into group [H01M 50/114](#).
 Groups [H01M 50/112](#) and [H01M 50/114](#) should be considered in order to perform a complete search.
- N H01M 50/114** • • • specially adapted for lead-acid cells
WARNING
 Group [H01M 50/114](#) is incomplete pending reclassification of documents from group [H01M 50/112](#).
 Groups [H01M 50/112](#) and [H01M 50/114](#) should be considered in order to perform a complete search.
- Q H01M 50/116** • • characterised by the material
WARNING
 Group [H01M 50/116](#) is impacted by reclassification into groups [H01M 50/117](#), [H01M 50/119](#), [H01M 50/121](#), [H01M 50/122](#), [H01M 50/124](#), [H01M 50/126](#), [H01M 50/128](#), [H01M 50/129](#), [H01M 50/131](#), [H01M 50/133](#), [H01M 50/134](#), [H01M 50/136](#), [H01M 50/14](#), [H01M 50/141](#), [H01M 50/143](#), and [H01M 50/145](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/117** • • • Inorganic material
WARNING
 Groups [H01M 50/117](#) and [H01M 50/119](#) are incomplete pending reclassification of documents from group [H01M 50/116](#).
 Groups [H01M 50/116](#), [H01M 50/117](#), and [H01M 50/119](#) should be considered in order to perform a complete search.

- N H01M 50/119 Metals
- N H01M 50/121 Organic material
WARNING
 Group [H01M 50/121](#) is incomplete pending reclassification of documents from group [H01M 50/116](#).
 Groups [H01M 50/116](#) and [H01M 50/121](#) should be considered in order to perform a complete search.
- N H01M 50/122 Composite material consisting of a mixture of organic and inorganic materials
WARNING
 Group [H01M 50/122](#) is incomplete pending reclassification of documents from group [H01M 50/116](#).
 Groups [H01M 50/116](#) and [H01M 50/122](#) should be considered in order to perform a complete search.
- N H01M 50/124 having a layered structure
WARNING
 Groups [H01M 50/124](#), [H01M 50/126](#), [H01M 50/128](#), and [H01M 50/129](#) are incomplete pending reclassification of documents from group [H01M 50/116](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/1243 {characterised by the internal coating on the casing}
- N H01M 50/1245 {characterised by the external coating on the casing}
- N H01M 50/126 comprising three or more layers
- N H01M 50/128 with two or more layers of only inorganic material
- N H01M 50/129 with two or more layers of only organic material
- N H01M 50/131 characterised by physical properties, e.g. gas-permeability or size
WARNING
 Groups [H01M 50/131](#) - [H01M 50/136](#) are incomplete pending reclassification of documents from group [H01M 50/116](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/133 Thickness
- N H01M 50/134 Hardness
- N H01M 50/136 Flexibility or foldability
- N H01M 50/138 adapted for specific cells, e.g. electrochemical cells operating at high temperature
- N H01M 50/1385 {Hybrid cells}
- N H01M 50/14 for protecting against damage caused by external factors
WARNING
 Groups [H01M 50/14](#) - [H01M 50/145](#) are incomplete pending reclassification of documents from groups [H01M 50/10](#) and [H01M 50/116](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/141 for protecting against humidity
- N H01M 50/143 Fireproof; Explosion-proof
- N H01M 50/145 for protecting against corrosion

- Q H01M 50/147
- • Lids or covers
- WARNING
Group [H01M 50/147](#) is impacted by reclassification into groups [H01M 50/591](#) and [H01M 50/593](#).
Groups [H01M 50/147](#), [H01M 50/591](#), and [H01M 50/593](#) should be considered in order to perform a complete search.
- Q H01M 50/148
- • • characterised by their shape
- WARNING
Group [H01M 50/148](#) is impacted by reclassification into groups [H01M 50/15](#), [H01M 50/152](#), and [H01M 50/153](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/15
- • • • for prismatic or rectangular cells ([H01M 50/153](#) takes precedence)
- WARNING
Group [H01M 50/15](#) is incomplete pending reclassification of documents from group [H01M 50/148](#).
Groups [H01M 50/148](#) and [H01M 50/15](#) should be considered in order to perform a complete search.
- N H01M 50/152
- • • • for cells having curved cross-section, e.g. round or elliptic ([H01M 50/15](#), [H01M 50/153](#) take precedence)
- WARNING
Group [H01M 50/152](#) is incomplete pending reclassification of documents from group [H01M 50/148](#).
Groups [H01M 50/148](#) and [H01M 50/152](#) should be considered in order to perform a complete search.
- N H01M 50/153
- • • • for button or coin cells
- WARNING
Group [H01M 50/153](#) is incomplete pending reclassification of documents from group [H01M 50/148](#).
Groups [H01M 50/148](#) and [H01M 50/153](#) should be considered in order to perform a complete search.
- N H01M 50/1535
- • • • {adapted for specific cells, e.g. electrochemical cells operating at high temperature}
- N H01M 50/1537
- • • • • {for hybrid cells}
- N H01M 50/154
- • • • {Lid or cover comprising an axial bore for receiving a central current collector}
- Q H01M 50/155
- • • characterised by the material
- WARNING
Group [H01M 50/155](#) is impacted by reclassification into groups [H01M 50/157](#), [H01M 50/159](#), [H01M 50/16](#), [H01M 50/162](#), [H01M 50/164](#), [H01M 50/591](#), and [H01M 50/593](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/157
- • • • Inorganic material
- WARNING
Groups [H01M 50/157](#) and [H01M 50/159](#) are incomplete pending reclassification of documents from group [H01M 50/155](#).

Groups [H01M 50/155](#), [H01M 50/157](#), and [H01M 50/159](#) should be considered in order to perform a complete search.

N H01M 50/159

- • • • Metals

N H01M 50/16

- • • Organic material

WARNING

Group [H01M 50/16](#) is incomplete pending reclassification of documents from group [H01M 50/155](#).

Groups [H01M 50/155](#) and [H01M 50/16](#) should be considered in order to perform a complete search.

N H01M 50/162

- • • Composite material consisting of a mixture of organic and inorganic materials

WARNING

Group [H01M 50/162](#) is incomplete pending reclassification of documents from group [H01M 50/155](#).

Groups [H01M 50/155](#) and [H01M 50/162](#) should be considered in order to perform a complete search.

N H01M 50/164

- • • having a layered structure

WARNING

Group [H01M 50/164](#) is incomplete pending reclassification of documents from group [H01M 50/155](#).

Groups [H01M 50/155](#) and [H01M 50/164](#) should be considered in order to perform a complete search.

Q H01M 50/166

- • characterised by the methods of assembling casings with lids

WARNING

Group [H01M 50/166](#) is impacted by reclassification into groups [H01M 50/167](#), [H01M 50/169](#), and [H01M 50/171](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H01M 50/167

- • • by crimping

WARNING

Group [H01M 50/167](#) is incomplete pending reclassification of documents from group [H01M 50/166](#).

Groups [H01M 50/166](#) and [H01M 50/167](#) should be considered in order to perform a complete search.

N H01M 50/169

- • • by welding, brazing or soldering

WARNING

Group [H01M 50/169](#) is incomplete pending reclassification of documents from group [H01M 50/166](#).

Groups [H01M 50/166](#) and [H01M 50/169](#) should be considered in order to perform a complete search.

N H01M 50/171

- • • using adhesives or sealing agents

WARNING

Group [H01M 50/171](#) is incomplete pending reclassification of documents from group [H01M 50/166](#).

Groups [H01M 50/166](#) and [H01M 50/171](#) should be considered in order to perform a complete search.

- Q H01M 50/172
- • Arrangements of electric connectors penetrating the casing
- WARNING
Group [H01M 50/172](#) is impacted by reclassification into groups [H01M 50/174](#), [H01M 50/176](#), [H01M 50/178](#), [H01M 50/179](#), and [H01M 50/181](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/174
- • • adapted for the shape of the cells
- WARNING
Groups [H01M 50/174](#), [H01M 50/176](#), [H01M 50/178](#), [H01M 50/179](#), and [H01M 50/181](#) are incomplete pending reclassification of documents from group [H01M 50/172](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/176
- • • • for prismatic or rectangular cells ([H01M 50/181](#) takes precedence)
- N H01M 50/178
- • • • for pouch or flexible bag cells
- N H01M 50/179
- • • • for cells having curved cross-section, e.g. round or elliptic ([H01M 50/176](#), [H01M 50/181](#) take precedence)
- N H01M 50/181
- • • • for button or coin cells
- N H01M 50/182
- • • • {for cells with a collector centrally disposed in the active mass, e.g. Leclanché cells}
- Q H01M 50/183
- • Sealing members
- WARNING
Group [H01M 50/183](#) is impacted by reclassification into groups [H01M 50/184](#), [H01M 50/186](#), [H01M 50/188](#), [H01M 50/19](#), [H01M 50/191](#), [H01M 50/193](#), [H01M 50/195](#), [H01M 50/197](#), and [H01M 50/198](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/184
- • • characterised by their shape or structure
- WARNING
Group [H01M 50/184](#) is incomplete pending reclassification of documents from group [H01M 50/183](#).
Groups [H01M 50/183](#) and [H01M 50/184](#) should be considered in order to perform a complete search.
- N H01M 50/186
- • • characterised by the disposition of the sealing members
- WARNING
Groups [H01M 50/186](#) and [H01M 50/188](#) are incomplete pending reclassification of documents from group [H01M 50/183](#).
Groups [H01M 50/183](#), [H01M 50/186](#), and [H01M 50/188](#) should be considered in order to perform a complete search.
- N H01M 50/188
- • • • the sealing members being arranged between the lid and terminal
- N H01M 50/19
- • • characterised by the material
- WARNING
Groups [H01M 50/19](#) - [H01M 50/198](#) are incomplete pending reclassification of documents from group [H01M 50/183](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/191
- • • • Inorganic material

- N H01M 50/193 Organic material
- N H01M 50/195 Composite material consisting of a mixture of organic and inorganic materials
- N H01M 50/197 having a layered structure
- N H01M 50/198 characterised by physical properties, e.g. adhesiveness or hardness
- Q H01M 50/20 . Mountings; Secondary casings or frames; Racks, modules or packs; Suspension devices; Shock absorbers; Transport or carrying devices; Holders (structural combination of accumulators with charging apparatus [H01M 10/46](#))

WARNING

Group [H01M 50/20](#) is impacted by reclassification into groups [H01M 50/202](#), [H01M 50/204](#), [H01M 50/207](#), [H01M 50/209](#), [H01M 50/211](#), [H01M 50/213](#), [H01M 50/216](#), [H01M 50/218](#), [H01M 50/22](#), [H01M 50/222](#), [H01M 50/224](#), [H01M 50/227](#), [H01M 50/229](#), [H01M 50/231](#), [H01M 50/233](#), [H01M 50/236](#), [H01M 50/238](#), [H01M 50/24](#), [H01M 50/242](#), [H01M 50/244](#), [H01M 50/247](#), [H01M 50/249](#), [H01M 50/251](#), [H01M 50/253](#), [H01M 50/262](#), [H01M 50/264](#), [H01M 50/267](#), [H01M 50/269](#), [H01M 50/271](#), [H01M 50/273](#), [H01M 50/276](#), [H01M 50/278](#), [H01M 50/28](#), [H01M 50/282](#), [H01M 50/284](#), [H01M 50/287](#), [H01M 50/289](#), [H01M 50/291](#), [H01M 50/293](#), [H01M 50/296](#), [H01M 50/298](#), and [B60L 50/64](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H01M 50/202 . . Casings or frames around the primary casing of a single cell or a single battery

WARNING

Group [H01M 50/202](#) is incomplete pending reclassification of documents from group [H01M 50/20](#).

Groups [H01M 50/20](#) and [H01M 50/202](#) should be considered in order to perform a complete search.

- N H01M 50/204 . . Racks, modules or packs for multiple batteries or multiple cells

WARNING

Group [H01M 50/204](#) is incomplete pending reclassification of documents from group [H01M 50/20](#).

Groups [H01M 50/20](#) and [H01M 50/204](#) should be considered in order to perform a complete search.

- N H01M 50/207 . . . characterised by their shape

WARNING

Group [H01M 50/207](#) is incomplete pending reclassification of documents from group [H01M 50/20](#).

Groups [H01M 50/20](#) and [H01M 50/207](#) should be considered in order to perform a complete search.

- Q H01M 50/209 adapted for prismatic or rectangular cells ([H01M 50/216](#) takes precedence)

WARNING

Group [H01M 50/209](#) is incomplete pending reclassification of documents from group [H01M 50/20](#).

Group [H01M 50/209](#) is also impacted by reclassification into group [H01M 50/211](#).

Groups [H01M 50/20](#), [H01M 50/209](#), and [H01M 50/211](#) should be considered in order to perform a complete search.

- N H01M 50/211 adapted for pouch cells
WARNING
 Group [H01M 50/211](#) is incomplete pending reclassification of documents from groups [H01M 50/20](#) and [H01M 50/209](#).
 Groups [H01M 50/20](#), [H01M 50/209](#), and [H01M 50/211](#) should be considered in order to perform a complete search.
- N H01M 50/213 adapted for cells having curved cross-section, e.g. round or elliptic ([H01M 50/209](#), [H01M 50/216](#) take precedence)
WARNING
 Group [H01M 50/213](#) is incomplete pending reclassification of documents from group [H01M 50/20](#).
 Groups [H01M 50/20](#) and [H01M 50/213](#) should be considered in order to perform a complete search.
- N H01M 50/216 adapted for button or coin cells
WARNING
 Group [H01M 50/216](#) is incomplete pending reclassification of documents from group [H01M 50/20](#).
 Groups [H01M 50/20](#) and [H01M 50/216](#) should be considered in order to perform a complete search.
- N H01M 50/218 . . characterised by the material
WARNING
 Groups [H01M 50/218](#) - [H01M 50/231](#) are incomplete pending reclassification of documents from group [H01M 50/20](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/22 of the casings or racks
- N H01M 50/222 Inorganic material
- N H01M 50/224 Metals
- N H01M 50/227 Organic material
- N H01M 50/229 Composite material consisting of a mixture of organic and inorganic materials
- N H01M 50/231 having a layered structure
- N H01M 50/233 . . characterised by physical properties of casings or racks, e.g. dimensions
WARNING
 Groups [H01M 50/233](#) - [H01M 50/242](#) are incomplete pending reclassification of documents from group [H01M 50/20](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/236 Hardness
- N H01M 50/238 Flexibility or foldability
- N H01M 50/24 adapted for protecting batteries from their environment, e.g. from corrosion (thermal insulation [H01M 10/658](#))
- N H01M 50/242 adapted for protecting batteries against vibrations, collision impact or swelling

- N H01M 50/244
- Secondary casings; Racks; Suspension devices; Carrying devices; Holders characterised by their mounting method
- WARNING
Group [H01M 50/244](#) is incomplete pending reclassification of documents from group [H01M 50/20](#).
Groups [H01M 50/20](#) and [H01M 50/244](#) should be considered in order to perform a complete search.
- N H01M 50/247
- specially adapted for portable devices, e.g. mobile phones, computers, hand tools or pacemakers
- WARNING
Group [H01M 50/247](#) is incomplete pending reclassification of documents from group [H01M 50/20](#).
Groups [H01M 50/20](#) and [H01M 50/247](#) should be considered in order to perform a complete search.
- N H01M 50/249
- specially adapted for aircraft or vehicles, e.g. cars or trains (constructional details of batteries specially adapted for electric vehicles [B60L 50/64](#))
- WARNING
Group [H01M 50/249](#) is incomplete pending reclassification of documents from group [H01M 50/20](#).
Groups [H01M 50/20](#) and [H01M 50/249](#) should be considered in order to perform a complete search.
- N H01M 50/251
- specially adapted for stationary devices, e.g. power plant buffering or backup power supplies
- WARNING
Group [H01M 50/251](#) is incomplete pending reclassification of documents from group [H01M 50/20](#).
Groups [H01M 50/20](#) and [H01M 50/251](#) should be considered in order to perform a complete search.
- N H01M 50/253
- adapted for specific cells, e.g. electrochemical cells operating at high temperature
- WARNING
Group [H01M 50/253](#) is incomplete pending reclassification of documents from group [H01M 50/20](#).
Groups [H01M 50/20](#) and [H01M 50/253](#) should be considered in order to perform a complete search.
- N H01M 50/256
- Carrying devices, e.g. belts
- N H01M 50/258
- Modular batteries; Casings provided with means for assembling
- N H01M 50/26
- Assemblies sealed to each other in a non-detachable manner
- N H01M 50/262
- with fastening means, e.g. locks
- WARNING
Groups [H01M 50/262](#) and [H01M 50/264](#) are incomplete pending reclassification of documents from group [H01M 50/20](#).
Groups [H01M 50/20](#), [H01M 50/262](#), and [H01M 50/264](#) should be considered in order to perform a complete search.
- N H01M 50/264
- for cells or batteries, e.g. straps, tie rods or peripheral frames

- N H01M 50/267
- • *having means for adapting to batteries or cells of different types or different sizes*
- WARNING
Group [H01M 50/267](#) is incomplete pending reclassification of documents from group [H01M 50/20](#).
Groups [H01M 50/20](#) and [H01M 50/267](#) should be considered in order to perform a complete search.
- N H01M 50/269
- • *Mechanical means for varying the arrangement of batteries or cells for different uses, e.g. for changing the number of batteries or for switching between series and parallel wiring (methods or arrangements for servicing or maintenance [H01M 6/50](#), [H01M 10/42](#))*
- WARNING
Group [H01M 50/269](#) is incomplete pending reclassification of documents from group [H01M 50/20](#).
Groups [H01M 50/20](#) and [H01M 50/269](#) should be considered in order to perform a complete search.
- N H01M 50/271
- • *Lids or covers for the racks or secondary casings*
- WARNING
Groups [H01M 50/271](#) - [H01M 50/282](#) are incomplete pending reclassification of documents from group [H01M 50/20](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/273
- • • *characterised by the material*
- N H01M 50/276
- • • • *Inorganic material*
- N H01M 50/278
- • • • *Organic material*
- N H01M 50/28
- • • • *Composite material consisting of a mixture of organic and inorganic materials*
- N H01M 50/282
- • • • *having a layered structure*
- N H01M 50/284
- • *with incorporated circuit boards, e.g. printed circuit boards [PCB]*
- WARNING
Groups [H01M 50/284](#) and [H01M 50/287](#) are incomplete pending reclassification of documents from group [H01M 50/20](#).
Groups [H01M 50/20](#), [H01M 50/284](#), and [H01M 50/287](#) should be considered in order to perform a complete search.
- N H01M 50/287
- • • *Fixing of circuit boards to lids or covers*
- N H01M 50/289
- • *characterised by spacing elements or positioning means within frames, racks or packs (spacing elements inside cells other than separators, membranes or diaphragms [H01M 50/471](#))*
- WARNING
Groups [H01M 50/289](#) - [H01M 50/293](#) are incomplete pending reclassification of documents from group [H01M 50/20](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/291
- • • *characterised by their shape*
- N H01M 50/293
- • • *characterised by the material*

- N H01M 50/296
- • *characterised by terminals of battery packs (terminals of batteries [H01M 50/543](#))*
- WARNING
Group [H01M 50/296](#) is incomplete pending reclassification of documents from groups [H01M 50/20](#) and [H01M 50/543](#).
Groups [H01M 50/20](#), [H01M 50/543](#), and [H01M 50/296](#) should be considered in order to perform a complete search.
- N H01M 50/298
- • *characterised by the wiring of battery packs*
- WARNING
Group [H01M 50/298](#) is incomplete pending reclassification of documents from group [H01M 50/20](#).
Groups [H01M 50/20](#) and [H01M 50/298](#) should be considered in order to perform a complete search.
- N H01M 50/30
- *Arrangements for facilitating escape of gases*
- N H01M 50/308
- • *Detachable arrangements, e.g. detachable vent plugs or plug systems*
- N H01M 50/317
- • *Re-sealable arrangements*
- N H01M 50/325
- • • *comprising deformable valve members, e.g. elastic or flexible valve members*
- N H01M 50/333
- • • *Spring-loaded vent valves*
- N H01M 50/342
- • *Non-re-sealable arrangements*
- N H01M 50/3425
- • • *{in the form of rupturable membranes or weakened parts, e.g. pierced with the aid of a sharp member}*
- Q H01M 50/35
- • *Gas exhaust passages comprising elongated, tortuous or labyrinth-shaped exhaust passages*
- WARNING
Group [H01M 50/35](#) is impacted by reclassification into groups [H01M 50/358](#) and [H01M 50/367](#).
Groups [H01M 50/35](#), [H01M 50/358](#), and [H01M 50/367](#) should be considered in order to perform a complete search.
- N H01M 50/358
- • • *External gas exhaust passages located on the battery cover or case*
- WARNING
Group [H01M 50/358](#) is incomplete pending reclassification of documents from group [H01M 50/35](#).
Groups [H01M 50/35](#) and [H01M 50/358](#) should be considered in order to perform a complete search.
- N H01M 50/367
- • • *Internal gas exhaust passages forming part of the battery cover or case; Double cover vent systems*
- WARNING
Group [H01M 50/367](#) is incomplete pending reclassification of documents from group [H01M 50/35](#).
Groups [H01M 50/35](#) and [H01M 50/367](#) should be considered in order to perform a complete search.
- N H01M 50/375
- • *Vent means sensitive to or responsive to temperature*
- N H01M 50/383
- • *Flame arresting or ignition-preventing means*
- N H01M 50/392
- • *with means for neutralising or absorbing electrolyte; with means for preventing leakage of electrolyte through vent holes*
- N H01M 50/394
- • *{Gas-pervious parts or elements}*

