**CPC**  COOPERATIVE PATENT CLASSIFICATION

**B**  PERFORMING OPERATIONS; TRANSPORTING

*(NOTES omitted)*

**TRANSPORTING**

**B65**  CONVEYING; PACKING; STORING; HANDLING THIN OR FILAMENTARY MATERIAL

**B65H**  HANDLING THIN OR FILAMENTARY MATERIAL, e.g. SHEETS, WEBS, CABLES

**NOTES**

1. This subclass does not cover methods or devices intimately associated with other operations on thin or filamentary material, e.g. sheets, webs, cables or means for performing such operations, which are classified in the relevant subclasses for these operations, e.g.:

   - **B07C**: Postal sorting, similar sorting of documents, e.g. cheques
   - **B08B 1/02**: Cleaning travelling work, e.g. webs, by methods involving the use of tools, brushes or like members
   - **B21B 41/00**: Metal rolling involving guiding, conveying or accumulating easily-flexible work, e.g. wire, sheet metal bands, in loops or curves
   - **B21C 47/00**: Winding-up, coiling, winding-off or temporarily accumulating metal wire, metal band or other flexible metal material, characterised by features relevant to metal processing only, other than by rolling
   - **B21D 43/00**: Feeding, positioning or storing devices, combined with, or arranged in, or specially adapted for use in connection with, apparatus for working or processing sheet metal without essentially removing material
   - **B23K 9/12**: Means for automatic feeding of electrodes for spot or seam welding or cutting
   - **B29C 31/00**: Handling for shaping or joining of plastics, for shaping of substances in a plastic state in general or for after-treatment of shaped products, e.g. feeding the material to be shaped
   - **B41B 15/32**: Film-handling mechanisms in photographic composing machines
   - **B41B 21/32**: Conveying or guiding webs through rotary printing presses or machines
   - **B41J 11/00**: Handling of copy- or impression-transfer material
   - **B41J 17/00**: in typewriters or selective printing mechanisms
   - **B41K 3/44**: Means for handling copy matter in stamping or numbering apparatus or devices
   - **B41L**: Handling sheets or webs in apparatus or devices for manifolding, duplicating or printing for office or other commercial purposes, or on addressing machines or like series-printing machines
   - **B42B**: Handling relating to permanently attaching together sheets, quires, or signatures
   - **B42C**: Handling sheets in book-binding
   - **B65B**: Handling of sheets or webs in apparatus for, or methods of, packaging articles, not of interest apart from their application in packaging machines
   - **B65C**: Handling of labels in labelling or tagging apparatus
   - **C14B 1/62**: Winding or stacking hides or leather in machines or devices for manufacturing leather
   - **D01- D07**: Spinning, weaving, braiding, lace-making, knitting, sewing, making ropes or cables
   - **D21F 2/00**: Transferring webs from wet ends to press sections in paper-making
   - **F26B 13/00**: Handling fabrics, fibres, yarns or other material in long lengths in drying apparatus
   - **G03B**: Film-strip handling or handling of pictures in apparatus for taking photographs or for projecting or viewing them
   - **G06K 12/00**: Conveying record carriers from one station to another
   - **G06M 7/00**: Counting of flat articles, e.g. sheets, carried by a conveyor to Information storage based on relative movement
   - **G11B 15/00**: between record carrier and transducer, involving handling record carriers for recording or reproducing
   - **H01F 41/06**: Manufacturing coils for magnets, inductances, transformers, by winding
   - **H01G 13/02**: Machines for winding capacitors
   - **H04N 1/00**: Sheet handling not of interest apart from its use in systems for transmission or reproduction of pictures or patterns not varying in time, e.g. facsimile transmission

2. In this subclass:
1/00 Supports or magazines for piles from which articles are to be separated (carriers used for associating, collating, or gathering articles B65H 39/00)

1/02 . adapted to support articles on edge

1/022 . {with non-controlled means for advancing the pile to the separating device, e.g. weights or spring}

1/025 . {with controlled positively-acting mechanical devices for advancing the pile to present the articles to the separating device}

1/027 . {Support fully or partially removable from the handling machine, e.g. cassette, drawer}

1/04 . adapted to support articles substantially horizontally, e.g. for separation from top of pile

1/06 . for separation from bottom of pile

1/08 . with means for advancing the articles to present the articles to the separating device { (B65H 1/02 takes precedence)}

1/10 . comprising weights { (B65H 1/022 takes precedence)}

1/12 . comprising spring { (B65H 1/022 takes precedence)}

1/14 . comprising positively-acting mechanical devices { (B65H 1/025 takes precedence)}

1/16 . comprising pneumatic or hydraulic means { (B65H 1/18, B65H 1/20 take precedence)}

1/18 . controlled by height of pile

1/20 . controlled by weight of pile; Floating arrangements

1/22 . moving in direction of plane of articles, e.g. for bodily advancement of fanned-out piles

1/225 . {Round stack feeders}

1/24 . with means for relieving or controlling pressure of the pile

3/00 Separating articles from piles (associating, collating, or gathering articles B65H 39/00); machines for separating superposed webs B65H 41/00; unpiling thin material combined with folding B65H 45/26; combinations of piling and depiling operations, of interest apart from the single operation of piling or depiling B65H 83/00 ( B67C 1/02, G07D 11/50 )

3/02 . using friction forces between articles and separator

3/04 . { Endless-belt separators}

3/042 . {separating from the bottom of the pile}

3/045 . {for separating substantially vertically stacked articles}

3/047 . {separating from the top of a pile}

3/06 . Rollers or like rotary separators { (B65H 3/42 takes precedence)}

3/0607 . {cooperating with means for automatically separating the pile from roller or rotary separator after a separation step}

3/0615 . {reciprocating and rotatable in one direction only}

3/0623 . {acting at least during a part of each separation cycle on the articles in a direction opposite to the final separating direction}

3/063 . {separating from the bottom of pile (B65H 3/0615, B65H 3/0623 take precedence)}
Feeding articles to machines; Separating articles from piles; Pile supports

3/0638 . . . {Construction of the rollers or like rotary separators (B65H 3/0615 takes precedence; construction of feed or guide rollers B65H 27/00)}
3/0646 . . . {Wave generation rollers, i.e. combing wheels}
3/0653 . . . {for separating substantially vertically stacked articles}
3/0661 . . . {for separating inclined-stacked articles with separator rollers above the stack}
3/0669 . . . {Driving devices therefor}
3/0676 . . . {with two or more separator rollers in the feeding direction}
3/0684 . . . {on moving support, e.g. pivoting, for bringing the roller or like rotary separator into contact with the pile}
3/0692 . . . {Vacuum assisted separator rollers}
3/08 . . . using pneumatic force {(B65H 3/40, B65H 3/42 take precedence)}
3/0808 . . . {Suction grippers}
3/0816 . . . {separating from the top of pile}
3/0825 . . . {and acting on the rear part of the articles relatively to the final separating direction}
3/0833 . . . {and acting on the front part of the articles relatively to the final separating direction}
3/0841 . . . {this action resulting at least during a part of each separating cycle, in a movement of at least the front part of the articles in a direction opposite to the final separating direction}
3/085 . . . {separating from the bottom of pile}
3/0858 . . . {this action resulting merely in a curvature of each article being separated (in combination with the use of screw or like separators B65H 3/28)}
3/0866 . . . {the final separation being performed between rollers}
3/0875 . . . {the final separation being performed by mechanical grippers}
3/0883 . . . {Construction of suction grippers or their holding devices}
3/0891 . . . {Generating or controlling the depression (B65H 3/0883, B65H 3/14 take precedence; in response to abnormal circumstances B65H 7/16)}
3/10 . . . Suction rollers
3/12 . . . Suction bands, belts, or tables moving relatively to the pile
3/122 . . . {Suction tables}
3/124 . . . {Suction bands or belts}
3/126 . . . {separating from the bottom of pile}
3/128 . . . {separating from the top of pile}
3/14 . . . Air blasts producing partial vacuum
3/16 . . . using magnetic force
3/18 . . . using electrostatic force
3/20 . . . using adhesives
3/22 . . . by needles or the like engaging the articles
3/24 . . . by pushers engaging the edges of the articles
3/242 . . . {for separating a part of the pile, i.e. several articles at once}
3/245 . . . {the pile being pre-marked}
3/247 . . . {the pile being off-set}
3/26 . . . by separators engaging folds, flaps, or projections of articles
3/28 . . . by screw or like separators
3/30 . . . by escapement devices (screw and like separators B65H 3/28); from staggered piles; from piles of articles having staggered formations, e.g. cuts or perforations
3/32 . . . by elements, e.g. fingers, plates, rollers, inserted or traversed between articles to be separated and remainder of the pile (such elements acting only as supplementary devices to assist separation or prevent double feed B65H 3/50)
3/322 . . . {for separating a part of the pile, i.e. several articles at once}
3/325 . . . {the pile being pre-marked}
3/327 . . . {the pile being off-set}
3/34 . . . Article-retaining devices controlling the release of the articles to the separators
3/36 . . . by separators moved in special paths, e.g. enclosing an area
3/38 . . . the paths not enclosing an area
3/40 . . . by two or more separators acting alternately on the same pile (rotary or oscillating bodies carrying two or more separators B65H 3/42)
3/42 . . . by two or more separators mounted for movement with, or relative to, rotary or oscillating bodies
3/44 . . . Simultaneously, alternately, or selectively separating articles from two or more piles
3/443 . . . {simultaneously}
3/446 . . . {alternatively, i.e. according to a fixed sequence}
3/46 . . . Supplementary devices or measures to assist separation or prevent double feed (control means comprising detectors responsive to double feed B65H 7/12)
3/48 . . . Air blast acting on edges of, or under, articles
3/50 . . . Elements, e.g. fingers, plates, rollers, inserted or traversed between articles to be separated and remainder of the pile
3/52 . . . Friction retainers acting on under or rear side of article being separated
3/5207 . . . {Non-driven retainers, e.g. movable retainers being moved by the motion of the article}
3/5215 . . . {the retainers positioned under articles separated from the top of the pile}
3/5223 . . . {Retainers of the pad-type, e.g. friction pads}
3/523 . . . {the retainers positioned over articles separated from the bottom of the pile}
3/5238 . . . {Retainers of the pad-type, e.g. friction pads}
3/5246 . . . {Driven retainers, i.e. the motion thereof being provided by a dedicated drive}
3/5253 . . . {the retainers positioned under articles separated from the top of the pile}
3/5261 . . . {Retainers of the roller type, e.g. rollers}
3/5269 . . . {Retainers of the belt type, e.g. belts}
3/5276 . . . {the retainers positioned over articles separated from the bottom of the pile}
3/5284 . . . {Retainers of the roller type, e.g. rollers}
3/5292 . . . {Retainers of the belt type, e.g. belts}
3/54 . . . Pressing or holding devices
3/56 . . . Elements, e.g. scrapers, fingers, needles, brushes, acting on separated article or on edge of the pile (B65H 3/52 takes precedence)
3/565 . . . {for reintroducing partially separated articles in the stack}
Feeding articles to machines; Separating articles from piles; Pile supports

B65H

3/58 . Articles spiked, threaded, cemented, or gummed together, to prevent double feed, e.g. piles with gummed edges
3/60 . Loosening articles in piles
3/62 . . . by swinging, agitating, or knocking the pile
3/64 . . . by vacuum apparatus
3/66 . . . Article guides or smoothers, e.g. movable in operation
3/68 . . . immovable in operation

5/00 Feeding articles separated from piles; Feeding articles to machines (B65H 9/00 takes precedence; ) identical mechanisms or parts for delivering or advancing articles from machines B65H 29/00; recirculating articles B65H 85/00 (. G03B 27/625))

5/002 . . [Adaptations of counting devices (delivery of articles from machines B65H 29/001)]
5/004 . . [using electrostatic force]
5/006 . . [Feeding stacks of articles to machines]
5/008 . . [using vibrations]
5/02 . . by belts or chains { e.g. between belts or chains (by combinations of endless conveyors and grippers B65H 5/085; by suction belts B65H 5/224)}
5/021 . . [by belts]
5/023 . . . [between a pair of belts forming a transport nip]
5/025 . . . [between belts and rotary means, e.g. rollers, drums, cylinders or balls, forming a transport nip]
5/026 . . . [between belts and stationary pressing, supporting or guiding elements forming a transport nip]
5/028 . . . [by chains]
5/04 . . by movable tables or carriages (rotary tables B65H 5/18 ; suction gripper or gripper tables B65H 5/10)]
5/06 . . by rollers {or balls, e.g. between rollers (transport by suction rollers B65H 5/226 })
5/062 . . . [between rollers or balls]
5/064 . . . [the axes of the rollers being perpendicular to the plane of the articles]
5/066 . . . [the articles resting on rollers or balls]
5/068 . . . [between one or more rollers or balls and stationary pressing, supporting or guiding elements]
5/08 . . by grippers, e.g. suction grippers
5/085 . . [by combinations of endless conveyors and grippers (suction belts B65H 5/224)]
5/10 . . Reciprocating or oscillating grippers { e.g. suction or gripper tables}
5/12 . . Revolving grippers, e.g. mounted on arms, frames or cylinders
5/14 . . Details of grippers; Actuating-mechanisms therefor
5/16 . by pusher, needles, friction, or like devices adapted to feed single articles along a surface or table
5/18 . by rotary dials or tables
5/20 . by dropping-roller or like device
5/22 . by air-blast or suction device (suction grippers B65H 5/08)
5/222 . . [by suction devices]
5/224 . . [by suction belts (B65H 11/005 takes precedence)]

5/226 . . . [by suction rollers]
5/228 . . . [by air-blast devices]
5/24 . [Feeding articles in overlapping streams, i.e. by separation of articles from a pile]
5/26 . Duplicate, alternate, selective, or coacting feeds
5/28 . Feeding articles stored in rolled or folded bands
5/30 . Opening devices for folded sheets or signatures
5/301 . . . [comprising blade-like means inserted between the parts to be opened]
5/302 . . . . [the blade-like means being stationary]
5/303 . . . . [comprising movable endless means for opening the folded sheets (B65H 5/308 takes precedence)]
5/305 . . . . [comprising rotary means for opening the folded sheets (B65H 5/308 takes precedence)]
5/306 . . . . [two opposite rotary means, only one of them having gripping means]
5/307 . . . . [two opposite rotary means, both having gripping means]
5/308 . . . [the folded sheets or signatures travelling in hanging position]
5/32 . Saddle-like members over which partially-unfolded sheets or signatures are fed to signature-gathering, stitching, or like machines
5/34 . Varying the phase of feed relative to the receiving machine
5/36 . . Article guides or smoothers, e.g. movable in operation
5/38 . . immovable in operation

7/00 Controlling article feeding, separating, pile-advancing, or associated apparatus, to take account of incorrect feeding, absence of articles, or presence of faulty articles

7/02 . . by feelers or detectors
7/04 . . . responsive to absence of articles, e.g. exhaustion of pile (B65H 7/14 takes precedence)
7/06 . . . responsive to presence of faulty articles or incorrect separation or feed (B65H 7/14 takes precedence)
7/08 . . . responsive to incorrect front register
7/10 . . . responsive to incorrect side register (controlling transverse register of webs B65H 23/032)
7/12 . . . responsive to double feed or separation
7/125 . . . . [sensing the double feed or separation without contacting the articles]
7/14 . . by photoelectric feelers or detectors
7/16 . Controlling air-supply to pneumatic separators
7/18 . Modifying or stopping actuation of separators
7/20 . Controlling associated apparatus

9/00 Registering, e.g. orientating, articles; Devices therefor

9/002 . . [changing orientation of sheet by only controlling movement of the forwarding means, i.e. without the use of stop or register wall]
9/004 . . [Deskewing sheet by abutting against a stop, i.e. producing a buckling of the sheet]
9/006 . . . [the stop being formed by forwarding means in stand-by]
9/008 . . . [the stop being formed by reversing the forwarding means]
9/02 . . Gauge pins
9/04 . Fixed or adjustable stops or gauges (gauge pins B65H 9/02)
Feeding articles to machines; Separating articles from piles; Pile supports

Feed tables
11/00
11/002 . [incorporating transport belts]
11/005 . [Suction belts]
11/007 . [with front stop arrangements]
11/02 . angularly adjustable in plane of articles

Lifting the ends of piles to facilitate the formation of overlapped piles
13/00

Overturning articles
15/00

WARNING
Group B65H 15/00 is impacted by reclassification into groups B65H 15/004, B65H 15/008, B65H 15/012 and B65H 15/016.
All groups listed in this Warning should be considered in order to perform a complete search.

15/004 . [employing rollers]

WARNING
Group B65H 15/004 is incomplete pending reclassification of documents from groups B65H 15/00 and B65H 15/02.
Groups B65H 15/00, B65H 15/02 and B65H 15/004 should be considered in order to perform a complete search.

15/008 . [employing belts]

WARNING
Group B65H 15/008 is incomplete pending reclassification of documents from groups B65H 15/00 and B65H 15/02.
Groups B65H 15/00, B65H 15/02 and B65H 15/008 should be considered in order to perform a complete search.

Framing articles to machines; Separating articles from piles; Pile supports

WARNING
Group B65H 15/012 is incomplete pending reclassification of documents from groups B65H 15/00 and B65H 15/02.
Groups B65H 15/00, B65H 15/02 and B65H 15/012 should be considered in order to perform a complete search.

15/016 . [employing rotary or reciprocating elements supporting transport means]

WARNING
Group B65H 15/016 is incomplete pending reclassification of documents from groups B65H 15/00 and B65H 15/02.
Groups B65H 15/00, B65H 15/02 and B65H 15/016 should be considered in order to perform a complete search.

15/02 . Overturning piles

WARNING
Group B65H 15/02 is impacted by reclassification into groups B65H 15/004, B65H 15/008, B65H 15/012 and B65H 15/016.
All groups listed in this Warning should be considered in order to perform a complete search.

Feeding webs to or from machines; Winding or unwinding webs; Splicing webs
(web-delivering apparatus incorporating devices for performing auxiliary operations B65H 35/00, B65H 37/00; associating two or more webs B65H 39/16; winding or unwinding metal band or like flexible metallic material during manufacture B21C; cutting machines or devices in general B26D1; inselective printers, e.g. typewriters, ink-ribbon mechanisms B41J; in cinematographic or photographic apparatus G03B; winding, unwinding, or feeding tape to, in, or from, information processing apparatus G06, G11B)

16/00

Unwinding, paying-out webs { (reel-to-reel type web winding and unwinding mechanisms B65H 18/103, B65H 18/145) }

WARNING
Groups B65H 16/00, B65H 16/005, B65H 16/02, B65H 16/028, B65H 16/04, B65H 16/06, B65H 16/08, B65H 16/10, B65H 16/103, and B65H 16/106 are incomplete pending reclassification of documents from groups B65H 16/025 and B65H 16/026.
All groups listed in this Warning should be considered in order to perform a complete search.

16/005 . [Dispensers, i.e. machines for unwinding only parts of web roll]

16/02 . Supporting web roll
16/021 . . . [Multiple web roll supports]

**WARNING**

Group B65H 16/021 is incomplete pending reclassification of documents from groups B65H 16/025 and B65H 16/026.

Group B65H 16/021 is also impacted by reclassification into group B65H 16/024.

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

16/023 . . . [rotatable]

**WARNING**

Group B65H 16/023 is impacted by reclassification into group B65H 16/024.

Groups B65H 16/023 and B65H 16/024 should be considered in order to perform a complete search.

16/024 . . . . [Turrets]

**WARNING**

Group B65H 16/024 is incomplete pending reclassification of documents from groups B65H 16/021 and B65H 16/023.

Groups B65H 16/021, B65H 16/023, and B65H 16/024 should be considered in order to perform a complete search.

16/025 . . . . [Unwinding apparatus incorporating length-measuring devices]

**WARNING**

Group B65H 16/025 is no longer used for the classification of documents as of August 1, 2020.

The content of this group is being reclassified into groups B65H 16/00, B65H 16/005, B65H 16/02, B65H 16/021, B65H 16/028, B65H 16/04, B65H 16/06, B65H 16/08, B65H 16/10, B65H 16/103, B65H 16/106, B65H 25/11/1, and B65H 2220/03.

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

16/026 . . . . [Unwinding apparatus incorporating inspecting devices]

**WARNING**

Group B65H 16/026 is no longer used for the classification of documents as of August 1, 2020.

The content of this group is being reclassified into groups B65H 16/00, B65H 16/005, B65H 16/02, B65H 16/021, B65H 16/028, B65H 16/04, B65H 16/06, B65H 16/08, B65H 16/10, B65H 16/103, and B65H 16/106.

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

16/028 . . . . [on its outer circumference (B65H 16/08 takes precedence)]

16/04 . . . . cantilever type
16/06 . . . . both-ends type
16/08 . . . . parallel rollers type
16/10 . . . . Arrangements for effecting positive rotation of web roll
16/103 . . . . (in which power is applied to web-roll spindle)
16/106 . . . . (in which power is applied to web roll)

18/00 Winding webs
18/02 . . . . Supporting web roll
18/021 . . . . [Multiple web roll supports]

**WARNING**

Group B65H 18/021 is impacted by reclassification into group B65H 18/0212.

Groups B65H 18/021 and B65H 18/0212 should be considered in order to perform a complete search.

18/0212 . . . . [Turrets]

**WARNING**

Group B65H 18/0212 is incomplete pending reclassification of documents from group B65H 18/021.

Groups B65H 18/021 and B65H 18/0212 should be considered in order to perform a complete search.

