

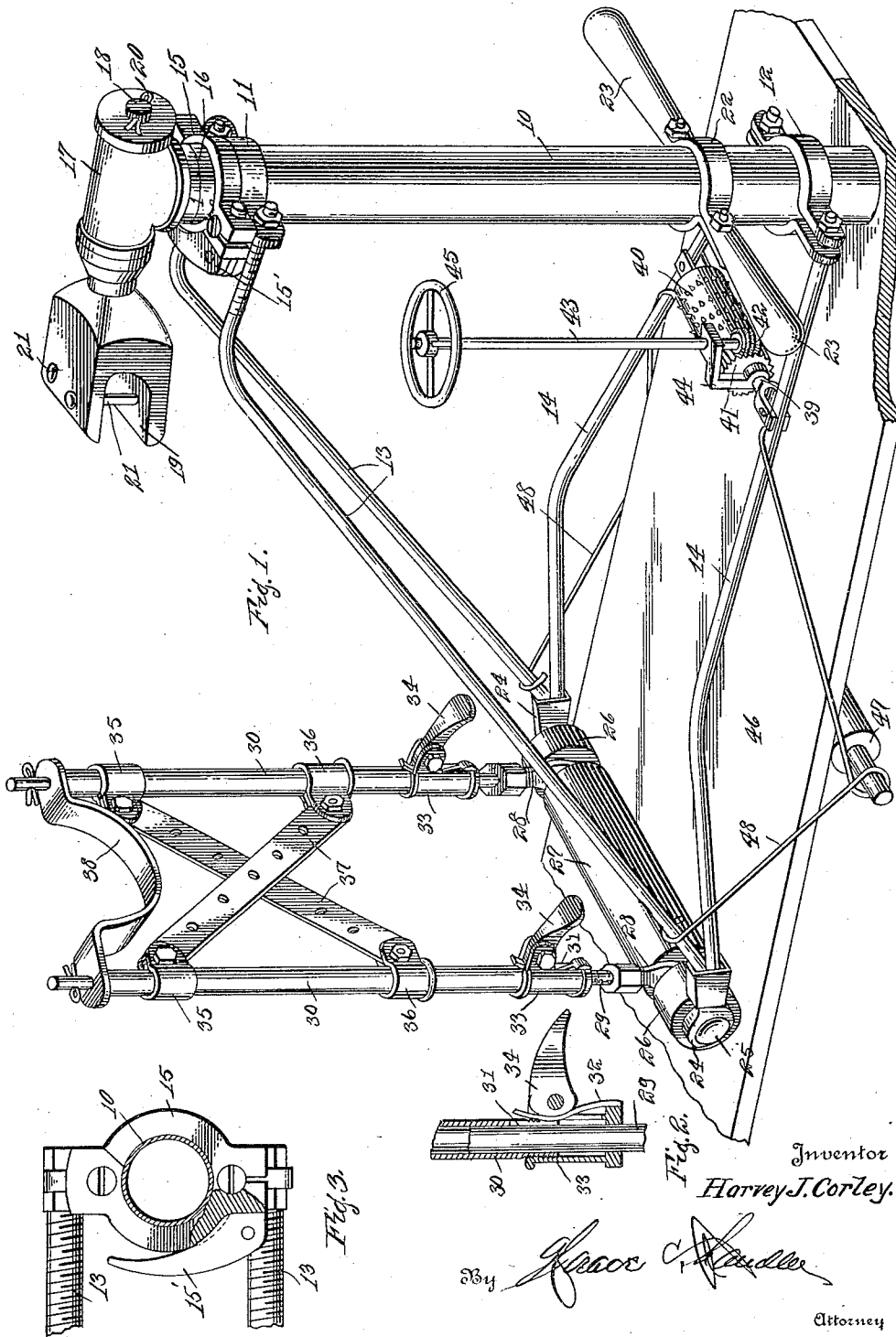
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H. J. CORLEY

ROCK DRILL SUPPORT

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UNITED STATES PATENT OFFICE.

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ROCK-DRILL SUPPORT.

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To all whom it may concern:

Be it known that I, HARVEY J. CORLEY, a citizen of the United States, residing at Thompson Falls, in the county of Sanders, State of Montana, have invented certain new and useful Improvements in Rock-Drill Supports; 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.

