CPC COOPERATIVE PATENT CLASSIFICATION

F MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING
(NOTE omitted)

LIGHTING; HEATING

F24 HEATING; RANGES; VENTILATING
(NOTE omitted)

F24F AIR-CONDITIONING; AIR-HUMIDIFICATION; VENTILATION; USE OF AIR CURRENTS FOR SCREENING (removing dirt or fumes from areas where they are produced B08B 15/00; vertical ducts for carrying away waste gases from buildings E04F 17/02; tops for chimneys or ventilating shafts, terminals for flues F23L 17/02)

NOTES
1. In this subclass:
   • air-humidification as auxiliary treatment in air-conditioning, i.e. in units wherein the air is also either cooled or heated, is covered by groups F24F 1/00 or F24F 3/14;
   • air-humidification per se, e.g. "room humidifiers", is covered by group F24F 6/00.
2. In this subclass, the following terms or expressions are used with the meanings indicated:
   • "air-conditioning" means the supply of air to or the treatment of air in rooms or spaces by means of cooling or a combination of cooling and a further kind of air treatment, e.g. humidification, heating or air purification;
   • "ventilation" means the supply of air to, or its extraction from, rooms or spaces, and systems for circulating air within rooms or spaces, but does not cover the mere treatment of air being supplied to, extracted from, or circulated within, rooms or spaces.
3. In this subclass, control or safety arrangements are classified in F24F 11/00. In order to indicate the type of air-treatment system in which these arrangements are used, further classification may be made in main groups F24F 1/00 - F24F 9/00.

WARNING
In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the scheme.

1/00 Room units for air-conditioning, e.g. separate or self-contained units or units receiving primary air from a central station
1/0003 . characterised by a split arrangement, wherein parts of the air-conditioning system, e.g. evaporator and condenser, are in separately located units
1/0007 . Indoor units, e.g. fan coil units (self-contained units F24F 1/02)

WARNING

1/00073 . . [comprising a compressor in the indoor unit housing]

WARNING
Group F24F 1/00073 is incomplete pending reclassification of documents from group F24F 1/0007.
Groups F24F 1/0007 and F24F 1/00073 should be considered in order to perform a complete search.

1/00075 . . [receiving air from a central station]

WARNING
Group F24F 1/00075 is incomplete pending reclassification of documents from group F24F 1/0007.
Groups F24F 1/0007 and F24F 1/00075 should be considered in order to perform a complete search.
1/0077 . . [receiving heat exchange fluid entering and leaving the unit as a liquid]

**WARNING**

Group F24F 1/00077 is incomplete pending reclassification of documents from group F24F 1/0007.

Groups F24F 1/0007 and F24F 1/00077 should be considered in order to perform a complete search.

1/0011 . . characterised by air outlets
1/0014 . . having two or more outlet openings
1/0018 . . characterised by fans (with secondary air induced by injector action of the primary air F24F 1/01)
1/0022 . . Centrifugal or radial fans
1/0025 . . Cross-flow or tangential fans
1/0029 . . Axial fans
1/0033 . . having two or more fans
1/0035 . . characterised by introduction of outside air to the room

**WARNING**

Group F24F 1/0035 is incomplete pending reclassification of documents from group F24F 1/0007. Group F24F 1/0035 is also impacted by reclassification into group F24F 1/0038.

Groups F24F 1/0035, F24F 1/0007 and F24F 1/0038 should be considered in order to perform a complete search.

1/0038 . . in combination with simultaneous exhaustion of inside air

**WARNING**

Group F24F 1/0038 is incomplete pending reclassification of documents from groups F24F 1/0007, F24F 1/0035 and F24F 1/0041.

All groups listed in this Warning should be considered in order to perform a complete search.

1/0043 . . characterised by mounting arrangements

**WARNING**

Group F24F 1/0043 is incomplete pending reclassification of documents from group F24F 1/0007.

Groups F24F 1/0007 and F24F 1/0043 should be considered in order to perform a complete search.

1/0047 . . mounted in the ceiling or at the ceiling

**WARNING**

Group F24F 1/0047 is incomplete pending reclassification of documents from group F24F 1/0007.

Groups F24F 1/0007 and F24F 1/0047 should be considered in order to perform a complete search.

1/005 . . mounted on the floor; standing on the floor

**WARNING**

Group F24F 1/005 is incomplete pending reclassification of documents from group F24F 1/0007.

Groups F24F 1/0007 and F24F 1/005 should be considered in order to perform a complete search.

1/0053 . . mounted at least partially below the floor; with air distribution below the floor

**WARNING**

Group F24F 1/0053 is incomplete pending reclassification of documents from group F24F 1/0007.

Groups F24F 1/0007 and F24F 1/0053 should be considered in order to perform a complete search.

1/0057 . . mounted in or on a wall

**WARNING**

Group F24F 1/0057 is incomplete pending reclassification of documents from group F24F 1/0007.

Groups F24F 1/0007 and F24F 1/0057 should be considered in order to perform a complete search.

1/0059 . . characterised by heat exchangers

**WARNING**

Group F24F 1/0059 is incomplete pending reclassification of documents from group F24F 1/0007.

Groups F24F 1/0059 is also impacted by reclassification into groups F24F 1/0063, F24F 1/0067, F24F 1/0068, F24F 1/032, F24F 1/0323, F24F 1/0325 and F24F 1/0326.

All groups listed in this Warning should be considered in order to perform a complete search.
by the mounting or arrangement of the heat exchangers

WARNING

Group F24F 1/0063 is incomplete pending reclassification of documents from groups F24F 1/0007 and F24F 1/0059.

Groups F24F 1/0007, F24F 1/0059 and F24F 1/0063 should be considered in order to perform a complete search.

by the shape of the heat exchangers or of parts thereof, e.g. of their fins

WARNING

Group F24F 1/0067 is incomplete pending reclassification of documents from groups F24F 1/0007 and F24F 1/0059.

Groups F24F 1/0007, F24F 1/0059 and F24F 1/0067 should be considered in order to perform a complete search.

characterised by the arrangement of refrigerant piping outside the heat exchanger within the unit casing

WARNING

Group F24F 1/0068 is incomplete pending reclassification of documents from groups F24F 1/0007 and F24F 1/0059.

Groups F24F 1/0007, F24F 1/0059 and F24F 1/0068 should be considered in order to perform a complete search.

with means for purifying supplied air (perfuming or deodorising means F24F 1/008)

WARNING

Group F24F 1/0071 is incomplete pending reclassification of documents from group F24F 1/0007.

Group F24F 1/0071 is also impacted by reclassification into groups F24F 1/0007, F24F 1/0038, F24F 1/0035 and F24F 1/0053.

