

Title (en)

Hybrid cooling system, and refrigerator and freezer using the same

Title (de)

Hybride Kühlanlage und dieselbe Kühlanlage verwendender Kühlschrank und Gefrierschrank

Title (fr)

Système de refroidissement hybride et réfrigérateur et congélateur l'utilisant

Publication

EP 1677059 A2 20060705 (EN)

Application

EP 05077379 A 20051017

Priority

KR 20040116240 A 20041230

Abstract (en)

A hybrid cooling system comprising a compressor (10) for compressing a gas refrigerant, a condenser (20) for condensing the refrigerant compressed in the compressor to a liquid state, an expansion (30) device for expanding the refrigerant condensed in the condenser, and an evaporator (40) for heat-exchanging the expanded refrigerant with ambient air, thereby evaporating the refrigerant. This hybrid cooling system further comprises a thermoelectric module (50) for re-cooling the air, which has been cooled in accordance with the heat exchange in the evaporator, using a Peltier effect generated in accordance with an electrical co-operation of P-type and N-type semiconductor elements (53, 54) included in the thermoelectric module with current flowing through the semiconductor elements. The invention also relates to the application of such a cooling system in a freezer or a refrigerator.

IPC 8 full level

F25D 17/06 (2006.01); **F25B 21/02** (2006.01); **F25B 25/00** (2006.01); **F25D 11/02** (2006.01)

CPC (source: EP KR US)

F25B 21/02 (2013.01 - EP KR US); **F25B 25/00** (2013.01 - EP US); **F25D 11/00** (2013.01 - KR); **F25D 11/02** (2013.01 - EP US); **F25D 17/065** (2013.01 - EP US); **F25D 2317/061** (2013.01 - EP US); **F25D 2317/0653** (2013.01 - EP US); **F25D 2317/0682** (2013.01 - EP US); **F25D 2400/04** (2013.01 - EP US)

Cited by

CH703730A3; EP2607821A3; WO2018129861A1; EP3187799B1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

EP 1677059 A2 20060705; CN 1796900 A 20060705; KR 20060077396 A 20060705; US 2006144073 A1 20060706

DOCDB simple family (application)

EP 05077379 A 20051017; CN 200510113755 A 20051014; KR 20040116240 A 20041230; US 31945305 A 20051229