

Title (en)

HEAT EXCHANGER, HEAT EXCHANGER UNIT, AND REFRIGERATION CYCLE DEVICE

Title (de)

WÄRMETAUSCHER, WÄRMETAUSCHEREINHEIT UND KÄLTEKREISLAUFVORRICHTUNG

Title (fr)

ÉCHANGEUR DE CHALEUR, UNITÉ D'ÉCHANGEUR DE CHALEUR ET DISPOSITIF À CYCLE DE RÉFRIGÉRATION

Publication

EP 3845851 A4 20210901 (EN)

Application

EP 18932105 A 20180827

Priority

JP 2018031502 W 20180827

Abstract (en)

[origin: EP3845851A1] A heat-exchanger, a heat-exchanger unit, and a refrigeration-cycle apparatus are provided that allow for improved pressure resistance of tubes through which refrigerant passes, reduced weight of heat transfer fins, and easy manufacture. The heat-exchanger includes a first flat-tube group, a second flat-tube group, and a fin. The first flat-tube group includes plural flat tubes each having a pipe axis, and the flat tubes included in the first flat-tube group are arranged in such a manner that the pipe axes of the flat tubes included in the first flat-tube group are arranged in parallel to each other. One of the flat tubes included in the first flat-tube group is a first flat tube. The second flat-tube group is provided adjacent to the first flat-tube group, the second flat-tube group includes plural flat tubes each having a pipe axis, and the flat tubes included in the second flat-tube group are arranged in such a manner that the pipe axes of the flat tubes included in the second flat-tube group are arranged in parallel to each other. One of the flat tubes included in the second flat-tube group is a second flat tube. The fin is provided to the first flat-tube group and the second flat-tube group. The fin includes a first portion connecting an end of a longitudinal axis of the first flat tube in a section perpendicular to the pipe axis of the first flat tube and an end of a longitudinal axis of the second flat tube in a section perpendicular to the pipe axis of the second flat tube.

IPC 8 full level

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CPC (source: EP)

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Citation (search report)

- [A] WO 0216834 A2 20020228 - ENGINEERED DYNAMICS CORP [US], et al
- [A] JP 2002181488 A 20020626 - JAPAN CLIMATE SYSTEMS CORP
- [A] DE 2154366 A1 19730510 - FOLLE WILLI
- [A] DE 1927605 A1 19701203 - HERMANN DR PETER, et al
- [A] EP 0987502 A2 20000322 - HITACHI LTD [JP]
- [A] GB 2095813 A 19821006 - HUTOGEPGYAR
- [A] CN 107218822 A 20170929 - DANFOSS MICRO-CHANNEL HEAT EXCHANGER (JIAXING) CO LTD
- See references of WO 2020044391A1

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

Designated extension state (EPC)

BA ME

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DOCDB simple family (application)

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