All groups listed in this Warning should be considered in order to perform a complete search.

characterised by the mounting or arrangement of filters

WARNING

Group F24F 1/0073 is incomplete pending reclassification of documents from groups F24F 1/0007 and F24F 1/0071.

Groups F24F 1/0007, F24F 1/0071 and F24F 1/0073 should be considered in order to perform a complete search.

by electric means, e.g. ionisers or electrostatic separators

WARNING

Group F24F 1/0076 is incomplete pending reclassification of documents from groups F24F 1/0007 and F24F 1/0071.

Groups F24F 1/0007, F24F 1/0071 and F24F 1/0076 should be considered in order to perform a complete search.

with perfuming or deodorising means

WARNING

Group F24F 1/008 is incomplete pending reclassification of documents from group F24F 1/0007.

Groups F24F 1/0007 and F24F 1/008 should be considered in order to perform a complete search.

with dehumidification means

WARNING

Group F24F 1/0083 is incomplete pending reclassification of documents from group F24F 1/0007.

Groups F24F 1/0007 and F24F 1/0083 should be considered in order to perform a complete search.

with humidification means

WARNING

Group F24F 1/0087 is incomplete pending reclassification of documents from group F24F 1/0007.

Groups F24F 1/0007 and F24F 1/0087 should be considered in order to perform a complete search.

characterised by heating arrangements (characterised by heat exchangers F24F 1/0059)

WARNING

Group F24F 1/009 is incomplete pending reclassification of documents from group F24F 1/0007.

Groups F24F 1/0007 and F24F 1/009 should be considered in order to perform a complete search.

with additional radiant heat-discharging elements, e.g. electric heaters

WARNING

Group F24F 1/0093 is incomplete pending reclassification of documents from group F24F 1/0007.

Groups F24F 1/0007 and F24F 1/0093 should be considered in order to perform a complete search.
using thermoelectric or thermomagnetic means, e.g. Peltier elements

**WARNING**

Group F24F 1/0097 is incomplete pending reclassification of documents from group F24F 1/0007.
Groups F24F 1/0007 and F24F 1/0097 should be considered in order to perform a complete search.

Self-contained room units for air-conditioning, i.e. with all apparatus for treatment installed in a common casing

**WARNING**


All groups listed in this Warning should be considered in order to perform a complete search.

comprising a compressor cycle

**WARNING**

Group F24F 1/02 is incomplete pending reclassification of documents from group F24F 1/02.
Groups F24F 1/02 and F24F 1/028 should be considered in order to perform a complete search.

mounted in wall openings, e.g. in windows

**WARNING**

Group F24F 1/028 is incomplete pending reclassification of documents from group F24F 1/02.
Groups F24F 1/02 and F24F 1/028 should be considered in order to perform a complete search.

characterised by air supply means, e.g. fan casings, internal dampers or ducts (with secondary air induced by injector action of the primary air F24F 1/01)

**WARNING**

Group F24F 1/028 is incomplete pending reclassification of documents from group F24F 1/02.
Groups F24F 1/02 and F24F 1/028 should be considered in order to perform a complete search.

mounted on a wall

**WARNING**

Group F24F 1/0284 is incomplete pending reclassification of documents from group F24F 1/02.
Groups F24F 1/02 and F24F 1/0284 should be considered in order to perform a complete search.

with horizontally arranged fan axis

**WARNING**

Group F24F 1/0287 is incomplete pending reclassification of documents from group F24F 1/02.
Groups F24F 1/02 and F24F 1/0287 should be considered in order to perform a complete search.

with vertically arranged fan axis

**WARNING**

Group F24F 1/0287 is incomplete pending reclassification of documents from group F24F 1/02.
Groups F24F 1/02 and F24F 1/0287 should be considered in order to perform a complete search.

characterised by the layout or mutual arrangement of components, e.g. of compressors or fans

**WARNING**

Group F24F 1/029 is incomplete pending reclassification of documents from group F24F 1/02.
Groups F24F 1/02 and F24F 1/029 should be considered in order to perform a complete search.

characterised by mounting arrangements

**WARNING**

Group F24F 1/031 is incomplete pending reclassification of documents from group F24F 1/02.
Groups F24F 1/02 and F24F 1/031 should be considered in order to perform a complete search.

penetrating a wall or window

**WARNING**

Group F24F 1/0314 is incomplete pending reclassification of documents from group F24F 1/02.
Groups F24F 1/02 and F24F 1/0314 should be considered in order to perform a complete search.

suspended from the ceiling

**WARNING**

Group F24F 1/0317 is incomplete pending reclassification of documents from group F24F 1/02.
Groups F24F 1/02 and F24F 1/0317 should be considered in order to perform a complete search.

characterised by heat exchangers

**WARNING**

Group F24F 1/032 is incomplete pending reclassification of documents from groups F24F 1/0007, F24F 1/0059 and F24F 1/02.
All groups listed in this Warning should be considered in order to perform a complete search.
by the mounting or arrangement of the heat exchangers

**WARNING**

Group **F24F 1/0323** is incomplete pending reclassification of documents from groups F24F 1/0007, F24F 1/0059 and F24F 1/02.

All groups listed in this Warning should be considered in order to perform a complete search.

by the shape of the heat exchangers or of parts thereof, e.g. of their fins

**WARNING**

Group **F24F 1/0325** is incomplete pending reclassification of documents from groups F24F 1/0007, F24F 1/0059 and F24F 1/02.

All groups listed in this Warning should be considered in order to perform a complete search.

classified by the arrangement of refrigerant piping outside the heat exchanger within the unit casing

**WARNING**

Group **F24F 1/0326** is incomplete pending reclassification of documents from groups F24F 1/0007, F24F 1/0059 and F24F 1/02.

All groups listed in this Warning should be considered in order to perform a complete search.

with means for purifying supplied air (perfuming or deodorising means **F24F 1/0355**)

**WARNING**

Group **F24F 1/0328** is incomplete pending reclassification of documents from groups F24F 1/0007, F24F 1/0059 and F24F 1/02.

All groups listed in this Warning should be considered in order to perform a complete search.

characterised by the mounting or arrangement of filters

**WARNING**

Group **F24F 1/0335** is incomplete pending reclassification of documents from groups F24F 1/0007, F24F 1/0071 and F24F 1/02.

All groups listed in this Warning should be considered in order to perform a complete search.

by electric means, e.g. ionisers or electrostatic separators

**WARNING**

Group **F24F 1/0333** is incomplete pending reclassification of documents from groups F24F 1/0007, F24F 1/0071 and F24F 1/02.

All groups listed in this Warning should be considered in order to perform a complete search.

with perfuming or deodorising means

**WARNING**

Group **F24F 1/0335** is incomplete pending reclassification of documents from group F24F 1/02.

