

(51) International Patent Classification:  
F25J 3/00 (2006.01)

(21) International Application Number:

PCT/US2014/061031

(22) International Filing Date:

17 October 2014 (17.10.2014)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/912,984 6 December 2013 (06.12.2013) US

(71) Applicant (for all designated States except US): **EXXON-MOBIL UPSTREAM RESEARCH COMPANY** [US/US]; CORP-URC-SW359, P.O. Box 2189, Houston, TX 77252-2189 (US).

(72) Inventor; and

(71) Applicant (for US only): **VALENCIA, Jaime, A.** [US/US]; 5503 Peace Court, Houston, TX 77041 (US).(74) Agents: **LOBATO, Ryan, L.** et al.; Exxonmobil Upstream Research Company, CORP-URC-SW359, P.O. Box 2189, Houston, TX 77252-2189 (US).

(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, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, 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, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, 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, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,

[Continued on next page]

(54) Title: METHOD AND SYSTEM OF MODIFYING A LIQUID LEVEL DURING START-UP OPERATIONS

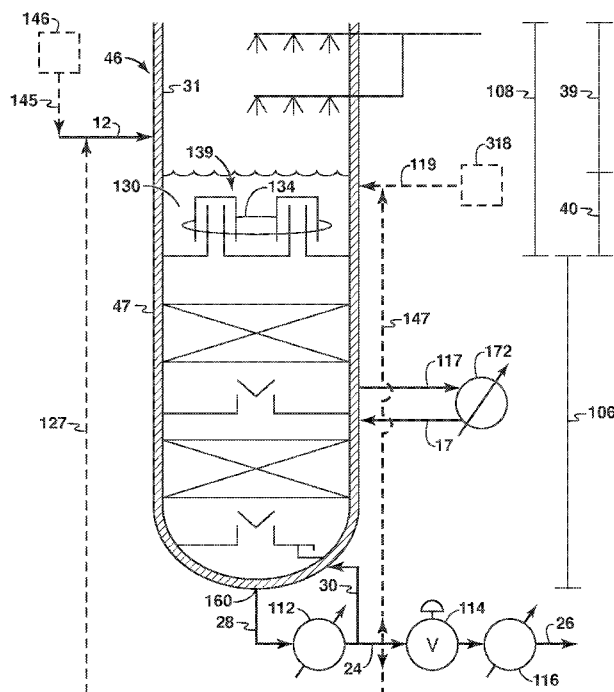


FIG. 5

(57) Abstract: The present disclosure provides a method for separating a feed stream in a distillation tower. The method includes operating a controlled freeze zone section in a distillation tower that separates a feed stream at a temperature and pressure at which the feed stream forms a solid in the controlled freeze zone section, wherein the feed stream includes a first contaminant; maintaining a melt tray assembly in the controlled freeze zone section; introducing the feed stream to the controlled freeze zone section; and accumulating a liquid in the melt tray assembly until the liquid is at a predetermined liquid level in the controlled freeze zone section, by: feeding a second contaminant to the controlled freeze zone section; and adding the second contaminant to the melt tray assembly, wherein the liquid comprises the second contaminant.



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))

**Declarations under Rule 4.17:**

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))

— 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))

— as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

**(88) Date of publication of the international search report:**

26 November 2015