18/023 . . . . [on its outer circumference]
18/025 . . . . [Parallel rollers type]
18/026 . . . . [Cantilever type]
18/028 . . . . [Both ends type]
18/04 . . . . Interior-supporting
18/06 . . . . Lateral-supporting
18/08 . . . . Web-winding mechanisms
18/085 . . . . [for non-continuous winding]
18/10 . . . . Mechanisms in which power is applied to web-roll spindle
18/103 . . . . [Reel-to-reel type web winding and unwinding mechanisms]
18/106 . . . . [for several juxtaposed strips]
18/12 . . . . to effect step-by-step advancement of web
18/14 . . . . Mechanisms in which power is applied to web roll, e.g. to effect continuous advancement of web
18/145 . . . . [Reel-to-reel type web winding and unwinding mechanisms]
18/16 . . . . by friction roller
18/18 . . . . . . to effect step-by-step advancement of web [not used]
18/20 . . . . the web roll being supported on two parallel rollers at least one of which is driven
18/22 . . . . by friction band
18/24 . . . . . . to effect step-by-step advancement of web [not used]
18/26 . . . . Mechanisms for controlling contact pressure on winding-web package, e.g. for regulating the quantity of air between web layers
18/28 . . . . Wound package of webs

19/00 Changing the web roll
19/10 . . . . in unwinding mechanisms or in connection with unwinding operations
Feeding webs to or from machines; Winding or unwinding webs; Splicing webs

19/102 . . . [Preparing the leading end of the replacement web before splicing operation; Adhesive arrangements on leading end of replacement web; Tabs and adhesive tapes for splicing]
19/105 . . . [Opening of web rolls; Removing damaged outer layers; Detecting the leading end of a closed web roll]
19/107 . . . [Processing the trailing end of the replaced web after splicing operation, e.g. rewinding it]
19/12 . . . Lifting, transporting, or inserting the web roll; Removing empty core
19/123 . . . [with cantilever supporting arrangements]
19/126 . . . [with both-ends supporting arrangements]
19/14 . . . Accumulating surplus web for advancing to machine while changing the web roll
19/18 . . . Attaching, e.g. pasting, the replacement web to the expiring web [(adhesive arrangements on leading end of replacement web, tabs and adhesive tapes for splicing B65H 19/102)]
19/1805 . . . [Flying splicing, i.e. the expiring web moving during splicing contact]
19/181 . . . [(taking place on the replacement roll)]
19/1815 . . . [the replacement web being stationary prior to splicing contact]
19/1821 . . . [the replacement web being accelerated or running prior to splicing contact]
19/1826 . . . [taking place at a distance from the replacement roll]
19/1831 . . . [the replacement web being stationary prior to splicing contact]
19/1836 . . . [the replacement web being accelerated or running prior to splicing contact]
19/1842 . . . [standing splicing, i.e. the expiring web being stationary during splicing contact]
19/1847 . . . [taking place on the replacement roll]
19/1852 . . . [taking place at a distance from the replacement roll]
19/1857 . . . [Support arrangement of web rolls]
19/1863 . . . [with translatory or arcuated movement of the roll supports]
19/1868 . . . [The roll support being of the turret type]
19/1873 . . . [with two stationary roll supports carrying alternately the replacement and the expiring roll]
19/1878 . . . [with one stationary support for the rolls]
19/1884 . . . [Details for effecting a positive rotation of web roll, e.g. accelerating the replacement roll]
19/1889 . . . [related to driving arrangements]
19/1894 . . . [the replacement web being accelerated through contact with the expiring web]
19/20 . . . Cutting-off the expiring web
19/22 . . . in winding mechanisms or in connection with winding operations
19/2207 . . . [the web roll being driven by a winding mechanism of the centre or core drive type]
19/2215 . . . [Turret-type with two roll supports]
19/2223 . . . [Turret-type with more than two roll supports]
19/223 . . . [with roll supports being independently displacable along a common path]
19/2238 . . . [The web roll being driven by a winding mechanism of the nip or tangential drive type (B65H 19/2276 takes precedence)]
19/2246 . . . [and the roll being supported on two rollers]
19/2253 . . . [and the roll being displaced during the winding operation]
19/2261 . . . [Pope-roller]
19/2269 . . . [Cradle]
19/2276 . . . [The web roll being driven by a winding mechanism of the coreless type]
19/2284 . . . [Simultaneous winding at several stations, e.g. slitter-rewinders]
19/2292 . . . [Removing cores or mandrels from web roll after winding]
19/24 . . . Accumulating surplus delivered web while changing the web roll
19/26 . . . Cutting-off the web running to the wound web roll
19/262 . . . [using a thin or filamentary material which is wound on the new roll]
19/265 . . . [using a cutting member moving linearly in a plane parallel to the surface of the web and along a direction crossing the web]
19/267 . . . [by tearing or bursting]
19/28 . . . Attaching the leading end of the web to the replacement web-roll core or spindle (cores, formers, supports or holders, e.g. reels, with arrangements for securing ends of material B65H 75/28)
19/283 . . . [by applying adhesive to the core]
19/286 . . . [by applying adhesive to the web]
19/29 . . . Securing the trailing end of the wound web to the web roll (cores, formers, supports or holders, e.g. reels, with arrangements for securing ends of material B65H 75/28)
19/30 . . . Lifting, transporting, or removing the web roll; Inserting core
19/305 . . . [Inserting core]
20/00 Advancing webs
20/005 . . . [Electrical drive motor control devices therefor]
20/02 . . . by friction roller
20/04 . . . to effect step-by-step advancement of web
20/06 . . . by friction band
20/08 . . . to effect step-by-step advancement of web
20/10 . . . by a feed band against which web is held by fluid pressure, e.g. suction or air blast
20/12 . . . by suction roller
20/14 . . . by direct action on web of moving fluid
20/16 . . . by web-gripping means, e.g. grippers, clips
20/18 . . . to effect step-by-step advancement of web
20/20 . . . by web-penetrating means, e.g. pins
20/22 . . . to effect step-by-step advancement of web
20/24 . . . by looping or like devices
20/26 . . . Mechanisms for advancing webs to or from the inside of web rolls
20/28 . . . Mechanisms for delivering webs in superposed folds and refeeding them from the lower end of the folded assemblies
20/30 . . . Arrangements for accumulating surplus web (while changing the web roll B65H 19/14, B65H 19/24)
20/32 . . . by making loops
20/34 . . . with rollers
20/36 . . . having means to optionally advance the web either in one longitudinal direction or in the opposite longitudinal direction
20/38 . . . by changing the direction of mechanism driving the web-roll spindle
20/40 . . . by changing the direction of mechanism driving the pinch roller
21/00 Apparatus for splicing webs (during web-roll changing B65H 19/00)
21/02 . . . for premarked, e.g. preprinted, webs
23/00 Registering, tensioning, smoothing or guiding webs (registering articles B65H 9/00; in connection with splicing B65H 21/00)
23/005 . . . [Sensing web roll diameter (warning or safety devices responsive to a predetermined diameter B65H 26/08)]
23/02 . . . transversely (by tentering, gripper, or like apparatus operating on fabric webs D06C)
23/0204 . . . [Sensing transverse register of web (and controlling it B65H 23/032)]
23/0208 . . . [with an element engaging the edge of the web]
23/0212 . . . [with an element utilising fluid flow]
23/0216 . . . [with an element utilising photoelectric effect]
23/022 . . . by tentering devices
23/025 . . . by rollers
23/0251 . . . . . . [with a straight axis]
23/0253 . . . . . . [with axially movable elements]
23/0255 . . . . . . [with axially stretchable elements]
23/0256 . . . . . . [with opposed helicoidal windings]
23/0258 . . . . . . [with a bowed axis]
23/028 . . . by clips
23/032 . . . Controlling transverse register of web
23/0322 . . . [by acting on edge regions of the web]
23/0324 . . . [by acting on lateral regions of the web]
23/0326 . . . [by moving the unwinding device]
23/0328 . . . [by moving the winding device]
23/035 . . . by guide bars
23/038 . . . by rollers
23/04 . . . longitudinally
23/042 . . . [Sensing the length of a web loop (sensing web tension B65H 23/044)]
23/044 . . . [Sensing web tension (B65H 23/06, B65H 23/18 takes precedence)]
23/046 . . . [Sensing longitudinal register of web (B65H 23/18 takes precedence)]
23/048 . . . [by positively actuated movable bars or rollers]
23/06 . . . by retarding devices, e.g. acting on web-roll spindle
23/063 . . . [and controlling web tension]
23/066 . . . [Electrical brake devices therefor (B65H 23/063 takes precedence)]
23/08 . . . acting on web roll being unwound
23/085 . . . . . . [and controlling web tension]
23/10 . . . acting on running web (suction retarders B65H 23/24)
23/105 . . . . . . [and controlling web tension]
23/12 . . . . . . [with an element engaging the edge of the web]
23/14 . . . . . . [Tensioning rollers applying braking forces]
23/16 . . . . . . [by weighted or spring-pressed movable bars or rollers]
23/18 . . . . . . [by controlling or regulating the web-advancing mechanism, e.g. mechanism acting on the running web]
23/1806 . . . . . . [in reel-to-reel type web winding and unwinding mechanism, e.g. mechanism acting on web-roll spindle]
23/1813 . . . . . . [acting on web-roll]
23/182 . . . . . . [in unwinding mechanisms or in connection with unwinding operations]
23/1825 . . . . . . [and controlling web tension]
23/185 . . . . . . motor-controlled
23/188 . . . . . . in connection with running-web
23/1882 . . . . . . [and controlling longitudinal register of web]
23/1884 . . . . . . [with step-by-step advancement]
23/1886 . . . . . . [Synchronising two or more webs]
23/1888 . . . . . . [and controlling web tension]
23/192 . . . . . . motor-controlled
23/195 . . . . . . in winding mechanisms or in connection with winding operations
23/1955 . . . . . . [and controlling web tension]
23/198 . . . . . . motor-controlled [Controlling electrical drive motors thereof]
23/24 . . . . . . by fluid action, e.g. to retard the running web
23/245 . . . . . . [Suction retarders]
23/26 . . . . . . by transverse stationary or adjustable bars or rollers
23/28 . . . . . . by longitudinally-extending strips, tubes, plates, or wires (flexible tapes or bands B65H 23/30)
23/30 . . . . . . by longitudinally-extending flexible tapes or bands
23/32 . . . . . . Arrangements for turning or reversing webs
23/34 . . . . . . Apparatus for taking-out curl from webs
26/00 Warning or safety devices, e.g. automatic fault detectors, stop-motions, for web-advancing mechanisms (safety devices in general F16P; indicating chemical or physical properties of materials in general G01N; indicating devices in general G08R)
26/02 . . . responsive to presence of irregularities in running webs
26/025 . . . . . . [responsive to web breakage]
26/04 . . . for variation in tension
26/06 . . . responsive to predetermined lengths of webs
26/063 . . . . . . [responsive to detection of the trailing edge]
26/066 . . . . . . [responsive to information, e.g. printed mark, on the web or web roll]
26/08 . . . responsive to a predetermined diameter
27/00 Special constructions of feed or guide rollers and surfaces thereof ([tentering rollers B65H 23/06]; rollers in general F16C 13/00)

Delivering articles from machines; Piling articles; Article or web delivery apparatus incorporating devices for performing specified auxiliary operations; Associating or gathering articles or webs; Machines for separating superposed webs
29/00 Delivering or advancing articles from machines; Advancing articles to or into piles
29/001 . . . [Adaptations of counting devices (to feeding of articles to machines B65H 5/002)]
29/003 . . . [by grippers (B65H 29/02 takes precedence)]
29/005 . . . [by chains or bands having mechanical grippers engaging the side edges of articles, e.g. newspaper conveyors]
29/006 . . . [Winding articles into rolls]
Delivering articles from machines; Piling articles; Article or web delivery apparatus incorporating devices

for...

- by mechanical grippers engaging the leading edge only of the articles
- the grippers being carried by endless chains or bands
- [and introducing into a pile (slowing-down from grippers B65H 29/683)]
- [Intermediate conveyors, e.g. transferring devices]
- [conveying through a machine]
- [Details of grippers]
- [Gripper opening devices]
- [Self-opening and -closing grippers]
- the grippers being carried by rotating members
- the grippers being oscillated in arcuate paths
- the grippers being reciprocated in rectilinear paths
- by means of the nip between two, or between two sets of, moving tapes or bands (or rollers)
- [between two sets of rollers]
- and introducing into a pile
- [the pile being formed between the two, or between the two sets of, tapes or bands or rollers]
- by contact of one face only with moving tapes, bands, or chains (with suction belts B65H 29/242)
- and introducing into a pile
- by contact with rotating friction members, e.g. brushes, or cylinders (with suction rollers B65H 29/243)
- and introducing into a pile
- by air blast or suction apparatus (B65H 5/22 takes precedence; dropping articles from suction carriers B65H 29/32)
- (Suction devices)
- (Suction bands or belts)
- (Suction rollers)
- (Air blast devices)
- (acting on stacking devices)
- (blowing on upperside of the sheet)
- [with coanda effect (separating from a stack B65H 3/14)]
- by dropping (the articles)
- from mechanical grippers (grippers engaging the leading edge only B65H 29/02)
- from magnetic holders
- from pneumatic, e.g. suction, carriers
- from supports slid from under the articles
- from tapes, bands, or rollers rolled from under the articles
- by movable piling or advancing arms, frames, plates, or like members with which the articles are maintained in face contact
- Members rotated about an axis perpendicular to direction of article movement, e.g. star-wheels formed by S-shaped members
- Members rotated about an axis parallel to direction of article movement, e.g. helices
- Members oscillated in arcuate paths
- Members reciprocated in rectilinear path
- by tables arranged to be tilted to cause sliding of articles
- Piling apparatus of which the discharge point moves in accordance with the height to the pile
- . . . (Suction devices)
- . . . (Suction bands or belts)
- . . . (Suction rollers)
- . . . (Air blast devices)
- . . . (acting on stacking devices)
- . . . (blowing on upperside of the sheet)
- . . . (with coanda effect (separating from a stack B65H 3/14))
- . . . by dropping (the articles)
- . . . from mechanical grippers (grippers engaging the leading edge only B65H 29/02)
- . . . from magnetic holders
- . . . from pneumatic, e.g. suction, carriers
- . . . from supports slid from under the articles
- . . . from tapes, bands, or rollers rolled from under the articles
- . . . by movable piling or advancing arms, frames, plates, or like members with which the articles are maintained in face contact
- . . . Members rotated about an axis perpendicular to direction of article movement, e.g. star-wheels formed by S-shaped members
- . . . Members rotated about an axis parallel to direction of article movement, e.g. helices
- . . . Members oscillated in arcuate paths
- . . . Members reciprocated in rectilinear path
- . . . by tables arranged to be tilted to cause sliding of articles
- . . . Piling apparatus of which the discharge point moves in accordance with the height to the pile
- . . . (Suction devices)
- . . . (Suction bands or belts)
- . . . (Suction rollers)
- . . . (Air blast devices)
- . . . (acting on stacking devices)
- . . . (blowing on upperside of the sheet)
- . . . (with coanda effect (separating from a stack B65H 3/14))
- . . . by dropping (the articles)
- . . . from mechanical grippers (grippers engaging the leading edge only B65H 29/02)
- . . . from magnetic holders
- . . . from pneumatic, e.g. suction, carriers
- . . . from supports slid from under the articles
- . . . from tapes, bands, or rollers rolled from under the articles
- . . . by movable piling or advancing arms, frames, plates, or like members with which the articles are maintained in face contact
- . . . Members rotated about an axis perpendicular to direction of article movement, e.g. star-wheels formed by S-shaped members
- . . . Members rotated about an axis parallel to direction of article movement, e.g. helices
- . . . Members oscillated in arcuate paths
- . . . Members reciprocated in rectilinear path
- . . . by tables arranged to be tilted to cause sliding of articles
- . . . Piling apparatus of which the discharge point moves in accordance with the height to the pile
- . . . (Suction devices)
- . . . (Suction bands or belts)
- . . . (Suction rollers)
- . . . (Air blast devices)
- . . . (acting on stacking devices)
- . . . (blowing on upperside of the sheet)
- . . . (with coanda effect (separating from a stack B65H 3/14))
- . . . by dropping (the articles)
- . . . from mechanical grippers (grippers engaging the leading edge only B65H 29/02)
- . . . from magnetic holders
- . . . from pneumatic, e.g. suction, carriers
- . . . from supports slid from under the articles
- . . . from tapes, bands, or rollers rolled from under the articles
- . . . by movable piling or advancing arms, frames, plates, or like members with which the articles are maintained in face contact
- . . . Members rotated about an axis perpendicular to direction of article movement, e.g. star-wheels formed by S-shaped members
- . . . Members rotated about an axis parallel to direction of article movement, e.g. helices
- . . . Members oscillated in arcuate paths
- . . . Members reciprocated in rectilinear path
- . . . by tables arranged to be tilted to cause sliding of articles
- . . . Piling apparatus of which the discharge point moves in accordance with the height to the pile

B65H
Delivering articles from machines; Piling articles; Article or web delivery apparatus incorporating devices

31/30 Arrangements for removing completed piles (bands, chains, or like moving receivers B65H 31/28)
31/3009 [by dropping, e.g. removing the pile support from under the pile]
31/3018 [from opposite part-support elements, e.g. operated simultaneously]
31/3027 [by the nip between moving belts or rollers (pile being formed between belts or rollers B65H 29/145)]
31/3036 [by gripping the pile]
31/3045 [on the outermost articles of the pile for clamping the pile]
31/3054 [by moving the surface supporting the lowermost article of the pile, e.g. by using belts or rollers]
31/3063 [by special supports like carriages, containers, trays, compartments, plates or bars, e.g. moved in a closed loop]
31/3072 [by moving a surface supporting the pile of articles on edge, e.g. by using belts or carriages]
31/3081 [by acting on edge of the pile for moving it along a surface, e.g. by pushing]
31/309 [by acting on one of the outermost articles for moving the pile of articles on edge along a surface, e.g. by pushing]
31/32 Auxiliary devices for receiving articles during removal of a completed pile
31/34 Apparatus for squaring-up piled articles
31/36 Auxiliary devices for contacting each article with a front stop as it is piled
31/38 Apparatus for vibrating or knocking the pile during piling
31/40 Separate receivers, troughs, and like apparatus for knocking-up completed piles

33/00 Forming counted batches in delivery pile or stream of articles
33/02 by moving a blade or like member into the pile
33/04 by inserting marker slips in pile or stream
33/06 by displacing articles to define batches
33/08 Displacing whole batches, e.g. forming stepped piles
33/10 Displacing the end articles of a batch
33/12 by creating gaps in the stream
33/14 by diverting batches to separate receivers ([B65H 33/16 takes precedence; article switches or diverters B65H 29/58])
33/16 by depositing articles in batches on moving supports
33/18 with separators between adjacent batches
35/00 Delivering articles from cutting or line-perforating machines; Article or web delivery apparatus incorporating cutting or line-perforating devices, e.g. of the kinds specified below (cutting or perforating machines or devices in general B26D, B26F)
35/0006 [Article or web delivery apparatus incorporating cutting or line-perforating devices]
35/0013 (and applying the article or the web by adhesive to a surface [B65H 35/02 takes precedence])
35/0002 [Hand-held or table apparatus [B65H 35/006 takes precedence]
35/0026 [for delivering pressure-sensitive adhesive tape]
35/0033 [and affixing it to a surface (B65H 35/004 takes precedence)]

35/004 [simultaneously with a second roll, e.g. masking tape]
35/0046 [with means for moistening or coating the articles or webs, or applying adhesive thereto]
35/0053 [and affixing it to a surface]
35/006 [with means for delivering a predetermined length of tape]
35/0066 [this length being adjustable]
35/0073 [Details]
35/008 [Arrangements or adaptations of cutting devices]
35/0086 [using movable cutting elements]
35/0093 [Arrangements or adaptations of length measuring devices]
35/02 from or with longitudinal slitters or perforators
35/04 from or with transverse cutters or perforators
35/06 from or with blade, e.g. shear-blade, cutters or perforators (from or with revolving blade B65H 35/08)
35/08 from or with revolving, e.g. cylinder, cutters or perforators
35/10 from or with devices for breaking partially-cut or perforated webs, e.g. bursters

37/00 Article or web delivery apparatus incorporating devices for performing specified auxiliary operations (incorporating cutting or line-perforating devices B65H 35/00)
37/0002 [Web delivery apparatus, the web serving as support for articles, material or another web]
37/0005 [Hand-held apparatus]
37/0007 [Applicators for applying coatings, e.g. correction, colour or adhesive coatings]
37/02 for applying adhesive (and securing together B65H 37/04)
37/04 for securing together articles or webs, e.g. by adhesive, stitching or stapling (adhering replacement to expiring web during change of web roll B65H 19/18)
37/06 for folding

39/00 Associating, collating or gathering articles or webs (machines for both collating or gathering and permanently attaching together sheets or signatures B42C 1/00)
39/02 Associating, collating or gathering articles from several sources
39/04 from piles
39/041 the piles being disposed in rotary carriers
39/042 the piles being disposed in superposed carriers
39/043 the piles being disposed in juxtaposed carriers
39/045 by collecting in rotary carriers
39/05 by collecting in superposed carriers
39/055 by collecting in juxtaposed carriers
39/06 from delivery streams
39/065 by collecting in rotary carriers
39/07 by collecting in superposed carriers
39/075 by collecting in juxtaposed carriers
39/10 Associating articles from a single source, to form, e.g. a writing-pad ([laminating B32B 37/00, B32B 38/00])
39/105 in rotary carriers
39/11 in superposed carriers
39/115 in juxtaposed carriers
Delivering articles from machines; Piling articles; Article or web delivery apparatus incorporating devices

45/00 Machines for separating superposed webs

43/00 Use of control, checking, or safety devices, e.g. automatic devices comprising an element for sensing a variable

43/02 . detecting, or responding to, absence of articles (B65H 43/08 takes precedence)

43/04 . detecting, or responding to, presence of faulty articles (B65H 43/08 takes precedence; diverting faulty articles from main streams B65H 29/62)

43/06 . detecting, or responding to, completion of pile (B65H 43/08 takes precedence)

45/08 . Photoelectric devices

45/00 Folding or unfolding thin material

45/02 . Folding limp material (shaping of plastics or by bending or folding B29C 53/00; folding sheets, blanks or webs for box, carton, envelope or bag making B31B 50/26, B31B 70/26; shaping of paper or cardboard by bending or folding B31F 1/0003;) without application of pressure to define or form crease lines (winding or unwinding fabrics for feeding to or from machines B65H 16/00 - B65H 27/00; folding garments for packaging purposes B65H; folding fabrics in sewing machines D05B)

45/04 . Folding sheets

45/06 . Folding webs (B65H 20/28 takes precedence)

45/08 . longitudinally

45/09 . Doubling, i.e. folding into half of width

45/10 . transversely

45/101 in combination with laying, i.e. forming a zig-zag pile

45/1015 . . . . . . . (Folding webs provided with predefined fold lines; Refolding prefolded webs, e.g. fanfolded continuous forms)

45/103 . . . . . . by a carriage which reciprocates above the laying station

45/105 . . . . . . . coating with fold holders

45/107 . . . . . . . by means of swinging or reciprocating guide bars

45/109 . . . . . . . Registering or counting the folds; Detecting irregularities in the zig-zag pile

45/12 . . Folding articles or webs with application of pressure to define or form crease lines (B65H 20/28 takes precedence; pleating, kitting or goffering textile fabrics D06J)

45/14 . . Buckling folders

45/141 . . . . (with noise reducing means)

45/142 . . . . [Pocket-type folders]

45/144 . . . . [Pockets or stops therefor]

45/145 . . . . [Circular pockets]

45/147 . . . . [Folding rollers therefor]

45/148 . . . . [Diverters therefor]

45/16 . . Rotary folders

45/161 . . . . [Flying tuck folders]

45/162 . . . . [With folding jaw cylinders]

45/163 . . . . [Details of folding jaws therefor]

45/164 . . . . [Details of folding blades therefor]

45/165 . . . . [Details of sheet gripping means therefor]

45/166 . . . . [Having an adjustable circumference]

45/167 . . . . [Having associated sheet guide means]

45/168 . . . . [Having changeable mode of operation]

45/18 . . Oscillating or reciprocating blade folders (carried on rotary members B65H 45/16)

45/20 . . . . . . . . . . . Zig-zag folders ((B65H 45/228 takes precedence)

45/22 . . . . . . . . . . . Longitudinal folders, i.e. for folding moving sheet material parallel to the direction of movement

45/221 . . . . . . . . . . . [Incorporating folding triangles]

45/223 . . . . . . . . . . . [Details of folding triangles]

45/225 . . . . . . . . . . . [Arrangements of folding triangles]

