

## Title (en)

Refrigerator with a non-azeotropic mixture of hydrocarbons refrigerants

## Title (de)

Kühlschrank mit einer nichtazeotropischen Mischung aus Kohlenwasserstoff-Kältemitteln

## Title (fr)

Réfrigérateur avec mélange non azéotrope de réfrigérants d'hydrocarbures

## Publication

**EP 2857778 A1 20150408 (EN)**

## Application

**EP 13187230 A 20131003**

## Priority

EP 13187230 A 20131003

## Abstract (en)

A refrigerator with a refrigerant circuit using a non-azeotropic mixture of hydrocarbons refrigerants comprises a compressor, a condenser, an expansion device, a first evaporator downstream the expansion device, a second evaporator downstream the first evaporator, a first heat exchanger to cause heat exchange between refrigerant downstream the condenser and upstream the first evaporator, on one side, and refrigerant downstream the first evaporator and upstream the second evaporator, on the other side, and a second heat exchanger to cause heat exchange between refrigerant downstream the condenser and upstream the first heat exchanger, on one side, and refrigerant downstream the second evaporator (19) and upstream the compressor (10), on the other side, the expansion device being a capillary tube that is integral part of both heat exchangers as a side of exchangers, where the capillary tube is parallel and in contact with a tube of the circuit or it is wrapped around such tube.

## IPC 8 full level

**F25B 41/06** (2006.01)

## CPC (source: EP US)

**F25B 1/005** (2013.01 - US); **F25B 41/37** (2021.01 - EP US); **F25D 11/022** (2013.01 - EP US); **F28D 15/04** (2013.01 - US); **F25B 6/04** (2013.01 - EP US); **F25B 9/006** (2013.01 - EP US); **F25B 2400/052** (2013.01 - EP US)

## Citation (applicant)

- US 5207077 A 19930504 - RADERMACHER REINHARD [US], et al
- EP 2592366 A2 20130515 - SAMSUNG ELECTRONICS CO LTD [KR], et al
- "Performance optimization of a Lorenz- Meutzner cycle charged with hydrocarbon mixtures for a domestic refrigerator-freezer", IJR, vol. 1, no. 35, pages 36 - 46

## Citation (search report)

- [Y] GB 2143014 A 19850130 - HOTPOINT LTD
- [YD] EP 2592366 A2 20130515 - SAMSUNG ELECTRONICS CO LTD [KR], et al
- [AD] US 5207077 A 19930504 - RADERMACHER REINHARD [US], et al
- [A] DE 102009001677 A1 20100923 - BSH BOSCH SIEMENS HAUSGERAETE [DE]
- [A] JP 2001201196 A 20010727 - TOSHIBA CORP
- [A] WON JAE YOON ET AL: "Performance optimization of a LorenzMeutzner cycle charged with hydrocarbon mixtures for a domestic refrigerator-freezer", INTERNATIONAL JOURNAL OF REFRIGERATION, ELSEVIER, PARIS, FR, vol. 35, no. 1, 28 September 2011 (2011-09-28), pages 36 - 46, XP028336834, ISSN: 0140-7007, [retrieved on 20111006], DOI: 10.1016/J.IJREFRIG.2011.09.014

## Cited by

EP3073210A1

## 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 2857778 A1 20150408**; US 2015096325 A1 20150409

## DOCDB simple family (application)

**EP 13187230 A 20131003**; US 201414482181 A 20140910