This invention relates to new and useful improvements in supports for general use, and particularly for devices for supporting rock drills.

One object of the invention is to provide a support which is readily portable, and which obviates the use of the usual supporting post, which post must be anchored to the roof and floor of the drift, in a mine.

Another object is to provide a device of this character which is comparatively light in weight, whereby the operator can remove the drill, in a few seconds, and carry the support in one hand to the point desired, and without inconvenience.

Another object is to provide a device of this character which is readily adjustable so that the drill bit may be brought to different elevations.

Another object is to provide a supporting device of this character having uprights thereon, one of which is capable of angular adjustment for use independently of the other upright, under certain conditions.

A further object is to provide a supporting device of this character having means for advancing and withdrawing the device. Other objects and advantages will be apparent from the following description when taken in connection with the accompanying drawing.

In the drawing:
Figure 1 is a perspective view of the device.

Figure 2 is an enlarged vertical sectional detail on the line 2—2 of Figure 1.

Figure 3 is an enlarged horizontal sectional detail on the line 3—3 of Figure 1, partly broken away.

Referring particularly to the accompanying drawing, 10 represents an upright post having the collars 11 and 12, therearound, adjacent the upper and lower ends, and secured in the ears of the collars are the upper

and lower braces 13 and 14. Mounted on the upper collar 11 is a split clamping collar 15, which engages in embracing relation with the vertically slidable post 16, which is disposed or telescoped into the post 10. Carried by the upper end of the post 16 is a transverse hollow head 17, and rotatably engaged in said head is a shaft 18, which has on one end a bifurcation 19, and has its other end held within the head by a transverse pin 20. The bifurcation is adapted to receive the handle end of a jack hammer, pins 21 being disposed through the furcations to hold the jack hammer within the bifurcation, and permit the same to rotate with the shaft 18. Secured around the post 10, above the collar 12, is a collar 22 having the oppositely extending handles 23 which are adapted to be grasped by the operator for lifting the post from the ground, or board which supports the post, when it is desired to move the device forwardly or backwardly.

The braces 14 extend horizontally forward from the post 10, but with a slight upward curve, and each of the braces 14 is connected with the forward end of a brace 13. At the convergent ends of the braces 13 and 14 there are formed the bearing eyes 24, which rotatably support the ends of a transverse shaft 25, and rotatable on the shaft, between the bearing eyes, is a ground engaging roller 26. The rollers 26, are, however, comparatively short, and between the inner ends of these rollers is disposed a longer roller 27. Engaged on the shaft, between the ends of the longer roller 27, and the shorter rollers 26, are the bearing eyes 28, formed on the lower ends of the uprights 29. Telescoped onto the uprights are the vertically slidable tubular rods 30, each having in its lower end a longitudinal slot 31, within which is secured a leaf spring 32, and pivotally carried by a collar 33, which is mounted on the lower end of the tubular rod 30, is a cam lever 34, said cam working through said slot to press the free end of the spring against the upright 29, for the purpose of holding the tubular rod at different elevations on the upright. Secured on the tubular rods 30, above the collars 33, are the collars 35 and 36, the former being above the latter, as shown, and pivotally connected to each of the collars 35 and 36 is one end of a brace bar 37, the same extending between the members

30, and being disposed in crossed relation. By this construction, the uprights and tubular rods may be readily adjusted toward and away from each other and maintained in parallel relation. When, however, this adjustment is made, it is necessary to change the rollers 26 and 27, by substituting longer or shorter rollers, in accordance with the direction of movement of the uprights.

Disposed transversely between the upper ends of the tubular rods 30, which ends are slightly reduced in diameter, is a downwardly curved member 38, the ends of which have openings receiving the said ends of the rods 30. The curved portion of the member 38 is arranged to receive and support the forward end of the cylinder of a jack hammer, as will be understood.

Clamped to the lower braces 14, and extending therebetween, adjacent the post 10, is a shaft 39, and rotatably mounted on the intermediate portion of this shaft is a spiked roller 40, which is arranged to contact with the surface of the ground or board, on which the support is mounted. One end of the roller 40 is provided with a worm wheel 41, which is engaged by a worm 42, on the lower end of a staff 43, said staff being rotatably supported in the bracket 44, and being provided with a hand wheel 45, on its upper end. The operator, by turning the hand wheel 45, can rotate the roller 40, and cause the forward or backward movement of the entire supporting device.

