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EXXONMOBIL UPSTREAM RESEARCH COMPANY [US/US]; (EMHC-N1-4A-607), 22777 Springwood Village Parkway, Spring, TX 77389 (US).

(72) Inventors; and

(71) Applicants (for US only): **PIERRE, Fritz** [US/US]; 18011 Bayou Mead Trail, Humble, TX 77346 (US). **YUNKER, William, N.** [US/US]; 437 Callery Drive, Boling, IL 60490 (US). **SITES, O., Angus** [US/US]; 2410 Randal Point Ct., Spring, TX 77388 (US).(74) Agent: **JENSEN, Nathan, O.** et al.; Exxonmobil Upstream Research Company, (EMHC-N1-4A-607), 22777 Springwoods Village Parkway, Spring, TX 77389 (US).

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(54) Title: NATURAL GAS LIQUEFACTION BY A HIGH PRESSURE EXPANSION PROCESS USING MULTIPLE TURBOEXPANDER COMPRESSORS

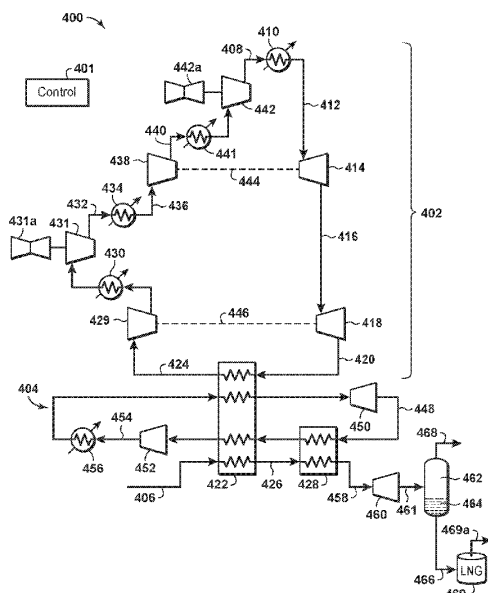


FIG. 4

(57) Abstract: A method and system for liquefying a feed gas stream including natural gas. The feed gas stream is provided at a pressure less than 82,7 bara. A refrigerant stream (408) having a pressure of at least 103,4 bara is cooled (410) and then expanded in a first expander (414) to an intermediate pressure. The first expander is mechanically coupled to a first coupled compressor (438) to together form a first turboexpander-compressor. The refrigerant stream is expanded in a second expander (418), which is mechanically coupled to a second coupled compressor (429) to together form a second turboexpander-compressor. The refrigerant stream cools the feed gas stream (406) in one or more heat exchangers (422). Using the second coupled compressor (429) and a first driven compressor (431), the refrigerant stream is compressed to a discharge pressure within 20,7 bara of the intermediate pressure. The refrigerant stream is compressed using the first coupled compressor (438) and is further compressed (442) to provide the refrigerant stream.

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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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