

(No Model.)

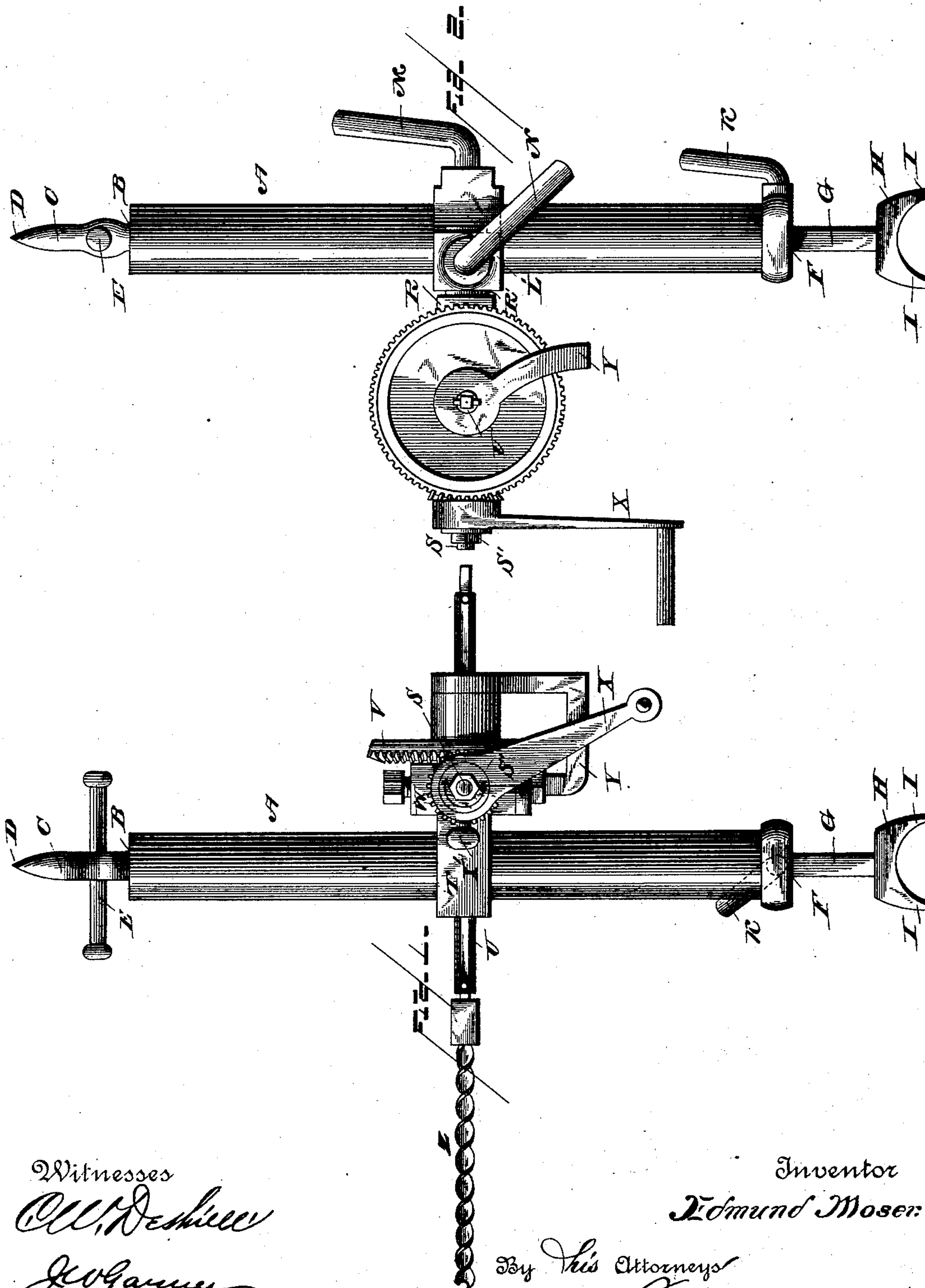
2 Sheets—Sheet 1.

E. MOSER.

COAL AND ROCK DRILLING MACHINE.

No. 363,477.

Patented May 24, 1887.



Witnesses

*W. D. Schiller*  
*J. G. Hanner*

Inventor

*Edmund Moser*

By His Attorneys

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(No Model.)

