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(12) # EUROPEAN PATENT APPLICATION

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(54) **Drilling apparatus.**

(57) The invention provides a drill pipe rotary drive mechanism for an earth drilling apparatus comprising a housing, a drive member mounted in the housing for rotation therein about a rotary axis and having an axial bore opening at each end to the exterior of the housing, and a drive mechanism in the housing for rotatably driving the drive member. A drive coupling tool is adapted to be readily removably mounted in the drive member so that the drive mechanism can be used for rotatably driving different types of earth drilling tools, the coupling tool having a tubular body portion telescopingly removably mounted in the axial bore of the drive member, the body portion having an axial opening extending therethrough for reception of a portion of the length of the drill pipe, a flange at one end of the body portion for abutting engagement with one end of the drive member for axially locating the coupling tool in the drive member, the coupling tool being adapted to be non-rotatably coupled to a drilling tool and to the drive member.

The invention also provides a dual-wall drill pipe section comprising an outer pipe member having a box end formed with an internal thread and a pin end formed with an external thread for engagement with the box end of another outer pipe member, the bore of one of the ends of the outer pipe member is formed with a shoulder and a circumferential, inwardly facing groove axially spaced from the shoulder, an inner pipe member concentrically disposed within the outer pipe member so as to define an annular passage between the inner and outer pipe members, spacer members connected to each end of the inner pipe member and disposed in the annular passage for maintaining concentricity between the inner and outer pipe members, the spacer members at one end of the inner pipe being formed with a shoulder for abutting engagement with the shoulder of the outer pipe member so as to axially locate and support the inner pipe member within the outer pipe member, and at least one spring member connected to the inner pipe member and having a portion engageable with the groove of the outer pipe member for resiliently and frictionally retaining the inner pipe member within the outer pipe member during drilling, storage and handling of an assembled pipe section.

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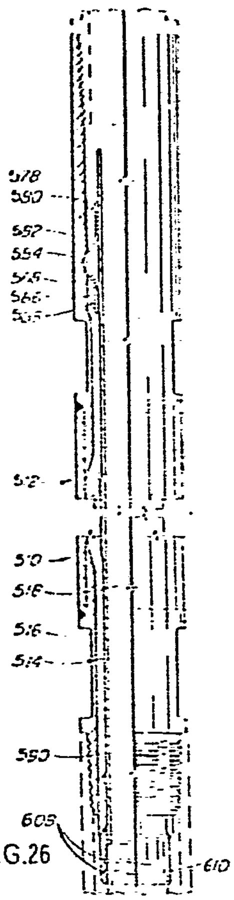
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FIG.26

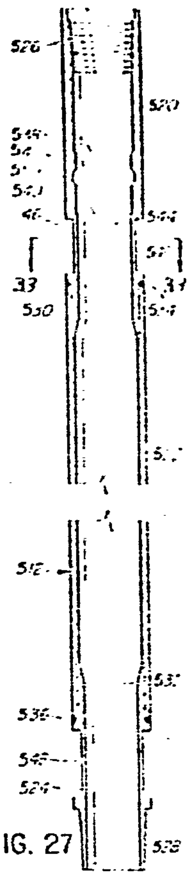
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FIG. 27

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EUROPEAN SEARCH REPORT

0165479
Application number

EP 85 10 6086

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)
A	GB-A-2 074 629 (SALZGITTER) * figure 3 *		E 21 B 17/18 E 21 B 17/00
A	US-A-4 241 789 (GROSCH) * figure 4 *		
A	US-A-2 512 116 (SIEBELS) * figure 2 *		
A	US-A-4 280 535 (WILLIS) * figure 4 *		

TECHNICAL FIELDS SEARCHED (Int. Cl.4)

E 21 B 17/18
E 21 B 17/10
E 21 B 21/12
E 21 B 21/14
F 16 L 9/18
F 16 L 59/12

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
BERLIN	24-10-1985	ZAPP E

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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A : technological background
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