

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
15 January 2009 (15.01.2009)

PCT

(10) International Publication Number
WO 2009/009367 A3

(51) International Patent Classification:
A61M 5/178 (2006.01) *A61M 31/00* (2006.01)

(21) International Application Number:
PCT/US2008/068998

(22) International Filing Date: 2 July 2008 (02.07.2008)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/066,155 6 July 2007 (06.07.2007) US
61/031,313 25 February 2008 (25.02.2008) 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, BR, BW, BY, BZ, CA, CH, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, 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, 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, HR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

[Continued on next page]

(54) Title: CONSTRAINED FLUID DELIVERY DEVICE

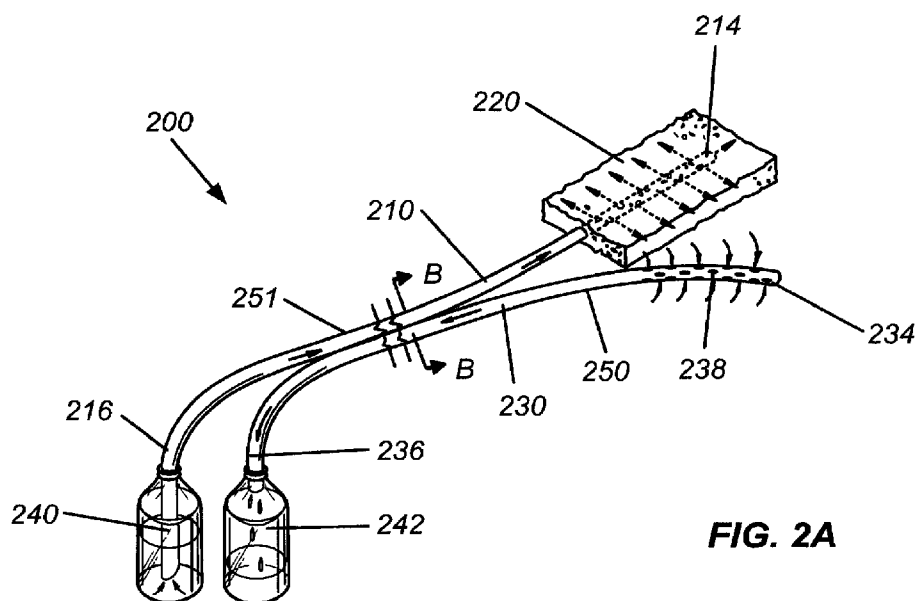


FIG. 2A

(57) Abstract: Constrained fluid delivery devices are described that deliver fluid to an anatomical region of a mammal in a controlled release manner where the device comprises an elongate body defining a lumen throughout a portion thereof, a distal end interiorly positionable adjacent the anatomical region of the mammal and a proximal end in communication with an exterior of the mammal. The device also includes a delivery member and one or more withdrawal members. Also provided herein are methods and kits incorporating the fluid delivery device.

WO 2009/009367 A3



(88) Date of publication of the international search report:

9 July 2009

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2008/068998**A. CLASSIFICATION OF SUBJECT MATTER****A61M 5/178(2006.01)i, A61M 31/00(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)

IPC

A61M 5/178, A61M 31/00

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 since 1975

Japanese Utility models and applications for Utility Models since 1975

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

eKIPASS(KIPO internal), DELPHION, "(delivery<or>diffuser)&(withdrawal<or>drainage) & elongate & reservoir and similar terms"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US6749580B2 (JACK WORK et al.) 15 June 2004 See Figs. 1A~8C.	1-22, 25-30, 32-44, 55-105, 107-139
Y	US4048996 (HERBERT MITTLEMAN et al.) 20 September 1977 See Fig. 1.	1-22, 25-30, 32-44, 55-105, 107-139
A	US4623329A (JAMES L. DROBISH et al.) 18 November 1986 See the whole document.	1-44, 55-139
A	US7186247B2 (MICHAEL R. UJHELYI et al.) 6 March 2007 See the whole document.	1-44, 55-139

