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(54) **Axial balancing device for downhole drilling motors.**

(57) A downhole drilling motor is described which has an outer drill casing (11), a shaft (12) for driving a drill bit connected thereto, and the shaft (12) being rotatable relative to the casing (11). A turbine (15) is disposed between the casing (11) and the shaft (12) to permit the shaft (12) to be rotated. A pressurized fluid can be admitted via an inlet (13) and is transmitted to the turbine (15) via a passage (20) to effect operation. The shaft is provided with reaction means which includes

a sleeve (17) mounted on the shaft (12) and which sleeve and shaft have pressure surfaces (23,24) which can be acted on by the pressure fluid to produce a force acting counter to the normal hydraulic thrust on the shaft (12) to produce a reduced resultant hydraulic thrust on the shaft (12). In a preferred arrangement, the reaction member and thrust bearing is located above the turbine (15) so that the unit can be replaced as a whole.

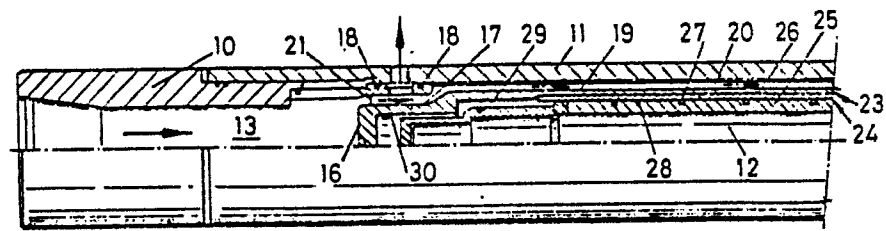


FIG. 1A

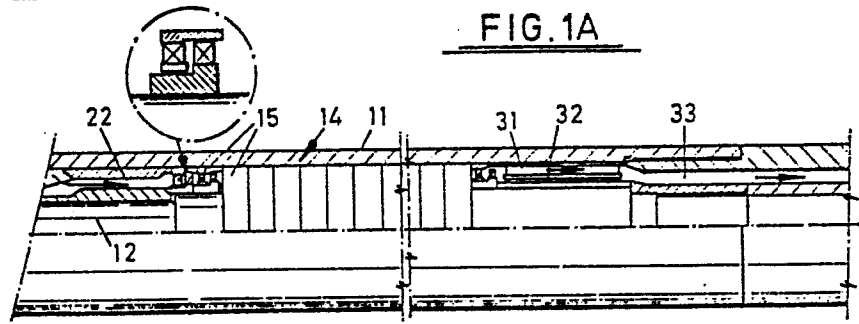


FIG. 1B



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EUROPEAN SEARCH REPORT

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EP 86 30 5258

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 4)
X	FR-A-1 161 543 (TIRASPOLSKY) * Page 2, right-hand column, line 19 - page 4, left-hand column, line 25 *	1	F 03 B 13/02 E 21 B 4/02
A	---	2	
A	GB-A- 781 860 (BATAAFSCHE PETROLEUM MY) * Page 3, line 28 - page 4, line 55 *	2-4,6	
A	---	5,7,8	
A	US-A-4 260 032 (FOX) * Column 2, line 25 - column 3, line 35 *	9,10	
A	---	6,9,10, 18	
A	US-A-4 308 927 (FOX) * Column 2, line 65 - column 5, line 2 *	13,14, 15	TECHNICAL FIELDS SEARCHED (Int. Cl. 4) F 03 B E 21 B
A	---		
A	FR-A-2 240 345 (ALSTHOM) * Page 2, lines 7-27 * -----		
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 22-01-1988	Examiner DE WINTER P.E.F.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ----- & : member of the same patent family, corresponding document			