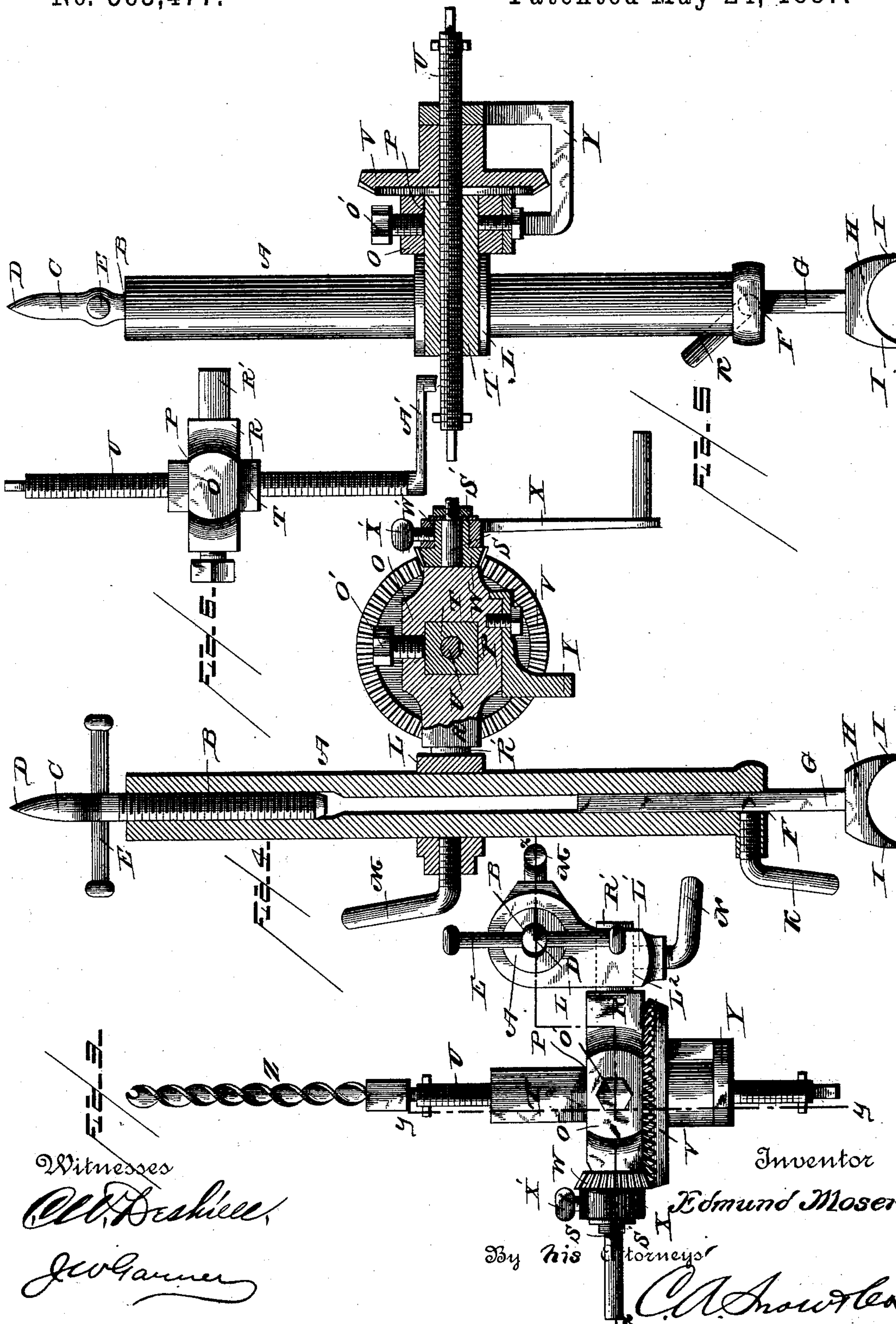
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# UNITED STATES PATENT OFFICE.

EDMUND MOSER, OF PITTSBURG, KANSAS.

## COAL AND ROCK DRILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 363,477, dated May 24, 1887.

Application filed December 23, 1886. Serial No. 222,389. (No model.)

*To all whom it may concern:*

Be it known that I, EDMUND MOSER, a citizen of the United States, residing at Pittsburg, in the county of Crawford and State of Kansas, have invented a new and useful Improvement in Coal and Rock Drilling Machines, of which the following is a specification.

My invention relates to an improvement in coal and rock drilling machines, to be used in mining and for drilling when sinking shafts; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a drilling-machine embodying my improvements. Fig. 2 is a rear elevation of the same. Fig. 3 is a top plan view. Fig. 4 is a vertical sectional view taken on the line *xx* of Fig. 3. Fig. 5 is a similar view taken on the line *yy* of Fig. 3. Fig. 6 is a top plan view of a modified form of my invention.

A represents a vertical post, which is provided at its upper end with a threaded socket, B, in which is located an extension-screw, C, the upper end of which is pointed, as at D. An opening is made transversely in the screw, and through the said opening extends a cross-bar or handle, E, which is adapted to slide freely in the opening, and is provided at its extremities with enlarged heads. In the lower end of the post A is made a vertical socket, F, in which is located an extension-rod, G, the lower end of which is broadened to form a foot, H, having the downwardly-extending points or prongs I, which are adapted to enter the ground at the lower side of the drift while the point D enters the upper side of the drift, and thus secures the post firmly in a vertical position or at any desired angle therein. The clamping-screw K passes through a threaded opening that is made transversely in the lower end of the post and communicates with the socket F, the function of this set-screw being to bear against the extensible rod G, so as to secure the latter at any desired adjustment in the post. It will be observed that by providing the screw C at the upper end of the post the point D may be extended or retracted, and thus the post is made extensible at both ends, to adapt it to fit a drift or gallery of any diameter.