Groups **F24F 1/02** and **F24F 1/0355** should be considered in order to perform a complete search.

with dehumidification means

**WARNING**

Group **F24F 1/0340** is incomplete pending reclassification of documents from group F24F 1/02.

Groups **F24F 1/02** and **F24F 1/0358** should be considered in order to perform a complete search.

with humidification means

**WARNING**

Group **F24F 1/037** is incomplete pending reclassification of documents from groups F24F 1/0007 and F24F 1/02.

Groups **F24F 1/0007** and **F24F 1/02** and **F24F 1/037** should be considered in order to perform a complete search.

characterised by heating arrangements (characterised by heat exchangers **F24F 1/0323**)

**WARNING**

Group **F24F 1/0373** is incomplete pending reclassification of documents from group F24F 1/02.

Groups **F24F 1/02** and **F24F 1/0373** should be considered in order to perform a complete search.

with additional radiant heat-discharging elements, e.g. electric heaters

**WARNING**

Group **F24F 1/0375** is incomplete pending reclassification of documents from group F24F 1/02.

Groups **F24F 1/02** and **F24F 1/0375** should be considered in order to perform a complete search.

using thermoelectric or thermomagnetic means, e.g. Peltier elements

**WARNING**

Group **F24F 1/0378** is incomplete pending reclassification of documents from group F24F 1/02.

Groups **F24F 1/02** and **F24F 1/0378** should be considered in order to perform a complete search.
NOTE

In this group, the first place priority rule is applied, i.e. at each hierarchical level, in the absence of an indication to the contrary, classification is made in the first appropriate place.

1/08 . . . Compressors specially adapted for separate outdoor units
1/10 . . . Arrangement or mounting thereof
1/12 . . . Vibration or noise prevention thereof
1/14 . . . Heat exchangers specially adapted for separate outdoor units
1/16 . . . Arrangement or mounting thereof
1/18 . . . characterised by their shape
1/20 . . . Electric components for separate outdoor units
1/22 . . . Arrangement or mounting thereof
1/24 . . . Cooling of electric components
1/26 . . . Refrigerant piping
1/28 . . . for connecting several separate outdoor units
1/30 . . . for use inside the separate outdoor units
1/32 . . . for connecting the separate outdoor units to indoor units
1/34 . . . Protection means thereof, e.g. covers for refrigerant pipes
1/36 . . . Drip trays for outdoor units
1/38 . . . Fan details of outdoor units, e.g. bell-mouth shaped inlets or fan mountings
1/40 . . . Vibration or noise prevention at outdoor units (for outdoor units compressors F24F 1/12)
1/42 . . . characterised by the use of the condensate, e.g. for enhanced cooling
1/44 . . . characterised by the use of internal combustion engines
1/46 . . . Component arrangements in separate outdoor units
1/48 . . . characterised by air airflow, e.g. inlet or outlet airflow
1/50 . . . with outlet air in upward direction
1/52 . . . with inlet and outlet arranged on the same side, e.g. for mounting in a wall opening
1/54 . . . Inlet and outlet arranged on opposite sides
1/56 . . . Casing or covers of separate outdoor units, e.g. fan guards
1/58 . . . Separate protective covers for outdoor units, e.g. solar guards, snow shields or camouflage
1/60 . . . Arrangement or mounting of the outdoor unit
1/62 . . . Wall-mounted

3/00 Air-conditioning systems in which conditioned primary air is supplied from one or more central stations to distributing units in the rooms or spaces where it may receive secondary treatment; Apparatus specially designed for such systems (room units F24F 1/00)

3/01 . . . (in which the air treatment in the central station takes place by means of a heat-pump or by means of a reversible cycle (regulation of heat-pump circuit in air treatment systems F25B 29/00; heat pumps F25B 13/00, F25B 29/00; reversible cycle for humidifying and drying air F24F 3/147))

2003/003 . . . (with primary air treatment in the central station and subsequent secondary air treatment in air treatment units located in or near the rooms)

2003/005 . . . (with a single air duct for transporting treated primary air from the central station to air treatment units located in or near the rooms)

2003/006 . . . (with two air ducts for separately transporting treated hot and cold primary air from the central station to air treatment units located in or near the rooms)

2003/008 . . . (Supplying highly filtered air to a room or to a limited area within a room)

3/02 . . . characterised by the pressure or velocity of the primary air

WARNING


Group F24F 3/02 is also impacted by reclassification into groups F24F 3/06 - F24F 3/10 and F24F 3/12 - F24F 2003/1696.

All groups listed in this Warning should be considered in order to perform a complete search.

3/04 . . . operating with high pressure or high velocity

WARNING


Group F24F 3/04 is also impacted by reclassification into groups F24F 3/06 - F24F 3/10 and F24F 3/12 - F24F 2003/1696.

All groups listed in this Warning should be considered in order to perform a complete search.

3/044 . . . Systems in which all treatment is given in the central station, i.e. all-air systems

WARNING

Group F24F 3/044 is impacted by reclassification into groups F24F 3/02 and F24F 3/04.

Groups F24F 3/044, F24F 3/02, and F24F 3/04 should be considered in order to perform a complete search.
3/0442 . . . (with volume control at a constant temperature)

**WARNING**

Group F24F 3/0442 is impacted by reclassification into groups F24F 3/02 and F24F 3/04.

Groups F24F 3/0442, F24F 3/02, and F24F 3/04 should be considered in order to perform a complete search.

3/0444 . . . (in which two airstreams are conducted from the central station via independent conduits to the space to be treated, of which one has a constant volume and a season-adapted temperature to compensate for the fluctuating heat transfer losses of the building, while the other varies in volume and is always cold in order to compensate for the interior fluctuations and variable solar heating effects, i.e. so-called “Dual Conduit System”; this system is similar to a high-pressure air-water system)

**WARNING**

Group F24F 3/0444 is impacted by reclassification into groups F24F 3/02 and F24F 3/04.

Groups F24F 3/0444, F24F 3/02, and F24F 3/04 should be considered in order to perform a complete search.

2003/0446 . . . (with a single air duct for transporting treated air from the central station to the rooms)

**WARNING**

Group F24F 2003/0446 is impacted by reclassification into groups F24F 3/02 and F24F 3/04.

Groups F24F 2003/0446, F24F 3/02, and F24F 3/04 should be considered in order to perform a complete search.

2003/0448 . . . (with two air ducts for separately transporting treated hot and cold air from the central station to the rooms)

**WARNING**

Groups F24F 2003/0448 is impacted by reclassification into groups F24F 3/02 and F24F 3/04.

Groups F24F 2003/0448, F24F 3/02, and F24F 3/04 should be considered in order to perform a complete search.

3/052 . . . Multiple duct systems, e.g. systems in which hot and cold air are supplied by separate circuits from the central station to mixing chambers in the spaces to be conditioned

**WARNING**

Group F24F 3/052 is incomplete pending reclassification of documents from group F24F 3/056.

