

CPC**COOPERATIVE PATENT CLASSIFICATION****F25D****REFRIGERATORS; COLD ROOMS; ICE-BOXES; COOLING OR FREEZING APPARATUS NOT COVERED BY ANY OTHER SUBCLASS**

(refrigerated show cases [A47F 3/04](#) ; thermally-insulated vessels for domestic use [A47J 41/00](#) ; refrigerated vehicles, see the appropriate subclasses of classes [B60](#) to [B64](#) ; containers with thermal insulation in general [B65D 81/38](#) ; heat-transfer, heat-exchange or heat-storage materials, e.g. refrigerants, or materials for the production of heat or cold by chemical reactions other than by combustion [C09K 5/00](#) ; thermally-insulated vessels for liquefied or solidified gases [F17C](#) ; air-conditioning or air-humidification [F24F](#) ; refrigeration machines, plants or systems [F25B](#) ; cooling of instruments and comparable apparatus without refrigeration [G12B](#) ; cooling of engines or pumps, see the relevant classes)

NOTE

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

- "device" means an enclosed space to be cooled; such devices being associated either with refrigerating machinery, e.g. in a refrigerator, or with other cold sources, e.g. in an ice-box.

Attention is drawn to Note (2) following the title of subclass [F24F](#) .

Guidance heading: Devices not associated with refrigerating machinery

F25D 1/00 **Devices using naturally cold air or cold water**

F25D 1/02 . using naturally cold water, e.g. household tap water

F25D 3/00 **Devices using other cold materials; Devices using cold-storage bodies**

F25D 3/005 . { combined with heat exchangers }

F25D 3/02 . using ice, e.g. ice-boxes

F25D 3/04 .. Stationary cabinets

F25D 3/045 ... { Details }

F25D 3/06 .. Movable containers

F25D 3/08 ... portable, i.e. adapted to be carried personally

F25D 3/10 . using liquefied gases, e.g. liquid air {(for cooling semiconductor devices [H01L 23/445](#))}

F25D 3/102 .. { Stationary cabinets }

- F25D 3/105 . . { Movable containers }
- F25D 3/107 . . { portable, i.e. adapted to be carried personally }
- F25D 3/11 . . with conveyers carrying articles to be cooled through the cooling space

- F25D 3/12 . using solidified gases, e.g. carbon-dioxide snow
- F25D 3/122 . . { Stationary cabinets }
- F25D 3/125 . . { Movable containers }
- F25D 3/127 . . { Stationary devices with conveyers carrying articles to be cooled through the cooling space }
- F25D 3/14 . . portable, i.e. adapted to be carried personally

- F25D 5/00** **Devices using endothermic chemical reactions, e.g. using frigorific mixtures**

- F25D 5/02 . portable, i.e. adapted to be carried personally

- F25D 7/00** **Devices using evaporation effects without recovery of the vapour (butter or cheese dishes with cooling devices [A47G 19/26](#))**

- F25D 9/00** **Devices not covered by groups [F25D 1/00](#) to [F25D 7/00](#); Combinations of devices covered by two or more of the groups [F25D 1/00](#) to [F25D 7/00](#)**

- F25D 9/005 . { using fluorinated halogenous hydrocarbons }

- Guidance heading:** **Devices associated with refrigerating machinery**

- F25D 11/00** **Self-contained movable devices, e.g. domestic refrigerator**

- F25D 11/003 . { Transport containers }
- F25D 11/006 . { with cold storage accumulators }
- F25D 11/02 . with cooling compartments at different temperatures
- F25D 11/022 . . { with two or more evaporators }
- F25D 11/025 . . { using primary and secondary refrigeration systems }
- F25D 11/027 . . { of the sorption cycle type }
- F25D 11/04 . specially adapted for storing deep-frozen articles ([F25D 11/02](#) takes precedence)

- F25D 13/00** **Stationary devices, e.g. cold-rooms**

- F25D 13/02 . with several cooling compartments, e.g. refrigerated locker systems
- F25D 13/04 . . the compartments being at different temperatures

- F25D 13/06 . with conveyers carrying articles to be cooled through the cooling space
- F25D 13/062 .. { with refrigerated conveyers }
- F25D 13/065 .. { Articles being submerged in liquid coolant }
- F25D 13/067 .. { with circulation of gaseous cooling fluid }

- F25D 15/00** **Devices not covered by group [F25D 11/00](#) or [F25D 13/00](#) , e.g. non-self-contained movable devices**

