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(54) Apparatus and method for directional drilling using coiled tubing

(57)A steerable directional drilling tool assembly includes a bent housing (12) defining a bend angle and having a mud motor (13) in its upper section and a drill bit (15) below its lower section, an orienting tool (17) rotatably coupled to such upper section and suspended on coiled tubing (20) that extends upward to the surface, an electric motor in the orienting tool operable to rotate the bent housing in either hand direction to change or adjust the tool face angle of the bit, or continuously rotate the bent housing so that the bit drills straight-ahead, and an electric cable extending throughout the coiled tubing to furnish power from the surface to the electric motor and transmit electric signals to and from the surface. A logging tool can be included in the assembly for measuring characteristics of the formation, the borehole, and the tool assembly.

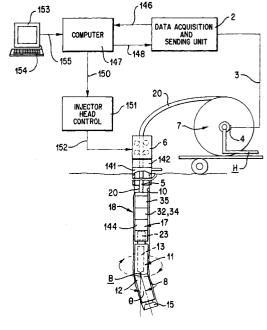


FIG. 4



EUROPEAN SEARCH REPORT

Application Number EP 02 07 6823

		ERED TO BE RELEVANT	T		
Category	Citation of document with i of relevant pass	ndication, where appropriate, ages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.7)	
X	US 5 441 119 A (HEA 15 August 1995 (199 * column 2, line 8	5-08-15) - line 16 *	1,15,16	E21B7/06	
Y A	* column 3, line 36 * column 5, line 21	- line 44 * - line 39; figure 6 *	2-6 7,17		
Y	WO 80 02582 A (BENO 27 November 1980 (1 * page 17, line 2 -		2,3,6		
Y	7 March 1995 (1995-	NGLE RONALD E ET AL) 03-07) - column 4, line 8 *	4,5		
E	EP 0 811 745 A (BAK 10 December 1997 (1 * claim 1 *		1,7,15		
				Market	·
				TECHNICAL SEARCHED	
				E21B	
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	The present search report has	peen drawn up for all claims			
	Place of search	Date of completion of the search	J	Examiner	······································
MUNICH		9 October 2002	Be1	lingacci,	F
X : parti Y : parti docu	ATEGORY OF CITED DOCUMENTS icularly relevant if taken alone cularly relevant if combined with anot unent of the same category nological background	L : document cited for	ument, but publise the application	shed on, or	
O : non-	-written disclosure mediate document	& : member of the sa document			

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

EP 02 07 6823

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

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09-10-2002

Patent document cited in search report			Publication date		Patent family member(s)	Publication date
JS	5441119	Α	15-08-1995	GB	2271795 A ,B	27-04-1994
WO	8002582	A	27-11-1980	US EP	4303135 A 0029449 A1	01-12-1981 03-06-1981
				JP	56500661 T	14-05-1981
				NO	810184 A	21-01-1981
	000 N0000 00000 00000 18000 12000 12000 10000 17000 17000 10000			WO	8002582 A1	27-11-1980
US 	5394951	Α	07-03-1995	CA	2136559 A1	14-06-1995
				FR	2713697 A1	16-06-1995
				GB	228 4 624 A ,B	14-06-1995
				NO	944708 A	14-06-1995
EP	0811745	Α	10-12-1997	EP	0811745 A1	10-12-1997
				CA	2206926 A1	07-12-1997
				NO	972628 A	08-12-1997
				US	5934383 A	10-08-1999

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