

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
06 April 2023 (06.04.2023)



(10) International Publication Number
WO 2023/055407 A1

(51) International Patent Classification:
A61M 16/00 (2006.01) *A61M 16/20* (2006.01)

(21) International Application Number:
PCT/US2021/061250

(22) International Filing Date:
30 November 2021 (30.11.2021)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/251,373 01 October 2021 (01.10.2021) US
17/537,169 29 November 2021 (29.11.2021) US

(71) Applicant: **COMPACT MEDICAL SOLUTIONS LLC**
[US/US]; 7711 Ashtree Drive, Indianapolis, IN 46259 (US).

(72) Inventors: **MERRELL, Jonathan**; c/o Compact Medical Solutions LLC, 7711 Ashtree Drive, Indianapolis, IN 46259 (US). **SCOTT, Adam**; c/o Compact Medical Solutions LLC, 7711 Ashtree Drive, Indianapolis, IN 46259 (US). **FLAGLE, Jacob**; c/o Compact Medical Solutions LLC, 7711 Ashtree Drive, Indianapolis, IN 46259 (US). **LANE, Daniel**; c/o Compact Medical Solutions LLC, 7711 Ashtree Drive, Indianapolis, IN 46259 (US).

(74) Agent: **BRUESS, Steven, C.** et al.; Merchant & Gould P.C., P.O. Box 2903, Minneapolis, MN 55402-0903 (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,

(54) Title: BAG AND VALVE FOR ADVANCED RESPIRATORY SUPPORT

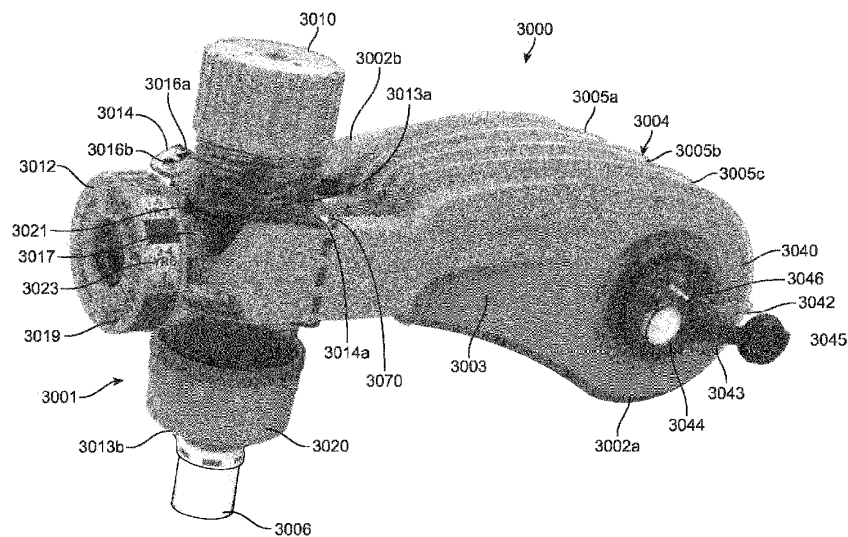


FIG. 46A

(57) Abstract: A respiratory device (3000) provides respiratory support to a patient. The respiratory device includes an expandable bag (3004) and a rigid valve housing (3001). The expandable bag has an air inlet valve (3046) as well as a first and second sides that are bounded, respectively, by first and second rigid side panels (3002a, 3002b). Each of the first and second rigid side panels includes a biasing member projection (3081a, 3081b). The rigid valve housing is in fluid communication with the expandable bag. The rigid valve housing includes an adjustable tidal volume control device (3012) that interfaces with the biasing member projection of each of the first and second rigid side panels to set one of a plurality of predetermined tidal volumes for the expandable bag in an uncompressed or compressed configuration. The rigid valve housing additionally includes a patient breathing interface connection member (3006).

[Continued on next page]

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).

Published:

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