Aug. 12, 1924. 1,504,852

W. W. WRIGHT

ROTARY DRILL BIT

Filed Aug. 19, 1922

Fig. 1.

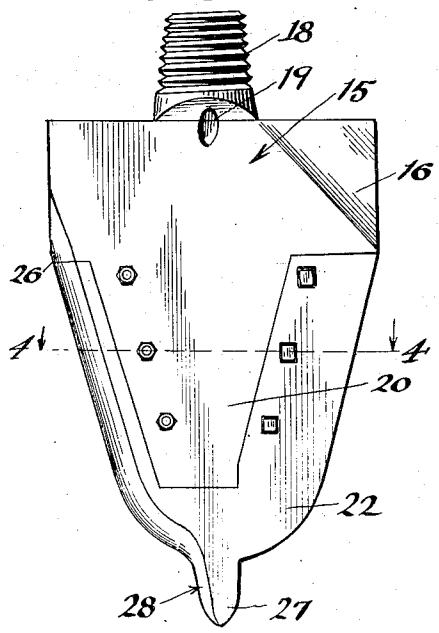


Fig. 2.

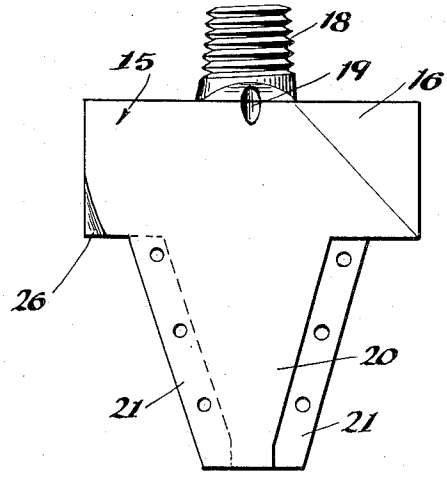


Fig. 3.

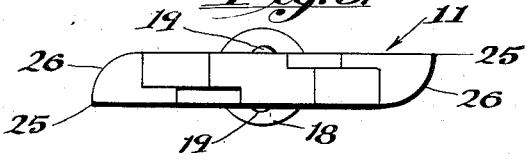
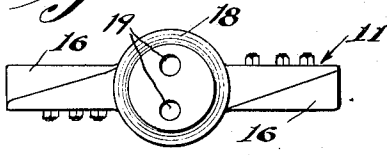


Fig. 5.



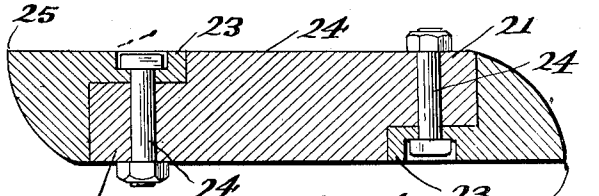


Fig. 4.

Fig. 7.

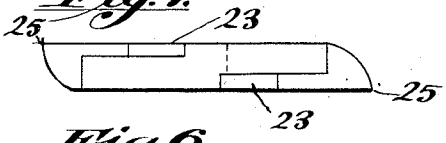
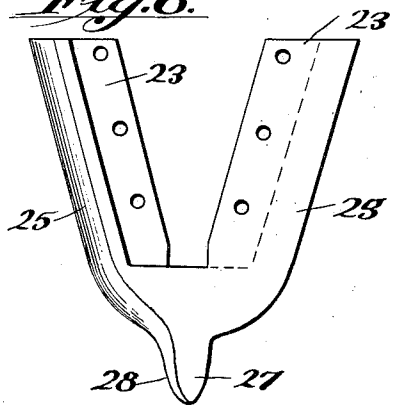


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILSON W. WRIGHT, OF DOWNEY, CALIFORNIA.

ROTARY DRILL BIT.

Application filed August 19, 1922. Serial No. 582,877

To all whom it may concern:

Be it known that I, WILSON W. WRIGHT, a citizen of the United States, residing at Downey, in the county of Los Angeles and State of California, have invented new and useful Improvements in Rotary Drill Bits, of which the following is a specification.

My invention relates to rotary drill bits for well drilling, and a purpose of my invention is the provision of a drill bit having a blade which is detachably associated with the bit body so as to allow of the ready substitution of a new blade for a removal or resharpening of the old blade. It is also a purpose of my invention to provide a drill bit having the body and blade of tapered form so that a uniform wearing of the cutting edges of the blade is insured thus resulting in the boring of a hole of uniform diameter.

Although I have herein shown and described only one form of rotary drill bit embodying my invention, it is to be understood that various changes and modifications may be made herein without departing from the spirit of the invention and the spirit and scope of the appended claims.

In the accompanying drawings,

Figure 1 is a view showing in side elevation one form of drill bit embodying my invention.

Fig. 2 is a view similar to Fig. 1 with the blade removed.

