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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.

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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

Published:

- with international search report (Art. 21(3))
- 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 March 2013

(54) Title: CONTROLLED PRODUCTION AND INJECTION

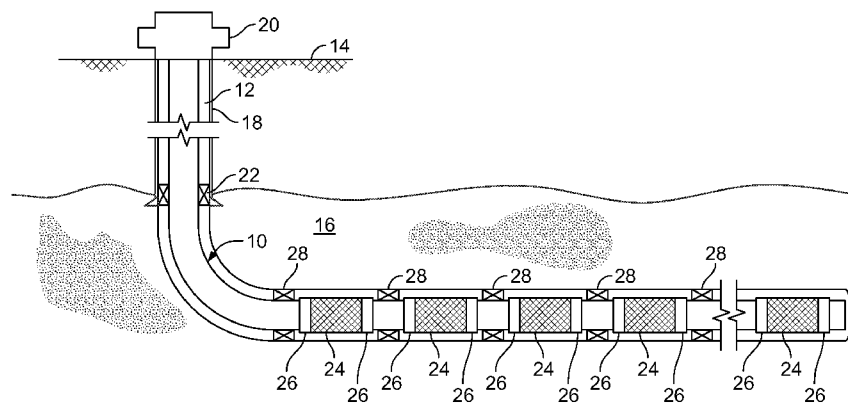


FIG. 1

(57) Abstract: A well production and injection string includes a plurality of spaced apart packers each adapted to seal with a wall of the wellbore. A plurality of flow control devices are provided in the string, distributed between pairs of adjacent packers. The flow control devices are adapted to communicate flow between an interior and an exterior of the string with less restriction to flow from the interior to the exterior of the string than to flow from the exterior to the interior of the string.

WO 2012/148640 A3

A. CLASSIFICATION OF SUBJECT MATTER*E21B 34/02(2006.01)i, E21B 33/122(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 34/02; E21B 43/04; E21B 34/06; E21B 43/01; E21B 34/10

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: flow, control, valve, packer 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.
X Y A	US 2009-0288838 A1 (RICHARDS, WILLIAM MARK) 26 November 2009 See paragraphs 23-38 and figures 1-6	1-6, 8, 9, 12-20 10, 11 7
Y A	US 2007-0272408 A1 (ZAZOVSKY, ALEXANDER F. et al.) 29 November 2007 See paragraphs 5, 17, 38-53 and figures 1-6B	10, 11 1-9, 12-20
A	US 2011-0042091 A1 (DYKSTRA, JASON D. et al.) 24 February 2011 See paragraph 4 and figures 1, 2	1-20
A	US 2009-0000787 A1 (HILL, BUNKER et al.) 01 January 2009 See paragraphs 18, 19 and figure 1-3	1-20

 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

08 JANUARY 2013 (08.01.2013)

Date of mailing of the international search report

14 JANUARY 2013 (14.01.2013)

Name and mailing address of the ISA/KR

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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:

Independent claim 1 is directed to a well production and injection string and it is considered that a flow control device having different resistances for flow into and out of the interior of the string comprises a first special technical feature.

Independent claims 9, 17 are directed to a method of accessing a subterranean zone and a well system respectively. It is considered that flow into and out of the interior of the string through a first and second flow area comprises a second special technical feature.

Since above mentioned independent claims do not share any of the technical features identified, a technically special relationship between the inventions does not exist. Accordingly, the claims do not relate to one invention or to a single inventive concept, a priori.

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

Information on patent family members

International application No.

PCT/US2012/032130

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