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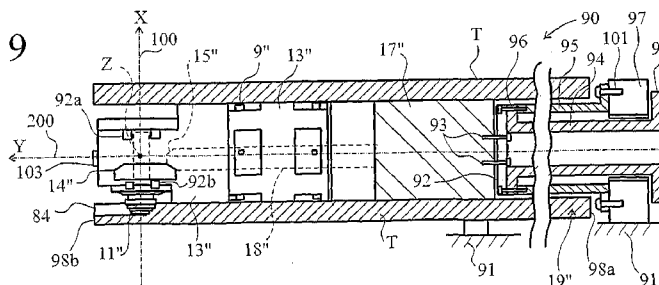
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

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(54) Title: SPINDLE DRIVE SYSTEM AND METHOD OF MACHINING A MEMBER USING SUCH A SYSTEM

Fig. 9



(57) Abstract: Machining systems (10, 20, 30, 40, 50, 60, 70, 90; figs 1-9) and methods of their use for material treatment or removal within a member (T) are disclosed. Each system has a spindle (12) powered by a motor (17, 17'; figs 1-3 & 9) or motors (17a & 17b; figs 4-7) positionable within the member (T) during operation. To provide increased resistance to torsional cutting forces a preferred embodiment (90; fig. 9) includes two concentric pipe members (95, 94), one of which (94) is rotated by an actuating mechanism (110A, HOB or HOC, - figs 10A, 10B and 10C) to pre-stress the other (95). Another preferred embodiment (fig. 9) includes a steady support (9', 18; figs 9 or A9) to support the system (90) in the member (T). A control system (42, 43a, 43b; fig. 4) including a sensor (43a, 43b) and control mechanism (42) can maintain the spindle (12) at the required speed. The machining system may be used for machining helical grooves (84; fig. 8), in a tube or pipe (T) in order to manufacture a stator (80; fig. 8) for a down-hole motor.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
 INV. B23C3/32 B23Q5/10 B23Q15/10 B24B5/40 E21B4/02
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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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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 practical, search terms used)
 EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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Y		4-6,8,9, 21
X	DE 92 09 821 U1 (JT ELEKTRONIK GMBH [DE]) 11 November 1993 (1993-11-11) the whole document ----- -/--	1-3, 17-20

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