

Title (en)

HEAT EXCHANGER AND REFRIGERATION CYCLE DEVICE

Title (de)

WÄRMETAUSCHER UND KÄLTEKREISLAUFVORRICHTUNG

Title (fr)

ÉCHANGEUR DE CHALEUR ET DISPOSITIF À CYCLE DE RÉFRIGÉRATION

Publication

EP 4130634 A1 20230208 (EN)

Application

EP 20928270 A 20200330

Priority

JP 2020014479 W 20200330

Abstract (en)

A heat exchanger includes a plurality of fins being spaced apart from one another in a first direction and a plurality of heat transfer tubes penetrating through the plurality of fins. The plurality of heat transfer tubes are spaced apart from one another in a second direction crossing the first direction. Each of the plurality of fins includes a fin base surface being flat and a fin projection provided between two adjacent heat transfer tubes of the plurality of heat transfer tubes. The fin projection projects from the fin base surface in the first direction. The fin projection includes a main part and an uprise portion surrounding the main part and connecting between the main part and the fin base surface. A relationship between angle θ_a and angle θ_b , $\theta_a > \theta_b$ is established where θ_a is an angle of the uprise portion against the fin base surface, and θ_b is an angle of the main part against the fin base surface.

IPC 8 full level

F28F 1/32 (2006.01)

CPC (source: EP)

F28F 1/32 (2013.01); **F28F 13/12** (2013.01); **F28D 1/0477** (2013.01)

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 4130634 A1 20230208; **EP 4130634 A4 20230510**; **EP 4130634 B1 20240619**; JP 7309041 B2 20230714; JP WO2021199121 A1 20211007; WO 2021199121 A1 20211007

DOCDB simple family (application)

EP 20928270 A 20200330; JP 2020014479 W 20200330; JP 2022512516 A 20200330