

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
16 December 2021 (16.12.2021)



(10) International Publication Number
WO 2021/252085 A1

(51) International Patent Classification:
B01D 15/38 (2006.01) *G01N 30/46* (2006.01)
B01D 15/18 (2006.01)

Burlington, MA 01803 (US). **STONE, Matthew, T.**; c/o EMD Millipore Corporation, 400 Summit Drive, Burlington, MA 01803 (US).

(21) International Application Number:
PCT/US2021/029152

(74) Agent: **LEMACK, Kevin, S.** et al.; Nields, Lemack & Frame, LLC, 176 E. Main Street, Suite 5, Westboro, MA 01581 (US).

(22) International Filing Date:
26 April 2021 (26.04.2021)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/037,262 10 June 2020 (10.06.2020) US

(71) Applicant: **MERCK MILLIPORE LTD.** [IE/IE]; Tullagreen, County Cork, Carrigtwohill (IE).

(72) Inventors: **RAUTIO, Kevin**; c/o EMD Millipore Corporation, 400 Summit Drive, Burlington, MA 01803 (US). **FOLEY, Sean**; c/o EMD Millipore Corporation, 400 Summit Drive, Burlington, MA 01803 (US). **CEDRONE, Gerardo**; c/o EMD Millipore Corporation, 400 Summit Drive,

(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, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN, KP, KR, KW, 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, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, 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,

(54) Title: DEVICE FOR BIND AND ELUTE CHROMATOGRAPHY USING MEMBRANES, AND METHOD OF MANUFACTURE

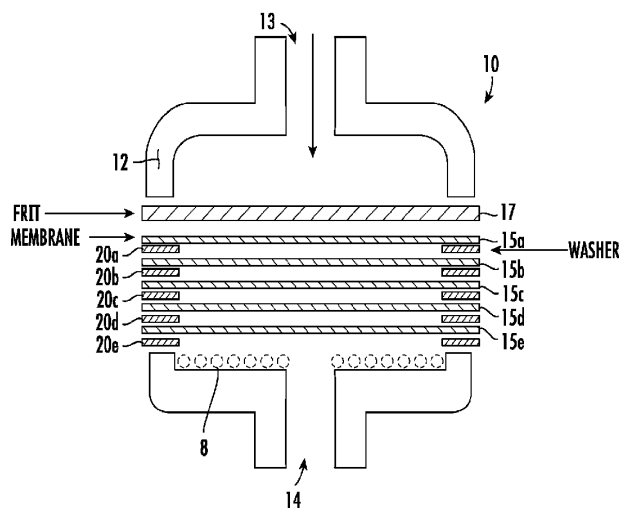


FIG. 1

(57) Abstract: Integral chromatography unit having an inlet and an outlet, and comprising one or more membranes interposable in the internal volume of the unit between the inlet and outlet. In certain embodiments, each of the membranes is allotted adequate space within the unit to swell by the placement of one or more spacers. Fluid entering the unit through a fluid inlet passes the membrane(s) and spacer(s) prior to exiting the unit through a fluid outlet.

[Continued on next page]

WO 2021/252085 A1

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).

Published:

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