

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

NOTES

1. In this subclass, the following term is used with the meaning indicated:
 - "device" means an enclosed space to be cooled; such devices being associated either with refrigerating machinery, e.g. in a refrigerator, or with other cold sources, e.g. in an ice-box.
2. Attention is drawn to Note (2) following the title of subclass [F24F](#).

Devices not associated with refrigerating machinery

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| 1/00 1/02 3/00 3/005 3/02 3/04 3/045 3/06 3/08 3/10 3/102 3/105 3/107 3/11 3/12 3/122 3/125 3/127 3/14 5/00 5/02 7/00 9/00 9/005 | Devices using naturally cold air or cold water . using naturally cold water, e.g. household tap water Devices using other cold materials; Devices using cold-storage bodies . {combined with heat exchangers} . using ice, e.g. ice-boxes . . Stationary cabinets . . . {Details} . . Movable containers . . . portable, i.e. adapted to be carried personally . using liquefied gases, e.g. liquid air {for cooling semiconductor devices H01L 23/445 } . . {Stationary cabinets} . . {Movable containers} . . {portable, i.e. adapted to be carried personally} . . with conveyors carrying articles to be cooled through the cooling space . using solidified gases, e.g. carbon-dioxide snow . . {Stationary cabinets} . . {Movable containers} . . {Stationary devices with conveyors carrying articles to be cooled through the cooling space} . . portable, i.e. adapted to be carried personally Devices using endothermic chemical reactions, e.g. using frigorific mixtures . portable, i.e. adapted to be carried personally Devices using evaporation effects without recovery of the vapour (butter or cheese dishes with cooling devices A47G 19/26) Devices not covered by groups F25D 1/00 - F25D 7/00; Combinations of devices covered by two or more of the groups F25D 1/00 - F25D 7/00 . {using fluorinated halogenous hydrocarbons} |
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Devices associated with refrigerating machinery

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| 11/00 11/003 11/006 11/02 11/022 11/025 11/027 11/04 13/00 13/02 13/04 13/06 13/062 13/065 13/067 15/00 16/00 | Self-contained movable devices, e.g. domestic refrigerator . {Transport containers} . {with cold storage accumulators} . with cooling compartments at different temperatures . . {with two or more evaporators} . . {using primary and secondary refrigeration systems} . . {of the sorption cycle type} . specially adapted for storing deep-frozen articles (F25D 11/02 takes precedence) Stationary devices, e.g. cold-rooms . with several cooling compartments, e.g. refrigerated locker systems . . the compartments being at different temperatures . with conveyors carrying articles to be cooled through the cooling space . . {with refrigerated conveyors} . . {Articles being submerged in liquid coolant} . . {with circulation of gaseous cooling fluid} Devices not covered by group F25D 11/00 or F25D 13/00, e.g. non-self-contained movable devices Devices using a combination of a cooling mode associated with refrigerating machinery with a cooling mode not associated with refrigerating machinery |
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Details or features of the devices covered by groups [F25D 1/00 - F25D 16/00](#)