- F25D 16/00** **Devices using a combination of a cooling mode associated with refrigerating machinery with a cooling mode not associated with refrigerating machinery**

- Guidance heading:** **Details or features of the devices covered by groups [F25D 1/00](#) to [F25D 16/00](#)**

- F25D 17/00** **Arrangements for circulating cooling fluids; Arrangements for circulating gas, e.g. air, within refrigerated spaces**

- F25D 17/005 . { in cold rooms }
- F25D 17/02 . for circulating liquids, e.g. brine
- F25D 17/04 . for circulating air, e.g. by convection
- F25D 17/042 .. { Air treating means within refrigerated spaces (air conditioning in general [F24F](#)) }
- F25D 17/045 ... { Air flow control arrangements }
- F25D 17/047 ... { Pressure equalising devices }
- F25D 17/06 .. by forced circulation
- F25D 17/062 ... { in household refrigerators }
- F25D 17/065 { with compartments at different temperatures }
- F25D 17/067 ... { Evaporator fan units }
- F25D 17/08 ... using ducts

- F25D 19/00** **Arrangement or mounting of refrigeration units with respect to devices { or objects to be refrigerated, e.g. infra-red detectors }**

- F25D 19/003 . { with respect to movable containers }
- F25D 19/006 . { Thermal coupling structure or interface }
- F25D 19/02 . plug-in type
- F25D 19/04 . with more than one refrigeration unit

F25D 21/00	Defrosting; Preventing frosting; Removing condensed or defrost water (removing ice or water from heat-exchange apparatus in general F28F 17/00 ; heating arrangements specially adapted for transparent or reflecting areas H05B 3/84)
F25D 21/002	. { Defroster control }
F25D 21/004	.. { Control mechanisms (F25D 21/006 takes precedence)}
F25D 21/006	.. { with electronic control circuits }
F25D 21/008	.. { by timer }
F25D 21/02	. Detecting the presence of frost or condensate
F25D 21/025	.. { using air pressure differential detectors }
F25D 21/04	. Preventing the formation of frost or condensate
F25D 21/06	. Removing frost (defrosting cycles F25B 47/02)
F25D 21/065	.. { by mechanical means }
F25D 21/08	.. by electric heating
F25D 21/10	.. by spraying with fluid
F25D 21/12	.. by hot-fluid circulating system separate from the refrigerant system
F25D 21/125	... { the hot fluid being ambient air }
F25D 21/14	. Collecting or removing condensed and defrost water; Drip trays
F25D 23/00	General constructional features (F25D 21/00 takes precedence)
F25D 23/003	. { for cooling refrigerating machinery }
F25D 23/006	. { for mounting refrigerating machinery components }
F25D 23/02	. Doors; Covers (F25D 23/08 takes precedence) { locks or fastenings E05B 65/0042 }
F25D 23/021	.. { Sliding doors }
F25D 23/023	.. { Air curtain closures }
F25D 23/025	.. { Secondary closures }
F25D 23/026	.. { for open-top cabinets }
F25D 23/028	.. { Details }
F25D 23/04	.. with special compartments, e.g. butter conditioners
F25D 23/06	. Walls (F25D 23/08 takes precedence; containers with thermal insulation B65D 81/38)
F25D 23/061	.. { with conduit means }
F25D 23/062	.. { defining a cabinet }
F25D 23/063	... { formed by an assembly of panels }
F25D 23/064	... { formed by moulding, e.g. moulding in situ }
F25D 23/065	.. { Details }

- F25D 23/066 . . . { Liners }
- F25D 23/067 . . . { Supporting elements }
- F25D 23/068 . . . { Arrangements for circulating fluids through the insulating material }
- F25D 23/069 . . { Cooling space dividing partitions }

- F25D 23/08 . Parts formed wholly or mainly of plastics materials
- F25D 23/082 . . { Strips }

NOTE

When a document describes both breaking and sealing strips it is classified in group [F25D 23/082](#) only.

