

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

### Devices associated with refrigerating machinery

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

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

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|--------------|--|
| <b>17/00</b> | <b>Arrangements for circulating cooling fluids; Arrangements for circulating gas, e.g. air, within refrigerated spaces</b> |
| 17/005       | • {in cold rooms}  |
| 17/02        | • for circulating liquids, e.g. brine  |
| 17/04        | • for circulating air, e.g. by convection  |

17/042	. . {Air treating means within refrigerated spaces (air conditioning in general <a href="#">F24F</a> )}	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}	<b>NOTE</b>	
17/065	. . . . {with compartments at different temperatures}	When a document describes both breaking and sealing strips it is classified in group <a href="#">F25D 23/082</a> only.	
17/067	. . . {Evaporator fan units}		
17/08	. . . using ducts		
<b>19/00</b>	<b>Arrangement or mounting of refrigeration units with respect to devices {or objects to be refrigerated, e.g. infra-red detectors}</b>	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}
<b>21/00</b>	<b>Defrosting; Preventing frosting; Removing condensed or defrost water (removing ice or water from heat-exchange apparatus in general <a href="#">F28F 17/00</a>; heating arrangements specially adapted for transparent or reflecting areas <a href="#">H05B 3/84</a>)</b>	23/126	. . {Water cooler}
21/002	. {Defroster control}	<b>25/00</b>	<b>Charging, supporting, and discharging the articles to be cooled</b>
21/004	. . {Control mechanisms ( <a href="#">F25D 21/006</a> 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 ( <a href="#">defrosting cycles F25B 47/02</a> )	25/027	. . {Rotatable shelves}
21/065	. . {by mechanical means}	25/028	. . {Cooled supporting means}
21/08	. . by electric heating	25/04	. by conveyors ( <a href="#">in general B65G</a> )
21/10	. . by spraying with fluid	<b>27/00</b>	<b>Lighting arrangements (<a href="#">in general F21</a>)</b>
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}	<b>29/00</b>	<b>Arrangement or mounting of control or safety devices</b>
21/14	. Collecting or removing condensed and defrost water; Drip trays	29/001	. {for cryogenic fluid systems}
<b>23/00</b>	<b>General constructional features (<a href="#">F25D 21/00</a> takes precedence)</b>	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 ( <a href="#">F25D 23/08</a> takes precedence {locks or fastenings <a href="#">E05B 65/0042</a> })	29/008	. {Alarm devices}
23/021	. . {Sliding doors}	<b>31/00</b>	<b>Other cooling or freezing apparatus</b>
23/023	. . {Air curtain closures}	31/001	. {Plate freezers}
23/025	. . {Secondary closures}	31/002	. {Liquid coolers, e.g. beverage cooler ( <a href="#">receptacle coolers F25D 31/006</a> )}
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 ( <a href="#">F25D 23/08</a> takes precedence; containers with thermal insulation <a href="#">B65D 81/38</a> )	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}	<b>2201/00</b>	<b>Insulation</b>
23/064	. . . {formed by moulding, e.g. moulding <a href="#">in situ</a> }	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

2323/00271	. . . from the back bottom	<b>2400/00</b>	<b>General features of, or devices for refrigerators, cold rooms, ice-boxes, or for cooling or freezing apparatus not covered by any other subclass</b>
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		
<b>2325/00</b>	<b>{Charging, supporting or discharging the articles to be cooled, not provided for in other groups of this subclass}</b>	<b>2500/00</b>	<b>Problems to be solved</b>
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
<b>2327/00</b>	<b>{Lighting arrangements not provided for in other groups of this subclass}</b>	<b>2600/00</b>	<b>Control issues</b>
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
<b>2331/00</b>	<b>{Details or arrangements of other cooling or freezing apparatus not provided for in other groups of this subclass}</b>	<b>2700/00</b>	<b>Means for sensing or measuring; Sensors therefor</b>
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		