Group F24F 3/052 is also impacted by reclassification into groups F24F 3/02 and F24F 3/04.

All groups listed in this Warning should be considered in order to perform a complete search.

3/0522 . . . (in which warm or cold air from the central station is delivered via individual pipes to mixing chambers in the space to be treated, the cold air/warm air ratio being controlled by a thermostat in the space concerned, i.e. so-called Dual-duct System)

**WARNING**

Group F24F 3/0522 is incomplete pending reclassification of documents from group F24F 3/056.

Group F24F 3/0522 is also impacted by reclassification into groups F24F 3/02 and F24F 3/04.

All groups listed in this Warning should be considered in order to perform a complete search.

3/0525 . . . (in which the air treated in the central station is reheated; this may take place near the central station upon arrival, in the space to be treated, in a branch pipe to zone in a multi-zone system or in the warm pipe in a system having separate supply conduits for warm and cold air)

**WARNING**

Group F24F 3/0525 is incomplete pending reclassification of documents from group F24F 3/056.

Group F24F 3/0525 is also impacted by reclassification into groups F24F 3/02 and F24F 3/04.

All groups listed in this Warning should be considered in order to perform a complete search.

3/048 . . . with temperature control at constant rate of airflow

**WARNING**

Group F24F 3/048 is incomplete pending reclassification of documents from group F24F 3/056.

Group F24F 3/048 is also impacted by reclassification into groups F24F 3/02 and F24F 3/04.

All groups listed in this Warning should be considered in order to perform a complete search.
{ in which treated air having differing temperatures is conducted through independent conduits from the central station to various spaces to be treated, i.e. so-called “multi-Zone” system; (F24F 3/0525 takes precedence) }

**WARNING**

Group F24F 3/0527 is incomplete pending reclassification of documents from group F24F 3/056.

Group F24F 3/0527 is also impacted by reclassification into groups F24F 3/02 and F24F 3/04.

All groups listed in this Warning should be considered in order to perform a complete search.

3/056 . . . the air at least partially flowing over lighting fixtures, the heat of which is dissipated or used (outlets for directing or distributing air into rooms or spaces combined with lighting fixtures F24F 13/078)

**WARNING**


All groups listed in this Warning should be considered in order to perform a complete search.

3/06 . . . characterised by the arrangements for the supply of heat-exchange fluid for the subsequent treatment of primary air in the room units

**WARNING**


Group F24F 3/06 is also impacted by reclassification into groups F24F 3/12 - F24F 2003/1696.

All groups listed in this Warning should be considered in order to perform a complete search.

3/08 . . . with separate supply and return lines for hot and cold heat-exchange fluids {i.e. so-called “4-conduit” system}

**WARNING**


Group F24F 3/08 is also impacted by reclassification into groups F24F 3/12 - F24F 2003/1696.

All groups listed in this Warning should be considered in order to perform a complete search.

3/10 . . . with separate supply lines and common return line for hot and cold heat-exchange fluids {i.e. so-called “3-conduit” system}

**WARNING**


Group F24F 3/10 is also impacted by reclassification into groups F24F 3/12 - F24F 2003/1696.

All groups listed in this Warning should be considered in order to perform a complete search.

3/12 . . . characterised by the treatment of the air otherwise than by heating and cooling

**WARNING**


All groups listed in this Warning should be considered in order to perform a complete search.

3/14 . . . by humidification; by dehumidification

**WARNING**


All groups listed in this Warning should be considered in order to perform a complete search.
[in which the humidity of the air is exclusively affected by contact with the evaporator of a closed-circuit cooling system or heat pump circuit]

**WARNING**


All groups listed in this Warning should be considered in order to perform a complete search.

(by absorbing or adsorbing water, e.g. using an hygroscopic desiccant)

**WARNING**


All groups listed in this Warning should be considered in order to perform a complete search.

(with liquid hygroscopic desiccants)

**WARNING**


All groups listed in this Warning should be considered in order to perform a complete search.

(with a moving bed of solid desiccants, e.g. a rotary wheel supporting solid desiccants)

**WARNING**


All groups listed in this Warning should be considered in order to perform a complete search.

[alternatively operating a heat exchanger in an absorbing/adsorbing mode and a heat exchanger in a regeneration mode]

**WARNING**


All groups listed in this Warning should be considered in order to perform a complete search.
2003/1464 . . . [using rotating regenerators]

**WARNING**

All groups listed in this Warning should be considered in order to perform a complete search.

3/147 . . . with both heat and humidity transfer between supplied and exhausted air

**WARNING**

All groups listed in this Warning should be considered in order to perform a complete search.

3/153 . . . with subsequent heating, i.e. with the air, given the required humidity in the central station, passing a heating element to achieve the required temperature

**WARNING**

All groups listed in this Warning should be considered in order to perform a complete search.

3/16 . . . by purification, e.g. by filtering; by sterilisation; by ozonisation [(ion sources H01J 27/02, H01J 37/08; treatment rooms or enclosures for medical purposes A61G 10/00)]

**WARNING**

All groups listed in this Warning should be considered in order to perform a complete search.

3/1603 . . . [by filtering (arrangements or mounting of filters F24F 13/28)]

**WARNING**

All groups listed in this Warning should be considered in order to perform a complete search.

3/1607 . . . [Clean air work stations, i.e. selected areas within a space to which filtered air is passed (means providing sterile air at a surgical operation table or area A61G 13/108)]

**WARNING**

All groups listed in this Warning should be considered in order to perform a complete search.

3/161 . . . [Clean rooms, i.e. enclosed spaces in which a uniform flow of filtered air is distributed (air distribution by perforated walls F24F 7/10; dust-free rooms or enclosures applicable solely to laboratory purposes B01L 1/04)]

**WARNING**

All groups listed in this Warning should be considered in order to perform a complete search.

2003/1614 . . . [using a dry filtering element]

**WARNING**

All groups listed in this Warning should be considered in order to perform a complete search.

2003/1617 . . . [using wet filtering methods]

**WARNING**

All groups listed in this Warning should be considered in order to perform a complete search.

2003/1621 . . . [using chemical filtering methods]

**WARNING**

All groups listed in this Warning should be considered in order to perform a complete search.
WARNING


All groups listed in this Warning should be considered in order to perform a complete search.

WARNING


All groups listed in this Warning should be considered in order to perform a complete search.

WARNING


All groups listed in this Warning should be considered in order to perform a complete search.

WARNING


All groups listed in this Warning should be considered in order to perform a complete search.

WARNING


All groups listed in this Warning should be considered in order to perform a complete search.

WARNING


All groups listed in this Warning should be considered in order to perform a complete search.

