

Title (en)  
CRYOGENIC DEVICE WITH COMPACT EXCHANGER

Title (de)  
KRYOGENE VORRICHTUNG MIT KOMPAKTEM WÄRMETAUSCHER

Title (fr)  
DISPOSITIF CRYOGENIQUE A ECHANGEUR COMPACT

Publication  
**EP 3465030 B1 20200129 (FR)**

Application  
**EP 17735183 A 20170602**

Priority  
• FR 1655128 A 20160606  
• FR 2017051390 W 20170602

Abstract (en)  
[origin: WO2017212148A1] The invention relates to a cold-generating device that uses the "Joule-Thomson" expansion principle. It comprises a heat exchanger inside which a high-pressure and a low-pressure fluid circulate in countercurrent. The heat exchanger consists of a stack of pellets (5) made of a porous material, particularly sintered material, forming a cylindrical mandrel at the periphery of which, and in contact with which, a capillary (10) is wound inside which the high-pressure fluid circulates, wherein the low-pressure fluid circulates in countercurrent inside the porous mandrel formed in this way.

IPC 8 full level  
**F25B 41/06** (2006.01); **F25B 9/02** (2006.01); **F28D 7/02** (2006.01); **F28D 7/04** (2006.01); **F28F 13/00** (2006.01)

CPC (source: EP IL KR US)  
**F25B 9/02** (2013.01 - EP IL KR US); **F25B 41/37** (2021.01 - EP IL KR US); **F28D 7/024** (2013.01 - EP IL KR US); **F28D 7/04** (2013.01 - IL); **F28F 13/003** (2013.01 - EP IL KR US); **F25B 2309/022** (2013.01 - EP IL KR US); **F25B 2341/062** (2013.01 - EP IL KR US); **F25B 2400/052** (2013.01 - EP IL KR US); **Y10S 165/00** (2013.01 - KR)

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

DOCDB simple family (publication)  
**FR 3052245 A1 20171208; FR 3052245 B1 20190614**; CN 109073293 A 20181221; CN 109073293 B 20200703; EP 3465030 A1 20190410; EP 3465030 B1 20200129; IL 262395 A 20181231; IL 262395 B 20201029; KR 102260700 B1 20210603; KR 20190015202 A 20190213; SI 3465030 T1 20200331; US 2019120529 A1 20190425; WO 2017212148 A1 20171214

DOCDB simple family (application)  
**FR 1655128 A 20160606**; CN 201780025154 A 20170602; EP 17735183 A 20170602; FR 2017051390 W 20170602; IL 26239518 A 20181015; KR 20187030498 A 20170602; SI 201730180 T 20170602; US 201716094328 A 20170602