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H. MASCHEK

2,025,354

DRILL BIT

Filed Nov. 27, 1934

Fig. 1.

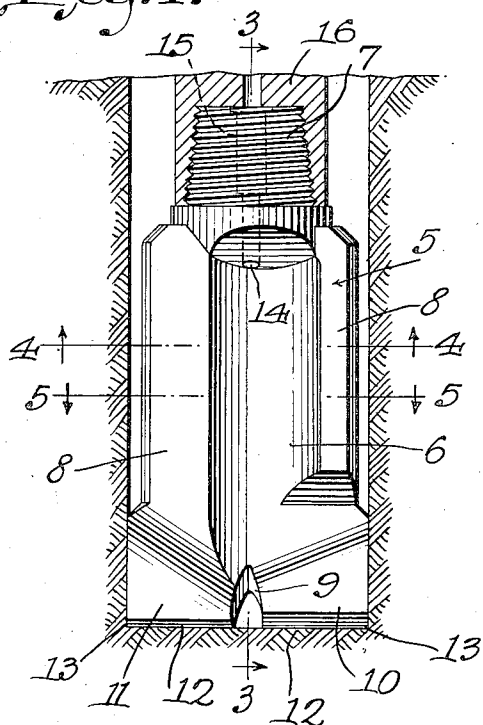


Fig. 2.

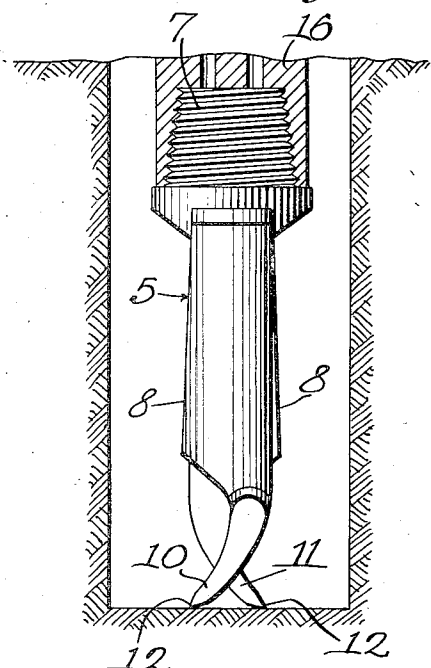


Fig. 3.

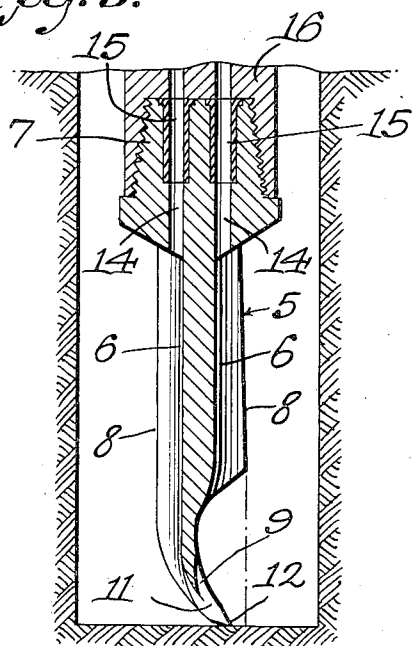


Fig. 4.

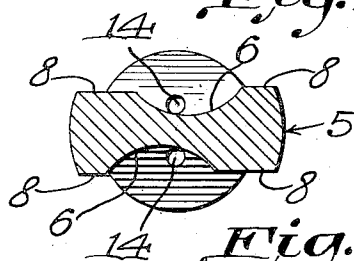
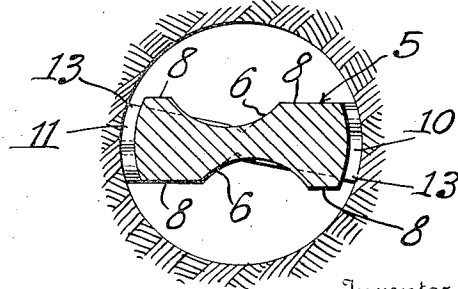


Fig. 5.



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UNITED STATES PATENT OFFICE

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DRILL BIT

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Application November 27, 1934, Serial No. 755,055

1 Claim. (Cl. 255—61)

This invention relates to drill bits, and particularly to drill bits of the fish-tail type.

The primary object of the invention is to provide a drill bit which, during the drilling operation will be prevented from digging into the side wall of the bore, thereby insuring against the drill breaking when the drill bit is directed through hard surfaces.

Another object of the invention is to provide a drill bit which will be held in perfect alignment with the wall of the bore being drilled, eliminating twisting of the drill bit while in operation.

A still further object of the invention is to provide means which will eliminate wear on the openings of the drill bit, through which the sand and water flow, and at the same time provide means whereby the drill bit may be readily reconditioned for further use.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

In the drawing

Figure 1 is an elevational view of a drill bit constructed in accordance with the invention.

Figure 2 is a side elevational view of the drill bit.

Figure 3 is a sectional view taken on line 3—3 of Figure 1.

Figure 4 is a sectional view taken on line 4—4 of Figure 1.

Figure 5 is a sectional view taken on line 5—5 of Figure 1.

Referring to the drawing in detail, the drill bit is indicated generally by the reference character 5, and as shown the bit is flat sided. Grooves indicated at 6 are formed in the side faces of the body portion 5, the grooves extending from the cutting end of the bit to a point adjacent to the threaded shank 7 thereof.

In forming these grooves 6, the groove at one side of the bit is disposed adjacent to one edge thereof, while the groove at the opposite side of the bit is disposed adjacent to the opposite side edge of the body portion.

These grooves define longitudinal ribs 8, the front edges of the ribs being inclined towards the threaded shank 7.

That portion of the bit below the ribs 8, is formed with a notch or cut out portion 9 dividing the lower end of the bit into blades 10 and 11. These blades 10 and 11 are curved outwardly in opposite directions and provide wide cutting edges 12 that dig into the bottom of the bore, during the drilling operation.

As shown, the ribs 8 at their lower ends are of widths to extend beyond a vertical line drawn flush with the cutting edge of the blade associated therewith, to the end that when the bit is in operation, and contacts with an obstruction which tends to direct the bit laterally, the rib will contact with the wall of the bore, thereby insuring against the blade digging into the wall of the bore to twist or break the blade. This structure also insures the blade holding its gauge.

It might be further stated that the outer surfaces of the ribs, as well as the cutting edges of the blade, are case hardened, and coated with copper, with the result that the soft copper material provides a cushion, preventing the corners of the bit from chipping off. It has been found that although the copper coating presents a comparatively soft metal surface, the copper is tough and wear-resisting.

Bores 14 are formed in the shank 7, and have their inner ends communicating with the grooves 6, whereby streams of water may be directed to the grooves removing the cuttings of the bit.

In order to preserve the construction of these bores 14, removable tubular copper members 15 are provided, which exactly fit within these bores. When the copper tubing members become worn due to the sand and water passing therethrough, they may be readily removed and replaced, reconditioning these bores.

It will of course be understood that the drill bit is used in the usual manner and is secured at the lower end of the drill rod indicated at 16.

Having thus described the invention what is claimed is:

In a drill bit, a wide flat body portion, blades at the lower end of the body portion, said blades being wider than the body portion to extend beyond the side edges of the body portion, ribs extending along the front and rear surfaces of the body portion adjacent to the side edges of the body portion, said ribs being inclined inwardly towards the upper end of the body portion, the widest portions of the ribs extending beyond the cutting edges of the blades.

HENRY MASCHKEK.