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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
8 October 2009 (08.10.2009)

PCT

(10) International Publication Number
WO 2009/123751 A3

(51) International Patent Classification:
B01D 3/10 (2006.01)

(21) International Application Number:
PCT/US2009/002099

(22) International Filing Date:
3 April 2009 (03.04.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/042,040 3 April 2008 (03.04.2008) 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, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, 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, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

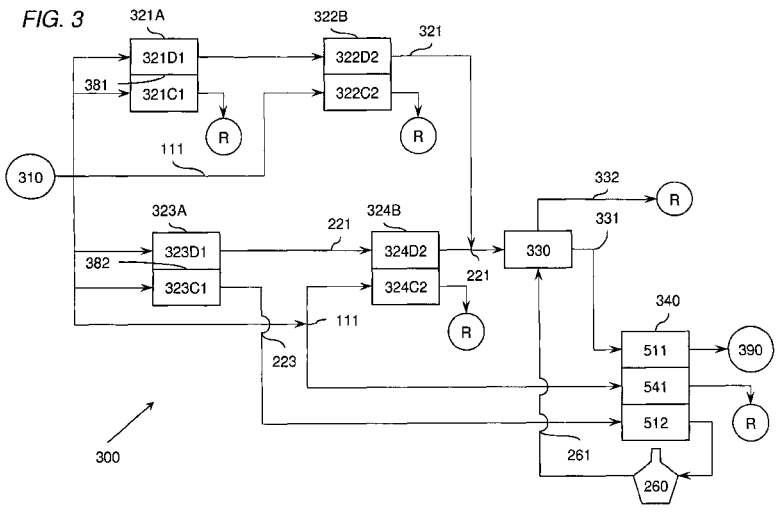
Published:

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

(88) Date of publication of the international search report:
7 January 2010

(54) Title: LOW ENERGY SYSTEM AND METHOD OF DESALINATING SEAWATER

FIG. 3



(57) Abstract: A low energy system and process for seawater desalination wherein the system has at least an electrodialysis apparatus that produces partially desalinated water and a brine by- product, an ion exchange softener, and at least one electrodeionization apparatus. The softener treats the partially desalinated water stream to remove or reduce the amount of scaling material in order to maintain deionization apparatus efficiency and reduce energy consumption. The softener has the capability of removing a higher ratio of calcium ions to magnesium ions than is in the partially desalinated stream, thereby reducing softener size and energy use. The deionization apparatus produces product water of the desired properties. The brine stream may be used to regenerate the softener.

WO 2009/123751 A3