

Title (en)

HEAT EXCHANGER AND REFRIGERATING CYCLE DEVICE PROVIDED WITH SAME

Title (de)

WÄRMETAUSCHER UND KÄLTEKREISLAUFVORRICHTUNG DAMIT

Title (fr)

ÉCHANGEUR DE CHALEUR ET DISPOSITIF À CYCLE DE RÉFRIGÉRATION LE COMPORTANT

Publication

EP 2256452 A4 20130731 (EN)

Application

EP 09726196 A 20090323

Priority

- JP 2009055585 W 20090323
- JP 2008075816 A 20080324

Abstract (en)

[origin: EP2256452A1] In an outdoor unit in a cold area and an indoor unit of a refrigerating device, a temperature of a heat exchanger functioning as an evaporator is cooled up to an air dew-point temperature or below, and when the temperature is 0°C or below, a frost formation phenomenon occurs on a surface. The frost formation causes increase in air-path resistance and thermal resistance and leads to reduced ability of the device. However, if the frost formation can be delayed, energy saving can be realized. Thus, by providing a plurality of holes, for example, a plurality of holes whose radius is an order of several nanometers on the fin surface of the heat exchanger, generation of condensed water droplets on the fin surface is suppressed. By providing a plurality of holes exerting the Gibbs-Thomson effect so as to lower the freezing point, reduced ability due to the frost formation is delayed.

IPC 8 full level

F28F 1/32 (2006.01)

CPC (source: EP)

F25B 39/022 (2013.01); **F25B 47/006** (2013.01); **F28F 1/32** (2013.01); **F28F 13/187** (2013.01); **F25B 2500/01** (2013.01)

Citation (search report)

- [Y] US 2007031639 A1 20070208 - HSU MING F [US], et al
- [Y] US 6764745 B1 20040720 - KARASAWA YASUSHI [JP], et al
- [Y] EP 1750018 A2 20070207 - GEN ELECTRIC [US]
- See references of WO 2009119474A1

Designated contracting state (EPC)

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 SE SI SK TR

DOCDB simple family (publication)

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DOCDB simple family (application)

EP 09726196 A 20090323; CN 200980107327 A 20090323; JP 2009055585 W 20090323; JP 2010505612 A 20090323; MY PI2010003669 A 20090323