

# CPC COOPERATIVE PATENT CLASSIFICATION

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

### LIGHTING; HEATING

#### F28 HEAT EXCHANGE IN GENERAL (NOTES omitted)

#### F28C HEAT-EXCHANGE APPARATUS, NOT PROVIDED FOR IN ANOTHER SUBCLASS, IN WHICH THE HEAT-EXCHANGE MEDIA COME INTO DIRECT CONTACT WITHOUT CHEMICAL INTERACTION (safety devices in general [F16P](#); fluid heaters having heat generating means [F24H](#); with an intermediate heat-transfer medium coming into direct contact with heat-exchange media [F28D 15/00](#) - [F28D 19/00](#); details of heat-exchange apparatus of general application [F28F](#))

##### 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.

|             |   |             |   |
|-------------|---|-------------|---|
| <b>1/00</b> | <b>Direct-contact trickle coolers, e.g. cooling towers</b><br>(building construction <a href="#">E04H 5/12</a> ; enclosed spaces cooled by trickle <a href="#">F25</a> ; components parts of trickle coolers <a href="#">F28F 25/00</a> ; {indirect-contact cooling towers <a href="#">F28B 1/06</a> }) | <b>3/14</b> | . . . the particulate material moving by gravity, e.g. down a tube                |
|             |   | <b>3/16</b> | . . . the particulate material forming a bed, e.g. fluidised, on vibratory sieves |
|             |   | <b>3/18</b> | . . . the particulate material being contained in rotating drums                  |
| 1/003       | . {comprising outlet ducts for exhaust gases}   |             |   |
| 2001/006    | . {Systems comprising cooling towers, e.g. for recooling a cooling medium (for condensers <a href="#">F28B 9/06</a> )}  |             |   |
| 1/02        | . with counter-current only   |             |   |
| 1/04        | . with cross-current only   |             |   |
| 1/06        | . with both counter-current and cross-current   |             |   |
| 1/08        | . Arrangements for recovering heat from exhaust steam   |             |   |
| 1/10        | . Arrangements for suppressing noise  |             |   |
| 1/12        | . Arrangements for preventing clogging by frost   |             |   |
| 1/14        | . comprising also a non-direct contact heat exchange  |             |   |
| 2001/145    | . . {with arrangements of adjacent wet and dry passages}  |             |   |
| 1/16        | . Arrangements for preventing condensation, precipitation or mist formation, outside the cooler ( <a href="#">F28C 1/14</a> takes precedence)   |             |   |
| <b>3/00</b> | <b>Other direct-contact heat-exchange apparatus</b>   |             |   |
| 3/005       | . {one heat-exchange medium being a solid ( <a href="#">F28C 3/10</a> takes precedence)}  |             |   |
| 3/02        | . the heat-exchange media both being gases or vapours   |             |   |
| 3/04        | . the heat-exchange media both being liquids  |             |   |
| 3/06        | . the heat-exchange media being a liquid and a gas or vapour (temperatures for cooling steam <a href="#">F22</a> )  |             |   |
| 3/08        | . . with change of state, e.g. absorption, evaporation, condensation (generating steam under pressure <a href="#">F22</a> )   |             |   |
| 3/10        | . one heat-exchange medium at least being a fluent solid, e.g. a particulate material   |             |   |
| 3/12        | . . the heat-exchange medium being a particulate material and a gas, vapour, or liquid  |             |   |