

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
23 March 2023 (23.03.2023)



(10) International Publication Number
WO 2023/042219 A1

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

(21) International Application Number:
PCT/IN2022/050821

(22) International Filing Date:
14 September 2022 (14.09.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
202131041443 14 September 2021 (14.09.2021) IN

(72) Inventors; and

(71) Applicants: **RAJGURU, Shivani** [IN/IN]; Jyoti Nagar Golaghat, Near 6 Dhekeripeta L P School, Bhagagaon Posp/district Golaghat 785621, Assam, India, Golaghat (IN). **BORTHAKUR, Manas Pratim** [IN/IN]; Flat 3 I, Vijaya Orchid Appartment, Ajanta Path, Survey Beltola, Guwahati 781028, Assam, India, Guwahati (IN). **KARIM, Habib Md**

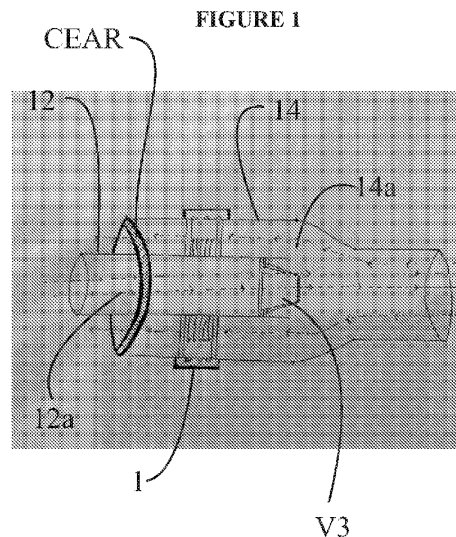
Reazaul [IN/IN]; Village And Po Chakla, District Bongaingoan 783392, Assam, India, Bongaingaoan (IN).

(72) Inventors: **VERMA, Pradeep Kumar**; Vill - H.n. 167, Rampur Puwari, Post-madna, thana-maharajgunj, Ayodhya 224171, Uttar Pradesh, India, Ayodhya (IN). **CHOUDHURY, Kaushik**; Iota Design & Innovations Lab, #10, Cradle, Edii, Gandhinagar, Gujarat 382428, India, Gandhinagar (IN).

(74) Agent: **TANNA, Chirag**; Ink Idee, B-72, 62, 73 Pereira Nagar No. 7, Khopat, Thane (w) 400 601, Maharashtra, India, Thane 400601 (IN).

(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, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, 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,

(54) Title: A RESPIRATORY SYSTEM



(57) Abstract: A respiratory system comprising: a tube-within-tube (12, 14), with an outer cylinder tube (14) and an inner cylinder tube (12), with dedicated channels (12a, 14a) for inspired gases (12a) and expired gases (14a) facilitated by valves (2, 3) configured to resist outflow of expired gases, in that, inspired air flows through said inner cylinder tube (12) and expired air flows through said inner cylinder tube (14); a Continuous Expiratory Airway Resistance Valve (CEAR-Valve, Valve 2), being an expiration valve (Valve 2); another unidirectional valve (Valve 3), being an inspiration valve (3).

[Continued on next page]

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).

Declarations under Rule 4.17:

- *as to the identity of the inventor (Rule 4.17(i))*
- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
- *of inventorship (Rule 4.17(iv))*

Published:

- *with international search report (Art. 21(3))*
- *in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE*