

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
24 February 2005 (24.02.2005)

PCT

(10) International Publication Number
WO 2005/017068 A2

- (51) International Patent Classification⁷: **C10G**
- (21) International Application Number:
PCT/US2004/024909
- (22) International Filing Date: 30 July 2004 (30.07.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
10/635,763 5 August 2003 (05.08.2003) US
- (71) Applicant: **ABB LUMMUS GLOBAL INC.** [US/US];
1515 Broad Street, Bloomfield, NJ 07003-3096 (US).
- (72) Inventors: **SUMNER, Charles**; 3 Stratford Drive, Livingston, NJ 07039 (US). **HEINEMAN, Jeffrey, L.**; 171 Main Street, Apt 6, Madison, NJ 07940 (US).
- (74) Agents: **COVELLO, Diane, F.** et al.; Alix, Yale & Ristas, LLP, 750 Main Street, Hartford, CT 06103 (US).
- (81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,

GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

- (84) Designated States (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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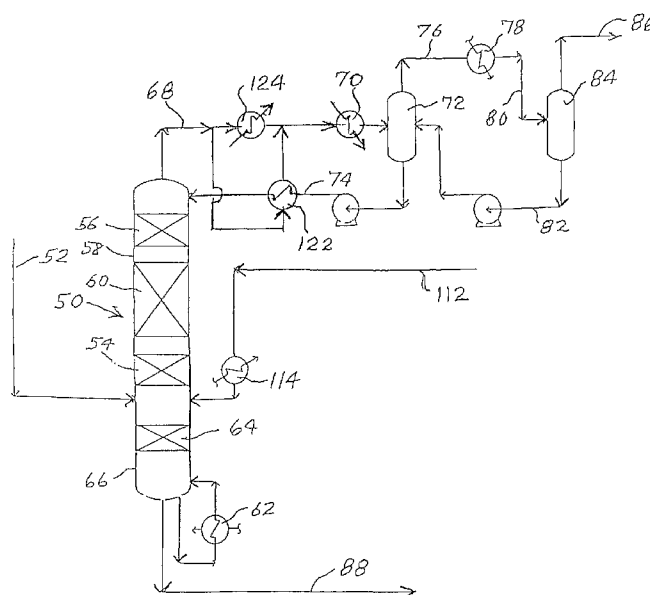
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations

Published:

- without international search report and to be republished upon receipt of that report

[Continued on next page]

(54) Title: DUAL PRESSURE CATALYTIC DISTILLATION HYDROGENATION COLUMN SYSTEM FOR THE FRONT END OF AN ETHYLENE PLANT



(57) Abstract: The charge gas from the thermal cracking of a hydrocarbon feedstock is processed in a front-end catalytic distillation hydrogenation system of an olefins plant to more effectively recover ethylene and propylene product and to process the by-products. The rate of fouling in the system is reduced by employing two columns in the system with the first column operating at a higher pressure and the second column operating at a lower pressure. The hydrogenation as well as fractionation takes place in the first column while the second column is only a fractionator. The temperature of the bottoms from each column is maintained at a temperature less than 200°C to avoid fouling.

WO 2005/017068 A2



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