WARNING


All groups listed in this Warning should be considered in order to perform a complete search.

WARNING


All groups listed in this Warning should be considered in order to perform a complete search.

WARNING


All groups listed in this Warning should be considered in order to perform a complete search.

WARNING


All groups listed in this Warning should be considered in order to perform a complete search.
WARNING
All groups listed in this Warning should be considered in order to perform a complete search.

WARNING
All groups listed in this Warning should be considered in order to perform a complete search.

WARNING
All groups listed in this Warning should be considered in order to perform a complete search.

WARNING
All groups listed in this Warning should be considered in order to perform a complete search.

WARNING
All groups listed in this Warning should be considered in order to perform a complete search.

WARNING
All groups listed in this Warning should be considered in order to perform a complete search.

WARNING
All groups listed in this Warning should be considered in order to perform a complete search.

WARNING
All groups listed in this Warning should be considered in order to perform a complete search.

WARNING
All groups listed in this Warning should be considered in order to perform a complete search.
Air-conditioning systems or apparatus not covered by F24F 1/00 or F24F 3/00, e.g. using solar heat or combined with household units such as an oven or water heater

5/007 Cooling apparatus specially adapted for use in air-conditioning (self-contained room units F24F 1/02; F24F 5/0046 takes precedence; air-humidification F24F 6/00)

5/001 (Compression cycle type)

5/0046 [using natural energy, e.g. solar energy, energy from the ground]

5/005 [using energy from the ground by air circulation, e.g. “Canadian well”]

5/003 (Exclusively-fluid systems)

5/007 [cooling apparatus adapted for use in air-conditioning]

5/0017 [using cold storage bodies, e.g. ice]

5/0021 [using phase change material [PCM] for storage]

2005/0025 [using heat exchange fluid storage tanks]

2005/0028 [using hydridable metals as energy storage media]

2005/0032 [Systems storing energy during the night]

2005/0035 [using evaporation]

2005/0039 [using a cryogen, e.g. CO₂ liquid or N₂ liquid]

5/0042 [characterised by the application of thermo-electric units or the Peltier effect (refrigerators and cooling systems using magnetic or electrical effects in general F25B 21/02; for semi-conductors H01L 23/38; thermobatteries or thermogenerators H01L 35/00)]

5/0046 [using natural energy, e.g. solar energy, energy from the ground]

5/005 [using energy from the ground by air circulation, e.g. “Canadian well”]

2005/0053 [receiving heat-exchange fluid from a well]

2005/0057 [receiving heat-exchange fluid from a closed circuit in the ground]

2005/006 [receiving heat-exchange fluid from the drinking or sanitary water supply circuit]

2005/0064 [using solar energy]

2005/0067 [with photovoltaic panels]

5/0071 [adapted for use in covered swimming pools]

5/0075 [Systems using thermal walls, e.g. double window (double windows per se E06B)]

2005/0078 [Double windows]

2005/0082 [Facades]

5/0085 [Systems using a compressed air circuit (B64D 13/00; B66H take precedence)]

5/0089 [Systems using radiation from walls or panels]

5/0092 [ceilings, e.g. cool ceilings]

5/0096 [combined with domestic apparatus]

6/00 Air-humidification, e.g. cooling by humidification

2006/001 [using a water curtain]

2006/003 [using a decorative fountain]

2006/005 [using plants]

2006/006 [with water treatment]

2006/008 [Air-humidifier with water reservoir]

6/02 by evaporation of water in the air [humidifiers specially adapted for radiators see F24D 19/008]

6/025 [using electrical heating means (F24F 6/105 takes precedence)]

6/04 [using stationary unheated wet elements]

6/043 [with self-sucking action, e.g. wicks (humidifiers for radiators F24D 19/008)]

2006/046 [with a water pump]

6/06 [using moving unheated wet elements]
7/025  . . [with forced air circulation by means of a built-in ventilator]

**WARNING**
Group F24F 7/025 is incomplete pending reclassification of documents from groups F24F 7/007 and F24F 7/013.

Groups F24F 7/007, F24F 7/013, and F24F 7/025 should be considered in order to perform a complete search.

7/04  . . with ducting systems (also by double walls; with natural circulation (F24F 7/02 takes precedence))

7/06  . . with forced air circulation, e.g. by fan (positioning of a ventilator in or against a conduit)

7/065 . . . [fan combined with single duct; mounting arrangements of a fan in a duct]

7/08  . . . with separate ducts for supplied and exhausted air (with provisions for reversal of the input and output systems)

7/10  . . . with air supply, or exhaust, through perforated wall, floor or ceiling (outlet members for directing or distributing air [into rooms or spaces, e.g. ceiling air-diffusers] F24F 13/06)

9/00  **Use of air currents for screening, e.g. air curtains**

2009/0002 . . [Room dividers]
2009/0005 . . [combined with a door]
2009/0007 . . [using more than one jet or band in the air curtain]

11/00  **Control or safety arrangements**

**NOTE**
In this group, it is desirable to add the indexing codes of groups F24F 2110/00 – F24F 2140/00.

11/0001 . . [for ventilation (F24F 11/30 takes precedence)]
2011/0002 . . . [for admittance of outside air]
2011/0004 . . . . [to create overpressure in a room]
2011/0005 . . . . . [to create underpressure in a room, keeping contamination inside]
2011/0006 . . . . . . [using low temperature external supply air to assist cooling]
11/0008 . . . . [for air-humidification (F24F 11/30 takes precedence)]
11/30 . . . for purposes related to the operation of the system, e.g. for safety or monitoring

**WARNINGS**


   All groups listed in this Warning should be considered in order to perform a complete search.


   Groups F24F 11/30 and F24F 11/32 – F24F 11/49 should be considered in order to perform a complete search.

11/32 . . . Responding to malfunctions or emergencies
11/33 . . . . to fire, excessive heat or smoke
11/34 . . . . . . by opening air passages

11/35 . . . . . . by closing air passages
11/36 . . . . . to leakage of heat-exchange fluid
11/37 . . . . . Resuming operation, e.g. after power outages; Emergency starting
11/38 . . . . . Failure diagnosis
11/39 . . . . . Monitoring filter performance
11/41 . . . . . Defrosting; Preventing freezing
11/42 . . . . . of outdoor units
11/43 . . . . . . of indoor units
11/46 . . . . Improving electric energy efficiency or saving
11/47 . . . . . Responding to energy costs
11/48 . . . . . prior to normal operation, e.g. pre-heating or pre-cooling
11/49 . . . . . ensuring correct operation, e.g. by trial operation or configuration checks
11/50 . . . . . characterised by user interfaces or communication

**WARNING**


Groups F24F 11/50 – F24F 11/61 and F24F 11/30 should be considered in order to perform a complete search.

