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DRILL HOLDING HEAD FOR MINERS' DRILLS.

APPLICATION FILED OCT. 31, 1912.

**1,085,811.** Patented Feb. 3, 1914.

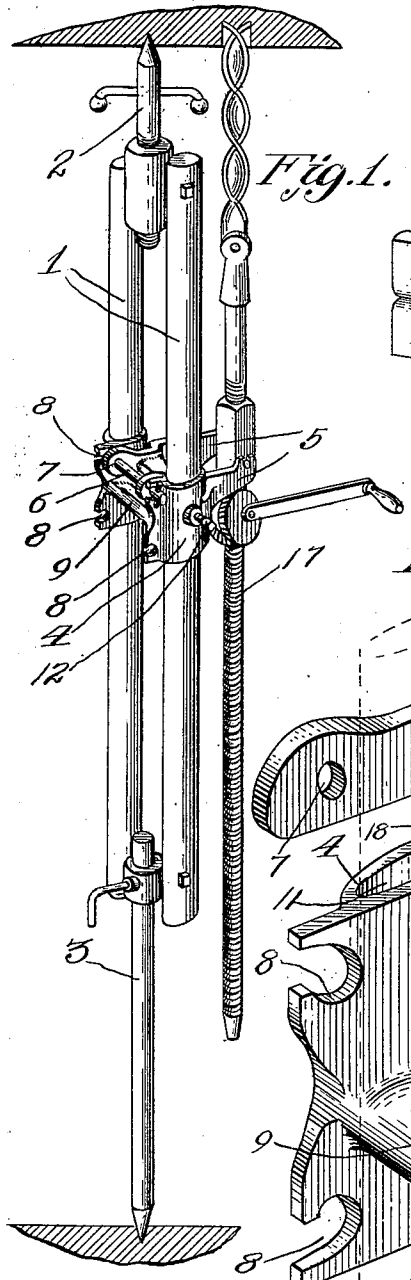


Fig. 1.

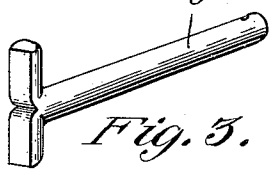


Fig. 3.

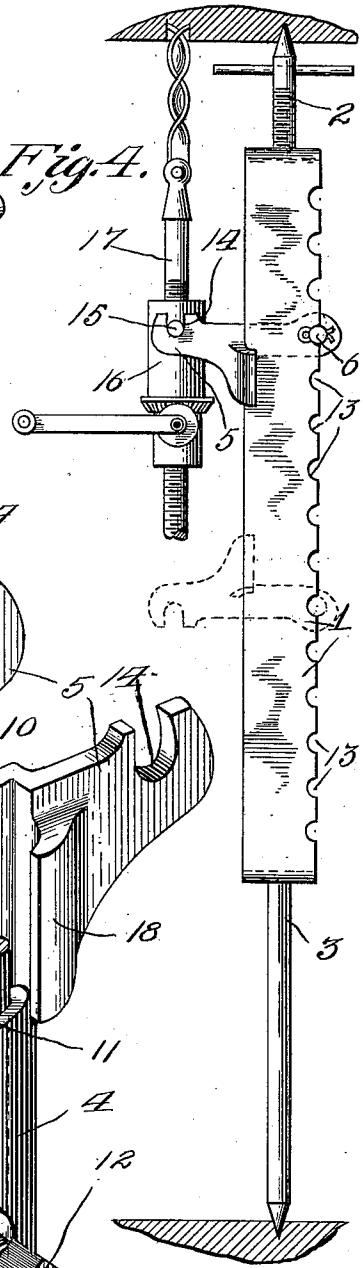


Fig. 4.

