

Title (en)

G-M REFRIGERATOR WITH PHASE ADJUSTING MECHANISM

Title (de)

G-M-KÜHLSCHRANK MIT PHASENANPASSUNGSMECHANISMUS

Title (fr)

RÉFRIGÉRATEUR GIFFORT-MCMAHON ÉQUIPÉ D'UN MÉCANISME DE RÉGLAGE DE PHASE

Publication

EP 2482004 A4 20140101 (EN)

Application

EP 10856605 A 20100930

Priority

- CN 201010267075 A 20100831
- CN 2010077524 W 20100930

Abstract (en)

[origin: EP2482004A1] A G-M refrigerator comprises a compressor (1), a gas inlet valve (2), an exhaust valve (3), a regenerator (4), a cylinder (5), a piston (6), a hot cavity (7), a cold cavity (8), a seal ring (9), a driving mechanism (10-12), an annular gap (13), a heat exchanger (14), an orifice valve (18) and a gas reservoir (19). By introducing a phase modulation mechanism, such as the orifice valve (18), the gas reservoir (19) and the like, the working way of gas in the annular gap (13) is changed to be the same with that of a pulse tube refrigerator with the phase modulation mechanism, expansion of the part of the gas is fully utilized for doing work so as to generate the cold effect, loss caused by gas leakage through the seal ring (9) is further eliminated and the performances of the G-M refrigerator are further improved.

IPC 8 full level

F25B 9/14 (2006.01)

CPC (source: EP US)

F25B 9/14 (2013.01 - EP US); **F25B 9/10** (2013.01 - EP US)

Citation (search report)

- [X] US 4471625 A 19840918 - YASUKOCHI KOU [JP], et al
- [X] US 4708725 A 19871124 - OKUMURA NOBUO [JP]
- [X] US 5590533 A 19970107 - ASAMI HIROSHI [JP], et al
- [A] SU 1224514 A1 19860415 - FIZ TEKH INST NIZKIKH TEMP [SU]
- [A] EP 1251320 A1 20021023 - SHARP KK [JP]
- [A] JP 2004144461 A 20040520 - MITSUBISHI ELECTRIC CORP
- See references of WO 2012027918A1

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 SE SI SK SM TR

DOCDB simple family (publication)

EP 2482004 A1 20120801; **EP 2482004 A4 20140101**; **EP 2482004 B1 20170607**; CN 101900447 A 20101201; CN 101900447 B 20120815; JP 2013511696 A 20130404; JP 5589193 B2 20140917; US 2012227417 A1 20120913; WO 2012027918 A1 20120308

DOCDB simple family (application)

EP 10856605 A 20100930; CN 2010077524 W 20100930; CN 201010267075 A 20100831; JP 2012540263 A 20100930; US 201013498092 A 20100930