In the general use of the device, the support is mounted on a board, or other flat surface 46, and disposed transversely beneath the board is a roller 47, the ends of which are rotatably supported in the intermediate coils of the spring 48, said spring having its ends bent to embrace the end portions of the lower brace 14. Thus the board, with the support thereon, can be placed in any position desired, that is at any angle from the vertical, to a position with the entire device completely inverted. This latter position is assumed when a hole is to be bored close to the floor, and in a line approximately parallel therewith, and which could not be reached with the device in any other position. The springs and roller thus hold the support firmly on the board, or other surface.

In the operation of the device, the operator stations himself behind the post 10, and advances the supporting structure along the supporting surface, by pressing forwardly against one of the handles 23. Another mode of operation is for the operator to grasp the handles and lift the device, while at the same time pushing it forwardly, or he may draw the same rearwardly, as when backing the drill out of the hole, for the purpose of removing the small bits of rock. The op-

erator can more evenly and gradually advance the support, and drill, by turning the hand wheel 45 in the proper direction.

When the device is to be moved to another place, the operator removes the drill, and folds the front supporting uprights back onto the braces, after which he may carry the folded frame in the hand to the point desired.

By means of the cams 15' and 34, the post 16 and the rods 30 may be adjusted to the height, at which the operator wishes to drill the hole in the rock. The cam 15', above referred to, is mounted in connection with the split clamping collar 15, which holds the post 16 at different elevations, as previously mentioned.

It will, of course, be understood that when the uprights and rods 29—30 are adjusted toward and away from each other, that a curved member 38, of different length must of necessity be used, for the purpose of accommodating jack hammers of different sizes.

In the ordinary use of the device, that is when drilling straight into a wall, the drill operates in a line parallel to the surface on which the support is mounted. In fact, the drill bores in parallel relation to the supporting surface, no matter at what angle the hole is being drilled. When, however, it is desired to drill a hole adjacent the floor, and in a downward direction, the rear end of the jack hammer is detached from the head of the post 16, and the members 29—30 swung downwardly and forwardly, with the jack hammer resting on the curved member 38, until the proper angle is reached for the drill. Then, as the drill advances into the rock, the operator moves the supporting structure rearwardly, to maintain the drill in the hole, and the drill at the proper angle.

What is claimed is:

1. A supporting device comprising a base, a vertically adjustable upright on one end of the base, and a support on the other end of the base constructed and arranged for transverse and vertical adjustment and for swinging movement.

2. A supporting device comprising a base, a vertically adjustable upright on one end of the base, a movable holding means carried by the upright, and a support on the other end of the base including vertical members adjustable toward and away from each other, and means for vertically adjusting the vertical members.

3. A supporting device comprising a base, a vertically adjustable upright on one end of the base, a rotatable holding means carried by the upright, a support on the other end of the base constructed and arranged for vertical and transverse adjustment and for vertical swinging movement, and a holding means on the last-named support.

4. A supporting device for a rock drill comprising a base, an upright on one end of the base, a rotatable drill frame engaging means on the upright, a swingable upright
5 on the other end of the base, and a drill frame supporting means carried by the swingable upright.

5. A supporting device for a rock drill comprising a post, a stem vertically adjustable in the post, a rotatable head carried by
10 the post for engagement with one end of the drill frame, adjustable uprights on the other end of the base, and a transversely disposed support on the adjustable uprights for the
15 other end of the drill frame.

6. A supporting device comprising a post, an upright vertically adjustable in the post, diverging braces extending in a common di-

rection from the ends of the post, a shaft connecting and supporting the divergent
20 ends of the braces, a ground roller on the shaft, vertical members supported on the shaft, adjustable paralleling connections between the vertical members, a swiveled and
25 bifurcated member carried by the said upright, and a transverse curved supporting element carried by the vertical members.

7. The combination with a portable surface, of a rock drill support movable longitudinally and laterally of the surface, and
30 resilient means carried by the support and engaged with the surface for holding the support against the surface.

In testimony whereof, I affix my signature.

HARVEY J. CORLEY.