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AO, AT, AU, AZ, BA, BB, BG, BH, BN, 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, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, 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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Published:

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(54) Title: DOWNHOLE RELEASE TOOL

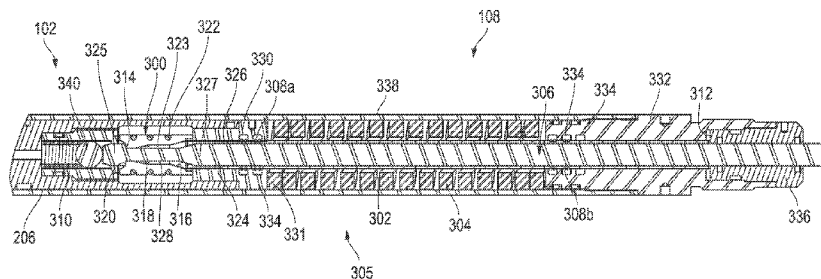


FIG. 3

(57) Abstract: A downhole tool has a release device for releasing a downhole device in a wellbore. The downhole tool has a collet with an inner surface and a collet shoulder; a release rod configured to engage the collet shoulder in a locked position and disengage from the collet shoulder in a release position; and a release tube surrounding the release rod and having a release ramp proximate a nose of the release tube.



INTERNATIONAL SEARCH REPORT

International application No
PCT/US2014/066764

A. CLASSIFICATION OF SUBJECT MATTER
INV. E21B23/01 E21B23/06 E21B23/03 E21B31/12
ADD.
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 practicable, 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 Y A	US 5 050 682 A (HUBER KLAUS B [US] ET AL) 24 September 1991 (1991-09-24) column 8, lines 4-38; figure 5	1 2-7, 17-25 8-11, 26-28
X A	----- US 4 869 325 A (HALBARDIER ANNA L [US]) 26 September 1989 (1989-09-26) page 6, line 43 - page 7, line 36; figures 1,3	1 2-7, 17-25
X A	----- US 2013/068533 A1 (HRADECKY JASON A [US] ET AL) 21 March 2013 (2013-03-21) paragraphs [0031] - [0041]; figures 2D,3C	1 2-6, 17-22
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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	"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
"E" earlier application or patent but published on or after the international filing date	"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
"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)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 14 September 2015	Date of mailing of the international search report 30/11/2015
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Beran, Jiri
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INTERNATIONAL SEARCH REPORT

International application No

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	WO 00/12862 A1 (CAMCO INT [US]) 9 March 2000 (2000-03-09) page 10, line 4 - page 11, line 29; figures 4,6	2-7, 17-25 8-11, 26-28
A	----- WO 01/71154 A1 (NOETIC ENG INC [CA]; SLACK MAURICE WILLIAM [CA]; KAISER TRENT MICHAEL) 27 September 2001 (2001-09-27) page 15, line 32 - page 17, line 31; figures 6-9 -----	2-6, 17-22

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/066764

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: 1-11, 17-28

a downhole tool having a release rod, a release tube and collet to engage the release rod with a release tube disengaging the collet by moving the collet radially outward from the release tube

2. claims: 12-16

a down hole device releasing method preventing an accidental release of the device

3. claims: 29-34

a release tube of a downhole tool having a plurality of ratchet profiles

4. claims: 35-39

a downhole tool with a release tube connected to an inner sleeve surrounded by a radial spring and pin connected to said inner sleeve and further having a slotted outer sleeve with the pin engaging the slot

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2014/066764

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5050682	A	24-09-1991	NONE

US 4869325	A	26-09-1989	NONE

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