

(10) International Publication Number
WO 2016/126940 A1(43) International Publication Date
11 August 2016 (11.08.2016)

(51) International Patent Classification:

C02F 1/461 (2006.01) *C25B 3/00* (2006.01)
C25B 1/00 (2006.01)

(21) International Application Number:

PCT/US2016/016563

(22) International Filing Date:

4 February 2016 (04.02.2016)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/111,980 4 February 2015 (04.02.2015) US

(71) Applicant: SPRAYING SYSTEMS CO. [US/US]; North Avenue and Schmale Road, P.O. Box 7900, Wheaton, Illinois 60187-7091 (US).

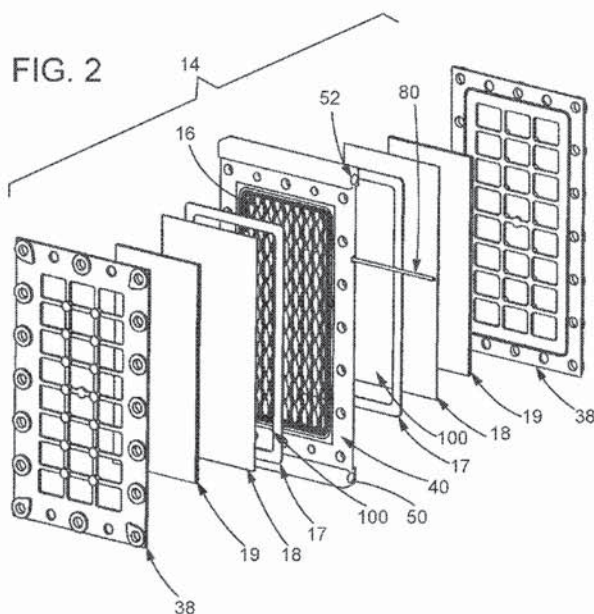
(72) Inventors: SWARTZ, James B.; 1305 Willow Court, Noblesville, Indiana 46062 (US). MOYER, James I.; 3019 West 300 South, Kokomo, Indiana 46902 (US). HAZELWOOD, John; 1210 Wolf Run Court, Anderson, Indiana 46013 (US). ROSSOM, James D.; 5377 Woodfield Drive, Carmel, Indiana 46033 (US).

(74) Agents: SCHLEMMER, Dennis R. et al.; Leydig, Voit & Mayer, Ltd., Two Prudential Plaza, Suite 4900, Chicago, Illinois 60601 (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, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: ELECTROLYTIC CARTRIDGE, SYSTEMS AND METHODS OF USING SAME



(57) Abstract: Electrolytic cartridges for, systems for, and methods of electrolyzing a brine solution of water and an alkali salt to produce acidic electrolyzed water and alkaline electrolyzed water are provided. The system includes an internal chamber for receiving the brine solution and at least two electrolytic cartridges immersed in a brine bath. Each electrolytic cartridge includes an electrode, an ion selective membrane disposed on a side of the electrode so as to define a space adjacent to at least a portion of the electrode, a permeable insert covering the ion selective membrane on a side opposite the space, and a bonding plate disposed on the permeable insert on a side opposite the side facing the ion selective membrane. The methods recycle at least a portion of alkaline electrolyzed water into the feed of a cartridge having a positively charged electrode.



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))