

Title (en)
HEAT EXCHANGER

Title (de)
WÄRMETAUSCHER

Title (fr)
ECHANGEUR DE CHALEUR

Publication
EP 2395308 A4 20130911 (EN)

Application
EP 10738301 A 20100119

Priority
• JP 2010000267 W 20100119
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Abstract (en)
[origin: EP2395308A1] A heat exchanger includes a heat transfer tube group in which a plurality of first heat transfer tubes (3) through which a first fluid flows and a plurality of second heat transfer tubes (4) through which a second fluid that exchanges heat with the first fluid flows are arranged alternately while being in contact with each other. The heat transfer tube group is formed in a spiral shape by being wound in X direction perpendicular to Y direction in which the first heat transfer tubes (3) and the second heat transfer tubes (4) are arranged. A plurality of concave portions (3a) are provided on both sides, in the X direction, of an outer circumferential surface (31) of each of the first heat transfer tubes (3), along an extending direction of the first heat transfer tube (3). The plurality of concave portions (3a) form convex portions on an inner circumferential surface of the first heat transfer tube (3).

IPC 8 full level
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F24H 4/04 (2013.01 - EP US); **F28D 7/0016** (2013.01 - EP US); **F28F 1/426** (2013.01 - EP US); **F28F 13/12** (2013.01 - EP US); **F24D 2200/123** (2013.01 - EP US); **F28F 2270/00** (2013.01 - EP US)

Citation (search report)
• [XYI] JP 2003148880 A 20030521 - SANYO ELECTRIC CO, et al
• [I] JP 2008082669 A 20080410 - MITSUBISHI ELECTRIC CORP
• [I] JP 2004340455 A 20041202 - TAIHEIYO SEIKO KK
• [Y] JP 2008188599 A 20080821 - MATSUSHITA ELECTRIC IND CO LTD
• [Y] JP 2007326141 A 20071220 - MITSUBISHI ELECTRIC CORP
• See references of WO 2010089957A1

Designated contracting state (EPC)
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 SE SI SK SM TR

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DOCDB simple family (application)
EP 10738301 A 20100119; CN 201080005789 A 20100119; JP 2010000267 W 20100119; JP 2010549372 A 20100119; US 201013147743 A 20100119