

Title (en)

Method and device for producing cold gaseous or liquid air

Title (de)

Verfahren und Vorrichtung zum Erzeugen kalter gasförmiger oder flüssiger Luft

Title (fr)

Procédé et dispositif de production d'air froid sous forme gazeuse ou liquide

Publication

EP 2369280 A3 20150506 (DE)

Application

EP 11159073 A 20110321

Priority

DE 102010012778 A 20100325

Abstract (en)

[origin: EP2369280A2] The method involves conveying air to a heat exchanger (21), and cooling the air in the heat exchanger by heat exchange with liquefied cryogenic coolant e.g. liquid nitrogen. The cryogenic coolant is vaporized, and the air to be cooled is passed through an air drier (26) e.g. adsorber drier, membrane drier and coolant drier, before supplying the air to the heat exchanger. The coolant evaporated in the heat exchanger is used as an operating agent in the air drier, and the evaporated cryogenic coolant is released to an expansion machine (32). An independent claim is also included for a device for producing cryogenic gaseous or liquefied air comprising a heat exchanger with a surface for thermal contact of air with evaporated cryogenic coolant.

IPC 8 full level

F25J 1/02 (2006.01); **F25D 3/10** (2006.01); **F25J 1/00** (2006.01)

CPC (source: EP)

F25D 3/10 (2013.01); **F25J 1/0012** (2013.01); **F25J 1/0221** (2013.01); **F25J 1/0259** (2013.01); **F25J 2205/66** (2013.01); **F25J 2210/42** (2013.01); **F25J 2220/40** (2013.01); **F25J 2230/20** (2013.01); **F25J 2230/40** (2013.01); **F25J 2240/12** (2013.01); **F25J 2240/90** (2013.01); **F25J 2290/34** (2013.01); **F25J 2290/62** (2013.01)

Citation (search report)

- [X] CH 659698 A5 19870213 - NIPPON OXYGEN CO LTD
- [XY] DE 19748966 A1 19990512 - MESSER GRIESHEIM GMBH [DE]
- [I] FR 2690982 A1 19931112 - AIR LIQUIDE [FR]
- [A] DE 1960515 B1 19710527 - LINDE AG
- [Y] US 4320627 A 19820323 - HVIZDOS LEONARD J

Cited by

CN107691429A; US2015143844A1; US9890995B2; FR2996909A1; FR2996910A1

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

Designated extension state (EPC)

BA ME

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