45/226 . . . . . . . . . . . [Positional adjustment of folding triangles]

45/228 . . . . . . . . . . . [Zig-zag folders]

45/24 . . . . . Interfolding sheets, e.g. cigarette or toilet papers

45/26 . . . . . . . . . . . Folding in combination with unpleating (unpiling B65H 3/00)

45/28 . . . . . . . . . . . . Folding in combination with cutting (cutting machines B26D)

45/30 . . . . . . . . . . . . Folding in combination with creasing, smoothing or application of adhesive (folding or adhesive application in article or web delivering B65H 37/00)

47/00 Unfolding thin limp material (B65H 20/28 takes precedence; opening devices for sheets or signatures B65H 5/30)

Unwinding, paying-out, forwarding, winding, coiling, or depositing, filamentary material (devices specially adapted or mounted for storing and repeatedly paying-out and re-storing lengths of material B65H 75/34; working and processing wire B21F, B21G; unwinding, paying-out, forwarding, or winding ropes or cables in load-moving apparatus B61B; B65G; B66; creels, warping, beaming, or leasing machines or methods for textile manufacturing purposes D02H)

49/00 . . Unwinding or paying-out filamentary material; Supporting, storing or transporting packages from which filamentary material is to be withdrawn or paid-out (winding B65H 54/00; bobbins, tubes or other cores for packages B65H 75/00)

49/02 . . Methods or apparatus in which packages do not rotate

49/04 . . . . Package-supporting devices

49/06 . . . . for a single operative package

49/08 . . . . enclosing the package

49/10 . . . . for one operative package and one or more reserve packages

49/12 . . . . the reserve packages being mounted to permit manual or automatic transfer to operating position

49/14 . . . . for several operative packages

49/16 . . . . Stands or frameworks

49/18 . . . . Methods or apparatus in which packages rotate (flyers or other guides assisting paying-out B65H 57/00; supports or holders, for storing and repeatedly paying-out and rewinding lengths of material provided for particular purposes B65H 75/34)

49/20 . . . . Package-supporting devices

49/205 . . . . [Hand-held or portable dispensers]

49/22 . . . . Overhead suspension devices
Unwinding, paying-out, forwarding, winding, coiling, or depositing, filamentary material

51/22 . . . Reels or cages, e.g. cylindrical, with storing and forwarding surfaces provided by rollers or bars (measuring and temporarily storing the weft in looms D03D 47/36; thread feeding devices for weft knitting machines D04B 15/48)
51/24 . . . with interdigitating bars
51/26 . . . Rollers or bars mounted askew to facilitate movement of filamentary material along them, e.g. pairs of canted rollers
51/28 . . . Arrangements for initiating a forwarding operation
51/30 . . . Devices controlling the forwarding speed to synchronise with supply, treatment, or take-up apparatus (B65H 59/10, B65H 59/38 take precedence)
51/32 . . . Supporting or driving arrangements for forwarding devices

54/00 Winding, coiling, or depositing filamentary material (cores, formers, holders, cans or receptacles B65H 75/02)
54/02 . . . Winding and traversing material on to reels, bobbins, tubes, or like package cores or formers
54/023 . . . [Hank to spool winders]
54/026 . . . [Doubling winders, i.e. for winding two or more parallel yarns on a bobbin, e.g. in preparation for twisting or weaving]
54/04 . . . for making packages with closely-wound convolutions
54/06 . . . for making cross-wound packages
54/08 . . . Precision winding arrangements
54/10 . . . for making packages of specified shapes or on specified types of bobbins, tubes, cores, or formers
54/103 . . . {forming frusto-conical packages or forming packages on frusto-conical bobbins, tubes, cores or formers}
54/106 . . . {Manual or other small, compact or portable winding devices for forming packages for different purposes}
54/12 . . . on flanged bobbins or spools (B65H 54/20 takes precedence)
54/14 . . . on tubes, cores, or formers having generally parallel sides, e.g. cops or packages to be loaded into loom shuttles
54/16 . . . forming bottle bobbin packages
54/18 . . . forming spools to be loaded into sewing, lace, embroidery, or like machines
54/20 . . . forming multiple packages
54/205 . . . . . . (the winding material being continuously transferred from one bobbin to the adjacent one)
54/22 . . . Automatic winding machines, i.e. machines with servicing units for automatically performing end-finding, interconnecting of successive lengths of material, controlling and fault-detecting of the running material and replacing or removing of full or empty cores
54/24 . . . having a plurality of winding units moving along an endless path past one or more fixed servicing units
54/26 . . . having one or more servicing units moving along a plurality of fixed winding units

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51/00 Forwarding filamentary material (stretch-spinning methods D01D 5/12; drawing or drafting rovings or the like D01H 5/00)
51/005 . . . Separating a bundle of forwarding filamentary materials into a plurality of groups
51/01 . . . by means of static electricity
51/015 . . . Gathering a plurality of forwarding filamentary materials into a bundle
51/02 . . . Rotary devices, e.g. with helical forwarding surfaces (devices for temporarily storing filamentary material during forwarding B65H 51/20; driven rotary devices for controlling tension B65H 59/18)
51/04 . . . Rollers, pulleys, capstans, or intermeshing rotary elements
51/06 . . . arranged to operate singly
51/08 . . . arranged to operate in groups or in co-operation with other elements
51/10 . . . with opposed coating surfaces, e.g. providing nips
51/105 . . . . . . (one of which is an endless belt)
51/12 . . . in spaced relation to provide a series of independent forwarding surfaces around which material is passed or wound
51/14 . . . Aprons, endless belts, lattices, or like driven elements
51/16 . . . Devices for entraining material by flow of liquids or gases, e.g. air-blast devices (blowing slag wool in molten state C03B 37/06)
51/18 . . . Gripping devices with linear motion
51/20 . . . Devices for temporarily storing filamentary material during forwarding, e.g. for buffer storage
51/205 . . . {by means of a fluid}
54/28 . . . Traversing devices; Package-shaping arrangements (arrangements for preventing ribbon winding B65H 54/38; grooved, slotted, or split drums for driving of packages B65H 54/46)

54/2803 . . . [with a traversely moving package]

54/2806 . . . [Traversing devices driven by cam]

54/2809 . . . [rotating grooved cam (driving split drums B65H 54/50)]

54/2812 . . . [with a traversing guide running in the groove]

54/2815 . . . [heart-shaped cam]

54/2818 . . . [Traversing devices driven by rod]

54/2821 . . . [Traversing devices driven by belts or chains (B65H 54/2836 takes precedence)]

54/2824 . . . [with at least two traversing guides travelling in opposite directions]

54/2827 . . . [Traversing devices with a pivotally mounted guide arm]

54/283 . . . [Traversing devices driven by pneumatic or hydraulic means]

54/2833 . . . [Traversing devices driven by electromagnetic means]

54/2836 . . . [with a rotating guide for traversing the yarn]

54/2839 . . . [counter rotating guides, e.g. wings]

54/2842 . . . [grooved, slotted, or split drums]

54/2845 . . . ["screw" type Owens Fiberglas]

54/2848 . . . [Arrangements for aligned winding (reels with grooves or grooved elements for aligned winding B65H 75/265)]

54/2851 . . . [by pressing the material being wound against the drum, flange or already wound material, e.g. by fingers or rollers; guides moved by the already wound material (B65H 54/2869 takes precedence)]

54/2854 . . . [Detection or control of aligned winding or reversal]

54/2857 . . . [Reversal control]

54/286 . . . . . . [by detection that the material has reached the flange or the reel end]

54/2863 . . . . . . [the flange acting on the material, e.g. provoking wire climbing or incident angle changing]

54/2866 . . . . . . [by detection of position, or distance made of the traverser]

54/2869 . . . . . . [Control of the rotating speed of the reel or the traversing speed for aligned winding]

54/2872 . . . . . . [by detection of the incidence angle]

54/2875 . . . . . . [by detecting or following the already wound material, e.g. contour following]

54/2878 . . . . . . [by detection of incorrect conditions on the wound surface, e.g. material climbing on the next layer, a gap between windings]

54/2881 . . . [Traversing devices with a plurality of guides for winding on a plurality of bobbins (forming multiple packages B65H 54/20)]

54/2884 . . . [Microprocessor-controlled traversing devices in so far the control is not special to one of the traversing devices of groups B65H 54/2803 - B65H 54/325 or group B65H 54/38]

54/2887 . . . [detecting the position of the yarn guide]

54/289 . . . . . . [stopping the yarn guide in a predetermined position]

54/2893 . . . [Superposed traversing, i.e. traversing or other movement superposed on a traversing movement]

54/2896 . . . [Flyers]

54/30 . . . . . . . with thread guides reciprocating or oscillating with fixed stroke [(B65H 54/2803 - B65H 54/2896 take precedence)]

54/32 . . . . . . with thread guides reciprocating or oscillating with variable stroke

54/325 . . . . . . [in accordance with growth of the package]

54/34 . . . . . for laying subsidiary winding, e.g. transfer tails

54/343 . . . . . [when starting winding on an empty bobbin]

54/346 . . . . . [on or outwardly of the fully wound yarn package]

54/36 . . . . . Yarn-guide advancing or raising mechanisms, e.g. cop-building arrangements

54/365 . . . . . [for cops of pirn winding machine (B65H 54/14 takes precedence)]

54/38 . . . . . [Arrangements for preventing ribbon winding]; Arrangements for preventing irregular edge forming, e.g. edge raising or yarn falling from the edge]

54/381 . . . . . [Preventing ribbon winding in a precision winding apparatus, i.e. with a constant ratio between the rotational speed of the bobbin spindle and the rotational speed of the traversing device driving shaft]

54/383 . . . . . [in a stepped precision winding apparatus, i.e. with a constant wind ratio in each step]

54/385 . . . . . [Preventing edge raising, e.g. creeping arrangements]

54/386 . . . . . [with energy storing means for recovering the kinetic energy at the end of the traversing stroke]

54/388 . . . . . [Preventing the yarn from falling off the edge of the package]

54/40 . . . . . [Arrangements for rotating packages]

54/42 . . . . . . [in which the package, core, or former is rotated by frictional contact of its periphery with a driving surface]

54/44 . . . . . . [in which the package, core, or former is engaged with, or secured to, a driven member rotatable about the axis of the package]

54/46 . . . . . Package drive drums

54/48 . . . . . [Grooved drums]

54/485 . . . . . [with an auxiliary guide]

54/50 . . . . . [Slotted or split drums]

54/52 . . . . . Drive contact pressure control, e.g. pressing arrangements

54/54 . . . . . [Arrangements for supporting cores or formers at winding stations; Securing cores or formers to driving members]

54/543 . . . . . [Securing cores or holders to supporting or driving members, e.g. collapsible mandrels]

54/547 . . . . . [Cantilever supporting arrangements]

54/553 . . . . . [Both-ends supporting arrangements]

54/56 . . . . . Winding of hanks or skeins

54/58 . . . . . Swifts or reels adapted solely for the formation of hanks or skeins (B65H 49/30 takes precedence)
Unwinding, paying-out, forwarding, winding, coiling, or depositing, filamentary material

54/585 . . . [Reels for rolling tape-like material, e.g. flat hose or strap, into flat spiral form; Means for retaining the roll after removal of the reel]
54/60 . . . Devices for domestic use
54/62 . . . Binding of skins
54/64 . . Winding of balls; {forming hollow objects by winding on to fusible or soluble cores, e.g. forming pressure vessels B29C 53/56}
54/66 . . . Winding yarns into balls
54/68 . . Winding on to cards or other flat cores, e.g. of star form
54/70 . . Other constructional features of yarn-winding machines
54/702 . . . [Arrangements for confining or removing dust (for spinning D01H 11/00; cleaning in general B08B)]
54/705 . . . [Arrangements for reducing hairyness of the filamentary material]
54/707 . . . [Suction generating system]
54/71 . . . Arrangements for severing filamentary materials
54/72 . . . Framework; Casings; Coverings
54/74 . . . Driving arrangements (arrangements for preventing ribbon winding B65H 54/38; arrangements for rotating packages B65H 54/40)
54/76 . . Depositing materials in cans or receptacles
54/78 . . . Apparatus in which the depositing device or the receptacle is reciprocated
54/80 . . . Apparatus in which the depositing device or the receptacle is rotated
54/82 . . . and in which coils are formed before deposition
54/84 . . . Arrangements for compacting materials in receptacles
54/86 . . . Arrangements for taking-up waste material before or after winding or depositing
54/88 . . . by means of pneumatic arrangements, e.g. suction guns

55/00 Wound packages of filamentary material
55/005 . . [with two or more filaments wound in parallel on the bobbin]
55/02 . . Self-supporting packages
55/04 . . characterised by method of winding
55/043 . . . [the yarn paying off through the centre of the package]
55/046 . . . [packages having a radial opening through which the material will pay off]

57/00 Guides for filamentary materials; Supports therefor
57/003 . . . [Arrangements for threading or unthreading the guide]
57/006 . . . [Traversing guides]
57/02 . . . Stationary rods or plates
57/04 . . . Guiding surfaces within slots or grooves
57/06 . . . Annular guiding surfaces; Eyes, e.g. pigtails
57/08 . . . formed of wire or the like
57/10 . . . with flared apertures
57/12 . . . Tubes
57/14 . . . Pulleys, rollers, or rotary bars
57/16 . . . formed to maintain a plurality of filaments in spaced relation
57/18 . . . mounted to facilitate unwinding of material from packages
57/20 . . . Flyers (for inserting twist D01H)

57/22 . . . adapted to prevent excessive ballooning of material
57/24 . . . with wear-resistant surfaces
57/26 . . . Supports for guides
57/28 . . . Reciprocating or oscillating guides (traversing devices for winding, coiling, or depositing filamentary material B65H 54/28)

59/00 Adjusting or controlling tension in filamentary material, e.g. for preventing snarling; Applications of tension indicators
59/005 . . [Means compensating the yarn tension in relation with its moving due to traversing arrangements]
59/02 . . by regulating delivery of material from supply package (by contact of package with support B65H 49/02; by controlling speed of driving mechanism of unwinding or paying-out devices B65H 59/38)
59/04 . . . by devices acting on package or support
59/043 . . . [with a braking force varying proportionally to the diameter or the weight of the package being unwound]
59/046 . . . . . [varying proportionally to the weight only]
59/06 . . . by devices acting on material leaving the package
59/08 . . . by contact of running length of material with supply package
59/10 . . . by devices acting on running material and not associated with supply or take-up devices (by controlling speed of driving mechanism of material-forwarding devices B65H 59/38)
59/105 . . . [the material being subjected to the action of a fluid]
59/12 . . . Stationary elements arranged to deflect material from straight path
59/14 . . . and provided with surfaces imposing additional retarding forces on material
59/16 . . . Braked elements rotated by material
59/18 . . . Driven rotary elements (material-forwarding devices B65H 51/00)
59/20 . . . Co-operating surfaces mounted for relative movement
59/22 . . . and arranged to apply pressure to material
59/225 . . . . . [Tension discs]
59/24 . . . . . Surfaces movable automatically to compensate for variation in tension
59/26 . . . . . and arranged to deflect material from straight path
59/28 . . . . . the surfaces being urged towards each other
59/30 . . . . . Surfaces movable automatically to compensate for variation in tension
59/32 . . . . . the surfaces being urged away from each other
59/34 . . . . . Surfaces movable automatically to compensate for variation in tension
59/36 . . . . . Floating elements compensating for irregularities in supply or take-up of material (buffer storage devices B65H 51/20)
59/38 . . . by regulating speed of driving mechanism of unwinding, paying-out, forwarding, winding, or depositing devices, e.g. automatically in response to variations in tension
59/381 . . . [using pneumatic or hydraulic means]
59/382 . . . [using mechanical means]
59/384 . . . [using electronic means]
59/385 . . . [Regulating winding speed]
Unwinding, paying-out, forwarding, winding, coiling, or depositing, filamentary material

B65H

59/387 . . . [Regulating unwinding speed]
59/388 . . . [Regulating winding speed]
59/40 . Applications of tension indicators

61/00 Applications of devices for metering predetermined lengths of running material (of general application G01B)
61/005 . [for measuring speed of running yarns]
63/00 Warning or safety devices, e.g., automatic fault detectors, stop-motions (safety devices in general F16P; indicating devices in general G08B) {; Quality control of the package}
63/003 . [responsive to winding of yarns around rotating cylinders]
63/006 . [quality control of the package]
63/02 . responsive to reduction in material tension, failure of supply, or breakage, of material
63/024 . . . responsive to breakage of materials
63/028 . . . characterised by the detecting or sensing element
63/032 . . . . electrical or pneumatic
63/0321 . . . . . . [using electronic actuators]
63/0322 . . . . . . [using capacitor sensing means, i.e. the defect signal is a variation of impedance]
63/0324 . . . . . . [using photo-electric sensing means, i.e. the defect signal is a variation of light energy]
63/0325 . . . . . . [using fluid sensing means, e.g. acoustic]
63/0327 . . . . . . [using piezo-electric sensing means]
63/0328 . . . . . . [using pneumatic sensing means]
63/036 . . . . characterised by the combination of the detecting or sensing elements with other devices, e.g. stopping devices for material advancing or winding mechanism
63/0362 . . . . . [by a plate separating the package from the driving drum]
63/0364 . . . . . [by lifting or raising the package away from the driving roller]
63/0366 . . . . . . [Braking means for the raised or lifted package]
63/0368 . . . . . . [by clutching or de-clutching the package from its driving means (package secured to a rotary driven member)]
63/04 . responsive to excessive tension or irregular operation of apparatus
63/06 . responsive to presence of irregularities in running material, e.g. for severing the material at irregularities {Control of the correct working of the yarn cleaner]
63/061 . . . . . . [Mechanical slub catcher and detector]
63/062 . . . . . . [Electronic slub detector]
63/064 . . . . . . [using capacitor sensing means, i.e. the defect signal is a variation of impedance]
63/065 . . . . . . [using photo-electric sensing means, i.e. the defect signal is a variation of light energy]
63/067 . . . . . . [using fluid sensing means, e.g. acoustic]
63/068 . . . . . . [using piezo-electric sensing means]
63/08 . responsive to delivery of a measured length of material, completion of winding of a package, or filling of a receptacle
63/082 . . . . [responsive to a predetermined size or diameter of the package]
63/084 . . . . [responsive to a predetermined weight of the package]
63/086 . . . . [responsive to completion of unwinding of a package]
63/088 . . . . [Clamping device (connected with slub-catcher B65H 63/061)]

65/00 Securing material to cores or formers (arrangements for securing ends of material to cores, formers, supports or holders, e.g. reels, B65H 75/28)
65/005 . {Securing end of yarn in the wound or completed package}

67/00 Replacing or removing cores, receptacles, or completed packages at paying-out, winding, or depositing stations
67/02 . Arrangements for removing spent cores or receptacles and replacing by supply packages at paying-out stations ( {for cans D01H 9/008; arrangement of the service carriage B65H 54/26; } supports for packages B65H 49/04, B65H 49/20)
67/04 . Arrangements for removing completed take-up packages and (or) replacing by cores, formers, or empty receptacles at winding or depositing stations; Transferring material between adjacent full and empty take-up elements {arrangement of the service carriage B65H 54/26;}
67/0405 . . . [Arrangements for removing completed take-up packages or for loading an empty core (B65H 67/044 takes precedence)]
67/0411 . . . . [for removing completed take-up packages]
67/0417 . . . . [for loading an empty core]
67/0422 . . . . [for loading a starter winding, i.e. a spool core with a small length of yarn wound on it; preparing the starter winding]
67/0428 . . . . [for cans, boxes and other receptacles]
67/0434 . . . . [Transferring material devices between full and empty cans]
67/044 . Continuous winding apparatus for winding on two or more winding heads in succession
67/048 . . . . . . . having winding heads arranged on rotary capstan head
67/052 . . . . . . . having two or more winding heads arranged in parallel to each other
67/056 . . . . . . . having two or more winding heads arranged in series with each other
67/06 . . . . . . . Supplying cores, receptacles, or packages to, or transporting from, winding or depositing stations ( {between spinning and winding machines D01H 9/18; e.g. transporting cans D01H 9/185}
67/061 . . . . [Orientating devices]
67/062 . . . . [Sorting devices for full/empty packages]
67/063 . . . . [Marking or identifying devices for packages]
67/064 . . . . [Supplying or transporting cross-wound packages, also combined with transporting the empty core]
67/065 . . . . [Manipulators with gripping or holding means for transferring the packages from one station to another, e.g. from a conveyor to a creel trolley]
67/066 . . . . [Depositing full or empty bobbins into a container or stacking them]
67/067 . . . . [Removing full or empty bobbins from a container or a stack]
67/068 . . . . [Supplying or transporting empty cores]
67/069 . . . [Removing or fixing bobbins or cores from or on the vertical peg of trays, pallets or the pegs of a belt]
67/08 . Automatic end-finding and material-interconnecting arrangements (knot-tying devices B65H 69/00)
67/081 . . . [acting after interruption of the winding process, e.g., yarn breakage, yarn cut or package replacement]
67/083 . . . [handling the yarn-end of the new supply package]
67/085 . . . [end-finding at the take-up package, e.g., by suction and reverse package rotation]
67/086 . . . [Preparing supply packages]
67/088 . . . [Prepositioning the yarn end into the interior of the supply package]
69/00 Methods of, or devices for, interconnecting successive lengths of material; Knit-tying devices {Control of the correct working of the interconnecting device}
69/02 . by means of adhesives
69/04 . by knotting
69/043 . . . {the threads are moved in ducts having the form of the wanted knot}
69/046 . . . [by a fluid]
69/06 . by splicing {grommets made by splicing D07B 1/18, auxiliary apparatus for splicing ropes or cables D07B 7/169) }
69/061 . . . {using pneumatic means}
69/063 . . . {Preparation of the yarn ends}
69/065 . . . {using mechanical means}
69/066 . . . {Wet splicing, i.e., adding liquid to the splicing room or to the yarn ends preparing rooms}
69/068 . . . {using a binding thread, e.g., sewing}
69/08 . by welding
69/085 . . . {using ultrasonic means}
71/00 Moistening, sizing, oiling, waxing, colouring or drying filamentary material as additional measures during package formation (applying liquids or other fluent materials to surfaces in general B05)
71/002 . . . [Abrading, scraping (in general D02J 3/00)]
71/005 . . . [Oiling, waxing by applying solid wax cake during spooling]
71/007 . . . [Oiling, waxing by applying liquid during spooling]
73/00 Stripping waste material from cores or formers, e.g., to permit their re-use

Methods, apparatus, or devices of general interest or not otherwise provided for in connection with the handling of webs, tapes, or filamentary materials (unwinding, paying-out, forwarding or winding ropes or cables in load-moving apparatus B61B, B65G, B66)
75/00 Storing webs, tapes, or filamentary material, e.g., on reels (fishing reels A01K 89/00; storing means for record carriers, specially adapted for cooperation with the recording or reproducing apparatus G11B 23/02)
75/002 . . . [Cores, formers, supports, or holders for coiled, wound, or folded material, e.g., reels, spindles, bobbins, cop tubes, cans (packaging aspects B65D 85/67)]
75/025 . . . [specially adapted for winding or storing webs with the confronting layers spaced from each other, e.g., frames for storing nap fabrics]
75/04 . . . [Kinds or types (B65H 75/18 takes precedence)]
75/06 . . . [Flat cores, e.g., cards]
75/08 . . . [of circular or polygonal cross-section (cans or receptacles B65H 75/16)]
75/10 . . . {without flanges, e.g., cop tubes}
75/105 . . . . . . . . . . .{Pirns destined for use in shuttles, i.e., with a yarn receiving portion and a thicker base portion, this thicker portion being adapted to be engaged by a spindle in a spinning frame and also being adapted for fitting in a shuttle}
75/12 . . . {with a single end flange (e.g., with a conical end flange)}; formed with one end of greater diameter than the barrel
75/14 . . . [with two end flanges]
75/141 . . . . . . . . . . .{covers therefor}
75/143 . . . . . . . . . . .{at least one end flange being shaped to cover the windings}
75/145 . . . . . . . . . . .[Reinforcement or protection arrangements for the peripheral edge of the flanges]
75/146 . . . . . . . . . . .[with at least one intermediate flange between the two end flanges]
75/148 . . . . . . . . . . .[with at least one frustoconical end flange]
75/16 . . . . . . . . . . .[Cans or receptacles, e.g., sliver cans]
75/18 . . . . . . . . . . .[Constructional details]
75/182 . . . . . . . . . . .[Identification means]
75/185 . . . . . . . . . . .[End caps, plugs or adapters]
75/187 . . . . . . . . . . .[Reinforcing end caps]
75/20 . . . . . . . . . . .[Skeleton construction, e.g., formed of wire (perforated supports for textile materials to be treated D06B 23/042)]
75/22 . . . . . . . . . . .[collapsible; with removable parts]
75/24 . . . . . . . . . . .[adjustable in configuration, e.g., expansible]
75/241 . . . . . . . . . . .[axially adjustable reels or bobbins]
75/242 . . . . . . . . . . .[Expansible spindles, mandrels or chucks, e.g., for securing or releasing cores, holders or packages (expansible mandrels for machine tools B23B 31/00)]
75/243 . . . . . . . . . . .[comprising a fluid pressure actuated elastic member, e.g., a diaphragm or a pneumatic tube]
75/245 . . . . . . . . . . .[by deformation of an elastic or flexible material]
75/246 . . . . . . . . . . .[by relative rotation of the clamping elements and the supporting spindle or core]
75/247 . . . . . . . . . . .[using rollers or rods moving relative to a wedge or cam surface]
75/248 . . . . . . . . . . .[with clamping elements linked to the spindle]
75/26 . . . . . . . . . . .[Arrangements for preventing slipping of winding]
75/265 . . . . . . . . . . .[Reels with grooves or grooved elements inhibiting aligned or orderly winding]
Methods, apparatus, or devices of general interest or not otherwise provided for in connection with the handling of...

