

Title (en)

HEAT EXCHANGER AND REFRIGERATION CYCLE APPARATUS EQUIPPED WITH SAME

Title (de)

WÄRMETAUSCHER UND KÄLTEKREISLAUFPORRICHTUNG DAMIT

Title (fr)

ÉCHANGEUR DE CHALEUR ET APPAREIL À CYCLE DE RÉFRIGÉRATION ÉQUIPÉ DE CELUI-CI

Publication

**EP 4242569 A1 20230913 (EN)**

Application

**EP 20960833 A 20201106**

Priority

JP 2020041582 W 20201106

Abstract (en)

An outdoor heat exchanger (11) includes a first heat exchange module (21a) and a second heat exchange module (21b), as heat exchange modules (21) each including a plurality of heat transfer tubes (23) and a securing connector (25) that holds the heat transfer tubes (23). The securing connector (25) has a holder plate (27a) holding one end of each of the heat transfer tubes (23), and a pair of side plates (29a) extending from the holder plate (27a) away from the heat transfer tubes (23). The pair of side plates (29a) of the securing connector (25) of the first heat exchange module (21a) is joined to the pair of side plates (29a) of the securing connector (25) of the second heat exchange module (21b). The securing connectors (25) of both of the first heat exchange module (21a) and the second heat exchange module (21b) define a space, and the heat transfer tubes (23) of the first heat exchange module (21a) and the heat transfer tubes (23) of the second heat exchange module (21b) communicate with the space.

IPC 8 full level

**F28F 9/00** (2006.01)

CPC (source: EP US)

**F25B 13/00** (2013.01 - US); **F25B 39/02** (2013.01 - EP); **F25B 39/04** (2013.01 - EP); **F28D 1/0443** (2013.01 - EP US);  
**F28D 1/05391** (2013.01 - EP US); **F28F 1/14** (2013.01 - EP US); **F28F 9/0224** (2013.01 - EP); **F28F 9/18** (2013.01 - EP);  
**F28F 17/005** (2013.01 - EP US); **F25B 13/00** (2013.01 - EP); **F28D 2001/0273** (2013.01 - EP US); **F28D 2021/0068** (2013.01 - EP US);  
**F28F 2275/04** (2013.01 - EP US)

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 4242569 A1 20230913; EP 4242569 A4 20240228; JP WO2022097281 A1 20220512; US 2023332806 A1 20231019;**  
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DOCDB simple family (application)

**EP 20960833 A 20201106; JP 2020041582 W 20201106; JP 2022560607 A 20201106; US 202018044272 A 20201106**