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(11) Publication number:

0 449 415 A3

(12)

EUROPEAN PATENT APPLICATION

(21) Application number: **91301389.2**

(51) Int. Cl.⁵: **E21B 10/18**

(22) Date of filing: **21.02.91**

(30) Priority: **30.03.90 US 502046**
14.11.90 US 613241
24.12.90 US 632949

(43) Date of publication of application:
02.10.91 Bulletin 91/40

(84) Designated Contracting States:
DE FR GB IT NL

(88) Date of deferred publication of the search report:
27.11.91 Bulletin 91/48

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(54) **Outwardly mounted nozzles for rotary drill bits.**

(57) A rotary drill bit (10) has fluid discharge nozzles (36A, 36B, 36C) positioned between adjacent pairs of roller cutters (20A, 20B, 20C). A fluid discharge nozzle (36A) positioned along the outer circumference of the drill bit body (12) provides a high velocity stream of drill fluid (44) along the bore hole side wall (34) with at least a substantial side portion of the stream (44) engaging the side wall (34) adjacent roller cutter (20A) and flowing downwardly along the side wall (34) across the bore hole corner surface (33). The nozzle orifice (37) has its center (41) positioned less than one inch from the adjacent bore hole side wall (34) and the stream is directed downwardly to provide a minimal change in direction as the stream (44) sweeps across the corner surface (33) and the bore hole bottom surface (32).

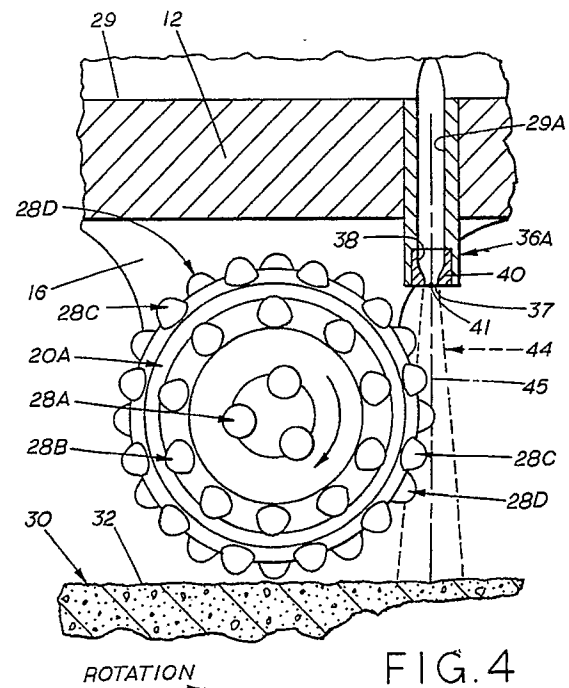


FIG. 4

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EUROPEAN SEARCH REPORT

Application Number

EP 91 30 1389

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.5)
D,A	US-A-3 618 682 (J.D.BENNETT ET AL.) * the whole document * -----	1	E 21 B 10/18
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			E 21 B
The present search report has been drawn up for all claims			
Place of search		Date of completion of search	Examiner
The Hague		02 October 91	RAMPELMANN K.
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