W. M. WILLIAMS.

DRILL PULLER.

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1,316,753. Patented Sept. 23, 1919.

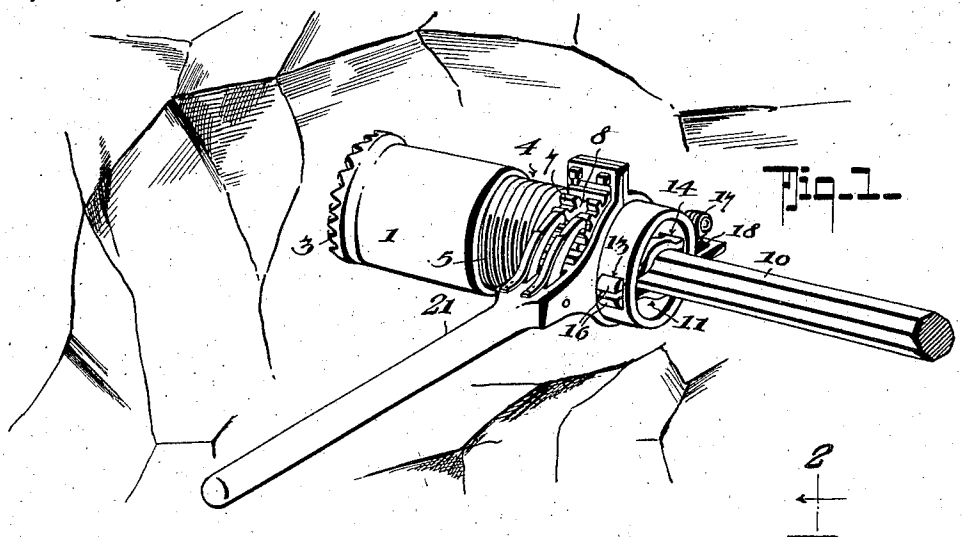


Fig. 1.

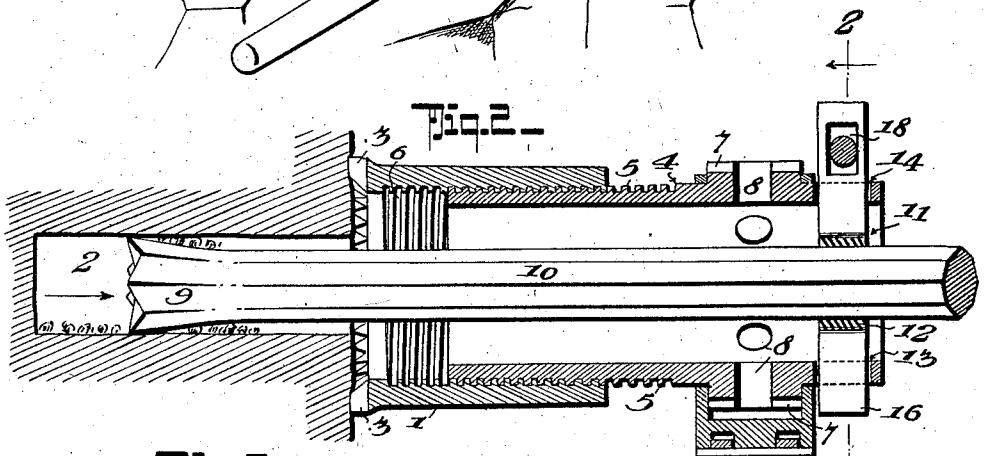


Fig. 2.

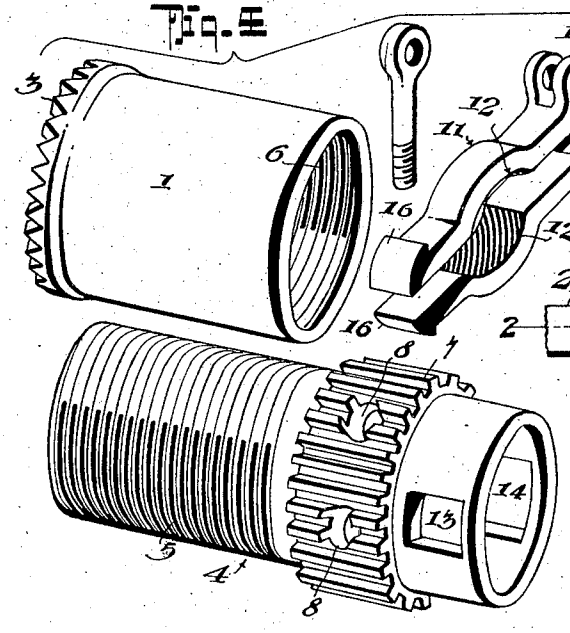


Fig. 4.

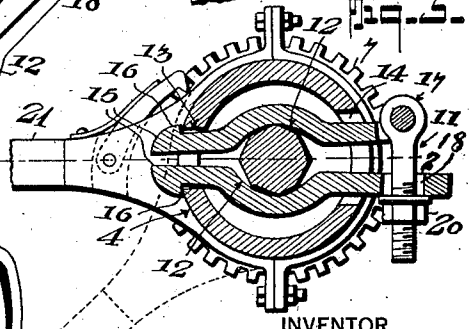


Fig. 3.

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DRILL-PULLER.

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To all whom it may concern:

Be it known that I, WILLIAM M. WILLIAMS, a citizen of the United States, residing at Reno, in the county of Washoe and State of Nevada, have invented a new and Improved Drill-Puller, of which the following is a specification.