- Q H01M 50/40
- Separators; Membranes; Diaphragms; Spacing elements inside cells
- WARNING
Group [H01M 50/40](#) is impacted by reclassification into groups [H01M 50/471](#), [H01M 50/474](#), [H01M 50/477](#), [H01M 50/48](#), [H01M 50/483](#), [H01M 50/486](#), [H01M 50/489](#), [H01M 50/491](#), [H01M 50/494](#), and [H01M 50/497](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q H01M 50/403
- • Manufacturing processes of separators, membranes or diaphragms
- WARNING
Group [H01M 50/403](#) is impacted by reclassification into group [H01M 50/406](#).
Groups [H01M 50/403](#) and [H01M 50/406](#) should be considered in order to perform a complete search.
- N H01M 50/406
- • • Moulding; Embossing; Cutting
- WARNING
Group [H01M 50/406](#) is incomplete pending reclassification of documents from group [H01M 50/403](#).
Groups [H01M 50/403](#) and [H01M 50/406](#) should be considered in order to perform a complete search.
- Q H01M 50/409
- • Separators, membranes or diaphragms characterised by the material
- WARNING
Group [H01M 50/409](#) is impacted by reclassification into groups [H01M 50/443](#), [H01M 50/489](#), [H01M 50/491](#), [H01M 50/494](#), and [H01M 50/497](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q H01M 50/411
- • • Organic material
- WARNING
Group [H01M 50/411](#) is impacted by reclassification into groups [H01M 50/414](#), [H01M 50/417](#), [H01M 50/42](#), [H01M 50/423](#), [H01M 50/426](#), [H01M 50/429](#), [H01M 50/489](#), [H01M 50/491](#), [H01M 50/494](#), and [H01M 50/497](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/414
- • • • Synthetic resins, e.g. thermoplastics or thermosetting resins
- WARNING
Groups [H01M 50/414](#) - [H01M 50/426](#) are incomplete pending reclassification of documents from group [H01M 50/411](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/417
- • • • • Polyolefins
- N H01M 50/42
- • • • • Acrylic resins
- N H01M 50/423
- • • • • Polyamide resins
- N H01M 50/426
- • • • • Fluorocarbon polymers
- N H01M 50/429
- • • • • Natural polymers
- WARNING
Group [H01M 50/429](#) is incomplete pending reclassification of documents from group [H01M 50/411](#).

Groups [H01M 50/411](#) and [H01M 50/429](#) should be considered in order to perform a complete search.

N H01M 50/4295 {Natural cotton, cellulose or wood}

Q H01M 50/431 . . . Inorganic material

WARNING

Group [H01M 50/431](#) is impacted by reclassification into groups [H01M 50/434](#), [H01M 50/437](#), [H01M 50/489](#), [H01M 50/491](#), [H01M 50/494](#), and [H01M 50/497](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H01M 50/434 Ceramics

WARNING

Groups [H01M 50/434](#) and [H01M 50/437](#) are incomplete pending reclassification of documents from group [H01M 50/431](#).

Groups [H01M 50/431](#), [H01M 50/434](#), and [H01M 50/437](#) should be considered in order to perform a complete search.

N H01M 50/437 Glass

N H01M 50/44 . . . Fibrous material

N H01M 50/443 . . . Particulate material

WARNING

Group [H01M 50/443](#) is incomplete pending reclassification of documents from group [H01M 50/409](#).

Groups [H01M 50/409](#) and [H01M 50/443](#) should be considered in order to perform a complete search.

N H01M 50/446 . . . Composite material consisting of a mixture of organic and inorganic materials

Q H01M 50/449 . . . having a layered structure

WARNING

Group [H01M 50/449](#) is impacted by reclassification into groups [H01M 50/451](#), [H01M 50/454](#), [H01M 50/457](#), [H01M 50/489](#), [H01M 50/491](#), [H01M 50/494](#), and [H01M 50/497](#).

All groups listed in this Warning should be considered in order to perform a complete search.

N H01M 50/451 comprising layers of only organic material and layers containing inorganic material

WARNING

Group [H01M 50/451](#) is incomplete pending reclassification of documents from group [H01M 50/449](#).

Groups [H01M 50/449](#) and [H01M 50/451](#) should be considered in order to perform a complete search.

N H01M 50/454 comprising a non-fibrous layer and a fibrous layer superimposed on one another

WARNING

Group [H01M 50/454](#) is incomplete pending reclassification of documents from group [H01M 50/449](#).

Groups [H01M 50/449](#) and [H01M 50/454](#) should be considered in order to perform a complete search.

- N H01M 50/457
- • • comprising three or more layers
- WARNING
Group [H01M 50/457](#) is incomplete pending reclassification of documents from group [H01M 50/449](#).
Groups [H01M 50/449](#) and [H01M 50/457](#) should be considered in order to perform a complete search.
- N H01M 50/46
- • Separators, membranes or diaphragms characterised by their combination with electrodes
- N H01M 50/461
- • • {with adhesive layers between electrodes and separators}
- Q H01M 50/463
- • Separators, membranes or diaphragms characterised by their shape
- WARNING
Group [H01M 50/463](#) is impacted by reclassification into groups [H01M 50/466](#) and [H01M 50/469](#).
Groups [H01M 50/463](#), [H01M 50/466](#), and [H01M 50/469](#) should be considered in order to perform a complete search.
- N H01M 50/466
- • • U-shaped, bag-shaped or folded
- WARNING
Group [H01M 50/466](#) is incomplete pending reclassification of documents from group [H01M 50/463](#).
Groups [H01M 50/463](#) and [H01M 50/466](#) should be considered in order to perform a complete search.
- N H01M 50/469
- • • tubular or cylindrical
- WARNING
Group [H01M 50/469](#) is incomplete pending reclassification of documents from group [H01M 50/463](#).
Groups [H01M 50/463](#) and [H01M 50/469](#) should be considered in order to perform a complete search.
- N H01M 50/471
- • Spacing elements inside cells other than separators, membranes or diaphragms (for preventing incorrect contact inside or outside batteries [H01M 50/584](#)); Manufacturing processes thereof
- WARNING
Groups [H01M 50/471](#) - [H01M 50/486](#) are incomplete pending reclassification of documents from group [H01M 50/40](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/474
- • • characterised by their position inside the cells
- N H01M 50/477
- • • characterised by their shape
- N H01M 50/48
- • • characterised by the material
- N H01M 50/483
- • • • Inorganic material
- N H01M 50/486
- • • • Organic material
- N H01M 50/489
- • Separators, membranes, diaphragms or spacing elements inside the cells, characterised by their physical properties, e.g. swelling degree, hydrophilicity or shut down properties
- WARNING
Groups [H01M 50/489](#) - [H01M 50/497](#) are incomplete pending reclassification of documents from groups [H01M 50/40](#), [H01M 50/409](#), [H01M 50/411](#), [H01M 50/431](#), and [H01M 50/449](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H01M 50/491
 - • • Porosity
- N H01M 50/494
 - • • Tensile strength
- N H01M 50/497
 - • • Ionic conductivity
- Q H01M 50/50
 - Current conducting connections for cells or batteries

WARNING

Group [H01M 50/50](#) is impacted by reclassification into group [H01M 50/569](#). Groups [H01M 50/50](#) and [H01M 50/569](#) should be considered in order to perform a complete search.

- Q H01M 50/502
 - • Interconnectors for connecting terminals of adjacent batteries;
Interconnectors for connecting cells outside a battery casing

WARNING

Group [H01M 50/502](#) is impacted by reclassification into groups [H01M 50/503](#), [H01M 50/505](#), [H01M 50/507](#), [H01M 50/509](#), [H01M 50/51](#), [H01M 50/512](#), [H01M 50/514](#), [H01M 50/516](#), [H01M 50/517](#), [H01M 50/519](#), [H01M 50/521](#), [H01M 50/522](#), [H01M 50/524](#), [H01M 50/526](#), and [H01M 50/569](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H01M 50/503
 - • • characterised by the shape of the interconnectors

WARNING

Group [H01M 50/503](#) is incomplete pending reclassification of documents from group [H01M 50/502](#).

Groups [H01M 50/502](#) and [H01M 50/503](#) should be considered in order to perform a complete search.

- N H01M 50/505
 - • • comprising a single busbar

WARNING

Group [H01M 50/505](#) is incomplete pending reclassification of documents from group [H01M 50/502](#).

Groups [H01M 50/502](#) and [H01M 50/505](#) should be considered in order to perform a complete search.

- N H01M 50/507
 - • • comprising an arrangement of two or more busbars within a container structure, e.g. busbar modules

WARNING

Group [H01M 50/507](#) is incomplete pending reclassification of documents from group [H01M 50/502](#).

Groups [H01M 50/502](#) and [H01M 50/507](#) should be considered in order to perform a complete search.

- N H01M 50/509
 - • • characterised by the type of connection, e.g. mixed connections

WARNING

Groups [H01M 50/509](#) - [H01M 50/512](#) are incomplete pending reclassification of documents from group [H01M 50/502](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H01M 50/51
 - • • • Connection only in series
- N H01M 50/512
 - • • • Connection only in parallel

- N H01M 50/514
- • • Methods for interconnecting adjacent batteries or cells
- WARNING
Groups [H01M 50/514](#) - [H01M 50/517](#) are incomplete pending reclassification of documents from group [H01M 50/502](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/516
- • • • by welding, soldering or brazing
- N H01M 50/517
- • • • by fixing means, e.g. screws, rivets or bolts
- N H01M 50/519
- • • comprising printed circuit boards [PCB]
- WARNING
Group [H01M 50/519](#) is incomplete pending reclassification of documents from group [H01M 50/502](#).
Groups [H01M 50/502](#) and [H01M 50/519](#) should be considered in order to perform a complete search.
- N H01M 50/521
- • • characterised by the material
- WARNING
Groups [H01M 50/521](#) - [H01M 50/526](#) are incomplete pending reclassification of documents from group [H01M 50/502](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/522
- • • • Inorganic material
- N H01M 50/524
- • • • Organic material
- N H01M 50/526
- • • • having a layered structure
- N H01M 50/528
- • Fixed electrical connections, i.e. not intended for disconnection
- N H01M 50/529
- • • Intercell connections through partitions, e.g. in a battery casing
- Q H01M 50/531
- • Electrode connections inside a battery casing
- WARNING
Group [H01M 50/531](#) is impacted by reclassification into groups [H01M 50/533](#), [H01M 50/534](#), and [H01M 50/536](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/533
- • • characterised by the shape of the leads or tabs
- WARNING
Group [H01M 50/533](#) is incomplete pending reclassification of documents from groups [H01M 50/531](#), [H01M 50/538](#), [H01M 50/54](#), and [H01M 50/541](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/534
- • • characterised by the material of the leads or tabs
- WARNING
Group [H01M 50/534](#) is incomplete pending reclassification of documents from groups [H01M 50/531](#), [H01M 50/538](#), [H01M 50/54](#), and [H01M 50/541](#).
All groups listed in this Warning should be considered in order to perform a complete search.

- N H01M 50/536
- • • characterised by the method of fixing the leads to the electrodes, e.g. by welding
- WARNING
Group [H01M 50/536](#) is incomplete pending reclassification of documents from groups [H01M 50/531](#), [H01M 50/538](#), [H01M 50/54](#), and [H01M 50/541](#). All groups listed in this Warning should be considered in order to perform a complete search.
- Q H01M 50/538
- • • Connection of several leads or tabs of wound or folded electrode stacks
- WARNING
Group [H01M 50/538](#) is impacted by reclassification into groups [H01M 50/533](#), [H01M 50/534](#), and [H01M 50/536](#). All groups listed in this Warning should be considered in order to perform a complete search.
- Q H01M 50/54
- • • Connection of several leads or tabs of plate-like electrode stacks, e.g. electrode pole straps or bridges
- WARNING
Group [H01M 50/54](#) is impacted by reclassification into groups [H01M 50/533](#), [H01M 50/534](#), and [H01M 50/536](#). All groups listed in this Warning should be considered in order to perform a complete search.
- Q H01M 50/541
- • • • for lead-acid accumulators
- WARNING
Group [H01M 50/541](#) is impacted by reclassification into groups [H01M 50/533](#), [H01M 50/534](#), and [H01M 50/536](#). All groups listed in this Warning should be considered in order to perform a complete search.
- Q H01M 50/543
- • Terminals
- WARNING
Group [H01M 50/543](#) is impacted by reclassification into groups [H01M 50/547](#), [H01M 50/548](#), [H01M 50/55](#), [H01M 50/552](#), [H01M 50/553](#), [H01M 50/559](#), [H01M 50/562](#), [H01M 50/564](#), [H01M 50/566](#), [H01M 50/567](#), [H01M 50/569](#), and [H01M 50/296](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/545
- • • formed by the casing of the cells (cup shaped terminals adapted for cells having curved cross-section [H01M 50/56](#))
- N H01M 50/547
- • • characterised by the disposition of the terminals on the cells
- WARNING
Groups [H01M 50/547](#) - [H01M 50/55](#) are incomplete pending reclassification of documents from groups [H01M 50/543](#), [H01M 50/555](#), and [H01M 50/557](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/548
- • • • on opposite sides of the cell
- N H01M 50/55
- • • • on the same side of the cell
- N H01M 50/552
- • • characterised by their shape
- WARNING
Groups [H01M 50/552](#), [H01M 50/553](#), and [H01M 50/559](#) are incomplete pending reclassification of documents from group [H01M 50/543](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H01M 50/553
 - • • Terminals adapted for prismatic, pouch or rectangular cells
- Q H01M 50/555
 - • • • Window-shaped terminals
 - WARNING
Group [H01M 50/555](#) is impacted by reclassification into groups [H01M 50/547](#), [H01M 50/548](#), [H01M 50/55](#), [H01M 50/562](#), [H01M 50/564](#), [H01M 50/566](#), and [H01M 50/567](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- Q H01M 50/557
 - • • • Plate-shaped terminals
 - WARNING
Group [H01M 50/557](#) is impacted by reclassification into groups [H01M 50/547](#), [H01M 50/548](#), [H01M 50/55](#), [H01M 50/562](#), [H01M 50/564](#), [H01M 50/566](#), and [H01M 50/567](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/559
 - • • Terminals adapted for cells having curved cross-section, e.g. round, elliptic or button cells ([H01M 50/553](#) takes precedence)
- N H01M 50/56
 - • • • Cup shaped terminals
- N H01M 50/561
 - • • {Hollow metallic terminals, e.g. terminal bushings}
- N H01M 50/562
 - • • characterised by the material
 - WARNING
Group [H01M 50/562](#) is incomplete pending reclassification of documents from groups [H01M 50/543](#), [H01M 50/555](#), and [H01M 50/557](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/564
 - • • characterised by their manufacturing process
 - WARNING
Groups [H01M 50/564](#) - [H01M 50/567](#) are incomplete pending reclassification of documents from groups [H01M 50/543](#), [H01M 50/555](#), and [H01M 50/557](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/566
 - • • • by welding, soldering or brazing
- N H01M 50/567
 - • • • by fixing means, e.g. screws, rivets or bolts
- N H01M 50/569
 - • • Constructional details of current conducting connections for detecting conditions inside cells or batteries, e.g. of voltage sensing terminals (battery terminal connectors with integrated measuring arrangements [G01R 31/364](#))
 - WARNING
Group [H01M 50/569](#) is incomplete pending reclassification of documents from groups [H01M 6/50](#), [H01M 6/5044](#), [H01M 6/505](#), [H01M 6/5055](#), [H01M 6/5061](#), [H01M 10/48](#), [H01M 10/482](#), [H01M 10/484](#), [H01M 10/486](#), [H01M 10/488](#), [H01M 50/50](#), [H01M 50/502](#), and [H01M 50/543](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/571
 - • Methods or arrangements for affording protection against corrosion; Selection of materials therefor

- Q H01M 50/572 . . . Means for preventing undesired use or discharge
- WARNING
Group [H01M 50/572](#) is impacted by reclassification into groups [H01M 6/5044](#), [H01M 50/574](#), [H01M 50/583](#), [H01M 50/584](#), [H01M 50/586](#), [H01M 50/588](#), [H01M 50/59](#), [H01M 50/591](#), [H01M 50/593](#), [H01M 50/595](#), and [H01M 50/597](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/574 . . . Devices or arrangements for the interruption of current
- WARNING
Groups [H01M 50/574](#) and [H01M 50/583](#) are incomplete pending reclassification of documents from group [H01M 50/572](#). Groups [H01M 50/572](#), [H01M 50/574](#), and [H01M 50/583](#) should be considered in order to perform a complete search.
- N H01M 50/576 in response to theft
- N H01M 50/578 in response to pressure
- N H01M 50/579 in response to shock
- N H01M 50/581 in response to temperature
- N H01M 50/583 in response to current, e.g. fuses
- N H01M 50/584 . . . for preventing incorrect connections inside or outside the batteries
- WARNING
Groups [H01M 50/584](#), [H01M 50/586](#), [H01M 50/588](#), [H01M 50/59](#), [H01M 50/595](#), and [H01M 50/597](#) are incomplete pending reclassification of documents from group [H01M 50/572](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/586 inside the batteries, e.g. of electrodes or electrode connections
- N H01M 50/588 outside the batteries, e.g. of terminals or busbars
- N H01M 50/59 characterised by the protection means
- N H01M 50/591 Covers
- WARNING
Group [H01M 50/591](#) is incomplete pending reclassification of documents from groups [H01M 50/147](#), [H01M 50/155](#), and [H01M 50/572](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/593 Spacers; Insulating plates
- WARNING
Group [H01M 50/593](#) is incomplete pending reclassification of documents from groups [H01M 50/147](#), [H01M 50/155](#), and [H01M 50/572](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/595 Tapes
- N H01M 50/597 Protection against reversal of polarity
- N H01M 50/598 . . . Guarantee labels

- Q H01M 50/60
- Arrangements or processes for filling or topping-up with liquids; Arrangements or processes for draining liquids from casings
- WARNING
Group [H01M 50/60](#) is impacted by reclassification into groups [H01M 50/609](#), [H01M 50/618](#), [H01M 50/627](#), [H01M 50/673](#), and [H01M 50/682](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/609
- • Arrangements or processes for filling with liquid, e.g. electrolytes
- WARNING
Groups [H01M 50/609](#), [H01M 50/618](#), and [H01M 50/627](#) are incomplete pending reclassification of documents from group [H01M 50/60](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/618
- • • Pressure control
- N H01M 50/627
- • • Filling ports
- Q H01M 50/636
- • • • Closing or sealing filling ports, e.g. using lids
- WARNING
Group [H01M 50/636](#) is impacted by reclassification into groups [H01M 50/645](#), [H01M 50/655](#), [H01M 50/664](#), and [H01M 50/668](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H01M 50/645
- • • • • Plugs
- WARNING
Groups [H01M 50/645](#) and [H01M 50/655](#) are incomplete pending reclassification of documents from group [H01M 50/636](#).
Groups [H01M 50/636](#), [H01M 50/645](#), and [H01M 50/655](#) should be considered in order to perform a complete search.
- N H01M 50/655
- • • • • specially adapted for venting
- N H01M 50/664
- • • • • Temporary seals, e.g. for storage of instant batteries or seawater batteries
- WARNING
Group [H01M 50/664](#) is incomplete pending reclassification of documents from group [H01M 50/636](#).
Groups [H01M 50/636](#) and [H01M 50/664](#) should be considered in order to perform a complete search.
- N H01M 50/668
- • {Means for preventing spilling of liquid or electrolyte, e.g. when the battery is tilted or turned over}
- WARNING
Group [H01M 50/668](#) is incomplete pending reclassification of documents from group [H01M 50/636](#).
Groups [H01M 50/636](#) and [H01M 50/668](#) should be considered in order to perform a complete search.
- N H01M 50/673
- • Containers for storing liquids; Delivery conduits therefor
- WARNING
Groups [H01M 50/673](#) and [H01M 50/682](#) are incomplete pending reclassification of documents from group [H01M 50/60](#).
Groups [H01M 50/60](#), [H01M 50/673](#), and [H01M 50/682](#) should be considered in order to perform a complete search.

