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(71) Applicant: **L'AIR LIQUIDE, SOCIETE ANONYME
POUR L'ETUDE ET L'EXPLOITATION DES PRO-
CEDES GEORGES CLAUDE** [FR/FR]; 75 Quai d'Orsay,
75007 PARIS (FR).

(72) Inventors: **SCHMID MC GUINNESS**, Teja; c/o Air
Liquide E&C Solutions Germany, Olof-Palme-Straße 35,
60439 Frankfurt am Main (DE). **ROSSI, Umberto**; c/o
Air Liquide E&C Solutions Germany GmbH, Olof-Palme-
Straße 35, 60439 Frankfurt am Main (DE). **PONTZEN,
Florian**; Air Liquide Forschung und Entwicklung GmbH,
Gwinnerstraße 27-33, 60388 Frankfurt am Main (DE).
SCHACK, Dominik; c/o Air Liquide Forschung und Ent-
wicklung GmbH, Gwinnerstraße 27-33, 60388 Frankfurt
am Main (DE).

(74) Agent: **ORCET, François**; L'AIR LIQUIDE S.A., 75 Quai
d'Orsay, 75321 PARIS CEDEX 07 (FR).

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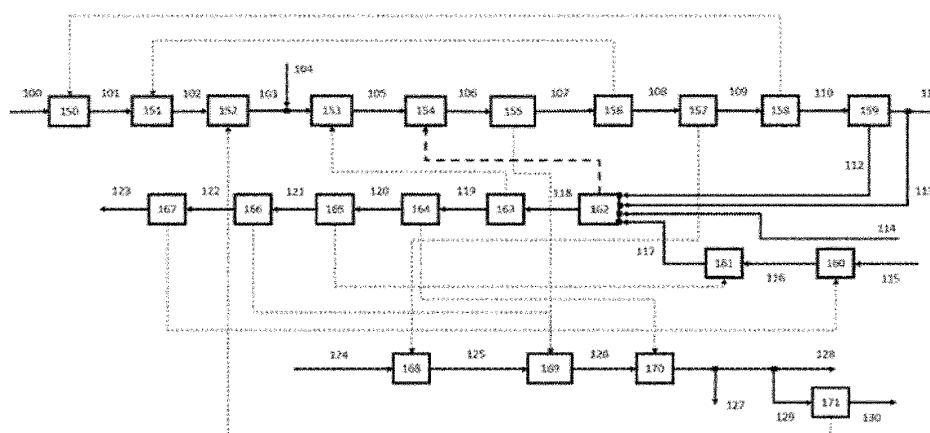


FIG. 1

(57) Abstract: A method for producing hydrogen using a feed stream comprising ammonia is provided. The method can include the steps of: heating the feed stream in a first heat exchanger to produce a heated feed stream, wherein the heated feed stream is at a temperature above 500°C; introducing the heated feed stream into a first reaction zone under conditions effective for catalytically cracking the heated feed stream to produce a raw hydrogen stream, wherein the raw hydrogen stream comprises hydrogen and nitrogen; cooling the raw hydrogen stream by indirect heat exchange against a first cooling fluid to form a cooled hydrogen stream; and purifying the raw hydrogen stream to produce a hydrogen product stream and a tail gas, wherein the tail gas has a higher concentration of nitrogen as compared to the hydrogen product stream.

[Continued on next page]

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