11/52 . . . Indication arrangements, e.g. displays
11/523 . . . . for displaying temperature data
11/526 . . . . . giving audible indications
11/54 . . . . . using one central controller connected to several sub-controllers
11/56 . . . . Remote control
11/57 . . . . . using telephone networks
11/58 . . . . . using Internet communication
11/59 . . . . . for presetting
11/61 . . . . . using timers
11/62 . . . . . characterised by the type of control or by internal processing, e.g. using fuzzy logic, adaptive control or estimation of values

**WARNING**


Groups F24F 11/62 – F24F 11/67 and F24F 11/30 should be considered in order to perform a complete search.

11/63 . . . . Electronic processing
11/64 . . . . . using pre-stored data
11/65 . . . . . . for selecting an operating mode

**WARNING**

Group F24F 11/65 is incomplete pending reclassification of documents from group F24F 11/30.

Group F24F 11/65 is also impacted by reclassification into group F24F 11/67.

All groups listed in this Warning should be considered in order to perform a complete search.

11/66 . . . . . Sleep mode
Switching between heating and cooling modes

**WARNING**


Groups F24F 11/30, F24F 11/65, and F24F 11/67 should be considered in order to perform a complete search.

Control systems characterised by their outputs; Constructional details thereof

**WARNING**


Group F24F 11/70 is also impacted by reclassification into groups F24F 11/80 – F24F 11/875.

All groups listed in this warning should be considered in order to perform a complete search.

for controlling the supply of treated air, e.g. its pressure

**WARNING**

Group F24F 11/74 is incomplete pending reclassification of documents from group F24F 11/30 and F24F 11/70.

Group F24F 11/74 is also impacted by reclassification into group F24F 11/755.

All groups listed in this warning should be considered in order to perform a complete search.

[the air flow rate increasing with an increase of air-current or wind pressure]

**WARNING**

Group F24F 11/74 is incomplete pending reclassification of documents from group F24F 11/30 and F24F 11/70.

Group F24F 11/74 is also impacted by reclassification into group F24F 11/755.

All groups listed in this warning should be considered in order to perform a complete search.

for maintaining constant air flow rate or air velocity

**WARNING**


All groups listed in this warning should be considered in order to perform a complete search.

by means responsive to temperature, e.g. bimetal springs

**WARNING**


Groups F24F 11/30, F24F 11/65, and F24F 11/67 should be considered in order to perform a complete search.

**WARNING**


All groups listed in this Warning should be considered in order to perform a complete search.

for controlling the air supply to heat-exchangers or bypass channels

**WARNING**

Group F24F 11/83 is incomplete pending reclassification of documents from groups F24F 11/30 and F24F 11/70.


All groups listed in this Warning should be considered in order to perform a complete search.

for controlling air flow rate or air velocity

**WARNING**


All groups listed in this Warning should be considered in order to perform a complete search.

using valves

**WARNING**


All groups listed in this Warning should be considered in order to perform a complete search.

using variable-flow pumps

**WARNING**


All groups listed should be considered in order to perform a complete search.

for controlling compressors within refrigeration or heat pump circuits

**WARNING**


All groups listed should be considered in order to perform a complete search.

by controlling absorption or discharge of heat in outdoor units

**WARNING**


All groups listed should be considered in order to perform a complete search.

by controlling outdoor fans

**WARNING**


All groups listed should be considered in order to perform a complete search.

by controlling refrigerant heaters

**WARNING**


All groups listed should be considered in order to perform a complete search.

by controlling heat-storage apparatus
11/88 . . . Electrical aspects, e.g. circuits

**WARNING**

Group F24F 11/88 is incomplete pending reclassification of documents from group F24F 11/30.

Groups F24F 11/30 and F24F 11/88 should be considered in order to perform a complete search.

11/89 . . . Arrangement or mounting of control or safety devices

12/00 Use of energy recovery systems in air conditioning, ventilation or screening (with both heat and humidity transfer between supplied and exhausted air F24F 3/147)

12/001 . . . [with heat-exchange between supplied and exhausted air]

12/002 . . . [using an intermediate heat-transfer fluid]

12/003 . . . [using a heat pump]

12/005 . . . [using heat pipes]

12/006 . . . [using an air-to-air heat exchanger (F24F 12/002 takes precedence)]

12/007 . . . [using a by-pass for bypassing the heat-exchanger]

12/008 . . . [cyclic routing supply and exhaust air (F24F 2007/005 takes precedence when there is no heat exchange)]

13/00 Details common to, or for air-conditioning, air-humidification, ventilation or use of air currents for screening

13/02 . . . Ducting arrangements

13/0209 . . . [characterised by their connecting means, e.g. flanges]

13/0218 . . . [Flexible soft ducts, e.g. ducts made of permeable textiles]

13/0227 . . . [using parts of the building, e.g. air ducts inside the floor, walls or ceiling of a building (air ducts or channels of buildings E04F 17/04)]

13/0236 . . . [with ducts including air distributors, e.g. air collecting boxes with at least three openings]

13/0245 . . . [Manufacturing or assembly of air ducts; Methods therefor]

13/0254 . . . [characterised by their mounting means, e.g. supports]

13/0263 . . . [Insulation for air ducts]

13/0272 . . . [Modules for easy installation or transport]

13/0281 . . . [Multilayer duct]

13/029 . . . [Duct comprising an opening for inspection, e.g. manhole]

13/04 . . . Air-mixing units (F24F 13/06 takes precedence : room units for the mixing of pre-treated primary air with recirculated or room air F24F 1/00)]

13/06 . . . Outlets for directing or distributing air into rooms or spaces, e.g. ceiling air diffusor

13/0604 . . . [integrated in or forming part of furniture]

13/0608 . . . [Perforated ducts]

13/0612 . . . [Induction nozzles without swirl means]

13/0616 . . . [Outlets that have intake openings]

13/062 . . . [having one or more bowls or cones diverging in the flow direction]

**WARNING**

Group F24F 13/062 is incomplete pending reclassification of documents from group F24F 13/072.

Groups F24F 13/072 and F24F 13/062 should be considered in order to perform a complete search.

13/065 . . . formed as cylindrical or spherical bodies which are rotatable

**WARNING**

Group F24F 13/065 is incomplete pending reclassification of documents from group F24F 13/072.

Groups F24F 13/072 and F24F 13/065 should be considered in order to perform a complete search.

13/068 . . . formed as perforated walls, ceilings or floors (F24F 13/078 takes precedence)

13/072 . . . of elongated shape, e.g. between ceiling panels

**WARNING**

Group F24F 13/072 is impacted by reclassification into groups F24F 13/062 and F24F 13/065.

Groups F24F 13/072, F24F 13/062, and F24F 13/065 should be considered in order to perform a complete search.

