

1,030,830.

Fig. 1.

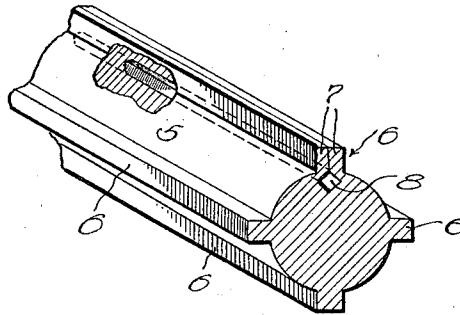


Fig. 7.

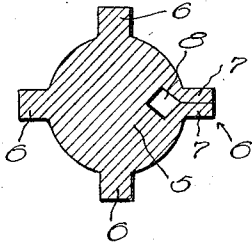
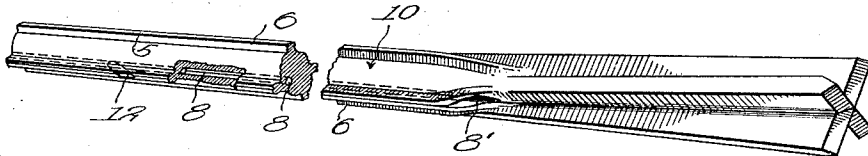


Fig. 3.



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UNITED STATES PATENT OFFICE.

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BAR FOR DRILLS AND THE LIKE.

1,030,830.

Specification of Letters Patent. Patented June 25, 1912.

Application filed October 31, 1910. Serial No. 589,901.

To all whom it may concern:

Be it known that I, WILLIAM K. RILEY, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Bars for Drills and the Like, of which the following is a specification.

This invention relates generally to a metallic bar of peculiar conformation and particularly to a steel bar of novel form and having a longitudinal depth therethrough and adapted particularly for use in rock drills.

The bar about to be explained is the product of my process for the formation of steel bars and the like for which I have filed application for Letters Patent on October 31st, 1910, under Serial No. 589,902. A short description of this process will suffice to show the utility of the bar of this application. In my process I first form a pair of flanges projecting from the bar and form a groove between these flanges. These flanges are then turned over toward each other and are forced into contact along their sides, thus covering the groove and forming a longitudinal interior duct. Where the flanges meet they may be welded together or merely forced into tight engagement; in any case, they form practically a single rib projecting from the bar and extending longitudinally on it. In the particular form of bar which I wish to protect by the claims of this application, the bar is provided with ribs projecting from it at points other than where the interior duct is formed. These other ribs are exactly similar to the rib formed by the two flanges over the interior duct so far as outward appearance goes.

In the accompanying drawings: Figure 1 is a perspective view of a bar constructed after my invention. Fig. 2 is a cross section of the same. Fig. 3 is a perspective view of a drill formed of a bar after my invention.

In the drawings 5 designates the body of a bar, preferably formed of steel and generally circular in section. This bar is illustrated as having four projecting ribs 6 which are equally spaced around the bar. The number of ribs may be varied. One of the ribs 6 is made up of two flanges 7 which meet over an interior longitudinal duct 8. It will be noted that the flanges meet along

their lateral sectors rather than edge to edge, and in this manner project from the bar to form a whole rib similar to the other ribs 6. They may be either welded together or may merely be forced into tight engagement with each other; in either case, for all practical purposes and to all appearances, these two flanges 7 form a rib which is exactly similar to the other ribs.

In Fig. 3 I have illustrated a drill made from a bar of the configuration shown in Figs. 1 and 2. The body 10 of the drill is formed of the bar as illustrated in those figures. One end of the bar is adapted to be gripped by the chuck of a drill actuating mechanism, such as the air actuated mechanisms now on the market. Duct 8 is cut into at 12 so that a portion of the water forced through the duct may be sprayed out through the hole 12 to moisten the surface of the rock when the drill is being started. Duct 8 leads through the entire length of the body of the drill. A cutting portion, or bit, 13 is formed on the end of the body portion, this cutting portion being of any desired size and configuration and having no bearing upon the present invention. Duct 8 emerges as at 8' at the end of the body portion, means being thus provided for discharging the water at a point back of the cutting edge of the drill. This provides that the duct shall not become stopped or clogged by cuttings lodging therein and also provides for uniform discharge of the water to clean out the drill hole. Air may also be fed through the duct and the number of ducts may be increased by mere duplication of the one shown.

The utility of my bar depends mainly upon its facility of formation by a rolling process, or by any other process of that nature. And it also depends upon a mechanical feature in the bar itself; in that the finished longitudinal duct 8 is placed directly beneath one of the ribs 6 and is protected thereby under a fair thickness of metal. Unless the wear on the bar became so excessive as to completely wear down the ribs 6 (and the bar would thus become otherwise useless) the bar would never be worn down so as to expose the duct 8. This is a feature of some importance, and, I believe, of some novelty; the forms of bar containing a longitudinal duct of which I am aware having

only a thin portion of the metal covering the duct, which covering portion is liable to be worn through.

Having described my invention, I claim:

- 5 1. A metallic bar, comprising a body portion having a longitudinal rib projecting therefrom, and having a longitudinal duct therein beneath the rib.
- 10 2. A metallic bar, comprising a body portion having a longitudinal rib projecting therefrom, and having a longitudinal duct

therein located centrally beneath the rib, the rib being split on a radial plane leading outwardly from the duct.

In witness that I claim the foregoing I 15 have hereunto subscribed my name this 25th day of October 1910.

WM. K. RILEY.

Witnesses:

JAMES T. BARKELEW,
ELWOOD H. BARKELEW.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."