

Title (en)

HEAT TRANSFER FIN, FIN-TUBE HEAT EXCHANGER, AND HEAT PUMP DEVICE

Title (de)

WÄRMEÜBERTRAGUNGSLAMELLE, LAMELLENROHR-WÄRMETAUSCHER UND WÄRMEPUMPENVORRICHTUNG

Title (fr)

AILETTE DE TRANSFERT DE CHALEUR, ÉCHANGEUR DE CHALEUR À TUBE À AILETTES ET DISPOSITIF DE POMPE À CHALEUR

Publication

**EP 2778593 A4 20141015 (EN)**

Application

**EP 12848344 A 20121109**

Priority

- JP 2011246711 A 20111110
- JP 2012007197 W 20121109

Abstract (en)

[origin: EP2778593A1] A heat transfer fin (3A) includes: a base portion (4); a cylindrical collar portion (5) extending upwardly from the base portion (4); a protruding portion (51) protruding radially outwardly from a part of an upper end of the collar portion (5); and a wall portion (52) extending upwardly from a part of the upper end of the collar portion (5) other than the part of the upper end from which the protruding portion (51) protrudes. A height (B) from the base portion (4) to a top of the wall portion (52) is greater than a height (A) from the base portion (4) to a top of the protruding portion (51).

IPC 8 full level

**F28F 1/32** (2006.01); **F25B 39/00** (2006.01)

CPC (source: EP)

**F25B 39/00** (2013.01); **F28F 1/32** (2013.01); **F25B 13/00** (2013.01); **F28F 2240/00** (2013.01)

Citation (search report)

- [X] US 5706695 A 19980113 - HELMS WERNER [DE], et al
- [X] FR 379072 A 19071024 - BRISCOE MFG COMPANY [US]
- [X] JP 2011064403 A 20110331 - MITSUBISHI ELECTRIC CORP
- See references of WO 2013069299A1

Cited by

US11125505B2

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

DOCDB simple family (publication)

**EP 2778593 A1 20140917**; **EP 2778593 A4 20141015**; **EP 2778593 B1 20170510**; CN 103105089 A 20130515; CN 103105089 B 20170301; CN 202885630 U 20130417; JP 6115783 B2 20170419; JP WO2013069299 A1 20150402; WO 2013069299 A1 20130516

DOCDB simple family (application)

**EP 12848344 A 20121109**; CN 201210447596 A 20121109; CN 201220590083 U 20121109; JP 2012007197 W 20121109; JP 2013542859 A 20121109