

Title (en)
GAS COMPRESSOR, DEVICE COMPRISING SAID COMPRESSOR AND GASEOUS MIXTURE SEPARATING METHOD USING SAID COMPRESSOR

Title (de)
GASVERDICHTER, DEN VERDICHTER UMFASSENDE VORRICHTUNG UND DEN VERDICHTER VERWENDENDES GASGEMISCHTRENNVERFAHREN

Title (fr)
COMPRESSEUR DE GAZ, APPAREIL DE SEPARATION D'UN MELANGE GAZEUX INCORPORANT UN TEL COMPRESSEUR ET PROCEDE DE SEPARATION D'UN MELANGE GAZEUX INCORPORANT UN TEL COMPRESSEUR

Publication
EP 1692443 A1 20060823 (FR)

Application
EP 04805857 A 20041124

Priority
• FR 2004050615 W 20041124
• FR 0350978 A 20031205

Abstract (en)
[origin: FR2863348A1] The gas compressor has n stages (C1, C2, C3, C4, C5) connected in series where n is equal to at least 3, each stage is followed by a coolant (R1, R2, R3, R4, R5). At least two coolants have different pressure drops for the compressed gas, with the cooler with the lower pressure drop upstream of the cooler with the higher pressure drop. The cooler (R5) for the last stage of the compressor has a higher pressure drop than the first. The last stages of the compressor have a pressure drop higher than the first stages. At least two coolers have pressure drops differing by at least 30%, preferably at least 50% or even by at least 100%. Independent claims are also included for: (i) a gas separating device including at least one compressor as described above; (ii) an air separation unit comprising a cryogenic distillation unit with at least one distillation column, means of sending compressed air to a column in the unit, means of extracting a liquid from the column, and means of vaporizing the liquid by heat exchange with a compressed gas, where the gas has been compressed by at least one of the last stages of a compressor (R4, R5) as described above and/or the air is compressed in the compressor; and (iii) a method of separating a gas mixture by cryogenic distillation in a system of columns in which a gas intended for the columns or a gas from the columns is compressed in a compressor as described above and the gas leaving the last stage is at a pressure greater than 5 bars, preferably greater than 10 bars; compressing a first air flow to a first pressure; part of the air being suppressed to a second pressure greater than 10 bars; part of the air at the first pressure being sent to the distillation columns; extracting a liquid flow from the columns; vaporizing the liquid flow by heat exchange with the air at the second pressure; and compressing the air to the first and/or the second pressure in at least one compressor as described above.

IPC 8 full level
F25J 3/04 (2006.01); **F04D 29/58** (2006.01)

CPC (source: EP US)
F04D 29/5826 (2013.01 - EP US); **F25J 3/04018** (2013.01 - EP US); **F25J 3/04024** (2013.01 - EP US); **F25J 3/0403** (2013.01 - EP US); **F25J 3/0406** (2013.01 - EP US); **F25J 2215/40** (2013.01 - EP US); **F25J 2230/04** (2013.01 - EP US); **F25J 2290/12** (2013.01 - EP US)

Citation (search report)
See references of WO 2005057111A1

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LU MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)
FR 2863348 A1 20050610; **FR 2863348 B1 20061222**; CN 100473928 C 20090401; CN 1890524 A 20070103; EP 1692443 A1 20060823; JP 2007518048 A 20070705; US 2007122272 A1 20070531; WO 2005057111 A1 20050623

DOCDB simple family (application)
FR 0350978 A 20031205; CN 200480036078 A 20041124; EP 04805857 A 20041124; FR 2004050615 W 20041124; JP 2006541989 A 20041124; US 58079704 A 20041124