

Title (en)  
HEAT EXCHANGER AND AIR CONDITIONER

Title (de)  
WÄRMETAUSCHER UND KLIMAAANLAGE

Title (fr)  
ÉCHANGEUR DE CHALEUR ET CLIMATISEUR

Publication  
**EP 4116642 A4 20230405 (EN)**

Application  
**EP 20923061 A 20200305**

Priority  
JP 2020009421 W 20200305

Abstract (en)  
[origin: EP4116642A1] A heat exchanger for an air conditioner for which a zeotropic refrigerant mixture is used is obtained, and the heat exchanger, when used as an evaporator, enables reduction of the amount of required refrigerant without deteriorating the heat transfer performance. The heat exchanger includes: a plurality of fins 11 stacked together at predetermined intervals therebetween; first heat transfer pipes 31 to 36 which extend through the plurality of fins 11, in which a heat medium flows, and which have a plurality of grooves in the inner surface of the pipes; and second heat transfer pipes 37, 38 extending through the plurality of fins 11, having one end connected to one end of the first heat transfer pipes 31 to 36 to form one heat medium flow path, being smaller in pipe diameter than the first heat transfer pipes 31 to 36, and having an inner surface shape providing a pressure loss per unit length smaller than that of the first heat transfer pipes 31 to 36.

IPC 8 full level  
**F25B 39/02** (2006.01); **F25B 1/00** (2006.01); **F25B 13/00** (2006.01); **F25B 39/04** (2006.01); **F28D 1/047** (2006.01); **F28D 21/00** (2006.01); **F28F 1/00** (2006.01); **F28F 1/06** (2006.01); **F28F 1/32** (2006.01); **F28F 1/40** (2006.01); **F28F 13/02** (2006.01); **F28F 13/06** (2006.01); **F28F 13/18** (2006.01)

CPC (source: EP US)  
**F25B 13/00** (2013.01 - EP); **F25B 39/02** (2013.01 - EP US); **F25B 39/04** (2013.01 - EP US); **F28D 1/0477** (2013.01 - EP); **F28F 1/006** (2013.01 - EP); **F28F 1/06** (2013.01 - EP); **F28F 1/40** (2013.01 - EP); **F28F 13/02** (2013.01 - EP US); **F28F 13/06** (2013.01 - EP US); **F28F 13/187** (2013.01 - EP); **F28D 2021/0068** (2013.01 - EP); **F28F 1/32** (2013.01 - EP); **F28F 2210/08** (2013.01 - EP)

Citation (search report)

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- [A] KR 20020038002 A 20020523 - LG ELECTRONICS INC [KR]
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- [A] US 6550273 B2 20030422 - FUJITAKA AKIRA [JP], et al
- See also references of WO 2021176651A1

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

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BA ME

Designated validation state (EPC)  
KH MA MD TN

DOCDB simple family (publication)  
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DOCDB simple family (application)  
**EP 20923061 A 20200305**; JP 2020009421 W 20200305; JP 2022504883 A 20200305; US 202017790299 A 20200305