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S. F. BASHARA ET AL

1,476,481

DRILL BIT

Filed Jan. 27, 1920

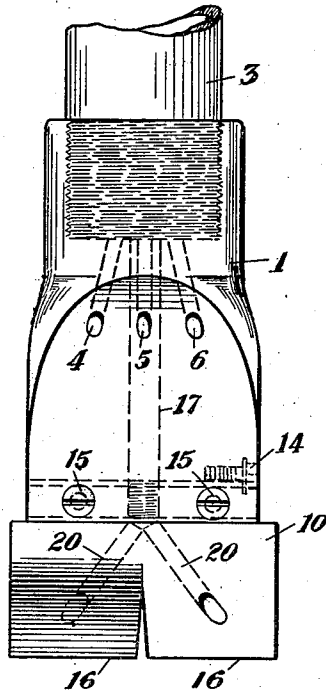


Fig. 1.

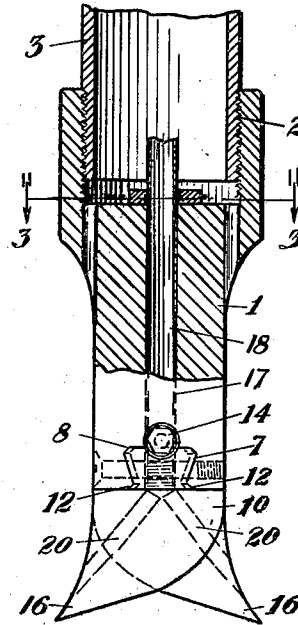


Fig. 2.

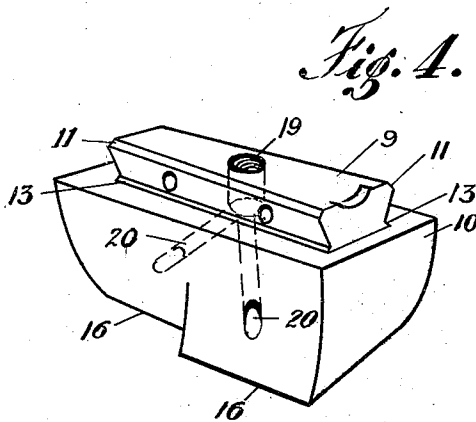


Fig. 4.

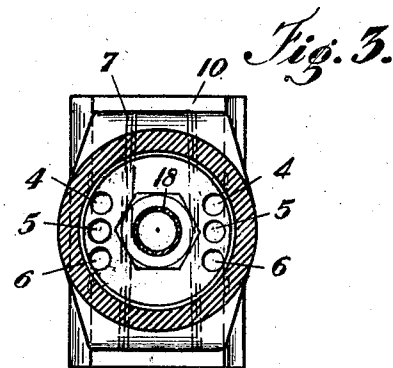


Fig. 3.

INVENTOR
Samuel F. Bashara
Joseph F. Bashara
 BY
Hardway & Cathey
 ATTORNEYS.

UNITED STATES PATENT OFFICE.

SAMUEL F. BASHARA AND JOSEPH F. BASHARA, OF HOUSTON, TEXAS.

DRILL BIT.

Application filed January 27, 1920. Serial No. 354,388.

To all whom it may concern:

Be it known that SAMUEL F. BASHARA and JOSEPH F. BASHARA, citizens of the United States, and Mount Lebanon, Syria, respectively, 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 drill bit of the fish tail type, having the cutting blades detachably anchored to the shank of the bit so that when they become dulled or broken they may be readily removed and replaced.

Another object of the invention resides in the provision of the bit of the character described provided with water courses through which water may be supplied to the cutting points of the bit and also with a plurality of water courses through which an abundant supply of water may be discharged on to the sides of the bit shank, and which passes thence to said cutting points:

A further feature is to provide a bit whose shank is attached directly to the lower end of the drill stem.

With the above and other objects in view the 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 drawings wherein:

Figure 1 is a side elevation of the bit,

Figure 2 shows an edge view thereof shown partially in section,

Figure 3 shows a transverse sectional view taken on the line 3—3 of Figure 2 and

Figure 4 shows a perspective view of the blade section.

Referring now more particularly to the drawings wherein like numerals of reference designate similar parts in each of the figures, the numeral 1 designates the shank of the bit which is somewhat flattened at its lower portion, but whose upper end is formed with a tubular inwardly threaded socket 2, provided to receive the lower end of the drill stem 3. Water courses 4, 5 and 6 extend down from the upper end of the shank on each side and discharge water on to the opposite sides thereof for the purpose of keeping said shank cleansed of the formation which may have a tendency to adhere

thereto. By the use of a plurality of these courses a great volume of water may be supplied to the bit.

