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**Drill bit assembly having improved operational life.**

(57)

A drill bit assembly (10) has an elongated housing in which a drill is provided with a generally cylindrical shape for receiving an enlarged tool end with somewhat greater diameter, the tool having cutting cones (22) for cutting a drill hole in material to be drilled. Air is fed to a plenum chamber within the housing out of which are fed two air flows. The first flow is directed to the region of the cutting cones and is of reduced magnitude sufficient only for removing dust and cuttings away from the bit assembly up along the sides of the bit. A plurality of vanes (60 a-c) are provided on the housing to direct the first flow into a helical path the general pitch of the vanes. The vanes are caused to overlap one another in the direction of flow. A plurality of jet nozzels (56) are provided from the plenum chamber at the side of the housing intermediate each pair of vanes and aligned so that the second flow will be in line with the first flow and generally parallel to the vanes in the general direction of the drill end and away from the cutting cones. Centrifugal force thus imparted keeps particles away from the drill bit and the pipe extensions and thereby reduces wear.

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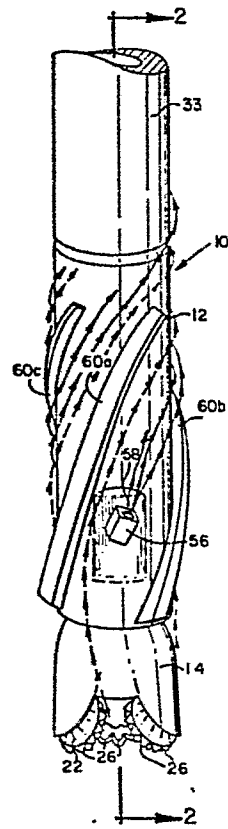


FIG. 1



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# EUROPEAN SEARCH REPORT

0106702

Application number

EP 83 30 6326

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. 3)
Y	US-A-4 083 417 (ARNOLD) * Column 2, line 4 - column 3, line 5; figures 2,3 *	1,3-5	E 21 B 10/18 E 21 B 10/44 E 21 B 17/22 E 21 B 21/00
A	---	7,8	
Y	US-A-3 848 683 (PERSSON) * Column 4, lines 31-55; figure 3 *	1,3-5	
A	--- AU-B- 41 129 (BAYLISS)(1972) * Page 3, last paragraph - page 4; figure *	1,3-6, 9	
A	--- US-A-4 049 066 (RICHEY)		TECHNICAL FIELDS SEARCHED (Int. Cl. 3)
A	--- US-A-2 334 788 (O'LEARY)		E 21 B
A	--- US-A-2 634 101 (SLOAN) -----		
<p>•The present search report has been drawn up for all claims</p>			
Place of search THE HAGUE		Date of completion of the search 18-10-1985	Examiner RAMPELMANN J.
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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 &amp; : member of the same patent family, corresponding document</p>			