

Title (en)

HEAT EXCHANGER AND HEAT PUMP WATER HEATER

Title (de)

WÄRMETAUSCHER UND WÄRMEPUMPENWASSERERHITZER

Title (fr)

ÉCHANGEUR DE CHALEUR ET CHAUFFE-EAU À POMPE À CHALEUR

Publication

**EP 3575724 A4 20200108 (EN)**

Application

**EP 17894252 A 20170130**

Priority

JP 2017003147 W 20170130

Abstract (en)

[origin: EP3575724A1] A heat exchanger includes: a first pipe which is formed of resin, and allows fluid to flow through the first pipe; a second pipe which is formed of metal, provided in the first pipe, and allows refrigerant to flow through the second pipe; and a resin element which is formed as an element separate from the first pipe and the second pipe, and provided in a region in space between an inner surface of the first pipe and an outer surface of the second pipe.

IPC 8 full level

**F28D 7/10** (2006.01)

CPC (source: EP)

**F28D 7/106** (2013.01); **F28D 7/14** (2013.01); **F28F 21/062** (2013.01); **F28F 21/081** (2013.01); **F28D 2021/0068** (2013.01); **F28F 1/20** (2013.01); **F28F 2225/04** (2013.01); **F28F 2240/00** (2013.01)

Citation (search report)

- [X] JP S6422173 U 19890203
- [Y] US 4392526 A 19830712 - HAGE MANFRED [DE], et al
- [Y] CN 201697503 U 20110105 - SHANGHAI CHUNHUA ELECTRONICS CO LTD
- [A] US 4930544 A 19900605 - ZIU CHRISTOPHER G [US]
- [A] US 2011139416 A1 20110616 - BERNARD CHRISTOPHE [FR]
- See references of WO 2018138906A1

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 3575724 A1 20191204**; **EP 3575724 A4 20200108**; **EP 3575724 B1 20210818**; JP 6790129 B2 20201125; JP WO2018138906 A1 20191107; WO 2018138906 A1 20180802

DOCDB simple family (application)

**EP 17894252 A 20170130**; JP 2017003147 W 20170130; JP 2018564070 A 20170130