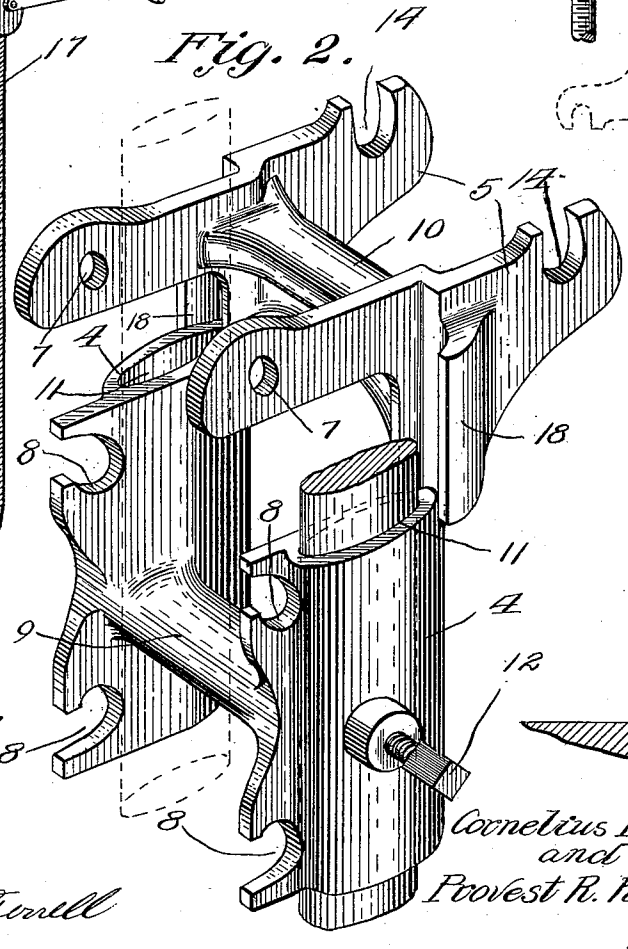


Fig. 2.

Witnesses

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# UNITED STATES PATENT OFFICE.

CORNELIUS E. HOLT, OF WASHINGTONVILLE, AND PROVEST R. RAUCH, OF LEETONIA, OHIO, ASSIGNORS TO THE LEETONIA TOOL COMPANY, OF LEETONIA, OHIO, A CORPORATION OF OHIO.

## DRILL-HOLDING HEAD FOR MINERS' DRILLS.

1,085,811. Specification of Letters Patent. Patented Feb. 3, 1914.

Application filed October 31, 1912. Serial No. 728,844.

*To all whom it may concern:*

Be it known that we, CORNELIUS E. HOLT and PROVEST R. RAUCH, citizens of the United States, CORNELIUS E. HOLT residing at Washingtonville, in the county of Columbiana and State of Ohio, and PROVEST R. RAUCH residing at Leetonia, in the county of Columbiana and State of Ohio, have invented a new and useful Drill-Holding Head for Miners' Drills, of which the following is a specification.

Our invention relates to improvements in heads for holding miners' drills, and the objects of the present invention, are first, to provide a head adapted to carry a miner's drill together with the various mechanism usually employed to rotate and feed the drill, second, to so construct the head that it can be adjusted vertically upon the parallel post uprights and held at any desired place of adjustment upon said parallel posts, and third, to provide means whereby the drill together with its allied mechanism can be placed in a vertical position whereby holes can be drilled in the roof and floor of a coal mine. The purpose and object of drilling holes in the roofs of coal mines is to provide for the proper introduction of electrical appliances such as are commonly used in the proper wiring of coal mines. These objects and purposes together with other objects readily apparent to those skilled in the art, we attain by the construction illustrated in the accompanying drawings, although our invention may be embodied in a variety of other forms, the construction illustrated being chosen by way of example.

In the accompanying drawings—Figure 1 is a view showing an ordinary post properly connected to the roof and floor of a mine, and illustrating the drill holding head properly attached, and the drill located in a vertical position. Fig. 2 is an enlarged perspective view of the drill holding head showing the different parts disconnected. Fig. 3 is a detached view of the connecting bolt. Fig. 4 is a view similar to Fig. 1, showing a modification of the parallel post uprights or bars.

Similar numerals of reference indicate corresponding parts in all the figures of the drawing.

In the accompanying drawing, 1 represents the parallel post uprights or members, which may be of the form shown in Figs. 1 and 4, or they may be of the form shown in Fig. 2. These various forms of post uprights are shown conventionally as well as the adjusting screw 2 and the foot or holding bar 3.

The parts going to make up the post as an entirety form no specific part of the present invention, except that a post adapted to be connected to the roof and floor of a mine must necessarily be employed. The parts designed to rotate and feed the drill are also shown conventionally as they within themselves form no specific part of the present invention.

The head proper is made up of the parallel members 4 and the drill holding members 5, which members are connected together by means of the bolt 6, which bolt is passed through the apertures 7, and the notches 8 as best illustrated in Fig. 1. It will be understood that the members 4 and 5 are to be held in proper parallel relationship with reference to each other by the tie-bars 9 and 10, which tie-bars may be formed integral, or they may be made separate and attached in any convenient and well known manner. The parallel bars 4 are formed hollow to receive the various parallel members 1, and it will be understood that the shape and size of the openings 11 must correspond with the shape and size of the parallel post uprights or bars. For the purpose of holding the parallel members 4 at any desired point of adjustment when the parallel post uprights 1 are of the form shown in Figs. 1 and 2, set screws 12 are employed.

When it is desired to connect the bars 5 to the parallel uprights such as shown in Fig. 4 said bars 5 are separated from the parallel bars 4 and the bars 5 alone constitute the head which carries the drill and the different parts pertaining to said drill.

