

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 B1 20180530 (EN)**

Application

**EP 06003379 A 20060220**

Priority

JP 2005261972 A 20050909

Abstract (en)

[origin: EP1762793A2] 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

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CPC (source: EP NO)

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