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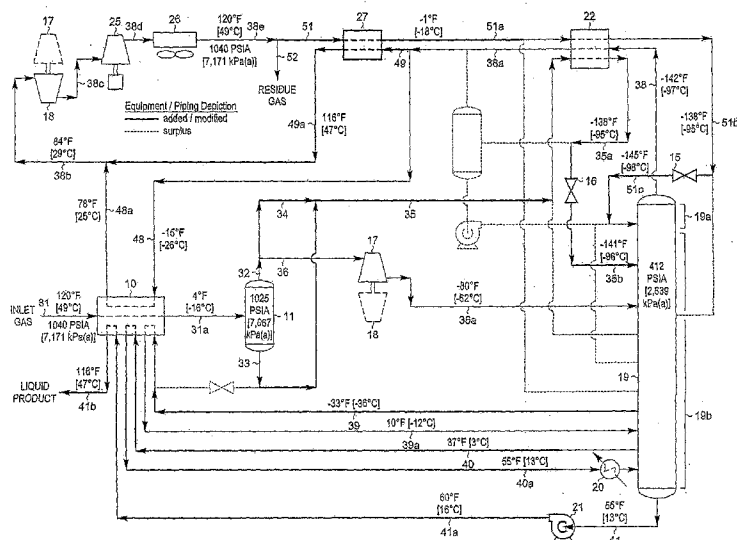
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(54) Title: HYDROCARBON GAS PROCESSING



(57) Abstract: A process for the recovery of ethane, ethylene, propane, propylene, and heavier hydrocarbon components from a hydrocarbon gas stream is disclosed. The stream is cooled and is thereafter expanded to the fractionation tower pressure and supplied to the fractionation tower at a lower mid-column feed position. A distillation stream is withdrawn from the column below the feed point of the stream and is then directed into heat exchange relation with the tower overhead vapor stream to cool the distillation stream and condense at least a part of it, forming a condensed stream. At least a portion of the condensed stream is directed to the fractionation tower at an upper mid-column feed position. A recycle stream is withdrawn from the tower overhead after it has been warmed and compressed. The compressed recycle stream is cooled sufficiently to substantially condense it, and is then expanded.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 06/18932

A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - F25J 3/00 (2007.1)

USPC - 62/620

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)

USPC 62/620

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
62/613, 617, 619, 621 (text search)

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

PubWEST (USPT, PGPB, USOC, EPAB, JPAB); DialogPRO (Engineering); Google Scholar

Search Terms Used: recovery, separation, hydrocarbon, gas stream, cool, pressure, condense, distillation column, heat exchange

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/0172967 A1 (PATEL et al.) 09 September 2004 (09.09.2004); entire document, especially fig 2 and para [0018]-[0027].	1
Y		2-24
Y	US 5,890,378 A (RAMBO et al.) 06 April 1999 (06.04.1999); entire document, especially fig 3-6.	2, 5-24
Y	US 6,244,070 B1 (LEE et al.) 12 June 2001 (12.06.2001); entire document, especially fig 9.	3, 4, 9-14, 16-24
Y	US 5,799,507 A (WILKINSON et al.) 01 September 1998 (01.09.1998); entire document, especially fig 3-6.	7,8

☐ Further documents are listed in the continuation of Box C.

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

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