



- (51) **International Patent Classification:**
A61M 39/10 (2006.01) *A61M 39/22* (2006.01)
A61M 39/20 (2006.01)
- (21) **International Application Number:**
PCT/US2012/023028
- (22) **International Filing Date:**
27 January 2012 (27.01.2012)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
13/016,883 28 January 2011 (28.01.2011) US
- (63) **Related by continuation (CON) or continuation-in-part (CIP) to earlier application:**
US 13/016883 (CON)
Filed on 28 January 2011 (28.01.2011)
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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, 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,

[Continued on next page]

(54) **Title:** CONNECTOR WITH FIRST AND SECOND PORTS

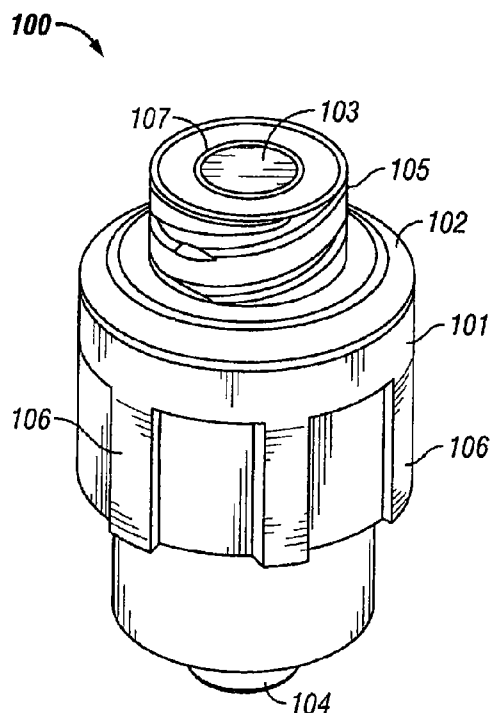


FIG. 1

(57) **Abstract:** A connector is disclosed that has a housing having a fluid path from a first port through an internal cavity to a second port. The connector also includes a plug that has first and second positions within the internal cavity, where the plug blocks the fluid path between the first port and the internal cavity when in the first position. The plug has a diaphragm that separates the internal cavity into a first volume that is vented and a second volume that includes the fluid path. The plug also includes a biasing element that is disposed within the first volume and that urges the plug toward the first position. Displacement of the plug from the first position toward the second position opens the fluid path and increases the second volume.



GM, KE, LR, LS, MW, MZ, NA, RW, 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, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

— *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:

26 October 2012

Published:

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

A. CLASSIFICATION OF SUBJECT MATTER*A61M 39/10(2006.01)i, A61M 39/20(2006.01)i, A61M 39/22(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 39/10; F16K 15/14; A61M 5/00; F16L 37/28; F16K 1/00

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: connector, valve, volumne, luer, needleless, port

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2010-0059702 A1 (MANSOUR et al.) 11 March 2010 See the abstract; claims 1 and 3; paragraphs [0022], [0026]-[0027], [0035] and [0037]; and figs. 3-4, 5A and 5B.	1-20
A	US 05730418 A (FEITH et al.) 24 March 1998 See the abstract; claims 1 and 4; column 4, lines 13-18; column 5, lines 8-11 and 37-39; and figs. 1 and 2.	1-20
A	US 6482188 B1 (ROGERS et al.) 19 November 2002 See the abstract; claim 1; column 5, lines 2-6 and lines 11-17; and figs. 4-5 and 7.	1-20
A	US 06158458 A (RYAN) 12 December 2000 See the abstract; claim 1; column 8, lines 57-62; and figs. 11-12.	1-20



Further documents are listed in the continuation of Box C.



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Date of the actual completion of the international search

22 AUGUST 2012 (22.08.2012)

Date of mailing of the international search report

24 AUGUST 2012 (24.08.2012)

Name and mailing address of the ISA/KR

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City, 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

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Telephone No. 82-42-481-8525



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2012/023028

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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