

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
11 June 2020 (11.06.2020)



(10) International Publication Number
WO 2020/117452 A1

(51) International Patent Classification:
E03B 3/28 (2006.01)

(21) International Application Number:
PCT/US2019/061737

(22) International Filing Date:
15 November 2019 (15.11.2019)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
62/774,536 03 December 2018 (03.12.2018) US
16/371,508 01 April 2019 (01.04.2019) US
16/587,269 30 September 2019 (30.09.2019) US

(71) Applicant: **THE UNIVERSITY OF TULSA** [US/US];
800 South Tucker Drive, Tulsa, Oklahoma 74104 (US).

(72) Inventors: **OTANICAR, Todd**; 2079 Danmor Drive,
Boise, Idaho 83712 (US). **GALBRAITH, John**; 6819 East
48th Place, Tulsa, Oklahoma 74145 (US).

(74) Agent: **KACHIGIAN, Mark G.**; Head, Johnson, Kachigian & Wilkinson, PC, 228 West 17th Place, Tulsa, Oklahoma 74119 (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, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, 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, 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,

(54) Title: ATMOSPHERIC WATER GENERATOR APPARATUS

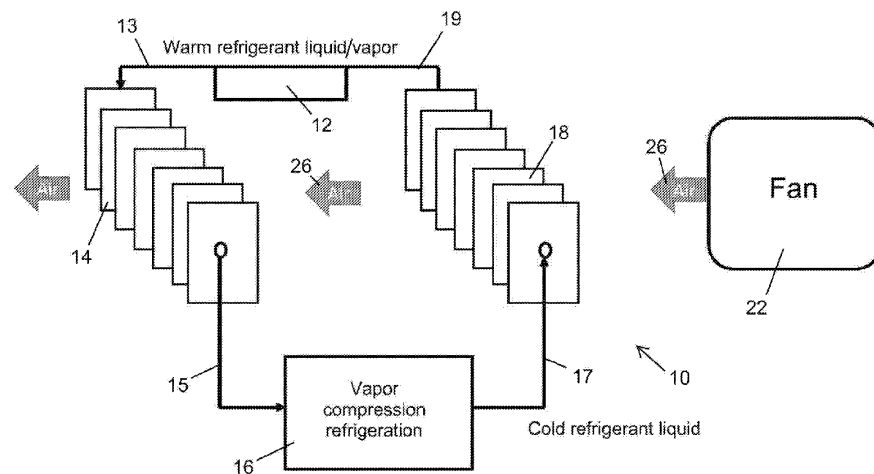


Fig. 1

(57) Abstract: An atmospheric water generator apparatus. In one embodiment, the apparatus includes a fluid cooling device. A water condensing surface is thermally connected to the fluid cooling device, the water condensing surface having a superhydrophobic condensing surface, a highly hydrophobic condensing surface, a superhydrophilic condensing surface, a highly hydrophilic condensing surface, or a combination thereof. An air-cooled heat rejection device is in fluid communication with a fluid cooling device. An air fan is configured to induce airflow across the water condensing surface in order to condense and extract water from the atmosphere.

[Continued on next page]

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))*