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330, Houston, TX 77070 (US).(81) Designated States (unless otherwise indicated, for every
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ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,
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TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
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MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, SM,
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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))
- of inventorship (Rule 4.17(iv))

[Continued on next page]

(54) Title: METHOD AND SYSTEM FOR SETTING A METAL SEAL

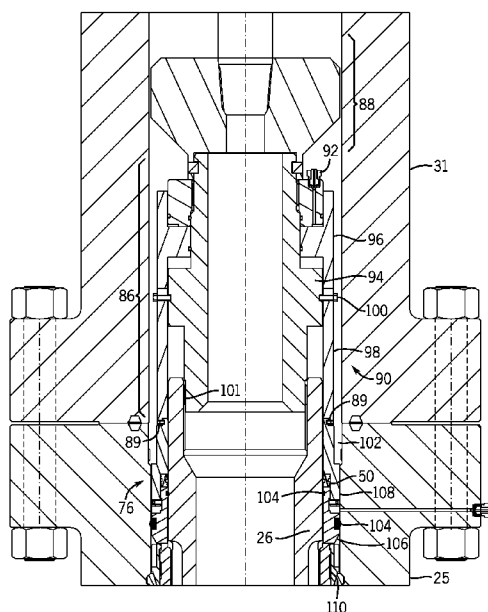


FIG. 4

(57) Abstract: A system and method is provided for setting a metal-to-metal seal (e.g., in an annular space between wellhead components) using a temporary elastomer seal. For example, the annular space may be sealed with one or more elastomer seals before hydraulically setting the metal-to-metal seal. A seal assembly may include the elastomer seals and the metal-to-metal seal. Positioning the seal assembly in the annular space between the wellhead components may isolate pressure in the annular space below the seal such that the metal-to-metal seal may be set. In an exemplary embodiment, a hydraulic mechanism axially compresses the metal-to-metal seal between two members of the seal assembly, thereby radially expanding and setting the metal-to-metal seal.

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12 August 2010

- *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))*

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2009/059871

A. CLASSIFICATION OF SUBJECT MATTER
INV. E21B33/03 E21B33/04

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

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 practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 158 326 A (ANDERSON ALFRED L [US] ET AL) 27 October 1992 (1992-10-27) column 10, line 42 - column 11, line 33 figures 2,3	1-13
A	US 5 524 710 A (SHINN TERRY L [US]) 11 June 1996 (1996-06-11) column 10, line 19 - line 33 figure 4	1-13
A	US 4 556 224 A (LE TRI C [US]) 3 December 1985 (1985-12-03) abstract figures 2-4	1-13

☐ 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 document 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

10 March 2010

Date of mailing of the international search report

18/06/2010

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2009/059871

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 additional 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 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.:

"see additional sheet(s)"

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.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-13

A method and system comprising a retainer ring.

2. claims: 14-17

A system comprising a hydraulic tool.

3. claims: 18-20

A system comprising a running tool.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2009/059871

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