

Title (en)
Process for producing gaseous nitrogen

Title (de)
Verfahren zur Gewinnung von gasförmigem Stickstoff

Title (fr)
Procédé de production d'azote gazeux

Publication
EP 1134524 A3 20020109 (DE)

Application
EP 01105925 A 20010309

Priority
DE 10013074 A 20000317

Abstract (en)
[origin: EP1134524A2] A second oxygen-enriched gas is removed from the vaporizing chamber of the condenser-vaporizer, relieving the pressure and heating in the heat exchanger. Process for recovering gaseous nitrogen by the decomposition of air in a distillation column system comprises compressing the air (1) in an air compressor, cooling in a heat exchanger (2) and feeding to a single column (4); removing the nitrogen-rich fraction (5, 7, 8) from the column system and compressing to a first part (12, 13) in a circulating compressor (9); feeding the first part of the nitrogen-rich fraction to the liquefaction chamber of a condenser-vaporizer (14) downstream of the circulating compressor and condensing under pressure to form a nitrogen-rich liquid (15, 16); partially vaporizing a liquid oxygen-rich fraction from the distillation system in the vaporizing chamber of the condenser-vaporizer; producing a first oxygen-enriched gas from the vapor formed in the vaporizing chamber; and removing a second part (19, 20) of the nitrogen-rich fraction as a gaseous nitrogen product. A second oxygen-enriched gas is removed from the vaporizing chamber of the condenser-vaporizer, relieving the pressure and heating in the heat exchanger. An Independent claim is also included for an apparatus for recovering gaseous nitrogen by the decomposition of air in a distillation column system. Preferred Features: The whole circulating liquid for the single column is produced in the condenser-vaporizer. The air compressor and the circulating compressor are formed by a single machine.

IPC 1-7
F25J 3/04

IPC 8 full level
F25J 3/04 (2006.01)

CPC (source: EP US)
F25J 3/04284 (2013.01 - EP); **F25J 3/04321** (2013.01 - EP US); **F25J 3/04351** (2013.01 - EP US); **F25J 3/044** (2013.01 - EP US);
F25J 2215/50 (2013.01 - EP)

Citation (search report)
• [X] DE 19623310 A1 19961107 - LINDE AG [DE]
• [A] EP 0816784 A1 19980107 - CRIO & ENG S R L [IT]
• [DA] US 4400188 A 19830823 - PATEL SURESH U [US], et al
• [A] FR 2767317 A1 19990219 - AIR LIQUIDE [FR]
• [PA] DE 10013073 A1 20001019 - LINDE AG [DE]
• [A] GB 1392294 A 19750430 - BRITISH OXYGEN CO LTD

Cited by
EP1314941A3

Designated contracting state (EPC)
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)
EP 1134524 A2 20010919; EP 1134524 A3 20020109; EP 1134524 B1 20051005; AT E306062 T1 20051015; DE 10013074 A1 20010920;
DE 50107586 D1 20051110; US 2001052242 A1 20011220; US 6470707 B2 20021029

DOCDB simple family (application)
EP 01105925 A 20010309; AT 01105925 T 20010309; DE 10013074 A 20000317; DE 50107586 T 20010309; US 81070801 A 20010319