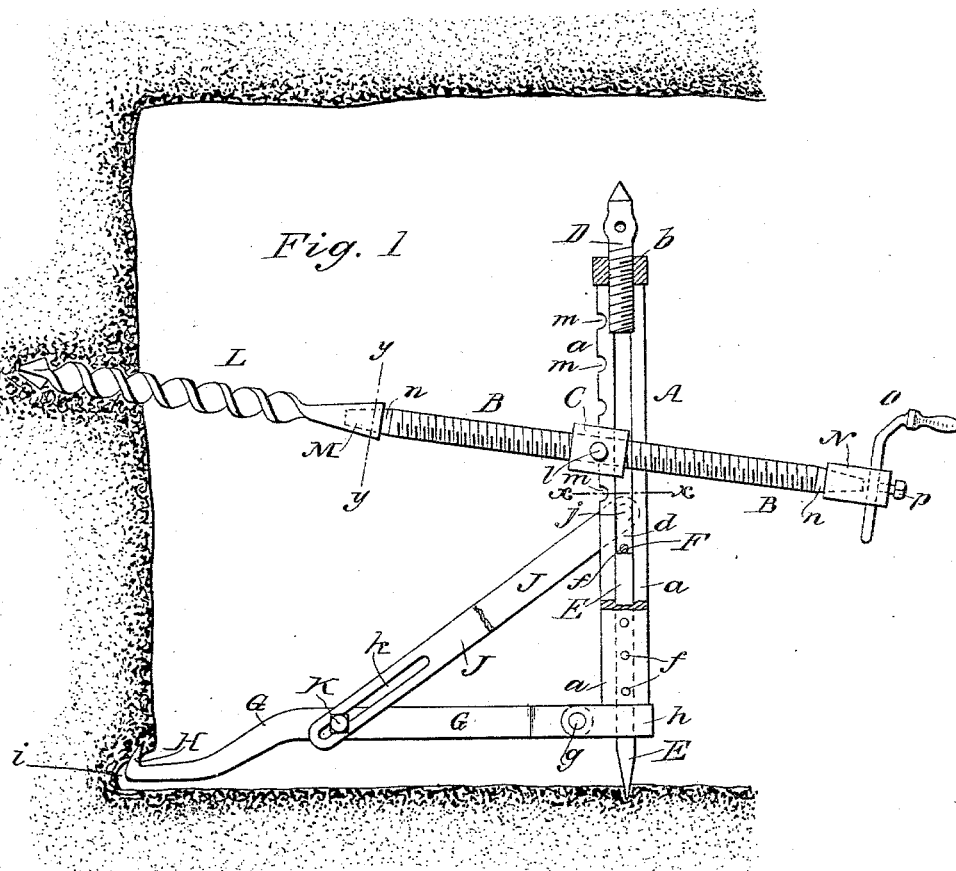


(No Model.)

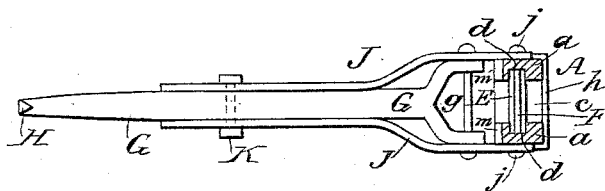
J. W. KEENEY.  
MINER'S DRILLING MACHINE.

No. 304,109.

Patented Aug. 26, 1884.



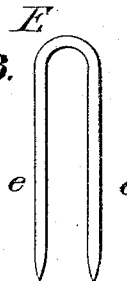
*Fig. 2.*



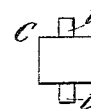
*Fig. 5.*



*Fig. 3.*



*Fig. 4.*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

JOHN W. KEENEY, OF COALBURG, WEST VIRGINIA.

## MINER'S DRILLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 304,109, dated August 26, 1884.

Application filed April 16, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN WILSON KEENEY, of Coalburg, in the county of Kanawha and State of West Virginia, have invented a new and Improved Miner's Drilling-Machine, of which the following is a full, clear, and exact description.

The object of my invention is to provide a light, strong, simple, inexpensive, and durable machine for drilling holes to receive explosive charges in mining operations, the machine being more especially intended for mining coal.

The invention consists of the combinations of parts and their construction, substantially as hereinafter fully set forth, and pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my improved drilling-machine, partly broken away and as applied to use. Fig. 2 is a plan view in section on line *xx*, Fig. 1. Fig. 3 is an edge view of the vertically-adjustable foot-piece removed from the drill-stock, and drawn to an enlarged scale. Fig. 4 is a plan view of the drill feed-nut detached; and Fig. 5 is a cross-section through the bit-socket and feed-screw on the line *yy*, Fig. 1.