My present invention has reference to miner's tools and particularly has for its purpose to provide an improved device or tool that is designed for pulling drills out of holes, when they become stuck or held fast by the cuttings in the holes that usually work behind the drill head during the operation of drilling.

Primarily, my invention has for its purpose to provide a device for the purposes stated of a simple and inexpensive character, capable of being readily applied onto the drill shank and which can be conveniently manipulated, whereby to expeditiously and effectively operate to pull the drill.

With other objects in view, that will hereinafter appear, my present invention is a drill pulling appliance that embodies the peculiar features of construction and combination of parts as set out in the following detail description, specifically pointed out in the appended claims and illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view of my invention, the same being shown as applied for use.

Fig. 2 is a longitudinal section thereof taken on the line 2—2 on Fig. 3.

Fig. 3 is a cross section thereof on the section line 2—2 on Fig. 2, the dotted lines indicating the manner in which the ratchet lever is manipulated for effecting the desired draw or pull on the drill shank.

Fig. 4 is a perspective view of the several parts that constitute my improved drill pulling appliance, the parts being shown separated.

In carrying out my present invention, I form the body portion of the appliance of two parts, one of which, 1, is in the nature of a tubular member, the outer end of which is adapted for being seated over the hole 2 in which the drill is held fast, and the said outer end has teeth or serrations 3 to provide for firmly bighting against the wall that surrounds the hole 2, when the appliance is operatively used as in Figs. 1 and 2.

4 designates what I shall term, the movable body member, since it has longitudinal movement relatively to the other body member 1 for a purpose that will be presently understood.

The body member 4 is of a slightly less diameter than the other body member 1 and it has an annular slow pitch screw thread 5 for engaging with the internal screw thread 6 formed on the outer body member 1, it being understood that the two body parts may be readily contracted or extended by screwing or unscrewing them, as desired.

Near the outer end, the body member 4 is formed with a ratchet collar 7 and, through the said collar, extend holes 8 for receiving spanner wrenches and similar implements for turning the tubular member 4 within the other tubular member 1.

9 designates a drill head, 10 the drill shank and 11 a clamp device for engaging and fixedly holding the said shank during the pulling and drawing operation.

The clamp device 11 consists of two members, each having a concaved serrated seat 12—12 for gripping around the drill shank 10 and the said clamp, when the parts are applied for use are held in such interlocked engagement with the body member 4, whereby as the said member 4 is fed out of the other member 1, the clamp device traveling with it, effects the desired pulling or drawing action on the drill.

To facilitate fitting the appliance with the clamp device over the drill shank, the outer end of the tubular or body member 4 has a pair of oppositely disposed horizontally elongated slots 13 and 14, one of which 14, is of somewhat greater length than the other one 13, the latter aperture being just large enough to admit of passing the ends 15—15 of the clamp member 12—12 therethrough, when the said ends are held in close relation.

Each of the ends 15—15 has a lateral lug 16, which lugs constitute lock members for holding the device, when it is fitted to the operative position. The other end of one of the members 12 terminates in an apertured ear 17 and the coincident end of the other member 12 has an elongated slot 18 through which plays a tightener bolt that receives a

tightening nut 20, it being understood that the said other ends of the members 12—12 have sufficient free movement in the slot 14 for freely placing the clamping device onto the drill shank, as is clearly shown in Fig. 3.

While the outer tubular body member 4 may be turned by a spanner wrench or lever rod, I prefer to make the turning member as a complete part of the appliance and for such purpose, a ratchet lever 21 is mounted over and operatively connects with the ratchet collar 7 on the member 4, as shown.

The manner in which my improved drill puller is applied for use and operates is explained as follows:

When a drill becomes stuck or fast in a hole being drilled and it is desired to pull it out, all that is necessary is to slip the appliance over the drill shank and clamp the said appliance to the shank, which is done by adjusting the clamping device to tightly grip the shank and hold the member 1 up against the wall around the drill hole, as is clearly shown in Figs. 1 and 2.

By now working the ratchet lever, see dotted lines on Fig. 3, with the pawls of the said lever operating to grip the ratchet collar to effect an unthreading movement of the body member 4, causes the said body member 4, as the front member 1 is forced against the wall, to feed the said member 4 slowly outwardly, carrying with it the drill, see arrow at the left on Fig. 2.

From the foregoing description taken in connection with the accompanying drawings, the complete construction, the manner of its operation and the advantages of my invention will be readily understood by those skilled in the art to which it relates.

The appliance is of a very simple and inexpensive nature and may be readily made and the coöperating parts are so arranged that they will not readily become separated, lost or broken during the ordinary usage thereof.

What I claim is:

1. A drill pulling appliance in which is included an extensible pull member, a drill clamp device comprising a pair of opposing clamping jaws, one end of each of which has a lateral lug, draw bolt devices connected with the other ends of the said jaws for adjusting the clamp device to grip the drill shank, the outer end of one of the aforesaid pulling members having oppositely disposed slots through which the opposite end of the clamping jaws are projected.

2. A drill pulling device including extensible pulling members, one of the said members having a transverse opening, a clamp device for gripping the drill, said clamp device comprising a pair of opposing clamping jaws, one end of each of which has a lateral lug, draw bolt devices for adjusting the jaws to grip the drill shank, the outer end of one of the said pulling jaws having oppositely disposed horizontally elongated slots through which the opposite ends of the clamping jaws are projected.

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