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(71) Applicant (for all designated States except US): **PRAXAIR TECHNOLOGY, INC.** [US/US]; 39 Old Ridgebury Road, Danbury, CT 06810 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SCHWARTZ, Joseph, Michael** [US/US]; 474 Cottonwood Drive, Williamsville, NY 14221 (US). **DRNEVICH, Raymond, Francis** [US/US]; 5850 Creekview Drive, Clarence Center, NY 14032 (US). **JANKOWIAK, Jerome, Thomas** [US/US]; 10 Haverford Lane, Williamsville, NY 14221

(US). **BONAQUIST, Dante, Patrick** [US/US]; 1036 Ransom Road, Grand Island, NY 14072 (US).

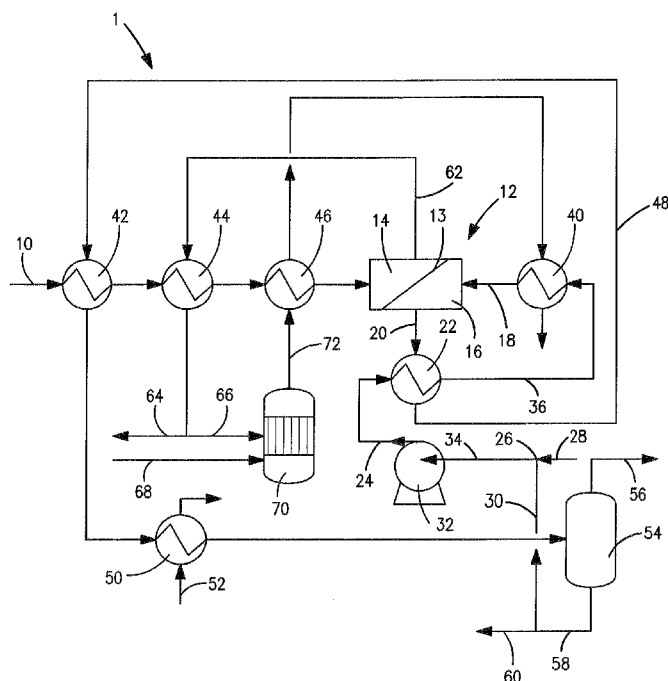
(74) Agents: **ROSENBLUM, David, M.** et al.; Praxair, Inc., 39 Old Ridgebury Road, Danbury, CT 06810 (US).

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[Continued on next page]

(54) Title: SEPARATION METHOD AND APPARATUS

**FIG. 1**

(57) Abstract: A separation method and apparatus that separates a component from a feed stream by use of a membrane in which separation is driven, at least in part, by a sweep stream. The sweep stream may be pumped to a supercritical pressure and then heated to at least near supercritical temperature, at least in part, through heat exchange with a component laden sweep stream being discharged from the membrane. A multi-component mixture can also be used that will produce the sweep stream as a vapor as a result of the heat exchange. The component laden sweep stream, due to cooling through the indirect heat exchange, will form a two-phase fluid that can be phase separated into a vapor phase enriched in the component that can be taken as a product and a residual liquid that can be recirculated in the formation of the sweep stream in the liquid state. In one embodiment the component is hydrogen.

**Declarations under Rule 4.17:**

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))
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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

C01B B01D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

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X	EP 0 916 384 A1 (PRAXAIR TECHNOLOGY INC [US]) 19 May 1999 (1999-05-19)	1,2,9,10
Y	paragraph [0019] - paragraph [0027]; figure 1; table IIa	4,5,12, 13
X	US 6 139 604 A (GOTTSMANN CHRISTIAN FRIEDRICH [US] ET AL) 31 October 2000 (2000-10-31) column 12, line 35 - column 16, line 55; figures 2,3,4,6 column 19, line 45 - column 22, line 46	1,2,9,10
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Y	page 2, line 50 - page 5, line 42; claims 1-3,10,12; figures 1,8,9	8,16,17
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Further documents are listed in the continuation of Box C.



See patent family annex.

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& document member of the same patent family

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Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2
 NL - 2280 HV Rijswijk
 Tel. (+31-70) 340-2040,
 Fax: (+31-70) 340-3016

Authorized officer

Cristescu, Ioana

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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Y	page 4, line 24 - page 5, line 58; figure 8 -----	4,5,12, 13
X	WO 91/08040 A1 (DOW CHEMICAL CO [US]) 13 June 1991 (1991-06-13)	1,2,9,10
Y	page 15, line 7 - page 19, line 2; claims 1,6; figures 1,2 -----	4,5,12, 13
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INTERNATIONAL SEARCH REPORT

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