- N H01M 50/682 . . . accommodated in battery or cell casings
- N H01M 50/691 . . Arrangements or processes for draining liquids from casings; Cleaning battery or cell casings
- N H01M 50/70 . Arrangements for stirring or circulating the electrolyte
- N H01M 50/73 . . Electrolyte stirring by the action of gas on or in the electrolyte
- N H01M 50/77 . . with external circulating path

Project: MP0451 (H01P)

- M H01P WAVEGUIDES; RESONATORS, LINES, OR OTHER DEVICES OF THE WAVEGUIDE TYPE (operating at optical frequencies [G02B](#); ~~aerials H01Q; {modulating electromagnetic waves in transmission line, waveguide, cavity resonator or radiation field of aerial H03C-7/02}; networks comprising lumped impedance elements H03H)~~**

NOTE

In this subclass, the following expression is used with the meaning indicated :

- "waveguide type" as applied to transmission lines includes only high-frequency coaxial cables or Lecher lines, and as applied to resonators, delay lines, or other devices includes all devices having distributed inductance and capacitance.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

- U H01P 1/00 Auxiliary devices (coupling devices of the waveguide type [H01P 5/00](#))**
- M H01P 1/04 . Fixed joints (~~{pipe joints F16L}; line connectors H01R; cable fittings H02G-15/00~~)
- M H01P 1/08 . Dielectric windows (~~coupling devices for transit time tubes H01J-23/36~~)
- M H01P 1/16 . for mode selection, e.g. mode suppression or mode promotion; for mode conversion (~~linking dissimilar lines or devices H01P-5/08~~)
- M H01P 1/18 . Phase-shifters ([H01P 1/165](#) takes precedence; ~~coupling devices with variable coupling factor H01P-5/04~~)
- M H01P 1/20 . Frequency-selective devices, e.g. filters (~~{variable impedance transformers, e.g. slug tuners or stub tuners H01P-5/04}; resonators H01P-7/00~~)
- U H01P 1/24 . Terminating devices
- M H01P 1/28 . . Short-circuiting plungers (~~coupling devices with variable coupling factor H01P-5/04~~)
- U H01P 3/00 Waveguides; Transmission lines of the waveguide type**
- U H01P 3/02 . with two longitudinal conductors
- M H01P 3/06 . . Coaxial lines (~~not suitable for handling frequencies considerably beyond the audio range, {coaxial cables in general} H01B-11/18~~)

NOTE

This subgroup is only used for documents disclosing typical HF-features of coaxial cables, e.g. propagation of non-TEM-modes, multimoding, oversized coaxial cables, particular cross-section adapted for HF-propagation

- M H01P 5/00 Coupling devices of the waveguide type (~~non-reciprocal devices H01P-1/32; for introducing or removing wave energy to or from the discharge in transit-time tubes H01J-23/36~~)**

- M H01P 7/00 Resonators of the waveguide type ~~(variable impedance transformers H01P 5/04); structurally associated with transit-time tubes and interacting with the discharge therein H01J 23/18; generators of electronic oscillations using resonators of this type H03B 5/18, H03B 7/14, H03B 9/14; electronic amplifiers using resonators of this type H03F 3/54; microwave heating devices H05B 6/64)~~
- M H01P 9/00 Delay lines of the waveguide type ~~(structurally associated with transit-time tubes and interacting with the discharge therein H01J 23/24)~~
- M H01P 11/00 Apparatus or processes specially adapted for manufacturing waveguides or resonators, lines, or other devices of the waveguide type ~~(manufacture of coaxial cables H01B 13/00)~~

Project: RP0496-F (H01R)

- U H01R 4/00 Electrically-conductive connections between two or more conductive members in direct contact, i.e. touching one another; Means for effecting or maintaining such contact; Electrically-conductive connections having two or more spaced connecting locations for conductors and using contact members penetrating insulation
- U H01R 4/24
- Connections using contact members penetrating or cutting insulation or cable strands
- M H01R 4/2404
- • the contact members having teeth, prongs, pins or needles penetrating the insulation
- WARNING**
Group H01R 4/2404 is impacted by reclassification into groups H01R 4/2406 and H01R 4/2407.
Groups H01R 4/2404, H01R 4/2406 and H01R 4/2407 should be considered in order to perform a complete search.
- M H01R 4/2406
- • • having needles or pins
- WARNING**
Group H01R 4/2406 is incomplete pending reclassification of documents from groups H01R 4/2404, H01R 4/2408 and H01R 4/2412.
Groups H01R 4/2404, H01R 4/2406, H01R 4/2408 and H01R 4/2412 should be considered in order to perform a complete search.
- M H01R 4/2407
- • • having saw-tooth projections
- WARNING**
Group H01R 4/2407 is incomplete pending reclassification of documents from group H01R 4/2404, H01R 4/2408 and H01R 4/2412.
Groups H01R 4/2404, H01R 4/2407, H01R 4/2408 and H01R 4/2412 should be considered in order to perform a complete search.
- M H01R 4/2408
- • • actuated by clamping screws
- WARNING**
Group H01R 4/2408 is impacted by reclassification into groups H01R 4/2406 and H01R 4/2407.
Groups H01R 4/2406, H01R 4/2407 and H01R 4/2408 should be considered in order to perform a complete search.
- M H01R 4/2412
- • • actuated by insulated cams or wedges
- WARNING**
Group H01R 4/2412 is impacted by reclassification into groups H01R 4/2406 and H01R 4/2407.

Groups H01R 4/2406, H01R 4/2407 and H01R 4/2412 should be considered in order to perform a complete search.

- U H01R 4/2416
 - • the contact members having insulation-cutting edges, e.g. of tuning fork type
- U H01R 4/2445
 - • • the contact members having additional means acting on the insulation or the wire, e.g. additional insulation penetrating means, strain relief means or wire cutting knives
- M H01R 4/245
 - • • • the additional means having two or more slotted flat portions

WARNING

Group H01R 4/245 is impacted by reclassification into groups H01R 4/2452 and H01R 4/2456.
Groups H01R 4/245, H01R 4/2452 and H01R 4/2456 should be considered in order to perform a complete search.

- M H01R 4/2452
 - • • • in serial configuration, e.g. opposing folded slots

WARNING

Group H01R 4/2452 is incomplete pending reclassification of documents from group H01R 4/245.
Groups H01R 4/245 and H01R 4/2452 should be considered in order to perform a complete search.

- M H01R 4/2454
 - • • • forming a U-shape with slotted branches

WARNING

Group H01R 4/2454 is impacted by reclassification into group H01R 4/2455.
Groups H01R 4/2454 and H01R 4/2455 should be considered in order to perform a complete search.

- M H01R 4/2455
 - • • • • forming a slotted bight

WARNING

Group H01R 4/2455 is incomplete pending reclassification of documents from group H01R 4/2454.
Groups H01R 4/2454 and H01R 4/2455 should be considered in order to perform a complete search.

- M H01R 4/2456
 - • • • • in parallel configuration

WARNING

Group H01R 4/2456 is incomplete pending reclassification of documents from group H01R 4/245.
Groups H01R 4/245 and H01R 4/2456 should be considered in order to perform a complete search.

Project: RP0701 (H01S)

- U H01S 3/00 **Lasers, i.e. devices using stimulated emission of electromagnetic radiation in the infrared, visible or ultraviolet wave range (semiconductors lasers [H01S 5/00](#))**
- U H01S 3/02
 - Constructional details {(housings or packages of fibre lasers [H01S 3/06704](#))}
- M H01S 3/04
 - • **Cooling arrangements** *Arrangements for thermal management*

Project: RP0548 (H01S)

- M H01S 5/00 Semiconductor lasers (superluminescent diodes)**
(~~H01L 33/0045~~)[H01L 33/00](#))
- NOTE
Attention is drawn to Special Rules of classification at [C07F](#), which Special Rules indicate to which version of the periodic table of chemical elements CPC refers. In this group, the Periodic System used is the 8 group system indicated by Roman numerals in the Periodic Table thereunder.
- C H01S 5/005**
- {Optical ~~devices~~*components* external to the laser cavity, specially adapted therefor, e.g. for homogenisation or merging of the beams or for manipulating laser pulses, e.g. pulse shaping ([H01S 5/026](#), [H01S 5/18388](#) take precedence)}
- WARNING
Group [H01S 5/005](#) is impacted by reclassification into group [H01S 5/0087](#). Groups [H01S 5/005](#) and [H01S 5/0087](#) should be considered in order to perform a complete search.
- M H01S 5/0057**
- • {~~Temporal~~*for temporal* shaping, e.g. pulse compression, frequency chirping}
- M H01S 5/0064**
- • {Anti-reflection ~~devices~~*components*, e.g. optical isolators}
- M H01S 5/0071**
- • {~~Beam~~*for beam* steering, e.g. ~~whereby~~*using* a mirror outside the cavity ~~is present~~ to change the beam direction}
- M H01S 5/0078**
- • {~~Frequency~~*for frequency* filtering}
- M H01S 5/0085**
- • {~~Modulating~~*for modulating* the output, i.e. the laser beam is modulated outside the laser cavity}
- N H01S 5/0087**
- • {~~for illuminating phosphorescent or fluorescent materials, e.g. using optical arrangements specifically adapted for guiding or shaping laser beams illuminating these materials~~}
- WARNING
Group [H01S 5/0087](#) is incomplete pending reclassification of documents from group [H01S 5/005](#). Groups [H01S 5/005](#) and [H01S 5/0087](#) should be considered in order to perform a complete search.
- M H01S 5/0092**
- • {~~Nonlinear~~*for nonlinear* frequency conversion, e.g. second harmonic generation [SHG] or sum- or difference-frequency generation outside the laser cavity (~~nonlinear frequency conversion per se G02F 1/35~~)}

Project: RP0701 (H01S)

- U H01S 5/02**
- Structural details or components not essential to laser action
- C H01S 5/022**
- • Mountings; Housings
- WARNING
Group [H01S 5/022](#) is impacted by reclassification into groups [H01S 5/02218](#) and [H01S 5/0239](#). Groups [H01S 5/022](#), [H01S 5/02218](#), and [H01S 5/0239](#) should be considered in order to perform a complete search.
- D H01S 5/02204**
- • • {including a getter material to absorb contaminations}
 - <administratively transferred to [H01S 5/02235](#)>
- M H01S 5/02208**
- • • {~~Shape of the housing~~*characterised by the shape of the housings*}
- M H01S 5/02212**
- • • • {Can-type, e.g. TO-9 ~~housing~~*CAN housings* with emission along or parallel to symmetry axis}

- M H01S 5/02216 {Butterfly-type, i.e. ~~the housing is generally flat~~} *with electrode pins extending horizontally from the housings*
- N H01S 5/02218 Material of the housings; Filling of the housings
WARNING
 Group [H01S 5/02218](#) is incomplete pending reclassification of documents from group [H01S 5/022](#).
 Groups [H01S 5/022](#) and [H01S 5/02218](#) should be considered in order to perform a complete search.
- M H01S 5/02222 ~~{filled with special gases}~~ *Gas-filled housings*
- M H01S 5/02224 ~~{Oxygen is contained in the housing, e.g. to avoid contamination of the light emitting facet}~~ *the gas comprising oxygen, e.g. for avoiding contamination of the light emitting facets*
- D H01S 5/02228 {filled with a resin, or the complete housing being made of resin}
 <administratively transferred to [H01S 5/02234](#)>
- M H01S 5/02232 ~~{filled with a liquid}~~ *Liquid-filled housings* ~~{H01S-5/0243 takes precedence}~~
- N H01S 5/02234 Resin-filled housings; the housings being made of resin
- N H01S 5/02235 Getter material for absorbing contamination
- D H01S 5/02236 {Mounts or sub-mounts (H01S-5/02476 takes precedence)}
 <administratively transferred to [H01S 5/023](#), [H01S 5/0233](#), and [H01S 5/0235](#) simultaneously>
- D H01S 5/0224 {Up-side down mounting, e.g. flip-chip or epi-side down mounted laser}
 <administratively transferred to [H01S 5/0234](#)>
- D H01S 5/02244 {Lead-frames, e.g. the laser is mounted on a lead frame or on a stem}
 <administratively transferred to [H01S 5/0231](#)>
- D H01S 5/02248 {Mechanically integrated components on a mount or an optical microbench, e.g. optical components, detectors, etc.}
 <administratively transferred to [H01S 5/02325](#)>
- N H01S 5/0225 Out-coupling of light
- N H01S 5/02251 using optical fibres
- D H01S 5/02252 {Relative positioning of laser diode and optical components, e.g. grooves in the mount to fix an optical fibre or a lens}
 <administratively transferred to [H01S 5/02326](#)>
- N H01S 5/02253 using lenses
- N H01S 5/02255 using beam deflecting elements
- D H01S 5/02256 {Details of fixing the laser diode on the mount}
 <administratively transferred to [H01S 5/02355](#)>
- N H01S 5/02257 using windows, e.g. specially adapted for back-reflecting light to a detector inside the housing
- D H01S 5/0226 {using an adhesive}
 <administratively transferred to [H01S 5/0236](#)>
- D H01S 5/02264 {by clamping}
 <administratively transferred to [H01S 5/02365](#)>
- D H01S 5/02268 {Positioning, e.g. using marks for positioning of the laser diode}
 <administratively transferred to [H01S 5/02375](#)>
- D H01S 5/02272 {using soldering}
 <administratively transferred to [H01S 5/0237](#)>

- D H01S 5/02276 {Wire-bonding details}
<administratively transferred to [H01S 5/02345](#)>
- D H01S 5/0228 . . . {Out-coupling light}
<administratively transferred to [H01S 5/0225](#)>
- D H01S 5/02284 {with an optical fibre}
<administratively transferred to [H01S 5/02251](#)>
- D H01S 5/02288 {with a lens}
<administratively transferred to [H01S 5/02253](#)>
- D H01S 5/02292 {with a beam-deflecting element}
<administratively transferred to [H01S 5/02255](#)>
- D H01S 5/02296 {Details of a window, e.g. special materials or special orientation for back-reflecting light to a detector inside the housing}
<administratively transferred to [H01S 5/02257](#)>
- Q H01S 5/023 . . . Mount members, e.g. sub-mount members
WARNING
Group [H01S 5/023](#) is impacted by reclassification into group [H01S 5/02315](#).
Groups [H01S 5/023](#) and [H01S 5/02315](#) should be considered in order to perform a complete search.
- Q H01S 5/0231 Stems
WARNING
Group [H01S 5/0231](#) is impacted by reclassification into group [H01S 5/0232](#).
Groups [H01S 5/0231](#) and [H01S 5/0232](#) should be considered in order to perform a complete search.
- N H01S 5/02315 Support members, e.g. bases or carriers
WARNING
Group [H01S 5/02315](#) is incomplete pending reclassification of documents from group [H01S 5/023](#).
Groups [H01S 5/023](#) and [H01S 5/02315](#) should be considered in order to perform a complete search.
- N H01S 5/0232 Lead-frames
WARNING
Group [H01S 5/0232](#) is incomplete pending reclassification of documents from group [H01S 5/0231](#).
Groups [H01S 5/0231](#) and [H01S 5/0232](#) should be considered in order to perform a complete search.
- N H01S 5/02325 Mechanically integrated components on mount members or optical micro-benches
- N H01S 5/02326 Arrangements for relative positioning of laser diodes and optical components, e.g. grooves in the mount to fix optical fibres or lenses
- Q H01S 5/0233 . . . Mounting configuration of laser chips
WARNING
Group [H01S 5/0233](#) is impacted by reclassification into group [H01S 5/02335](#).

Groups [H01S 5/0233](#) and [H01S 5/02335](#) should be considered in order to perform a complete search.

- N H01S 5/02335
- • • • Up-side up mountings, e.g. ep-side up mountings or junction up mountings
- WARNING
Group [H01S 5/02335](#) is incomplete pending reclassification of documents from group [H01S 5/0233](#).
Groups [H01S 5/0233](#) and [H01S 5/02335](#) should be considered in order to perform a complete search.
- N H01S 5/0234
- • • • Up-side down mountings, e.g. Flip-chip, epi-side down mountings or junction down mountings
- N H01S 5/02345
- • • • Wire-bonding
- N H01S 5/0235
- • • • Method for mounting laser chips
- N H01S 5/02355
- • • • Fixing laser chips on mounts
- N H01S 5/0236
- • • • • using an adhesive
- N H01S 5/02365
- • • • • by clamping
- N H01S 5/0237
- • • • • by soldering
- Q H01S 5/02375
- • • • Positioning of the laser chips
- WARNING
Group [H01S 5/02375](#) is impacted by reclassification into groups [H01S 5/0238](#) and [H01S 5/02385](#).
Groups [H01S 5/02375](#), [H01S 5/0238](#), and [H01S 5/02385](#) should be considered in order to perform a complete search.
- N H01S 5/0238
- • • • • using marks
- WARNING
Group [H01S 5/0238](#) is incomplete pending reclassification of documents from group [H01S 5/02375](#).
Groups [H01S 5/02375](#) and [H01S 5/0238](#) should be considered in order to perform a complete search.
- N H01S 5/02385
- • • • • using laser light as reference
- WARNING
Group [H01S 5/02385](#) is incomplete pending reclassification of documents from group [H01S 5/02375](#).
Groups [H01S 5/02375](#) and [H01S 5/02385](#) should be considered in order to perform a complete search.
- N H01S 5/0239
- • • Combinations of electrical or optical elements
- WARNING
Group [H01S 5/0239](#) is incomplete pending reclassification of documents from group [H01S 5/022](#).
Groups [H01S 5/022](#) and [H01S 5/0239](#) should be considered in order to perform a complete search.
- M H01S 5/024
- • ~~Cooling arrangements~~ {~~Arrangements for thermal management~~(~~H01S 5/0261 takes precedence~~)}
- U H01S 5/10
- Construction or shape of the optical resonator {, e.g. extended or external cavity, coupled cavities, bent-guide, varying width, thickness or composition of the active region ([H01S 5/20](#) takes precedence)}

- D H01S 5/105
- {Comprising a photonic bandgap structure}
<administratively transferred to [H01S 5/11](#)>
- U H01S 5/1092
- {Multi-wavelength lasing}
- U H01S 5/1096
- • {in a single cavity}
- N H01S 5/11
- • *Comprising a photonic bandgap structure*
WARNING
*Group [H01S 5/11](#) is incomplete pending reclassification of documents from group [H01S 5/12](#).
Groups [H01S 5/12](#) and [H01S 5/11](#) should be considered in order to perform a complete search.*
- C H01S 5/12
- • the resonator having a periodic structure, e.g. in distributed **feed-back** *feedback* [DFB] lasers (**H01S 5/18 takes precedence** *comprising a photonic bandgap structure [H01S 5/11](#); surface-emitting lasers [H01S 5/18](#)*)
WARNING
*Group [H01S 5/12](#) is impacted by reclassification into group [H01S 5/11](#).
Groups [H01S 5/12](#) and [H01S 5/11](#) should be considered in order to perform a complete search.*

Project: RP0548 (H01S)

- M H01S 5/14
- • External cavity lasers ~~{(external cavity elements, their control or stabilisation [H01S 3/08](#), [H01S 3/10](#) and [H01S 3/13](#) [H01S 5/18 takes precedence](#); mode locking [H01S 5/065](#))}~~
NOTE
in this group external cavity elements correspond to elements inside the laser cavity but outside the monolithic semiconductor body. These elements correspond to intra cavity elements in [H01S 3/00](#)
- M H01S 5/16
- • Window-type lasers, i.e. with a region of non-absorbing material between the active region and the reflecting surface ([H01S 5/14 takes precedence](#))

Project: RP0701 (H01S)

- C H01S 5/18
- • Surface-emitting [SE] lasers, *e.g. having both horizontal and vertical cavities*
WARNING
*Group [H01S 5/18](#) is impacted by reclassification into group [H01S 5/185](#).
Groups [H01S 5/18](#) and [H01S 5/185](#) should be considered in order to perform a complete search.*
- M H01S 5/183
- • having **a vertical cavity** *[VCSE-lasers only vertical cavities, e.g. vertical cavity surface-emitting lasers [VCSEL]*
- U H01S 5/18308
- • • {having a special structure for lateral current or light confinement}
- M H01S 5/18319
- • • • {comprising a periodical structure in lateral directions ~~(photonic crystals in semiconductor laser structures per se [H01S 5/105](#))}~~
- U H01S 5/18397
- • • • {Plurality of active layers vertically stacked in a cavity for multi-wavelength emission}
- N H01S 5/185
- • • *having only horizontal cavities, e.g. horizontal cavity surface-emitting lasers [HCSEL] (comprising a photonic bandgap structure [H01S 5/11](#))*
WARNING
Group [H01S 5/185](#) is incomplete pending reclassification of documents from group [H01S 5/18](#).