75/28 . . . Arrangements for positively securing ends of material
75/285 . . . [Holding devices to prevent the wound material from unwinding]
75/30 . . . Arrangements to facilitate driving or braking
75/305 . . . [Arrangements to facilitate driving by a portable drill]
75/32 . . . Arrangements to facilitate severing of material
75/34 . . . specially adapted or mounted for storing and repeatedly paying-out and re-storing lengths of material provided for particular purposes, e.g. anchored hoses, power cables (retractors for storing flexible hoses as accessories of dental work stands A61G 15/18; vehicle safety belt retractors B60R 22/34; hose-storing devices in apparatus or devices for transferring liquids from bulk storage containers or reservoirs into vehicles or portable containers B67D 7/40; clothes-line supports D06F 53/00; spring drums for liftable blinds with horizontal lamellae E06B 9/322; spring drums or tape drums for roll-type closures or roller blinds E06B 9/56; hauling- or hoisting-chains with arrangements for holding electric cables, hoses or the like F16G 13/16; devices for guiding pipes, cables or protective tubing, between relatively movable points, e.g. movable channels, F16L 3/01; flexible rulers or tapes with scales G01B 3/10; electrical features of stored material, see the relevant subclasses, e.g. H02G]

75/36 . . . without essentially involving the use of a core or former internal to a stored package of material, e.g. with stored material housed within casing or container, or intermittently engaging a plurality of supports as in sinuous or serpentine fashion
75/362 . . . [with stored material housed within a casing or container (B65H 75/368 takes precedence)]
75/364 . . . [the stored material being coiled]
75/366 . . . [with stored package of material loosely hanging on a support, e.g. a hose hanger]
75/368 . . . [with pulleys]
75/38 . . . involving the use of a core or former internal to, and supporting, a stored package of material
75/40 . . . mobile or transportable
75/403 . . . [Carriage with wheels]
75/406 . . . [hand-held during use (B65H 75/48, B65H 75/4473 take precedence)]
75/42 . . . attached to, or forming part of, mobile tools, machines or vehicles
75/425 . . . [attached to, or forming part of a vehicle, e.g. truck, trailer, vessel]
75/44 . . . Constructional details
75/4402 . . . [Guiding arrangements to control paying-out and re-storing of the material (guides per se B65H 57/800)]
75/4405 . . . [Traversing devices; means for orderly arranging the material on the drum]
75/4407 . . . [positively driven, e.g. by a transmission between the drum and the traversing device]
75/441 . . . [with a handle on the guide for manual operation]
75/4413 . . . [with a traversely moving drum]
75/4415 . . . [Guiding ribs on the drum]
75/4418 . . . [Arrangements for stopping winding or unwinding; Arrangements for releasing the stop means]
75/4421 . . . [acting directly on the material]
75/4423 . . . [Manual stop or release button]
75/4426 . . . [Stopping at the end of winding or unwinding]
75/4428 . . . [acting on the reel or on a reel blocking mechanism]
75/4431 . . . [Manual stop or release button]
75/4434 . . . [acted by pulling on or imparting an inclination to the material]
75/4436 . . . [Arrangements for yieldably braking the reel or the material for moderating speed of winding or unwinding]
75/4439 . . . [acting directly on the material]
75/4442 . . . [acting on the reel]
75/4444 . . . [with manually adjustable brake pads]
75/4447 . . . [centrifugally]
75/4449 . . . [Arrangements or adaptations to avoid movable contacts or rotary couplings, e.g. by the use of an expansion chamber for a lenght of the cord or hose]
75/4452 . . . [Simultaneous winding and unwinding of the material, e.g. winding or unwinding on a stationary drum while respectively unwinding or winding on a rotating drum using a planetary guiding roller]
75/4455 . . . [using a planetary assembly coaxially rotating around a central drum]
75/4457 . . . [Arrangements of the frame or housing]
75/446 . . . [for releasably or permanently attaching the frame to a wall, on a floor or on a post or the like]
75/4463 . . . [Swivelling attachment]
75/4465 . . . [Foldable or collapsible]
75/4468 . . . [Tubular frame]
75/4471 . . . [Housing enclosing the reel]
75/4473 . . . [without arrangements or adaptations for rotating the core or former (cores or formers which are not specially adapted for repeatedly paying-out and re-storing lengths of material B65H 75/02)]
75/4476 . . . [with stored material wound around two spaced supports]
75/4478 . . . [relating to handling of fluids]
75/4481 . . . [Arrangements or adaptations for driving the reel or the material (by a spring B65H 75/48)]
75/4484 . . . [Electronic arrangements or adaptations for controlling the winding or unwinding process, e.g. with sensors]
75/4486 . . . [Electric motors]
75/4489 . . . [Fluid motors]
75/4492 . . . [Manual drives]
75/4494 . . . [Arrangements or adaptations of the crank]
75/4497 . . . [driving by the wheels of the carriage or vehicle]
75/48 . . . Automatic restoring devices (B65H 75/4418 takes precedence)
75/483 . . . [Balance reel]
Methods, apparatus, or devices of general interest or not otherwise provided for in connection with the handling of...

B65H

75/486 . . . . . {Arrangements or adaptations of the spring motor}
75/50 . Methods of making reels, bobbins, cop tubes, or the like by working an unspecified material, or several materials
75/505 . . {Working on cores, reels or the like to permit their reuse, e.g. correcting distortion, replacing parts of the core or reel}

79/00 Driving-gear for devices for forwarding, winding, unwinding, or depositing material, not otherwise provided for

81/00 Methods, apparatus, or devices for covering or wrapping cores by winding webs, tapes, or filamentary material, not otherwise provided for (forming hollow objects by winding filamentary material on to fusible or soluble cores [B29C 53/56]; making wound articles of paper B31C)

81/02 . Covering or wrapping annular or like cores forming a closed or substantially closed figure
81/04 . . by feeding material obliquely to the axis of the core
81/06 . Covering or wrapping elongated cores
81/08 . . by feeding material obliquely to the axis of the core

83/00 Combinations of piling and depiling operations, e.g. performed simultaneously, of interest apart from the single operation of piling or depiling as such

83/02 . performed on the same pile or stack
83/025 . . . {onto and from the same side of the pile or stack}

85/00 Recirculating articles, i.e. feeding each article to, and delivering it from, the same machine work-station more than once

99/00 Subject matter not provided for in other groups of this subclass

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2220/00 Function indicators

2220/01 . indicating that the input or output entities exclusively relate to machine elements

2220/11 . indicating that the input or output entities exclusively relate to machine elements

2301/00 Handling processes for sheets or webs

2301/10 . Selective handling processes
2301/11 . . of web or zig-zag web
2301/12 . . of sheets or web
2301/121 . . . for sheet handling processes, i.e. wherein the web is cut into sheets
2301/122 . . . for web or sheet handling processes wherein the sheets are cut from the web

2301/13 . . Relative to size or orientation of the material
2301/131 . . . single width or double width
2301/132 . . . single face or double face
2301/1321 . . . Printed material
2301/133 . . Face-up or face-down handling mode
2301/134 . . Portrait or landscape printing
2301/14 . . of batches of material of different characteristics
2301/141 . . . of different format, e.g. A0 - A4
2301/142 . . . of different thickness
2301/1421 . . . Single sheet or set of sheets
2301/1422 . . . Sheet or envelope
2301/15 . . of sheets in pile or in shingled formation
2301/151 . . . Selective shingled formation
2301/1511 . . . Selective shingled or non shingled formation
2301/152 . . . of sheets piled horizontally or vertically
2301/153 . . . of discharge in bins, stacking, collating or gathering
2301/161 . . . Mailing or sorting mode
2301/162 . . . Normal or offset stacking mode
2301/163 . . . Bound or non bound, e.g. stapled or non stapled stacking mode
2301/165 . . . selective stapling modes, e.g. corner or edge or central
2301/164 . . . Folded or non folded stacking mode
2301/165 . . . Normal or finished stacking mode
2301/166 . . . Superposed or interfolded stacking mode
2301/17 . . . Selective folding mode
2301/20 . . Continuous handling processes
2301/21 . . . of batches of material of different characteristics
2301/211 . . . . of different format, e.g. A0 - A4
2301/212 . . . . of different thickness
2301/22 . . . of material of different characteristics
2301/23 . . . of multiple materials in parallel to each other
2301/231 . . . Recto verso portions of a single material
2301/30 . . Orientation, displacement, position of the handled material

2301/31 . . . Features of transport path
2301/311 . . . for transport path in plane of handled material, e.g. geometry

2301/3111 . . . . circular
2301/3112 . . . . S-shaped
2301/31122 . . . . Omega-shaped
2301/31124 . . . . U-shaped
2301/3113 . . . vertical
2301/3114 . . . oblique with respect to axis of handled material

2301/3115 . . . linear
2301/312 . . . for transport path involving at least two planes of transport forming an angle between each other

2301/3121 . . . L-shaped
2301/3122 . . . U-shaped
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2301/3123 S-shaped
2301/3124 Y-shaped
2301/3125 T-shaped
2301/3134 Closed loop
2301/316 of web roll
2301/3162 involving only one plane containing the roll axis
2301/31622 rectilinear transport path
2301/3164 involving at least two planes containing the roll axis
2301/31642 L-shaped
2301/32 Orientation of handled material
2301/321 Standing on edge
2301/322 Riding over one elongated or saddle-like member
2301/3221 on saddle-like member extending perpendicularly to the transport direction
2301/323 Hanging
2301/324 Inclined
2301/325 of roll of material
2301/3251 vertical axis
2301/3253 inclined axis
2301/33 Modifying, selecting, changing orientation
2301/331 Skewing, correcting skew, i.e. changing slightly orientation of material
2301/3311 levelling
2301/332 Turning, overturning
2301/3321 kinetic therefor
2301/33212 about an axis parallel to the direction of displacement of material
2301/33214 about an axis perpendicular to the direction of displacement and parallel to the surface of material
2301/33216 about an axis perpendicular to the direction of displacement and to the surface of material
2301/3322 according to a determined angle
2301/33222 90°
2301/33224 180°
2301/333 Inverting
2301/3331 Invoking forward reverse transporting means
2301/33312 forward reverse rollers pairs
2301/33314 forward reverse belts
2301/3332 Tri-rollers type
2301/34 Modifying, selecting, changing direction of displacement
2301/341 without change of plane of displacement
2301/3411 Right angle arrangement, i.e. 90 degrees
2301/34112 changing leading edge
2301/3412 involving transport means arranged obliquely to the in-feed or/and out-feed conveyor
2301/342 with change of plane of displacement
2301/3421 for changing level of plane of displacement, i.e. the material being transported in parallel planes after at least two changes of direction by travelling a path section in arc of circle
2301/3422 by travelling an angled curved path section for overturning and changing feeding direction
2301/3423 by travelling an angled curved path section for overturning and changing feeding direction
2301/34232 involving conical angled curved path
2301/35 Spacing
2301/351 parallel to the direction of displacement

2301/36 Positioning; Changing position
2301/361 during displacement
2301/3611 centering, positioning material symmetrically relatively to a given axis of displacement
2301/36112 by elements engaging both sides of web
2301/3612 oscillating material transversely relatively to a given axis of displacement
2301/3613 Lateral positioning
2301/36132 involving slanted belts or chains arrangement
2301/36132 of stationary material
2301/3621 perpendicularly to a first direction in which the material is already in registered position
2301/36212 centering, positioning material symmetrically relatively to said first direction
2301/363 of material in pile
2301/364 of material in roll
2301/40 Type of handling process
2301/41 Winding, unwinding
2301/412 Roll
2301/4124 Outer end attachment
2301/41242 Tab arrangement
2301/41244 glued between outmost layer and tail
2301/41246 by machine, e.g. on unwinder turret
2301/4127 with interleaf layer, e.g. liner
2301/4128 Multiple rolls
2301/41282 coaxially arranged
2301/41284 involving juxtaposed lanes wound around a common axis
2301/412845 and spliced to each other, e.g. for serial unwinding
2301/413 Supporting web roll
2301/41306 Slot arrangement, e.g. saddle shaft bearing
2301/41308 Releasably clamping the web roll shaft
2301/4131 Support with vertical axis
2301/41312 the axis being displaced on circular path of 360 degrees
2301/4132 Cantilever arrangement
2301/41322 pivoting movement of roll support
2301/413223 around an axis parallel to roll axis
2301/413226 around an axis perpendicular to roll axis
2301/41324 linear movement of roll support
2301/413243 parallel to roll axis
2301/413246 perpendicular to roll axis (e.g. lowering)
2301/4133 special features
2301/41335 locking mechanism for roll, e.g. axial flange
2301/4134 Both ends type arrangement
2301/41342 shaft transversing the roll (see also B65H 75/08)
2301/41344 the roll being fixed to the shaft (e.g. by clamping)
2301/41346 separate elements engaging each end of the roll (e.g. chuck)
2301/4135 Movable supporting means
2301/41352 moving on linear path (including linear slot arrangement)
2301/413523 reciprocating supporting means
2301/413526 vertically moving supporting means
2301/41354 moving along a path enclosing a circular area, e.g. turret

Spacing displacement

Modifying, selecting, changing direction of displacement

Modifying, selecting, changing orientation

Orientation of handled material

Standing on edge

Riding over one elongated or saddle-like member

on saddle-like member extending perpendicularly to the transport direction

about an axis parallel to the direction of displacement of material

about an axis perpendicular to the direction of displacement and parallel to the surface of material

about an axis perpendicular to the direction of displacement and to the surface of material

according to a determined angle

90°

180°

Inverting

Invoking forward reverse transporting means

forward reverse rollers pairs

forward reverse belts

Tri-rollers type

Modifying, selecting, changing direction of displacement

without change of plane of displacement

Right angle arrangement, i.e. 90 degrees

changing leading edge

involving transport means arranged obliquely to the in-feed or/and out-feed conveyor

with change of plane of displacement

for changing level of plane of displacement, i.e. the material being transported in parallel planes after at least two changes of direction by travelling a path section in arc of circle

by travelling an angled curved path section for overturning and changing feeding direction

by travelling an angled curved path section for overturning and changing feeding direction

involving conical angled curved path

parallel to the direction of displacement

Positioning; Changing position

during displacement

centering, positioning material symmetrically relatively to a given axis of displacement

by elements engaging both sides of web

oscillating material transversely relatively to a given axis of displacement

Lateral positioning

involving slanted belts or chains arrangement

of stationary material

perpendicularly to a first direction in which the material is already in registered position

centering, positioning material symmetrically relatively to said first direction

of material in pile

of material in roll

Type of handling process

Winding, unwinding

Roll

Outer end attachment

Tab arrangement

glued between outmost layer and tail

by machine, e.g. on unwinder turret

with interleaf layer, e.g. liner

Multiple rolls

coaxially arranged

involving juxtaposed lanes wound around a common axis

and spliced to each other, e.g. for serial unwinding

Supporting web roll

Slot arrangement, e.g. saddle shaft bearing

Releasably clamping the web roll shaft

Support with vertical axis

the axis being displaced on circular path of 360 degrees

Cantilever arrangement

pivoting movement of roll support

around an axis parallel to roll axis

around an axis perpendicular to roll axis

linear movement of roll support

parallel to roll axis

perpendicular to roll axis (e.g. lowering)

special features

locking mechanism for roll, e.g. axial flange

Both ends type arrangement

shaft transversing the roll (see also B65H 75/08)

the roll being fixed to the shaft (e.g. by clamping)

separate elements engaging each end of the roll (e.g. chuck)

Movable supporting means

moving on linear path (including linear slot arrangement)

reciprocating supporting means

vertically moving supporting means

moving along a path enclosing a circular area, e.g. turret
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2301/41356 . . . . moving on path enclosing a non-circular area
2301/41358 . . . . moving on an arc of a circle, i.e. pivoting supporting means
2301/4136 . . . . Mounting arrangements not otherwise provided for
2301/41361 . . . . sequentially used roll supports for the same web roll
2301/41362 . . . . one of the supports for the roller axis being movable as auxiliary bearing
2301/41364 . . . . the roller axis pivoting around an axis perpendicular to itself
2301/41366 . . . . arrangements for mounting and supporting and -preferably- driving the (un)winding shaft
2301/413665 . . . . articulated bearing
2301/41368 . . . . one or two lateral flanges covering part of or entire web diameter
2301/413683 . . . . at least one flange transmitting driving force
2301/413686 . . . . The driving flange being rotationally fixed
2301/41369 . . . . hub arrangements, i.e. involving additional part between core / roll and machine bearing
2301/4137 . . . . on its outer circumference
2301/41372 . . . . rollers or balls arrangement
2301/41374 . . . . arranged in a stationary manner
2301/41376 . . . . arranged in a non-stationary manner, i.e. changing according to actual roll diameter
2301/4138 . . . . belt arrangement
2301/41382 . . . . arranged in stationary manner
2301/41384 . . . . arranged in non-stationary manner, i.e. changing according to actual roll diameter
2301/41386 . . . . fixed or flexible frictional surface
2301/41387 . . . . on inclined surface
2301/4139 . . . . Supporting means for several rolls
2301/41392 . . . . moving in forced (kinematic) relationship
2301/41394 . . . . moving independently from each other
2301/41398 . . . . juxtaposed
2301/414 . . . . Winding
2301/4141 . . . . Preparing winding process
2301/41414 . . . . involving pulper or doctor blade or air knife
2301/41417 . . . . cutting leading strip (überführstreifen) for transferring web
2301/41419 . . . . Starting winding process
2301/41421 . . . . involving electrostatic means
2301/41422 . . . . involving mechanical means
2301/414222 . . . . fixed to frame, tucking leading edge to core, e.g. by brush
2301/414225 . . . . fixed to shaft or mandrel, e.g. clamping or pinching leading edge to shaft or mandrel
2301/414227 . . . . rotatable grippers for coreless winding
2301/41423 . . . . involving liquid, e.g. wetting core by water
2301/41424 . . . . involving use of glue
2301/41425 . . . . involving blowing means, e.g. air blast
2301/41426 . . . . involving suction means, e.g. core with vacuum supply
2301/41427 . . . . involving arrangements for securing leading edge to core, e.g. adhesive tape
2301/41428 . . . . involving additional element between core and web
2301/41429 . . . . in coreless applications
2301/4143 . . . . Performing winding process
2301/41432 . . . . special features of winding process
2301/414321 . . . . helical winding (B65H 2701/18444 takes precedence)
2301/414322 . . . . oscillated winding, i.e. oscillating the axis of the winding roller or material
2301/414323 . . . . spiral winding, i.e. single layers not touching each other, e.g. for tyre rubber
2301/414324 . . . . involving interleaf web/sheet, e.g. liner
2301/414325 . . . . winding a core in-line with the web, e.g. wound core made out of sheet material
2301/414326 . . . . winding on core with non-circular cross-sectional profile, e.g. polygonal, oval, flat or slightly curved
2301/414327 . . . . winding on core irregular inner or outer longitudinal profile, e.g. stepped or grooved
2301/414328 . . . . different torques on both ends of core
2301/414329 . . . . blowing gas into winding gap
2301/4144 . . . . Finishing winding process
2301/41441 . . . . and blocking outer layers against falling apart
2301/41442 . . . . Specified by the sealing medium sealing used
2301/414421 . . . . Glue or hot-melt
2301/414422 . . . . Adhesive tape
2301/414424 . . . . Electrostatic charge
2301/414425 . . . . Simultaneous deformation of trailing edge and outer layers
2301/414427 . . . . Heating or use of thermoplastic material
2301/414428 . . . . Folding of trailing end
2301/41443 . . . . Specified by the place to where the sealing medium is applied
2301/414433 . . . . onto the roll
2301/414436 . . . . onto the web
2301/41444 . . . . Specified by process phase during which sealing /securing is performed
2301/414443 . . . . Sealing or securing within the winding station
2301/414446 . . . . Sealing or securing in a separate following station
2301/41445 . . . . after winding process
2301/41446 . . . . removing roll/core from shaft/mandrel, e.g. by compressed air
2301/41447 . . . . discharging roll by, e.g. rolling it down a slope
2301/4146 . . . . involving particular drive arrangement
2301/41461 . . . . centre drive
2301/41462 . . . . nip drive
2301/41464 . . . . lateral drive arrangement, e.g. operating on the flange of the web roll
2301/41466 . . . . combinations of drives
2301/41468 . . . . centre and nip drive
2301/4148 . . . . slitting
2301/41482 . . . . prepare slitting process
2301/41484 . . . . slitting roll after winding, i.e. cutting log into individual rolls

