

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:	<u>Details or features of the devices covered by groups F25D 1/00 to F25D 16/00</u>
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}

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