SECTION F — MECHANICAL ENGINEERING; LIGHTING; HEATING; WEAPONS; BLASTING

F28 HEAT EXCHANGE IN GENERAL

F28D HEAT-EXCHANGE APPARATUS, NOT PROVIDED FOR IN ANOTHER SUBCLASS, IN WHICH THE HEAT-EXCHANGE MEDIA DO NOT COME INTO DIRECT CONTACT (heat-transfer, heat-exchange or heat-storage materials C09K 5/00; fluid heaters having heat generating means and heat transferring means F24H; furnaces F27; details of heat-exchange apparatus of general application F28F)**; HEAT STORAGE PLANTS OR APPARATUS IN GENERAL [4]**

Subclass index

1/00 Heat-exchange apparatus having stationary conduit assemblies for one heat-exchange medium only, the media being in contact with different sides of the conduit wall, in which the other heat-exchange medium is a large body of fluid, e.g. domestic or motor car radiators (F28D 5/00 takes precedence) **[1, 2006.01]**

1/02 • with the heat-exchange conduits immersed in the body of fluid **[1, 2006.01]**

1/03 • • with plate-like or laminated conduits **[4, 2006.01]**

1/04 • • with tubular conduits **[1, 2006.01]**

1/047 • • • the conduits being bent, e.g. in a serpentine or zig-zag **[4, 2006.01]**

1/053 • • • the conduits being straight **[4, 2006.01]**

1/06 • with the heat-exchange conduits forming part of, or being attached to, the tank containing the body of fluid **[1, 2006.01]**

3/00 Heat-exchange apparatus having stationary conduit assemblies for one heat-exchange medium only, the media being in contact with different sides of the conduit wall, in which the other heat-exchange medium flows in a continuous film, or trickles freely, over the conduits (F28D 5/00 takes precedence) **[1, 2006.01]**

3/02 • with tubular conduits **[1, 2006.01]**

3/04 • Distributing arrangements **[1, 2006.01]**

5/00 Heat-exchange apparatus having stationary conduit assemblies for one heat-exchange medium only, the media being in contact with different sides of the conduit wall, using the cooling effect of natural or forced evaporation [1, 2006.01]

5/02 • in which the evaporating medium flows in a continuous film or trickles freely over the conduits **[1, 2006.01]**

7/00 Heat-exchange apparatus having stationary tubular conduit assemblies for both heat-exchange media, the media being in contact with different sides of a conduit wall [1, 2006.01]

7/02 • the conduits being helically coiled (F28D 7/10 takes precedence) **[1, 2006.01]**

7/04 • the conduits being spirally coiled (F28D 7/10 takes precedence) **[1, 2006.01]**

7/06 • the conduits having a single U-bend (F28D 7/10 takes precedence) **[1, 2006.01]**

7/08 • the conduits being otherwise bent, e.g. in a serpentine or zig-zag (F28D 7/10 takes precedence) **[1, 2006.01]**

7/10 • the conduits being arranged one within the other, e.g. concentrically **[1, 2006.01]**

7/12 • • the surrounding tube being closed at one end, i.e. return type (F28D 7/14 takes precedence) **[1, 2006.01]**

7/14 • • both tubes being bent **[1, 2006.01]**

7/16 • the conduits being arranged in parallel spaced relation (F28D 7/02-F28D 7/10 take precedence) **[4, 2006.01]**

9/00 Heat-exchange apparatus having stationary plate-like or laminated conduit assemblies for both heat-exchange media, the media being in contact with different sides of a conduit wall [1, 2006.01]

9/02 • the heat-exchange media travelling at an angle to one another (F28D 9/04 takes precedence) **[1, 2006.01]**

9/04 • the conduits being formed by spirally-wound plates or laminae **[1, 2006.01]**

11/00 Heat-exchange apparatus employing moving conduits [1, 2006.01]

11/02 • the movement being rotary, e.g. performed by a drum or roller (F28D 11/08 takes precedence) **[1, 2006.01]**

11/04 • • performed by a tube or a bundle of tubes **[1, 2006.01]**

11/06 • the movement being reciprocating or oscillating (F28D 11/08 takes precedence) **[1, 2006.01]**

11/08 • more than one conduit assembly performing independent movements, e.g. rotary bundle of tubes in a rotary drum **[1, 2006.01]**

13/00 Heat-exchange apparatus using a fluidised bed [1, 2006.01]

Heat-exchange apparatus employing intermediate heat-transfer media or bodies [3]

15/00 Heat-exchange apparatus with the intermediate heat-transfer medium in closed tubes passing into or through the conduit walls [1, 2006.01]

15/02 • in which the medium condenses and evaporates, e.g. heat-pipes **[4, 2006.01]**

15/04 • • with tubes having a capillary structure **[6, 2006.01]**

15/06 • • Control arrangements therefor **[6, 2006.01]**

17/00 Regenerative heat-exchange apparatus in which a stationary intermediate heat-transfer medium or body is contacted successively by each heat-exchange medium, e.g. using granular particles [1, 2006.01]

17/02 • using rigid bodies, e.g. of porous material **[1, 2006.01]**

17/04 • Distributing arrangements for the heat-exchange media **[1, 2006.01]**

19/00 Regenerative heat-exchange apparatus in which the intermediate heat-transfer medium or body is moved successively into contact with each heat-exchange medium [1, 2006.01]

19/02 • using granular particles **[1, 2006.01]**

19/04 • using rigid bodies, e.g. mounted on a movable carrier **[1, 2006.01]**

20/00 Heat storage plants or apparatus in general; Regenerative heat-exchange apparatus not covered by groups F28D 17/00 or F28D 19/00 [4, 2006.01]

20/02 • using latent heat **[6, 2006.01]**

21/00 Heat-exchange apparatus not covered by any of the groups F28D 1/00-F28D 20/00 [1, 4, 2006.01]