Groups [H01S 5/18](#) and [H01S 5/185](#) should be considered in order to perform a complete search.

- M H01S 5/187 . . . using a distributed Bragg reflector [~~SE-DBR-lasers~~] Bragg reflection ([H01S 5/183](#) takes precedence)

Project: RP0548 (H01S)

- U H01S 5/30 . Structure or shape of the active region; Materials used for the active region
M H01S 5/36 . . comprising organic materials (~~dye lasers H01S 3/213~~)

Project: MP0497 (H02J)

- M H02J 50/00 **Circuit arrangements or systems for wireless supply or distribution of electric power**

NOTE

1. In this main group, the specific types of wireless technology used for the power transmission are covered in groups [H02J 50/05-H02J 50/30](#), while aspects relevant to the circuit arrangements or systems thereof are covered in groups [H02J 50/40-H02J 50/90](#).

2. In this main group, multi-aspect classification is applied, so that subject matter characterised by aspects covered by more than one of its groups should be classified in each of those groups:

WARNING

Group [H02J 50/00](#) is impacted by reclassification into groups [H02J 50/001](#) and [H02J 50/005](#).

Groups [H02J 50/00](#), [H02J 50/001](#), and [H02J 50/005](#) should be considered in order to perform a complete search.

Project: MP0427 (H02K)

- M H02K **DYNAMO-ELECTRIC MACHINES (dynamo-electric relays [H01H 53/00](#); conversion of DC or AC input power into surge output power {[H03K 3/53](#)})**

NOTES

1. This subclass covers the structural adaptation of dynamo-electric machines for the purpose of their control.

2. This subclass does not cover starting, regulating, electronically commutating, braking, or otherwise controlling motors, generators or dynamo-electric converters, in general, which are covered by subclass [H02P](#).

3. Attention is drawn to the Notes following the titles of class [B81](#) and subclass [B81B](#) relating to "microstructural devices" and "microstructural systems".

4. Group [H02K 16/00](#) takes precedence over groups [H02K 17/00 - H02K 53/00](#). {This Note corresponds to IPC Note (1) relating to [H02K 17/00 - H02K 53/00](#).}

~~4-5.~~ {In this subclass, it is desirable to add the indexing codes of [H02K 2201/00-H02K 2213/12](#).}

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: RP0673 (H02K)

- M H02K 1/00 **Details of the magnetic circuit (~~magnetic circuits or magnets in general, magnetic circuits for transformers for power supply H01F~~; magnetic circuits for relays [H01H 50/16](#))**

- M H02K 1/04
- characterised by the material used for insulating the magnetic circuit or parts thereof ~~(insulation of windings H02K 3/30)~~
- U H02K 1/06
- characterised by the shape, form or construction
- U H02K 1/22
- • Rotating parts of the magnetic circuit
- U H02K 1/223
- • • {Rotor cores with windings and permanent magnets (for additional excitation in synchronous motors or generators [H02K 21/042](#); in synchronous motors having additional short-circuited winding for starting as an asynchronous motor [H02K 21/46](#))}
- D H02K 1/226
- • • • {of the claw-pole type}
 - <administratively transferred to [H02K 21/044](#)>
- M H02K 1/27
- • • Rotor cores with permanent magnets ~~{{(rotor cores for synchronous machines with means for mechanical adjustment of the excitation flux H02K 21/021)}}~~
- M H02K 3/00** **Details of windings ~~(coils in general H01F 5/00)~~**
- M H02K 3/02
- Windings characterised by the conductor material ~~(conductors in general H01B 1/00, H01B 5/00)~~
- M H02K 3/30
- Windings characterised by the insulating material ~~(insulating bodies in general H01B 3/00, H01B 17/00)~~
- M H02K 3/32
- Windings characterised by the shape, form or construction of the insulation ~~{{(H02K 3/46 takes precedence)}}~~
- U H02K 3/46
- Fastening of windings on the stator or rotor structure
- M H02K 3/50
- • Fastening of winding heads, equalising connectors, or connections thereto ~~{{(H02K 3/52 takes precedence)}}~~
- U H02K 5/00** **Casings; Enclosures; Supports**
- U H02K 5/04
- Casings or enclosures characterised by the shape, form or construction thereof
- M H02K 5/10
- • with arrangements for protection from ingress, e.g. ~~of~~ water or fingers ~~{{(means for protecting brushes or brush holders H02K 5/14)}}~~
- U H02K 5/12
- • specially adapted for operating in liquid or gas (combined with cooling arrangements [H02K 9/00](#))
- U H02K 5/128
- • • using air-gap sleeves or air-gap discs
- D H02K 2005/1287
- • • • {Details of sleeves or discs}
 - <administratively transferred to [H02K 5/128](#)>
- C H02K 5/20
- • with channels or ducts for flow of cooling medium
- WARNING**
*Group [H02K 5/20](#) is impacted by reclassification into groups [H02K 5/203](#) and [H02K 5/207](#).
 Groups [H02K 5/20](#), [H02K 5/203](#), and [H02K 5/207](#) should be considered in order to perform a complete search.*
- N H02K 5/203
- • • {specially adapted for liquids, e.g. cooling jackets}
- WARNING**
*Group [H02K 5/203](#) is incomplete pending reclassification of documents from group [H02K 5/20](#).
 Groups [H02K 5/20](#) and [H02K 5/203](#) should be considered in order to perform a complete search.*
- N H02K 5/207
- • • {with openings in the casing specially adapted for ambient air}
- WARNING**
Group [H02K 5/207](#) is incomplete pending reclassification of documents from group [H02K 5/20](#).

Groups [H02K 5/20](#) and [H02K 5/207](#) should be considered in order to perform a complete search.

- M H02K 5/24
- specially adapted for suppression or reduction of noise or vibrations ~~(({elastic means for supporting brush holders H02K 5/14; elastic means for supporting bearings H02K 5/16})~~
- U H02K 7/00**
- Arrangements for handling mechanical energy structurally associated with dynamo-electric machines, e.g. structural association with mechanical driving motors or auxiliary dynamo-electric machines**
- U H02K 7/06
- Means for converting reciprocating motion into rotary motion or *vice versa*
- M H02K 7/065
- • Electromechanical oscillators; Vibrating magnetic drives ~~(in time-pieces G04C 5/00)~~
- M H02K 7/14
- Structural association with mechanical loads, e.g. with hand-held machine tools or fans (~~(H02K 7/006 takes precedence;)~~ with fan or impeller for cooling the machine [H02K 9/06](#))
- M H02K 7/18
- Structural association of electric generators with mechanical driving motors, e.g. *turbine with turbines* (if the driving-motor aspect predominates, *see the relevant subclass of section F, e.g. F03B 13/00*)
- M H02K 7/20
- Structural association with auxiliary dynamo-electric machines, e.g. with electric starter ~~motor, with exciter~~ *motors or exciters*
- U H02K 9/00**
- Arrangements for cooling or ventilating (channels or ducts in parts of the magnetic circuit [H02K 1/20](#), [H02K 1/32](#); channels or ducts in or between conductors [H02K 3/22](#), [H02K 3/24](#))**
- D H02K 9/005
- {Details of cooling systems with unspecified cooling medium flowing through channels in or between the conductors}
- <administratively transferred to [H02K 9/00](#)>
- U H02K 9/19
- for machines with closed casing and closed-circuit cooling using a liquid cooling medium, e.g. oil
- C H02K 9/20
- • wherein the cooling medium vaporises within the machine casing
- WARNING**
Group [H02K 9/20](#) is impacted by reclassification into group [H02K 9/225](#). Groups [H02K 9/20](#) and [H02K 9/225](#) should be considered in order to perform a complete search.
- C H02K 9/22
- by solid heat conducting material embedded in, or arranged in contact with, the stator or rotor, e.g. heat bridges
- WARNING**
Group [H02K 9/22](#) is impacted by reclassification into groups [H02K 9/223](#), [H02K 9/225](#), and [H02K 9/227](#). All groups listed in this Warning should be considered in order to perform a complete search.
- N H02K 9/223
- • {Heat bridges}
- WARNING**
Group [H02K 9/223](#) is incomplete pending reclassification of documents from group [H02K 9/22](#). Groups [H02K 9/22](#) and [H02K 9/223](#) should be considered in order to perform a complete search.

- N H02K 9/225
- {Heat pipes}
- WARNING**
Group [H02K 9/225](#) is incomplete pending reclassification of documents from groups [H02K 9/20](#) and [H02K 9/22](#).
Groups [H02K 9/20](#), [H02K 9/22](#), and [H02K 9/225](#) should be considered in order to perform a complete search.
- N H02K 9/227
- {Heat sinks}
- WARNING**
Group [H02K 9/227](#) is incomplete pending reclassification of documents from group [H02K 9/22](#).
Groups [H02K 9/22](#) and [H02K 9/227](#) should be considered in order to perform a complete search.
- M H02K 9/24
- Protection against failure of cooling arrangements, e.g. due to loss of cooling medium; **or** due to interruption of the circulation of cooling medium (~~circuit arrangements affording such protection H02H 7/00~~)
- M H02K 9/28
- Cooling of commutators, slip-rings; or brushes; e.g. by ventilating

Project: MP0427, RP0673 (H02K)

- U H02K 16/00
- Machines with more than one rotor or stator {(machines for transmitting mechanical power from a driving shaft to a driven shaft and comprising structurally interrelated motor and generator parts [H02K 51/00](#); permanent magnet machines with multiple rotors or stators relatively rotated for vectorially combining the excitation fields or the armature voltages [H02K 21/029](#))}**
- M H02K 16/04
- Machines with one rotor and **two** stators
- NOTE**
Group [H02K 16/00](#) takes precedence over groups [H02K 17/00](#) - [H02K 53/00](#).

Project: RP0673 (H02K)

- U H02K 17/00
- Asynchronous induction motors; Asynchronous induction generators**
- U H02K 17/02
- Asynchronous induction motors
- M H02K 17/34
- Cascade arrangement of an asynchronous motor with another dynamo-electric motor or converter (~~(machines with rotors and moving stators connected in a cascade H02K 16/025); control of cascade arrangements H02P~~)
- U H02K 23/00
- DC commutator motors or generators having mechanical commutator; Universal AC/DC commutator motors**
- U H02K 23/26
- characterised by the armature windings
- M H02K 23/30
- having lap **or loop** windings; ~~having loop windings~~
- M H02K 23/32
- having wave ~~winding or undulating windings; having undulating winding~~
- M H02K 23/66
- Structural association with auxiliary electric devices influencing the characteristic of, or controlling, the machine, e.g. with ~~impedance, with switch impedances or switches~~(~~control arrangements external to the machine H02P~~)
- M H02K 23/68
- Structural association with auxiliary mechanical devices, e.g. with ~~clutch, with brake clutches or brakes~~(~~control arrangements external to the machine H02P~~)
- U H02K 27/00
- AC commutator motors or generators having mechanical commutator**
- M H02K 27/30
- Structural association with auxiliary mechanical devices, e.g. ~~clutch, brake with clutches or brakes~~(~~control arrangements external to the machine H02P~~)

- U H02K 29/00** Motors or generators having non-mechanical commutating devices, e.g. discharge tubes or semiconductor devices
- M H02K 29/06 · with position sensing devices (*H02K 29/03 takes precedence*)
- M H02K 29/14 · with speed sensing devices ~~{{(structural association with other mechanical energy devices H02K 7/00 H02K 29/03 takes precedence)}}~~
- U H02K 41/00** Propulsion systems in which a rigid body is moved along a path due to dynamo-electric interaction between the body and a magnetic field travelling along the path ~~{{(electromagnetic launchers F41B 6/00)}}~~
- M H02K 41/06 · Rolling motors, i.e. *motors* having the rotor axis parallel to the stator axis and following a circular path as the rotor rolls around the inside or outside of the stator ~~};~~ ~~};~~ Nutating motors, i.e. having the rotor axis *parallel to the stator axis* inclined with respect to the stator axis and performing a nutational movement as the rotor rolls on the stator}
- M H02K 49/00** Dynamo-electric clutches; Dynamo-electric brakes ~~(electrically or magnetically actuated clutches or brakes F16D 27/00, F16D 29/00, F16D 65/28; magnetic-particle clutches F16D 37/02; adapted for use as dynamometers G01L)~~
- U H02K 49/02 · of the asynchronous induction type
- M H02K 49/04 · · of the eddy-current hysteresis type ~~{{(eddy current brakes cooperating with a rail B61H 7/083)}}~~

Project: MP0427 (H02P)

- M H02P 1/00** Arrangements for starting electric motors or dynamo-electric converters (starting of synchronous motors with electronic commutators except reluctance motors, [H02P 6/20](#), [H02P 6/22](#); starting dynamo-electric motors rotating step by step [H02P 8/04](#); vector control [H02P 21/00](#))
- NOTE*
{Group H02P 1/029 takes precedence over groups H02P 1/26 - H02P 1/54.}
- U H02P 1/16 · for starting dynamo-electric motors or dynamo-electric converters
- M H02P 1/24 · · for starting an individual ac commutator motor (starting of ac/dc commutator motors [H02P 1/18](#))

NOTE*Group H02P 1/029 takes precedence over groups H02P 1/26 - H02P 1/54***Project: MP0427 (H03F)**

- M H03F 3/00** Amplifiers with only discharge tubes or only semiconductor devices as amplifying elements
- NOTE*
Groups H03F 3/20 - H03F 3/72 take precedence over groups H03F 3/02 - H03F 3/189.
{This Note corresponds to IPC Note (1) relating to H03F 3/02 - H03F 3/189.}
- M H03F 3/005 · {using switched capacitors, e.g. dynamic amplifiers; using switched capacitors as resistors in differential amplifiers ([H03F 3/45](#) takes precedence)}

NOTE*Groups H03F 3/20 - H03F 3/72 take precedence over groups H03F 3/02 - H03F 3/195*

Project: MP0427 (H03J)

- M H03J 1/00 Details of adjusting, driving, indicating, or mechanical control arrangements for resonant circuits in general (machine elements in general [F16](#); coupling of knobs to shafts [F16D](#))

NOTE

Groups [H03J 1/14](#), [H03J 1/16](#) take precedence over groups [H03J 1/08](#) - [H03J 1/12](#).

{This Note corresponds to IPC Note (1) relating to [H03J 1/08](#) - [H03J 1/12](#).}

- U H03J 1/06 • Driving or adjusting arrangements; combined with other driving or adjusting arrangements, e.g. of gain control
- M H03J 1/066 • • {Constructional details regarding potentiometric setting of voltage or current variable reactances}

NOTE

~~Groups [H03J 1/14](#), [H03J 1/16](#) take precedence over groups [H03J 1/08](#) - [H03J 1/12](#).~~

Project: RP0160-F (H03M)

- U H03M 13/00 Coding, decoding or code conversion, for error detection or error correction; Coding theory basic assumptions; Coding bounds; Error probability evaluation methods; Channel models; Simulation or testing of codes (error detection or error correction for analogue/digital, digital/analogue or code conversion [H03M 1/00](#) – [H03M 11/00](#) specially adapted for digital computers [G06F 11/08](#), for information storage based on relative movement between record carrier and transducer [G11B](#), e.g. [G11B 20/18](#), for static stores [G11C](#))

- U H03M 13/37 • Decoding methods or techniques, not specific to the particular type of coding provided for in groups [H03M 13/03](#) - [H03M 13/35](#)

- U H03M 13/39 • • Sequence estimation, i.e. using statistical methods for the reconstruction of the original codes

- M H03M 13/3905 • • • {Maximum a posteriori probability [MAP] decoding or approximations thereof based on trellis or lattice decoding, e.g. forward-backward algorithm, log-MAP decoding, max-log-MAP decoding}

WARNING

~~Group [H03M 13/3905](#) is incomplete pending reclassification of documents from group [H03M 13/42](#).~~

~~Groups [H03M 13/42](#) and [H03M 13/3905](#) should be considered in order to perform a complete search.~~

- M H03M 13/3911 • • • {Correction factor, e.g. approximations of the $\exp(1+x)$ function}

WARNING

~~Group [H03M 13/3911](#) is incomplete pending reclassification of documents from group [H03M 13/42](#).~~

~~Groups [H03M 13/42](#) and [H03M 13/3911](#) should be considered in order to perform a complete search.~~

- M H03M 13/3916 • • • {for block codes using a trellis or lattice}

WARNING

~~Group [H03M 13/3916](#) is incomplete pending reclassification of documents from group [H03M 13/42](#).~~

~~Groups [H03M 13/42](#) and [H03M 13/3916](#) should be considered in order to perform a complete search.~~

- M H03M 13/3922 . . . {Add-Compare-Select [ACS] operation in forward or backward recursions}
- WARNING
~~Group H03M 13/3922 is incomplete pending reclassification of documents from group H03M 13/42.~~
~~Groups H03M 13/42 and H03M 13/3922 should be considered in order to perform a complete search.~~
- M H03M 13/3927 . . . {Log-Likelihood Ratio [LLR] computation by combination of forward and backward metrics into LLRs}
- WARNING
~~Group H03M 13/3927 is incomplete pending reclassification of documents from group H03M 13/42.~~
~~Groups H03M 13/42 and H03M 13/3927 should be considered in order to perform a complete search.~~
- M H03M 13/3933 . . . {Decoding in probability domain}
- WARNING
~~Group H03M 13/3933 is incomplete pending reclassification of documents from group H03M 13/42.~~
~~Groups H03M 13/42 and H03M 13/3933 should be considered in order to perform a complete search.~~
- M H03M 13/3938 . . . {Tail-biting ([H03M 13/2996](#) takes precedence)}
- WARNING
~~Group H03M 13/3938 is incomplete pending reclassification of documents from group H03M 13/42.~~
~~Groups H03M 13/42 and H03M 13/3938 should be considered in order to perform a complete search.~~
- D H03M 13/42
 —(Frozen)
- . . . {MAP decoding or approximations thereof based on trellis or lattice decoding, e.g. forward-backward algorithm, log-MAP decoding, max-log-MAP decoding}
- WARNING
~~Group H03M 13/42 is no longer used for the classification of documents as of MAY 1, 2019.~~
~~The content of this group is being reclassified into groups H03M 13/3905, H03M 13/3911, H03M 13/3916, H03M 13/3922, H03M 13/3927, H03M 13/3933 and H03M 13/3938.~~
~~All groups listed in this Warning should be considered in order to perform a complete search.~~

Project: MP0497 (H04H)

- M H04H **BROADCAST COMMUNICATION (multiplex communication [H04J](#); pictorial communication aspects of broadcast systems [H04N](#))**
- NOTE
1. In this subclass, the following terms or expressions are used with the meaning indicated:
- "broadcast" is simultaneous distribution of identical signals to plural receiving stations. The term "broadcast" does not include distribution to receiving stations which is controlled by requests or responses from the receiving stations;
 - "broadcast information" covers all kinds of information distributed by broadcast systems;

- "broadcast-related information" is information required by services provided via broadcast systems, other than broadcast information;
- "broadcast time" is a time when particular broadcast information exists and is available;
- "broadcast channel" is a channel via which broadcast information is distributed, e.g. carrier waves, time slots, cables or wireless broadcast service areas;
- "broadcast space" is either a set of broadcast channels in which particular broadcast information exists and is available or a geographical area determined by the set of broadcast channels;
- "broadcast space-time" is space-time determined by broadcast space and broadcast time in which particular broadcast information exists and is available;
- "broadcast system" is a system which consists of transmitter, transponder and receiver for broadcast;
- "broadcast-related system" is a system which is directly affected by generation, broadcast, reception or use of broadcast information;
- "broadcast service" is a service directly provided by a broadcast system, i.e. distribution service of broadcast information;
- "broadcast-related service" is a service provided by broadcast-related systems;
- "A with a direct linkage to B" means that A directly affects B or that A is directly affected by B.

~~2. In this subclass, multi-aspect classification is applied, so that subject matter characterised by aspects covered by more than one of its groups, which is considered to represent information of interest for search, may also be classified in each of those groups.~~

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

Project: RP0350 (H04L)

M H04L

TRANSMISSION OF DIGITAL INFORMATION, e.g. TELEGRAPHIC COMMUNICATION (~~typewriters B41J; order telegraphs, fire or police telegraphs G08B; visual telegraphy G08B, G08C; teleautographic systems G08C; ciphering or deciphering apparatus per se G09C; coding, decoding or code conversion, in general H03M; arrangements common to telegraphic and telephonic communication H04M; selecting H04Q~~)

NOTE

This subclass covers transmission of signals having been supplied in digital form and includes data transmission, telegraphic communication and methods or arrangements for monitoring.

