

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
23 June 2022 (23.06.2022)



(10) International Publication Number
WO 2022/133268 A1

(51) International Patent Classification:
A61J 9/00 (2006.01)

(21) International Application Number:
PCT/US2021/064128

(22) International Filing Date:
17 December 2021 (17.12.2021)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/127,085 17 December 2020 (17.12.2020) US
63/243,908 14 September 2021 (14.09.2021) US
17/554,746 17 December 2021 (17.12.2021) US

(71) Applicant: **AVIRA HEALTH INCORPORATED**
[US/US]; 16095 Big Springs Way, San Diego, California
92127 (US).

(72) Inventors: **JOHN, Tina**; 16095 Big Springs Way,
San Diego, California 92127 (US). **BOWMAN, Brian**;
7332 Sitio Castano, Carlsbad, California 92009 (US).
ALDERSON, Clayton; 122 S. Nardo Avenue, Solana
Beach, California 92075 (US). **FAY, Aidan J.**; 7075 Fair-
way Road, La Jolla, California 92037 (US). **WARDER,**
Henry; 1222 12th Avenue, San Francisco, California 94123

(US). **MAGNUSON, Conner**; 10750 Pacific Canyon Way,
San Diego, California 92121 (US). **DUQUESNEL, Bran-**
don; 43636 Savona Street, Temecula, California 92592
(US). **ARNOLD, Benjamin**; 1120 Law Street, San Diego,
California 92109 (US). **FRIED, Ian**; 3008 Beachwood
Bluff Way, San Diego, California 92117 (US).

(74) Agent: **CASELL, Nathan S.**; Acuity IP, 5460 Ward
Road, Suite 320, Arvada, Colorado 80002 (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,

(54) Title: BREASTMILK PUMPING AND FEEDING SYSTEMS AND METHODS

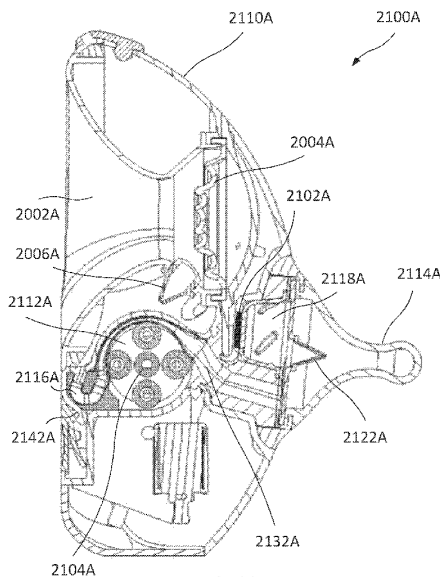


FIG. 21H

(57) Abstract: Methods and breast pump devices for simultaneous pumping and feeding breastmilk in the nursing position and quantification of breastmilk consumption are provided. A breast pump device includes a nipple shield for receiving a nipple, a housing having a throughput aperture and a fluid path, the fluid path extending from the nipple shield to the throughput aperture, and a negative pressure source. In some embodiments, the housing further includes a gate to control the quantity of breastmilk displaced to a baby. In some embodiments, the gate operates to respond to the amount of breastmilk displaced to the baby, and thereby allows for quantification. In some embodiments, the quantity of breastmilk displaced is also recorded.

WO 2022/133268 A1

[Continued on next page]

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))*
- *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))*