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2301/41485 . . . . winding on one single shaft or support
2301/41486 . . . . winding on two or more winding shafts simultaneously
2301/414863 . . . . directly against central support roller
2301/414866 . . . . on bed rollers
2301/41487 . . . . trimming edge
2301/4149 . . . . features concerning supply of cores
2301/41493 . . . . integrated core cutter
2301/41496 . . . . loading pre-arranged set of cores
2301/4145 . . . . Unwinding
2301/41501 . . . . Special features of unwinding process
2301/415013 . . . . Roll holder being able to pivot around an axis perpendicular to roller axis
2301/415016 . . . . Roll material fed from inner layer
2301/41505 . . . . Preparing unwinding process
2301/41506 . . . . the web roll not yet being in the unwinding support / unwinding location
2301/415063 . . . . the preparation performed in a roll preparation station
2301/415066 . . . . by connecting trailing edge of expiring web to leading edge of following web
2301/41508 . . . . the web roll being in the unwinding support / unwinding location
2301/415085 . . . . by adjusting / registering the lateral position of the web roll
2301/41509 . . . . opening web roll and related steps
2301/415095 . . . . gripping an edge of the web, e.g. by clamping and forward it, e.g. to splicing web advancing unit
2301/4151 . . . . Starting unwinding process
2301/41518 . . . . Performing unwinding process
2301/415185 . . . . Web unwound being guided over (pivoting) guide resting on the roller diameter
2301/4152 . . . . Finishing unwinding process
2301/41522 . . . . Detecting residual amount of web
2301/41524 . . . . Detecting trailing edge
2301/41525 . . . . and consuming web roll up to trailing edge
2301/4155 . . . . after unwinding process
2301/41552 . . . . separating core from remaining layers of wound material from each other
2301/415525 . . . . by cutting wound material, e.g. transversally (core slabling)
2301/4165 . . . . Unwinding or unwinding material from or to one station in which the material is stored
2301/417 . . . . Handling or changing web rolls
2301/41702 . . . . management and organisation of stock and production
2301/41704 . . . . involving layout of production or storage facility
2301/4171 . . . . Handling web roll
2301/4172 . . . . by circumferential portion, e.g. rolling on circumference
2301/41722 . . . . by acting on outer surface, e.g. gripping or clamping
2301/41724 . . . . by crane
2301/41726 . . . . by conveyor
2301/4173 . . . . by central portion, e.g. gripping central portion
2301/41732 . . . . by crane
2301/41734 . . . . involving rail
2301/4174 . . . . by side portion, e.g. forwarding roll lying on side portion

2301/41745 . . . . by axial movement of roll
2301/4175 . . . . involving cart (see B65H 2405/422)
2301/4176 . . . . Preparing leading edge of replacement roll
2301/41764 . . . . by adhesive tab
2301/41766 . . . . by adhesive tab or tape with cleavable or delaminating layer
2301/418 . . . . Changing web roll
2301/4181 . . . . Core or mandrel supply
2301/41812 . . . . by conveyor belt or chain running in closed loop
2301/41814 . . . . by container storing cores and feeding through wedge-shaped slot or elongated channel
2301/41816 . . . . by core magazine within winding machine, i.e. horizontal or inclined ramp holding cores
2301/41818 . . . . mandrels circulating (cycling) in machine or system
2301/4182 . . . . Core or mandrel insertion, e.g. means for loading core or mandrel in winding position
2301/41822 . . . . from above, i.e. by gravity
2301/41824 . . . . from below, e.g. between rollers of winding bed
2301/41826 . . . . by gripping or pushing means, mechanical or suction gripper
2301/41828 . . . . in axial direction
2301/41829 . . . . positioning the core, e.g. in axial direction
2301/4185 . . . . Core or mandrel discharge or removal, also organisation of core removal
2301/41852 . . . . by extracting mandrel from wound roll, e.g. in coreless applications
2301/418523 . . . . by movement of the wound web roll
2301/418526 . . . . by movement of the mandrel
2301/41854 . . . . by extracting core from wound roll, i.e. in coreless applications only
2301/41856 . . . . by stripping core from mandrel or chuck, e.g. by spring mechanism
2301/41858 . . . . by collecting cores in container
2301/41859 . . . . by continuously operated device, e.g. conveyor
2301/4186 . . . . by lifting or lowering device, e.g. crane
2301/4187 . . . . Relative movement of core or web roll in respect of mandrel
2301/4189 . . . . Cutting
2301/41891 . . . . Cutting knife located between two winding rollers
2301/41892 . . . . Cutting knife located in winding or guiding roller and protruding therefrom and cooperating with second assembly located in another roller
2301/41893 . . . . Cutting knife moving on circular path
2301/41894 . . . . Cutting knife moving on circular or acute path, e.g. pivoting around winding roller
2301/41896 . . . . Several cutting devices, e.g. located at different upstream/downstream positions of the web path
2301/41898 . . . . Cutting threading tail and leading it to new core
2301/419 . . . . from or to storage, i.e. the storage integrating winding or unwinding means

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2301/4191 . . . . . . . . . . . . for handling articles of limited length, e.g. AO format, arranged at intervals from each other
2301/41912 . . . . . . . . . . . . between two belt like members
2301/4192 . . . . . . . . . . . . for handling articles of limited length in shingled formation
2301/41922 . . . . . . . . . . . . and wound together with single belt like members
2301/419225 . . . . . . . . . . . . Several belts spaced in axis direction
2301/41924 . . . . . . . . . . . . between two belt like members
2301/4193 . . . . . . . . . . . . for handling continuous material
2301/42 . . . . . . . . . . . . Piling, depiling, handling piles
2301/421 . . . . . . . . . . . . Forming a pile
2301/4211 . . . . . . . . . . . . of articles alternatively overturned, or swivelled from a certain angle
2301/42112 . . . . . . . . . . . . swivelled from 180°
2301/42114 . . . . . . . . . . . . swivelled from 90°
2301/4212 . . . . . . . . . . . . of articles substantially horizontal
2301/42122 . . . . . . . . . . . . by introducing articles from under the pile
2301/42124 . . . . . . . . . . . . by introducing articles selectively from under or above the pile
2301/4213 . . . . . . . . . . . . of a limited number of articles, e.g. buffering, forming bundles
2301/42132 . . . . . . . . . . . . between belts
2301/42134 . . . . . . . . . . . . Feeder loader, i.e. picking up articles from a main stack for maintaining continuously enough articles in a machine feeder
2301/4214 . . . . . . . . . . . . of articles on edge
2301/42142 . . . . . . . . . . . . by introducing articles from beneath
2301/42144 . . . . . . . . . . . . by erecting articles from horizontal transport flushing with the supporting surface of the pile
2301/42146 . . . . . . . . . . . . by introducing articles from above
2301/4215 . . . . . . . . . . . . of articles riding on an elongated member
2301/4216 . . . . . . . . . . . . of web folded in zig-zag form
2301/42162 . . . . . . . . . . . . Juxtaposing several piles
2301/42164 . . . . . . . . . . . . Guiding web alternatively to corner of pile receiver
2301/421645 . . . . . . . . . . . by stationary guide element
2301/4217 . . . . . . . . . . . . Forming multiple piles
2301/42172 . . . . . . . . . . . . simultaneously
2301/4218 . . . . . . . . . . . . Changing the pile
2301/4219 . . . . . . . . . . . . forming a pile in which articles are offset from each other, e.g. forming stepped pile
2301/42192 . . . . . . . . . . . . forming a pile of articles in zigzag fashion
2301/42194 . . . . . . . . . . . . forming a pile in which articles are offset from each other in the delivery direction
2301/422 . . . . . . . . . . . . Handling piles, sets or stacks of articles
2301/4221 . . . . . . . . . . . . Removing package around stack
2301/42212 . . . . . . . . . . . . Extracting staple from stapled set of articles
2301/4222 . . . . . . . . . . . . Squaring-up piles
2301/4223 . . . . . . . . . . . . Pressing piles
2301/4224 . . . . . . . . . . . . Gripping piles, sets or stacks of articles
2301/42242 . . . . . . . . . . . . by acting on the outermost articles of the pile for clamping the pile
2301/42244 . . . . . . . . . . . . Sets in which articles are offset to each other
2301/4225 . . . . . . . . . . . . in or on special supports
2301/42252 . . . . . . . . . . . . Vehicles, e.g. carriage, truck
2301/42254 . . . . . . . . . . . . Boxes; Cartes; Containers
2301/422542 . . . . . . . . . . . . emptying or unloading processes
2301/422544 . . . . . . . . . . . . opening processes
2301/422546 . . . . . . . . . . . . superposed
2301/422548 . . . . . . . . . . . . filling or loading process
2301/42256 . . . . . . . . . . . . Pallets; Skids; Platforms with feet, i.e. handled together with the stack
2301/4226 . . . . . . . . . . . . Delivering, advancing piles
2301/42261 . . . . . . . . . . . . by dropping
2301/422615 . . . . . . . . . . . . from opposite part-support elements, e.g. operated simultaneously
2301/42262 . . . . . . . . . . . . by acting on surface of outermost articles of the pile, e.g. in nip between pair of belts or rollers (Nota: gripping pile see B65H 2301/4224)
2301/42264 . . . . . . . . . . . . by moving the surface supporting the lowermost article of the pile, e.g. conveyor, carriage
2301/42265 . . . . . . . . . . . . by moving the surface supporting the pile of articles on edge, e.g. conveyor or carriage
2301/42266 . . . . . . . . . . . . by acting on edge of the pile for moving it along a surface, e.g. pushing
2301/42268 . . . . . . . . . . . . by acting on one of the outermost article for moving pile of articles on edge along a surface, e.g. pushing
2301/4227 . . . . . . . . . . . . Deforming piles, e.g. folding
2301/4228 . . . . . . . . . . . . Dividing piles
2301/4229 . . . . . . . . . . . . cutting piles
2301/423 . . . . . . . . . . . . Depiling; Separating articles from a pile
2301/4231 . . . . . . . . . . . . by two or more separators acting selectively on the same pile
2301/4232 . . . . . . . . . . . . of horizontal or inclined articles, i.e. wherein articles support fully or in part the mass of other articles in the piles
2301/42322 . . . . . . . . . . . . from bottom of the pile
2301/423225 . . . . . . . . . . . . by dropping the article through an opening beneath the pile
2301/42324 . . . . . . . . . . . . from top of the pile
2301/423245 . . . . . . . . . . . . the pile lying on a stationary support, i.e. the separator moving according to the decreasing height of the pile
2301/42326 . . . . . . . . . . . . selectively from bottom or top of the pile
2301/42328 . . . . . . . . . . . . of inclined articles and inclination angle >45
2301/4233 . . . . . . . . . . . . by peeling, i.e. involving elongated elements traversing pile
2301/4234 . . . . . . . . . . . . assisting separation or preventing double feed
2301/42342 . . . . . . . . . . . . vibrating
2301/42344 . . . . . . . . . . . . separating stack from the sheet separating means after separation step
2301/42346 . . . . . . . . . . . . Releasing stack holding means during separation step
2301/4235 . . . . . . . . . . . . of web material in zig-zag form
2301/4237 . . . . . . . . . . . . of vertical articles, e.g. by extracting articles laterally from the pile
2301/42372 . . . . . . . . . . . . by extracting articles upwards from the pile
2301/424 . . . . . . . . . . . . in sorter
2301/426 . . . . . . . . . . . . Forming batches
2301/4261 . . . . . . . . . . . . by inserting a wire or tape shaped marker element
2301/42612 . . . . . . . . . . . . cut into tabs before or upon insertion
2301/4262 . . . . . . . . . . . . by inserting auxiliary support as defined in B65H 31/32
Gathering; Associating; Assembling

substantially vertical or inclined

In channels, e.g. in which the articles are horizontally in trays, i.e. vertically in pockets, i.e. vertically

With compartments, e.g. the articles being substantially horizontal

Channels

Making samples assemblies

Making packets of bundles of banknotes or the like in correct sequence

Gathering material delivered from a digital printing machine

Making personalised books or mail packets

Features with regard to the collection, nature, sequence and/or the making thereof

Gathering, associating, assembling articles substantially horizontal in each compartment with compartments, e.g. the articles being substantially horizontal

Webs sheet-like articles and threads

Making samples assemblies

Making packets of bundles of banknotes or the like in correct sequence

Inserting subproducts in a signature as main product

the subproduct being inserted in a direction substantially perpendicular to the fold of the main product

the main product being slightly inclined or horizontal and oriented with opening face laterally to its transport direction

the main product being slightly inclined or horizontal and oriented with opening face rearwards to its transport direction

the main product being orientated with opening face upwards

the subproduct being inserted in a direction parallel to the fold of the main product

attaching subproducts on outer portion of a main product

Gathering, associating, assembling articles from a single source which is supplied by several sources

in pockets, i.e. vertically and dropping material through bottom of the pocket

Asymmetric pockets

in trays, i.e. horizontally

In channels, e.g. in which the articles are substantially vertical or inclined

with several channels on a rotary carrier rotating around an axis parallel to the channels

on collecting conveyor receiving articles astride thereon

with pushers, e.g. the articles being substantially horizontal

with compartments, e.g. the articles being substantially horizontal in each compartment with grippers

with pins engaging into handled material

with supports for receiving combination of articles astride and in standing position

on saddles

on a rotary carrier rotating around an axis parallel to the saddles

Repairing a faulty collection due to, e.g. misfeed, multiplefeed

Finishing

Bringing a cover

Binding or attaching processes

Involving binding tape

Involving heating

Involving pressure sensitive adhesive

Involving wrapping, banding or strapping

Involving elastically deformable member, e.g. clip

Involving wire element supplied from a wire dispenser

Involving coating adhesive on at least a part of the handled material

Involving simultaneous deformation of at least a part of the articles to be bound

Moving, forwarding, guiding material

by vibrating

by acting on edge of handled material

by abutting edge

with guide member moving in the material direction

with guide member rotating against the edges of material

by acting on surface of handled material

by means with operating surfaces contacting opposite faces of material

between belts and rollers

between belts and cylinder

between belts

between rollers

between balls

by means having an operating surface contacting only one face of the material, e.g. roller

belt

Rollers

pivoting around an axis perpendicular to the plane of the material (especially when web is running in a U-loop)

pivoting around an axis parallel to the plane of the material

by means holding the material

at particular portion of handled material

(to be used in combination with at least one code B65H 2701/13)

using magnetic forces

using electrostatic forces

using adhesive forces

using suction forces

using mechanical grippers

involving user cooperation

pulling

by acting only on part of the surface

on opposite lateral edge regions

Stream of articles in shingled formation, overlapping stream
<table>
<thead>
<tr>
<th>CPC</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2301/4447</td>
<td>multiple streams</td>
</tr>
<tr>
<td>2301/44472</td>
<td>superposed</td>
</tr>
<tr>
<td>2301/44474</td>
<td>interfolded</td>
</tr>
<tr>
<td>2301/445</td>
<td>stream of articles separated from each other</td>
</tr>
<tr>
<td>2301/4451</td>
<td>forming a stream or streams of separated articles</td>
</tr>
<tr>
<td>2301/44512</td>
<td>forming parallel streams of separated articles</td>
</tr>
<tr>
<td>2301/44514</td>
<td>Separating superposed articles</td>
</tr>
<tr>
<td>2301/44516</td>
<td>so that there are no intervals between the sheets</td>
</tr>
<tr>
<td>2301/4452</td>
<td>Regulating space between separated articles</td>
</tr>
<tr>
<td>2301/44522</td>
<td>Varying space between separated articles</td>
</tr>
<tr>
<td>2301/4453</td>
<td>and performing dynamic accumulation</td>
</tr>
<tr>
<td>2301/4454</td>
<td>Merging two or more streams</td>
</tr>
<tr>
<td>2301/4455</td>
<td>Diverting a main stream into part streams</td>
</tr>
<tr>
<td>2301/44552</td>
<td>by alternatively directing articles following each other to appropriate part stream</td>
</tr>
<tr>
<td>2301/446</td>
<td>Assisting moving, forwarding or guiding of material</td>
</tr>
<tr>
<td>2301/4461</td>
<td>by blowing air towards handled material</td>
</tr>
<tr>
<td>2301/4462</td>
<td>by jogging</td>
</tr>
<tr>
<td>2301/447</td>
<td>transferring material between transport devices</td>
</tr>
</tbody>
</table>

**NOTE:**

When classifying in this group, the notation + B65H 2220/01 designates downstream transport device, while the notation + B65H 2220/02 designates the upstream transport device.