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

H04L 9/18	covered by	H04L 9/065
H04L 9/20	covered by	H04L 9/0656
H04L 9/22	covered by	H04L 9/0662
H04L 9/24	covered by	H04L 9/0662
H04L 9/26	covered by	H04L 9/0668
H04L 9/28	covered by	H04L 9/002 , H04L 9/008 , H04L 9/06 , H04L 9/08 , H04L 9/30 , H04L 9/32
H04L 12/20	covered by	H04L 29/00

H04L 12/24	covered by	H04L 41/00
H04L 12/26	covered by	H04L 43/00
H04L 12/58	covered by	H04L 51/00
H04L 12/60-H04L 12/62	covered by	H04L 12/54
H04L 12/70	covered by	H04L 47/00
H04L 12/701	covered by	H04L 45/00
H04L 12/703	covered by	H04L 45/28
H04L 12/705	covered by	H04L 45/18
H04L 12/707	covered by	H04L 45/22 , H04L 45/24
H04L 12/709	covered by	H04L 45/245
H04L 12/711	covered by	H04L 45/22 , H04L 45/24
H04L 12/713	covered by	H04L 45/586
H04L 12/715	covered by	H04L 45/04 , H04L 45/46 , H04L 45/64
H04L 12/717	covered by	H04L 45/42
H04L 12/721	covered by	H04L 45/06 , H04L 45/12 , H04L 45/123 , H04L 45/124 , H04L 45/127 , H04L 45/14 , H04L 45/26 , H04L 45/32 , H04L 45/34 , H04L 45/36 , H04L 45/38 , H04L 45/40 , H04L 45/44 , H04L 45/566 , H04L 45/62 , H04L 45/66 , H04L 45/68 , H04L 45/70 , H04L 45/72
H04L 12/723	covered by	H04L 45/50-H04L 45/507
H04L 12/725	covered by	H04L 45/30-H04L 45/308
H04L 12/727	covered by	H04L 45/121
H04L 12/729	covered by	H04L 45/125
H04L 12/733	covered by	H04L 45/122 , H04L 45/126 , H04L 45/20
H04L 12/735	covered by	H04L 45/128-H04L 45/1287
H04L 12/741	covered by	H04L 45/54 , H04L 45/74 , H04L 45/745
H04L 12/743	covered by	H04L 45/7453 , H04L 45/7457
H04L 12/745	covered by	H04L 45/748
H04L 12/747	covered by	H04L 45/742
H04L 12/749	covered by	H04L 45/741
H04L 12/751	covered by	H04L 45/02 , H04L 45/025 , H04L 45/026 , H04L 45/08 , H04L 45/10
H04L 12/753	covered by	H04L 45/48
H04L 12/755	covered by	H04L 45/021
H04L 12/757	covered by	H04L 45/023
H04L 12/759	covered by	H04L 45/023
H04L 12/761	covered by	H04L 45/16
H04L 12/763	covered by	H04L 45/00
H04L 12/771	covered by	H04L 45/56 , H04L 45/563
H04L 12/773	covered by	H04L 45/60
H04L 12/775	covered by	H04L 45/58 , H04L 45/583
H04L 12/781	covered by	H04L 45/52

H04L 12/801	covered by	H04L 47/10 , H04L 47/11 , H04L 47/115 , H04L 47/12 , H04L 47/127 , H04L 47/13- H04L 47/196 , H04L 47/29 , H04L 47/33 , H04L 47/34 , H04L 47/35 , H04L 47/37 , H04L 47/39
H04L 12/803	covered by	H04L 47/122 , H04L 47/125
H04L 12/805	covered by	H04L 47/36 , H04L 47/365
H04L 12/807	covered by	H04L 47/27
H04L 12/811	covered by	H04L 47/38
H04L 12/813	covered by	H04L 47/20
H04L 12/815	covered by	H04L 47/22 , H04L 47/225 , H04L 47/23
H04L 12/819	covered by	H04L 47/21 , H04L 47/215
H04L 12/823	covered by	H04L 47/32-H04L 47/326
H04L 12/825	covered by	H04L 47/25-H04L 47/266
H04L 12/827	covered by	H04L 47/25 - H04L 47/266
H04L 12/829	covered by	H04L 47/25 - H04L 47/266
H04L 12/833	covered by	H04L 47/2458 , H04L 47/31
H04L 12/835	covered by	H04L 47/30
H04L 12/841	covered by	H04L 47/28-H04L 47/286
H04L 12/851	covered by	H04L 47/24 , H04L 47/2408 , H04L 47/2425 , H04L 47/2433 , H04L 47/245 , H04L 47/2483
H04L 12/853	covered by	H04L 47/2416
H04L 12/855	covered by	H04L 47/2466
H04L 12/857	covered by	H04L 47/2491
H04L 12/859	covered by	H04L 47/2475
H04L 12/861	covered by	H04L 49/90 , H04L 49/9005 , H04L 49/9031 - H04L 49/9094
H04L 12/863	covered by	H04L 47/50 , H04L 47/54 , H04L 47/62-H04L 47/627 , H04L 47/628 , H04L 47/6285 , H04L 47/6295
H04L 12/865	covered by	H04L 47/6275
H04L 12/867	covered by	H04L 47/629
H04L 12/869	covered by	H04L 47/58 , H04L 47/60
H04L 12/873	covered by	H04L 47/52 , H04L 47/521 , H04L 47/522 , H04L 47/524 , H04L 47/527 , H04L 47/528
H04L 12/875	covered by	H04L 47/56-H04L 47/568
H04L 12/877	covered by	H04L 47/525
H04L 12/879	covered by	H04L 49/901 , H04L 49/9026
H04L 12/883	covered by	H04L 49/9015 , H04L 49/9021
H04L 12/885	covered by	H04L 49/90 , H04L 49/9005 , H04L 49/9031 - H04L 49/9094
H04L 12/891	covered by	H04L 47/41
H04L 12/893	covered by	H04L 47/40

H04L 12/901	covered by	H04L 2012/5603 - H04L 2012/5687
H04L 12/903	covered by	H04L 2012/5603 - H04L 2012/5687
H04L 12/905	covered by	H04L 2012/5603 - H04L 2012/5687
H04L 12/911	covered by	H04L 47/70-H04L 47/748 , H04L 47/78 , H04L 47/781 , H04L 47/782 , H04L 47/783 , H04L 47/788 , H04L 47/82 - H04L 47/829
H04L 12/913	covered by	H04L 47/724
H04L 12/915	covered by	H04L 47/785 , H04L 47/787 , H04L 47/787
H04L 12/917	covered by	H04L 47/76
H04L 12/919	covered by	H04L 47/765 , H04L 47/767
H04L 12/923	covered by	H04L 47/762
H04L 12/925	covered by	H04L 47/722
H04L 12/927	covered by	H04L 47/80-H04L 47/808
H04L 12/931	covered by	H04L 49/00 , H04L 49/20 - H04L 49/208 , H04L 49/35 - H04L 49/508 , H04L 49/60 - H04L 49/70
H04L 12/933	covered by	H04L 49/10-H04L 49/1592
H04L 12/935	covered by	H04L 49/30-H04L 49/3009
H04L 12/937	covered by	H04L 49/253-H04L 49/255
H04L 12/939	covered by	H04L 49/55-H04L 49/557
H04L 12/943	covered by	H04L 49/55 - H04L 49/557
H04L 12/945	covered by	H04L 49/55 - H04L 49/557
H04L 12/947	covered by	H04L 49/25 , H04L 49/251 , H04L 49/252 , H04L 49/256 , H04L 49/257 , H04L 49/258
H04L 12/951	covered by	H04L 2012/5603 - H04L 2012/5687
H04L 12/953	covered by	H04L 2012/5603 - H04L 2012/5687
H04L 12/955	covered by	H04L 2012/5603 - H04L 2012/5687
H04L 25/04	covered by	H04L 25/03
H04L 25/17	covered by	H04L 25/02 - H04L 25/0298
H04L 25/18	covered by	H04L 25/027
H04L 25/28	covered by	H04L 25/0268
H04L 25/30	covered by	H04L 25/061
H04L 25/32	covered by	H04L 25/49
H04L 25/34	covered by	H04L 25/4917
H04L 25/48	covered by	H04L 25/49
H04L 25/52	covered by	H04L 25/20
H04L 25/54	covered by	H04L 25/20
H04L 25/56	covered by	H04L 25/202
H04L 25/58	covered by	H04L 25/20
H04L 25/60	covered by	H04L 25/207
H04L 25/62	covered by	H04L 25/205
H04L 25/64	covered by	H04L 25/245

[H04L 25/66](#) covered by [H04L 25/247](#)

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

- M H04L 5/00** **Arrangements affording multiple use of the transmission path** ~~(multiplex communication in general H04J; {orthogonal multiplex systems H04J-11/00})~~
- U H04L 5/003 · {Arrangements for allocating sub-channels of the transmission path}
- M H04L 5/0044 · · {allocation of payload}
- WARNING*
Groups H04L 5/0044 and H04L 5/0046 are incomplete pending reclassification of documents from group H04L 27/2608. Group H04L 27/2608, H04L 5/0044 and H04L 5/0046 should be considered in order to perform a complete search.
- M H04L 5/0048 · · {Allocation of pilot signals, i.e. of signals known to the receiver}
- WARNING*
Groups H04L 5/0048 - H04L 5/0051 are incomplete pending reclassification of documents from group H04L 27/2611. All groups listed in this Warning should be considered in order to perform a complete search.
- M H04L 5/14 · Two-way operation using the same type of signal, i.e. duplex ~~{{duplex repeaters H04L 25/22}; conditioning for two-way transmission in general H04B 3/20; {for interconnection between telephone switching centres H04Q 3/00}}~~
- M H04L 5/22 · using time-division multiplexing ~~{{in general H04J 3/00}}~~
- U H04L 12/00** **Data switching networks (interconnection of, or transfer of information or other signals between, memories, input/output devices or central processing units G06F 13/00)**
- U H04L 12/28 · characterised by path configuration, e.g. local area networks [LAN], wide area networks [WAN]
- U H04L 12/40 · · Bus networks
- M H04L 12/4013 · · · {Management of data rate on the bus (systems modifying transmission characteristics according to link quality [H04L 1/0001](#); ~~negotiation of transmission parameters of transmission speed prior to communication H04L 5/1446; adaptive data allocation for multicarrier modulation H04L 27/2608~~)}
- U H04L 27/00** **Modulated-carrier systems** ~~{{code shift keying in combination with frequency multiplexing H04L 5/06; simultaneous bidirectional transmission of ac signals H04L 5/143; code shift keying H04L 23/02; polarisation shift keying H04B 14/008; transmission of data during the active part of a television frame H04N 7/025}}~~
- U H04L 27/02 · Amplitude-modulated carrier systems, e.g. using on-off keying; Single sideband or vestigial sideband modulation ([H04L 27/32](#) takes precedence)
- M H04L 27/04 · · Modulator circuits ~~(in general H03C {H03K 7/02})~~; Transmitter circuits
- M H04L 27/06 · · Demodulator circuits ~~(in general H03D {H03K 9/02})~~; Receiver circuits
- U H04L 27/10 · Frequency-modulated carrier systems, i.e. using frequency-shift keying ([H04L 27/32](#) takes precedence {; continuous phase systems [H04L 27/18](#))}
- M H04L 27/12 · · Modulator circuits ~~(in general H03C {H03K 7/06})~~; Transmitter circuits ~~{{continuous phase modulation H04L 27/20}}~~
- M H04L 27/14 · · Demodulator circuits ~~(in general H03D {H03K 9/06})~~; Receiver circuits ~~{{for continuous phase modulation systems H04L 27/22}}~~

- M H04L 27/18
 - Phase-modulated carrier systems, i.e. using phase-shift keying ([H04L 27/32](#) takes precedence) ~~{includes continuous phase systems}~~
- M H04L 27/20
 - • Modulator circuits ~~(in general H03C {H03K 7/04})~~; Transmitter circuits
- M H04L 27/22
 - • Demodulator circuits ~~(in general H03D {H03K 9/04})~~; Receiver circuits
- U H04L 27/26
 - Systems using multi-frequency codes ([H04L 27/32](#) takes precedence)
- U H04L 27/2601
 - • {Multicarrier modulation systems}
- C H04L 27/2602
 - • • {Signal structure}

WARNING

Group [H04L 27/2602](#) is impacted by reclassification into groups [H04L 27/26025](#), [H04L 27/2603](#), and [H04L 27/26035](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N [H04L 27/26025](#)
 - • • {Numerology, i.e. varying one or more of symbol duration, subcarrier spacing, Fourier transform size, sampling rate or down-clocking (allocating sub-channels of the transmission path [H04L 5/003](#))}
 - WARNING**
 - Group [H04L 27/26025](#) is incomplete pending reclassification of documents from group [H04L 27/2602](#).
 - Groups [H04L 27/2602](#) and [H04L 27/26025](#) should be considered in order to perform a complete search.
- N [H04L 27/2603](#)
 - • • {Signal structure ensuring backward compatibility with legacy system}
 - WARNING**
 - Group [H04L 27/2603](#) is incomplete pending reclassification of documents from group [H04L 27/2602](#).
 - Groups [H04L 27/2602](#) and [H04L 27/2603](#) should be considered in order to perform a complete search.
- N [H04L 27/26035](#)
 - • • {Maintenance of orthogonality, e.g. for signals exchanged between cells or users, or by using covering codes or sequences (using different training sequence per antenna [H04B 7/0684](#); code allocation [H04J 13/16](#))}
 - WARNING**
 - Group [H04L 27/26035](#) is incomplete pending reclassification of documents from group [H04L 27/2602](#).
 - Groups [H04L 27/2602](#) and [H04L 27/26035](#) should be considered in order to perform a complete search.
- U H04L 27/2604
 - • • {Multiresolution systems (by means of multiresolution subcarriers [H04L 27/183](#), [H04L 27/3488](#))}
- M H04L 27/2605
 - • • {Symbol extensions, e.g. *Zero Tail*, *Unique Word [UW]*}
- F H04L 27/2608
(Frozen)
 - • • {Allocation of payload}

WARNING

Group [H04L 27/2608](#) is no longer used for the classification of documents as of January 1, 2021.

The content of this group is being reclassified into groups [H04L 5/0044](#) and [H04L 5/0046](#).

Groups [H04L 27/2608](#), [H04L 5/0044](#) and [H04L 5/0046](#) should be considered in order to perform a complete search.

- T H04L 27/261 {Details of reference signals ~~(H04L 27/262 takes precedence)~~}
- WARNING**
Group [H04L 27/261](#) is incomplete pending reclassification of documents from group [H04L 27/262](#).
Groups [H04L 27/262](#) and [H04L 27/261](#) should be considered in order to perform a complete search.
- F H04L 27/2611 (Frozen) {Distribution thereof}
- WARNING**
Group [H04L 27/2611](#) is no longer used for the classification of documents as of January 1, 2021.
The content of this group is being reclassified into groups [H04L 5/0048](#), [H04L 5/005](#), and [H04L 5/0051](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- C H04L 27/2613 {Structure of the reference signals ~~per se~~}
- WARNING**
Group [H04L 27/2613](#) is incomplete pending reclassification of documents from group [H04L 27/262](#).
Group [H04L 27/2613](#) is also impacted by reclassification into groups [H04L 27/26132](#), [H04L 27/26134](#), and [H04L 27/26136](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H04L 27/26132 {using repetition}
- WARNING**
Group [H04L 27/26132](#) is incomplete pending reclassification of documents from groups [H04L 27/2613](#) and [H04L 27/262](#).
Groups [H04L 27/2613](#), [H04L 27/262](#), and [H04L 27/26132](#) should be considered in order to perform a complete search.
- N H04L 27/26134 {Pilot insertion in the transmitter chain, e.g. pilot overlapping with data, insertion in time or frequency domain}
- WARNING**
Group [H04L 27/26134](#) is incomplete pending reclassification of documents from groups [H04L 27/2613](#) and [H04L 27/262](#).
Groups [H04L 27/2613](#), [H04L 27/262](#), and [H04L 27/26134](#) should be considered in order to perform a complete search.
- N H04L 27/26136 {Pilot sequence conveying additional information}
- WARNING**
Group [H04L 27/26136](#) is incomplete pending reclassification of documents from groups [H04L 27/2613](#) and [H04L 27/262](#).
Groups [H04L 27/2613](#), [H04L 27/262](#), and [H04L 27/26136](#) should be considered in order to perform a complete search.
- U H04L 27/2614 . . . {Peak power aspects}
- C H04L 27/262 {Reduction thereof by selection of pilot symbols}
- WARNING**
Group [H04L 27/262](#) is impacted by reclassification into groups [H04L 27/261](#), [H04L 27/2613](#), [H04L 27/26132](#), [H04L 27/26134](#), and [H04L 27/26136](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- C H04L 27/2626
 - • • {Arrangements specific to the transmitter *only*}
 - WARNING
*Group H04L 27/2626 is impacted by reclassification into group H04L 27/26265.
Groups H04L 27/2626 and H04L 27/26265 should be considered in order to perform a complete search.*

- N H04L 27/26265
 - • • • {Arrangements for sidelobes suppression specially adapted to multicarrier systems, e.g. spectral precoding}
 - WARNING
*Group H04L 27/26265 is incomplete pending reclassification of documents from group H04L 27/2626.
Groups H04L 27/2626 and H04L 27/26265 should be considered in order to perform a complete search.*

- U H04L 27/2627
 - • • • {Modulators}
- C H04L 27/2628
 - • • • • {Inverse Fourier transform modulators, e.g. *IFFT/IDFT inverse fast Fourier transform [IFFT] or inverse discrete Fourier transform [IDFT] modulators (DFT or FFT computation methods or devices in general G06F 17/141 H04L 27/2634 takes precedence)*}
 - WARNING
*Group H04L 27/2628 is impacted by reclassification into groups H04L 27/2634, H04L 27/2636 and H04L 27/26362.
All groups listed in this Warning should be considered in order to perform a complete search.*

- C H04L 27/263
 - • • • • • {modification of IFFT/IDFT modulator for performance improvement}
 - WARNING
*Group H04L 27/263 is impacted by reclassification into groups H04L 27/2634, H04L 27/2636 and H04L 27/26362.
All groups listed in this Warning should be considered in order to perform a complete search.*

- C H04L 27/2631
 - • • • • • {with polyphase implementation}
 - WARNING
*Group H04L 27/2631 is impacted by reclassification into groups H04L 27/2634, H04L 27/2636 and H04L 27/26362.
All groups listed in this Warning should be considered in order to perform a complete search.*

- C H04L 27/2633
 - • • • • • • {using partial FFTs}
 - WARNING
*Group H04L 27/2633 is impacted by reclassification into groups H04L 27/2634, H04L 27/2636 and H04L 27/26362.
All groups listed in this Warning should be considered in order to perform a complete search.*

- C H04L 27/2634 {~~IFFT/IDFT~~ *Inverse fast Fourier transform [IFFT] or inverse discrete Fourier transform [IDFT] modulators* in combination with other circuits for modulation (~~DFT or FFT computation methods or devices in general G06F 17/141~~)}
WARNING
 Group H04L 27/2634 is incomplete pending reclassification of documents from group [H04L 27/2628](#), [H04L 27/263](#), [H04L 27/2631](#) and [H04L 27/2633](#).
 Group H04L 27/2634 is also impacted by reclassification into group [H04L 27/26362](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- T H04L 27/2636 {with ~~FFT/DFT~~, e.g. ~~standard SC-FDMA transmitter or DFT-SOFDM or DFT modulators~~, e.g. *standard single-carrier frequency-division multiple access [SC-FDMA] transmitter or DFT spread orthogonal frequency division multiplexing [DFT-SOFDM]*}
WARNING
 Group H04L 27/2636 is incomplete pending reclassification of documents from group [H04L 27/2628](#), [H04L 27/263](#), [H04L 27/2631](#) and [H04L 27/2633](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N H04L 27/26362 {Subcarrier weighting equivalent to time domain filtering, e.g. weighting per subcarrier multiplication (arrangements for removing intersymbol interference at the transmitter end [H04L 25/03343](#))}
WARNING
 Group [H04L 27/26362](#) is incomplete pending reclassification of documents from groups [H04L 27/2628](#), [H04L 27/263](#), [H04L 27/2631](#) and [H04L 27/2633](#), and [H04L 27/2634](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- U H04L 27/2637 {with direct modulation of individual subcarriers}
- M H04L 27/2639 {~~Discrete cosine transform modulators~~ *Modulators using other transforms, e.g. discrete cosine transforms, Orthogonal Time Frequency and Space [OTFS] or hermetic transforms*}
- C H04L 27/264 {~~Filterbank multicarrier [FBMC]~~ *Pulse-shaped multi-carrier, i.e. not using rectangular window*}
WARNING
 Group H04L 27/264 is impacted by reclassification into groups [H04L 27/26412](#), [H04L 27/26414](#), and [H04L 27/26416](#).
 All groups listed in this Warning should be considered in order to perform a complete search.
- N H04L 27/26412 {Filtering over the entire frequency band, e.g. filtered orthogonal frequency-division multiplexing [OFDM]}
WARNING
 Group [H04L 27/26412](#) is incomplete pending reclassification of documents from group [H04L 27/264](#).
 Groups [H04L 27/264](#) and [H04L 27/26412](#) should be considered in order to perform a complete search.

