

Title (en)

PROCESS AND APPARATUS FOR CRYOGENIC SEPARATION OF AIR WITH MIXED GAS TURBINE

Title (de)

VERFAHREN UND VORRICHTUNG ZUR KRYOGENEN TRENNUNG VON LUFT MIT EINER TURBINE FÜR EIN GASGEMISCH

Title (fr)

PROCÉDÉ ET APPAREIL DE SÉPARATION CRYOGÉNIQUE DE L'AIR À L'AIDE D'UNE TURBINE À GAZ MIXTE

Publication

EP 4214456 B1 20240508 (EN)

Application

EP 21777405 A 20210909

Priority

- EP 20020419 A 20200917
- EP 2021025333 W 20210909

Abstract (en)

[origin: WO2022058043A1] In this process and apparatus for cryogenic separation of air, the separation column system comprises a high-pressure column (12), a low-pressure column (13) and a crude argon column (18). A mixed gas stream (73, 74) produced by mixing gaseous oxygen (72) and a gas stream (31, 71) from the evaporation space of the argon top condenser (21), is work expanded in a mixed gas turbine (75).

IPC 8 full level

F25J 3/00 (2006.01)

CPC (source: EP IL KR US)

F25J 3/0409 (2013.01 - EP IL KR); **F25J 3/04096** (2013.01 - EP IL KR); **F25J 3/04181** (2013.01 - EP IL KR); **F25J 3/0423** (2013.01 - EP IL KR); **F25J 3/04284** (2013.01 - EP IL KR); **F25J 3/04315** (2013.01 - US); **F25J 3/04321** (2013.01 - EP IL KR US); **F25J 3/04351** (2013.01 - EP IL KR); **F25J 3/04496** (2013.01 - EP IL KR); **F25J 3/04715** (2013.01 - EP IL KR US); **F25J 3/04727** (2013.01 - EP IL KR US); **F25J 3/04878** (2013.01 - EP IL KR); **F25J 3/0409** (2013.01 - US); **F25J 3/04181** (2013.01 - US); **F25J 2200/06** (2013.01 - EP IL KR US); **F25J 2200/20** (2013.01 - EP IL KR US); **F25J 2200/34** (2013.01 - EP IL KR US); **F25J 2215/52** (2013.01 - EP IL KR US); **F25J 2215/56** (2013.01 - EP IL KR US); **F25J 2220/02** (2013.01 - US); **F25J 2220/52** (2013.01 - EP IL KR); **F25J 2235/58** (2013.01 - EP IL KR US); **F25J 2245/02** (2013.01 - EP IL KR US); **F25J 2245/42** (2013.01 - US); **F25J 2245/50** (2013.01 - EP IL KR US); **F25J 2245/58** (2013.01 - EP IL KR); **F25J 2270/02** (2013.01 - EP IL KR US)

Citation (examination)

- EP 0269342 A2 19880601 - BOC GROUP PLC [GB]
- EP 0881446 A1 19981202 - BOC GROUP PLC [GB]
- WO 8801037 A1 19880211 - ERICKSON DONALD C [US]
- DE 19543953 C1 19961219 - LINDE AG [DE]

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

DOCDB simple family (publication)

WO 2022058043 A1 20220324; CN 116171366 A 20230526; EP 4214456 A1 20230726; EP 4214456 B1 20240508; EP 4214456 C0 20240508; IL 300773 A 20230401; KR 20230069966 A 20230519; TW 202227766 A 20220716; US 2023358468 A1 20231109

DOCDB simple family (application)

EP 2021025333 W 20210909; CN 202180062897 A 20210909; EP 21777405 A 20210909; IL 30077323 A 20230219; KR 20237012420 A 20210909; TW 110134752 A 20210917; US 202118044858 A 20210909