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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
25 September 2014 (25.09.2014)

WIPO | PCT

(10) International Publication Number
WO 2014/151139 A1

(51) International Patent Classification:
A61M 15/00 (2006.01)

(21) International Application Number:
PCT/US2014/025077

(22) International Filing Date:
12 March 2014 (12.03.2014)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/792,607 15 March 2013 (15.03.2013) US
61/910,179 29 November 2013 (29.11.2013) US

(71) Applicant: **MICRODOSE THERAPEUTX, INC.** [US/US]; 4262 US Route 1, Monmouth Junction, New Jersey 08852 (US).

(72) Inventors: **WEITZEL, Douglas**; 96 Wolfpack Road, Hamilton, New Jersey 08619 (US). **GUMASTE, Anand, V.**; 7 Ardsley Court, West Windsor, New Jersey 08550 (US). **CHAN, Philip**; 115 Gilman Place, Hightstown, New Jersey 08520 (US).

(74) Agents: **SOLOWAY, Norman, P.** et al.; c/o HAYES SOLOWAY P.C., 4640 E. Skyline Drive, Tucson, Arizona 85718 (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, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, 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, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, 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, 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))*

(54) **Title**: INHALATION DEVICE, CONTROL METHOD AND COMPUTER PROGRAM

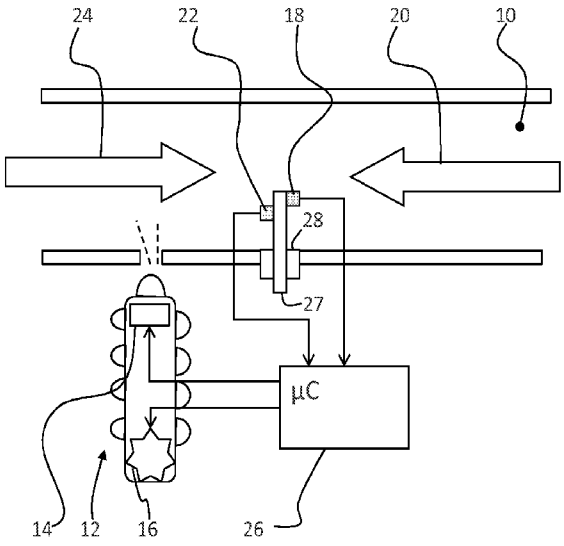


FIG. 1

(57) **Abstract**: The invention provides an inhalation device using an electrically driven vibratory element (14) for releasing a drug dose into a flow channel (10), and a controller (26) for activating/deactivating the vibratory element. A sensor arrangement (18,22) is able to differentiate between inhalation flow and exhalation flow through the flow channel, to assist in forming a model of the breathing pattern of the user. The device can detect reliably inhalation flow patterns from patients of all ages.

WO 2014/151139 A1