

Title (en)

Heat exchanger and nozzle of heat exchanger

Title (de)

Wärmetauscher und Düse des Wärmetauschers

Title (fr)

Échangeur thermique et buse pour échangeur thermique

Publication

**EP 2400247 A3 20140101 (EN)**

Application

**EP 11170678 A 20110621**

Priority

JP 2010141734 A 20100622

Abstract (en)

[origin: EP2400247A2] In one embodiment, a heat exchanger (10) is provided with an inside shell (12), an outside shell (11), a cooling portion, and an inlet nozzle (19). The inside shell (12) has an inside space for flowing a fluid (S), and an opening portion (12a) for outflowing the fluid (S) from the inside space. The outside shell (11) covers the inside shell (12) to form a first passage (17) between them to flow the fluid (S) outflowing from the opening portion (12a). The cooling portion is disposed within the inside shell to cool the fluid (S) within the inside space. The inlet nozzle (19) has an inner pipe (20), an outer pipe (21), and an outlet pipe (22). The inner pipe (20) flows the fluid into the inside space through the outside shell (11). The outer pipe (21) covers the inner pipe (20) to form a second passage (23) between them and has its one end connected to the outside shell (11) to communicate the second passage (23) with the first passage (17), and its other end connected to the inner pipe (20) on the outside of the outside shell (11) to seal the second passage (23) to flow the fluid (S) partly from the first passage (17) to the second passage (23). The outlet pipe (22) is connected to the outer pipe (21) to inflow the fluid (S) from the second passage (23).

IPC 8 full level

**F28D 7/06** (2006.01); **F28F 9/00** (2006.01); **F28F 9/02** (2006.01)

CPC (source: EP US)

**F28D 7/06** (2013.01 - EP US); **F28F 9/00** (2013.01 - EP US); **F28F 9/0246** (2013.01 - EP US)

Citation (search report)

- [X] US 4010797 A 19770308 - PARNKOPF FISKE O, et al
- [XI] US 3704690 A 19721205 - MEVENKAMP PAUL
- [AP] EP 2327948 A2 20110601 - TOSHIBA KK [JP]

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RU2679580C1; EP2975353A1; RU2675966C2; US10386120B2; WO2016008675A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

**EP 2400247 A2 20111228**; **EP 2400247 A3 20140101**; CN 102313482 A 20120111; CN 102313482 B 20130626; JP 2012007761 A 20120112; US 2012145367 A1 20120614

DOCDB simple family (application)

**EP 11170678 A 20110621**; CN 201110168955 A 20110622; JP 2010141734 A 20100622; US 201113162856 A 20110617