No. 814,856. PATENTED MAR. 13, 1906.

F. LONSKI.

MINING DRILL.

APPLICATION FILED OCT. 19, 1905.

Fig. 1.

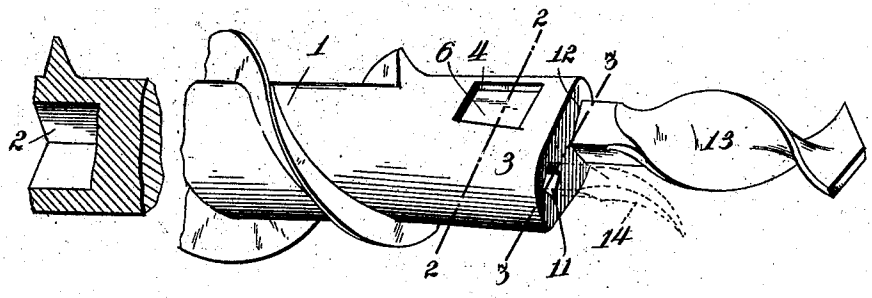


Fig. 3.

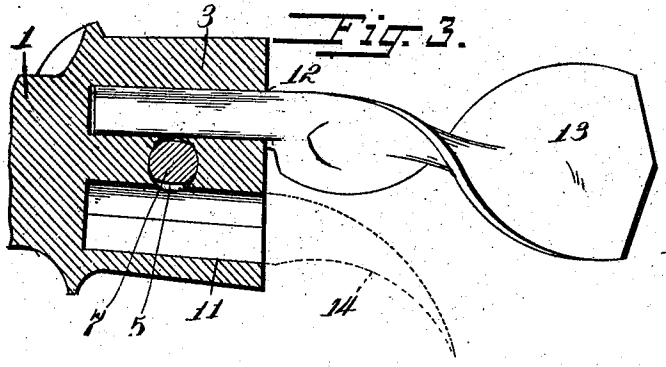


Fig. 2.

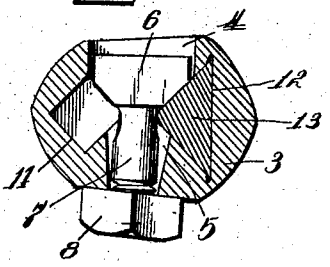


Fig. 4.

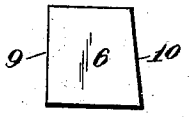


Fig. 5.

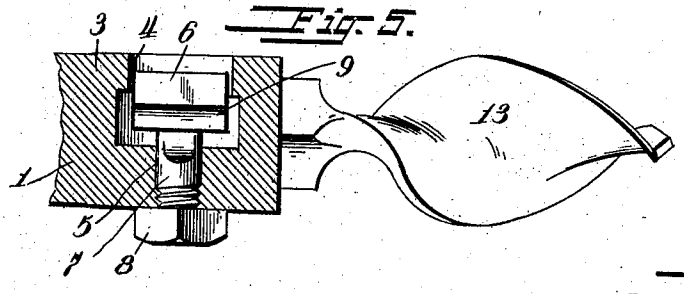


Fig. 6.

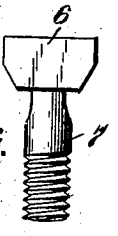
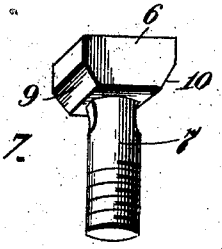


Fig. 7.



Witnesses

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MINING-DRILL.

No. 814,856. Specification of Letters Patent. Patented March 13, 1906.

Application filed October 19, 1905. Serial No. 283,474.

To all whom it may concern:

Be it known that I, FRANK LONSKI, a citizen of the United States, residing at Plymouth, in the county of Luzerne and State of Pennsylvania, have invented new and useful Improvements in Mining-Drills, of which the following is a specification.

