



(51) International Patent Classification:
B03C 11/00 (2006.01)

(21) International Application Number:
PCT/US2011/046713

(22) International Filing Date:
5 August 2011 (05.08.2011)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/371,046 5 August 2010 (05.08.2010) 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, 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, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, 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, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, 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, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

(54) Title: PETROLEUM DESALTING UTILIZING VOLTAGE MODULATION

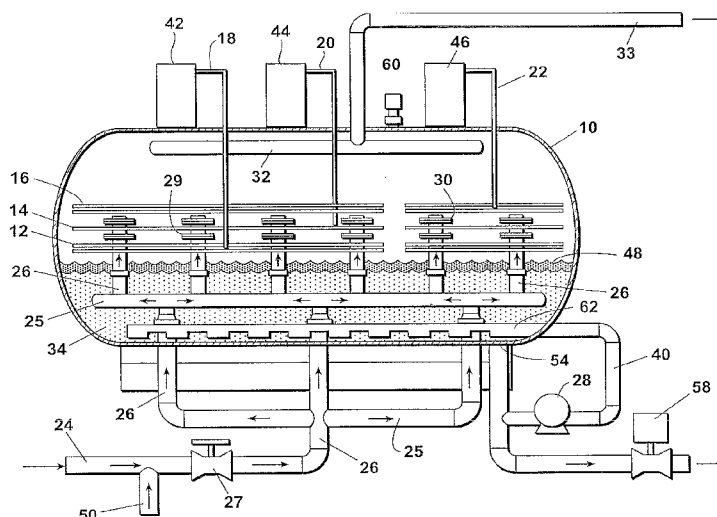


Fig. 2

(57) Abstract: A method of removing entrained salt containing water from an inlet crude oil, stream includes the steps of applying an electrical energy to at least one electrode of a plurality of horizontally oriented, spaced-apart electrodes (12, 14, 16) housed within an elongated desalting vessel (10) and distributing an inlet crude oil stream between the electrodes. Each electrode in the plurality of electrodes is housed in an upper portion of the desalting vessel and may be in communication with a first, second and third transformer (42, 44, 46), respectively. The electrical energy may be at a single frequency and voltage or at a modulated voltage. Or, the electrical energy may be a modulated frequency at a single or modulated voltage. Fresh water may be mixed with the inlet crude oil stream either exteriorly or interiorly of the vessel.