

Title (en)
HEAT EXCHANGER AND REFRIGERATION CYCLE DEVICE

Title (de)
WÄRMETAUSCHER UND KÜHLZYKLUSVORRICHTUNG

Title (fr)
ÉCHANGEUR DE CHALEUR, ET DISPOSITIF DE CYCLE FRIGORIFIQUE

Publication
EP 3971507 A4 20220420 (EN)

Application
EP 19928811 A 20190514

Priority
JP 2019019127 W 20190514

Abstract (en)
[origin: EP3971507A1] An object is to provide a heat exchanger that includes a plurality of heat transfer tubes connected to one another at both ends in a tube axis direction and can prevent deformation, and to provide a refrigeration cycle device. The heat exchanger includes: a plurality of heat transfer tubes configured to allow refrigerant to pass therethrough, arranged in a first direction and being spaced from each other; a first header connected to one end of each of the plurality of the heat transfer tubes; a second header connected to an other end of each of the plurality of the heat transfer tubes; and a plurality of reinforcing elements connected to each of the first header and the second header. Each of the plurality of heat transfer tubes and each of the plurality of reinforcing elements are disposed between the first header and the second header and are connected by the first header and the second header without being connected by a component connecting side surfaces of the plurality of heat transfer tubes and a side surface of each of the plurality of heat transfer tubes and a side surface of each of reinforcing elements.

IPC 8 full level
F28D 1/053 (2006.01); **F28F 9/013** (2006.01); **F28F 9/02** (2006.01)

CPC (source: EP)
F25B 13/00 (2013.01); **F28D 1/053** (2013.01); **F28D 1/05366** (2013.01); **F28F 9/001** (2013.01); **F28F 9/013** (2013.01); **F28F 9/02** (2013.01); **F28D 2021/0068** (2013.01); **F28F 2225/00** (2013.01)

Citation (search report)

- [X] US 2003131976 A1 20030717 - KRAUSE PAUL E [US], et al
- [X] KR 20040005283 A 20040116 - HALLA CLIMATE CONTROL CORP
- See references of WO 2020230267A1

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

DOCDB simple family (publication)
EP 3971507 A1 20220323; **EP 3971507 A4 20220420**; **EP 3971507 B1 20231101**; CN 113785168 A 20211210; CN 113785168 B 20231103; JP 7170859 B2 20221114; JP WO2020230267 A1 20211021; WO 2020230267 A1 20201119

DOCDB simple family (application)
EP 19928811 A 20190514; CN 201980095830 A 20190514; JP 2019019127 W 20190514; JP 2021519100 A 20190514