

Title (en)

ARROWHEAD FIN FOR HEAT EXCHANGE TUBING

Title (de)

PFEILSPITZENRIPPE FÜR EINE WÄRMEAUSTAUSCHROHRLEITUNG

Title (fr)

AILETTE À FORME DE POINTE DE FLÈCHE POUR TUBULURE D'ÉCHANGE DE CHALEUR

Publication

**EP 3411649 A4 20191002 (EN)**

Application

**EP 17748341 A 20170206**

Priority

- US 201662291196 P 20160204
- US 2017016689 W 20170206

Abstract (en)

[origin: CN108603731A] A new heat exchange tube fin design in which a plurality of arrowhead shapes are pressed into or embossed onto each fin, the arrowhead shape defined by two intersecting wedge sections. The pressed arrowhead shapes are grouped into nested pairs, and one of the arrowheads in a pair is pressed as a positive relative to the fin plane and the other of the pair is pressed as a negative relative to the fin plane. The arrowhead pairs are placed in rows parallel to the air flow direction and arrowhead pairs in one row are preferably staggered relative to the arrowhead pairs in the adjacent row along the fin in the air flow direction.

IPC 8 full level

**F28F 1/32** (2006.01); **F28F 1/30** (2006.01); **F28F 3/02** (2006.01); **F28F 7/00** (2006.01); **F28F 13/12** (2006.01)

CPC (source: EP US)

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Citation (search report)

- [XA] US 2013087318 A1 20130411 - NAKANO KIMIYAKI [JP], et al
- [XA] US 4817709 A 19890404 - ESFORMES JACK L [US]
- [X] US 2012024511 A1 20120202 - HARADA MASAKI [JP]
- [X] US 2012318485 A1 20121220 - YABE MITSUO [JP], et al
- See references of WO 2017136819A1

Designated contracting state (EPC)

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CN 108603731 A 20180928; CN 108603731 B 20210601; EP 3411649 A1 20181212; EP 3411649 A4 20191002; EP 3411649 B1 20211013

DOCDB simple family (application)

CN 201780009126 A 20170206; EP 17748341 A 20170206