Aug. 21, 1923.

1,465,407

S. F. BASHARA

DRILL BIT

Filed March 9, 1920

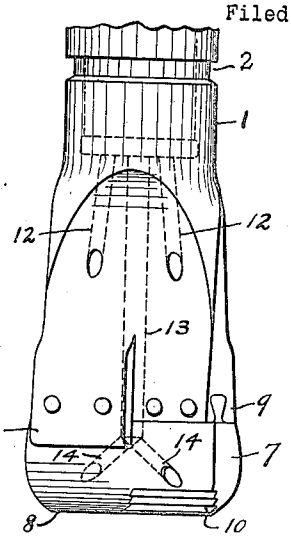


FIG. 1

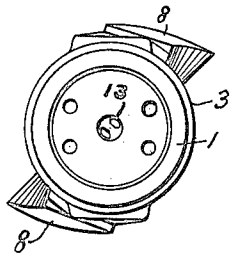


FIG. 2

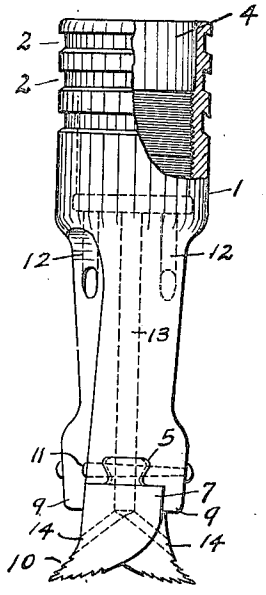


FIG. 3

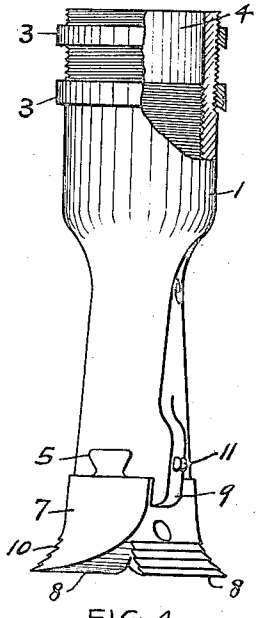


FIG. 4

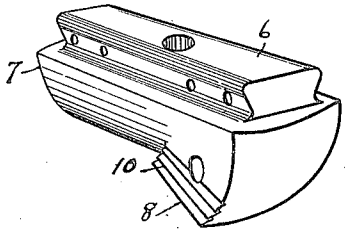


FIG. 5

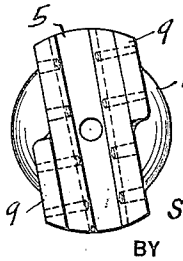


FIG. 6

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Patented Aug. 21, 1923. 1,465,407

UNITED STATES PATENT OFFICE.

SAMUEL F. BASHARA, OF HOUSTON, TEXAS.

DRILL BIT.

Application filed March 9, 1920. Serial No. 364,504.

To all whom it may concern:

Be it known that I, SAMUEL F. BASHARA, citizen of the United States, residing at Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in a Drill Bit, of which the following is a specification.

This invention relates to new and useful improvements in a drill bit.

One object of the invention is to provide a bit of the character described having cutting blades or points which are detachable from the shank of the bit.

Another object is to provide a bit formed of a bit shank and detachable cutting blades attached to said shank and backed, or reinforced, by means of reinforcing shoulders formed integrally with the shank and reinforcing the blades in the rear.

A further feature resides in an improved form of bit blade which is formed of successive cutting edges arranged in steps, so that when one of the cutting edges wears away the next succeeding one will come into action against the bottom of the bore.

A still further feature of the invention resides in the provision of an annular shoulder carried by the bit shank for engagement with a fishing tool whereby the bit may be withdrawn from the bore should it become twisted off from the drill stem.

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

Figure 1 shows a side elevation of the bit.

Figure 2 shows a top view thereof,

Figure 3 shows an edge view showing a modified form of blade.

Figure 4 shows a perspective view,

Figure 5 shows a perspective view of the blade section and,

Figure 6 shows a bottom end view of the bit shank.

Referring now more particularly to the drawings, wherein like numerals of reference designate similar parts in each of the figures the numeral 1 refers to the shank of the bit which is tubular in form at its upper end and internally threaded to receive the lower end of the drill stem. The tubular part of this shank has annular grooves 2 as shown in Figures 1 and 3, or annular collars 3, as shown in Figures 2 and 4 around its upper end. These collars are preferably, screwed on to the shank and the grooves, or collars as the case may be are provided to form an annular shoulder with which a fishing tool, (of well known construction) may be engaged to pull the bit out of the bore should it become twisted off from the stem in drilling. The upper end of the shank has a blank portion 4, above the threads, which fits around and strengthens, the adjacent end of the stem and lessens the liability of its twisting off.

The lower end of the shank is flattened, somewhat, as shown, and has the transverse dovetailed groove 5 cut diagonally across its face, as shown in Figure 6, to receive the transverse dove tailed rib 6 carried by the upper end of the blade section 7. The angles and corners of the groove 5 and rib 6 are respectively rounded off so as to give the parts a nicer fit and greater strength.

The blade section 7 is formed with two forwardly curved blades, 8, 8 and the upper part of each blade is backed by a corresponding reinforcing shoulder 9, formed integrally with and depending from the lower end of the shank; and these shoulders rest against opposite sides of the blade section behind the respective blades to strengthen them and to guard against breakage.

Furthermore the groove 5 extends diagonally so that there will be more material of the shank behind than in front of the blade, thus conducing to great strength.

As shown in Figures 1 to 5, the front side of each blade is formed with cutting edges 10, arranged in steps, so that as the foremost one wears away, in use, the next succeeding one will come into action against the bottom of the bore, and thus the blades always present a sharp cutting edge to the formation to be pierced.

The undersides of the blades may also be formed with a plurality of cutting edges, arranged in steps, as shown in Figure 3 and for the purpose above specified.

The blade section is secured to the shank by inserting the rib 6 into the groove 7 and keying the same therein by means of the keys 11.

The shank 1 has the water courses 12, 12, which extend downwardly therethrough and discharge water on opposite sides of the shank, and also has a central water course

13, which continues on down through the blade section and diverges forming the water courses 14, 14 through which water is discharged on to the cutting points of the blades.

What I claim is:

1. A drill bit, including a shank having a transverse dovetailed groove, a blade section formed with cutting blades, a transverse dovetailed rib carried by the blade section and fitting into the groove and detachably securing the blade section to the shank and a reinforcing shoulder fitting against the rear side only of each blade, said shoulders being formed integrally and depending from said shank.

2. A drill bit, including a shank, having a transverse dovetailed groove, a blade section, a transverse dovetailed rib carried by the blade section and fitting in said groove, oppositely curved cutting blades formed integrally with the blade section, and a reinforcing shoulder fitting against the rear side only of each blade, said shoulders depending from and being formed integrally with the shank, the front sides of the blades being substantially flush with corresponding sides of the shank.

3. A drill bit including a shank, cutting blades carried by one end of the shank, the front side of each blade being formed with cutting edges arranged in stepped relation.

4. A drill bit including a shank, cutting blades carried by one end thereof, the sides of each blade being formed with cutting edges arranged in stepped relation.

In testimony whereof I have signed my name to this specification in the presence of a subscribing witness.

SAMUEL F. BASHARA.

Witness:

E. V. HARDWAY.