This invention relates to mining-drills.

In the use of mining-drills a very common defect is the loosening of the fastening device which secures the drill bit or bits in the chuck of the drill-stock, so that both the bit or bits and the fastening device are liable to drop out.

The object of the present invention is to obviate the defects heretofore incident to mining-drills as above pointed out, and it also aims to provide an improved chuck for a mining-drill whereby tools for different purposes can be readily used and held at different times by the same fastening.

To carry out the objects of the present invention, I provide a mining-drill having an improved fastening device for the bit or bits, together with novel means for preventing the fastening device from becoming lost, as fully set forth hereinafter. The novel features of the invention are recited in the appended claims.

In the accompanying drawings, Figure 1 is a perspective view showing the center bit in full lines, the dotted lines representing a small bit which can be used to make the circumferential cut. Fig. 2 is a sectional elevation on line 2 2 of Fig. 1. Fig. 3 is a longitudinal sectional elevation on line 3 3 of Fig. 1. Fig. 4 is a detail plan view of the fastening-bolt removed. Fig. 5 is a detail horizontal sectional elevation, and Figs. 6 and 7 detail views of the fastening-bolt.

The stock 1 is in the form of a screw and provided with a socket 2 for the reception of the drill rod or stem. The chuck, to which my invention particularly appertains, is shown at 3 and has a polygonal opening 4 extending transversely thereof part way into the chuck and in communication with a more or less elliptical aperture 5, opening out on the opposite side of the chuck. The polygonal opening or seat 4 is to receive the head 6 of the fastening-bolt, whose shank 7 extends more or less loosely through the aperture 5 and is provided with a nut 8, whereby the head 6 is held in the opening 4. This prevents loosening of the bolt when the drill is in use or at other times. The aperture 5 is enlarged in order that in clamping the bit in the chuck the fastening-bolt will readily adjust itself to the shank of the bit. The opposite sides of the head 6 are beveled or more or less undercut at 9 and 10, the side 10 being also beveled transversely of the head 6. The beveled or undercut portions 9 and 10 are adapted to bear upon the shanks or tangs of the bits and clamp them in their sockets 11 and 12. The socket 11 is of general polygonal shape in cross-section and extends somewhat angularly in relation to the longitudinal axis of the stock 1. The disposition of socket 12 is such that the tip of the drill or bit 13 lies in the longitudinal axis of the stock, while the inclination of socket 11 enables a tool such as shown at 14 to be used with its cutting-point disposed outside the axis of the stock. A drill or bit such as shown at 13 forms the center hole, while such a tool as shown at 14 makes the side or circumferential cut. It is to be understood that various kinds of drills or bits can be used and other forms than those shown may be employed. By preference the socket 11 may be square in cross-section and the socket 12 triangular; but other cross-sectional shapes could be used. The undercut or beveled portion 9 engages the shank of bit 14, and the face 10 engages the shank of bit 13. The shank 7 of the bolt is flattened or grooved on two opposite sides adjacent to the head 6, so that when the bits are in place their edges engage with these grooves. This prevents the bolt from slipping out even if the nut comes off, and since this bolt has to be specially made for this chuck the expense which would be caused by its loss is thus prevented.

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

1. A chuck for mining-drills having a bit-socket, an opening for the head of the bit-fastening bolt which intersects the socket, and an aperture for the shank of the bit-fastening bolt, in combination with a fastening-bolt having a head with a beveled or undercut portion to engage the bit, and which is received in the opening aforesaid and prevented from turning thereby and provided with a shank passing through the aperture and having a narrow portion adjacent to said head, and a nut on said shank.

2. A chuck for mining-drills having two

sockets, an opening to receive and engage the head of the bit-fastening bolt, and an aperture, in combination with a single bolt having its head received in the opening and adapted to engage the bits in both of said sockets and having its shank passing through the aperture and provided with a narrow portion with which said bits engage, and a nut secured to said shank.

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