<table>
<thead>
<tr>
<th>CPC</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2301/4471</td>
<td>Grippers, e.g. moved in paths enclosing an area</td>
</tr>
<tr>
<td>2301/44712</td>
<td>carried by chains or bands</td>
</tr>
<tr>
<td>2301/44714</td>
<td>carried by rotating members</td>
</tr>
<tr>
<td>2301/44716</td>
<td>oscillated in arcuate paths</td>
</tr>
<tr>
<td>2301/44718</td>
<td>reciprocated in rectilinear paths</td>
</tr>
<tr>
<td>2301/4472</td>
<td>Suction grippers, e.g. moved in paths enclosing an area</td>
</tr>
<tr>
<td>2301/44722</td>
<td>oscillated in arcuate paths</td>
</tr>
<tr>
<td>2301/44724</td>
<td>reciprocated in rectilinear paths</td>
</tr>
<tr>
<td>2301/4473</td>
<td>Belts, endless moving elements on which the material is in surface contact</td>
</tr>
<tr>
<td>2301/44732</td>
<td>transporting articles in overlapping streams</td>
</tr>
<tr>
<td>2301/44734</td>
<td>overhead, i.e. hanging material by attraction forces, e.g. suction, magnetic forces</td>
</tr>
<tr>
<td>2301/44735</td>
<td>suction belt</td>
</tr>
<tr>
<td>2301/4474</td>
<td>Pair of cooperating moving elements as rollers, belts forming nip into which material is transported</td>
</tr>
<tr>
<td>2301/4475</td>
<td>Rotary or endless transport devices having elements acting on edge of articles</td>
</tr>
<tr>
<td>2301/4476</td>
<td>Endless transport devices with compartments</td>
</tr>
<tr>
<td>2301/44765</td>
<td>Rotary transport devices with compartments</td>
</tr>
<tr>
<td>2301/4477</td>
<td>Transport device with transport surface in sliding contact with handled material</td>
</tr>
<tr>
<td>2301/4478</td>
<td>Transport device acting on edge of material</td>
</tr>
<tr>
<td>2301/4479</td>
<td>Saddle conveyor with saddle member extending in transport direction</td>
</tr>
<tr>
<td>2301/44795</td>
<td>Saddle conveyor with saddle member extending transversely to transport direction</td>
</tr>
<tr>
<td>2301/448</td>
<td>Diverting</td>
</tr>
<tr>
<td>2301/4481</td>
<td>Stripping material from carrier web</td>
</tr>
<tr>
<td>2301/4482</td>
<td>to multiple paths, i.e. more than 2</td>
</tr>
<tr>
<td>2301/44822</td>
<td>3 paths</td>
</tr>
<tr>
<td>2301/449</td>
<td>Features of movement or transforming movement of handled material</td>
</tr>
<tr>
<td>2301/4491</td>
<td>transforming movement from continuous to intermittent or vice versa</td>
</tr>
<tr>
<td>2301/4492</td>
<td>braking</td>
</tr>
<tr>
<td>2301/44921</td>
<td>by friction contact with non driven element</td>
</tr>
<tr>
<td>2301/4493</td>
<td>intermittent</td>
</tr>
<tr>
<td>2301/45</td>
<td>Folding, unfolding</td>
</tr>
<tr>
<td>2301/4505</td>
<td>Folding bound sheets, e.g. stapled sheets</td>
</tr>
<tr>
<td>2301/451</td>
<td>involving manual operations</td>
</tr>
<tr>
<td>2301/452</td>
<td>utilising rotary folding means</td>
</tr>
<tr>
<td>2301/4521</td>
<td>without tucker blades</td>
</tr>
<tr>
<td>2301/453</td>
<td>opening folded material</td>
</tr>
<tr>
<td>2301/4531</td>
<td>by opposite opening drums</td>
</tr>
<tr>
<td>2301/45312</td>
<td>adjusting stop relative to one of the drum, i.e. in function of format</td>
</tr>
<tr>
<td>2301/4532</td>
<td>by movable member crossing the path of the folded material, i.e. traversing along product lip</td>
</tr>
<tr>
<td>2301/45322</td>
<td>Helical member</td>
</tr>
<tr>
<td>2301/4533</td>
<td>by stationary member in the transport path of the folded material, i.e. the fold being parallel to the direction of transport</td>
</tr>
<tr>
<td>2301/46</td>
<td>Splicing</td>
</tr>
<tr>
<td>2301/4601</td>
<td>special splicing features or applications</td>
</tr>
<tr>
<td>2301/46011</td>
<td>in winding process</td>
</tr>
<tr>
<td>2301/46013</td>
<td>and maintaining register of spliced webs</td>
</tr>
<tr>
<td>2301/46014</td>
<td>of webs with labels</td>
</tr>
<tr>
<td>2301/46015</td>
<td>of (half) tube webs</td>
</tr>
<tr>
<td>2301/46016</td>
<td>replacing lap slice by butt splice</td>
</tr>
<tr>
<td>2301/46017</td>
<td>involving several layers</td>
</tr>
<tr>
<td>2301/46018</td>
<td>involving location or further processing of splice</td>
</tr>
<tr>
<td>2301/460183</td>
<td>marking of splice</td>
</tr>
<tr>
<td>2301/460186</td>
<td>detect location of splice</td>
</tr>
<tr>
<td>2301/4602</td>
<td>Preparing splicing process</td>
</tr>
<tr>
<td>2301/46022</td>
<td>by detecting mark on rotating new roll and/or synchronize roll with trailing web speed</td>
</tr>
<tr>
<td>2301/46024</td>
<td>by collecting a loop of material of the fresh web downstream of the splicing station</td>
</tr>
<tr>
<td>2301/4604</td>
<td>Opening web rolls, remove outer layers</td>
</tr>
<tr>
<td>2301/46042</td>
<td>by tearing, bursting etc. preferably only outer (protective) layer</td>
</tr>
<tr>
<td>2301/46043</td>
<td>by cutting or tearing only outermost layer</td>
</tr>
<tr>
<td>2301/46044</td>
<td>by cutting or perforating in transverse direction</td>
</tr>
<tr>
<td>2301/4606</td>
<td>Preparing leading edge for splicing</td>
</tr>
<tr>
<td>2301/46064</td>
<td>by transversally operated carriage</td>
</tr>
<tr>
<td>2301/46066</td>
<td>by inserting adhesive tape between leading edge and wound roll</td>
</tr>
<tr>
<td>2301/4607</td>
<td>by adhesive tape</td>
</tr>
<tr>
<td>2301/46072</td>
<td>inserted between leading edge and wound web roll</td>
</tr>
<tr>
<td>2301/46075</td>
<td>by adhesive tab</td>
</tr>
<tr>
<td>2301/46078</td>
<td>the adhesive tab or tab having a cleavable or delaminating layer</td>
</tr>
<tr>
<td>2301/461</td>
<td>Processing webs in splicing process</td>
</tr>
<tr>
<td>2301/4611</td>
<td>before splicing</td>
</tr>
</tbody>
</table>
2301/46115 . . . . . . by bringing leading edge to splicing station, e.g. by chain or belt
2301/4613 . . . . . . during splicing
2301/46132 . . . . . . consuming web up to trailing edge
2301/4615 . . . . . . after splicing
2301/46152 . . . . . . cutting off tail after (flying) splicing
2301/46154 . . . . . . guiding tail after (flying) splicing
2301/4617 . . . . . . cutting webs in splicing process
2301/46171 . . . . . . cutting leading edge of new web, e.g. manually
2301/46172 . . . . . . cutting expiring web only
2301/46174 . . . . . . cutting both spliced webs separately
2301/46176 . . . . . . cutting both spliced webs simultaneously
2301/46178 . . . . . . cutting by transversally moving element
2301/462 . . . . . . Form of splice
2301/4621 . . . . . . Overlapping article or web portions
2301/4622 . . . . . . with C-folded trailing edge for embedding leading edge
2301/46213 . . . . . . with L-folded edges sealed together
2301/4622 . . . . . . Abutting article or web portions, i.e. edge to edge
2301/46222 . . . . . . involving double butt splice, i.e. adhesive tape applied on both sides of the article or web portions
2301/4623 . . . . . . Spaced article or web portions, i.e. gap between edges
2301/4625 . . . . . . Slanted
2301/463 . . . . . . splicing means, i.e. means by which a web end is bound to another web end
2301/4631 . . . . . . Adhesive tape
2301/46312 . . . . . . double-sided
2301/46314 . . . . . . Pieces of adhesive tape, e.g. labels
2301/4632 . . . . . . Simultaneous deformation of the two web ends
2301/46325 . . . . . . Separate element, e.g. clip
2301/46326 . . . . . . Stitched or seamed together
2301/46327 . . . . . . Ultrasonic sealing
2301/4633 . . . . . . Glue
2301/46332 . . . . . . hot melt
2301/4634 . . . . . . Heat seal splice
2301/4636 . . . . . . None, i.e. simply feeding both webs simultaneously or sequentially
2301/4637 . . . . . . Male and female configuration
2301/464 . . . . . . effecting splice
2301/4641 . . . . . . by pivoting element
2301/46412 . . . . . . by element moving in a direction perpendicular to the running direction of the web
2301/46414 . . . . . . by nipping rollers
2301/464145 . . . . . . at least one of the rollers having additional feature, e.g. knife or at least partly non-cylindrical shape
2301/4695 . . . . . . longitudinally
2301/50 . . . . . . Auxiliary process performed during handling process
2301/51 . . . . . . Modifying a characteristic of handled material
2301/5111 . . . . . . Processing surface of handled material upon transport or guiding thereof, e.g. cleaning
2301/51111 . . . . . . Printing; Marking
2301/51115 . . . . . . freeing product contained in handled material
2301/5112 . . . . . . removing material from outer surface
2301/51121 . . . . . . removing printed information, e.g. marks
2301/512 . . . . . . Changing form of handled material
2301/5121 . . . . . . Bending, buckling, curling, bringing a curvature
2301/51212 . . . . . . perpendicularly to the direction of displacement of handled material, e.g. forming a loop
2301/512125 . . . . . . by abutting against a stop
2301/51214 . . . . . . parallel to direction of displacement of handled material
2301/512145 . . . . . . Forming a tube
2301/5122 . . . . . . Corrugating; Stiffening
2301/5123 . . . . . . Compressing, i.e. diminishing thickness
2301/51232 . . . . . . for flattening
2301/5124 . . . . . . Stretching; Tentering
2301/51242 . . . . . . Stretching transversely; Tentering
2301/512422 . . . . . . involving roller pair acting on edge of web
2301/512425 . . . . . . involving guiding web along the circumference of a ring section
2301/512427 . . . . . . involving members moving axially on periphery of a drum
2301/5125 . . . . . . Restoring form
2301/51252 . . . . . . Compensating stretching
2301/51254 . . . . . . Unshirring
2301/51256 . . . . . . Removing waviness or curl, smoothing
2301/512565 . . . . . . involving tri-roller arrangement
2301/5126 . . . . . . Embossing, crimping or similar processes
2301/5127 . . . . . . shredding
2301/513 . . . . . . Modifying electric properties
2301/5131 . . . . . . Magnetising
2301/5132 . . . . . . Bringing electrostatic charge
2301/5133 . . . . . . Removing electrostatic charge
2301/514 . . . . . . Modifying physical properties
2301/5141 . . . . . . Rendering inert
2301/5142 . . . . . . Moistening
2301/51422 . . . . . . by passing through a bath
2301/5143 . . . . . . Warming
2301/51432 . . . . . . Applying heat and pressure
2301/5144 . . . . . . Cooling
2301/515 . . . . . . Cutting handled material
2301/5151 . . . . . . transversally to feeding direction
2301/51512 . . . . . . using a cutting member moving linearly in a plane parallel to the surface of the web and along a direction crossing the handled material
2301/515123 . . . . . . arranged for cutting web supported on the surface of a cylinder
2301/515126 . . . . . . for cutting from inside of the cylinder
2301/51514 . . . . . . Breaking; Bursting; Tearing, i.e. cutting without cutting member
2301/5152 . . . . . . Cutting partially, e.g. perforating
2301/5153 . . . . . . Details of cutting means
2301/51531 . . . . . . involving forms of stored energy, e.g. compressed air or explosive
2301/51532 . . . . . . Blade cutter, e.g. single blade cutter
2301/515323 . . . . . . rotary
2301/515326 . . . . . . . Multiple blade cutter
2301/51533 . . . . . . . Air jet
2301/51534 . . . . . . . Water jet
2301/51535 . . . . . . . adhesive tape or tab
2301/51536 . . . . . . . Laser
2301/51537 . . . . . . . Vacuum means
2301/51538 . . . . . . . Die-cutting
2301/51539 . . . . . . . Wire
2301/5154 . . . . . . . . from hand-held or table dispenser
2301/51541 . . . . . . with means mounted on roll of material
2301/5155 . . . . . . . . longitudinally
2301/5159 . . . . . . . . shredding
2301/516 . . . . . . . . Securing handled material to another material
2301/5161 . . . . . . . . Binding processes
2301/51611 . . . . . . . . involving at least a binding element traversing the handled material, e.g. staple
2301/51612 . . . . . . . . involving ultrasonic waves
2301/51614 . . . . . . . . involving heating element
2301/51616 . . . . . . . . involving simultaneous deformation of parts of the material to be bound
2301/5162 . . . . . . . . Coating, applying liquid or layer of any material to material
2301/5163 . . . . . . . . Applying label, tab to handled material
2301/517 . . . . . . . . Drying material
2301/52 . . . . . . . . for starting
2301/521 . . . . . . . . Stripping web from roll
2301/522 . . . . . . . . Threading web into machine
2301/52202 . . . . . . . . around several subsequent rollers (e.g. calendar)
2301/53 . . . . . . . . for acting on performance of handling machine
2301/5305 . . . . . . . . Cooling parts or areas of handling machine
2301/531 . . . . . . . . Cleaning parts of handling machine
2301/532 . . . . . . . . Modifying characteristics of surface of parts in contact with handled material
2301/5321 . . . . . . . . Removing electrostatic charge generated at said surface
2301/5322 . . . . . . . . Generating electrostatic charge at said surface
2301/5323 . . . . . . . . bringing adhesive properties
2301/533 . . . . . . . . Self-repair; Self-recovery; Automatic correction of errors
2301/54 . . . . . . . . for managing processing of handled material
2301/541 . . . . . . . . Counting
2301/542 . . . . . . . . Quality control
2301/5421 . . . . . . . . taking samples
2301/543 . . . . . . . . processing waste material
2301/544 . . . . . . . . Reading; Scanning

2401/00  Materials used in construction, properties thereof

2401/10 . . . . . . . . . . Materials
2401/11 . . . . . . . . . . . Macromolecular composition
2401/111 . . . . . . . . . . . . Elastomer
2401/112 . . . . . . . . . . . . Fiber reinforced composition
2401/1121 . . . . . . . . . . . Carbon fibre composition
2401/113 . . . . . . . . . . . . Polymer composition
2401/114 . . . . . . . . . . . . Polyester composition
2401/1141 . . . . . . . . . . . Flexible polyester film made from biaxially oriented polyethylene terephthalate
2401/115 . . . . . . . . . . . Resin composition
2401/12 . . . . . . . . . . . Ceramic composition
2401/13 . . . . . . . . . . . Coatings, paint, varnish and details thereof
2401/14 . . . . . . . . . . . textile materials
2401/141 . . . . . . . . . . . . woven or knit material
2401/15 . . . . . . . . . . . . Metals
2401/20 . . . . . . . . . . . . Physical properties
2401/21 . . . . . . . . . . . . electrical properties
2401/211 . . . . . . . . . . . Conductivity
2401/212 . . . . . . . . . . . electrical resistance
2401/213 . . . . . . . . . . . magnetic properties
2401/22 . . . . . . . . . . . . visual aspect properties
2401/221 . . . . . . . . . . . opaque material
2401/222 . . . . . . . . . . . transparent material
2401/23 . . . . . . . . . . . . Strength of materials
2401/231 . . . . . . . . . . . . Rigidity
2401/2311 . . . . . . . . . . . . . tensile elastic, Young's modulus
2401/24 . . . . . . . . . . . . Other properties
2401/241 . . . . . . . . . . . . . Self lubricating
2401/242 . . . . . . . . . . . . . porous
2401/243 . . . . . . . . . . . . . heat-shrinkable
2401/244 . . . . . . . . . . . . . non-permeable

2402/00  Features of construction

2402/10 . . . . . . . . . . . Modular construction
2402/11 . . . . . . . . . . . using preforms, e.g. profiles
2402/20 . . . . . . . . . . . Force system
2402/21 . . . . . . . . . . . Concurrent force system
2402/22 . . . . . . . . . . . Parallel force system
2402/23 . . . . . . . . . . . Composition of forces
2402/231 . . . . . . . . . . . . Parallelogram of forces
2402/232 . . . . . . . . . . . . Resolution of a force
2402/24 . . . . . . . . . . . . Means for balancing forces
2402/25 . . . . . . . . . . . . Centrifugal force
2402/30 . . . . . . . . . . . Support, subassembly, mounting thereof
2402/31 . . . . . . . . . . . . Pivoting support means
2402/32 . . . . . . . . . . . . Sliding support means
2402/33 . . . . . . . . . . . . cantilever support means
2402/34 . . . . . . . . . . . . . other support assembly
2402/341 . . . . . . . . . . . . . Eccentric mounting
2402/342 . . . . . . . . . . . . . Parallelogram mounting
2402/343 . . . . . . . . . . . . . Telescopic mounting
2402/344 . . . . . . . . . . . . . scissor-like assembly
2402/35 . . . . . . . . . . . . . rotating around an axis
2402/351 . . . . . . . . . . . . . Turntable
2402/352 . . . . . . . . . . . . . turret
2402/40 . . . . . . . . . . . Features of frame, housing or mounting of the handling apparatus
2402/41 . . . . . . . . . . . . Portable or hand-held apparatus
2402/411 . . . . . . . . . . . . with means for mounting the apparatus on the user body, e.g. arm, wrist
2402/412 . . . . . . . . . . . details or the parts to be hold by the user, e.g. handle
2402/413 . . . . . . . . . . . . with means for mounting the apparatus to clothing of a user
2402/414 . . . . . . . . . . . . Manual tools for filamentary material, e.g. for mounting or removing a bobbin, measuring tension or splicing
2402/42 . . . . . . . . . . . Mobile apparatus, i.e. mounted on mobile carrier such as tractor or truck
2402/43 . . . . . . . . . . . . Wall apparatus, i.e. mounted on vertical support
2402/44 . . . . . . . . . . . . Housing
2402/441 . . . . . . . . . . . . movable for facilitating access to area inside the housing, e.g. pivoting, sliding
2402/442 . . . . . . . . . . . . with opening for introducing material to be handled, e.g. to insert wound roll of product
Assembling, coupling means
Locking means
Couplings
Adapter, interface mounting of an element
Springs
Guideways
Bearings
Joints
door (s)
flexible constant force arrangement
forces
Dead point arrangement, i.e. wherein a
Helical spring
tape or wire spring
Wound tape or wire spring, i.e. spirally coiled
involving bearings
hydrostatic bearings Thrust bearings
Magnetic bearings
Support of bearing
Washer
of elastic material
Bearings
Details of mounting
Self aligning bearings
Support of bearing
Shaft
retractable
Magnetic bearings
Thrust bearings
using fluid, e.g. air cushion, hydrodynamic, hydrostatic bearings Thrust bearings
Guideways
involving bearings
Springs
Wound tape or wire spring, i.e. spirally coiled tape or wire spring
Helical spring
Compression spring
Leaf spring
Single point attachment, i.e. one end of the spring is free
Torsion spring
Dead point arrangement, i.e. wherein a mechanism is maintained in standstill by spring forces
constant force arrangement
Assembling, coupling means
Keying means, i.e. for preventing incorrect mounting of an element
Adapter, interface
Couplings
Resilient material coupling
Universal joint; Hooke's coupling
Locking means

2403/00 Power transmission; Driving means
2403/10 Friction gearings
2403/11 Variable-speed drive unit
2403/111 . . . frontal
2403/20 Belt drives
2403/21 Timing belts
2403/211 . . . Double-sided timing belts
2403/22 . . . planetary
2403/25 . . . Arrangement for tensioning
2403/30 . . . Chain drives
2403/31 . . . involving non endless chain, e.g. the chain being used as a flexible rack
2403/40 . . . Toothed gearings
2403/41 . . . Rack-and-pinion, cogwheel in cog railway
2403/411 . . . Double rack cooperating with one pinion, e.g. for performing symmetrical displacement relative to pinion
2403/412 . . . Flexible rack
2403/42 . . . Spur gearing
2403/421 . . . involving at least a gear with toothless portion
2403/422 . . . involving at least a swing gear
2403/43 . . . Bevel gearing
2403/44 . . . Internal gearing
2403/45 . . . helical gearing
2403/46 . . . worm gearing
2403/47 . . . Ratchet
2403/48 . . . Other
2403/481 . . . Planetary
2403/482 . . . Harmonic drive
2403/483 . . . Differential gearing
2403/484 . . . Speed reducers
2403/50 . . . Driving mechanisms
2403/51 . . . Cam mechanisms
2403/511 . . . involving cylindrical cam, i.e. cylinder with helical groove at its periphery
2403/512 . . . involving radial plate cam
2403/513 . . . involving elongated plate cam, i.e. parallel to linear transport path
2403/514 . . . involving eccentric
2403/52 . . . Translation screw-thread mechanisms
2403/53 . . . Articulated mechanisms
2403/531 . . . Planar mechanisms
2403/5311 . . . Parallelogram mechanisms
2403/532 . . . Crank-and-rocker mechanism
2403/5321 . . . with oscillating crank, i.e. angular movement of crank inferior to 360
2403/533 . . . Slotted link mechanism
2403/5331 . . . with sliding slotted link
2403/5332 . . . with rotating slotted link
2403/5333 . . . with oscillating slotted link
2403/54 . . . other
2403/541 . . . Trigger mechanisms
2403/542 . . . Geneva mechanisms
2403/543 . . . producing cycloids
2403/544 . . . involving rolling up - unrolling of transmission element, e.g. winch
2403/5441 . . . with steel band as tracting element
2403/55 . . . Tandem; twin or multiple mechanisms, i.e. performing the same operation

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2403/60 . Damping means, shock absorbers
2403/61 . Rotation damper
2403/70 . Clutches; Couplings
2403/72 . Clutches, brakes, e.g. one-way clutch +F204
2403/721 . Positive-contact clutches, jaw clutches
2403/722 . Gear clutches
2403/723 . Wrap spring clutches
2403/724 . electromagnetic clutches
2403/7241 . eddy current clutches
2403/725 . Brakes
2403/7251 . Block brakes
2403/7252 . fluid controlled
2403/7253 . pneumatically controlled
2403/7254 . Dynamo electric brakes
2403/7255 . Disc brakes
2403/73 . Couplings
2403/731 . Slip couplings
2403/732 . Torque limiters
2403/733 . Spring overload-release arrangements
2403/735 . Rubber couplings
2403/80 . Transmissions, i.e. for changing speed
2403/81 . involving swing gear
2403/82 . Variable speed drive units
2403/821 . friction
2403/8211 . frontal
2403/8215 . Machine drive
2403/891 . Heat engine
2403/92 . Electric drive
2403/921 . Piezoelectric drives
2403/923 . Synchronous motor
2403/93 . Fluid power drive
2403/94 . Other features of machine drive
2403/941 . Manually powered handling device
2403/942 . Bidirectional powered handling device
2403/943 . Electronic shaft arrangement
2403/944 . Multiple power sources for one mechanism
2403/945 . Self-weight powered
2403/946 . Means for restitution of accumulated energy, e.g. flywheel, spring

2404/00 Parts for transporting or guiding the handled material
2404/10 . Rollers
2404/11 . Details of cross-section or profile
2404/111 . shape
2404/1112 . D-shape
2404/1113 . C-shape
2404/1114 . Paddle wheel
2404/1115 . toothed roller
2404/1116 . Polygonal cross-section
2404/1118 . with at least a relief portion on the periphery
2404/1119 . with at least an axial cavity on the periphery
2404/112 . Means for varying cross-section
2404/1121 . for changing diameter
2404/11211 . by inflation
2404/1122 . for rendering elastically deformable
2404/11221 . involving spring
2404/113 . made of circular segments
2404/114 . Built-up elements
2404/1141 . covering a part of the periphery
2404/115 . other
2404/1151 . brush

2404/1152 . Markings, patterns
2404/117 . comprising hollow portions
2404/12 . with at least an active member on periphery
2404/121 . articulated around axis parallel to roller axis
2404/122 . rotated around an axis parallel to the roller axis (B65H 2404/54 takes precedence)
2404/123 . moving in parallel to roller axis
2404/1231 . Arrangement of axially movable active elements, i.e. movable in parallel to roller axis
2404/13 . Details of longitudinal profile
2404/131 . shape
2404/1311 . Undulations, wavy shape
2404/1312 . tapered shape
2404/1313 . concave
2404/1314 . convex
2404/1315 . conical
2404/1316 . stepped or grooved
2404/13161 . Regularly spaced grooves
2404/13162 . Helicoidal grooves
2404/13163 . in longitudinal direction
2404/1317 . End profile
2404/13171 . tapered
2404/132 . arrangement of segments along axis
2404/1321 . Segments juxtaposed along axis
2404/13211 . and interconnected by gearing, e.g. differential gearing
2404/13212 . driven independently
2404/133 . Limited number of active elements on common axis
2404/134 . Axle
2404/1341 . Elastic mounting, i.e. subject to biasing means
2404/1342 . Built-up, i.e. arrangement for mounting axle element on roller body
2404/13421 . involving two elements, i.e. an element at each end of roller body
2404/1343 . axially limiting roller
2404/1344 . with eccentric shaft
2404/1345 . with two or more degrees of freedom
2404/1346 . balancing roller
2404/1347 . curved
2404/135 . Body
2404/1351 . Pipe element
2404/136 . with canals
2404/1361 . with cooling/heating system
2404/1362 . vacuum
2404/1363 . air supply or suction
2404/1364 . liquid
2404/137 . Means for varying longitudinal profiles
2404/1371 . Means for bending, e.g. for controlled deflection
2404/1372 . anti-deflection
2404/1373 . means for varying width
2404/1374 . means for varying longitudinal length
2404/1375 . means for assemble/disassemble
2404/138 . other
2404/1381 . Hinge
2404/1385 . built up out of spar elements
2404/14 . Roller pairs
2404/141 . with particular shape of cross profile
2404/1411 . D-shape / cylindrical
Details of bearings

Roller assembly, particular roller arrangement

beam supply

Idle roller

reverse roller

braking roller

containing, enclosing own driving means of rotation, e.g. during its rotation

Means for driving a roller parallelly to its axis

Details of pattern of rollers

Polygonal / cylindrical

Paddle / cylindrical

complementary relief

with male / female profiles

toothed or cylindrical

arranged on movable frame

rotating, pivoting or oscillating around an axis, e.g. parallel to the roller axis

the axis being one the roller axis, i.e. orbiting roller

reciprocating

circulating on a path, e.g. not enclosing an area

enclosing an area

moving in parallel to their axis

driving roller and idler roller arrangement

idler roller details

with relative movement of the rollers to / from each other

involving controlled actuator

Tripping arrangements

other

Pressure

web tension

both nip rollers being driven

Roller assembly, particular roller arrangement

Arrangement of roller on a movable frame

rotating, pivoting or oscillating around an axis, e.g. parallel to the roller axis

rotating, pivoting or oscillating around an axis perpendicular to the roller axis

moving linearly in feeding direction

moving in parallel to its axis

both roller ends being journalled to be movable independently from each other

Arrangements of rollers facing a transport surface

the transport surface being a cylinder

the transport surface being a belt

Rollers conveyor

Arrangement for curved path section, e.g. perpendicular to plane of handled material (quadrant conveyor section)

Details of pattern of rollers

Chevron or herringbone configuration

Quadrant or basket roller configuration

extensible

on a movable frame

Details of driving

Means for driving a roller parallelly to its axis of rotation, e.g. during its rotation

containing, enclosing own driving means

containing, enclosing braking means

self-centring or automatically centring

braking roller

reverse roller

Idle roller

Details of bearings

beam supply

tilting

bearing inside roller for surface to rotate

free bearing but slots or liquid support

composed of several layers

with cavities or projections at least at one layer

with emery paper like coating (gripping, anti-slip)

with outer layer helicoidally turned around shaft

wire around shaft

light weighted

easy deformable

with electro-conductive layer

with wear resistance

Other features of rollers

magnetic

noise limiting roller

Incorporating element used for control, e.g. IC tag

Belts

plan profile

edge structure

Cross section profile

Round belt

Multiplicity of round belts spaced out each other

Flat belt

Flat belt wider than width of transported material

with protrusions on inner side; Beads

V-belt

details of edges

with auxiliary handling means

pocket or gripper type

integraly attached to or part of belt material

Blade, plate, finger

on two opposite belts or set of belts, i.e. having active handling section cooperating with and facing to each other

Dog pins, i.e. details of construction or arrangement

rotary means, e.g. rollers

penetrating means

Endless helicoidal spring

Timing belts

Double helicoidal spring

with portions of different thickness

Driving or guiding arrangements

Details of drive roller

Arrangement for varying outer diameter, e.g. for adjusting speed or belts

Details of idler roller

Relative position of driving and idler rollers

for performing transport along a path curved according to an axis parallel to the transport surface

Arrangement for selectively changing the relative position of the driving and idler rollers

