



(51) International Patent Classification:

<i>C01B 3/38</i> (2006.01)	<i>C01B 3/48</i> (2006.01)
<i>B01D 53/04</i> (2006.01)	<i>C01B 3/50</i> (2006.01)
<i>B01D 53/22</i> (2006.01)	<i>C01B 3/56</i> (2006.01)
<i>B01D 53/26</i> (2006.01)	

(72) **Inventor: ELSEVIERS, Wim;** c/o TECHNIP ENERGIES FRANCE, 2126 Boulevard de la Défense, Immeuble Origine - CS 10266, 92741 Nanterre Cedex (FR).

(74) **Agent: WITHERS & ROGERS LLP** et al.; Kaulbachstr. 114, 80802 Munich (DE).

(21) International Application Number:

PCT/IB2024/000752

(22) International Filing Date:

19 December 2024 (19.12.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

FR 2315086 22 December 2023 (22.12.2023) FR

(71) Applicant: TECHNIP ENERGIES FRANCE [FR/FR];
2126 Boulevard de la Défense, Immeuble Origine - CS
10266, 92741 Nanterre Cedex (FR).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, CV,

(54) Title: SYNGAS DRYING INTEGRATED WITHIN A HYDROGEN PLANT

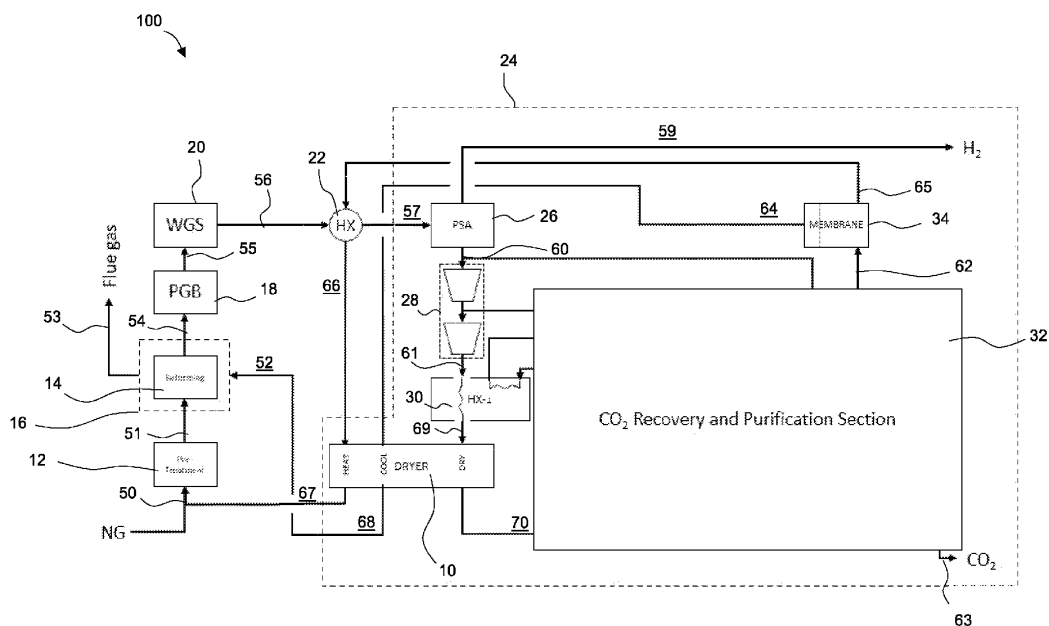


FIG. 1

(57) Abstract: A method for recovering waste heat and water vapor from a dryer system integrated in a hydrogen plant is described. The method includes receiving regeneration gas from a downstream unit of the hydrogen plant; using heat from the hydrogen plant to heat at least a part of the regeneration gas and form spent regeneration gas through a heating step and a cooling step; recycling spent regeneration gas back to the hydrogen plant that uses heat from the spent regeneration gas; and using desorbed water in the spent regeneration gas as process steam in the hydrogen plant.

[Continued on next page]

GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*