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| 17/00 17/005 17/02 17/04 | Arrangements for circulating cooling fluids; Arrangements for circulating gas, e.g. air, within refrigerated spaces . {in cold rooms} . for circulating liquids, e.g. brine . for circulating air, e.g. by convection |
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| 17/042 | . . {Air treating means within refrigerated spaces (air conditioning in general F24F)} | 23/068 | . . . {Arrangements for circulating fluids through the insulating material} |
| 17/045 | . . . {Air flow control arrangements} | 23/069 | . . {Cooling space dividing partitions} |
| 17/047 | . . . {Pressure equalising devices} | 23/08 | . Parts formed wholly or mainly of plastics materials |
| 17/06 | . . by forced circulation | 23/082 | . . {Strips} |
| 17/062 | . . . {in household refrigerators} | NOTE | |
| 17/065 | {with compartments at different temperatures} | When a document describes both breaking and sealing strips it is classified in group F25D 23/082 only. | |
| 17/067 | . . . {Evaporator fan units} | | |
| 17/08 | . . . using ducts | | |
| 19/00 | Arrangement or mounting of refrigeration units with respect to devices {or objects to be refrigerated, e.g. infra-red detectors} | 23/085 | . . . {Breaking strips} |
| 19/003 | . {with respect to movable containers} | 23/087 | . . . {Sealing strips} |
| 19/006 | . {Thermal coupling structure or interface} | 23/10 | . Arrangements for mounting in particular locations, e.g. for built-in type, for corner type |
| 19/02 | . plug-in type | 23/12 | . Arrangements of compartments additional to cooling compartments; Combinations of refrigerators with other equipment, e.g. stove |
| 19/04 | . with more than one refrigeration unit | 23/123 | . . {Butter compartment} |
| 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) | 23/126 | . . {Water cooler} |
| 21/002 | . {Defroster control} | 25/00 | Charging, supporting, and discharging the articles to be cooled |
| 21/004 | . . {Control mechanisms (F25D 21/006 takes precedence)} | 25/005 | . {using containers} |
| 21/006 | . . {with electronic control circuits} | 25/02 | . by shelves |
| 21/008 | . . {by timer} | 25/021 | . . {combined with trays} |
| 21/02 | . Detecting the presence of frost or condensate | 25/022 | . . {Baskets} |
| 21/025 | . . {using air pressure differential detectors} | 25/024 | . . {Slidable shelves} |
| 21/04 | . Preventing the formation of frost or condensate | 25/025 | . . . {Drawers} |
| 21/06 | . Removing frost (defrosting cycles F25B 47/02) | 25/027 | . . {Rotatable shelves} |
| 21/065 | . . {by mechanical means} | 25/028 | . . {Cooled supporting means} |
| 21/08 | . . by electric heating | 25/04 | . by conveyors (in general B65G) |
| 21/10 | . . by spraying with fluid | 27/00 | Lighting arrangements (in general F21) |
| 21/12 | . . by hot-fluid circulating system separate from the refrigerant system | 27/005 | . {combined with control means} |
| 21/125 | . . . {the hot fluid being ambient air} | 29/00 | Arrangement or mounting of control or safety devices |
| 21/14 | . Collecting or removing condensed and defrost water; Drip trays | 29/001 | . {for cryogenic fluid systems} |
| 23/00 | General constructional features (F25D 21/00 takes precedence) | 29/003 | . {for movable devices} |
| 23/003 | . {for cooling refrigerating machinery} | 29/005 | . {Mounting of control devices} |
| 23/006 | . {for mounting refrigerating machinery components} | 29/006 | . {Safety devices} |
| 23/02 | . Doors; Covers (F25D 23/08 takes precedence {locks or fastenings E05B 65/0042 }) | 29/008 | . {Alarm devices} |
| 23/021 | . . {Sliding doors} | 31/00 | Other cooling or freezing apparatus |
| 23/023 | . . {Air curtain closures} | 31/001 | . {Plate freezers} |
| 23/025 | . . {Secondary closures} | 31/002 | . {Liquid coolers, e.g. beverage cooler (receptacle coolers F25D 31/006)} |
| 23/026 | . . {for open-top cabinets} | 31/003 | . . {with immersed cooling element} |
| 23/028 | . . {Details} | 31/005 | . {Combined cooling and heating devices} |
| 23/04 | . . with special compartments, e.g. butter conditioners | 31/006 | . {specially adapted for cooling receptacles, e.g. tanks} |
| 23/06 | . Walls (F25D 23/08 takes precedence; containers with thermal insulation B65D 81/38) | 31/007 | . . {Bottles or cans} |
| 23/061 | . . {with conduit means} | 31/008 | . . {Drinking glasses} |
| 23/062 | . . {defining a cabinet} | | |
| 23/063 | . . . {formed by an assembly of panels} | 2201/00 | Insulation |
| 23/064 | . . . {formed by moulding, e.g. moulding in situ } | 2201/10 | . with respect to heat |
| 23/065 | . . {Details} | 2201/12 | . . using an insulating packing material |
| 23/066 | . . . {Liners} | 2201/122 | . . . of loose fill type |
| 23/067 | . . . {Supporting elements} | 2201/124 | . . . of fibrous type |
| | | 2201/126 | . . . of cellular type |
| | | 2201/1262 | with open cells |
| | | 2201/128 | . . . of foil type |

