

(19)



(11)

EP 2 009 300 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
21.11.2012 Bulletin 2012/47

(51) Int Cl.:
F16C 23/02 (2006.01) **F16C 29/02** (2006.01)
F28G 7/00 (2006.01) **F28G 15/02** (2006.01)

(43) Date of publication A2:
31.12.2008 Bulletin 2009/01

(21) Application number: **08252129.5**

(22) Date of filing: **20.06.2008**

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

(71) Applicant: **Babcock & Wilcox Power Generation
Group, Inc.**
Barberton OH 44203-0351 (US)

(72) Inventor: **Wilson, Rickey A.**
Marshallville, OH 44645 (US)

(30) Priority: **27.06.2007 US 768941**

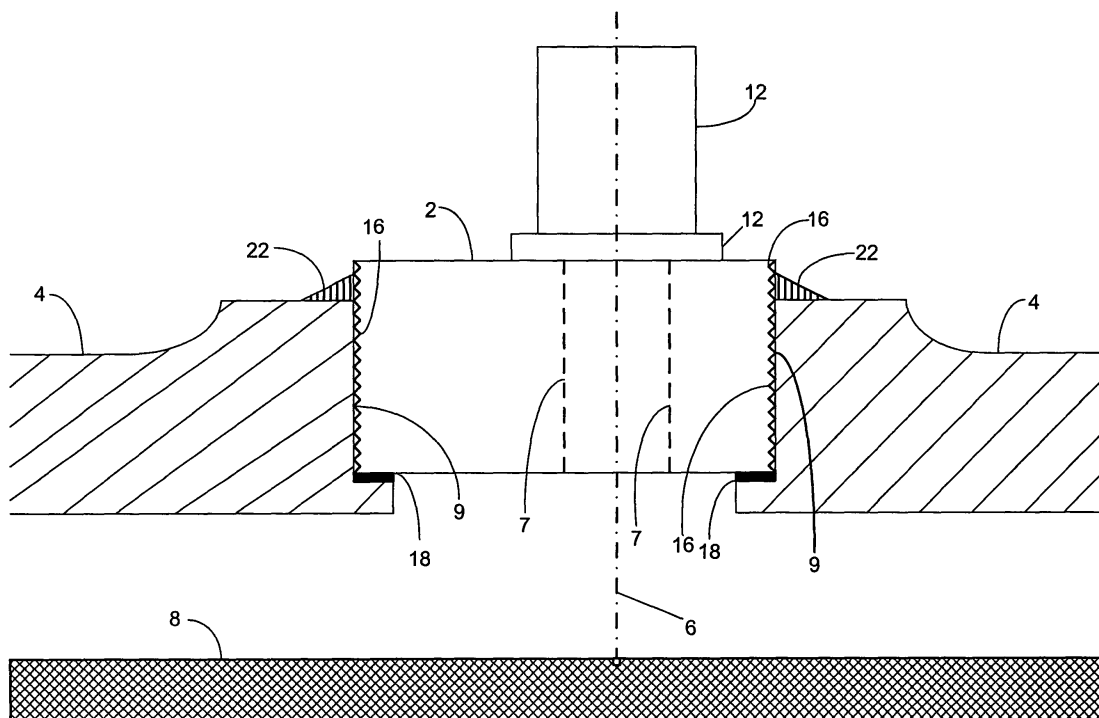
(74) Representative: **Meldrum, David James et al**
D Young & Co LLP
120 Holborn
London EC1N 2DY (GB)

(54) **Rapper alignment plug**

(57) The present invention relates generally to a rapper alignment plug (2) used in the custom alignment of

one or more portions of a rapper device (2) through the walls of a vessel (4), and methods for forming and using same.

FIG. 1



EP 2 009 300 A3



EUROPEAN SEARCH REPORT

Application Number
EP 08 25 2129

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	DE 521 545 C (MASCHF AUGSBURG NUERNBERG AG) 25 March 1931 (1931-03-25) * page 2, line 15 - line 30; figure 1 *	1-3,8	INV. F16C23/02 F16C29/02 F28G7/00 F28G15/02	
X	US 1 807 457 A (WEIS HENRY T) 26 May 1931 (1931-05-26) * page 2, line 17 - line 29; figures 1,3 *	1-3		
X	US 2 691 346 A (CONERY WILLIAM J) 12 October 1954 (1954-10-12) * column 4, line 65 - line 73 * * column 5, line 42 - line 53 * * column 7, line 28 - line 47; figures 1,3 *	1-3		
X	US 2 634 164 A (DRAKE ROBERT W) 7 April 1953 (1953-04-07) * column 3, line 3 - line 62; figure 6 *	1-3		
X	FR 1 258 134 A (DIAMOND POWER SPECIALITY) 7 April 1961 (1961-04-07) * page 2, left-hand column, line 42 - line 57; figure 2 *	1-3		TECHNICAL FIELDS SEARCHED (IPC)
X	US 1 754 850 A (DE LONG HARRY B) 15 April 1930 (1930-04-15) * page 1, line 59 - line 82; figure 2 *	1-3		F28G F16C
X	US 5 209 525 A (ITO KAZUHIKO [JP]) 11 May 1993 (1993-05-11) * column 17, line 61 - column 18, line 11; figures 6d, 8d' *	1-7		
A	US 3 997 000 A (PIELA ADAM) 14 December 1976 (1976-12-14) * column 3, line 11 - line 26; figure 3 *	1-19		
-/--				
The present search report has been drawn up for all claims				
Place of search The Hague		Date of completion of the search 15 October 2012	Examiner Beltzung, Francis	
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				

 2
EPO FORM 1503 03.02 (p04c01)



EUROPEAN SEARCH REPORT

Application Number
EP 08 25 2129

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	GB 721 846 A (LODGE COTTRELL LTD) 12 January 1955 (1955-01-12) * page 1, line 67 - page 3, line 23; figures 1-7 * -----	1-19	
			TECHNICAL FIELDS SEARCHED (IPC)
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 15 October 2012	Examiner Beltzung, Francis
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			

2
EPO FORM 1503 03.82 (P04C01)

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

EP 08 25 2129

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.

15-10-2012

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE 521545	C	25-03-1931	NONE
US 1807457	A	26-05-1931	NONE
US 2691346	A	12-10-1954	NONE
US 2634164	A	07-04-1953	NONE
FR 1258134	A	07-04-1961	NONE
US 1754850	A	15-04-1930	NONE
US 5209525	A	11-05-1993	DE 4110141 A1 02-10-1991 US 5209525 A 11-05-1993
US 3997000	A	14-12-1976	CA 1012960 A1 28-06-1977 US 3997000 A 14-12-1976
GB 721846	A	12-01-1955	NONE