Fig. 3 is a bottom plan view of the drill body shown in Fig. 2.

Fig. 4 is a transverse sectional view taken on the line 4—4 of Fig. 1.

Fig. 5 is a top plan view of the drill bit shown in Fig. 1.

Fig. 6 is a detail view of the blade comprised in the bit shown in Fig. 1.

Fig. 7 is a top plan view of the blade shown in Fig. 6.

Similar reference characters refer to similar parts in each of the views.

Referring specifically to the drawings, my invention in its present embodiment comprises a body including a head portion 15 which is relatively flat and beveled at its opposite ends and at the opposite sides thereof as indicated at 16 in Figs. 2 and 5. Upon the upper edge of the head portion, a threaded shank 18 is formed and provided with the usual duct 19 for supplying water to the drill bit as will be understood. The drill body also includes a tapered portion 20 formed on the lower edge of the head portion 15, the tapered portion being substantially V-shape in outline and provided along its vertical edges with flanges 21. As clearly shown in Fig. 4, the flanges 21 are disposed at opposite sides of the tapering portion.

The tool bit also includes a blade designated at 22 which is of V-shape so as to be associated with the tapering portion 20. As clearly shown in Figs. 4 and 6, the inner vertical edges of the blade are formed with flanges 23 adapted to contact with the flanges 21. Extending through all of the flanges are bolts 24 for detachably securing the blade as a unit to the drill body.

As clearly shown in Fig. 4, the outer vertical edges of the blade 22 are rounded to provide cutting edges 25 which are disposed at opposite sides of the blade and at opposite sides of the drill body when the blade is in applied position thereon. In effect, the upper ends of the cutting edges 25 are extended by rounding the lower corners of the head 15 at the points indicated at 26, the result being that the upper ends of the cutting edges terminate flush with the vertical edges of the head 15. The lower end of the blade 22 is formed at its apex with a centering stud or blade 27 provided with a cutting edge 28. This blade 27 serves to properly center the drill bit during the rotary movement of the latter, as will be understood.

In practice the bit is adapted to be rotated in the direction of the arrow in Fig. 5 so that the cutting edges 25 are properly presented to the wall of a well hole, and it will be understood that by virtue of the tapered form of the bit, the cutting edges will contact throughout their length with the wall of the hole so as to insure of the uniform wearing of the cutting edges. This naturally insures of the forming of a hole of uniform diameter. The beveled ends 16 of the head 15 permit the free passage of earth or rock upwardly from the drill bit during the operation of the latter, and at the same time serve to prevent clogging of earth adjacent the drill bit. When the cutting edges of the blade 22 become dull, it will be clear that by a removal of the bolts 24, the blade as a unit may be removed from the drill body and a new blade substituted or the edges of the old blade resharpened.

What I claim is:

1. A drill bit comprising a V-shaped body, a blade including divergent arms having

cutting edges, said body being received between said arms, and means extending through the arms and body for securing the blade to the body.

2. A drill bit comprising a body, and a blade V-shaped in outline detachably secured at its inner edges to the body.

3. A drill bit comprising a flat tapered body, a blade having a tapered recess to completely receive the body, and means for securing the blade to the body.

4. A drill bit comprising a tapered body, having rabbeted vertical surfaces, a blade having a tapered recess the vertical walls of which are rabbeted to have interfitting engagement with the vertical surfaces of the body, and means extending through the body and blade for securing the two together.

5. A drill bit comprising a body, a blade having convergent cutting edges, flanges formed on the body and blade, and securing means extending through the flanges for detachably securing the blade to the body.

6. A drill bit comprising a V-shaped body, a blade V-shaped in outline detachably secured to the body, and a centering blade formed at the apex of the first blade.

7. A drill bit comprising a body including a head portion and a tapered portion, said head portion having oppositely beveled ends and relatively short blade portions, a blade secured to the tapered portion and having reversely disposed cutting edges, said blade portions constituting a continuation of the cutting edges of said blade.

8. A drill bit comprising a body including a head portion and a tapered portion, said head portion having oppositely beveled ends and relatively short blade portions, a blade secured to the tapered portion and having reversely disposed cutting edges, said blade portions constituting a continuation of the cutting edges of said blade, and a centering blade formed on the narrow end of the first blade.

9. A drill bit comprising a body including a head portion having oppositely beveled ends and blade portions formed at the lower edges of the head, a tapered portion, flanges formed on the tapered portion, a blade of V-form having flanges detachably secured to the flanges of the tapered portion, the cutting edges of said blade being reversely disposed, and the blade portions of the head constituting a continuation of the cutting edges of said blade, and a centering blade formed on the narrow end of the first blade.

10. A drill bit comprising a tapered body and a blade V-shaped in outline secured to the body, said body having oppositely beveled ends for the purpose described.

In testimony whereof I have signed my name to this specification.

WILSON W. WRIGHT.