

Title (en)

SEMI-PERMEABLE MEMBRANE WITH PORES RESULTING FROM VOLATILE SUBSTANCE

Title (de)

SEMIPERMEABLE MEMBRAN MIT AUS EINER FLÜCHTIGEN SUBSTANZ RESULTIERENDEN POREN

Title (fr)

MEMBRANE SEMI-PERMÉABLE AVEC DES PORES RÉSULTANT D'UNE SUBSTANCE VOLATILE

Publication

**EP 4010645 A1 20220615 (FR)**

Application

**EP 20742661 A 20200708**

Priority

- FR 1908949 A 20190805
- EP 2020069193 W 20200708

Abstract (en)

[origin: WO2021023459A1] Disclosed is a low-temperature refrigeration device which is arranged in a frame (100) and comprises a working circuit (10) that forms a loop and contains a working fluid, the working circuit (10) forming a cycle comprising, connected in series: a compression mechanism (2, 3), a cooling mechanism (4, 5, 6), an expansion mechanism (7) and a heating mechanism (6, 8), wherein the mechanisms for cooling and heating the working fluid comprise a common heat exchanger (6) in which the working fluid flows in opposite directions in two separate transit portions of the working circuit (10), the device (1) further comprising a refrigeration heat exchanger (8) for extracting heat from at least one member (125) by exchanging heat with the working fluid flowing in the working circuit (10), the compression mechanism (2, 3) comprising two separate compressors (2, 3), the mechanism (4, 5, 6) for cooling the working fluid comprising two cooling heat exchangers (4, 5) which are arranged respectively at the outlet of the two compressors (2, 3) and ensure heat exchange between the working fluid and a cooling fluid, wherein the frame (100) extends in a longitudinal direction (A) and comprises a lower base (101) intended to be mounted on a support, the cooling heat exchangers (4, 5) are located in the frame (100) about the common heat exchanger (6), i.e. the cooling heat exchangers (4, 5) are not located below the common heat exchanger (6) between the common heat exchanger (6) and the lower base (101) of the frame (100).

IPC 8 full level

**F25J 1/00** (2006.01); **F25B 1/053** (2006.01); **F25B 1/10** (2006.01); **F25B 9/06** (2006.01); **F25B 11/04** (2006.01); **F25B 31/02** (2006.01); **F25J 1/02** (2006.01); **F25J 5/00** (2006.01); **F28D 7/00** (2006.01); **F28D 21/00** (2006.01)

CPC (source: EP KR US)

**F25B 1/053** (2013.01 - EP KR US); **F25B 1/10** (2013.01 - EP KR US); **F25B 9/06** (2013.01 - EP KR US); **F25B 11/04** (2013.01 - EP KR US); **F25B 31/026** (2013.01 - EP KR US); **F25J 1/001** (2013.01 - EP KR US); **F25J 1/0022** (2013.01 - EP KR US); **F25J 1/0025** (2013.01 - EP KR US); **F25J 1/005** (2013.01 - EP KR US); **F25J 1/0062** (2013.01 - EP KR US); **F25J 1/0065** (2013.01 - EP KR US); **F25J 1/0067** (2013.01 - EP KR US); **F25J 1/0072** (2013.01 - EP KR US); **F25J 1/0204** (2013.01 - EP KR US); **F25J 1/0212** (2013.01 - EP KR US); **F25J 1/0258** (2013.01 - EP KR US); **F25J 1/0259** (2013.01 - EP KR US); **F25J 1/0261** (2013.01 - EP KR US); **F25J 1/0265** (2013.01 - EP KR US); **F25J 1/0277** (2013.01 - EP KR US); **F25J 1/0284** (2013.01 - EP KR US); **F25J 1/0288** (2013.01 - EP KR US); **F25J 1/0296** (2013.01 - EP KR US); **F25B 2400/054** (2013.01 - EP KR US); **F25B 2400/072** (2013.01 - EP KR US); **F25B 2400/14** (2013.01 - EP KR US); **F25B 2500/01** (2013.01 - EP KR US); **F25B 2600/0251** (2013.01 - EP KR US); **F25J 2230/04** (2013.01 - EP KR US); **F25J 2230/20** (2013.01 - EP KR US); **F25J 2290/34** (2013.01 - EP KR US); **F25J 2290/62** (2013.01 - EP KR US)

Citation (search report)

See references of WO 2021023459A1

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)

**WO 2021023459 A1 20210211**; AU 2020325610 A1 20220224; CA 3146295 A1 20210211; CN 114364931 A 20220415; EP 4010645 A1 20220615; FR 3099819 A1 20210212; FR 3099819 B1 20210910; JP 2022543221 A 20221011; KR 20220042401 A 20220405; US 2022333859 A1 20221020

DOCDB simple family (application)

**EP 2020069193 W 20200708**; AU 2020325610 A 20200708; CA 3146295 A 20200708; CN 202080060821 A 20200708; EP 20742661 A 20200708; FR 1908949 A 20190805; JP 2022506156 A 20200708; KR 20227006294 A 20200708; US 202017633108 A 20200708