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[54] **DRILLING APPARATUS**

[76] Inventor: **James B. Loftis**, P.O. Box 38,
Remlap, Ala. 35217

[21] Appl. No.: **117,562**

[22] Filed: **Feb. 1, 1980**

[51] Int. Cl.³ **E21C 11/02**

[52] U.S. Cl. **175/52; 173/164;**
173/140; 175/85; 211/60 S

[58] Field of Search 175/52, 85; 173/164,
173/140; 211/60 S; 414/22

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Primary Examiner—Ernest R. Purser

Attorney, Agent, or Firm—Woodford R. Thompson, Jr.

[57] **ABSTRACT**

Drilling apparatus embodying an elongated frame supports a transmission unit for longitudinal movement therein. The transmission unit carries a drive head slidably driven by a polygonal, parallel drive shaft and is

threadedly connected to one end of a drill rod section in axial alignment therewith. The other end of the drill rod section is connected selectively to another drill rod section and a drill bit. A drill rod rack is mounted for rotation about an axis within the elongated frame and carries a plurality of angularly spaced drill rod sections which are moved sequentially into axial alignment with the driven head whereby it is positioned to drill a hole while extending through the rack. The drill rod sections extend through angularly spaced passageways in a support member which is carried by a shaft at the axis of rotation of the drill rod rack. A movable catch is carried adjacent each passageway and is movable from an outer position to an inner position in engagement with a locking recess in a drill rod section. Each catch is urged toward the inner position and is releasably held in the outer position until a drill rod is inserted. A joint breaker unit is mounted in axial alignment with the driven head at the end of the elongated frame adjacent the hole being drilled and includes an annular member which is mounted for rotation in a transverse frame and detachably connected to a drill rod section extending therethrough.

19 Claims, 19 Drawing Figures

