

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
07 December 2023 (07.12.2023)



(10) International Publication Number
WO 2023/235743 A1

(51) International Patent Classification:

C10G 1/08 (2006.01) *F04B 53/14* (2006.01)
B01J 3/02 (2006.01) *F16J 15/32* (2016.01)
B01J 8/00 (2006.01)

(21) International Application Number:

PCT/US2023/067678

(22) International Filing Date:

31 May 2023 (31.05.2023)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/347,629 01 June 2022 (01.06.2022) US

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(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,

(54) Title: SYSTEM FOR HYDROPROCESSING A SOLID FEEDSTOCK WITH PISTON FEEDSTOCK FEEDER SYSTEM
HAVING A T-SHAPE ANNULAR PISTON SEALING RING

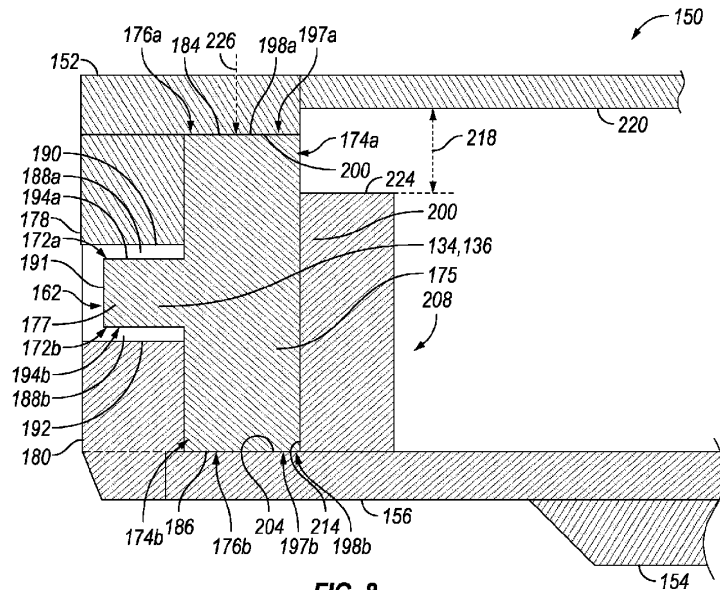


FIG. 8

(57) Abstract: A system for hydroprocessing of a solid feedstock includes a hydroprocessing reactor having one or more inlets that may receive the solid feedstock and to generate a product stream having partially deoxygenated hydroprocessing product, H₂O, H₂, CO₂, CO, C₁-C₃ gases, char, and fines. The hydroprocessing reactor includes one or more deoxygenation catalysts. The system also includes a solid feedstock feeding system disposed upstream from and fluidly coupled to the hydroprocessing reactor. The solid feedstock feeding system includes a piston feeder having an inlet, an outlet, at least one piston disposed between the inlet and the outlet, the at least one piston includes a chamber and a barrel disposed in and that may translocate within the chamber, the barrel

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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, 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))*

includes a terminal end having a seal, and the seal includes an annular ring having a first wall and a second wall, the second wall is orthogonal to and extends from the first wall such that a first portion of the first wall protrudes away from the second wall in a first direction and a second portion of the first wall protrudes away from the second wall in a second direction that is substantially opposite from the first direction.