

Title (en)
HEAT EXCHANGER

Title (de)
WÄRMETAUSCHER

Title (fr)
ÉCHANGEUR THERMIQUE

Publication
EP 2889570 B1 20170809 (EN)

Application
EP 13817311 A 20130621

Priority
• JP 2012153240 A 20120709
• JP 2013003907 W 20130621

Abstract (en)
[origin: US2015136366A1] First passages of a heat exchanger each include a plurality of channels that each connect an inlet formed in an inflow surface of a core and an outlet formed in an outflow surface of the core together. The channels have different channel resistances. The heat exchanger includes a flow-directing member of a first type disposed to a side of the core where the inflow surface is located to provide a uniform distribution of a dynamic pressure of the first fluid flowing into the core to the inflow surface; and a flow-directing member of a second type reducing a difference between flow rates of the first fluid through the channels arising from a difference in channel resistance between the channels forming each first passage of the core.

IPC 8 full level
F28F 9/22 (2006.01); **F28D 9/00** (2006.01); **F28F 3/00** (2006.01); **F28F 3/08** (2006.01); **F28F 9/02** (2006.01); **F28F 13/06** (2006.01)

CPC (source: EP US)
F28D 7/005 (2013.01 - US); **F28D 9/0006** (2013.01 - EP US); **F28D 9/0068** (2013.01 - EP US); **F28F 9/0265** (2013.01 - EP US); **F28F 9/028** (2013.01 - EP US); **F28F 13/06** (2013.01 - EP US); **F28F 2009/222** (2013.01 - EP US)

Citation (opposition)
Opponent : L'air liquide, societe anonyme pour l'etude et l'exploitation des procedes georges claudé
• CN 101696857 A 20100421 - WUXI JIALONG HEAT EXCHANGER MF
• US 2003111216 A1 20030619 - HIRAO HARUNORI [JP], et al
• JP 2007170271 A 20070705 - USUI KOKUSAI SANGYO KK
• FR 2037366 A5 19701231 - CHICAGO BRIDGE & IRON CO
• US 2002023739 A1 20020228 - WAGNER MARC [FR], et al
• WO 02090860 A1 20021114 - VALEO TERMICO SA [ES], et al
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• JP H0443297 A 19920213 - MATSUSHITA REFRIGERATION
• US 5107923 A 19920428 - SHERMAN ROBERT [US], et al
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• US 2005006076 A1 20050113 - MOELLER STEFAN [DE], et al

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EP4177560A1; US11530883B2; US11976677B2

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)
US 2015136366 A1 20150521; BR 112015000249 A2 20170627; CN 104428622 A 20150318; EA 030192 B1 20180731; EA 201590160 A1 20150529; EP 2889570 A1 20150701; EP 2889570 A4 20160608; EP 2889570 B1 20170809; JP 2014016083 A 20140130; JP 5795994 B2 20151014; WO 2014010180 A1 20140116

DOCDB simple family (application)
US 201314413689 A 20130621; BR 112015000249 A 20130621; CN 201380036190 A 20130621; EA 201590160 A 20130621; EP 13817311 A 20130621; JP 2012153240 A 20120709; JP 2013003907 W 20130621