- N H04L 27/26414 {Filtering per subband or per resource block, e.g. universal filtered multicarrier [UFMC] or generalized frequency division multiplexing [GFDM]}
- WARNING
Group [H04L 27/26414](#) is incomplete pending reclassification of documents from group [H04L 27/264](#).
Groups [H04L 27/264](#) and [H04L 27/26414](#) should be considered in order to perform a complete search.
- N H04L 27/26416 {Filtering per subcarrier, e.g. filterbank multicarrier [FBMC]}
- WARNING
Group [H04L 27/26416](#) is incomplete pending reclassification of documents from group [H04L 27/264](#).
Groups [H04L 27/264](#) and [H04L 27/26416](#) should be considered in order to perform a complete search.
- M H04L 27/2642 {Wavelet transform modulators (~~wavelets in general H04L 27/0004~~; wavelet-division [H04L 5/0008](#))}
- M H04L 27/2647 . . . {Arrangements specific to the receiver ~~only~~ (equalisation ~~H04L 25/03006~~; [H04L 27/01](#))}
- C H04L 27/2649 {Demodulators}
- WARNING
Group [H04L 27/2649](#) is impacted by reclassification into groups [H04L 27/26524](#), [H04L 27/26526](#), [H04L 27/26532](#), [H04L 27/26534](#), [H04L 27/26536](#), [H04L 27/26538](#), [H04L 27/2654](#), [H04L 27/26542](#), [H04L 27/26544](#), and [H04L 27/26546](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- C H04L 27/265 {Fourier transform demodulators}, e.g. fast Fourier transform [FFT] or discrete Fourier transform [DFT] demodulators ([H04L 27/26524](#) takes precedence)}
- WARNING
Group [H04L 27/265](#) is impacted by reclassification into groups [H04L 27/2651](#), [H04L 27/26522](#), [H04L 27/26524](#), and [H04L 27/26526](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H04L 27/2651 {Modification of fast Fourier transform [FFT] or discrete Fourier transform [DFT] demodulators for performance improvement}
- WARNING
Group [H04L 27/2651](#) is incomplete pending reclassification of documents from group [H04L 27/265](#).
Groups [H04L 27/265](#) and [H04L 27/2651](#) should be considered in order to perform a complete search.
- U H04L 27/2652 {with polyphase implementation}
- N H04L 27/26522 {using partial FFTs}
- WARNING
Group [H04L 27/26522](#) is incomplete pending reclassification of documents from group [H04L 27/265](#).
Groups [H04L 27/265](#) and [H04L 27/26522](#) should be considered in order to perform a complete search.

- N H04L 27/26524 {Fast Fourier transform [FFT] or discrete Fourier transform [DFT] demodulators in combination with other circuits for demodulation}
- WARNING
Groups [H04L 27/26524](#) and [H04L 27/26526](#) are incomplete pending reclassification of documents from group [H04L 27/2649](#) and [H04L 27/265](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H04L 27/26526 {with inverse FFT [IFFT] or inverse DFT [IDFT] demodulators, e.g. standard single-carrier frequency-division multiple access [SC-FDMA] receiver or DFT spread orthogonal frequency division multiplexing [DFT-SOFDM]}
- U H04L 27/2653 {with direct demodulation of individual subcarriers}
- N H04L 27/26532 {Demodulators using other transforms, e.g. discrete cosine transforms, Orthogonal Time Frequency and Space [OTFS] or hermetic transforms}
- WARNING
Group [H04L 27/26532](#) is incomplete pending reclassification of documents from group [H04L 27/2649](#).
Groups [H04L 27/2649](#) and [H04L 27/26532](#) should be considered in order to perform a complete search.
- N H04L 27/26534 {Pulse-shaped multi-carrier, i.e. not using rectangular window}
- WARNING
Groups [H04L 27/26534](#) - [H04L 27/2654](#) are incomplete pending reclassification of documents from group [H04L 27/2649](#).
All groups listed in this Warning should be considered in order to perform a complete search.
- N H04L 27/26536 {Filtering over the entire frequency band, e.g. filtered orthogonal frequency division multiplexing [OFDM]}
- N H04L 27/26538 {Filtering per subband or per resource block, e.g. universal filtered multicarrier [UFMC] or generalized frequency division multiplexing [GFDM]}
- N H04L 27/2654 {Filtering per subcarrier, e.g. filterbank multicarrier [FBMC]}
- N H04L 27/26542 {Wavelet transform demodulators (wavelet-division [H04L 5/0008](#))}
- WARNING
Group [H04L 27/26542](#) is incomplete pending reclassification of documents from group [H04L 27/2649](#).
Groups [H04L 27/2649](#) and [H04L 27/26542](#) should be considered in order to perform a complete search.
- N H04L 27/26544 {Demodulators for signals generated by symbol repetition (synchronisation arrangements [H04L 27/2655](#))}
- WARNING
Group [H04L 27/26544](#) is incomplete pending reclassification of documents from group [H04L 27/2649](#).
Groups [H04L 27/2649](#) and [H04L 27/26544](#) should be considered in order to perform a complete search.
- N H04L 27/26546 {with oversampling}
- WARNING
Group [H04L 27/26546](#) is incomplete pending reclassification of documents from group [H04L 27/2649](#).

Groups [H04L 27/2649](#) and [H04L 27/26546](#) should be considered in order to perform a complete search.

- U H04L 27/2655 {Synchronisation arrangements}
 - M H04L 27/2656 {Frame synchronisation, e.g. *packet synchronisation, time division duplex [TDD] switching point detection or subframe synchronisation*}
 - U H04L 27/2668 {Details of algorithms}
 - U H04L 27/2673 {characterised by synchronisation parameters}
 - M H04L 27/2675 {Pilot or known symbols (~~structure of pilot symbols H04L 27/2613; cell search in orthogonal multiplex systems H04J 11/0069; allocation of pilot signals H04L 5/0048~~)}
 - C H04L 27/2681 {characterised by constraints}
- WARNING**
*Group [H04L 27/2681](#) is impacted by reclassification into group [H04L 27/26885](#).
Groups [H04L 27/2681](#) and [H04L 27/26885](#) should be considered in order to perform a complete search.*
- U H04L 27/2688 {Resistance to perturbation, e.g. noise, interference or fading}
 - N H04L 27/26885 {Adaptation to rapid radio propagation changes, e.g. due to velocity}
- WARNING**
*Group [H04L 27/26885](#) is incomplete pending reclassification of documents from group [H04L 27/2681](#).
Groups [H04L 27/2681](#) and [H04L 27/26885](#) should be considered in order to perform a complete search.*
- U H04L 27/2689 {Link with other circuits, i.e. special connections between synchronisation arrangements and other circuits for achieving synchronisation}
 - M H04L 27/2691 {involving interference determination or cancellation (~~interference mitigation or coordination in orthogonal multiplex systems in general H04J 11/0023~~)}
 - M H04L 27/2695 {with channel estimation, e.g. determination of delay spread, derivative or peak tracking (channel estimation ~~per se~~ [H04L 25/0202](#))}

Project: MP0420 (H04M)

M H04M TELEPHONIC COMMUNICATION (circuits for controlling other apparatus via *via* a telephone cable and not involving telephone switching apparatus [G08](#))

NOTES

1. This subclass covers :
 - substation equipment;
 - telephonic communication systems combined with other electrical systems;
 - testing arrangements peculiar to telephonic communication systems.
2. In this subclass, the following terms or expressions are used with the meanings indicated :
 - "subscriber" is a general term for terminal equipment, e.g. fixed, wireless, mobile or cellular phones, or for a user of terminal equipment;
 - "substation" means a subscriber or monitoring equipment which may connect a single subscriber to a line without choice as to subscriber;
 - "satellite" is a type of exchange the operation of which depends upon control signals received from a supervisory exchange;

- "switching centres" include exchanges and satellites.

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following CPC groups:

H04M 7/02	covered by	H04Q 3/00
H04M 7/04	covered by	H04Q 3/00
H04M 7/10	covered by	H04Q 3/00
H04M 15/02	covered by	H04M 15/888

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

M	H04M 1/00	Substation equipment, e.g. for use by subscribers; Analogous equipment at exchanges Substation equipment, e.g. for use by subscribers (subscriber services or facilities provided at exchanges H04M 3/00; prepayment telephone coin boxes H04M 17/00; current supply arrangements H04M 19/00 H04M 19/08; {telephone sets particularly adapted for data transmission H04M 11/066; network interface devices H04Q 1/028})
U	H04M 1/02	• Constructional features of telephone sets
M	H04M 1/0295	• • { mechanical Mechanical mounting details of display modules (for portable telephones H04M 1/0266)}
M	H04M 1/03	• • Constructional features of telephone transmitters or receivers, e.g. telephone handsets, {speakers or microphones} hand-sets (transducers in general H04R 1/00)
M	H04M 1/04	• • Supports for telephone transmitters or receivers (for transducers in general H04R 1/00)
M	H04M 1/05	• • • specially adapted for use on head, throat, or breast (handsfree use of portable phones H04M 1/6041)
U	H04M 1/06	• • • Hooks; Cradles
M	H04M 1/08	• • • associated with switches operated by the weight of the receiver or hand-set
M	H04M 1/15	• • Protection of Protecting or guiding telephone cords; Guiding telephone cords; Winding-up telephone cords (in general H02G 11/00)
M	H04M 1/18	• • Telephone sets modified specially adapted for use in ships, mines, or other places exposed to adverse environment (H04M 1/19 takes precedence; telephone cabinets per se E04H 1/14)
M	H04M 1/19	• • Arrangements of transmitters, receivers, or complete sets to prevent eavesdropping, to attenuate local noise or to prevent undesired transmission; Special mouthpieces or receivers Mouthpieces or receivers specially adapted therefor (circuit arrangements for preventing eavesdropping H04M 1/68 ; telephone cabinets per se E04H 1/14)
M	H04M 1/21	• • Combinations with auxiliary equipment, e.g. with clock, with clocks or memoranda pads
M	H04M 1/22	• • Illuminating Illumination ; Arrangements for improving the visibility of characters on dials
M	H04M 1/24	• Arrangements for testing (measuring electric values G01R; testing transducers H04R 29/00)

Project: RP0702 (H04M)

- C H04M 1/247
- Telephone sets including user guidance or ~~features~~*feature* selection means facilitating their use (*user interfaces specially adapted for cordless or mobile telephones H04M 1/724*); ~~{Fixed telephone terminals for accessing a variety of communication services via the PSTN network}~~

WARNING

Group H04M 1/247 is impacted by reclassification into groups H04M 1/724, H04M 1/72403, H04M 1/72406, H04M 1/72409, H04M 1/72412, H04M 1/72415, H04M 1/72418, H04M 1/72421, H04M 1/72424, H04M 1/72427, H04M 1/7243, H04M 1/72433, H04M 1/72436, H04M 1/72439, H04M 1/72442, H04M 1/72445, H04M 1/72448, H04M 1/72451, H04M 1/72454, H04M 1/72457, H04M 1/7246, H04M 1/72463, H04M 1/72466, H04M 1/72469, H04M 1/72472, H04M 1/72475, H04M 1/72478, H04M 1/72481, and H04M 1/72484. All groups listed in this Warning should be considered in order to perform a complete search.

- M H04M 1/2474
- • {Telephone terminals specially adapted for disabled people (~~H04M 1/72588 takes precedence~~; *user interfaces for cordless or mobile telephones specially adapted for disabled users H04M 1/72475*; network based special services or facilities for hearing-impaired persons [H04M 3/42391](#); devices for conversing with the deaf-blind [G09B 21/04](#))}
- M H04M 1/2475
- • • {for a hearing impaired user (~~hearing-aids per se H04R 25/00~~)}
- M H04M 1/2476
- • • {for a visually impaired user (~~H04M 1/22 takes precedence~~*illuminating or arrangements for improving visibility of characters on dials H04M 1/22*)}

Project: MP0420 (H04M)

- M H04M 1/253
- Telephone sets using digital voice transmission (~~simultaneous speech and data transmission H04M 11/06~~; ~~{ISDN terminal access circuits H04Q 11/0471}~~)
- M H04M 1/26
- Devices for ~~signalling identity of wanted~~*calling a* subscriber (~~constructional features H04M 1/23~~*H04M 1/66 takes precedence*)
- U H04M 1/27
- • Devices whereby a plurality of signals may be stored simultaneously {(devices disposed in the exchange [H04M 3/424](#), [H04M 3/44](#))}
- M H04M 1/274
- • • with provision for storing more than one subscriber number at a time {, e.g. using toothed disc}

Project: RP0649-F (H04M)

- M H04M 1/2745
- • • • using static electronic memories, e.g. chips

WARNING

~~Group H04M 1/2745 is impacted by reclassification into groups H04M 1/27467 and H04M 1/2753. Groups H04M 1/2745, H04M 1/27467, and H04M 1/2753 should be considered in order to perform a complete search.~~

- M H04M 1/27467
- • • • • Methods of retrieving data

WARNING

~~Group H04M 1/27467 is incomplete pending reclassification of documents from group H04M 1/2745. Groups H04M 1/2745 and H04M 1/27467 should be considered in order to perform a complete search.~~

M H04M 1/2753 providing data content

WARNING

Group H04M 1/2753 is incomplete pending reclassification of documents from group H04M 1/2745. Groups H04M 1/2745 and H04M 1/2753 should be considered in order to perform a complete search.

Project: MP0420 (H04M)

- M H04M 1/515 . . by generating or selecting **other signals** *signals other* than trains of pulses of similar shape ~~or other signals~~, *or signals other* than currents of one or more different frequencies, e.g. generation of **direct-current** *dc* signals of alternating polarity, coded pulses; *or* impedance dialling
- M H04M 1/52 . . Arrangements wherein a dial or **equivalent** *the like* is mechanically coupled to a line selector
- U H04M 1/53 . . Generation of additional signals, e.g. additional pulses
- M H04M 1/54 Arrangements wherein a dial or **equivalent** *the like* generates identifying signals, e.g. in party-line systems
- M H04M 1/58 . . Anti-side-tone circuits ~~(hybrid circuits for carrier-frequency operation H04B 1/00)~~
- U H04M 1/66 . . with means for preventing unauthorised or fraudulent calling (verifying user identity or authority in secret or secure digital communications [H04L 9/32](#))
- M H04M 1/677 . . Preventing the dialling or sending of predetermined telephone numbers or selected types of telephone numbers, e.g. long distance *numbers*

Project: RP0702 (H04M)

- U H04M 1/68 . . Circuit arrangements for preventing eavesdropping
- U H04M 1/70 . . Lock-out or secrecy arrangements in party-line systems
- N *H04M 1/71* . . *Substation extension arrangements*
- WARNING**
Group [H04M 1/71](#) is incomplete pending reclassification of documents from group [H04M 1/72](#).
Groups [H04M 1/72](#) and [H04M 1/71](#) should be considered in order to perform a complete search.
- N *H04M 1/715* . . *using two or more extensions per line (cordless telephones [H04M 1/725](#))*
- C H04M 1/72 . . ~~Substation extension arrangements~~ *Mobile telephones*; Cordless telephones, i.e. devices for establishing wireless links to base stations without route selecting ~~{selection (constructional features of cordless telephones H04M 1/0202)}~~
- WARNING**
Group [H04M 1/72](#) is impacted by reclassification into group [H04M 1/71](#).
Groups [H04M 1/72](#) and [H04M 1/71](#) should be considered in order to perform a complete search.
- D H04M 1/723 . . using two or more extensions per line (H04M 1/725 takes precedence)
<administratively transferred to [H04M 1/715](#)>
- N *H04M 1/724* . . *User interfaces specially adapted for cordless or mobile telephones*
- WARNING**
Groups [H04M 1/724](#) - [H04M 1/72484](#) are incomplete pending reclassification of documents from group [H04M 1/247](#).

All groups listed in this Warning should be considered in order to perform a complete search.

- N H04M 1/72403 . . . with means for local support of applications that increase the functionality
- N H04M 1/72406 by software upgrading or downloading
- N H04M 1/72409 by interfacing with external accessories (hands-free [H04M 1/60](#))
- N H04M 1/72412 using two-way short-range wireless interfaces
- N H04M 1/72415 for remote control of appliances
- N H04M 1/72418 for supporting emergency services
- N H04M 1/72421 with automatic activation of emergency service functions, e.g. upon sensing an alarm
- N H04M 1/72424 with manual activation of emergency-service functions
- N H04M 1/72427 for supporting games or graphical animations
- N H04M 1/7243 with interactive means for internal management of messages
- N H04M 1/72433 for voice messaging, e.g. dictaphones (for answering incoming calls [H04M 1/64](#))
- N H04M 1/72436 for text messaging, e.g. SMS or e-mail
- N H04M 1/72439 for image or video messaging
- N H04M 1/72442 for playing music files
- N H04M 1/72445 for supporting Internet browser applications
- N H04M 1/72448 . . . with means for adapting the functionality of the device according to specific conditions
- N H04M 1/72451 according to schedules, e.g. using calendar applications
- N H04M 1/72454 according to context-related or environment-related conditions
- N H04M 1/72457 according to geographic location
- N H04M 1/7246 by connection of exchangeable housing parts
- N H04M 1/72463 to restrict the functionality of the device
- N H04M 1/72466 . . . with selection means, e.g. keys, having functions defined by the mode or the status of the device
- N H04M 1/72469 . . . for operating the device by selecting functions from two or more displayed items, e.g. menus or icons
- N H04M 1/72472 wherein the items are sorted according to specific criteria, e.g. frequency of use
- N H04M 1/72475 . . . specially adapted for disabled users
- N H04M 1/72478 for hearing-impaired users
- N H04M 1/72481 for visually impaired users
- N H04M 1/72484 . . . wherein functions are triggered by incoming communication events
- M H04M 1/725 . . Cordless telephones ~~{for handsfree use H04M 1/6041}~~ *user interfaces specially adapted therefor H04M 1/724*}
- M H04M 1/72502 . . . ~~{with one base station connected to a single line}~~
- M H04M 1/72505 ~~{Radio link set-up procedure}~~ *procedures*
- M H04M 1/72508 ~~{using a control channel}~~
- M H04M 1/72511 ~~{Searching for an available channel}~~ *available channels*
- M H04M 1/72513 ~~{On hold, intercom or transfer communication modes}~~
- M H04M 1/72516 ~~{including with means for out-of-range alerting means}~~

- D H04M 1/72519 . . . {Portable communication terminals with improved user interface to control a main telephone operation mode or to indicate the communication status}
<administratively transferred to [H04M 1/724](#)>
- D H04M 1/72522 . . . {With means for supporting locally a plurality of applications to increase the functionality (for selecting a function in a menu H04M 1/2477)}
<administratively transferred to [H04M 1/72403](#)>
- D H04M 1/72525 . . . {provided by software upgrading or downloading}
<administratively transferred to [H04M 1/72406](#)>
- D H04M 1/72527 . . . {provided by interfacing with an external accessory (hands-free H04M 1/6041)}
<administratively transferred to [H04M 1/72409](#)>
- D H04M 1/7253 . . . {using a two-way short-range wireless interface}
<administratively transferred to [H04M 1/72412](#)>
- D H04M 1/72533 . . . {for remote control of appliances}
<administratively transferred to [H04M 1/72415](#)>
- D H04M 1/72536 . . . {for supporting an emergency service (alarm systems G08B; telephonic communication systems in combination with alarm systems H04M 11/04; telephone sets for disabled persons H04M 1/2474)}
<administratively transferred to [H04M 1/72418](#)>
- D H04M 1/72538 . . . {with automatic feature activation, e.g. upon sensing of an alarm condition}
<administratively transferred to [H04M 1/72421](#)>
- D H04M 1/72541 . . . {with manual feature activation}
<administratively transferred to [H04M 1/72424](#)>
- D H04M 1/72544 . . . {for supporting a game or graphical animation}
<administratively transferred to [H04M 1/72427](#)>
- D H04M 1/72547 . . . {with interactive input/output means for internally managing multimedia messages (mail systems for messages comprising audio and non-audio components H04M 3/5307; message switching systems H04L 51/00)}
<administratively transferred to [H04M 1/7243](#)>
- D H04M 1/7255 . . . {for voice messaging, e.g. dictaphone (for answering an incoming call H04M 1/64)}
<administratively transferred to [H04M 1/72433](#)>
- D H04M 1/72552 . . . {for text messaging, e.g. sms, e-mail}
<administratively transferred to [H04M 1/72436](#)>
- D H04M 1/72555 . . . {for still or moving picture messaging (systems for transmission of still picture signals H04N 1/00095; videophones H04N 7/14)}
<administratively transferred to [H04M 1/72439](#)>
- D H04M 1/72558 . . . {for playing back music files (portable music players per se G11B 27/00)}
<administratively transferred to [H04M 1/72442](#)>
- D H04M 1/72561 . . . {for supporting an internet browser application}
<administratively transferred to [H04M 1/72445](#)>
- D H04M 1/72563 . . . {with means for adapting by the user the functionality or the communication capability of the terminal under specific circumstances}
<administratively transferred to [H04M 1/72448](#)>

