Title (en)

INTEGRAL HEAT EXCHANGER DISTRIBUTOR

Title (de)

INTEGRIERTER VERTEILER EINES WÄRMETAUSCHERS

Title (fr)

DISTRIBUTEUR D'ÉCHANGEUR DE CHALEUR INTÉGRÉ

Publication

EP 3462119 B1 20210331 (EN)

Application

EP 18204667 A 20140430

Priority

- US 201313873412 A 20130430
- EP 14166550 A 20140430

Abstract (en)

[origin: US2014318175A1] A heat exchanger comprises a first inlet port, a first outlet port longitudinally spaced apart from the first inlet port, a plurality of substantially parallel parting plates stacked along a no-flow axis, a plurality of first flow spaces, and a plurality of metering plates. The plurality of first flow spaces are defined between adjacent ones of at least some of the parting plates and provide communication between the first inlet port and the first outlet port. The plurality of metering plates are disposed across an upstream end of at least one of the first flow spaces. Each of the plurality of metering plates includes at least one metering aperture providing fluid communication between the first inlet port and the at least one first flow space.

IPC 8 full level

F28F 3/02 (2006.01); **F25B 39/02** (2006.01); **F28D 9/00** (2006.01); **F28F 9/02** (2006.01); F28D 21/00 (2006.01)

CPC (source: EP US)

F25B 39/028 (2013.01 - EP US); **F28D 9/0062** (2013.01 - EP US); **F28F 3/025** (2013.01 - EP US); **F28F 9/026** (2013.01 - EP US); **F28F 9/0282** (2013.01 - EP US); F28D 2021/0021 (2013.01 - EP US); F28D 2021/0064 (2013.01 - EP US); F28D 2021/0071 (2013.01 - EP US); F28D 2021/0085 (2013.01 - EP US)

Citation (examination)

FR 2037366 A5 19701231 - CHICAGO BRIDGE & IRON CO

Citation (opposition)

Opponent : L'Air Liquide

- EP 2618094 A2 20130724 - HONEYWELL INT INC [US]
- GB 2127140 A 19840404 - TRANE CO
- US 3612494 A 19711012 - TOYAMA AKIRA, et al
- US 3380517 A 19680430 - BUTT ALAN G
- US 3495656 A 19700217 - DICKSON RONALD
- US 4249595 A 19810210 - BUTT ALAN G [US]
- EP 0130122 A1 19850102 - AIR LIQUIDE [FR]
- US 2014318175 A1 20141030 - ZAGER MICHAEL [US]
- PLATE-FIN HEAT EXCHANGERS, 1987, pages 1 - 137
- N/A: "The Standards of the Brazed Aluminium Plate-Fin Heat Exchanger Manufacturers' Association - ALPEMA", ALPEMA, 1 January 2002 (2002-01-01), pages 1 - 70, XP055340954, [retrieved on 20170201]
- "Metallurgy of Welding", 1 January 1980, article LANCASTER J F: "Processes and types of joint", pages: 1 - 7, XP055887648
- ANONYMOUS: "Turnkey Heating Solutions", THE BRAZING GUIDE, 1 June 2010 (2010-06-01), pages 1 - 10, XP055887652, Retrieved from the Internet <URL:https://www.ghinduction.com/wp-content/uploads/2011/09/GH-Brazing-Guide1.pdf> [retrieved on 20220204]
- CHEN G. K.: "PACKED COLUMN INTERNALS. THIS PRIMER ON PACKED COLUMNS WILL HELP YOU TO SELECT THE MOST APPROPRIATE, COST-EFFICIENT DESIGN, AND TO MAINTAIN TROUBLEFREE OPERATION. IT DISCUSSES THE VARIOUS TYPES OF RANDOM AND STRUCTURED PACKINGS, AS WELL AS SUPPORTS, LIQUID DISTRIBUTORS, AND OTHER INTERNALS.", CHEMICAL ENGINEERING., ACCESS INTELLIGENCE ASSOCIATION, ROCKVILLE, MA., US, 5 March 1984 (1984-03-05), US , pages 40 - 62., XP000650169, ISSN: 0009-2460
- "Packed Bed Columns For Absorption, Desorption, Rectification and Direct Heat Transfer", 1 January 2006, article KOLEV NIKOLAI: "Distribution of the liquid and gas phase over the crosssection of a packed bed column", pages: 539 - 539, XP055887896
- NOZAKI TAKAHASHI, ET AL: "Heat Transfer to a Liquid Flowing Down Vertical Wires Hanging in a Hot Gas Stream : an Experimental Study of a New Means of Thermal Energy Recovery", PROC. ELEVENTH INT. HEAT TRANSFER CONF., vol. 6, 28 August 1998 (1998-08-28) - 28 August 1998 (1998-08-28), pages 63 - 68, XP055887914

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 2014318175 A1 20141030; EP 2816307 A2 20141224; EP 2816307 A3 20150114; EP 2816307 B1 20181107; EP 3462119 A1 20190403; EP 3462119 B1 20210331

DOCDB simple family (application)

US 201313873412 A 20130430; EP 14166550 A 20140430; EP 18204667 A 20140430