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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
9 January 2014 (09.01.2014)

WIPO | PCT

(10) International Publication Number
WO 2014/007949 A1

(51) International Patent Classification:
A61M 5/00 (2006.01)

(21) International Application Number:
PCT/US2013/045142

(22) International Filing Date:
11 June 2013 (11.06.2013)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
13/540,880 3 July 2012 (03.07.2012) US

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(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, 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, 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: DRUG INFUSION WITH PRESSURE SENSING AND NON-CONTINUOUS FLOW WITH INDENTIFICATION OF AND INJECTION INTO FLUID-FILLED ANATOMIC SPACES

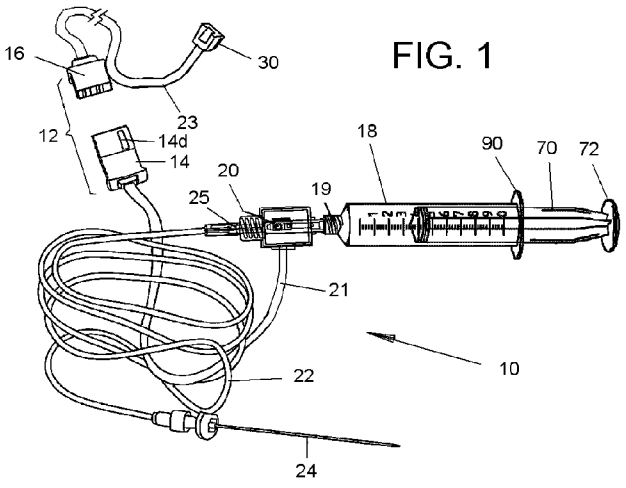


FIG. 1

(57) Abstract: An automatic injection apparatus uses non-continuous fluid-flow of drugs to identify an intended injection site and includes a drive mechanism, a sensor and a controller for establishing fluid flow and pressure and preventing fluid flow until the pressure drops below a predetermined threshold. The pressure threshold is determined based on an internal pressure generated during an injection and more fluid will not flow until it drops below a predetermined pressure. An injection is performed to establish an initial pressure threshhold and then to stop the fluid flow into a patient until the pressure drops below a predetermined pressure which allows fluid flow to resume, thus identifying a fluid filled tissue space. The initial pressure threshold is used as a control parameter to a microprocessor below which controls the rate of injection. Fluid flows below certain pressures are also used to identify a specific location within the body during injections.

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