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14.04.93 Bulletin 93/15(71) Applicant: **SMITH INTERNATIONAL, INC.**
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W-8000 München 22 (DE)(54) **Rock bit.**

(57) A rock bit is disclosed having a plurality of rolling cone cutters each having a gage row of inserts oriented to face the borehole bottom for crushing the same, and a second row of heel gage inserts which are oriented to face the borehole sidewall for scraping the same. The heel row inserts are interleaved between the gage row inserts and the cutting surface profile of the heel row inserts overlaps the cutting surface profile of the gage inserts in order to alleviate most of the scraping action normally encountered by gage inserts. The crowns of the heel row inserts are within four millimeters up hole from the crowns of the gage row inserts. The heel inserts are made of a harder material than the gage row inserts for resisting the scraping action against the sidewall of the borehole.

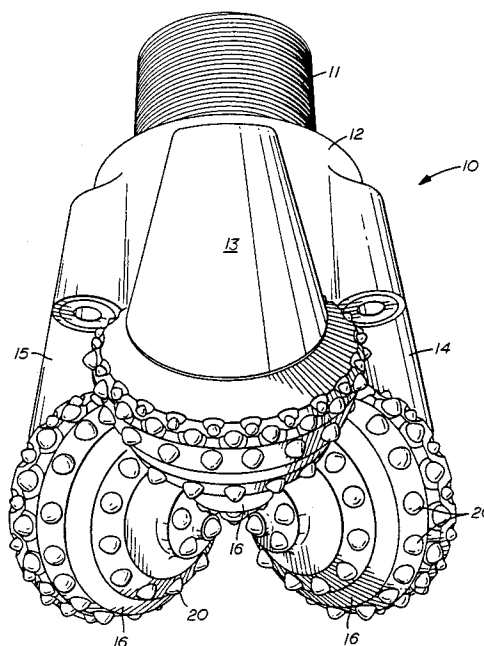


FIG. 1

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EUROPEAN SEARCH REPORT

Application Number

EP 92 10 6450

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)
A	US-A-2 990 025 (TALBERT) * column 1, line 9 - line 12 * * column 2, line 55 - column 3, line 13; figures * ---	1-3,9	E21B10/16 E21B10/52
A	FR-A-2 029 550 (DRESSER INDUSTRIES INC.) * page 2, line 5 - line 19 * * page 4, line 36 - page 5, line 5; figures * ---	1-3,9	
A,D	US-A-3 727 705 (NEWMAN) * column 1, line 57 - column 2, line 8; figure 2 * -----	1,3,7	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			E21B
Place of search THE HAGUE	Date of completion of the search 17 FEBRUARY 1993	Examiner LINGUA D.G.	
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	