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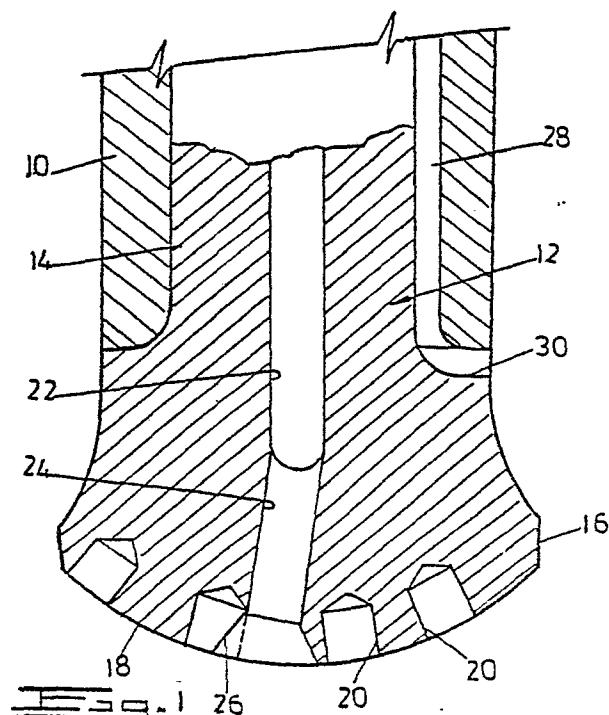
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54 Down-the-hole drilling.

57 The invention concerns down-the-hole drilling, where there is a persistent problem in providing an adequately controlled flow of flushing fluid to the face of the drill bit. In known down-the-hole drills turbulence and closed circuits of the flushing fluid tend to erode the bit and reduce its lifespan. The invention seeks to lessen these drawbacks by providing for the flow of flushing fluid to be divided into a component directed along a first cavity (22, 24) which terminates at the face (18) of the bit and another component directed along a second cavity (28, 30) which terminates above the face and is deflected up the drill hole. Weakening of the bit is avoided if there is at most one bore through the bit for flushing fluid.





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DOCUMENTS CONSIDERED TO BE RELEVANT			CLASSIFICATION OF THE APPLICATION (Int. Cl. ²)
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
D	<u>GB - A - 1 071 418</u> (P.V. MINING-ENGINEERING) * Page 2, lines 56-63 *	1,4,5,7	E 21 B 9/02 1/06 E 21 C 13/08
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	<u>US - A - 3 269 471</u> (ALEXANDER) * Column 2, lines 34-47 *	1,4,5	
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	<u>CH - A - 321 023</u> (HUSZAR) * Claim *	1,4	TECHNICAL FIELDS SEARCHED (Int.Cl. ²)
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	<u>CA - A - 871 004</u> (BENDO) * Page 2, line 24 to page 3, line 2 *	1,4,5,7	E 21 B E 21 C
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<u>US - A - 3 299 974</u> (CLEMMOW) * Column 2, lines 9-18 *	1,4,5		
--			
<u>US - A - 2 507 221</u> (PHIPPS) * Column 3, lines 26-32 *	1,4,5		
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<u>AU - A - 450 556</u> (WICKMAN SOUTH AFRICA) * Page 7, lines 11-15; figure 5 * * Page 6, lines 15-23; figure 3 *	1,2,4,5 3,6	CATEGORY OF CITED DOCUMENTS X: particularly relevant A: technological background O: non-written disclosure P: intermediate document T: theory or principle underlying the invention E: conflicting application D: document cited in the application L: citation for other reasons	
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<u>US - A - 3 155 180</u> (McSWEEN) * Column 3, lines 23-38 *	1,2,7		
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<input checked="" type="checkbox"/> The present search report has been drawn up for all claims			&: member of the same patent family, corresponding document
Place of search	Date of completion of the search	Examiner	
The Hague	19-04 1979	SOGNO	



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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
	<u>US - A - 3 866 746</u> (CURINGTON) * Column 3, lines 14-27 * ---	8	
	<u>US - A - 3 991 834</u> (CURINGTON) * Figures 1-9; column 2, line 64 to column 3, line 10 * ---	8	
	<u>FR - A - 2 200 434</u> (BOEHLER) * Page 2, lines 18-21; page 1, lines 31-34 * ---	3,6	TECHNICAL FIELDS SEARCHED (Int. Cl.)
	<u>US - A - 1 943 880</u> (REA) * Page 1, lines 59-67 * ---	3,6	
AD	<u>US - A - 3 225 841</u> (THOMPSON)		
AD	<u>DE - B - 1 238 864</u> (ZIMMERMANN) -----		