

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](#).

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}
	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
	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

[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

- 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

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

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

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**
- 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

F25D 2327/001 . Lighting arrangements on the external side of the refrigerator, freezer or cooling box

F25D 2331/00

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