Arrangement for varying the guiding or transport length

Arrangement for tensioning
2404/256 . . . Arrangement of endless belt
2404/2561 . . . twisted around an axis parallel the transport direction
2404/257 . . . Arrangement of non endless belt
2404/2571 . . . Wrapping/unwrapping arrangement
2404/26 . . . Particular arrangement of belt, or belts
2404/261 . . . Arrangement of belts, or belt(s) / roller(s) facing each other for forming a transport nip
2404/2611 . . . forming curved transport path
2404/2612 . . . forming serpentine transport path
2404/2613 . . . Means for changing the transport path, e.g. deforming, lengthening
2404/2614 . . . Means for engaging or disengaging belts into or out of contact with opposite belts, rollers or balls
2404/2615 . . . arranged on a movable frame, e.g. pivoting
2404/262 . . . Arrangements of belts facing rollers
2404/263 . . . Arrangements of belts facing balls
2404/264 . . . Arrangement of side-by-side belts
2404/2641 . . . on movable frame
2404/265 . . . Arrangement of belt forming a deformable ring, e.g. driven in the nip of a roller pair
2404/267 . . . Arrangement of belt(s) in edge contact with handled material
2404/268 . . . Arrangement of belts facing a transport surface, e.g. contact glass in copy machine
2404/2682 . . . means for engaging/disengaging with/from transport surface
2404/269 . . . other arrangements
2404/2691 . . . Arrangement of successive belts forming a transport path
2404/2692 . . . Arrangement of belts in pressure contact with a roll of material
2404/2693 . . . Arrangement of belts on movable frame
2404/27 . . . material used
2404/271 . . . felt or wire mesh
2404/28 . . . Other properties of belts
2404/281 . . . porous
2404/282 . . . transparent
2404/283 . . . magnetic
2404/284 . . . Elasticity
2404/285 . . . including readable marks, patterns, e.g. serving for control
2404/286 . . . Hardness
2404/30 . . . Chains
2404/31 . . . with auxiliary handling means
2404/311 . . . Blades, lugs, plates, paddles, fingers
2404/3111 . . . on two opposite chains or set of chains, i.e. having active handling section cooperating with and facing to each other
2404/312 . . . Pockets, containers
2404/313 . . . Bars, rods, e.g. bridging two chains running synchronously
2404/3132 . . . arranged obliquely relatively to transport direction
2404/314 . . . Means penetrating in handled material, e.g. needle, pin
2404/3141 . . . Wicket pins
2404/315 . . . Details of arrangement of the auxiliary handling means on the chain(s)
2404/32 . . . Saddle conveyor
2404/321 . . . with articulated pusher element, e.g. retractable
2404/33 . . . Means for guiding chains
2404/34 . . . Gripper bars bridging at least two chains running synchronously and parallely
2404/341 . . . Details of driving or return drum
2404/342 . . . Details of guiding
2404/3421 . . . in curved sections
2404/343 . . . Details of the bar bridging the chains
2404/35 . . . Arrangement of chains facing each other for forming a transport nip
2404/351 . . . the nip being formed between elongate members bridging two chains running synchronously and in parallel
2404/352 . . . Details of guiding
2404/36 . . . Arrangement of side-by-side chains
2404/40 . . . Shafts, cylinders, drums, spindles
2404/41 . . . Details of cross section profile
2404/411 . . . Means for varying cross-section
2404/412 . . . made of circular segments
2404/4121 . . . moving relatively to each other during rotation
2404/42 . . . Arrangement of pairs of drums
2404/421 . . . Bed arrangement, i.e. involving parallel and spaced drums, e.g. arranged horizontally for supporting a roll to be wound or unwound
2404/4211 . . . with means for changing space between the drums
2404/4212 . . . with means for changing inclination of bed
2404/4213 . . . the drums having different diameter
2404/4214 . . . the drums having different deformability
2404/422 . . . Nip arrangement, i.e. parallel drums in pressure contact to each other
2404/43 . . . Rider roll construction
2404/431 . . . involving several segments in axial direction
2404/432 . . . involving a plurality of parallel rider rolls
2404/433 . . . involving at least one rider roller following a spindle moved on a path, e.g. arcuate or circular path
2404/434 . . . Driven rider roll arrangement
2404/50 . . . Surface of the elements in contact with the forwarded or guided material
2404/51 . . . Cross section, i.e. section perpendicular to the direction of displacement
2404/511 . . . convex
2404/512 . . . concave
2404/513 . . . with limited number of active areas
2404/5131 . . . saw profile
2404/52 . . . other geometrical properties
2404/521 . . . Reliefs
2404/5211 . . . only a part of the element in contact with the forwarded or guided material
2404/5212 . . . produced by embedding particles
2404/52121 . . . by subjecting to blast finishing
2404/52122 . . . by subjecting to knurling
2404/5213 . . . Geometric details
2404/52131 . . . Grooves
2404/52132 . . . perforations
2404/5214 . . . extending in parallel to transport direction
2404/522 . . . details of surface roughness and/or surface treatment
2404/5221 . . . knurling
2404/53 . . . with particular mechanical, physical properties
2404/531 . . . particular coefficient of friction
2404/5311 . . . Surface with different coefficients of friction
2404/532 . . . with particular durometer
Parts for holding the handled material

- Means for introducing material on elements
- Means for introducing material in a direction parallel to the axis of rotation of elements
- Multiple, i.e. for introducing material selectively, alternatively or simultaneously at different angular positions at the periphery
- Particular arrangement
- Pair of opposite elements rotating around parallel axis, synchronously in opposite direction
- Rotating around an axis perpendicular to face of material
- Paddle wheel
- Disc shaped
- Helical or worm shaped
- Rotating around an axis parallel to face of material and parallel to transport direction
- Reciprocating in transport direction
- Other means designated for special purpose
- Guiding means extensible in material transport direction
- By unwinding from storage section
- Chute, e.g. inclined surface on which material slides by gravity
- Shaft-like element channel
- Retractable guiding means, i.e. between guiding and non guiding position
- Non driven means for pressing the handled material on forwarding or guiding elements
- In sliding contact with handled material
- Paternoster type
- Ball, sphere
- Driving means
- Other elements in edge contact with handled material, e.g. registering, orientating, guiding devices
- Adaptor, mask, i.e. restricting the working area of the parts for transporting or guiding the handled material
- Stops, gauge pins, e.g. stationary
- Adjustable
- Movable in operation
- Formed of forwarding means
- By nip rollers in standby
- By nip rollers in reversed rotation
- Formed of sensing means
- Retractable
- Means for sliding the handled material on a surface, e.g. pushers
- Moved in a path enclosing an area
- By means of chains
- In a direction perpendicular to a feeding / delivery direction
- Reciprocating
- Guiding means
- Movable in operation
- Retractable
- Pivotable
- For guiding transversely
- For guiding longitudinally
- Along a curved path
Cassettes, holders, bins, decks, trays, supports or magazines for sheets stacked substantially horizontally

Parts and details thereof

Bottom

with several surface portions forming an angle relatively to each other

with stepped surface portions

with surface portions curved in width-wise direction

forming a wavy profile

with surface portions curved in lengthwise direction

forming wavy profile

with surface inclined, e.g. in width-wise direction

with surface inclined upwardly in transport direction

with surface inclined downwardly in transport direction

with means for changing geometry

by at least a protruding portion arrangement

Front portion pivotable around an axis perpendicular to transport direction

Portion pivotable around an axis parallel to transport direction

Rear portion extensible in parallel to transport direction

involving extension members pivotable around an axis perpendicular to bottom surface

involving extension members pivotable around an axis parallel to bottom surface and perpendicular to transport direction

pivotal, e.g. around an axis perpendicular to transport direction, e.g. arranged at rear side of sheet support

around an axis parallel to transport direction

around an axis perpendicular to both transport direction and surface of sheets

Areas with particular friction properties, e.g. friction pad arrangement

Areas with particular deformation properties, e.g. flexible, elastic

Rear, i.e. portion opposite to the feeding / delivering side

movable linearly, details therefor

pivotal, details therefor

Front, i.e. portion adjacent to the feeding / delivering side

with stepped surface portions

movable, e.g. pivotal

inclined, i.e. forming an angle different from 90 with the bottom

curved

Side, i.e. portion parallel to the feeding / delivering direction

Projections or the like in surface contact with handled material

retractable

extendible

Cover

Parts to be handled by user

Locking means

Elements acting on corner of sheet, e.g. snubber member

Details of surface

Reliefs, projections

Ribs extending in parallel to feeding/delivery direction

Hook and loop-type fastener

relating to particular friction properties

Large capacity supports arrangements

Cassettes, holders, bins, decks, trays, supports or magazines for sheets stacked on edge

Parts and details thereof

bottom

with several surface portions forming an angle relatively to each other

end supports

sides

pocket like holder

details of bottom

Other features of supports for sheets

Supports for sheets fully removable from the handling machine, e.g. cassette

and serving also as package

Trolley, cart, i.e. support movable on the floor

with integrated handling means, e.g. separating means

Supports for sheets partially insertable - extractable, e.g. upon sliding movement, drawer

Shutter type element, i.e. involving multiple interlinked support elements

with means to span a long self-supporting length

with belt or curtain like support member, i.e. for avoiding relative movement between sheets and support during insertion or extraction

Cantilever finger member, e.g. reciprocating in parallel to plane of handled material

Cantilever during insertion but supported on both sides of the pile upon full insertion

between operative position and non operative position

with integrated handling means, e.g. separating means

Compartmented support

Juxtaposed compartments

for storing articles horizontally or slightly inclined

Feed tray juxtaposed to discharge tray

for storing articles vertically or inclined (>45°)

Feed tray juxtaposed to discharge tray

Superposed compartments

Feed tray superposed to discharge tray

discharge tray superposed to feed tray

Holder with cylindrical section

Means for moving support

shifting transversely to transport direction, e.g. for handling stepped piles

in closed loop

rail guided means, e.g. without permanent interconnection
Holders, supports for rolls
Details of the gripping parts releasably connected to transporting means
For both full and empty (or partial) roll
Carts with full reels placed laterally one beside the other
Cart holding roll placed onto another cart
Cart comprising means for rotating the roll around a vertical axis
Cart comprising splicing means
With air bearing, e.g. Luftkissen
Overhead means, gantry
Supports for rolls partially removable from the handling machine
Supports for storing rolls
Palette
combined with a frame for superposing several palettes
Rib-cage bin
Shafts for winding/unwinding
Radially extending end abutments
Active holding elements, e.g. inflatable bladders
engaging the side portion of the web roll
Passive holding elements, e.g. spring-biased pins
Means for penetrating into the core material, e.g. for transmitting torque
Grippers for bobbins, i.e. rolls
Center gripper (inside the core)
outer gripper (on circumference)
Gripping means
oscillating in arcuate paths
reciprocating
Rotary gripping arms
with relative movement of the arms relatively to the axis of rotation during rotation
Means for changing the length of the arms during rotation
Rotary gripping arms, i.e. integrated in a rotary element as for instance a cylinder, a disk or a turntable
arranged on opposite and synchronised rotary element
Rail guided gripping means running in closed loop, e.g. without permanent interconnecting means
with permanent interconnection allowing variable spacing between the grippers
with permanent interconnection and determined spacing between the grippers
details of interconnection, e.g. chain, link
Details of the gripping parts releasably connected to transporting means
Details of gripping surface
Means for achieving gripping/release operation
moving only one of the gripping parts towards the other
pivoting the movable gripping part towards the other part
movable in transport direction, e.g. on a portion of the transport path of the gripping means
Details of gripper orientation
Gripping mouth orientated in direction of gripper displacement
and varying its orientation after gripping
Associated control means
Penetrating means
Means using fluid
Made only for exhausting gaseous medium
producing fluidised bed
for handling material along a curved path, e.g. fluidised turning bar
pivoting around an axis perpendicular to the axis of the guided material
for handling material along preferably rectilinear path, e.g. nozzle bed for web
Details of the part distributing the air cushion
Porous material
Multiple nozzles arrangement
Adjustable impact angle
producing gas blast
Fan
Axial
Nozzles
adjustable impact angle
pressure arrangement for compensating weight of handled material
in combination with rollers or drums
with selectively operated air supply openings
rotary pressurized means, e.g. cylinder, drum, shaft, spindle
made only for liquid medium
for spraying liquid
nozzles
Suction means
Suction box; Suction chambers
for accumulating a loop of handled material
incorporating means for transporting the handled material against suction force
Rollers
Belts
Suction belts
Integral in feed table
Suction distributing means
for variable distribution in the direction of transport
switchable suction elements
details of the openings in the belt, e.g. shape, distribution
belt with alternated perforated and non perforated sections in transport direction
Overhead suction belt, i.e. holding material against gravity
2406/33 . . . Rotary suction means, e.g. roller, cylinder or drum
2406/331 . . . arranged for rotating while moving along material to be handled, e.g. rolling on material
2406/3312 . . . arranged for planetary movement on rotary support means
2406/3314 . . . arranged for linear movement, e.g. on reciprocating support
2406/332 . . . Details on suction openings
2406/333 . . . rotating around an axis perpendicular to the surface of handled material, e.g. disk
2406/334 . . . arranged on movable frame
2406/34 . . . Suction grippers
2406/341 . . . being oscillated in arcuate paths
2406/342 . . . being reciprocated in a rectilinear path
2406/343 . . . Details of sucking member
2406/3432 . . . Elongated sucking member; Sucking bar
2406/344 . . . circulating in closed loop
2406/345 . . . Rotary suction grippers
2406/3452 . . . performing reciprocating movement during rotation
2406/34525 . . . parallel to the axis of rotation
2406/3454 . . . performing oscillating movement during rotation
2406/35 . . . Other elements with suction surface, e.g. plate or wall
2406/351 . . . facing the surface of the handled material
2406/3511 . . . with nozzles oriented obliquely towards the material
2406/352 . . . facing the edge of the handled material
2406/36 . . . Means for producing, distributing or controlling suction
2406/361 . . . distributing vacuum from stationary element to movable element
2406/3612 . . . involving a shoe in sliding contact with flanges of a rotating element
2406/3614 . . . involving a shoe in sliding contact with an inner section of the periphery of a rotating element
2406/362 . . . adjusting or controlling distribution of vacuum transversally to the transport direction, e.g. according to the width of material
2406/3622 . . . adjusting or controlling distribution of vacuum in the transport direction
2406/363 . . . adjusting or controlling distribution of vacuum for a plurality of suction means
2406/3632 . . . means for auto adjustment of vacuum distribution according to the size of handled material
2406/364 . . . simultaneously blowing and sucking
2406/365 . . . selectively blowing or sucking
2406/366 . . . producing vacuum
2406/3661 . . . Injectors
2406/3662 . . . Fans
2406/36625 . . . cross flow, transverse
2406/3663 . . . Pumps
2406/40 . . . Fluid power drive; Fluid supply elements
2406/41 . . . Valves
2406/411 . . . Spool or slide valves
2406/412 . . . Rotary valves
2406/413 . . . Seat valves
2406/414 . . . Servo valves
2406/415 . . . Throttle valves
2406/416 . . . Check valves
2406/417 . . . Bleed valves
2406/418 . . . Diaphragm valves
2406/42 . . . Distribution circuits
2406/421 . . . with means for changing the temperature of the fluid
2406/4212 . . . for cooling fluid
2406/422 . . . Air throttling devices
2406/423 . . . distributing fluid from stationary elements to movable element

2407/00 Other means designed for special purposes
2407/10 . . . Safety means, e.g. for preventing injury to operator
2407/11 . . . Means preventing illegal operation
2407/20 . . . for manual intervention of operator
2407/22 . . . means for observing the handled material during its handling
2407/30 . . . Means for preventing damage of handled material
2407/31 . . . Controlling atmosphere confining the handled material
2407/311 . . . involving humidity control means
2407/32 . . . Protective cover
2407/33 . . . Means for controlling access to the area confining the handled material
2407/40 . . . Means for adding commercial value
2407/41 . . . Sound producing means
2407/42 . . . Animation displaying means
2407/43 . . . Optic means, e.g. transparent body
2407/431 . . . Built up optic means, e.g. magnifying glass
2407/44 . . . Static information displaying means, e.g. logo
2407/50 . . . Means for protecting parts of handling machine
2407/51 . . . Means for making dustproof

2408/00 Specific machines
2408/10 . . . for handling sheet(s)
2408/11 . . . Sorters or machines for sorting articles
2408/111 . . . with stationary location in space of the bins and a diverter per bin
2408/112 . . . with stationary location in space of the bins and in-feed member movable from bin to bin
2408/1121 . . . pivoting in-feed member
2408/113 . . . with variable location in space of the bins relative to a stationary in-feed path
2408/1131 . . . and variable bin capacity
2408/114 . . . means for shifting articles contained in at least one bin, e.g. for displacing the articles towards processing means as stapler, perforator
2408/1141 . . . performing alignment in the totality or a large number of bins at a time
2408/1142 . . . performing alignment in one bin or a limited number of bins at a time
2408/1143 . . . performing extraction of the sheets from the bin
2408/1144 . . . combination of shifting means for performing shifting in several directions
2408/116 . . . non sort tray arrangement, i.e. high capacity tray for collecting multiple set
2408/1162 . . . above sorting trays
2408/1164 . . . beneath sorting trays
2408/118 . . . Combination of several sorting modules
2408/12 . . . stapler arrangement
2408/121 . . . stationary stapler
2408/238 . . . Modified Pope-winders with secondary winding on a arc of a circle
2408/24 . . . unwinding machines
2408/241 . . . Turret
2408/2411 . . . with protruding guiding roll or surface between unwound rolls on mobile assembly
2408/2412 . . . details of indexing drive or mechanism
2408/2415 . . . specified by number of arms
2408/24153 . . . with two arms
2408/24156 . . . with three arms
2408/40 . Machines for test or simulation purposes

2511/00 Dimension; Position; Number; Identification; Occurrence
2511/10 . Size; Dimension
2511/11 . Length

**WARNING**

Group B65H 2511/11 is incomplete pending reclassification of documents from group B65H 16/025

Groups B65H 16/025 and B65H 2511/11 should be considered in order to perform a complete search.

2511/112 . . . of a loop, e.g. a free loop or a loop of dancer rollers
2511/114 . . . Remaining length of web roll
2511/12 . . . Width
2511/13 . . . Thickness
2511/135 . . . Surface texture; e.g. roughness
2511/14 . . . Diameter
2511/142 . . . of roll or package
2511/15 . . . Height
2511/152 . . . of stack
2511/16 . . . Irregularities
2511/162 . . . Protuberances or enlargements on the surface
2511/164 . . . Cavities, recesses or holes in the surface
2511/166 . . . relative to diameter, eccentricity or circularity
2511/17 . . . Deformation
2511/172 . . . Elongation; Stretching
2511/18 . . . relative to handling machine
2511/182 . . . Capacity of area accommodating handled material
2511/20 . Location in space
2511/21 . . . Angle
2511/212 . . . Rotary position
2511/214 . . . Inclination
2511/216 . . . Orientation, e.g. with respect to direction of movement
2511/22 . . . Distance
2511/222 . . . Stroke
2511/224 . . . Nip between rollers, between belts or between rollers and belts
2511/23 . . . Coordinates
2511/232 . . . in two dimensions
2511/234 . . . in three dimensions
2511/24 . . . Irregularities
2511/242 . . . in orientation, e.g. skew
2511/25 . . . Sequence
2511/30 . Number
2511/31 . Numeric flow, i.e. number per unit of time
2511/32 . . . of windings

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For handling web(s)

Splicing machines

User handling or holding material until withdrawal by Wall or kiosk dispenser, i.e. for positively movement of roll support, e.g. Metso-Type

With substantially continuous horizontal movement of roll support, e.g. Metso-Type

Winding beds consisting of two rollers

Central support turret

Hand-held winding device

Cradles

Pope-winders with first winding on an arc of circle and secondary winding along rails

With two secondary winding spools, e.g. on separate carriages

With additional element for facilitating web roll change

Winding machine with more than three arms

Winding machine with three arms

Winding bed with several cascaded loops

Roller with accumulated material wound around it (scrap roll)

Of rollers type, e.g. with at least one fixed and one movable roller

The position of the movable roller(s), i.e. the web loop, being positively actuated

Several cascaded loops of rollers

The rollers wrapped by the web being rotationally driven otherwise than by web

Belt or similar device for carrying web through the accumulator

Splicing machines

Splicing unit located above several web rolls arranged parallel to each other

Winding machine

Turret winders

With bedroll, i.e. very big roll used as winding roller

And transfer pad (to attach leading edge to new core)

With integrated core supply

With plurality of reel supporting or back-up rollers travelling around turret axis

Specified by number of arms

With two arms

With three arms

With more than three arms

Winding beds consisting of two rollers

With winding bed supplied with vacuum or compressed air

The winding rollers having different properties

At least one of the winding rollers being movable

Central support turret

Hand-held winding device

Cradles

Pope-winders with first winding on an arc of circle and secondary winding along rails

With two secondary winding spools, e.g. on separate carriages

With additional element for facilitating web roll change

With substantially continuous horizontal movement of roll support, e.g. Metso-Type

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Groups B65H 2511/11 and B65H 16/025 should be considered in order to perform a complete search.
2513/00 Dynamic entities; Timing aspect

2513/10 . Speed
2513/102 . Reference
2513/104 . Relative speed
2513/106 . Variation: Irregularities
2513/108 . Passage from one speed to another speed
2513/11 . angular
2513/112 . of the yarn balloon
2513/114 . Converting or comparing angular speed to linear speed, e.g. when detecting remaining length of web roll

2513/20 . Acceleration or deceleration
2513/21 . Acceleration
2513/212 . angular
2513/22 . Deceleration
2513/222 . angular
2513/30 . Kinetic energy
2513/40 . Movement
2513/41 . Direction of movement
2513/412 . Direction of rotation of motor powering the handling device

2513/42 . Route, path
2513/50 . Timing
2513/51 . Sequence of process
2513/511 . relating to a particular timing for sensing a variable
2513/512 . Stopping
2513/514 . Starting
2513/52 . Age; Life time
2513/53 . duration of event

2513/54 . Chronology of event

2515/00 Physical entities not provided for in groups

2515/10 . Mass; Weight
2515/11 . Mass flow rate
2515/112 . Specific weight
2515/114 . Denier
2515/116 . Inertia
2515/12 . Density
2515/20 . Volume
2515/21 . Volume flow rate
2515/212 . of air
2515/30 . Force; Stress
2515/31 . Tensile force
2515/312 . in direction perpendicular to transport direction
2515/314 . Tension profile, i.e. distribution of tension, e.g. across the material feeding direction or along diameter of web roll

2515/32 . Torque; Moment
2515/322 . Braking torque
2515/34 . Pressure
2515/342 . Fluid pressure
2515/37 . Elasticity modulus
2515/40 . Temperature
2515/41 . Heat conductivity
2515/50 . Vibrations; Oscillations
2515/60 . Optical characteristics, e.g. colour, light
2515/70 . Electrical characteristics
2515/702 . Voltage
2515/704 . Current
2515/706 . Power
2515/708 . Resistance
2515/71 . Magnetic properties
2515/712 . Capacitance
2515/714 . Inductance
2515/716 . Static electricity
2515/80 . Miscellaneous
2515/805 . Humidity
2515/81 . Rigidly; Stiffness; Elasticity
2515/815 . Slip
2515/82 . Sound; Noise
2515/83 . Environmental conditions, i.e. in the area confining the handled material or the handling machine

