

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
12 May 2022 (12.05.2022)



(10) International Publication Number
WO 2022/098473 A1

(51) International Patent Classification:
H04R 25/00 (2006.01)

(21) International Application Number:
PCT/US2021/054469

(22) International Filing Date:
12 October 2021 (12.10.2021)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
17/089,155 04 November 2020 (04.11.2020) US

(71) Applicant: **NANOEAR CORPORATION, INC.**
[US/US]; 2450 Holcombe Blvd. Suite X, Houston, TX
77021 (US).

(72) Inventors: **MOORE, Michael, M.**; 8888 Collins Ave.,
Unit 314, 33154 Surfside (FI). **MIRCHANDANI, Smru-**
ti; 7600 Kirby Drive, Apt. 112, Houston, TX 77030 (US).
MENZEL, Christoph; 53 Northwood Lane, New London,
NH 03257 (US).

(74) Agent: **PATTERSON, B., Todd**; Patterson + Sheridan
LLP, 24 Greenway Plaza, Suite 1600, Houston, TX 77046
(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, 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,
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

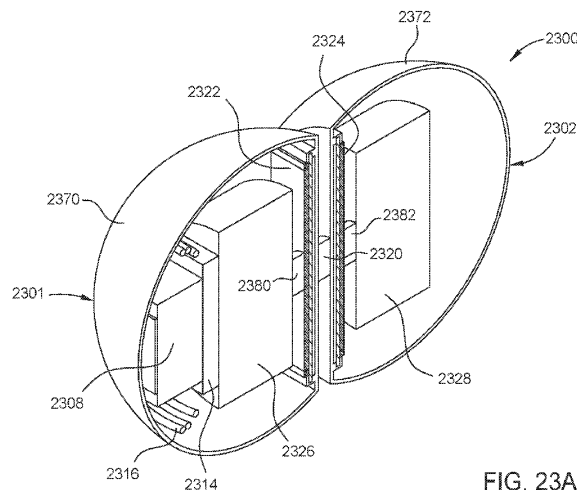


FIG. 23A

(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.

[Continued on next page]

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))*