13/075 . . . having parallel rods or lamellae directing the outflow, e.g. the rods or lamellae being individually adjustable (F24F 13/072 takes precedence)

13/078 . . . combined with lighting fixtures

**WARNING**

Group F24F 13/078 is incomplete pending reclassification of documents from group F24F 3/056.

Groups F24F 3/056 and F24F 13/078 should be considered in order to perform a complete search.

13/08 . . . Air-flow control members, e.g. louvres, grilles, flaps or guide plates (F24F 7/013, F24F 13/06 take precedence)

**WARNING**

Group F24F 13/08 is impacted by reclassification into group F24F 7/013.

Groups F24F 13/08 and F24F 7/013 should be considered in order to perform a complete search.

13/081 . . . [for guiding air around a curve]

13/082 . . . [Grilles, registers or guards]

13/084 . . . [with mounting arrangements, e.g. snap fasteners for mounting to the wall or duct]

13/085 . . . [including an air filter]

2013/087 . . . [using inflatable bellows]

2013/088 . . . [Air-flow straightener]
13/10  . . movable, e.g. dampers

**WARNING**

Group F24F 13/10 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 13/10 should be considered in order to perform a complete search.

13/105  . . . {composed of diaphragms or segments}

**WARNING**

Group F24F 13/105 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 13/105 should be considered in order to perform a complete search.

13/12  . . . built up of sliding members

**WARNING**

Group F24F 13/12 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 13/12 should be considered in order to perform a complete search.

13/14  . . . built up of tilting members, e.g. louvre

**WARNING**

Group F24F 13/14 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 13/14 should be considered in order to perform a complete search.

13/1406  . . . . {characterised by sealing means}

**WARNING**

Group F24F 13/1406 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 13/1406 should be considered in order to perform a complete search.

13/1413  . . . . {using more than one tilting member, e.g. with several pivoting blades (F24F 13/15 takes precedence)}

**WARNING**

Group F24F 13/1413 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 13/1413 should be considered in order to perform a complete search.

13/142  . . . . [using pivoting blades with intersecting axles]

**WARNING**

Group F24F 13/142 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 13/142 should be considered in order to perform a complete search.

13/1426  . . . . {characterised by actuating means}

**WARNING**

Group F24F 13/1426 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 13/1426 should be considered in order to perform a complete search.

2013/1433  . . . . {with electric motors}

**WARNING**

Group F24F 2013/1433 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 2013/1433 should be considered in order to perform a complete search.

2013/144  . . . . {with thermoactuators}

**WARNING**

Group F24F 2013/144 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 2013/144 should be considered in order to perform a complete search.

2013/1446  . . . . {with gearings}

**WARNING**

Group F24F 2013/1446 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 2013/1446 should be considered in order to perform a complete search.

2013/1453  . . . . {with cables, e.g. bowden cables}

**WARNING**

Group F24F 2013/1453 is incomplete pending reclassification of documents from group F24F 13/18.
Groups F24F 13/18 and F24F 2013/1453 should be considered in order to perform a complete search.
Group F24F 2013/146 is incomplete pending reclassification of documents from group F24F 13/18. Groups F24F 13/18 and F24F 2013/146 should be considered in order to perform a complete search.

Group F24F 2013/1466 is incomplete pending reclassification of documents from group F24F 13/18. Groups F24F 13/18 and F24F 2013/1466 should be considered in order to perform a complete search.

Group F24F 2013/1473 is incomplete pending reclassification of documents from group F24F 13/18. Groups F24F 13/18 and F24F 2013/1473 should be considered in order to perform a complete search.

Group F24F 2013/148 is incomplete pending reclassification of documents from group F24F 13/18. Groups F24F 13/18 and F24F 2013/148 should be considered in order to perform a complete search.

Group F24F 13/15 is impacted by reclassification into groups F24F 13/10 - F24F 13/16. All groups listed in this Warning should be considered in order to perform a complete search.

Group F24F 13/16 is incomplete pending reclassification of documents from group F24F 13/18. Groups F24F 13/18 and F24F 13/16 should be considered in order to perform a complete search.

Group F24F 13/18 is specially adapted for insertion in flat panels, e.g. in door or window-pane pending reclassification of documents from group F24F 13/18.

Group F24F 13/20 is Casings or covers
Group F24F 13/20 is Mounting a compressor unit therein
Group F24F 13/20 is Mounting a ventilator fan therein
Group F24F 13/20 is [with control knobs; Mounting controlling members or control units therein]

Group F24F 13/22 is Means for preventing condensation or evacuating condensate (for refrigerating devices in general F25D 21/14)
Group F24F 13/22 is to avoid the formation of condensate, e.g. dew
Group F24F 13/22 is for evacuating condensate
Group F24F 13/22 is [in a window-type room air conditioner]
Group F24F 13/22 is [by evaporating the condensate in the cooling medium, e.g. in air flow from the condenser]
Group F24F 13/22 is [Condensate pipe for drainage of condensate from the evaporator]
Group F24F 13/22 is [Treatment of condensate, e.g. sterilising]
Group F24F 13/22 is Means for preventing or suppressing noise [(in perforated ceilings F24F 7/10)]
Group F24F 13/22 is [Sound-absorbing material]
Group F24F 13/22 is [using resonance]
Group F24F 13/22 is [Active noise-suppression]

Group F24F 13/26 is Arrangements for air-circulation by means of induction, e.g. by fluid coupling or thermal effect
Group F24F 13/28 is Arrangement or mounting of filters
Group F24F 13/30 is Arrangement or mounting of heat-exchangers
Group F24F 13/32 is Supports for air-conditioning, air-humidification or ventilation units

Indexing scheme associated with group F24F 11/00, relating to control inputs, e.g. measured or estimated values or parameters

2110/00 Control inputs relating to air properties
2110/10 Temperature
2110/12 of the outside air
2110/20 Humidity
Indexing scheme associated with group F24F11/00, relating to control inputs, e.g. measured or estimated values or...

2110/22 . . of the outside air
2110/30  . Velocity
2110/32  . . of the outside air
2110/40  . Pressure, e.g. wind pressure

**WARNING**

Group F24F 2110/40 is impacted by reclassification into groups F24F 2140/10 and F24F 2140/12.

Groups F24F 2110/40, F24F 2140/10, and F24F 2140/12 should be considered in order to perform a complete search.

2110/50  . Air quality properties

**WARNING**

Group F24F 2110/50 is impacted by reclassification into group F24F 2110/65.

Groups F24F 2110/50 and F24F 2110/65 should be considered in order to perform a complete search.

2110/52  . . of the outside air
2110/60  . Odour
2110/62  . . Tobacco smoke
2110/64  . . Airborne particle content
2110/65  . . Concentration of specific substances or contaminants

**WARNING**

Group F24F 2110/65 is incomplete pending reclassification of documents from group F24F 2110/50.