- F25D 23/085 . . . { Breaking strips }
- F25D 23/087 . . . { Sealing strips }
- F25D 23/10 . Arrangements for mounting in particular locations, e.g. for built-in type, for corner type
- F25D 23/12 . Arrangements of compartments additional to cooling compartments; Combinations of refrigerators with other equipment, e.g. stove
- F25D 23/123 . . { Butter compartment }
- F25D 23/126 . . { Water cooler }

F25D 25/00 Charging, supporting, and discharging the articles to be cooled

- F25D 25/005 . { using containers }
- F25D 25/02 . by shelves
- F25D 25/021 . . { combined with trays }
- F25D 25/022 . . { Baskets }
- F25D 25/024 . . { Slidable shelves }
- F25D 25/025 . . . { Drawers }
- F25D 25/027 . . { Rotatable shelves }
- F25D 25/028 . . { Cooled supporting means }
- F25D 25/04 . by conveyers (in general [B65G](#))

F25D 27/00 Lighting arrangements (in general [F21](#))

- F25D 27/005 . { combined with control means }

F25D 29/00 Arrangement or mounting of control or safety devices

- F25D 29/001 . { for cryogenic fluid systems }

- F25D 29/003 . { for movable devices }
- F25D 29/005 . { Mounting of control devices }
- F25D 29/006 . { Safety devices }
- F25D 29/008 . { Alarm devices }

F25D 31/00 Other cooling or freezing apparatus

- F25D 31/001 . { Plate freezers }
 - F25D 31/002 . { Liquid coolers, e.g. beverage cooler ([receptacle coolers F25D 31/006](#)) }
 - F25D 31/003 . . { with immersed cooling element }
 - F25D 31/005 . { Combined cooling and heating devices }
 - F25D 31/006 . { specially adapted for cooling receptacles, e.g. tanks }
 - F25D 31/007 . . { Bottles or cans }
 - F25D 31/008 . . { Drinking glasses }
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F25D 2201/00 Insulation

- F25D 2201/10 . with respect to heat
- F25D 2201/12 . . using an insulating packing material
- F25D 2201/122 . . . of loose fill type
- F25D 2201/124 . . . of fibrous type
- F25D 2201/126 . . . of cellular type
- F25D 2201/1262 with open cells
- F25D 2201/128 . . . of foil type
- F25D 2201/1282 with reflective foils
- F25D 2201/14 . . using subatmospheric pressure
- F25D 2201/30 . with respect to sound

F25D 2230/00

F25D 2240/00

F25D 2250/00

F25D 2260/00

F25D 2270/00**F25D 2300/00** **Special arrangements or features for refrigerators; cold rooms; ice-boxes; Cooling or freezing apparatus not covered by any other subclass****F25D 2303/00** { Details of devices using other cold materials; Details of devices using cold-storage bodies }

- F25D 2303/08 . Devices using cold storage material, i.e. ice or other freezable liquid
- F25D 2303/081 .. using ice cubes or crushed ice
- F25D 2303/082 .. disposed in a cold storage element not forming part of a container for products to be cooled , e.g. ice pack or gel accumulator
- F25D 2303/0821 ... the element placed in a compartment which can be opened without the need of opening the container itself
- F25D 2303/0822 ... Details of the element
- F25D 2303/08221 Fasteners or fixing means for the element
- F25D 2303/08222 Shape of the element
- F25D 2303/08223 having the shape of an ice cube
- F25D 2303/083 .. using cold storage material disposed in closed wall forming part of a container for products to be cooled
- F25D 2303/0831 ... the liquid is disposed in the space between the walls of the container
- F25D 2303/0832 ... the liquid is disposed in an accumulator pack locked in a closable wall forming part of the container
- F25D 2303/084 .. Position of the cold storage material in relationship to a product to be cooled
- F25D 2303/0841 ... external to the container for a beverage, e.g. a bottle, can, drinking glass or pitcher
- F25D 2303/0842 ... inside the beverage contained in a bottle, can, drinking glass, pitcher or dispenser
- F25D 2303/0843 ... on the side of the product
- F25D 2303/0844 ... above the product
- F25D 2303/0845 ... below the product
- F25D 2303/0846 ... around the neck of a bottle
- F25D 2303/085 .. Compositions of cold storage materials

F25D 2317/00 { Details or arrangements for circulating cooling fluids; Details or arrangements for circulating gas, e.g. air, within refrigerated spaces, not provided for in other groups of this subclass }

- F25D 2317/04 . Treating air flowing to refrigeration compartments
- F25D 2317/041 .. by purification
- F25D 2317/0411 ... by dehumidification
- F25D 2317/04111 Control means therefor

