

CPC**COOPERATIVE PATENT CLASSIFICATION****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 to F28D 19/00](#); [details of heat-exchange apparatus of general application F28F](#))

F28C 1/00

Direct-contact trickle coolers, e.g. cooling towers ([building construction E04H 5/12](#); [enclosed spaces cooled by trickle F25](#) ; [components parts of trickle coolers F28F 25/00](#); { [indirect-contact cooling towers F28B 1/06](#) })

F28C 1/003

- . {[comprising outlet ducts for exhaust gases](#) }

F28C 1/02

- . with counter-current only

F28C 1/04

- . with cross-current only

F28C 1/06

- . with both counter-current and cross-current

F28C 1/08

- . Arrangements for recovering heat from exhaust steam

F28C 1/10

- . Arrangements for suppressing noise

F28C 1/12

- . Arrangements for preventing clogging by frost

F28C 1/14

- . comprising also a non-direct contact heat exchange

F28C 1/16

- . Arrangements for preventing condensation, precipitation or mist formation, outside the cooler ([F28C 1/14 takes precedence](#))

F28C 3/00

Other direct-contact heat-exchange apparatus

F28C 3/005

- . {[one heat-exchange medium being a solid \(F28C 3/10 takes precedence\)](#) }

F28C 3/02

- . the heat-exchange media both being gases or vapours

F28C 3/04

- . the heat-exchange media both being liquids

F28C 3/06

- . the heat-exchange media being a liquid and a gas or vapour ([temperators for cooling steam F22](#))

F28C 3/08

- .. with change of state, e.g. absorption, evaporation, condensation ([generating steam under pressure F22](#))

F28C 3/10

- . one heat-exchange medium at least being a fluent solid, e.g. a particulate material

F28C 3/12

- .. the heat-exchange medium being a particulate material and a gas, vapour, or liquid

F28C 3/14

- ... the particulate material moving by gravity, e.g. down a tube

- F28C 3/16 . . . the particulate material forming a bed, e.g. fluidised, on vibratory sieves
- F28C 3/18 . . . the particulate material being contained in rotating drums

F28C 2001/00 **Direct-contact trickle coolers, e.g. cooling towers** (building construction [E04H 5/12](#); enclosed spaces cooled by trickle [F25](#) ; components parts of trickle coolers [F28F 25/00](#); { indirect-contact cooling towers [F28B 1/06](#) })

- F28C 2001/006 . Systems comprising cooling towers, e.g. for recooling a cooling medium (for condensers [F28B 9/06](#))

- F28C 2001/14 . comprising also a non-direct contact heat exchange
- F28C 2001/145 . . with arrangements of adjacent wet and dry passages