

June 17, 1941.

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2,246,447

ROCK MINING DRILL BIT

Filed July 5, 1940

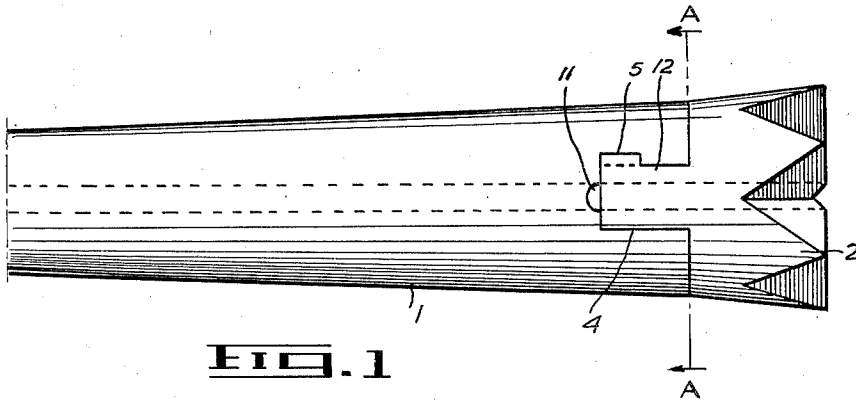


FIG. 1

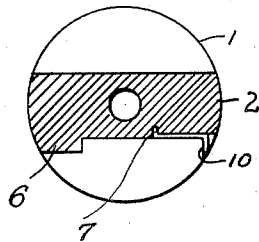


FIG. 3

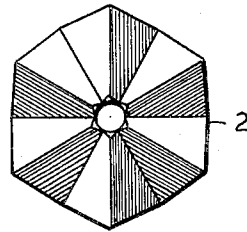


FIG. 2



FIG. 4

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2,246,447

ROCK MINING DRILL BIT

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Application July 5, 1940, Serial No. 344,154

2 Claims. (Cl. 255—64)

This invention relates to drills and more specifically to rock drills such as used in mining operations. In the course of mining operations it is well admitted that rock drills, that is to say the drill rod with the cutting head, have not and flexibility which will adapt the same to quick repair or to holes made thereby of various depth as the drilling progresses.

In order to provide a more suitable drill to raise their general efficiency, attempts were made to use drill bars having a detachable head or bit. However, it is a fact that these have proved of little use if not useless in some cases owing to the fact that the means of holding the head to the rod were not positive. The head will move out of its normal position, fall off, or break, and alter the intended direction of the bored hole to one that is not desired.

To obviate the above drawbacks I have designed a combined drill rod having a separable head incorporating features heretofore unknown in the art.

The objects of my invention are, therefore:

1. To provide a combined drill having a rod and head interchangeable with one another with means holding the two together in a positive manner.

2. To provide a mode of attachment which permits the interchangeability of any head of different sizes with rods of any length so that the length of the rod will be suited to the depth of drilling notwithstanding the fact that the drilling proceeds with the use of the head previously employed.

3. To provide means whereby the head once fastened to the rod will not be displaced in the course of drilling.

4. To provide a drill of the type mentioned wherein the locking means for the head onto the bar is easily undone when change of rod or head is required and easily replaced when necessary.

The above objects are arrived at by the special construction of bar, head and locking means hereinafter described and shown in the drawing appended hereto, in which drawing:

Figure 1 is a longitudinal view of a portion of a drill rod with detachable head fastened thereto in accordance with my invention;

Figure 2 is an end view thereof;

Figure 3 is a sectional view taken on line A—A of Figure 1; and,

Figure 4 is a perspective view of the locking piece.

Similar numerals of reference denote identical parts in all the figures.

In the drawing, 1 is a section of a drill rod being the forward end thereof. 2 is the head, which is of a conventional form and that part of the complete drill which will be resharpened or replaced as the case may be. The rod end is provided with a crosswise central slot 4 as shown adapted to receive tongue 12 of the head. This slot is provided with an undercut on one side shown at 5 in agreement with an integral key on the head tong so that the head may be slid in from one side of the rod and may not move longitudinally thereof. It will be seen that the key referred to above is provided with a small lug 6 at one end which engages with a small depression in the undercut portion of the rod so that the head may be slid in from one side of the rod only until it is in agreement therewith forming a continuous piece. In order to prevent the head from sliding back, a lock piece 3 having a bent portion 8 at right angle thereto is provided. This piece is adapted to fit in a space between the slot side in the drill rod and the tongue in a recess provided therein. Portion 8 fits into a small slot 7 in the tong so that it cannot be removed from the tongue once this part is in the slot.

After the head is inserted in the slot; the extending end of part 3 shown at 9 in Figure 4 is bent around the edge of the rod slot in a small cutaway therefor as shown at 10. It will be seen that after this bending is done the head may not move unless this extension is forced back intentionally which is the intended procedure when removal is necessary.

Shown at Figure 1, I have also provided at the bottom of the slot 4 in the rod end a hole 11 which extends across the whole width of the rod. I provide this hole 11 in the rod so that if the opening at the end of the bit should become clogged by drilling with mud or gravel then this hole 11 would at all times remain clean and free for air or water as the case may be.

While I have described my invention strictly in accordance with the embodiment shown, it must be understood that changes may be made so long as they fall within the spirit of my invention and scope of my claims. For instance part 3 may be permanently fastened to the tongue of the head by other means such as welding, or again it may be placed or fixed by either means to the rod section in which case room would be provided therefor in the rod instead of in the tongue and the extension bent over the rod side adjacent the lug.

I claim:

1. In a rock drill or the like consisting of a drill bar and a detachable head therefor, a groove in the end of said bar, a tongue in said head adapted to fit in said groove, a lateral undercut 5 in said groove, a rib on one side of said tongue to fit in said undercut, a lug on the other side of the said tongue, a depression in the groove to allow for said lug, locking means to hold said

head fixed in said groove consisting of a strip anchored in said tongue having an extension bendable over said bar in a cavity therein.

2. In a rock drill as claimed in claim 1, in which the anchoring means for said strip consists of a slot in said tongue at right angle thereto adapted to receive one end of said strip having a right angle bend.

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