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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
31 January 2013 (31.01.2013)

WIPO | PCT

(10) International Publication Number
WO 2013/016376 A3

(51) **International Patent Classification**:
A61M 5/152 (2006.01)

(21) **International Application Number**:
PCT/US2012/048044

(22) **International Filing Date**:
25 July 2012 (25.07.2012)

(25) **Filing Language**: English

(26) **Publication Language**: English

(30) **Priority Data**:
61/511,321 25 July 2011 (25.07.2011) US
61/576,405 16 December 2011 (16.12.2011) US

(71) **Applicant** *(for all designated States except US)*: **PRECIFLEX SA** [CH/CH]; rue Général-Dufour 4, CH-2502 Biel/Bienne (CH).

(72) **Inventors; and**
(75) **Inventors/Applicants** *(for US only)*: **VOUILLAMOZ, Lucien** [CH/CH]; Schulhausstrasse 3, CH-8835 Feusisberg (CH). **ROSEN, Melissa** [US/US]; 66 Cavendish Circle, Salem, MA 01970 (US). **WALISH, Judy L.** [US/US]; 1738 Commonwealth Ave, Apt #1, Brighton, MA 02135 (US). **YASEVAC, Daniel** [US/US]; 11 Clyde St. #1, Somerville, MA 02145 (US). **BRUEHWILER, Michel** [US/US]; 14 Erie Avenue, Newton, MA 02461 (US).

(74) **Agent**: **MOETTELI, John**; Da Vinci Partners LLC, St. Leonhardstrasse 4, CH-9000 St. Gallen (CH).

(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, 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, 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, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— *of inventorship (Rule 4.17(iv))*

Published:

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

[Continued on next page]

(54) **Title**: FLUID DISPENSER

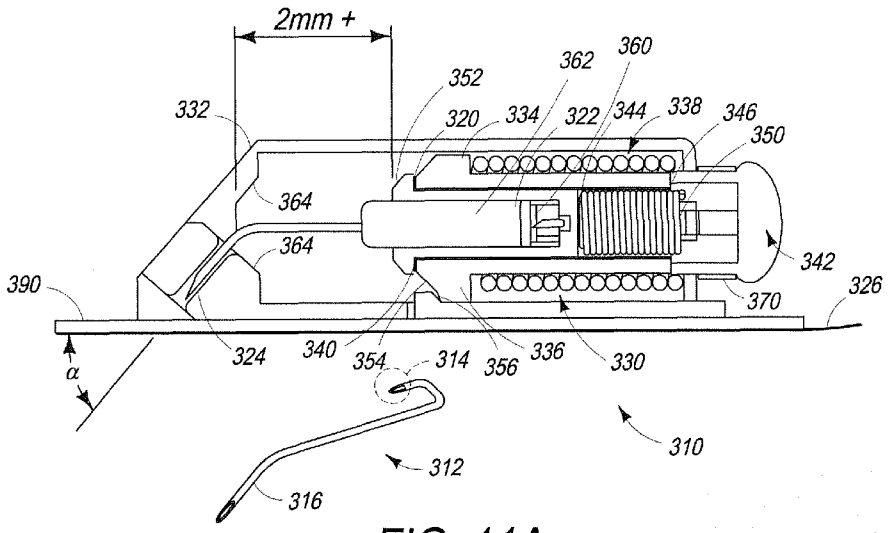


FIG. 11A

(57) **Abstract**: A fluid dispensing device is provided for dispensing a measured amount of fluid into a living organism. The device has a needle having a first end and a second end. The needle is adapted for interfacing, on the first end, with a septum of a flexible hollow membrane, and at a second end thereof, for subcutaneously inserting into a living organism. The needle is guided by a guide to permit an injection into the living organism at a substantially non-orthogonal angle with respect to a surface of the living organism. The first and second ends of the needle pierce their respective piercing surface while translating together in a common direction. In other embodiments, the dispensing device includes a main housing, a flexible fluid reservoir, an injection assembly and a trigger mechanism. The main housing houses the operative components of the device.

WO 2013/016376 A3

WO 2013/016376 A3

(88) Date of publication of the international search report:
10 May 2013

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/048044

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - A61M 5/152 (2012.01)
USPC - 604/65
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)
IPC(8) - A61M 5/20, 48, 142, 145, 148, 152, 158, 168, 178 (2012.01)
USPC - 604/19, 48, 65, 115, 164.01, 164.12, 136, 173, 180

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

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PatBase, Google Patents, NCBI PubMed, Google Scholar, Google

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X -- Y	US 2009/0254041 A1 (KRAG et al) 08 October 2009 (08.10.2009) entire document	1, 2, 4, 50 --- 3, 5-46, 53-56
Y	US 7,896,837 B2 (WILKINSON et al) 01 March 2011 (01.03.2011) entire document	5-19, 30, 42, 44, 54
Y	US 2006/0095014 A1 (ETHELFELD) 04 May 2006 (04.05.2006) entire document	3, 7, 17, 28
Y	US 2010/0100047 A1 (GLEJBØL et al) 22 April 2010 (22.04.2010) entire document	11, 20-42, 45, 46, 55, 56
Y	US 2011/0054400 A1 (CHONG et al) 03 March 2011 (03.03.2011) entire document	13-16, 24-27, 36-40, 43-46, 53-56
Y	US 5,050,612 A (MATSUMURA) 24 September 1991 (24.09.1991) entire document	31-42, 46, 56
Y	US 2004/0162521 A1 (BENGTSSON) 19 August 2004 (19.08.2004) entire document	53-56

☐ Further documents are listed in the continuation of Box C. ☐

* 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 another 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	Date of mailing of the international search report
27 December 2012	08 JAN 2013
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/048044

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See Extra Sheet

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☒ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2012/048044

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-5, 43, 50-53, are drawn to a fluid device dispensing device with a needle.

Group II,claims 6-42, 44-49, 54-56, are drawn to a fluid dispensing device with a housing, receiver, injection device, trigger mechanism.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The special technical feature of the Group I invention: needle, as claimed therein is not present in the invention of Group II. The special technical feature of the Group II invention: housing, receiver, injection device, trigger mechanism as claimed therein is not present in the invention of Group I.

Since none of the special technical features of the Group I and II inventions are found in more than one of the inventions, unity of invention is lacking.