- D H04M 1/72566 {according to a schedule or a calendar application (network applications for presence management H04L 29/08684)}
<administratively transferred to [H04M 1/72451](#)>
- D H04M 1/72569 {according to context or environment related information}
<administratively transferred to [H04M 1/72454](#)>
- D H04M 1/72572 {according to a geographic location (user location related services provided by wireless communication networks H04W 4/02; network applications adapted for the location of the user terminal H04L 29/08657)}
<administratively transferred to [H04M 1/72457](#)>
- D H04M 1/72575 {by connection of an exchangeable housing part}
<administratively transferred to [H04M 1/7246](#)>
- D H04M 1/72577 {to restrict the functionality or the communication capability of the terminal (network access restriction H04W 48/02)}
<administratively transferred to [H04M 1/72463](#)>
- D H04M 1/7258 {by using keys with multiple functionality defined by the current phone mode or status}
<administratively transferred to [H04M 1/72466](#)>
- D H04M 1/72583 {for operating the terminal by selecting telephonic functions from a plurality of displayed items, e.g. menus, icons (interaction techniques for Graphical User Interfaces *per se* G06F 3/048)}
<administratively transferred to [H04M 1/72469](#)>
- D H04M 1/72586 {wherein the items are sorted according to a specific criteria, e.g. frequency of use}
<administratively transferred to [H04M 1/72472](#)>
- D H04M 1/72588 {specially adapted for disabled people (devices for conversing with the deaf-blind G09B 21/04)}
<administratively transferred to [H04M 1/72475](#)>
- D H04M 1/72591 {for a hearing impaired user (hearing-aids *per se* H04R 25/00)}
<administratively transferred to [H04M 1/72478](#)>
- D H04M 1/72594 {for a visually impaired user (H04M 1/22 takes precedence)}
<administratively transferred to [H04M 1/72481](#)>
- D H04M 1/72597 {wherein handling of applications is triggered by incoming communication events (changing user alerting upon occurrence of events H04M 19/04)}
<administratively transferred to [H04M 1/72484](#)>

Project: MP0420 (H04M)

- M H04M 1/737 . . . ~~characterised~~ **Characterised** by transmission of electromagnetic waves other than radio waves, e.g. infra-red **waves**
- U H04M 1/738 . Interface circuits for coupling substations to external telephone lines ([H04M 1/78](#) takes precedence)
- M H04M 1/76 . . Compensating for differences in line impedance (~~in general H04B~~)
- M H04M 1/78 . Circuit arrangements in which low-frequency speech signals proceed in one direction on the line, while speech signals proceeding in the other direction on the line are modulated on a high-frequency carrier signal (~~repeater circuits H04B 3/38~~)
- M H04M 3/00 **Automatic or semi-automatic exchanges** (~~{(constructional details of telephone exchanges H04Q 1/02)}~~)

- M H04M 3/02
- ~~Ringling or otherwise calling substations~~ Calling substations, e.g. by ringing (selective calling H04Q)
- M H04M 3/04
- • the calling signal being supplied from the final selector
- M H04M 3/06
- • the calling signal being supplied from the subscriber's line circuit
- U H04M 3/08
- Indicating faults in circuits or apparatus
- M H04M 3/10
- • Providing fault- or trouble- signals
- M H04M 3/22
- ~~Supervisory, monitoring, {management, i.e. operation, administration, maintenance} or testing arrangements~~ Arrangements for supervision, monitoring or testing
- U H04M 3/26
- • with means for applying test signals (or for measuring)
- M H04M 3/34
- • • Testing for cross-talk (~~in lines generally H04B~~)
- M H04M 3/36
- • Statistical metering, e.g. recording occasions when traffic exceeds capacity of trunks (~~digital computers for evaluating statistical data G06F 17/18~~)
- M H04M 3/38
- Graded-service arrangements, i.e. some subscribers prevented from establishing certain connections (~~queueing arrangements {H04M 3/523}, H04Q 3/64~~ queueing arrangements H04Q 3/64)
- M H04M 3/42
- Systems providing special services or facilities to subscribers (*especially adapted for wireless communication networks H04W 4/00*)
- M H04M 3/487
- • Arrangements for providing information services, e.g. recorded voice services; *or* time announcements
- M H04M 3/56
- • Arrangements for connecting several subscribers to a common circuit, i.e. affording conference facilities (~~computer conferences H04L 12/1813~~); video conference systems H04N 7/15)
- U H04M 5/00** **Manual exchanges (substation equipment in general H04M 1/00)**
- M H04M 5/02
- Constructional details (jacks, jack-plugs H01R 2201/16; H01R 2201/16 H01R 24/58)
- M H04M 5/12
- ~~Ringling or otherwise calling substations~~ Calling substations, e.g. by ringing
- U H04M 5/18
- Arrangements for signalling the class or number of called or calling line from one exchange to another
- M H04M 5/20
- • ~~Number-indicating arrangements for~~ Arrangements for indicating the numbers of the incoming lines
- M H04M 7/00** **Interconnection arrangements Arrangements for interconnection between switching centres (transmission arrangements in general H04B; {interconnection arrangements between PSTN/ISDN switching centres H04Q 3/00})**
- M H04M 7/12
- for working between exchanges having different types of switching equipment, e.g. power-driven and step by step; ~~decimal and non-decimal, {circuit-switched and packet-switched, i.e. gateway arrangements}~~ *or decimal and non-decimal*
- M H04M 9/00** **Interconnection arrangements Arrangements for interconnection not involving centralised switching**
- M H04M 9/08
- Two-way loud-speaking telephone systems with means for ~~suppressing echoes or otherwise conditioning for one or other direction~~ *conditioning the signal, e.g. for suppressing echoes for one or both directions* of traffic (~~for line transmission in general H04B 3/20~~)
- M H04M 11/00** **Telephonic communication systems specially adapted for combination with other electrical systems**
- M H04M 11/02
- with bell or annunciator systems (~~such systems in general G08~~)
- M H04M 11/04
- with ~~fire, police, burglar, or other~~ alarm systems, e.g. *fire, police or burglar* alarm systems (~~such systems in general G08~~)

- M H04M 11/06
- Simultaneous speech and ~~telegraphic or other data~~ *data transmission, e.g. telegraphic* transmission over the same conductors (~~telegraphy in general H04L~~)
- M H04M 11/08
- *especially* adapted for optional reception of entertainment or informative matter (~~systems in which the information is continuously available on a carrier over the whole network H04H 20/81~~)
- M H04M 11/10
- with dictation recording and playback systems (~~such systems in general G11B~~)
- U H04M 19/00** **Current supply arrangements for telephone systems (for selecting-equipment H04Q 1/28)**
- M H04M 19/02
- providing ringing current or supervisory tones, e.g. dialling tone, *or* busy tone
- M H04M 19/04
- *the* ringing-current ~~generated at substation~~ *being generated at the substations*
- M H04M 19/06
- ~~Current in which current~~ supply sources at subordinate switching ~~centre~~ *centres are charged from the* main exchange
- M H04M 19/08
- ~~Current supply sources at substation with current supply sources at the~~ *substations* (generating ringing current [H04M 19/04](#))

Project: RP0702 (H04M)

- U H04M 2250/00** **Details of telephonic subscriber devices**
- H04M 2250/64
- file transfer between terminals (download of applications ~~H04M 1/72525~~ *H04M 1/72406*; transfer of messages, e.g. SMS, e-mail or MMS ~~H04M 1/72547~~ *H04M 1/7243*)

Project: RP0702 (H04N)

- U H04N 1/00** **Scanning, transmission or reproduction of documents or the like, e.g. facsimile transmission; Details thereof**
- U H04N 1/00127
- {Connection or combination of a still picture apparatus with another apparatus, e.g. for storage, processing or transmission of still picture signals or of information associated with a still picture}
- H04N 1/00281
- {with a telecommunication apparatus, e.g. a switched network of teleprinters for the distribution of text-based information, a selective call terminal (details of transmission [H04N 1/00095](#); establishing a communication with one of a facsimile machine or another apparatus sharing a single line [H04N 1/32704](#); interfacing cordless telephone terminals with an accessory to increase the functionality of user interface ~~H04M 1/72527~~ *H04M 1/72409*)}
- U H04N 21/00** **Selective content distribution, e.g. interactive television or video on demand [VOD] (real-time bi-directional transmission of motion video data [H04N 7/14](#) {; broadcast or conference over packet switching networks [H04L 12/18](#)})**

NOTES

1. This group covers :

- interactive video distribution processes, systems, or elements thereof, which are characterised by point-to-multipoint system configurations, and which are mainly used for motion video data unidirectional distribution or delivery resulting from interactions between systems operators, e.g. access or service providers, or users e.g. subscribers, and system elements.
- such systems include dedicated communication systems, such as television distribution systems, which primarily distribute or deliver motion video data in the manner indicated, which may, in addition, provide a framework for further, diverse data communications or services in either unidirectional or bi-directional form. However, video will occupy most of the downlink bandwidth in the distribution process.

- typically, system operators interface with transmitter-side elements or users' interface with receiver-side elements in order to facilitate, through interaction with such elements, the dynamic control of data processing or data flow at various points in the system. This interaction is typically occasional or intermittent in nature.
 - processes, systems or elements thereof specially adapted to the generation, distribution and processing of data, which is either associated with video content, e.g. metadata, ratings, or related to the user or his environment and which has been actively or passively gathered. This data is either used to facilitate interaction or to alter or target the content.
2. In this main group, the first place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the first appropriate place.
3. In this main group, the following terms and expressions are used with the meaning indicated:
- additional data - designates still pictures, textual, graphical or executable data such as software. It is used to convey supplemental information and can be generated prior to or during the distribution process itself, e.g. metadata, keys.
 - content designates video or audio streams, which may be combined with additional data. Video data will always be present and occupy most of the downlink bandwidth in the distribution process
 - server - designates an apparatus designed for adapting the content received from the content provider to the distribution network. It also manages the distribution to client devices or intermediate components over a network. Further servers may also be present for gathering or generating additional data, e.g. rights management server
 - additional data server - designates a server, which sole purpose is the distribution or management of additional data. It is not in charge of the distribution of video or audio data
 - client - designates an apparatus such as a TV receiver, a set-top-box, a PC-TV, a mobile appliance (e.g. mobile phone or receiver in a vehicle), for receiving video, audio and possibly additional data from one or several servers or intermediate components via a network for further processing, storing or displaying. It can also transmit this data on a home-based local network to further devices, e.g. a home server transmitting video to PCs and set-top-boxes within a home.
 - local network - pertains to a restricted area, e.g. a home or a vehicle, and designates the link between a client and its peripheral devices
 - network - is to be distinguished from "local network": "network" designates the link between the server and the clients, or between the server and the intermediate components, or between the intermediate components and the clients, or between remotely located clients
 - distribution - encompasses broadcasting, multicasting and unicasting techniques for transmitting content from one or more sources to one or more receiving stations. The distribution follows a request by a receiving station to the source, e.g. VOD or from a customization of the content by the source, e.g. targeting advertisements to a demographic group in a unidirectional or bidirectional system. Additionally, distribution encompasses techniques where the client acts as a source and another client acts as a receiving station, e.g. a peer-to-peer system for sharing video among client devices
 - end-user - designates a physical person, e.g. a TV viewer, who consumes the content using the client device. He is the final recipient of the content distributed by the server
 - interaction - covers actions occurring between or among two or more objects that have an effect upon one another, wherein objects comprise users, system operators, system elements, or content. The user may interact with content locally at the client device, e.g. for requesting additional

data stored within the client device. The user may interact with content remotely through a server e.g. for VOD playback control or for uploading video to a server. The client device may interact with the content e.g. selecting content based upon the user profile. The client device may interact with a server using a return channel, e.g. for authenticating client or uploading client hardware capabilities. The server may interact with a client device, e.g. to force a client to tune to an advertisement channel

upstream - designates the direction of data flow towards the source, e.g. a server receiving a request via a mobile phone network.

downstream - designates the direction of data flow towards a client, e.g. a client receiving data originating from a server elementary stream

An elementary stream (ES) as defined by the MPEG system layer designates the output of an audio or video encoder.

- U H04N 21/40 · Client devices specifically adapted for the reception of or interaction with content, e.g. set-top-box [STB]; Operations thereof
- U H04N 21/41 · · Structure of client; Structure of client peripherals
- U H04N 21/422 · · · Input-only peripherals {, i.e. input devices connected to specially adapted client devices}, e.g. global positioning system [GPS] {(input devices also receiving signals from specially adapted client devices [H04N 21/4104](#))}
- U H04N 21/42204 · · · · {User interfaces specially adapted for controlling a client device through a remote control device; Remote control devices therefor (constructive details of casings for the remote control device [H01H 9/0235](#); user interfaces for controlling a tuning device of a television receiver through a remote control [H03J 9/00](#); remote control of peripheral devices connected to a television receiver through the remote control device of the television receiver [H04B 1/205](#))}
- U H04N 21/42206 · · · · · {characterized by hardware details}
- H04N 21/4222 · · · · · · {Remote control device emulator integrated into a non-television apparatus, e.g. a PDA, media center or smart toy (remote control device for a television receiver integrated into a mobile phone [H04M 1/72533](#)[H04M 1/72415](#))}

Project: MP0427 (H04N)

- U H04N 2201/00 **Indexing scheme relating to scanning, transmission or reproduction of documents or the like, and to details thereof**
 - U H04N 2201/024 · deleted
 - M H04N 2201/02404 · · Arrangements for mounting or supporting heads ([H04N 2201/02402](#) takes precedence)
- NOTE**
Indexing codes of group H04N 2201/02406 can be used in combination, i.e. a code followed by additional codes preceded by a "+" sign, or in isolation
- U H04N 2201/02406 · · Arrangements for positioning elements within a head ([H04N 1/02409](#) takes precedence; arrangements for positioning heads [H04N 2201/02402](#))
 - U H04N 2201/02439 · · · Positioning method
 - M H04N 2201/02449 · · · · using a reference element, e.g. a stop
- NOTE**
Indexing codes of group H04N 2201/02452 can be used in combination, i.e. a code followed by additional codes preceded by a "+" sign, or in isolation

Project: MP0490 (H04W)**M H04W**

WIRELESS COMMUNICATION NETWORKS (broadcast communication [H04H](#); communication systems using wireless links for non-selective communication, e.g. wireless extensions [H04M 1/72](#))

NOTES

1. This subclass covers :
 - communication networks for selectively establishing one or a plurality of wireless communication links between a desired number of users or between users and network equipment, for the purpose of transferring information via these wireless communication links;
 - networks deploying an infrastructure for mobility management of wireless users connected thereto, e.g. cellular networks, WLAN [Wireless Local Area Network], wireless access networks, e.g. WLL [Wireless Local Loop] or self-organising wireless communication networks, e.g. ad hoc networks;
 - planning or deployment specially adapted for the above-mentioned wireless networks;
 - services or facilities specially adapted for the above-mentioned wireless networks;
 - arrangements or techniques specially adapted for the operation of the above-mentioned wireless networks.
2. This subclass does not cover :
 - communication systems using wireless extensions, i.e. wireless links without selective communication, e.g. cordless telephones, which are covered by group [H04M 1/72](#);
 - broadcast communication, which is covered by subclass [H04H](#).

3. In this subclass, the first place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the first appropriate place.

WARNING

In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

M H04W 4/00

Services specially adapted for wireless communication networks; Facilities therefor

NOTES

1. This **groups group** covers mobile application services or application service signalling for communication over wireless networks.
2. This group focuses on application services specially adapted for wireless networks or adjusted to the wireless environment.

3. In this group, the first place priority rule is not applied, i.e. the common rule is applied.

Project: RP0361-F, RP0704 (H04W)**M H04W 12/00**

Security arrangements, e.g. access security or fraud detection; Authentication, e.g. verifying user identity or authorisation; Protecting privacy or anonymity {; Protecting confidentiality; Key management; Integrity; Mobile application security; Using identity modules; Secure pairing of devices; Context aware security; Lawful interception}

WARNING

Group H04W 12/00 is impacted by reclassification into groups H04W 12/00, H04W 12/001, H04W 12/0013, H04W 12/0017, H04W 12/002, H04W 12/0023, H04W 12/0027, H04W 12/003, H04W 12/00305, H04W 12/004, H04W 12/00401, H04W 12/00403, H04W 12/00405,

~~H04W 12/00407, H04W 12/00409, H04W 12/005, H04W 12/0051, H04W 12/00502, H04W 12/00503, H04W 12/00504, H04W 12/00505, H04W 12/00506, H04W 12/00508, H04W 12/0051, H04W 12/00512, H04W 12/00514, H04W 12/00516, H04W 12/00518, H04W 12/0052, H04W 12/00522, H04W 12/00524, H04W 12/007, H04W 12/009, H04W 12/0401, H04W 12/0403, H04W 12/04031, H04W 12/04033, H04W 12/0407, H04W 12/04071, H04W 12/0602, H04W 12/0605, H04W 12/0608, H04W 12/0609, H04W 12/0802, H04W 12/0804, H04W 12/0806, H04W 12/0808, H04W 12/1002, H04W 12/1004, H04W 12/1006, H04W 12/1008, H04W 12/12, H04W 12/1201, H04W 12/1202, H04W 12/1204, H04W 12/1205, H04W 12/1206, H04W 12/1208.~~

All groups listed in this warning should be considered in order to perform a complete search.

- D H04W 12/001
- {Protecting confidentiality, e.g. by encryption or ciphering}
- WARNING
Group H04W 12/001 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/02.
Groups H04W 12/00, H04W 12/02, and H04W 12/001 should be considered in order to perform a complete search.
- D H04W 12/0013
- {of user plane, e.g. user traffic}
- WARNING
Group H04W 12/0013 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/0013 should be considered in order to perform a complete search.
- D H04W 12/0017
- {of control plane, e.g. signalling traffic}
- WARNING
Group H04W 12/0017 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/0017 should be considered in order to perform a complete search.
- D H04W 12/002
- {Mobile device security; Mobile application security}
- WARNING
Group H04W 12/002 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/002 should be considered in order to perform a complete search.
- D H04W 12/0023
- {Protecting application or service provisioning, e.g. securing SIM application provisioning}
- WARNING
Group H04W 12/0023 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/0023 should be considered in order to perform a complete search.

- D H04W 12/0027
- {Managing security policies for mobile device or applications control, e.g. mobile application permission management or mobile device security settings}
- WARNING
Group H04W 12/0027 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/0027 should be considered in order to perform a complete search.
- D H04W 12/003
- {Secure pairing of devices, e.g. bootstrapping a secure communication link between pairing terminals; Secure socializing}
- WARNING
Group H04W 12/003 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/003 should be considered in order to perform a complete search.
- D H04W 12/00305
- {involving three or more devices, e.g. group pairing}
- WARNING
Group H04W 12/00305 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/00305 should be considered in order to perform a complete search.
- D H04W 12/004
- {using identity modules}
- WARNING
Group H04W 12/004 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/004 should be considered in order to perform a complete search.
- D H04W 12/00401
- {using virtual identity modules}
- WARNING
Group H04W 12/00401 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/00401 should be considered in order to perform a complete search.
- D H04W 12/00403
- {using shared identity modules, e.g. SIM sharing}
- WARNING
Group H04W 12/00403 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/00403 should be considered in order to perform a complete search.
- D H04W 12/00405
- {using multiple identity modules}
- WARNING
Group H04W 12/00405 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/00405 should be considered in order to perform a complete search.

