



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).

— *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))*

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2010/040311**A. CLASSIFICATION OF SUBJECT MATTER***E21B 43/00(2006.01)i, E21B 43/12(2006.01)i, E21B 34/06(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)

E21B 43/00; F21B 43/00; E21B 43/12; F04F 1/20; E21B 43/18

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: first string ,second string, check valve, gas valve

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 4708595 A (MALONEY; TIMOTHY R. et al.) 24 November 1987 See abstract, figure 1 and columns 3, 4.	1-3,6-8 4,5,9,10
Y	US 2004-0216886 A1 (ROGERS JACK R.) 04 November 2004 See abstract, figures 3, 4 and paragraphs 129, 130, 131.	4,5,9,10
A	US 2003-0183394 A1 (DONALD, D. REITZ) 02 October 2003 See abstract, figure 1.	1-10
A	US 5911278 A (REITZ; DONALD D.) 15 June 1999 See abstract, figure 5.	1-10

 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

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"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

09 FEBRUARY 2011 (09.02.2011)

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2010/040311

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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US 2004-0216886 A1	04. 11. 2004	AR044148A1 AU 2003-284182 A1 US 2005-0022998 A1 US 6830108 B2 US 6966366 B2 WO 2004-099563 A1	24. 08. 2005 26. 11. 2004 03. 02. 2005 14. 12. 2004 22. 11. 2005 18. 11. 2004
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INTERNATIONAL SEARCH REPORT

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International application No.

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
		WO 98-59152 A1	30. 12. 1998