

Title (en)
REFRIGERATING CYCLE DEVICE AND OUTDOOR HEAT EXCHANGER USED IN SAME

Title (de)
KÜHLKREISVORRICHTUNG UND DARIN VERWENDETER AUSSENWÄRMETAUSCHER

Title (fr)
DISPOSITIF À CYCLE DE RÉFRIGÉRATION ET ÉCHANGEUR DE CHALEUR EXTÉRIEUR UTILISÉ DANS CELUI-CI

Publication
EP 3477227 A4 20190807 (EN)

Application
EP 16906317 A 20160624

Priority
JP 2016068810 W 20160624

Abstract (en)
[origin: EP3477227A1] An outdoor heat exchanger (11) of an air conditioning apparatus (1) includes a main heat exchange unit (13) and an auxiliary heat exchange unit (15). When the outdoor heat exchanger (11) is operated to function as an evaporator, in the outdoor heat exchanger (11), refrigerant flows from the auxiliary heat exchange unit (15) into the main heat exchange unit (13), and in the auxiliary heat exchange unit (15), refrigerant flows from a first heat transfer tube (33a) of an auxiliary heat exchange unit (15a) into a second heat transfer tube (33b) of an auxiliary heat exchange unit (15b). When a refrigerant outlet temperature is lower than a freezing point of water, the operation is performed such that a refrigerant inlet temperature of the refrigerant flowing into the auxiliary heat exchange unit (15) is higher than an outdoor air temperature and that a refrigerant outlet temperature of the refrigerant delivered out of the auxiliary heat exchange unit (15) is lower than the outdoor air temperature.

IPC 8 full level
F25B 47/02 (2006.01); **F25B 13/00** (2006.01); **F25B 39/00** (2006.01); **F25B 39/02** (2006.01); **F25B 47/00** (2006.01); **F28F 17/00** (2006.01)

CPC (source: EP US)
F25B 13/00 (2013.01 - EP US); **F25B 39/00** (2013.01 - EP US); **F25B 39/02** (2013.01 - EP US); **F25B 39/028** (2013.01 - EP US); **F25B 47/006** (2013.01 - EP US); **F25B 47/02** (2013.01 - EP US); **F25B 47/025** (2013.01 - EP US); **F28F 9/0275** (2013.01 - US); **F28F 17/00** (2013.01 - EP US)

Citation (search report)

- [Y] EP 3032182 A1 20160615 - DAIKIN IND LTD [JP]
- [Y] JP 2013083419 A 20130509 - DAIKIN IND LTD
- [Y] EP 2865967 A1 20150429 - LG ELECTRONICS INC [KR]
- [A] US 4768348 A 19880906 - NOGUCHI ICHIRO [JP]
- [A] EP 2372272 A1 20111005 - DAIKIN IND LTD [JP]
- See references of WO 2017221400A1

Cited by
EP4166868A1; EP4310427A4

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 3477227 A1 20190501; **EP 3477227 A4 20190807**; **EP 3477227 B1 20201223**; CN 109312971 A 20190205; CN 109312971 B 20201106; ES 2844591 T3 20210722; JP WO2017221400 A1 20190228; US 2019128574 A1 20190502; WO 2017221400 A1 20171228

DOCDB simple family (application)
EP 16906317 A 20160624; CN 201680085743 A 20160624; ES 16906317 T 20160624; JP 2016068810 W 20160624; JP 2018523250 A 20160624; US 201616089634 A 20160624