

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
16 April 2020 (16.04.2020)



(10) International Publication Number
WO 2020/076640 A1

- (51) **International Patent Classification:**
H04R 25/00 (2006.01) *H04R 17/00* (2006.01)
- (21) **International Application Number:**
PCT/US2019/054750
- (22) **International Filing Date:**
04 October 2019 (04.10.2019)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
62/742,525 08 October 2018 (08.10.2018) 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, 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, 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).

(54) **Title:** COMPACT HEARING AIDS

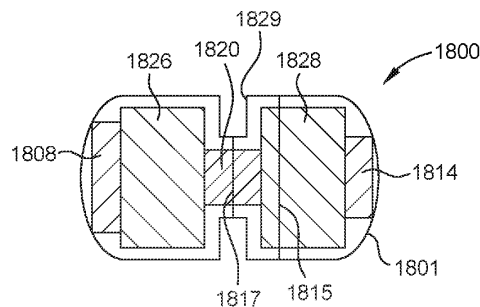


FIG. 18

(57) **Abstract:** The present disclosure relates to compact hearing aids, components thereof, and support systems therefor, as well as methods of insertion and removal thereof. The compact hearing aids generally include a sensor, such as a microphone, an actuation mass, an energy source for providing power to the compact hearing aid, a processor, and an actuator enclosed in a housing that is designed to be inserted through the tympanic membrane during a minimally-invasive outpatient procedure. In operation, the microphone receives sound waves and converts the sound waves into electrical signals. A processor then modifies the electrical signals and provides the electrical signals to the actuator. The actuator converts the electrical signals into mechanical motion, which actuates the actuation mass to modulate the velocity or the position of the tympanic membrane.

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Published:

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