



(51) International Patent Classification:

A61M 5/14 (2006.01) A61M 39/22 (2006.01)
A61M 5/178 (2006.01) A61J 1/20 (2006.01)

(21) International Application Number:

PCT/US2010/001512

(22) International Filing Date:

21 May 2010 (21.05.2010)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

12/455,099 27 May 2009 (27.05.2009) US

(72) Inventor; and

(71) Applicant : DUNCAN, David, R. [US/US]; 6952 Kayo Drive, Penryn, CA 95665 (US).

(74) Agent: HEISLER, Bradley, P.; Heisler & Associates, 3017 Douglas Blvd., Suite 300, Roseville, CA 95661 (US).

AO, AT, AU, AZ, BA, BB, BG, BH, 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, KM, 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, PE, PG, PH, PL, PT, RO, RS, RU, 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, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, 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, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

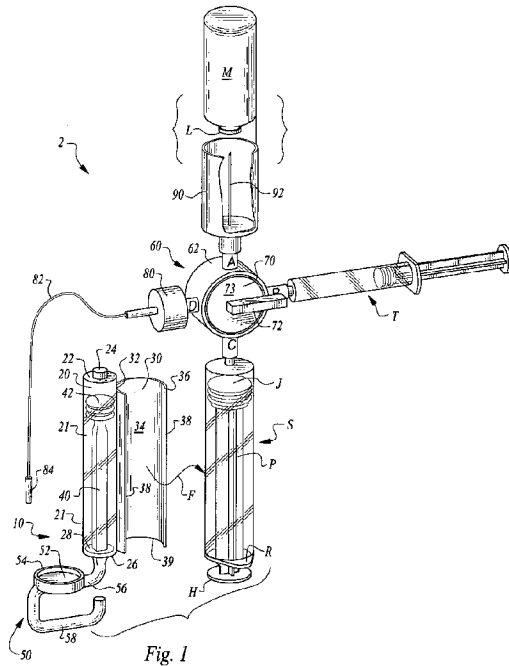
Published:

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

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

[Continued on next page]

(54) Title: COMPACT NON-ELECTRIC MEDICAMENT INFUSER



(57) Abstract: An assembly is provided which includes an infusion device coupled to a standard medication syringe. The medication syringe may be coupled to a stopcock valve having multiple ports and to which syringes, vial adapters, infusion tubing, and multiple other items may be coupled. The infusion device includes a source of power based on a resistance force such as vacuum, spring or gas power. The infusion device converts the resistance based force to usable work in the form of a force applicator. The force applicator includes a driver section on one section of a reciprocating arm and an attachment to the power source on another section of the arm. The driver is pulled outward (excursion) to increase the size of the chamber, creating a force that tends to return the driver back inward, causing incursion. The driver can be attached removably to the syringe plunger to induce the infusion process.

WO 2010/138170 A3



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(88) Date of publication of the international search report:
21 April 2011

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2010/001512**A. CLASSIFICATION OF SUBJECT MATTER***A61M 5/14(2006.01)i, A61M 5/178(2006.01)i, A61M 39/22(2006.01)i, A61J 1/20(2006.01)i*

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A61M 5/14; A61M 31/00; A61M 37/00; A61M 5/315; A61M 05/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: non-electric, infusion, syringe and resistance force

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5024664 A1 (MITCHELL, RICHARD J.) 18 June 1991 See Abstract, Fig. 1, Columns 2,3,6 and Claims 1,3,5,7	1-51
A	US 5807337 A1 (YAMADA, KEIICHI et al.) 15 September 1998 See Abstract, Figs. 1,5,8, Columns 1,5,6 and Claims 1,3,6	1-51
A	US 7041081 B2 (MINEZAKI, SUSUMU et al.) 09 May 2006 See Abstract, Figs. 15,17, Columns 1,2,10 and Claims 1,3,5-8	1-51
A	US 6139530 A1 (HIEJIMA, KATSUHIRO et al.) 31 October 2000 See whole documents	1-51
A	US 4180067 A1 (DERLIEN, MICHAEL L.) 25 December 1979 See whole documents	1-51
A	US 4966585 A1 (GANGEMI, RONALD J.) 30 October 1990 See whole documents	1-51

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

24 FEBRUARY 2011 (24.02.2011)

Date of mailing of the international search report

24 FEBRUARY 2011 (24.02.2011)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
Government Complex-Daejeon, 139 Seonsa-ro, Seo-
gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

Kang, Min Ku

Telephone No. 82-42-481-5609



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2010/001512

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5024664 A1	18.06.1991	EP 0479957 A1 EP 0479957 B1 JP 03-236935 B2 WO 91-16093 A1	15.04.1992 29.11.1995 05.10.2001 31.10.1991
US 5807337 A1	15.09.1998	EP 0715861 A1 EP 0715861 A4 EP 0715861 B1 JP 03-495045 B2 JP W095-28977A 1 WO 95-28977 A1	12.06.1996 02.04.1997 02.08.2000 21.11.2003 02.11.1995 02.11.1995
US 7041081 B2	09.05.2006	EP 1285673 A1 EP 1285673 A4 JP 2001-333980 A US 2002-0165490 A1 US 2004-0082912 A1 US 6685673 B2 WO 01-89610 A1	26.02.2003 02.11.2006 04.12.2001 07.11.2002 29.04.2004 03.02.2004 29.11.2001
US 6139530 A1	31.10.2000	EP 0945150 A2 EP 0945150 A3 EP 0945150 B1 JP 03-416943 B2 JP 11-276581 A JP 3416943 B2	29.09.1999 08.12.1999 12.03.2003 11.04.2003 12.10.1999 16.06.2003
US 4180067 A1	25.12.1979	JP 1093553 C JP 53-059286 A JP 56-038227 B	16.04.1982 27.05.1978 04.09.1981
US 4966585 A1	30.10.1990	None	