F25D 2317/0413	...	by humidification
F25D 2317/04131	Control means therefor
F25D 2317/0415	...	by deodorizing
F25D 2317/0416	...	using an ozone generator
F25D 2317/0417	...	using an UV-lamp
F25D 2317/043	..	by creating a vacuum in a storage compartment
F25D 2317/06	.	with forced air circulation
F25D 2317/061	..	through special compartments
F25D 2317/062	..	along the inside of doors
F25D 2317/063	..	with air guides
F25D 2317/065	..	characterised by the air return
F25D 2317/0651	...	through the bottom
F25D 2317/0652	...	through the corner
F25D 2317/0653	...	through the mullion
F25D 2317/0654	...	through the side
F25D 2317/0655	...	through the top
F25D 2317/066	..	characterised by the air supply
F25D 2317/0661	...	from the bottom
F25D 2317/0662	...	from the corner
F25D 2317/0663	...	from the mullion
F25D 2317/0664	...	from the side
F25D 2317/0665	...	from the top
F25D 2317/0666	...	from the freezer
F25D 2317/0667	...	from the refrigerator
F25D 2317/067	..	characterised by air ducts
F25D 2317/0671	...	Inlet ducts
F25D 2317/0672	...	Outlet ducts
F25D 2317/068	..	characterised by the fans
F25D 2317/0681	...	Details thereof
F25D 2317/0682	...	Two or more fans
F25D 2317/0683	...	the fans not of the axial type
F25D 2317/0684	...	the fans allowing rotation in reverse direction
F25D 2321/00	{ Details or arrangements for defrosting; Preventing frosting; Removing condensed or defrost water, not provided for in other groups of this subclass }	
F25D 2321/14	.	Collecting condense or defrost water; Removing condense or defrost water
F25D 2321/141	..	Removal by evaporation
F25D 2321/1411	...	using compressor heat
F25D 2321/1412	...	using condenser heat or heat of desuperheaters

- F25D 2321/1413 . . . using heat from electric elements or using an electric field for enhancing removal
- F25D 2321/142 . . characterised by droplet guides
- F25D 2321/143 . . characterised by means to fix, clamp, or connect water pipes or evaporation trays
- F25D 2321/144 . . characterised by the construction of drip water collection pans
- F25D 2321/1441 . . . inside a refrigerator
- F25D 2321/1442 . . . outside a refrigerator
- F25D 2321/145 . . characterised by multiple collecting pans
- F25D 2321/146 . . characterised by the pipes or pipe connections
- F25D 2321/147 . . characterised by capillary, wick, adsorbent, or evaporation elements

- F25D 2323/00** { General constructional features not provided for in other groups of this subclass }

- F25D 2323/0011 . Means for leveling refrigerators

- F25D 2323/002 . Details for cooling refrigerating machinery
- F25D 2323/0021 . . using air guides
- F25D 2323/0022 . . using multiple air flows
- F25D 2323/0023 . . Control of the air flow cooling refrigerating machinery
- F25D 2323/0024 . . Filters in the air flow cooling refrigerating machinery
- F25D 2323/0026 . . characterised by the incoming air flow
- F25D 2323/00261 . . . through the back bottom side
- F25D 2323/00262 . . . through the back top side
- F25D 2323/00263 . . . through the back corner side
- F25D 2323/00264 . . . through the front bottom part
- F25D 2323/00265 . . . through the front top part
- F25D 2323/00266 . . . through the bottom
- F25D 2323/00267 . . . through the side
- F25D 2323/00268 . . . through the top
- F25D 2323/0027 . . characterised by the out-flowing air
- F25D 2323/00271 . . . from the back bottom
- F25D 2323/00272 . . . from the back top
- F25D 2323/00273 . . . from the back corner
- F25D 2323/00274 . . . from the front bottom
- F25D 2323/00275 . . . from the front top
- F25D 2323/00276 . . . from the bottom
- F25D 2323/00277 . . . from the side
- F25D 2323/00278 . . . from the top
- F25D 2323/0028 . . characterised by the fans
- F25D 2323/00281 . . . Two or more fans
- F25D 2323/00282 . . . the fans not of the axial type

F25D 2323/00283	...	the fans allowing rotation in reverse direction
F25D 2323/00284	...	Details thereof
F25D 2323/02	.	Details of doors or covers not otherwise covered
F25D 2323/021	..	French doors
F25D 2323/022	..	Doors that can be pivoted either left-handed or right-handed
F25D 2323/023	..	Door in door constructions
F25D 2323/024	..	Door hinges
F25D 2323/06	.	Details of walls not otherwise covered
F25D 2323/061	..	Collapsible walls
F25D 2323/062	..	Inflatable walls
F25D 2323/121	.	the refrigerator is characterised by a water filter for the water/ice dispenser
F25D 2323/122	.	the refrigerator is characterised by a water tank for the water/ice dispenser
F25D 2325/00	{ Charging, supporting or discharging the articles to be cooled, not provided for in other groups of this subclass }	
F25D 2325/021	.	Shelves with several possible configurations
F25D 2325/022	.	Shelves made of glass or ceramic
F25D 2325/023	.	Shelves made of wires
F25D 2327/00	{ Lighting arrangements not provided for in other groups of this subclass }	
F25D 2327/001	.	Lighting arrangements on the external side of the refrigerator, freezer or cooling box
F25D 2331/00	{ Details or arrangements of other cooling or freezing apparatus not provided for in other groups of this subclass }	
F25D 2331/80	.	Type of cooled receptacles
F25D 2331/801	..	Bags
F25D 2331/8011	...	to be carried on the back of a person
F25D 2331/8012	...	for cosmetics
F25D 2331/8013	...	for playing golf
F25D 2331/8014	...	for medical use
F25D 2331/8015	...	Pouches
F25D 2331/802	..	Barrels
F25D 2331/803	..	Bottles
F25D 2331/804	..	Boxes
F25D 2331/8041	...	for drinking

F25D 2331/805	..	Cans
F25D 2331/8051	...	for holding milk
F25D 2331/806	..	Dispensers
F25D 2331/807	..	Eggs
F25D 2331/808	..	Glasses
F25D 2331/809	..	Holders
F25D 2331/81	..	Pitchers
F25D 2331/811	..	Pour-throughs
F25D 2331/812	..	Trays

F25D 2400/00 **General features of, or devices for refrigerators, cold rooms, ice-boxes, or for cooling or freezing apparatus not covered by any other subclass**

F25D 2400/02	.	Refrigerators including a heater
F25D 2400/04	.	Refrigerators with a horizontal mullion
F25D 2400/06	.	Refrigerators with a vertical mullion
F25D 2400/08	.	Refrigerator tables
F25D 2400/10	.	Refrigerator top-coolers
F25D 2400/12	.	Portable refrigerators
F25D 2400/14	.	Refrigerator multi units
F25D 2400/16	.	Convertible refrigerators
F25D 2400/18	.	Aesthetic features
F25D 2400/20	.	Carts specially adapted for transporting objects to be cooled
F25D 2400/22	.	Cleaning means for refrigerating devices
F25D 2400/24	.	Protection against refrigerant explosions
F25D 2400/26	.	Refrigerating devices for cooling wearing apparel, e.g. garments, hats, shoes or gloves.
F25D 2400/28	.	Quick cooling
F25D 2400/30	.	Quick freezing
F25D 2400/32	.	Removal, transportation or shipping of refrigerating devices from one location to another
F25D 2400/34	.	Temperature balancing devices

F25D 2400/36	. Visual displays
F25D 2400/361	. . Interactive visual displays
F25D 2400/38	. Refrigerating devices characterised by wheels
F25D 2400/40	. Refrigerating devices characterised by electrical wiring
F25D 2500/00	Problems to be solved
F25D 2500/02	. Geometry problems
F25D 2500/04	. Calculation of parameters
F25D 2500/06	. Stock management
F25D 2600/00	Control issues
F25D 2600/02	. Timing
F25D 2600/04	. Controlling heat transfer
F25D 2600/06	. Controlling according to a predetermined profile
F25D 2700/00	Means for sensing or measuring; Sensors therefor
F25D 2700/02	. Sensors detecting door opening
F25D 2700/04	. Sensors detecting the presence of a person
F25D 2700/06	. Sensors detecting the presence of a product
F25D 2700/08	. Sensors using Radio Frequency Identification (RFID)
F25D 2700/10	. Sensors measuring the temperature of the evaporator
F25D 2700/12	. Sensors measuring the inside temperature
F25D 2700/121	. . of particular compartments
F25D 2700/122	. . of freezer compartments
F25D 2700/123	. . more than one sensor measuring the inside air temperature in a compartment
F25D 2700/14	. Sensors measuring the temperature outside the refrigerator or freezer
F25D 2700/16	. Sensors measuring the temperature of products