

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2018/087586

**A. CLASSIFICATION OF SUBJECT MATTER**

B25B 11/00(2006.01)i; E21B 19/10(2006.01)i; E21B 23/00(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)

B25B11,E21B19, E21B23

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)

CNABS, CNKI, VEN, 夹, 石油, 齿轮, 齿槽, 弹簧, clamp+, holder+, petroleum+, gear+, teeth, tooth, spring+

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
PX	CN 106965110 A (JIANGSU JINFENG PETROLEUM MACHINERY MANUFACTURING CO., LTD.) 21 July 2017 (2017-07-21) description, paragraph [0011], and figures 1-2	1-4
PX	CN 206764622 U (JIANGSU JINFENG PETROLEUM MACHINERY MANUFACTURING CO., LTD.) 19 December 2017 (2017-12-19) description, paragraph [0014], and figures 1-2	1-4
A	CN 205290753 U (LI, KANGNING) 08 June 2016 (2016-06-08) description, paragraph [0015], and figure 1	1-4
A	CN 206010537 U (LANZHOU INSTITUTE OF TECHNOLOGY) 15 March 2017 (2017-03-15) entire document	1-4
A	CN 201246120 Y (TIANJIN GENERAL PRINCIPLE MACHINERY TECHNOLOGY CO., LTD.) 27 May 2009 (2009-05-27) entire document	1-4
A	CN 103291234 A (CHINA NATIONAL OFFSHORE OIL CORPORATION ET AL.) 11 September 2013 (2013-09-11) entire document	1-4

 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 2018

Date of mailing of the international search report

24 August 2018

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<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 08170324 A (NITTO CONSTRUCTION) 02 July 1996 (1996-07-02) entire document	1-4
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**INTERNATIONAL SEARCH REPORT**  
**Information on patent family members**

International application No.

**PCT/CN2018/087586**

Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)	Publication date (day/month/year)
CN	106965110	A	21 July 2017	None	
CN	206764622	U	19 December 2017	None	
CN	205290753	U	08 June 2016	None	
CN	206010537	U	15 March 2017	None	
CN	201246120	Y	27 May 2009	None	
CN	103291234	A	11 September 2013	CN 103291234	B 10 June 2015
JP	08170324	A	02 July 1996	JP 3103873	B2 30 October 2000