

May 22, 1956

J. SCHNEIDER

2,746,722

REVERSIBLE DRILL BIT

Filed July 17, 1950

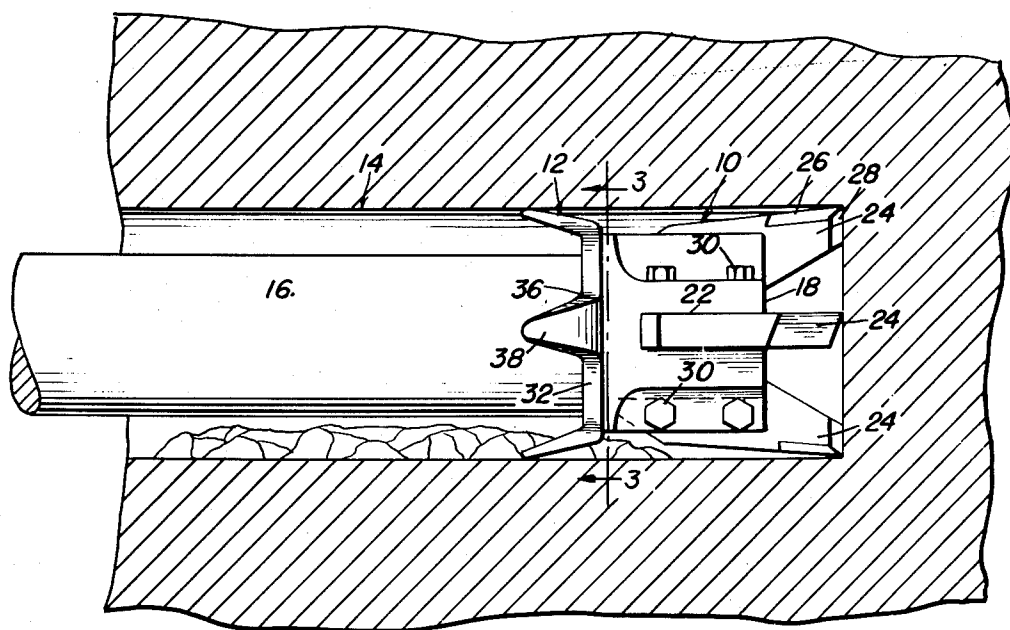


Fig. 1

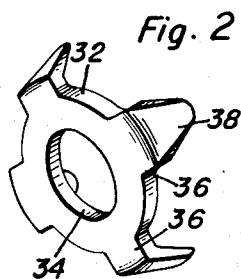


Fig. 2

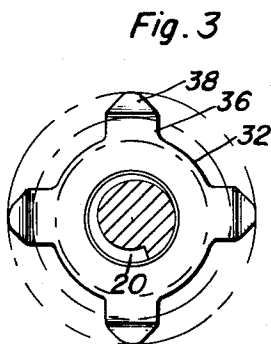


Fig. 3

Jacob Schneider
INVENTOR.

BY *Alvanice A. O'Brien*
and *Harvey E. Jacobson*
Attorneys

1

2,746,722

REVERSIBLE DRILL BIT

Jacob Schneider, Phillipsburg, Mont.

Application July 17, 1950, Serial No. 174,290

3 Claims. (Cl. 255—61)

The present invention relates to improvements in drill bits and more particularly to the type of drill bit which is adapted to be reversibly operated whereby removal of the drill bit is facilitated.

An object of the present invention is to provide a means to be employed in conjunction with conventional drill bits and for rotation therewith whereby chipping of the inner surface of the drill hole will be effected during removal of the drill, thereby facilitating the removal operation.

The further object of the present invention is to provide a washer-type means which adapted to be removably positioned on the back side of a drill bit for chipping the inner surface of a drill hole, which washer type means are simple in manufacture, easily assembled in a working position and disconnected therefrom, and readily replaceable.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description. However, the drawings merely show and the following description merely describes embodiments of the present invention, which are given by way of illustration or example only.

In the drawings:

Figure 1 is a side elevational view showing a conventional drill bit drilling a hole and with the attachment of the present invention in place;

Figure 2 is a perspective detail view of the washer bit of the present invention; and

Figure 3 is a vertical transverse sectional view taken substantially along the plane of line 3—3 of Figure 1.

Referring more particularly to the drawings, wherein like numerals designate like parts throughout, numeral 10 designates generally the conventional drill bit with which the washer bit of the present invention is employed, numeral 12 designates generally the washer bit, numeral 14 designates generally the drill hole and numeral 16 designates the conventional drill bit stem.

