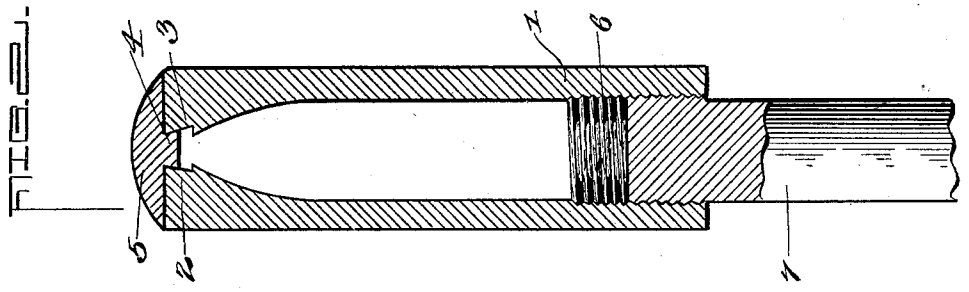
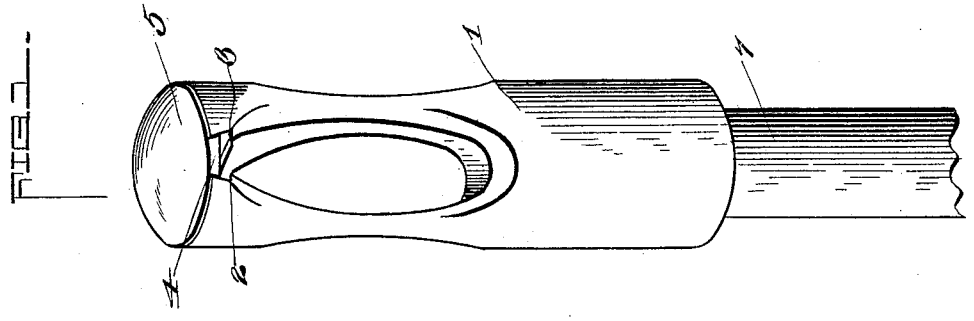
(No Model.)

J. HURST.

DEVICE FOR REMOVING BROKEN DRILL RODS.

No. 604,327. Patented May 17, 1898.





Witnesses
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UNITED STATES PATENT OFFICE.

JOHN HURST, OF NELSON, WASHINGTON.

DEVICE FOR REMOVING BROKEN DRILL-RODS.

SPECIFICATION forming part of Letters Patent No. 604,327, dated May 17, 1898.

Application filed May 25, 1897. Serial No. 638,064. (No model.)

To all whom it may concern:

Be it known that I, JOHN HURST, of Nelson, in the county of Steven and State of Washington, have invented certain new and useful Improvements in Devices for Removing Broken Drill-Rods; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to a device for removing bits or pieces of bits or drills from the hole in which the bit has become broken in use and in which the pieces are out of reach for removal by hand, the primary object being to provide miners with a simple and inexpensive device for removing portions of bits broken off in holes in the process of drilling in mining operations.

The invention consists in a device in the form of a permanent magnet having arms resembling those of the well-known horseshoe-magnet, but terminating at their heel end in a perforated cylinder adapted to receive a handle or stem for the manipulation of the magnet.

It will be understood from the following description and claim, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of the improved device or bit-remover with a piece of the handle rod or stem applied, and Fig. 2 represents a longitudinal section through the same.

1 indicates the device, made from so-called "lodestone" or "magnetic iron," and preferably cylindrical in form, but bifurcated at one end to form arms 2 3, resembling the arms of the ordinary horseshoe-magnet—that is to say, said arms approach each other near their ends, where they are provided each on its inner face with a rabbet, the opposing faces forming together a longitudinal slot or groove dovetailed in form for receiving a tongue 4 of corresponding form on the inner face of the keeper 5, which is applied to said end when the device is not in use for holding the magnetic property in the magnet. These arms are cut away from the sides between the ends of the cylindrical portion at the heel end of said arms, thereby giving lightness to the device or implement without detracting from its action as a magnet. The heel end, as stated, is made in the form of a hollow cylinder and provided with a screw-thread on its inner face at 6, adapting it to receive the stem or handle 7, which is formed of wood or other non-conducting material and which facilitates the insertion of the tool into the hole where the drill or bit pieces remain which it is desired to remove.

The operation will be readily understood. It is similar to that of the horseshoe-magnet in its action upon metals brought into contact with it and is of a form adapting it to be readily inserted in the holes formed by the bits broken in the process of cutting or drilling said hole.

The device constructed as described forms a simple, inexpensive, durable, and effective device or implement for the purpose indicated.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

A device for removing broken bits from drill-holes formed by said bits, the same consisting of a permanent magnet cylindrical in form, bifurcated at one end to resemble the arms of an ordinary horseshoe-magnet, said arms being adapted at their ends to receive and retain a keeper, the opposite end of said magnet being made in the form of a hollow sleeve adapting it to receive and retain a non-conducting rod or stem, substantially as and for the purpose described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN HURST.

Witnesses:
M. O'NEIL,
R. MAY.