Groups F24F 2110/50 and F24F 2110/65 should be considered in order to perform a complete search.

2110/66  . . Volatile organic compounds [VOC]
2110/68  . . Radon
2110/70  . . Carbon dioxide
2110/72  . . Carbon monoxide
2110/74  . . Ozone
2110/76  . . Oxygen
2110/80  . . Electric charge

2120/00  Control inputs relating to users or occupants

**WARNING**

Group F24F 2120/00 is incomplete pending reclassification of documents from group F24F 11/30.

Groups F24F 11/30 and F24F 2120/00 should be considered in order to perform a complete search.

2120/10  . Occupancy
2120/12  . . Position of occupants
2120/14  . . Activity of occupants
2120/20  . Feedback from users

2130/00  Control inputs relating to environmental factors not covered by group F24F 2110/00

2130/10  . Weather information or forecasts
2130/20  . Sunlight
2130/30  . . Artificial light
2130/40  . . Noise

2140/00  Control inputs relating to system states

**WARNING**

Group F24F 2140/00 is incomplete pending reclassification of documents from group F24F 11/30.

Groups F24F 11/30 and F24F 2140/00 should be considered in order to perform a complete search.

2140/10  . . Pressure

**WARNING**

Groups F24F 2140/10 and F24F 2140/12 are incomplete pending reclassification of documents from group F24F 2140/00.

Groups F24F 2140/10, F24F 2140/10 and F24F 2140/12 should be considered in order to perform a complete search.

2140/12  . . Heat-exchange fluid pressure
2140/20  . . Heat-exchange fluid temperature
2140/30  . Condensation of water from cooled air
2140/40  . Damper positions, e.g. open or closed
2140/50  . Load
2140/60  . Energy consumption

2203/00  Devices or apparatus used for air treatment

2203/02  . System or Device comprising a heat pump as a subsystem, e.g. combined with humidification/dehumidification, heating, natural energy or with hybrid system

2203/021 . . Compression cycle
2203/023 . . . with turbine used for expansion
2203/025 . . . with turbine for compression
2203/026 . . Absorption - desorption cycle
2203/028 . . . using a solid absorbing medium
2203/10  . Rotary wheel
2203/1004 . . Bearings or driving means
2203/1008 . . comprising a by-pass channel
2203/1012 . . Details of the casing or cover
2203/1016 . . combined with another type of cooling principle, e.g. compression cycle
2203/102 . . combined with a heat pipe
2203/1024 . . combined with a humidifier
2203/1028 . . combined with a spraying device
2203/1032 . . Desiccant wheel
2203/1036 . . . Details
2203/104 . . Heat exchanger wheel
2203/1044 . . performing other movements, e.g. sliding
2203/1048 . . Geometric details
2203/1052 . . comprising a non-axial air flow
2203/1056 . . comprising a reheater
2203/106 . . Electrical reheater
2203/1064 . . Gas fired reheater
2203/1068 . . comprising one rotor
2203/1072 . . comprising two rotors
2203/1076 . . comprising three rotors
2203/108 . . comprising rotor parts shaped in sector form
2203/1084 . . comprising two flow rotor segments
2203/1088 . . comprising three flow rotor segments
2203/1092 . . comprising four flow rotor segments
2203/1096 . . comprising sealing means
### Air-conditioning

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2203/12</td>
<td>Dehumidifying or humidifying belt type</td>
</tr>
<tr>
<td><strong>2221/00</strong></td>
<td>Details or features not otherwise provided for</td>
</tr>
<tr>
<td>2221/02</td>
<td>combined with lighting fixtures</td>
</tr>
<tr>
<td>2221/08</td>
<td>Installation or apparatus for use in sport halls, e.g.</td>
</tr>
<tr>
<td></td>
<td>swimming pools, ice rings</td>
</tr>
<tr>
<td>2221/10</td>
<td>combined with, or integrated in, furniture</td>
</tr>
<tr>
<td>2221/12</td>
<td>transportable</td>
</tr>
<tr>
<td>2221/125</td>
<td>mounted on wheels</td>
</tr>
<tr>
<td>2221/14</td>
<td>mounted on the ceiling</td>
</tr>
<tr>
<td>2221/16</td>
<td>mounted on the roof</td>
</tr>
<tr>
<td>2221/17</td>
<td>mounted in a wall</td>
</tr>
<tr>
<td>2221/18</td>
<td>combined with domestic apparatus</td>
</tr>
<tr>
<td>2221/183</td>
<td>combined with a hot-water boiler</td>
</tr>
<tr>
<td>2221/186</td>
<td>combined with a fireplace</td>
</tr>
<tr>
<td>2221/20</td>
<td>mounted in or close to a window</td>
</tr>
<tr>
<td>2221/22</td>
<td>Cleaning ducts or apparatus</td>
</tr>
<tr>
<td>2221/225</td>
<td>using a liquid</td>
</tr>
<tr>
<td>2221/26</td>
<td>improving the aesthetic appearance</td>
</tr>
<tr>
<td>2221/28</td>
<td>using the Coanda effect</td>
</tr>
<tr>
<td>2221/30</td>
<td>comprising fireproof material</td>
</tr>
<tr>
<td>2221/32</td>
<td>preventing human errors during the installation, use</td>
</tr>
<tr>
<td></td>
<td>or maintenance, e.g. goofy proof</td>
</tr>
<tr>
<td>2221/34</td>
<td>Heater, e.g. gas burner, electric air heater</td>
</tr>
<tr>
<td>2221/36</td>
<td>Modules, e.g. for an easy mounting or transport</td>
</tr>
<tr>
<td>2221/38</td>
<td>Personalised air distribution</td>
</tr>
<tr>
<td>2221/40</td>
<td>HVAC with raised floors</td>
</tr>
<tr>
<td>2221/42</td>
<td>Mobile autonomous air conditioner, e.g. robots</td>
</tr>
<tr>
<td>2221/44</td>
<td>Protection from terrorism or theft</td>
</tr>
<tr>
<td>2221/46</td>
<td>Air flow forming a vortex</td>
</tr>
<tr>
<td>2221/48</td>
<td>HVAC for a wine cellar</td>
</tr>
<tr>
<td>2221/50</td>
<td>HVAC for high buildings, e.g. thermal or pressure differences</td>
</tr>
<tr>
<td>2221/52</td>
<td>Weather protecting means, e.g. against wind, rain or snow</td>
</tr>
<tr>
<td>2221/54</td>
<td>Heating and cooling, simultaneously or alternatively</td>
</tr>
<tr>
<td>2221/56</td>
<td>Cooling being a secondary aspect</td>
</tr>
</tbody>
</table>