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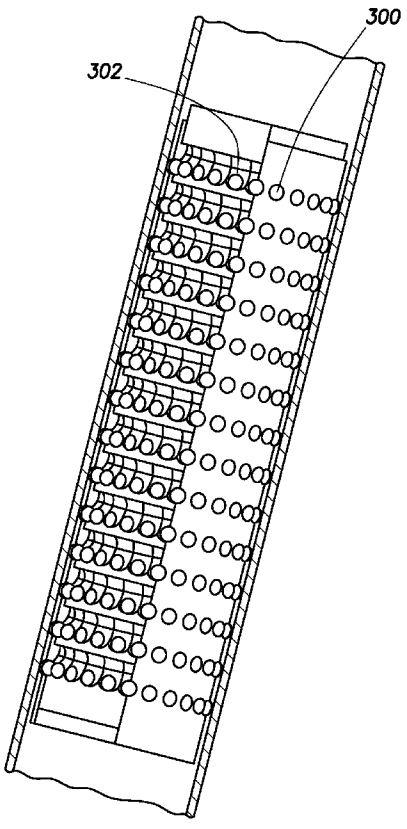
(54) Title: TUBULAR RUNNING TOOL



(57) Abstract: An apparatus (108) is disclosed for handling a tubular segment (102), coupling the tubular segment (102) with a tubular string (104), and handling the tubular string (104) in a well bore (106). The apparatus has a tubular engagement assembly (108), which connects to a drive shaft of a top drive (112). The tubular engagement assembly (108)has a self-engaging ball (300) and taper (302) assembly that releasably engages the tubular segment (102). When the tubular engagement assembly (108) connects to the drive shaft and the ball (300) and taper (302) assembly engages the tubular segment (102), any rotation in the drive shaft results in rotation of the tubular segment(102). This rotation allows the tubular segment (102) to engage the tubular string (104).

WO 2007/127737 A3

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC: **E21B 19/16**(2006.01)

USPC: 166/380
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)
U.S. : 166/380, 77.51, 85.1; 175/85; 414/23

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)
Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
x --- y	US 5,125,148 (Krasnov) 30 June 1992 (30.06.1992), Abstract, Fig 1, Fig 2, Fig 3, Fig 5; column 6 lines 12-14 and lines 16-20; column 3 lines 7-10, 13-16,20-22, and 43-46; column 4 line 49-52; column 5 lines 50-56 and lines 59-65; column 6 lines 12-24	1, 3-12, 14-20, 24-27 --- 2, 21-23
x	US 5,967,477 (Walmsley) 19 October 1999 (19.10.1999), abstract, Fig 1, Fig 1B, Fig 1D, Fig 3, Fig 4; column 1 lines 18-23, 52-53; column 3 lines 1-3, 4-6, 46-48; column 4 lines 13-14; column 6 lines 61-64	1, 8-15, 19, 28, 29
y	US 2004/0216924 (Pieras, et al.) 4 November 2004 (04.11.2004), Fig 1	2
y	US 2002/0000333 (Cicognani) 3 January 2002 (03.01.2002), Paragraph [0006]	21
Y, E	US 2007/0095524 (Lesko) 10 April 2006 (10.04.2006), Fig 2	22

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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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	US 5,125,148 (Walmsley) 19 October 1999 (19.10.1999), column 3 line 46-48	23
A	Det Norske Veritas, Technical Report: BSW Limited Design & Engineering: Testing of ballgrab anchor connector" report No. 2002-3263, 31 July 2002	
A	US 6,352,115 (Mathieu) 5 March 2002 (05.03.2002)	
A	US 4,643,472 (Schukei, et al.) 17 February 1987 (17.02.1987)	
A	US 5,484,222 (Schulze, Bekinghausen) 16 January 1996 (16.01.1996)	
A	US 1,829,760 (Santiago) 3 November 1931 (03.11.1931)	
A	US 2004/0256110 (York, et al.) 23 December 2004 (23.12.2004)	
A	US 2005/0000691 (Giroux, et al.) 6 January 2005 (06.01.2005)	
A	US 2002/0074132 (Juhasz, et al.) 20 June 2002 (20.06.2002)	