

Title (en)
HEAT EXCHANGER AND REFRIGERATION CYCLE APPARATUS

Title (de)
WÄRMETAUSCHER UND KÄLTEKREISLAUFVORRICHTUNG

Title (fr)
ÉCHANGEUR DE CHALEUR ET APPAREIL À CYCLE DE RÉFRIGÉRATION

Publication
EP 4166886 A4 20230726 (EN)

Application
EP 20941349 A 20200615

Priority
JP 2020023377 W 20200615

Abstract (en)
[origin: EP4166886A1] A heat exchanger and a refrigeration cycle apparatus are provided in each of which buckling of flat tubes in a tube-axis direction is prevented while ease of drainage and ease of air passage are maintained. The heat exchanger includes a plurality of heat transfer parts arranged in a first direction and spaced apart from each other, the plurality of heat transfer parts extending in a second direction and allowing refrigerant to flow through inside the plurality of heat transfer parts; a first header extending in the first direction and connected to one end of each of the plurality of heat transfer parts; a second header extending in the first direction and connected to an other end of each of the plurality of heat transfer parts; and a support extending along the first direction and the second direction and having an opening, the support being located at at least one face of the plurality of heat transfer parts in a third direction that is perpendicular to the first direction and the second direction, the support being fixed to the first header and the second header.

IPC 8 full level
F28F 9/013 (2006.01); **F28F 1/02** (2006.01)

CPC (source: EP US)
F25B 39/00 (2013.01 - US); **F28D 7/16** (2013.01 - US); **F28F 9/0135** (2013.01 - EP); **F28F 9/0136** (2013.01 - EP); **F28F 9/0137** (2013.01 - EP); **F28F 9/02** (2013.01 - US); **F28D 1/05366** (2013.01 - EP); **F28F 2225/00** (2013.01 - EP); **F28F 2265/22** (2013.01 - EP)

Citation (search report)

- [X] DE 102017221083 A1 20190529 - MAHLE INT GMBH [DE]
- [X] US 2019331438 A1 20191031 - NGUYEN DINH-LUYEN [FR]
- [X] WO 2018202631 A1 20181108 - VALEO SYSTEMES THERMIQUES [FR]
- See references of WO 2021255781A1

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

Designated validation state (EPC)
KH MA MD TN

DOCDB simple family (publication)
EP 4166886 A1 20230419; EP 4166886 A4 20230726; CN 115836189 A 20230321; JP 7387000 B2 20231127; JP WO2021255781 A1 20211223; US 2023127615 A1 20230427; WO 2021255781 A1 20211223

DOCDB simple family (application)
EP 20941349 A 20200615; CN 202080101836 A 20200615; JP 2020023377 W 20200615; JP 2022531109 A 20200615; US 202017917972 A 20200615