

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

(19) World Intellectual Property  
Organization  
International Bureau

(43) International Publication Date  
16 December 2021 (16.12.2021)



(10) International Publication Number  
**WO 2021/250384 A1**

(51) International Patent Classification:

**B01F 3/02** (2006.01) **B01F 5/06** (2006.01)  
**B01F 5/04** (2006.01)

(21) International Application Number:

PCT/GB2021/051406

(22) International Filing Date:

07 June 2021 (07.06.2021)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2009009.8 12 June 2020 (12.06.2020) GB

(71) Applicant: **EDWARDS LIMITED** [GB/GB]; Innovation Drive, Burgess Hill, Sussex RH15 9TW (GB).

(72) Inventor: **GREENWOOD, Joanne Rachel**; Edwards Limited, Innovation Drive, Burgess Hill, Sussex RH15 9TW (GB).

(74) Agent: **NORTON, Ian**; Edwards Limited, Innovation Drive, Burgess Hill, Sussex RH15 9TW (GB).

(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: FLAMMABLE GAS DILUTER AND METHOD THEREFORE

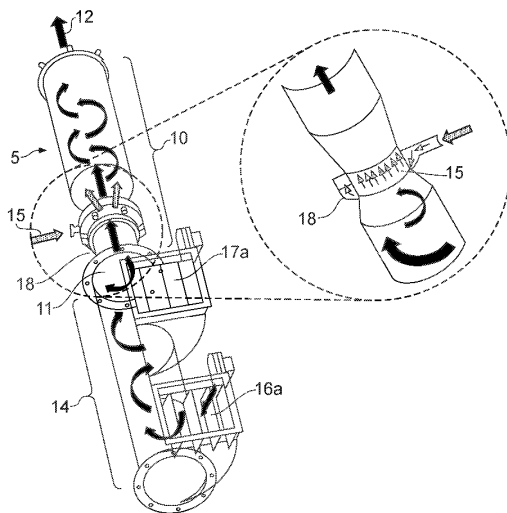


FIG. 1

(57) Abstract: A flammable gas diluter (5) for reliably diluting a flow of flammable gas to a concentration below the flammability limit of the flammable gas is disclosed. The diluter (10) comprises a dilution vessel (10) comprising an outer envelope defining a longitudinal flow passage from an inlet (11) to an outlet (12); at least one air inlet (16, 17) assembly for directing a flow of air into the inlet (11) of the dilution vessel (10); a flammable gas inlet (15) arrangement located towards an inlet (11) end of the dilution vessel (10); two gas flow generators configured to pump a flow of air into the air inlet (16, 17) assembly, the two gas flow generators being located upstream of the flammable gas inlet (15) arrangement. The two gas flow generators are configured to operate as operational and backup gas flow generators. The flammable gas diluter (10) comprises two dampers (16A, 17A), one damper (16A, 17A) associated with each of the gas flow generators, each of the dampers (16A) being mounted between a corresponding gas flow generator and the dilution vessel (10). The dampers (16A, 17A) are configured to obscure a passage between the corresponding gas flow generator and the dilution vessel (10) when closed and to open the passage between the gas flow generator and the dilution vessel (10) when open; and control circuitry (80) configured to control the opening and closing of the dampers (16A), the control circuitry (80) being configured to open the damper (16A, 17A) during an operational mode of the corresponding gas flow generator and to close the damper (16A, 17A) when the corresponding gas flow generator is stopped in standby mode.

[Continued on next page]

**Published:**

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