- 2201/1282 with reflective foils
- 2201/14 . . using subatmospheric pressure
- 2201/30 . . with respect to sound
- 2300/00** **Special arrangements or features for refrigerators; cold rooms; ice-boxes; Cooling or freezing apparatus not covered by any other subclass**
- 2303/00** **{Details of devices using other cold materials; Details of devices using cold-storage bodies}**
- 2303/08 . . Devices using cold storage material, i.e. ice or other freezable liquid
- 2303/081 . . using ice cubes or crushed ice
- 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
- 2303/0821 . . . the element placed in a compartment which can be opened without the need of opening the container itself
- 2303/0822 . . . Details of the element
- 2303/08221 Fasteners or fixing means for the element
- 2303/08222 Shape of the element
- 2303/08223 having the shape of an ice cube
- 2303/083 . . using cold storage material disposed in closed wall forming part of a container for products to be cooled
- 2303/0831 . . . the liquid is disposed in the space between the walls of the container
- 2303/0832 . . . the liquid is disposed in an accumulator pack locked in a closable wall forming part of the container
- 2303/084 . . Position of the cold storage material in relationship to a product to be cooled
- 2303/0841 . . . external to the container for a beverage, e.g. a bottle, can, drinking glass or pitcher
- 2303/0842 . . . inside the beverage contained in a bottle, can, drinking glass, pitcher or dispenser
- 2303/0843 . . . on the side of the product
- 2303/0844 . . . above the product
- 2303/0845 . . . below the product
- 2303/0846 . . . around the neck of a bottle
- 2303/085 . . Compositions of cold storage materials
- 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}**
- 2317/04 . . Treating air flowing to refrigeration compartments
- 2317/041 . . by purification
- 2317/0411 . . . by dehumidification
- 2317/04111 Control means therefor
- 2317/0413 . . . by humidification
- 2317/04131 Control means therefor
- 2317/0415 . . . by deodorizing
- 2317/0416 . . . using an ozone generator
- 2317/0417 . . . using an UV-lamp
- 2317/043 . . by creating a vacuum in a storage compartment
- 2317/06 . . with forced air circulation
- 2317/061 . . through special compartments
- 2317/062 . . along the inside of doors
- 2317/063 . . with air guides
- 2317/065 . . characterised by the air return
- 2317/0651 . . . through the bottom
- 2317/0652 . . . through the corner
- 2317/0653 . . . through the mullion
- 2317/0654 . . . through the side
- 2317/0655 . . . through the top
- 2317/066 . . characterised by the air supply
- 2317/0661 . . . from the bottom
- 2317/0662 . . . from the corner
- 2317/0663 . . . from the mullion
- 2317/0664 . . . from the side
- 2317/0665 . . . from the top
- 2317/0666 . . . from the freezer
- 2317/0667 . . . from the refrigerator
- 2317/067 . . characterised by air ducts
- 2317/0671 . . . Inlet ducts
- 2317/0672 . . . Outlet ducts
- 2317/068 . . characterised by the fans
- 2317/0681 . . . Details thereof
- 2317/0682 . . . Two or more fans
- 2317/0683 . . . the fans not of the axial type
- 2317/0684 . . . the fans allowing rotation in reverse direction
- 2321/00** **{Details or arrangements for defrosting; Preventing frosting; Removing condensed or defrost water, not provided for in other groups of this subclass}**
- 2321/14 . . Collecting condense or defrost water; Removing condense or defrost water
- 2321/141 . . Removal by evaporation
- 2321/1411 . . . using compressor heat
- 2321/1412 . . . using condenser heat or heat of desuperheaters
- 2321/1413 . . . using heat from electric elements or using an electric field for enhancing removal
- 2321/142 . . characterised by droplet guides
- 2321/143 . . characterised by means to fix, clamp, or connect water pipes or evaporation trays
- 2321/144 . . characterised by the construction of drip water collection pans
- 2321/1441 . . . inside a refrigerator
- 2321/1442 . . . outside a refrigerator
- 2321/145 . . characterised by multiple collecting pans
- 2321/146 . . characterised by the pipes or pipe connections
- 2321/147 . . characterised by capillary, wick, adsorbent, or evaporation elements
- 2323/00** **{General constructional features not provided for in other groups of this subclass}**
- 2323/0011 . . Means for leveling refrigerators
- 2323/002 . . Details for cooling refrigerating machinery
- 2323/0021 . . using air guides
- 2323/0022 . . using multiple air flows
- 2323/0023 . . Control of the air flow cooling refrigerating machinery
- 2323/0024 . . Filters in the air flow cooling refrigerating machinery
- 2323/0026 . . characterised by the incoming air flow
- 2323/00261 . . . through the back bottom side
- 2323/00262 . . . through the back top side
- 2323/00263 . . . through the back corner side
- 2323/00264 . . . through the front bottom part
- 2323/00265 . . . through the front top part
- 2323/00266 . . . through the bottom
- 2323/00267 . . . through the side
- 2323/00268 . . . through the top
- 2323/0027 . . characterised by the out-flowing air