- D H04W 12/00407
- {using near field communication [NFC], e.g. NFC tag, smart tag or radio frequency identification [RFID] module}
- WARNING
Group H04W 12/00407 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/00407 should be considered in order to perform a complete search.
- D H04W 12/00409
- {using secure binding, e.g. securely binding identity modules to devices, services or applications}
- WARNING
Group H04W 12/00409 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/00409 should be considered in order to perform a complete search.
- D H04W 12/005
- {Context aware security}
- WARNING
Group H04W 12/005 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/005 should be considered in order to perform a complete search.
- D H04W 12/00502
- {Time aware}
- WARNING
Group H04W 12/00502 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/00502 should be considered in order to perform a complete search.
- D H04W 12/00503
- {Location or proximity aware, e.g. using proximity to other devices}
- WARNING
Group H04W 12/00503 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/00503 should be considered in order to perform a complete search.
- D H04W 12/00504
- {Ambient aware, e.g. using captured environmental data}
- WARNING
Group H04W 12/00504 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/00504 should be considered in order to perform a complete search.
- D H04W 12/00505
- {Risk aware, e.g. selecting security levels depending on risk profiles}
- WARNING
Group H04W 12/00505 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/00505 should be considered in order to perform a complete search.
- D H04W 12/00506
- {Trust aware, e.g. using trust scores or trust relationships}
- WARNING
Group H04W 12/00506 is incomplete pending reclassification of documents from group H04W 12/00.

Groups H04W 12/00 and H04W 12/00506 should be considered in order to perform a complete search.

- D H04W 12/00508
 - {Gesture or behaviour aware, e.g. device movements or biometrics}
 - WARNING
Group H04W 12/00508 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/00508 should be considered in order to perform a complete search.

- D H04W 12/0051
 - {Identity aware}
 - WARNING
Group H04W 12/0051 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/0051 should be considered in order to perform a complete search.

- D H04W 12/00512
 - • {Hardware identity}
 - WARNING
Group H04W 12/00512 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/00512 should be considered in order to perform a complete search.

- D H04W 12/00514
 - • • {Subscriber identity}
 - WARNING
Group H04W 12/00514 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/00514 should be considered in order to perform a complete search.

- D H04W 12/00516
 - • • {Access point logical identity}
 - WARNING
Group H04W 12/00516 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/00516 should be considered in order to perform a complete search.

- D H04W 12/00518
 - • • {Temporary identity}
 - WARNING
Group H04W 12/00518 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/00518 should be considered in order to perform a complete search.

- D H04W 12/0052
 - • • {Group identity}
 - WARNING
Group H04W 12/0052 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/0052 should be considered in order to perform a complete search.

- D H04W 12/00522 • • • {Graphical identity}
- WARNING
Group H04W 12/00522 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/00522 should be considered in order to perform a complete search.
- D H04W 12/00524 • • • {Radio fingerprint}
- WARNING
Group H04W 12/00524 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/00524 should be considered in order to perform a complete search.
- D H04W 12/007 • {Lawful interception}
- WARNING
Group H04W 12/007 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00, H04W 12/02, and H04W 12/007 should be considered in order to perform a complete search.
- M H04W 12/009 • {specially adapted for networks, e.g. wireless sensor networks, ad-hoc networks, RFID networks or cloud networks}
- WARNING
Group H04W 12/009 is incomplete pending reclassification of documents from group H04W 12/00.
Groups H04W 12/00 and H04W 12/009 should be considered in order to perform a complete search.
- M H04W 12/02 • Protecting privacy or anonymity {, e.g. protecting personally identifiable information [PII]}
- WARNING
Group H04W 12/02 is impacted by reclassification into groups H04W 12/02, H04W 12/001, H04W 12/007.
All groups listed in this Warning should be considered in order to perform a complete search.

Project: RP0704 (H04W)

- N H04W 12/03 • Protecting confidentiality, e.g. by encryption
- N H04W 12/033 • • of the user plane, e.g. user's traffic
- N H04W 12/037 • • of the control plane, e.g. signalling traffic

Project: RP0361-F, RP0704 (H04W)

- M H04W 12/04 • Key management {, e.g. **by using** generic bootstrapping architecture [GBA]}
- WARNING
Group H04W 12/04 is impacted by reclassification into groups H04W 12/04, H04W 12/0401, H04W 12/0403, H04W 12/04031, H04W 12/04033, H04W 12/0407, H04W 12/04071.
All groups listed in this Warning should be considered in order to perform a complete search.

- D H04W 12/0401 • • {Key generation or derivation}
WARNING
 Group H04W 12/0401 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/04. Groups H04W 12/00, H04W 12/04, and H04W 12/0401 should be considered in order to perform a complete search.
- D H04W 12/0403 • • {using a trusted network node as anchor}
WARNING
 Group H04W 12/0403 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/04. Groups H04W 12/00, H04W 12/04, and H04W 12/0403 should be considered in order to perform a complete search.
- D H04W 12/04031 • • • {Key distribution, e.g. key pre-distribution or key agreement}
WARNING
 Group H04W 12/04031 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/04. Groups H04W 12/00, H04W 12/04, and H04W 12/04031 should be considered in order to perform a complete search.
- D H04W 12/04033 • • • {Key management protocols, e.g. managing shared keys, group keys, multicast keys or rekeying}
WARNING
 Group H04W 12/04033 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/04. Groups H04W 12/00, H04W 12/04, and H04W 12/04033 should be considered in order to perform a complete search.
- D H04W 12/0407 • • {without using a trusted network node as anchor}
WARNING
 Group H04W 12/0407 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/04. Groups H04W 12/00, H04W 12/04, and H04W 12/0407 should be considered in order to perform a complete search.
- D H04W 12/04071 • • • {Key exchange, e.g. between nodes}
WARNING
 Group H04W 12/04071 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/04. Groups H04W 12/00, H04W 12/04, and H04W 12/04071 should be considered in order to perform a complete search.

Project: RP0704 (H04W)

- N H04W 12/041 • • Key generation or derivation
- N H04W 12/043 • • using a trusted network node as an anchor
- N H04W 12/0431 • • • Key distribution or pre-distribution; Key agreement
- N H04W 12/0433 • • • Key management protocols
- N H04W 12/047 • • without using a trusted network node as an anchor
- N H04W 12/0471 • • • Key exchange

Project: RP0361-F, RP0704 (H04W)

- M H04W 12/06 • Authentication
- WARNING**
Group H04W 12/06 is impacted by reclassification into groups H04W 12/06, H04W 12/0602, H04W 12/0605, H04W 12/0608, H04W 12/0609. All groups listed in this Warning should be considered in order to perform a complete search.
- D H04W 12/0602 • • {Pre-authentication}
- WARNING**
Group H04W 12/0602 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/06. Groups H04W 12/00, H04W 12/06, and H04W 12/0602 should be considered in order to perform a complete search.
- D H04W 12/0605 • • {Continuous authentication}
- WARNING**
Group H04W 12/0605 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/06. Groups H04W 12/00, H04W 12/06, and H04W 12/0605 should be considered in order to perform a complete search.
- D H04W 12/0608 • • {using credential vaults, e.g. password manager applications or one time password [OTP] applications}
- WARNING**
Group H04W 12/0608 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/06. Groups H04W 12/00, H04W 12/06, and H04W 12/0608 should be considered in order to perform a complete search.
- D H04W 12/0609 • • {using certificates or pre-shared keys}
- WARNING**
Group H04W 12/0609 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/06. Groups H04W 12/00, H04W 12/06, and H04W 12/0609 should be considered in order to perform a complete search.

Project: RP0704 (H04W)

- N H04W 12/062 • • Pre-authentication
- N H04W 12/065 • • Continuous authentication
- N H04W 12/068 • • {using credential vaults, e.g. password manager applications or one time password [OTP] applications}
- N H04W 12/069 • • using certificates or pre-shared keys

Project: RP0361-F, RP0704 (H04W)

- M H04W 12/08 • Access security
- WARNING**
Group H04W 12/08 is impacted by reclassification into groups H04W 12/08, H04W 12/0802, H04W 12/0804, H04W 12/0806, H04W 12/0808. All groups listed in this Warning should be considered in order to perform a complete search.

- D H04W 12/0802
- {using revocation of authorisation}
- WARNING**
Group H04W 12/0802 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/08. Groups H04W 12/00, H04W 12/08, and H04W 12/0802 should be considered in order to perform a complete search.
- D H04W 12/0804
- {using delegated authorisation, e.g. Open Authorisation [OAuth] protocol, user centric management of access rights or user consent}
- WARNING**
Group H04W 12/0804 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/08. Groups H04W 12/00, H04W 12/08, and H04W 12/0804 should be considered in order to perform a complete search.
- D H04W 12/0806
- {using security domains, e.g. separating enterprise and private data domains, building machine-to-machine [M2M] domains or global platform domains}
- WARNING**
Group H04W 12/0806 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/08. Groups H04W 12/00, H04W 12/08, and H04W 12/0806 should be considered in order to perform a complete search.
- D H04W 12/0808
- {using packet filters or firewalls}
- WARNING**
Group H04W 12/0808 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/08. Groups H04W 12/00, H04W 12/08, and H04W 12/0808 should be considered in order to perform a complete search.

Project: RP0704 (H04W)

- N H04W 12/082
- using revocation of authorisation
- N H04W 12/084
- using delegated authorisation, e.g. open authorisation [OAuth] protocol
- N H04W 12/086
- using security domains
- N H04W 12/088
- using filters or firewalls

Project: RP0361-F, RP0704 (H04W)

- M H04W 12/10
- Integrity
- WARNING**
Group H04W 12/10 is impacted by reclassification into groups H04W 12/10, H04W 12/1002, H04W 12/1004, H04W 12/1006, H04W 12/1008. All groups listed in this Warning should be considered in order to perform a complete search.
- D H04W 12/1002
- {Route integrity, e.g. using trusted paths}
- WARNING**
Group H04W 12/1002 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/10. Groups H04W 12/00, H04W 12/10, and H04W 12/1002 should be considered in order to perform a complete search.

- D H04W 12/1004
- {Location integrity, e.g. secure geo-tagging or trusted cell tagging}
- WARNING
Group H04W 12/1004 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/10.
Groups H04W 12/00, H04W 12/10, and H04W 12/1004 should be considered in order to perform a complete search.
- D H04W 12/1006
- {Packet or message integrity}
- WARNING
Group H04W 12/1006 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/10.
Groups H04W 12/00, H04W 12/10, and H04W 12/1006 should be considered in order to perform a complete search.
- D H04W 12/1008
- {Source integrity}
- WARNING
Group H04W 12/1008 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/10.
Groups H04W 12/00, H04W 12/10, and H04W 12/1008 should be considered in order to perform a complete search.

Project: RP0704 (H04W)

- N H04W 12/102
- • Route integrity, e.g. using trusted paths
- N H04W 12/104
- • Location integrity, e.g. secure geotagging
- N H04W 12/106
- • Packet or message integrity
- N H04W 12/108
- • Source integrity

Project: RP0361-F, RP0704 (H04W)

- M H04W 12/12
- ~~Fraud detection (or prevention)~~ *Detection or prevention of fraud*
- WARNING
Group H04W 12/12 is incomplete pending reclassification of documents from group H04W 12/00.
Group H04W 12/12 is also impacted by reclassification into groups H04W 12/12, H04W 12/1201, H04W 12/1202, H04W 12/1204, H04W 12/1205, H04W 12/1206, H04W 12/1208.
All groups listed in this Warning should be considered in order to perform a complete search.
- D H04W 12/1201
- {Wireless intrusion detection system [WIDS]; Wireless intrusion prevention system [WIPS]}
- WARNING
Group H04W 12/1201 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/12.
Groups H04W 12/00, H04W 12/12, and H04W 12/1201 should be considered in order to perform a complete search.
- D H04W 12/1202
- • {Protecting against rogue devices}
- WARNING
Group H04W 12/1202 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/12.
Groups H04W 12/00, H04W 12/12, and H04W 12/1202 should be considered in order to perform a complete search.

- D H04W 12/1204
- • • {Countermeasures against attacks}
- WARNING
Group H04W 12/1204 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/12.
Groups H04W 12/00, H04W 12/12, and H04W 12/1204 should be considered in order to perform a complete search.
- D H04W 12/1205
- • {Protecting against power exhaustion attacks, e.g. power depletion, starvation attack or sleep deprivation attack}
- WARNING
Group H04W 12/1205 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/12.
Groups H04W 12/00, H04W 12/12, and H04W 12/1205 should be considered in order to perform a complete search.
- D H04W 12/1206
- • {Anti-theft arrangements, e.g. protecting against device theft, subscriber identity module [SIM] cloning or machine-to-machine [M2M] displacement}
- WARNING
Group H04W 12/1206 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/12.
Groups H04W 12/00, H04W 12/12, and H04W 12/1206 should be considered in order to perform a complete search.
- D H04W 12/1208
- • {Anti-malware arrangements, e.g. protecting against SMS fraud or mobile malware}
- WARNING
Group H04W 12/1208 is incomplete pending reclassification of documents from groups H04W 12/00 and H04W 12/12.
Groups H04W 12/00, H04W 12/12, and H04W 12/1208 should be considered in order to perform a complete search.

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- N H04W 12/121
- • Wireless intrusion detection systems [WIDS]; Wireless intrusion prevention systems [WIPS]
- N H04W 12/122
- • Counter-measures against attacks; Protection against rogue devices
- N H04W 12/125
- • Protection against power exhaustion attacks
- N H04W 12/126
- • Anti-theft arrangements, e.g. protection against subscriber identity module [SIM] cloning
- N H04W 12/128
- • Anti-malware arrangements, e.g. protection against SMS fraud or mobile malware
- Q H04W 12/30
- Security of mobile devices; Security of mobile applications
- WARNING
Group [H04W 12/30](#) is impacted by reclassification into group [H04W 12/33](#).
Groups [H04W 12/30](#) and [H04W 12/33](#) should be considered in order to perform a complete search.
- N H04W 12/33
- • using wearable devices, e.g. using a smartwatch or smart-glasses
- WARNING
Group [H04W 12/33](#) is incomplete pending reclassification of documents from group [H04W 12/30](#).
Groups [H04W 12/30](#) and [H04W 12/33](#) should be considered in order to perform a complete search.

- N H04W 12/35
 - • {Protecting application or service provisioning, e.g. securing SIM application provisioning}
- N H04W 12/37
 - • Managing security policies for mobile devices or for controlling mobile applications
- N H04W 12/40
 - Security arrangements using identity modules
- N H04W 12/42
 - • using virtual identity modules
- N H04W 12/43
 - • using shared identity modules, e.g. SIM sharing
- N H04W 12/45
 - • using multiple identity modules
- N H04W 12/47
 - • using near field communication [NFC] or radio frequency identification [RFID] modules
- N H04W 12/48
 - • using secure binding, e.g. securely binding identity modules to devices, services or applications
- N H04W 12/50
 - Secure pairing of devices
- N H04W 12/55
 - • involving three or more devices, e.g. group pairing
- N H04W 12/60
 - Context-dependent security
- N H04W 12/61
 - • Time-dependent
- Q H04W 12/63
 - • Location-dependent; Proximity-dependent

WARNING
Group [H04W 12/63](#) is impacted by reclassification into group [H04W 12/64](#). Groups [H04W 12/63](#) and [H04W 12/64](#) should be considered in order to perform a complete search.
- N H04W 12/64
 - • • using geofenced areas

WARNING
Group [H04W 12/64](#) is incomplete pending reclassification of documents from group [H04W 12/63](#). Groups [H04W 12/63](#) and [H04W 12/64](#) should be considered in order to perform a complete search.
- N H04W 12/65
 - • Environment-dependent, e.g. using captured environmental data
- N H04W 12/66
 - • {Trust-dependent, e.g. using trust scores or trust relationships}
- N H04W 12/67
 - • Risk-dependent, e.g. selecting a security level depending on risk profiles
- N H04W 12/68
 - • Gesture-dependent or behaviour-dependent
- N H04W 12/69
 - • Identity-dependent
- N H04W 12/71
 - • • Hardware identity
- N H04W 12/72
 - • • Subscriber identity
- N H04W 12/73
 - • • Access point logical identity
- N H04W 12/75
 - • • Temporary identity
- N H04W 12/76
 - • • Group identity
- N H04W 12/77
 - • • Graphical identity
- N H04W 12/79
 - • • Radio fingerprint
- N H04W 12/80
 - Arrangements enabling lawful interception [LI]

Project: MP0490 (H04W)**M H04W 76/00 Connection management****NOTE**

In this main group, the first place priority rule is not applied, i.e. the common rule is applied:

Project: MP0427 (H05B)

- U H05B 3/00 Ohmic-resistance heating**
- M H05B 3/68
- Heating arrangements specially adapted for cooking plates or analogous hot-plates
- NOTE**
Group [H05B 3/76](#) takes precedence over groups [H05B 3/70](#) - [H05B 3/74](#).
{This Note corresponds to IPC Note (1) relating to [H05B 3/70](#) - [H05B 3/76](#).}
- M H05B 3/688
- {Fabrication of the plates (for single-step processes see the appropriate subclass, e.g. in [B23C](#), sub-section metallurgy)}
- NOTE**
Group [H05B 3/76](#) takes precedence over groups [H05B 3/70](#), [H05B 3/72](#), [H05B 3/74](#).

Project: MP0497 (H05B)

- M H05B 45/00 Circuit arrangements for operating light emitting diodes [LED]**
- NOTE**
In this group, multi-aspect classification is applied, so that subject matter characterised by aspects covered by more than one of its subgroups, which is considered to represent information of interest for search, may also be classified in each of those subgroups.
- WARNING**
Group [H05B 45/00](#) is incomplete pending reclassification of documents from group [H05B 33/08](#).
Group [H05B 45/00](#) is also impacted by reclassification into groups [H05B 45/30](#) -[H05B 45/397](#). Groups [H05B 33/08](#), [H05B 45/00](#), and [H05B 45/30-H05B 45/397](#) should be considered in order to perform a complete search.
- M H05B 47/00 Circuit arrangements for operating light sources in general, i.e. where the type of the light source is not relevant**
- NOTE**
In this group, multi-aspect classification is applied, so that subject matter characterised by aspects covered by more than one of its subgroups, which is considered to represent information of interest for search, may also be classified in each of those subgroups.
- WARNING**
Group [H05B 47/00](#) is impacted by reclassification into groups [H05B 47/10](#) - [H05B 47/29](#).
Groups [H05B 47/00](#) and [H05B 47/10](#) - [H05B 47/29](#) should be considered in order to perform a complete search.

Project: RP0695 (H05K)

- U H05K 5/00 Casings, cabinets or drawers for electric apparatus**
- U H05K 5/02
- Details
- H05K 5/0217
- {Mechanical details of casings ([G06F 1/1613](#), [H01M 2/40](#)[H01M 50/20](#), [H04M 1/0202](#) take precedence)}

Project: MP0500 (H05K)

- U H05K 7/00 Constructional details common to different types of electric apparatus (casings, cabinets, drawers [H05K 5/00](#))**

- M H05K 7/14
- Mounting supporting structure in casing or on frame or rack-~~{{H05K 7/18 takes precedence}}~~

Project: RP0462 (Y10T)

- U Y10T 464/00 Rotary shafts, gudgeons, housings, and flexible couplings for rotary shafts**
- F Y10T 464/10 (Frozen)
- having heating or cooling means
- WARNING**
*Group Y10T 464/10 is no longer used for the classification of documents as of January 1, 2021.
 The content of this group is being reclassified into groups F16D 2300/02, F16D 2300/021, F16D 2300/0212, F16D 2300/0214 and F16D 2300/04.
 All groups listed in this Warning should be considered in order to perform a complete search.*
- F Y10T 464/20 (Frozen)
- with auxilliary indicator or alarm
- WARNING**
*Group Y10T 464/20 is no longer used for the classification of documents as of January 1, 2021.
 The content of this group is being reclassified into groups F16D 2300/18 and F16D 2300/20.
 Groups Y10T 464/20, F16D 2300/18 and F16D 2300/20 should be considered in order to perform a complete search.*
- F Y10T 464/30 (Frozen)
- Electrical or magnetic coupling
- WARNING**
*Group Y10T 464/30 is no longer used for the classification of documents as of January 1, 2021.
 The content of this group is being reclassified into groups H02K 49/10, H02K 49/104, H02K 49/106 and H02K 49/108.
 All groups listed in this Warning should be considered in order to perform a complete search.*
- F Y10T 464/40 (Frozen)
- Coupling accommodates drive between members having misaligned or angularly related axes, transmits torque via radially directed pin, and has particular balancing means
- WARNING**
*Group Y10T 464/40 is no longer used for the classification of documents as of January 1, 2021.
 The content of this group is being reclassified into groups F16D 2300/22 and F16D 3/38.
 Groups Y10T 464/40, F16D 2300/22 and F16D 3/38 should be considered in order to perform a complete search.*
- F Y10T 464/50 (Frozen)
- Shafting having particular vibration dampening or balancing structure
- WARNING**
*Group Y10T 464/50 is no longer used for the classification of documents as of January 1, 2021.
 The content of this group is being reclassified into groups F16F 15/10, F16F 15/32, F16F 15/322, F16F 15/264, F16C 1/00, F16C 1/06, F16C 1/08 and F16C 1/108.
 All groups listed in this Warning should be considered in order to perform a complete search.*