2515/84 . Quality
2515/842 . Condition, e.g. degree of wear, presence of wrinkles

2519/00 Chemical characteristics

2551/00 Means for control to be used by operator; User interfaces

2551/10 . Command input means
2551/11 . Slidable members
2551/12 . Rotating members
2551/13 . Remote control devices
2551/132 . Speech recognition
2551/14 . Switches; Selectors (contact switches

2551/15 . Push buttons; Keyboards
2551/152 . Pedals
2551/16 . Levers; Joysticks
2553/00 Means for sensing, detecting or otherwise used for control

2553/10 using fluid
2553/11 pneumatic
2553/12 hydraulic
2553/20 using electric elements
2553/21 Variable resistances, rheostats or potentiometers
2553/212 Strain gauges
2553/22 Magnetic detectors, e.g. Hall detectors
2553/23 Capacitive detectors
2553/232 Electrodes arrangement
2553/24 Inductive detectors
2553/25 Contact switches
2553/26 Piezo-electric sensors
2553/27 Electro mechanical thermal sensors, e.g. thermocouples, pyroelectric sensors, temperature sensitive sensor
2553/30 using acoustic or ultrasonic elements
2553/40 using optical, e.g. photographic, elements
2553/41 Photoelectric detectors
2553/412 in barrier arrangements, i.e. emitter facing a receptor element
2553/414 involving receptor receiving light reflected by a reflecting surface and emitted by a separate emitter
2553/416 Array arrangement, i.e. row of emitters or detectors
2553/42 Cameras
2553/43 Bar code reader
2553/44 involving light guide
2553/442 optical fibres
2553/45 Scanning means
2553/46 Illumination arrangement
2553/51 Encoder, e.g. rotary
2553/512 linear
2553/52 RFID sensor
2553/60 Details of intermediate means between the sensing means and the element to be sensed
2553/61 Mechanical means
2553/612 Contact arms; Levers; Antennas
2553/614 Impact generating means
2553/62 involving vibrating element
2553/80 Arrangement of the sensing means
2553/81 on a movable element
2553/82 with regard to the direction of transport of the handled material

2553/822 Multiple sensors in a direction perpendicular to the direction of transport of the handled material
2553/83 selectively positionable in operative state

2555/00 Actuating means

2555/10 linear
2555/11 pneumatic
2555/112 Inflatable element
2555/12 hydraulic
2555/13 magnetic, e.g. linear solenoids
2555/132 Linear induction motors
2555/134 Linear stepper motor
2555/14 piezoelectric
2555/20 angular
2555/21 pneumatic
2555/22 hydraulic
2555/23 magnetic, e.g. rotary solenoids
2555/24 Servomotors
2555/25 D.C. motors
2555/252 in derivation; Shunt motors
2555/26 Stepper motors
2555/27 piezoelectric
2555/30 Multi-axi
2555/31 Robots
2555/32 Automatic guided vehicle system
2555/40 Powering means
2555/41 Electrostatic forces
2555/42 Magnets

2557/00 Means for control not provided for in groups

2557/10 for signal transmission
2557/11 wireless (input by remote control devices
2557/112 using sound
2557/12 Network
2557/13 Data carrier, e.g. chip, transponder, magnetic strip
2557/20 Calculating means; Controlling methods
2557/22 Fuzzy logic
2557/23 Recording or storing data
2557/24 Calculating methods; Mathematic models
2557/242 involving a particular data profile or curve
2557/2423 involving an average value
2557/2426 involving a standard deviation
2557/25 Modular control, i.e. systems which work independently or partially dependently on other systems
2557/26 with key characteristics based on open loop control
2557/262 with key characteristics based on feed forward control
2557/264 with key characteristics based on closed loop control
2557/2644 characterised by PID control
2557/266 characterised by function other than PID for the transformation of input values to output values, e.g. mathematical
2557/30 Control systems architecture or components, e.g. electronic or pneumatic modules; Details thereof
2557/31 for converting, e.g. A/D converters
2557/32 for modulating frequency or amplitude
257/33 . . . for digital control, e.g. for generating, counting or comparing pulses
257/34 . . . for analog control, e.g. proportional, integral or differentiated
257/35 . . . for timing
257/352 . . . Clocks; Timers
257/354 . . . Sequence controllers
257/36 . . . Stroboscopes
257/37 . . . for fluid control
257/371 . . . Rotary valve
257/38 . . . for neural adaptive control
257/50 . . . Use of particular electromagnetic waves, e.g. light, radiowaves or microwaves
257/51 . . . Laser
257/512 . . . infra-red
257/514 . . . ultraviolet
257/516 . . . Polarized light
257/518 . . . X-ray
257/52 . . . Particle radiation
257/60 . . . Details of processes or procedures
257/61 . . . for calibrating
257/62 . . . for web tracking, i.e. retrieving a certain position of a web
257/63 . . . Optimisation, self-adjustment, self-learning processes or procedures, e.g. during start-up
257/64 . . . for detecting type or properties of handled material
257/65 . . . for diagnosing
257/652 . . . need of maintenance

**2601/00 Problem to be solved or advantage achieved**

2601/10 . . . Ensuring correct operation
2601/11 . . . Clearing faulty handling, e.g. jams
2601/111 . . . Clearing incorrect discharge of sheet
2601/12 . . . Compensating; Taking-up
2601/121 . . . Wear
2601/122 . . . Play
2601/123 . . . Defaults of handled material
2601/1231 . . . relative to geometry, shape of handled material
2601/124 . . . Unbalance
2601/125 . . . Vibration (B65H 2601/524 takes precedence)
2601/20 . . . Avoiding or preventing undesirable effects
2601/21 . . . Dynamic air effects
2601/211 . . . Entrapping air in or under the material
2601/212 . . . Environmental change in the area confining the handled material
2601/22 . . . Gravity effects, e.g. effect of weight of handled material
2601/221 . . . Centrifugal force effect
2601/24 . . . Deformation of part of handling machine
2601/25 . . . Damages to handled material
2601/251 . . . Smearing
2601/252 . . . Collapsing, e.g. of piles
2601/2525 . . . Collisions
2601/253 . . . to particular parts of material
2601/2531 . . . Edges
2601/2532 . . . Surface
2601/254 . . . Permanent deformation
2601/255 . . . Jam
2601/26 . . . Damages to handling machine
2601/261 . . . Clogging
2601/2611 . . . Soiling
2601/2612 . . . Pollution
2601/2613 . . . Oxidation
2601/27 . . . Other problems
2601/271 . . . Over stacking
2601/272 . . . Skewing of handled material during handling
2601/273 . . . Adhering of handled material to another handled material or to part of the handling machine
2601/30 . . . Facilitating or easing
2601/31 . . . entities relating to handled material
2601/32 . . . entities relating to handling machine
2601/321 . . . Access
2601/322 . . . Replenishing
2601/3222 . . . of binding material, e.g. needles
2601/324 . . . Removability or inter-changeability of machine parts, e.g. for maintenance
2601/325 . . . Manual handling of handled material
2601/326 . . . Manual handling of handling machine
2601/40 . . . Increasing or maximizing
2601/41 . . . entities relating to handled material
2601/42 . . . entities relating to the handling machine
2601/421 . . . Capacity
2601/422 . . . Versatility
2601/423 . . . Life span
2601/50 . . . Diminishing, minimizing or reducing
2601/51 . . . entities relating to handled material
2601/511 . . . Waste of handled material
2601/52 . . . entities relating to handling machine
2601/521 . . . Noise
2601/522 . . . Wear of friction surface
2601/523 . . . Required space
2601/524 . . . Vibration
2601/5242 . . . by using mass damper
2601/5244 . . . by using electro-rheological fluid [ERF]
2601/525 . . . Cost of application or use, e.g. energy, consumable
2601/60 . . . Miscellaneous
2601/61 . . . Refurbishing; Renewing the handling machine; Upgrading modifying functions of the handling machine

**2701/00 Handled material; Storage means**

2701/10 . . . Handled articles or webs
2701/11 . . . Dimensional aspect of article or web
2701/111 . . . Plane geometry, contour
2701/1111 . . . Geometric shape
2701/1112 . . . disk
2701/1114 . . . triangle
2701/1113 . . . irregular shape
2701/1132 . . . tabbed sheet
2701/112 . . . Section geometry
2701/1121 . . . shape
2701/1122 . . . U-shape
2701/1124 . . . tube
2701/1126 . . . circular segment
2701/1128 . . . corrugations
2701/1123 . . . Folded article or web
2701/11231 . . . Fan-folded material or zig-zag or leporello
2701/11232 . . . Z-folded
2701/11234 . . . C-folded
2701/11238 . . . Asymmetric folded material
<table>
<thead>
<tr>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>B65H</td>
<td>Surface aspects</td>
</tr>
<tr>
<td>2701/25</td>
<td>variable thickness</td>
</tr>
<tr>
<td>2701/25</td>
<td>thicker edges, e.g. reinforced</td>
</tr>
<tr>
<td>2701/25</td>
<td>Splice</td>
</tr>
<tr>
<td>2701/25</td>
<td>Size</td>
</tr>
<tr>
<td>2701/25</td>
<td>of sheets</td>
</tr>
<tr>
<td>2701/25</td>
<td>large formats, i.e. above A3</td>
</tr>
<tr>
<td>2701/25</td>
<td>of webs</td>
</tr>
<tr>
<td>2701/25</td>
<td>strip, tape, narrow web</td>
</tr>
<tr>
<td>2701/25</td>
<td>Surface aspects</td>
</tr>
<tr>
<td>2701/25</td>
<td>Perforations</td>
</tr>
<tr>
<td>2701/25</td>
<td>arranged linearly</td>
</tr>
<tr>
<td>2701/25</td>
<td>transversally</td>
</tr>
<tr>
<td>2701/25</td>
<td>where perforations serve for handling</td>
</tr>
<tr>
<td>2701/25</td>
<td>Projecting portions</td>
</tr>
<tr>
<td>2701/25</td>
<td>regularly distributed</td>
</tr>
<tr>
<td>2701/25</td>
<td>ball relief</td>
</tr>
<tr>
<td>2701/25</td>
<td>polygonal humps relief</td>
</tr>
<tr>
<td>2701/25</td>
<td>Hollow portions</td>
</tr>
<tr>
<td>2701/25</td>
<td>grooves</td>
</tr>
<tr>
<td>2701/25</td>
<td>linear, e.g. for further folding</td>
</tr>
<tr>
<td>2701/25</td>
<td>Patterns, marks, printed information</td>
</tr>
<tr>
<td>2701/25</td>
<td>register marks</td>
</tr>
<tr>
<td>2701/25</td>
<td>line</td>
</tr>
<tr>
<td>2701/25</td>
<td>printed information</td>
</tr>
<tr>
<td>2701/25</td>
<td>codes or the like which can be used for further processing, e.g. relative to</td>
</tr>
<tr>
<td></td>
<td>consumed or still available material</td>
</tr>
<tr>
<td>2701/25</td>
<td>hologram</td>
</tr>
<tr>
<td>2701/25</td>
<td>RFID [Radio Frequency Identification Data] transponder</td>
</tr>
<tr>
<td>2701/25</td>
<td>Particular treatment</td>
</tr>
<tr>
<td>2701/25</td>
<td>for facilitating sliding contact</td>
</tr>
<tr>
<td>2701/25</td>
<td>Parts concerned of the handled material</td>
</tr>
<tr>
<td>2701/25</td>
<td>Edges</td>
</tr>
<tr>
<td>2701/25</td>
<td>leading edge</td>
</tr>
<tr>
<td>2701/25</td>
<td>trailing edge</td>
</tr>
<tr>
<td>2701/25</td>
<td>side edges, i.e. regarded in context of transport</td>
</tr>
<tr>
<td>2701/25</td>
<td>Side portions</td>
</tr>
<tr>
<td>2701/25</td>
<td>of folded article or web</td>
</tr>
<tr>
<td>2701/25</td>
<td>Fold, spine portion of folded article</td>
</tr>
<tr>
<td>2701/25</td>
<td>Side opposite to spine portion of folded article</td>
</tr>
<tr>
<td>2701/25</td>
<td>corner</td>
</tr>
<tr>
<td>2701/25</td>
<td>Piled package</td>
</tr>
<tr>
<td>2701/25</td>
<td>Nature of material</td>
</tr>
<tr>
<td>2701/25</td>
<td>Physical features of handled article or web</td>
</tr>
<tr>
<td>2701/25</td>
<td>Transparent</td>
</tr>
<tr>
<td>2701/25</td>
<td>Magnetic</td>
</tr>
<tr>
<td>2701/25</td>
<td>Elastic</td>
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<tr>
<td>2701/25</td>
<td>Porous or permeable</td>
</tr>
<tr>
<td>2701/25</td>
<td>Photosensitive, e.g. exposure, photographic or phosphor</td>
</tr>
<tr>
<td>2701/25</td>
<td>Composite material</td>
</tr>
<tr>
<td>2701/25</td>
<td>including layer with adhesive properties</td>
</tr>
<tr>
<td>2701/25</td>
<td>Encapsulated adhesive</td>
</tr>
<tr>
<td>2701/25</td>
<td>distributed only on a part of the surface of the material</td>
</tr>
<tr>
<td>2701/25</td>
<td>including layer with magnetic properties</td>
</tr>
<tr>
<td>2701/25</td>
<td>including detachable components</td>
</tr>
<tr>
<td>2701/25</td>
<td>distributed only on a part of the surface of the material</td>
</tr>
<tr>
<td>2701/25</td>
<td>including layer with anti-adhesive properties</td>
</tr>
<tr>
<td>2701/25</td>
<td>Liquid soaked material</td>
</tr>
<tr>
<td>2701/25</td>
<td>Metal</td>
</tr>
<tr>
<td>2701/25</td>
<td>Aluminium</td>
</tr>
<tr>
<td>2701/25</td>
<td>Textile, fibre (for filamentary material</td>
</tr>
<tr>
<td></td>
<td>B65H 2701/31 and subgroups</td>
</tr>
<tr>
<td>2701/25</td>
<td>Fibreglass</td>
</tr>
<tr>
<td>2701/25</td>
<td>Plastic</td>
</tr>
<tr>
<td>2701/25</td>
<td>Polymer film</td>
</tr>
<tr>
<td>2701/25</td>
<td>Cardboard</td>
</tr>
<tr>
<td>2701/25</td>
<td>Corrugated</td>
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<tr>
<td>2701/25</td>
<td>Cut-out, single-layer, e.g. flat blanks for boxes</td>
</tr>
<tr>
<td>2701/25</td>
<td>Cut-out, multi-layer, e.g. folded blanks or boxes</td>
</tr>
<tr>
<td>2701/25</td>
<td>Book covers and the like</td>
</tr>
<tr>
<td>2701/25</td>
<td>Fibrous or compressible material</td>
</tr>
<tr>
<td>2701/25</td>
<td>Hide, leather or skin</td>
</tr>
<tr>
<td>2701/25</td>
<td>Form of handled article or web</td>
</tr>
<tr>
<td>2701/25</td>
<td>Piled package</td>
</tr>
<tr>
<td>2701/25</td>
<td>Juxtaposed stacks</td>
</tr>
<tr>
<td>2701/25</td>
<td>Web material folded in zig-zag form</td>
</tr>
<tr>
<td>2701/25</td>
<td>Juxtaposed sets</td>
</tr>
<tr>
<td>2701/25</td>
<td>Arrangement of sheets</td>
</tr>
<tr>
<td>2701/25</td>
<td>Ordered set of articles forming one batch</td>
</tr>
<tr>
<td>2701/25</td>
<td>wherein each article is offset from its neighbour in the pile</td>
</tr>
<tr>
<td>2701/25</td>
<td>Pile of alternate articles of different properties, e.g. pile of working</td>
</tr>
<tr>
<td></td>
<td>sheets with intermediate sheet between each working sheet</td>
</tr>
<tr>
<td>2701/25</td>
<td>Unordered set of articles</td>
</tr>
<tr>
<td>2701/25</td>
<td>Marker arrangement</td>
</tr>
<tr>
<td>2701/25</td>
<td>Interleaf layers</td>
</tr>
<tr>
<td>2701/25</td>
<td>of folded sheet material</td>
</tr>
<tr>
<td>2701/25</td>
<td>Z-folded</td>
</tr>
<tr>
<td>2701/25</td>
<td>W-folded</td>
</tr>
<tr>
<td>2701/25</td>
<td>Parts concerned of piled package</td>
</tr>
<tr>
<td>2701/25</td>
<td>Sides</td>
</tr>
<tr>
<td>2701/25</td>
<td>Bound, bundled or stapled stacks or packages</td>
</tr>
<tr>
<td>2701/25</td>
<td>Stapled sets of sheets</td>
</tr>
<tr>
<td>2701/25</td>
<td>Wound packages</td>
</tr>
<tr>
<td>2701/25</td>
<td>of webs</td>
</tr>
<tr>
<td>2701/25</td>
<td>Coreless</td>
</tr>
<tr>
<td>2701/25</td>
<td>Parts concerned</td>
</tr>
<tr>
<td>2701/25</td>
<td>Core</td>
</tr>
<tr>
<td>2701/25</td>
<td>Helically wound material</td>
</tr>
<tr>
<td>2701/25</td>
<td>Parts concerned</td>
</tr>
<tr>
<td>2701/25</td>
<td>Dimensional aspect</td>
</tr>
<tr>
<td>2701/25</td>
<td>Proportion</td>
</tr>
<tr>
<td>2701/25</td>
<td>Diameter much larger than width, e.g. audio/video tape bobbin</td>
</tr>
<tr>
<td>2701/25</td>
<td>Diameter substantially equal to width, e.g. toilet paper roll</td>
</tr>
<tr>
<td>2701/25</td>
<td>Diameter much smaller than width</td>
</tr>
<tr>
<td>2701/25</td>
<td>Non-cylindrical form, e.g. flat bobbin</td>
</tr>
<tr>
<td>2701/25</td>
<td>in cartridge or similar packaging device</td>
</tr>
</tbody>
</table>
Several articles or webs processed together
Rolls and sheets
Superposed webs
Specific article or web
Bags, sachets and pouches or the like
Banknotes, bills and cheques or the like
Cards, e.g. telephone, credit and identity cards
Envelopes and articles of mail
Insert between web or strip layer, e.g. wire
Labels (carrying webs or liners
for covering surfaces such as carpets, roads, roofs or walls
Napkins or tissues, e.g. dressings, toweling, serviettes, kitchen paper and compresses
Opened booklet
Printing plate
Sample, e.g. laminate
Signatures, folded printed matter, newspapers or parts thereof and books
Sticky notes, e.g. sheets partially coated with temporary adhesive
Tickets or coupons
Veneer sheet
Web supporting regularly spaced adhesive articles, e.g. labels, rubber articles, labels or stamps
Glue dots, arranged individually or in patterns
Supporting second web with articles as precut portions
Web supporting regularly spaced non-adhesive articles
Wrapping or packing material
Features of handled material other than dimensional aspect, use, or nature
Handled filamentary material
Textiles threads or artificial strands of filaments
Slivers
Fibreglass strands
extruded from spinnerets
Synthetic polymer threads
extruded from spinnerets
Carbon fibres
Elastic threads
Optical fibres or optical cables
Hollow or hose-like material
leaving an extruder
Flattened hoses
Hoses for drip irrigation
electric cords or electric power cables
in a manufacturing process
Ropes, lines
in a manufacturing process
Clotheslines
Construction lines, e.g. masonry line or for gardening
Cutting lines, e.g. for grass cutting
Fishlines
Kitelines
Marking strings, e.g. pre-inked lines
Strings for guiding plants
Wires
Semiconductor bonding wires
Tying wires, e.g. for tying concrete reinforcement rods
Barbed wires
Wires used in fences
Aerial wires, e.g. for wireless telegraph installation on aircraft
Pintle for seaming paper machine fabrics
Tapes
Curved tapes, e.g. "Spreizband"
Ink ribbons
Spring steel
Warning bands, e.g. police warning tapes
Strapping tapes
Electrician's fish tapes
Adhesive tape
Double-sided
Recording tape
Sealing tape
Thread sheet, e.g. sheet of parallel yarns or wires
Other types of filamentary materials or special applications
Spiral coiled hoses or cords
Chains
Fences made of wire
Extruded profiled strands
Irregular cross section, i.e. not circular
Strings of lights, e.g. Christmas lighting
Inserts between layers of wire, hose or yarn
Fairied cables
Surgical sutures
USB, earphones, audio or video cables, e.g. for connecting small electronic devices such as MP3 players or mobile telephones
Storage means for webs, tapes, or filamentary material
Cores or reels characterised by the material
especially made of sheet material
Paper or plastic sheet material
Metal sheets
Wood veneer
Textile material
moulded
Plastics
Metals
Particles of fibres, e.g. lignocelluloses material
Vitreous material
assembled mainly from rigid elements of the same kind
Wooden planks or similar material
Metal elements
Moulded metal elements
Metal profiles
Moulded plastic elements
Elastic elements
assembled from parts made of different materials
End flanges and barrel of different material
Wooden barrel
Paperboard barrel
B65H

2701/51526 . . . . . Metal barrel
2701/51528 . . . . . Plastic barrel
2701/52 . . . Integration of elements inside the core or reel
2701/522 . . . Chemical agents
2701/524 . . . Weights
2701/526 . . . Magnets
2701/528 . . . Heating or cooling devices
2701/53 . . . Adaptations of cores or reels for special purposes
2701/532 . . . Tearable or frangible cores or reels
2701/533 . . . Storage compartments for accessories
2701/534 . . . Stackable or interlockable reels or parts of reels
2701/535 . . . Dimensional aspect, e.g. non-cylindrical cores
2701/536 . . . Arrangements for protecting connectors attached to the wound material
2701/537 . . . Stopping the winding or unwinding of reels which do not feature spring motors

2701/70 . Use of material
2701/71 . Special purposes; Special handling other than the normal handling

2801/00 Application field
2801/03 . Image reproduction devices
2801/06 . Office-type machines, e.g. photocopiers
2801/09 . Single-function copy machines
2801/12 . Single-function printing machines, typically table-top machines
2801/15 . Digital printing machines
2801/18 . Stencil printing machines
2801/21 . Industrial-size printers, e.g. rotary printing press
2801/24 . Post-processing devices
2801/27 . Devices located downstream of office-type machines
2801/31 . Devices located downstream of industrial printers
2801/36 . Plotting
2801/39 . Scanning
2801/42 . Die-cutting
2801/45 . Audio or video tape players, or related mechanism
2801/48 . Bookbinding
2801/51 . Automobile
2801/54 . Cigarette making
2801/57 . Diaper manufacture
2801/61 . Display device manufacture, e.g. liquid crystal displays
2801/63 . Dunnage conversion
2801/66 . Envelope filling machines
2801/69 . Form fill-and-seal machines
2801/72 . Fuel cell manufacture
2801/75 . Labelling machines
2801/78 . Mailing systems
2801/81 . Packaging machines
2801/84 . Paper-making machines
2801/87 . Photovoltaic element manufacture, e.g. solar panels
2801/91 . Recording tape manufacture
2801/93 . Tyres