The lower end of the shank has a transverse dovetailed groove 7 therein which tapers from one end to the other and whose angles are formed with flat faces 8. This groove is provided to receive a correspondingly shaped dove-tailed rib 9 which is carried by the upper end of the blade section 10, said rib tapering from one end to the other so as to wedge in said groove and having its angles beveled off forming the flat faces 11 which fit against the faces 8 when the rib is seated in the groove. The groove is flared downwardly forming flat faces 12, 12 which fit against the corresponding flat faces 13, 13 of the rib and a set screw 14 may be threaded into the shank until its head abuts against the large end of the rib 9 to lock the blade section against detachment from the shank. The head of this said screw should be counter sunk so as to give a smooth surface. If desired, the blade section may be keyed to the shank by means of keys 15, 15 which pass through the lower end of the shank and through the rib 9. Either or both methods of anchoring the blade section to the shank may be employed. The blade section may vary in width so that different sized holes may be bored with the same shank and, as shown, is considerably wider than the shank. The blade section has oppositely curved cutting blades 16, 16, whose rear sides are convex and whose forward sides are concaved, said blades being so formed they will not readily become dull.

The shank of the bit has a central bore 17 therethrough, provided to receive the pipe section 18, whose lower end is threaded into an internally threaded socket 19 in the rib 9 thereby also anchoring the blade section to the shank, and the upper end of this pipe section projects up into the stem 3.

The blade section 10 is provided with water courses 20, which lead from the lower end of the pipe 18 and discharge water on to the concaved sides of the cutting blades 16.

As shown in the drawings the cutting edges of the blades 16 project out beyond the discharge ends of the said water courses 20, so as to protect them against becoming clogged up with the formation while the bit is being used in "spudding" that is while being raised and dropped, in the well known

manner, to "spud" through gumbo and similar formations.

What we claim is:

1. A drill bit including a shank whose upper end has a sleeve provided with an internally threaded socket adapted to receive the end of a drill stem and a blade section provided with cutting blades and detachably secured to the lower end of the shank, the forward sides of the blades being concaved, said bit having water courses through which water is discharged into said concavities near the cutting edges of the blades.
2. A drill bit including a shank whose upper end is formed with an integral sleeve provided with an internally threaded socket, said shank having a bore extending from the upper to the lower end thereof and a detachable blade section secured to the lower end of the shank and formed with cutting blades concaved on their forward sides and having water courses which lead from said bore and discharge water into the cutting points of the blades.
3. A drill bit including a shank whose lower end is provided with a transverse tapering groove, having flat faces on each side, angularly disposed relative to the sides of the groove, a blade section formed with cutting blades and whose upper end is formed with a transverse rib adapted to wedge into said groove whose sides fit against the sides of the groove and having lateral flat faces which fit against the flat faces of the groove when the rib is seated in the groove.
4. A drill bit including a shank whose upper end is formed with an internally threaded sleeve provided with an internally threaded socket, adapted to receive the end of a drill stem, and oppositely curved cutting blades carried by the lower end of the shank.

5. A drill bit including a shank having flat sides and adapted to be connected to a drill stem and provided with a plurality of water courses on each side which lead from the upper end of the shank and discharge water on to the respective sides thereof and detachable cutting blades carried by the lower end of said shank, and being oppositely curved.

6. A drill bit including a shank having flat sides and whose upper end is formed for attachment to a drill stem, said shank having a vertical central bore, a blade section detachably secured to the lower end of the shank and formed with oppositely curved cutting blades a pipe section fitted into said bore, whose lower end is secured to the blade section and whose upper end projects above the shank, said shank being provided with a plurality of water courses on each side which lead from the upper end thereof and discharge on to the respective sides of the bit and the blade section having water courses which lead from the pipe section and discharge water on to the points of the blades.

7. A drill bit including a shank whose lower end is formed with a transverse dove tailed groove, a blade section whose upper end is formed with a transverse dove tailed rib conforming in shape to, and adapted to, fit into said groove, and transverse keys fitted through the lower end of the shank and passing through said rib and interlocking the blade section with the shank.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

SAMUEL F. BASHARA.
JOSEPH F. BASHARA.

Witnesses:

P. J. EVENHADE,
JOHN DREAPER.