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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2017/032038**A. CLASSIFICATION OF SUBJECT MATTER****E21B 43/12(2006.01)i, F04D 13/10(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 43/12; E21B 33/04; E21B 17/20; F04D 27/00; H01B 7/00; E21B 19/22; E21B 23/00; F04D 13/10

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: artificial lift pump discharge, umbilical, coiled tubing, jacket, power cable

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 6298917 B1 (KOBYLINSKI et al.) 09 October 2001 See column 1, line 6 - column 4, line 13, column 6, lines 5-58; and figures 1-5.	1-16
A	US 2016-0076330 A1 (SAUDI ARABIAN OIL COMPANY) 17 March 2016 See paragraphs [0019]-[0034]; and figures 1-2, 5-6.	1-16
A	US 2013-0315751 A1 (ZEITECS B.V.) 28 November 2013 See paragraphs [0017]-[0037]; and figures 1A-1D, 2A-2B, 3A-3F, 4A-4B.	1-16
A	US 6538198 B1 (WOOTERS, TIMOTHY M.) 25 March 2003 See column 3, line 20 - column 6, line 11; and figures 3-6.	1-16
A	EP 0505815 A2 (CAMCO INTERNATIONAL INC.) 30 September 1992 See column 2, line 27 - column 5, line 45; and figures 1-5.	1-16



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 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 August 2017 (10.08.2017)

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2017/032038

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6298917 B1	09/10/2001	BR 9904228 A CN 1204341 C CN 1244633 A GB 2340155 A GB 2340155 B	17/04/2001 01/06/2005 16/02/2000 16/02/2000 20/11/2002
US 2016-0076330 A1	17/03/2016	CA 2959182 A1 WO 2016-044468 A1	24/03/2016 24/03/2016
US 2013-0315751 A1	28/11/2013	AU 2011-261686 A1 AU 2011-261686 B2 AU 2014-210638 A1 BR 112012030815 A2 CA 2799958 A1 CA 2799958 C CA 2895087 A1 CN 103180545 A DK 2576973 T3 EP 2576973 A2 EP 2576973 B1 EP 2845996 A2 EP 2845996 A3 MX 2012014121 A US 2011-0300008 A1 US 8534366 B2 US 8851165 B2 WO 2011-153011 A2 WO 2011-153011 A3	13/12/2012 04/09/2014 28/08/2014 01/11/2016 08/12/2011 06/10/2015 08/12/2011 26/06/2013 12/01/2015 10/04/2013 12/11/2014 11/03/2015 22/04/2015 29/01/2013 08/12/2011 17/09/2013 07/10/2014 08/12/2011 02/05/2013
US 6538198 B1	25/03/2003	None	
EP 0505815 A2	30/09/1992	CA 2063064 A1 CA 2063064 C EP 0505815 A3 NO 921210 A US 5146982 A	29/09/1992 06/06/1995 05/05/1993 29/09/1992 15/09/1992