When the bars 5 are used as illustrated in Fig. 4 the bolt 6 is passed through the apertures 7 and engage two oppositely disposed recesses or notches 13, said bars 5 being held in proper adjustment by means of the bolt 6 being placed in the desired notches. It will be understood that the limit of adjustment of the head or bar 5 is within the limits of the upper and lower set of recesses 13. The bars 5 are provided with the open recesses 14, which recesses are for the purpose of receiving the short lugs or bearings 15, which are connected to the drill-head 16, said drill-head being of the usual construction commonly used in miners' drills. The construction of the drill head 16 and the short lugs 15 being the same, or substantially the same regardless of the fact as to whether or not the drill is to be located in a horizontal position, or at any angle to a horizontal position, but by the use of the bars 5 we are enabled to bring the drill in a true vertical position, or at any slight angle to a perpendicular line. It is well understood that in the operation of miners' drills for blasting purposes, the drill is located in substantially a horizontal position, or at a slight angle to a horizontal position, but must be located in substantially a vertical position when the floor or roof of a mine is drilled for any purpose, other than blasting.

It will be understood that the drill 17 together with its different parts may be located and operated to drill for blasting purposes if desired.

In some instances it may be desired to drill in the bottom or floor of a mine, and when so desired the bars 5 which carry the drill are inverted as illustrated in the dotted lines Fig. 4, but it will be understood that they can be placed in the same position upon the bars 4 and the bolt 6 placed through the lower notches or recesses 8. By inverting the bars 5 when it is desired to drill in the floor, said bars will be in proper position to resist the upward pressure of the drill and when holes are drilled in the roof and the bars 5 located in the position illustrated in full lines, they will be in position to receive the downward pressure.

For the purpose of preventing any rocking movement of the bars 5 and at the same time providing means for properly bracing the bars 5 against the pressure of the drill, the bars 5 are provided with the outward extending flanges 18, which flanges are so located that they will fit against the edges of the bars 4 or against the edges of the post uprights 1, said flanges being extended below or above the point of connection of said bars by means of the bolts 6. For the purpose of rigidly holding the bars 5, which constitute the drill carrying head, the inner faces of the bars 4 are formed flat and of considerable width, which flat faces form abutments or contact faces for the flat faces of the bars 5. It will be understood that the bars 5 are so spaced with reference to the bar 4 or the upright posts 1 to provide a close fit.

In order that the drill 17, together with its different parts designed to rotate and feed the drill may be located at one side of the parallel uprights going to make up the post adapted to be connected to the roof and floor of a mine may be located entirely at one side and spaced from the upright posts, the bars 5 are formed of a length sufficient to allow the drill 17 to be spaced from the parallel uprights and located parallel with said uprights.

We claim—

1. In a device of the character described, the combination of parallel uprights, means for connecting said parallel uprights in fixed vertical position, parallel members slidably mounted upon the parallel uprights, parallel drill holding bars detachably connected to said sliding members, means for holding said sliding members in fixed adjustment upon the uprights, said members provided with notches at their top and bottom ends respectively, the drill holding bars provided with open slots and apertures at their opposite ends, respectively, a connecting bolt adapted to be passed through the apertures of the drill carrying bars and the notches of the adjustable members, said drill carrying bars provided with lateral flanges, said flanges adapted to abut against the parallel members located upon the parallel uprights.

2. In a device of the character described, the combination of parallel uprights, means for holding said parallel uprights in fixed vertical position, parallel members slidably mounted upon the parallel uprights, said slidable members provided with flanges having notches at their top and bottom ends respectively, drill carrying bars held in fixed spaced relationship with reference to each other, said drill carrying bars provided with recesses and apertures at their opposite ends respectively, means for connecting said drill carrying bars and sliding bars together, said drill carrying bars provided with lateral flanges adapted to abut against the sliding members and means for holding the sliding members in fixed adjustment upon the parallel uprights.

3. A device of the character described, the combination of parallel uprights, means for holding said uprights in fixed position in a mine, sliding members mounted upon said uprights, said sliding members provided with recesses at their top and bottom ends, drill holding bars, means for connecting said drill holding bars to the sliding members, the outer faces of the drill holding bars pro-

vided with flanges adapted to abut against the sliding members located upon the parallel uprights, means for holding said sliding members in fixed adjustment upon the upright and said drill holding members provided with recesses.

In testimony that we claim the above, we have hereunto subscribed our names in the presence of two witnesses.

CORNELIUS E. HOLT.
PROVEST R. RAUCH.

Witnesses:
W. E. WARREN,
EDNA M. LODGE.

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