The letter A indicates the drill-stock or upright, which consists of opposite side bars, *aa*, rigidly connected at the top and bottom by the head and foot blocks *b c*, respectively, said blocks spacing the bars *aa* apart sufficiently for passing the feed-screw B and its nut C between them. The upper block, *b*, is threaded to serve as a nut in which the pointed head-screw D may be screwed up or down to fasten or stay the head of the stock A to the roof of the cutting when it may be desired to do so. The opposing sides or faces of the bars *aa* are grooved at *d d*, to receive the pointed side arms, *ee*, of a staple-like foot-piece, E, adapted to slide in the grooves *d d*, and to be held in different positions by a pin, F, passed through opposite holes *ff*, made in the bars *aa* for lengthening or shortening the stock, as may be required by varying heights of the cutting, to secure the stock in place by the foot E and

head-screw D, as will readily be understood. The double point of the foot affords a secure hold of the stock to the floor, and prevents the stock from turning or wobbling laterally.

The mode of holding the drill-stock by a head-screw to the roof of the cutting, although sometimes desirable, is wasteful of time in fixing the drilling-machine in position, and the head-screw at times loosens the roof, making it liable to fall and injure the miners, and for these and other reasons it is desirable to hold the drill independently of any connection with the roof of the cutting, which I propose to do by pivoting to the foot of the drill-stock A at *g*, and preferably to a metal band, *h*, fixed around the lower end of the stock, the forwardly-extending foot-bar G, which has an upturned sharp point, H, at its outer end, to be hooked beneath or into a recess or cavity, *i*, made by a few strokes of a pick at the base of the head of the cutting, as shown in Fig. 1. Braces J, pivoted to the stock or post A at *j*, extend forward at each side of the foot-bar *g*, and are held fast thereto by a screw-bolt, K, or like clamp device, said bolt K passing through slots *k* of the braces J, to allow the braces to be slid along the bolt, to set the stock A at any desired forward or backward inclination, the pivot-joint of the bar G, with the stock at *g*, permitting every necessary range of adjustment for properly directing the boring tool or bit. This method of holding the stock A to its work is very simple and effective, as when the drill is at work the back-pressure on the stock serves to firmly bed the foot-piece E in the floor and the hook H in the recess *i*, and the time consumed in setting the stock in place is small compared with that required to make connection of the stock with the roof in the usual way.

I make the nut C with opposite fixed trunnions or studs *l*, which are adapted to enter the coincident recesses or notches *m* at the front edges of the bars *aa* of the stock, a number of recesses *m* being provided along the face of the stock, so that the nut C may be held by its trunnions *l* in any desired vertical position, and the trunnions *l* may swing in the notches *m* at any point along the stock, for setting the bit L in upward or down-

ward inclination from any set of the notches as a center, thereby giving as great range of vertical adjustment to the bit as is required.

The feed-screw B, which is well fitted by its threads to the nut C, has opposite ends of like angular shape, preferably of a square, tapered form as at *n n*, and the socket-head M of the bit L, and also the socket N, in which the handle O, by which the screw is turned to feed the drill forward, is held, are shaped to fit either end of the screw, so that when the bit has been fed forward a distance equal to the range of travel of the screw the screw may be turned back but slightly to release it from the bit socket-head M, and then be turned end for end to engage with a socket, M, of a longer bit, and without turning the screw back for its whole length through the nut C, which effects a considerable saving of time, and promotes durability of the parts, as the stress of the work, by a reversal of the screw, is taken alternately on both sides or faces of the screw-threads, and the screw clears itself in its passage through the solid nut both ways, so that clogging of the screw and nut, common to machines having a split or half box or nut for the screw, is avoided, and the full strength of the screw-threads always is available, which is not certain with the use of half-boxes, which often close imperfectly on the screw and throw the strain of the work on a small part of the face of the screw-threads, quickly ruining them, and making the machine useless without expensive repairs.

By fitting the solid ends of the screw B to the wrought-metal socket M of the bit, or rather by shaping the heated socket over the end of the screw, a much more substantial connection of the bit and screw is afforded than is given by a malleable cast socket, and excessive wobbling of the bit, as with such cast socket, is avoided, and the bit will bore a true hole for the lodgment of the blasting-charge at any desired predetermined point for the best effect in dislodging the coal or other material being mined.

I fit the handle O to the socket N, so as to slide laterally through the socket, a set-screw, *p*, being provided to bind the handle in the socket, to adjust the leverage, or to work the handle quite closely to the side walls of the cutting, which at times is required.

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

In a mining-drill, the combination, with the stock or standard having the screw provided with a bit or tool, of the foot-bar pivotally connected to said stock or standard at its lower end, and having a hooked forward end, and the brace N, pivotally connected to the stock or standard, and adjustably connected to the foot-bar, substantially as shown and described, and for the purpose set forth.

J. W. KEENEY.

Witnesses:

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R. P. WARREN.