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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
8 June 2006 (08.06.2006)

PCT

(10) International Publication Number
WO 2006/059340 A1

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

(21) International Application Number:
PCT/IN2004/000372

(22) International Filing Date:
3 December 2004 (03.12.2004)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicants and
(72) Inventors: **APARNA, Thirumalai Anandampillai** [IN/IN]; 19, 1 ST, PARTHASARATHY NAGAR, ADAMBAKKAM, CHENNAI 600088 (IN). **VIJAYAN, Thirumalai Anandampillai** [IN/IN]; 19, 1 ST, PARTHASARATHY NAGAR, ADAMBAKKAM, CHENNAI 600088 (IN). **ANANDVISHNU, Thirumalai Anandampilai** [IN/IN]; 19, 1ST, PARTHASARATHY NAGAR, ADAMBAKKAM, CHENNAI 600088 (IN).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

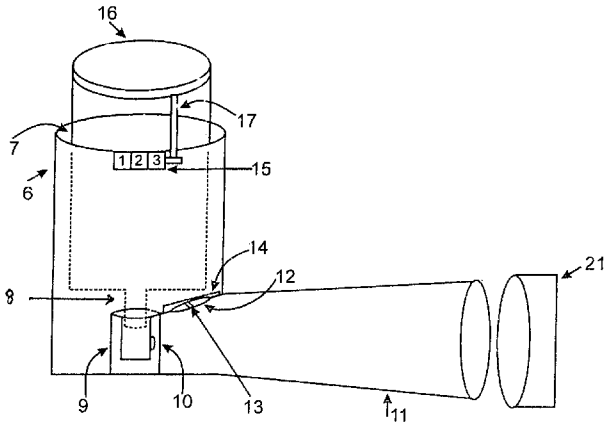
Declaration under Rule 4.17:
— *of inventorship (Rule 4.17(iv))*

Published:
— *with international search report*
— *with amended claims*

Date of publication of the amended claims: 9 November 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) **Title:** A RESONATING (ALERTING) METERED DOSE INHALER



(57) **Abstract:** This inhaler (1) has a drug vial part and diverging cone shaped mouthpiece (11). Drug vial (7) (with needed drugs in propellant, cosolvents) has a spray rod (8) fitting into a socket (9) with a nozzle (10) leading into the mouthpiece (11). Mouthpiece (11) has a small air hole (12) with a baffle (13) creating audible sound, for early inhalation correct trigerring. A filter (14) covers the air hole (12). A dose counter (15) records use. The long mouthpiece (11) is kept in mouth, air inhaled, alerting sound is heard, drug vial (7) is pressed, the spray is released at back of throat with longer, deeper and slow inhalation for more lung drug deposit and relief with clean filtered air and dose counter (15). Modified Insulin (protein) inhaler socket has seperate propellant and insulin vials. Insulin vial has a piston and valved exit fitting the socket, before propellant vial. Insulin piston fills needed dose in socket, inhaled, propellant vial is pressed , insulin spray fills lungs.

WO 2006/059340 A1