



(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:
13.07.2016 Bulletin 2016/28

(51) Int Cl.:
E21B 33/06^(2006.01)

(43) Date of publication A2:
23.03.2016 Bulletin 2016/12

(21) Application number: **14189874.2**

(22) Date of filing: **22.10.2014**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME

(30) Priority: **22.09.2014 US 201414492284**

(71) Applicant: **ZP Interests, LLC**
Houston, TX 77069 (US)

(72) Inventors:
• **DeOcampo, Hernani G.**
Spring, TX Texas 77379 (US)
• **Madell, Dean**
Busby, Alberta (CA)
• **Lam, Dennis D.**
Houston, TX Texas 77040 (US)

(74) Representative: **Holzwarth-Rochford, Andreas**
Jones Day
Nextower
Thurn-und-Taxis-Platz 6
60313 Frankfurt am Main (DE)

(54) **Multi-stage blowout preventer and method of using same**

(57) A blowout preventer includes a housing, a ram block carrier which moves within the housing, and one or more ram blocks configured to be placed within the ram block carrier. The ram block carrier may include an opening, an upper shelf within the opening configured to

hold an upper ram block, and a lower shelf within the opening configured to hold a lower ram block. The housing may include a central bore, cavities on both sides of the bore, and openings which allow ram blocks to access a pipe within the bore.

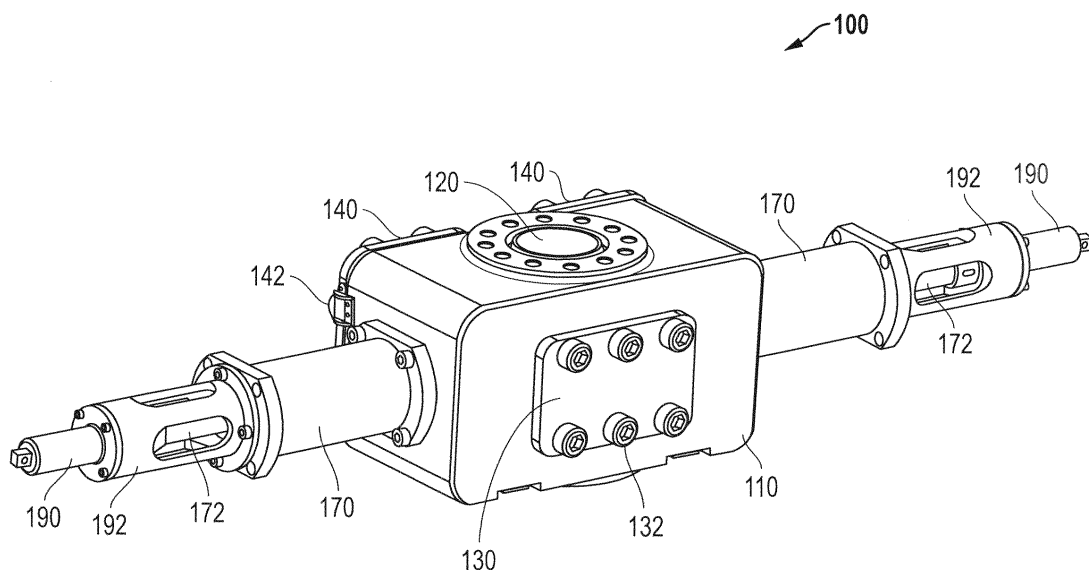


FIG. 1



EUROPEAN SEARCH REPORT

Application Number
EP 14 18 9874

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 2012/073815 A1 (SPRINGETT FRANK BENJAMIN [US] ET AL) 29 March 2012 (2012-03-29)	1	INV. E21B33/06
A	* paragraphs [0028], [0030]; figure 2 *	2,3	
A	US 6 173 770 B1 (MORRILL CHARLES D [US]) 16 January 2001 (2001-01-16) * column 5, line 57 - line 67; figure 9 *	1-3	
A	US 7 300 033 B1 (WHITBY MELVYN F [US] ET AL) 27 November 2007 (2007-11-27) * column 5, line 31 - line 53; figure 5 *	1-3	
A	US 4 057 887 A (JONES MARVIN R ET AL) 15 November 1977 (1977-11-15) * column 5, line 24 - line 46; figures 1,2 *	4-15	
A	US 2009/151959 A1 (DARNELL DAVID TREVOR [GB] ET AL) 18 June 2009 (2009-06-18) * paragraph [0064]; figure 4A *	4-15	TECHNICAL FIELDS SEARCHED (IPC)
A	GB 2 472 510 A (NAT OILWELL VARCO LP [US]) 9 February 2011 (2011-02-09) * page 8, line 25 - page 9, line 5 * * page 12, line 18 - line 27 *	4-15	E21B
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 3 June 2016	Examiner Schneiderbauer, K
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.02 (P04C01)



Application Number

EP 14 18 9874

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).



**LACK OF UNITY OF INVENTION
SHEET B**

Application Number
EP 14 18 9874

5
10
15
20
25
30
35
40
45
50
55

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-3

Ram block carrier with opening, upper and lower shelves and upper and lower ram blocks.

2. claims: 4-15

Housing of a BOP comprising a ram block carrier which can move in the housing.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 14 18 9874

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

03-06-2016

10

15

20

25

30

35

40

45

50

55

ORM P0459

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2012073815 A1	29-03-2012	CA 2812646 A1	05-04-2012
		CA 2812648 A1	05-04-2012
		CN 103228866 A	31-07-2013
		CN 103249907 A	14-08-2013
		EP 2622171 A2	07-08-2013
		EP 2622172 A2	07-08-2013
		KR 20130101065 A	12-09-2013
		KR 20130108375 A	02-10-2013
		SG 189079 A1	31-05-2013
		SG 189080 A1	31-05-2013
		US 2012073815 A1	29-03-2012
		US 2012073816 A1	29-03-2012
		WO 2012042268 A2	05-04-2012
		WO 2012042269 A2	05-04-2012

US 6173770 B1	16-01-2001	NONE	

US 7300033 B1	27-11-2007	BR PI0715840 A2	23-07-2013
		CA 2660536 A1	28-02-2008
		GB 2455245 A	10-06-2009
		US 7300033 B1	27-11-2007
		US 2008067458 A1	20-03-2008
		WO 2008024257 A2	28-02-2008

US 4057887 A	15-11-1977	NONE	

US 2009151959 A1	18-06-2009	CA 2646662 A1	14-06-2009
		GB 2455894 A	01-07-2009
		GB 2484226 A	04-04-2012
		GB 2484227 A	04-04-2012
		GB 2484430 A	11-04-2012
		GB 2484612 A	18-04-2012
		US 2009151959 A1	18-06-2009

GB 2472510 A	09-02-2011	BR PI1005857 A2	18-12-2012
		GB 2472510 A	09-02-2011
		GB 2486997 A	04-07-2012
		US 2011030943 A1	10-02-2011
		US 2014209320 A1	31-07-2014

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82