Title (en)
Closed type air cycle refrigerator and cooling method using the same

Title (de)
Kühler mit geschlossenem Luftkreislauf und dessen Kühlverfahren

Title (fr)
Réfrigérateur à cycle d'air fermé et procédé de refroidissement l'utilisant

Publication
EP 1762793 A2 20070314 (EN)

Application
EP 06003379 A 20060220

Priority
JP 2005261972 A 20050909

Abstract (en)
A closed type refrigerator includes a compressor (3) and an expansion turbine (4) coupled to ends of a rotation shaft of a motor (2), respectively; a refrigerant circulating pipe; a first heat exchanger (5) provided in a portion of the refrigerant circulating pipe from an outlet of the compressor to an inlet of the expansion turbine; and a second heat exchanger (6) provided in a portion of the refrigerant circulating pipe from the first heat exchanger to the inlet of the expansion turbine. The compressor compresses the refrigerant, and the first heat exchanger carries out heat exchange between the compressed refrigerant and atmosphere to generate a first cooled refrigerant. The second heat exchanger carries out heat exchange between the first cooled refrigerant and a second cooled refrigerant to generate a third cooled refrigerant, and the expansion turbine adiabatically expands the third cooled refrigerant to generate the second cooled refrigerant, which is used to cool a refrigeration storage (7) and supplied to the inlet of the compressor. The refrigerant is dehumidified.

IPC 8 full level
F25B 9/00 (2006.01)

CPC (source: EP NO)
B25B 9/00 (2013.01 - NO); F25B 9/004 (2013.01 - EP)

Cited by
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DE DK FI GB

Designated extension state (EPC)
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DOCDB simple family (publication)
EP 1762793 A2 20070314; EP 1762793 A3 20131225; EP 1762793 B1 20180530; DK 1762793 T3 20180702; JP 2007071507 A 20070322; NO 20060744 L 20070312; NO 342771 B1 20180806

DOCDB simple family (application)
EP 06003379 A 20060220; DK 06003379 T 20060220; JP 2005261972 A 20050909; NO 20060744 A 20060216