L represents a box, which is provided with a vertical opening, through which the post A extends. A clamping-screw, M, extends through one side of the said box, and is adapted to bear against the post A, so as to secure the box thereto at any desired adjustment. An arm, L', projects from one side of the box L, and through the same is made a transverse opening, L<sup>2</sup>.

N represents a clamping-screw, which works in a threaded opening that is made at right angles to the opening L<sup>2</sup> and communicates with the same.

O represents a block, which is provided with a rectangular transverse opening, P. From one side of the block projects an arm, R, having a reduced extremity or spindle, R', which extends through the opening L<sup>2</sup>, and is clamped therein by the screw N. From the outer side of the block O projects a spindle, S, the outer end of which is screw-threaded.

T represents the longitudinal sleeve, which is rectangular in cross-section and adapted to fit in the opening P. The said sleeve is provided with a longitudinal threaded opening, through which extends a screw-shaft, U, the ends of which are reduced and are made rectangular in cross-section, and thereby adapt it to fit a wrench or socket. This sleeve T is secured in the opening in the block O by any desired adjustment by means of a clamping-screw, O', with which the block is provided.

V represents a miter gear-wheel, which is splined or feathered on the screw-shaft U, to adapt the latter to fly vertically through the miter-wheel and cause the said shaft to rotate with the latter when the wheel is turned.

W represents a beveled pinion, which is journaled on the spindle S, and is provided on its outer side with an annular sleeve or collar, W'. The wheel W meshes with the wheel V, and to the annular collar or sleeve thereof is attached a crank-handle, X, by means of a clamp-screw, X'. A nut, S', is screwed on the threaded outer end of the spindle S, to prevent the pinion W and the crank-handle from becoming accidentally detached from the said spindle.

Y represents a curved or bent arm, which has one end bolted to the under side of the block O, and the other end bearing against the rear side of the hub of the gear-wheel V, so as



to prevent the latter from becoming disengaged from the pinion.

Z represents the ordinary drill-bit which is used for making the openings in the vein or coal or in the rock, and is provided at its rear end with a socket, whereby it may be attached to one of the reduced ends of the screw-shaft.

The operation of my invention will be readily understood. By adjusting the block L vertically on the post A an opening may be drilled in the vein or coal or in the rock at any desired elevation, and by turning the block O in the arm L' of the box the bit may be caused to work at any desired angle. In order to rotate the bit and urge it forward through the rock or coal, it is only necessary for the operator to rotate the crank in the direction indicated by the arrow in Fig. 1, so as to impart rotation to the pinion, and motion is conveyed therefrom to the wheel V, and through the latter to the screw-shaft and bit. As the screw-shaft passes through the sleeve T it will be noted that it is urged forward through the same at each rotation a distance corresponding to the pitch of the screw-threads thereof.

In Fig. 6 I illustrate a modified form of my invention, in which I simply employ a block that is attached to the box L in the manner hereinbefore described, and dispense with the gearing to actuate the screw-shaft, employing instead a crank-arm, A', which is adapted to fit one end of the screw-shaft.

Having thus described my invention, I claim—

1. In a drilling-machine, the combination of a post, a vertically-adjustable box fitted thereon, a horizontally-disposed block pivotally secured to the box, a longitudinally-adjustable sleeve passing transversely through the block and at right angles to the bore of the box, and a threaded feed-shaft carried by and working through said sleeve, substantially as specified.

2. In a drilling-machine, the combination of a post, a vertically-adjustable box, L, fitted thereon, and having an outwardly-projected arm, L', provided with a transverse opening, a block, O, having a spindle affixed thereto and fitted in the transverse opening in the arm, a binding-screw working in the arm and bearing against the spindle to hold the latter and the block to their adjusted positions, and a feed-shaft working in the block, substantially as described.

3. In a drilling-machine, the combination of a standard, a block, O, carried thereby, a feed-shaft extending through the block at right angles to its length, the gear-wheel V, splined or feathered to the feed-shaft, a pinion, W, journaled on an arm of the block and meshing with the wheel, and an arm, Y, affixed to the under side of the block and having one end thereof bearing against the hub of the wheel V, to prevent the same from partaking of the retrograde movement of the feed-shaft, substantially as described.

4. In a drilling-machine, the combination of a post, a vertically-adjustable box fitted thereon, a block, O, pivoted to the box and having a transverse angular opening, a non-rotatable sleeve, T, angular in cross-section, fitted in the correspondingly shaped opening in the block, and having a central threaded opening, a binding screw working in the block and bearing against the sleeve to hold the same at any desired longitudinal adjustment, and a feed-shaft working in the threaded opening of the sleeve, as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

EDMUND MOSER.

Witnesses:

AARON ROBBINS,  
ABERHAN NAPIER.