Dec. 26, 1933. J. D. CARR 1,940,996

DRILL

Original Filed March 26, 1931

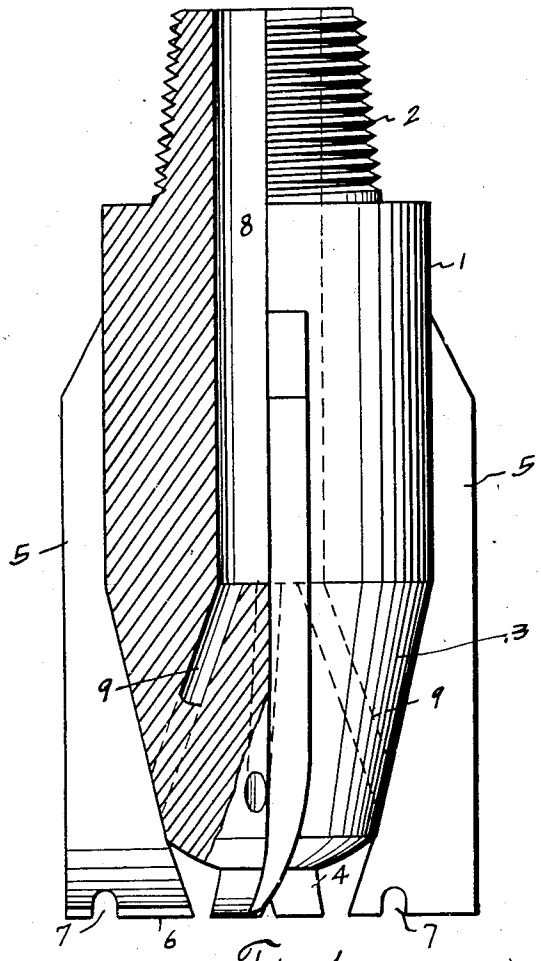


Fig. 1

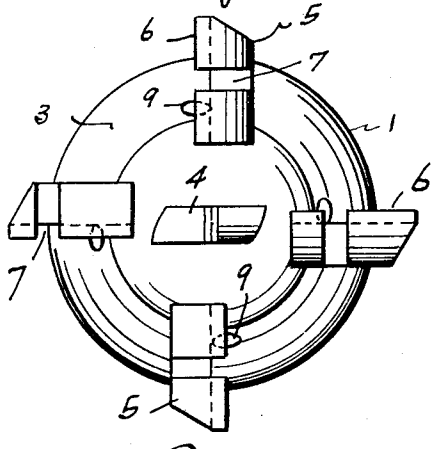


Fig. 2.

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DRILL

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Application March 26, 1931, Serial No. 525,385
Renewed August 31, 1933

1 Claim. (Cl. 255—61)

This invention relates to a novel type of drill.

An object of the invention is to provide a drill of the character described having a substantially cylindrical head with a tapered lower end, said head being provided with integral radial blades, whose lower ends terminate in forwardly curved cutting edges beneath the lower end of the head, said head also having a centrally located bit of the fish tail type at its lower end for cutting out the center of the bore to prevent the formation of a core therein.

Another object of the invention is to provide a drill having a cylindrical head, with radial side blades thereon, terminating in forwardly curved cutting edges beneath the head and having a centrally located bit at the lower end thereof with a large axial water channel extending downwardly through the head and branching into delivery channels through which flushing fluid may be discharged on the forward sides of said blades.

With the above and other objects in view, this invention has particular relation to certain novel features of construction, arrangement of parts and use, an example of which is given in this specification and illustrated in the accompanying drawing, wherein:

Figure 1 shows a side view of the drill partly in section, and

Figure 2 shows a bottom end view thereof.

Referring more particularly to the drawing, the numeral 1 designates a cylindrical head whose upper end may be reduced and externally threaded providing the shank 2 for connection to a drill collar by means of which the drill may be attached to a drill stem. The lower end 3 of the head 1, is tapered downwardly and there is a centrally located bit 4 preferably of the fish tail type at the extreme lower end of the head.

On the sides of the head are the radial blades 5 which extend out laterally beyond the head and downwardly beneath the lower end of the head. The downwardly extended lower ends of the blades are widened inwardly and are curved forwardly and terminate in the cutting edges as 6. Said cutting edges may be provided with notches as 7 arranged in staggered relation to each other.

There is a relatively large axial water channel 8 leading downwardly through the head from the upper end thereof and this channel separates into the branches 9 which terminate on the downwardly tapering portion 3 of the head in front of the respective blades and through this channel and its branches ample flushing fluid may be supplied to the forward sides of the blades to flush out the cuttings of the drill from the bore.

The drawing and description disclose what is now considered to be a preferred form of the invention by way of illustration only, while the broad principle of the invention will be defined by the appended claim.

What I claim is:

A drill including an elongated head whose upper end is cylindrical and whose lower end is tapered downwardly, the cylindrical portion of the head having a relatively large axial water channel leading downwardly therethrough from the upper end of the head to said tapered portion and which separates into reduced downwardly diverging channels which terminate on the downwardly tapering portion of the head, a centrally located bit formed integrally with the lower end of the head, radial blades on the sides of the head and formed integrally therewith whose upper ends are tapered upwardly and whose outer margins are approximately parallel with the axis of the head, said blades being extended downwardly beneath the head and being widened inwardly to conform to the taper of the head and whose lower ends terminate in inwardly widened cutting edges, at a common plane with the cutting edges of the central bit, said channels terminating in front of and in close proximity to the forward sides of said blades.

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