☐ 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

25 FEBRUARY 2009 (25.02.2009)

Date of mailing of the international search report

25 FEBRUARY 2009 (25.02.2009)

Name and mailing address of the ISA/KR

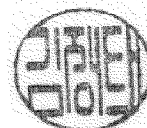
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gu, Daejeon 302-701, Republic of Korea

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US2008/068998**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.: 45-54
because they relate to subject matter not required to be searched by this Authority, namely:
Claims 45-54 pertain to a method for treatment of the human by therapy and thus relate to a subject matter which this International Searching Authority is not required, under Article 17(2)(a)(i) of the PCT and Rule 39.1(iv) of the Regulations under the PCT, to search.
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 an additional fee, this Authority did not invite payment of any additional fee.
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/US2008/068998

Continuation of:

Box III.

This ISA found multiple inventions in this application as follows:

Invention 1: A device for delivery of fluid to an anatomical region of a mammal (Claims 1-29).

Invention 2: A drug delivery device (Claims 30-44).

Invention 3: A method for delivering a fluid to a subject (Claims 45-54).

Invention 4: A device for delivery of fluid to an anatomical region of a mammal (Claims 55-79).

Invention 5: A device for delivery of fluid to an anatomical region of a mammal (Claims 80-104).

Invention 6: A drug delivery device (Claims 105-120).

Invention 7: A kit for administering fluid (Claims 121-124).

Invention 8: A drug delivery kit (Claims 125-127).

Invention 9: A kit for delivering fluid to an anatomical region of a mammal (Claims 128-131).

Invention 10: A kit for delivering fluid to an anatomical region of a mammal (Claims 132-136).

Invention 11: A drug delivery kit (Claims 137-139).

The single general concept linking the eleven inventions together is merely "constrained fluid delivery". This common concept is however described in US 6749580 (JACK WORK, et al. 15 June 2004) and, therefore, does not represent any contribution over the prior art.

Hence the inventions listed as inventions 1-11 do not relate to a single general inventive concept under PCT Rule 13.1 because the above mentioned common concept fails to make a contribution over the prior art within the meaning of PCT Rule 13.2.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2008/068998

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6749580 B2	15.06.2004	AU 2002-341967 A8	22.04.2003
		AU 2002-341967 A1	22.04.2003
		EP 1432462 A2	30.06.2004
		JP 2005-505353	24.02.2005
		JP 2005-505353 T	24.02.2005
		US 6749580	15.06.2004
		US 6911014	28.06.2005
		US 2003-0069534 A1	10.04.2003
		US 2003-069534 A1	10.04.2003
		US 6911014 B2	28.06.2005
		WO 0303-0960A2	17.04.2003
		WO 0303-0960A3	11.03.2004
US 4048996	20.09.1977	AU 2593077 A	14.12.1978
		AU 510429 B2	26.06.1980
		BE 855536 A1	03.10.1977
		BR 7703826 A	18.04.1978
		CA 1091118 A1	09.12.1980
		DE 2721746 A1	15.12.1977
		ES 459737 A1	16.08.1978
		FR 2354780 A1	13.01.1978
		GB 1573167 A	13.08.1980
		IL 51868 D0	30.06.1977
		IL 51868 A	31.05.1979
		IT 1074338 B	20.04.1985
		JP 52-154293 A	21.12.1977
		JP 52-154293	21.12.1977
		MX 146432 A	28.06.1982
		NL 7706491 A	16.12.1977
		NO 141825 B	11.02.1980
		NO 771977 A	15.12.1977
		SE 428423 B	04.07.1983
		SE 7706720 A	15.12.1977
		SU 955847 A3	30.08.1982
		ZA 7702290 A	29.03.1978
US 4623329 A	18.11.1986	EP 0145505 A2	19.06.1985
		EP 0145505 A3	23.07.1986
US 7186247 B2	06.03.2007	CA 2523671 A1	21.10.2004
		EP 1617887 A1	25.01.2006
		US 7186247	06.03.2007
		US 2004-199104 A1	07.10.2004
		US 2007-203473 A1	30.08.2007
		WO 2004-089447 A1	21.10.2004