

Title (en)
PLATE HEAT EXCHANGER

Title (de)
PLATTENWÄRMETAUSCHER

Title (fr)
ÉCHANGEUR DE CHALEUR À PLAQUES

Publication
EP 3404350 A4 20190918 (EN)

Application
EP 16885031 A 20161117

Priority
• JP 2016004234 A 20160113
• JP 2016084040 W 20161117

Abstract (en)
[origin: EP3404350A1] The present invention provides a plate heat exchanger capable of improving performance for transferring heat to heat transfer portions within a flow channel through which a second fluid medium that causes phase change as a result of its heat exchange with a first fluid medium is circulated. The present invention includes a plurality of heat transfer plates that each includes a heat transfer portion having a first surface and a second surface opposed to the first surface, and that respectively have the heat transfer portions stacked on each other in a first direction. A first flow channel through which the first fluid medium is circulated in a second direction orthogonal to the first direction is formed between the first surfaces of the heat transfer portions of each adjacent heat transfer plates, and a second flow channel through which the second fluid medium is circulated in the second direction is formed between the second surfaces of the heat transfer portions of each adjacent heat transfer plates. The heat transfer portion of at least one of each adjacent heat transfer plates includes, as ridges formed on the first surface, at least one barrier ridge that extends in a direction crossing the second direction, divides the heat transfer portion into two or more divided areas in the second direction, and crosses and abuts against the ridges formed on a first surface of the opposed heat transfer portion. Each of the heat transfer portions of each adjacent heat transfer plates with the second surfaces opposed to each other includes, as valleys formed on the second surface, a plurality of second flow channel forming valleys each constituting part of the second flow channel, the plurality of second flow channel forming valleys being arranged at intervals from each other in a third direction orthogonal to each of the first direction and the second direction in each of the two or more divided areas from one end to the other end in the second direction of the divided area.

IPC 8 full level
F28D 9/00 (2006.01); **F28D 9/02** (2006.01); **F28F 3/00** (2006.01); **F28F 3/04** (2006.01); **F28F 3/08** (2006.01)

CPC (source: EP US)
F28D 9/0037 (2013.01 - EP US); **F28D 9/005** (2013.01 - EP US); **F28D 9/02** (2013.01 - EP US); **F28F 3/00** (2013.01 - EP US); **F28F 3/046** (2013.01 - EP US); **F28F 3/048** (2013.01 - EP US); **F28F 3/08** (2013.01 - EP US); **F28F 3/12** (2013.01 - US); **F28F 2215/10** (2013.01 - EP US)

Citation (search report)
• [XAI] JP H07260386 A 19951013 - HISAKA WORKS LTD
• [XAI] JP S60162183 A 19850823 - FUORUKERU HANNEMAN, et al
• [A] WO 2011162659 A1 20111229 - ALFA LAVAL CORP AB [SE], et al
• [A] JP S5022503 B1 19750731
• [A] JP 2006162154 A 20060622 - EBARA CORP
• [A] EP 2233873 A1 20100929 - BOSCH GMBH ROBERT [DE]
• [A] WO 8502670 A1 19850620 - ALFA LAVAL THERMAL [SE]
• [A] JP 2002107074 A 20020410 - SANYO ELECTRIC CO
• [A] EP 1811255 A2 20070725 - FLATPLATE INC [US]
• [A] WO 2015086343 A1 20150618 - SWEP INT AB [SE]
• [A] EP 1475596 A2 20041110 - REHBERG PETER DIPL ING [DE], et al
• See references of WO 2017122428A1

Cited by
EP3660438A1; WO2020108985A1

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 3404350 A1 20181121; **EP 3404350 A4 20190918**; **EP 3404350 B1 20220817**; CN 108463683 A 20180828; JP 6407454 B2 20181017; JP WO2017122428 A1 20180712; US 2019011193 A1 20190110; WO 2017122428 A1 20170720

DOCDB simple family (application)
EP 16885031 A 20161117; CN 201680078789 A 20161117; JP 2016084040 W 20161117; JP 2017561528 A 20161117; US 201616065935 A 20161117