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(71) Applicant: **Korea Gas Corporation**
Gyeonggi-do 463-754 (KR)

(72) Inventors:
• **LEE, Sang Gyu**
137-040 SEOUL (KR)

- **YOON, Ihn Soo**
406-840 INCHEON (KR)
- **CHO, Byoung hak**
406-738 INCHEON (KR)
- **SOHN, Young Soon**
406-734 INCHEON (KR)
- **CHA, Kyu Sang**
403-828 INCHEON (KR)
- **PARK, Chang Won**
406-761 INCHEON (KR)
- **KWON, Yong Soo**
405-824 INCHEON (KR)

(74) Representative: **Cabinet Laurent & Charras**
Le Contemporain
50 Chemin de la Bruyère
69574 Dardilly Cedex (FR)

(54) **NATURAL GAS LIQUEFACTION PROCESS**

(57) A natural gas liquefaction process according to the present invention uses a single closed-loop refrigeration cycle employing a mixed refrigerant, thereby having a simple structure for the liquefaction process and allow-

ing the liquefaction process to be easily operated. Furthermore, the present invention cools natural gas after one stream is separated into two streams, thereby having an excellent efficiency of the liquefaction process.

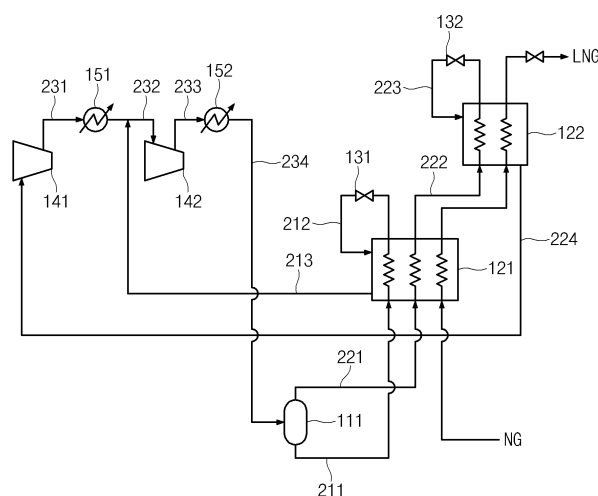


Fig.1



EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	US 2013/008204 A1 (KIM JIN-KUK [KR] ET AL) 10 January 2013 (2013-01-10) * figure 3 *	1-3	
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Y	* column 11, line 8 - line 18; figure 5 *	4,6	
Y	WO 2012/023752 A2 (KOREA GAS CORP R & D DIVISION [KR]; LEE SANG GYU [KR]; CHOE KUN HYUNG) 23 February 2012 (2012-02-23) * figures 4,10 *	4,6	
X	US 2002/170312 A1 (REIJNEN DUNCAN PETER MICHAEL [NL] ET AL) 21 November 2002 (2002-11-21) * figure 1 *	1,4	TECHNICAL FIELDS SEARCHED (IPC)
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The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 15 March 2018	Examiner Schopfer, Georg
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☒ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

1-4, 6

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

**LACK OF UNITY OF INVENTION
SHEET B**

Application Number

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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-3

Searched Invention

2. claims: 4, 6

parallel initial refrigerant compression

3. claim: 5

recycle of intermediate condensed refrigerant after the second separation step to the partially compressed second refrigerant

4. claim: 7

Spiral wound type heat exchanger

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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