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| 2323/00271 | . . . from the back bottom | 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 |
| 2323/00272 | . . . from the back top | 2400/02 | . Refrigerators including a heater |
| 2323/00273 | . . . from the back corner | 2400/04 | . Refrigerators with a horizontal mullion |
| 2323/00274 | . . . from the front bottom | 2400/06 | . Refrigerators with a vertical mullion |
| 2323/00275 | . . . from the front top | 2400/08 | . Refrigerator tables |
| 2323/00276 | . . . from the bottom | 2400/10 | . Refrigerator top-coolers |
| 2323/00277 | . . . from the side | 2400/12 | . Portable refrigerators |
| 2323/00278 | . . . from the top | 2400/14 | . Refrigerator multi units |
| 2323/0028 | . . characterised by the fans | 2400/16 | . Convertible refrigerators |
| 2323/00281 | . . . Two or more fans | 2400/18 | . Aesthetic features |
| 2323/00282 | . . . the fans not of the axial type | 2400/20 | . Carts specially adapted for transporting objects to be cooled |
| 2323/00283 | . . . the fans allowing rotation in reverse direction | 2400/22 | . Cleaning means for refrigerating devices |
| 2323/00284 | . . . Details thereof | 2400/24 | . Protection against refrigerant explosions |
| 2323/02 | . Details of doors or covers not otherwise covered | 2400/26 | . Refrigerating devices for cooling wearing apparel, e.g. garments, hats, shoes or gloves |
| 2323/021 | . . French doors | 2400/28 | . Quick cooling |
| 2323/022 | . . Doors that can be pivoted either left-handed or right-handed | 2400/30 | . Quick freezing |
| 2323/023 | . . Door in door constructions | 2400/32 | . Removal, transportation or shipping of refrigerating devices from one location to another |
| 2323/024 | . . Door hinges | 2400/34 | . Temperature balancing devices |
| 2323/06 | . Details of walls not otherwise covered | 2400/36 | . Visual displays |
| 2323/061 | . . Collapsible walls | 2400/361 | . . Interactive visual displays |
| 2323/062 | . . Inflatable walls | 2400/38 | . Refrigerating devices characterised by wheels |
| 2323/121 | . the refrigerator is characterised by a water filter for the water/ice dispenser | 2400/40 | . Refrigerating devices characterised by electrical wiring |
| 2323/122 | . the refrigerator is characterised by a water tank for the water/ice dispenser | | |
| 2325/00 | {Charging, supporting or discharging the articles to be cooled, not provided for in other groups of this subclass} | 2500/00 | Problems to be solved |
| 2325/021 | . Shelves with several possible configurations | 2500/02 | . Geometry problems |
| 2325/022 | . Shelves made of glass or ceramic | 2500/04 | . Calculation of parameters |
| 2325/023 | . Shelves made of wires | 2500/06 | . Stock management |
| 2327/00 | {Lighting arrangements not provided for in other groups of this subclass} | 2600/00 | Control issues |
| 2327/001 | . Lighting arrangements on the external side of the refrigerator, freezer or cooling box | 2600/02 | . Timing |
| | | 2600/04 | . Controlling heat transfer |
| | | 2600/06 | . Controlling according to a predetermined profile |
| 2331/00 | {Details or arrangements of other cooling or freezing apparatus not provided for in other groups of this subclass} | 2700/00 | Means for sensing or measuring; Sensors therefor |
| 2331/80 | . Type of cooled receptacles | 2700/02 | . Sensors detecting door opening |
| 2331/801 | . . Bags | 2700/04 | . Sensors detecting the presence of a person |
| 2331/8011 | . . . to be carried on the back of a person | 2700/06 | . Sensors detecting the presence of a product |
| 2331/8012 | . . . for cosmetics | 2700/08 | . Sensors using Radio Frequency Identification [RFID] |
| 2331/8013 | . . . for playing golf | 2700/10 | . Sensors measuring the temperature of the evaporator |
| 2331/8014 | . . . for medical use | 2700/12 | . Sensors measuring the inside temperature |
| 2331/8015 | . . . Pouches | 2700/121 | . . of particular compartments |
| 2331/802 | . . Barrels | 2700/122 | . . of freezer compartments |
| 2331/803 | . . Bottles | 2700/123 | . . more than one sensor measuring the inside temperature in a compartment |
| 2331/804 | . . Boxes | 2700/14 | . Sensors measuring the temperature outside the refrigerator or freezer |
| 2331/8041 | . . . for drinking | 2700/16 | . Sensors measuring the temperature of products |
| 2331/805 | . . Cans | | |
| 2331/8051 | . . . for holding milk | | |
| 2331/806 | . . Dispensers | | |
| 2331/807 | . . Eggs | | |
| 2331/808 | . . Glasses | | |
| 2331/809 | . . Holders | | |
| 2331/81 | . . Pitchers | | |
| 2331/811 | . . Pour-throughs | | |
| 2331/812 | . . Trays | | |