The drill bit stem 16 is of substantially uniform diameter throughout its length with an end portion of substantially reduced diameter and externally threaded for reception of a drill bit. The drill bit 10 is of conventional form and includes a holder member 18 which is adapted to be threadably mounted on the reduced portion 20 of the drill stem 16. The holder 18 is provided with a plurality of longitudinally extending slots 22 in which may be positioned a plurality of cutting tools 24 having cutting edges 26 and 28. Locking screws 30 are threadably engaged in threaded apertures in the holder 18 and are adapted to engage the side portions of the cutting tools 24 within the slots 22, thereby retaining the tools within the slots.

The washer bit 12 is best disclosed in the perspective view of Figure 2 and includes a flat central circular por-

2

tion 32 centrally apertured at 34 for positioning on a reduced threaded extension 20 of the drill stem 16. The drill washer bit 12 is formed with a plurality of radially extended prongs 36, the prongs have angulated integrally formed cutting projections 38 which are adapted to engage the inner surface of the drill hole 14, thereby performing chipping movements and facilitating the removal of the entire drill bit arrangement.

In the form illustrated the drill bit stem 16 may be provided with a longitudinally extending passageway whereby water may be injected into the drill hole and out around the drill bit, washing the loosened material and the drill bit, further facilitating both drilling and removal operations.

It is believed that from the foregoing description taken in conjunction with the drawings, that structure has been provided which will accomplish all of the objects hereinabove set forth, and further description at this point is believed to be unnecessary.

Having described the invention, what is claimed as new is:

1. A reversible drill bit comprising a washer having a flat circular central portion for positioning between a conventional drill bit and the drill stem, said drill bit being screwed onto said stem and adapted to abut said central portion for retention thereby, multiple means on the periphery of said central portion projecting radially outward a distance at least as great as the largest diameter of the drill bit for engagement with the inside surface of the drill hole, said means including a plurality of prongs radially extending from said central portion, said prongs having angulated cutting portions thereon extending rearwardly of the drill bit and engageable with the inside surface of the drill hole whereby retracting movement of the drill bit from the drill hole is facilitated.

2. For use with a drill bit and stem wherein the stem is provided with an end portion and an annular shoulder at the juncture of the end portion to the main body of the stem, the drill bit being screwed onto said end portion and normally abutting the stem shoulder, an attachment for facilitating removal of the drill from a bore drilled by the bit comprising: a flat circular washer adapted for retention between the drill bit and stem shoulder, said washer having a plurality of circumferentially spaced, radially extending prongs projecting from the periphery thereof a distance at least as great as the diameter of the drill bit, said prongs having angulated free end portions thereon provided with cutting edges, said free end portions extending rearwardly of the drill bit and engageable with the surface of the drill bore for facilitating retraction of the drill bit through the bore.

3. A dust ring removing attachment, for rock drills of the type having a drill steel with an enlarged bit receiving end with a threaded stud projecting from said latter end and a drill bit having a cylindrical rear extremity with a threaded socket for receiving said threaded stud and provided at its forward extremity with flared rock cutting teeth of larger diameter than said cylindrical rear extremity comprising: a relatively thin, circular, metallic washer of a diameter substantially equal to the diameter of said cylindrical rear extremity and of less diameter than said teeth and having a central opening for receiving said threaded stud; and fangs formed on opposite circumferential sides of and integrally with said washer, said fangs having a uniform thickness corresponding to the thickness of said washer and extending from the same

face of said washer at right angles to the plane of the latter, said washer being adapted to surround said stud and to be frictionally clamped between the enlarged bit receiving extremity of said drill steel and the cylindrical rear extremity of said drill bit as said stud is threaded into said drill bit with said fangs extending away from said drill bit and surrounding the enlarged bit-receiving extremity of said drill steel parallel to the axis of the latter.

References Cited in the file of this patent

UNITED STATES PATENTS

54,199 Palmer ----- Apr. 24, 1866

54,226
387,448
658,060
878,145
5 1,803,267
2,101,566
2,499,282
2,519,861
2,558,341

Smith ----- Apr. 24, 1866
Richards ----- Aug. 7, 1888
Dudley ----- Sept. 18, 1900
Middleton ----- Feb. 4, 1908
McCloskey ----- Apr. 28, 1931
Vanderpool ----- Dec. 7, 1937
Roberts ----- Feb. 28, 1950
Turner ----- Aug. 22, 1950
Cory et al. ----- June 26, 1951