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EUROPEAN PATENT APPLICATION

⑰ Application number: 81302162.3

⑤① Int. Cl.³: **B 01 J 20/18**
B 01 D 53/02

⑱ Date of filing: 15.05.81

⑳ Priority: 23.05.80 JP 67772/80
02.06.80 JP 72701/80

㉓ Date of publication of application:
02.12.81 Bulletin 81/48

㉔ Date of deferred publication of search report: 10.03.82

㉕ Designated Contracting States:
BE DE FR GB LU NL

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⑤④ Oxygen adsorbent and process for the separation of oxygen and nitrogen using same.

⑤⑦ Oxygen adsorbent for adsorbing oxygen from a two-component mixed gas consisting essentially of oxygen and nitrogen which comprises a substantially pure Na-A type zeolite having dissolved therein at least divalent iron or the iron dissolved Na-A type zeolite a portion of Na of which is substituted with K. A process for the separation of a two-component mixed gas consisting essentially of oxygen and nitrogen into oxygen and nitrogen which comprises passing the two-component mixed gas through a layer filled with the above oxygen adsorbent in a low temperature region below room temperature and adsorbing oxygen selectively with the adsorbent is also disclosed. Further, a process for the separation of a two-component mixed gas consisting essentially of oxygen and nitrogen into oxygen and nitrogen is disclosed which comprises passing the two-component mixed gas through a layer filled with the above adsorbent in a low temperature region below room temperature at a relatively high pressure, adsorbing oxygen selectively with the adsorbent, collecting nitrogen gas, and then collecting the adsorbed oxygen by reducing the pressure in the layer filled with the adsorbent to a relatively low level.

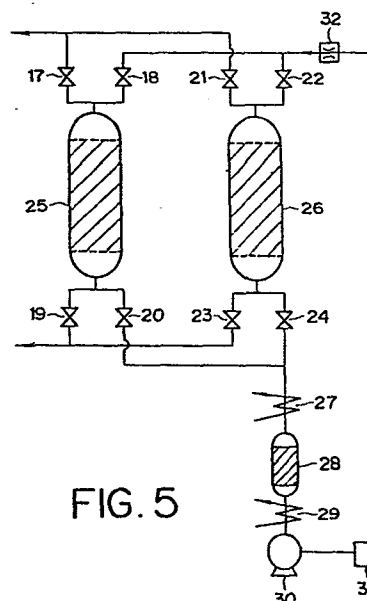


FIG. 5



| DOCUMENTS CONSIDERED TO BE RELEVANT | | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int. Cl. 3) |
|---|---|-------------------|---|
| Category | Citation of document with indication, where appropriate, of relevant passages | | B 01 J 20/18 B 01 D 53/02 |
| | <p><u>US - A - 3 013 982</u> (BRECK)</p> <p>* column 14, claims 1,2,6,8,9 *</p> <p>---</p> | 1 | |
| A | <u>US - A - 3 013 990</u> (BRECK) | | |
| A | <u>FR - A - 2 253 709</u> (LENINGRADSKY TEKHNOLOGICHESKY INSTITUT KHOLO- DILVOI PROMYSHLENNOSTI) | | |
| A | <p>IZVESTIYA AKADEMII NAUK SSSR, SERIYA KHIMICHESKAYA, no. 9, 1973, Institute of Physical Chemistry, Academy of Sciences of the USSR, I.A. KALINNIKOVA et al.: "Equilibrium adsorption of mixtures of nitrogen with oxygen on NaA zeolite", pages 1940-1946; translation in Bulletin of the Academy of Sciences of the USSR, Division of Chemical Sciences, NEW YORK (US) pages 1891-1896</p> | | <p>TECHNICAL FIELDS SEARCHED (Int. Cl. 3)</p> <p>B 01 J 20/18</p> |
| A | <u>US - A - 2 810 454</u> (JONES) | | |
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| | | | <p>CATEGORY OF CITED DOCUMENTS</p> <p>X: particularly relevant A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: conflicting application D: document cited in the application L: citation for other reasons</p> |
| <p><input checked="" type="checkbox"/> The present search report has been drawn up for all claims</p> | | | <p>&: member of the same patent family, corresponding document</p> |
| Place of search | Date of completion of the search | Examiner | |
| The Hague | 26.11.1981 | WENDLING | |