D. W. BRICKER.

Improvement in Rock-Drilling Machines.

No. 130,471. Patented Aug. 13, 1872.

Fig. 1.

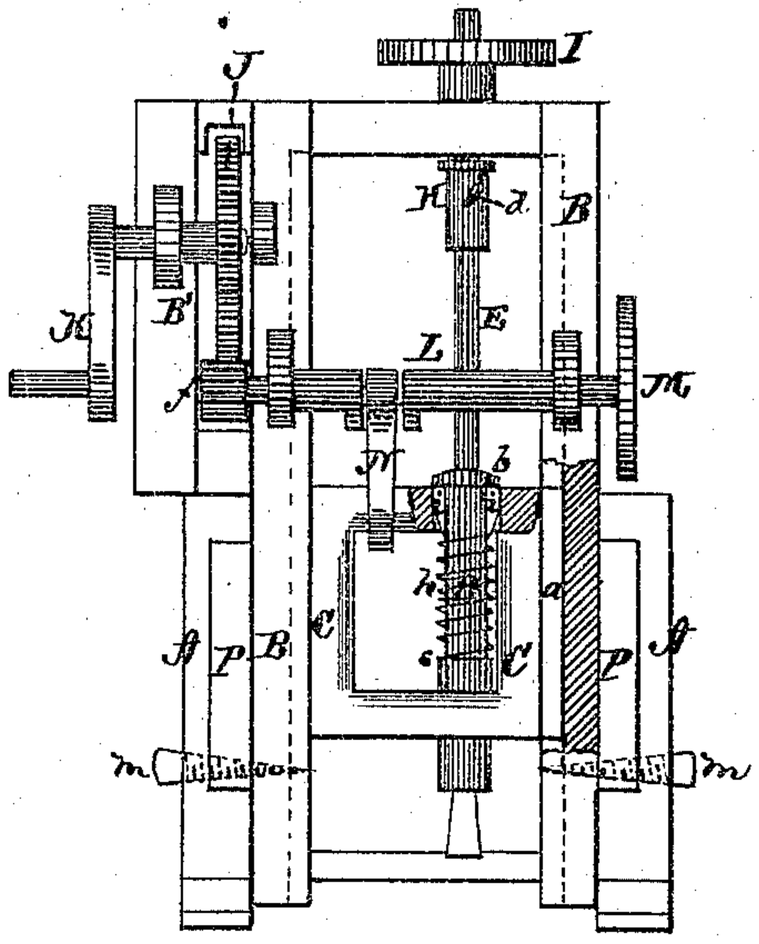


Fig. 2.

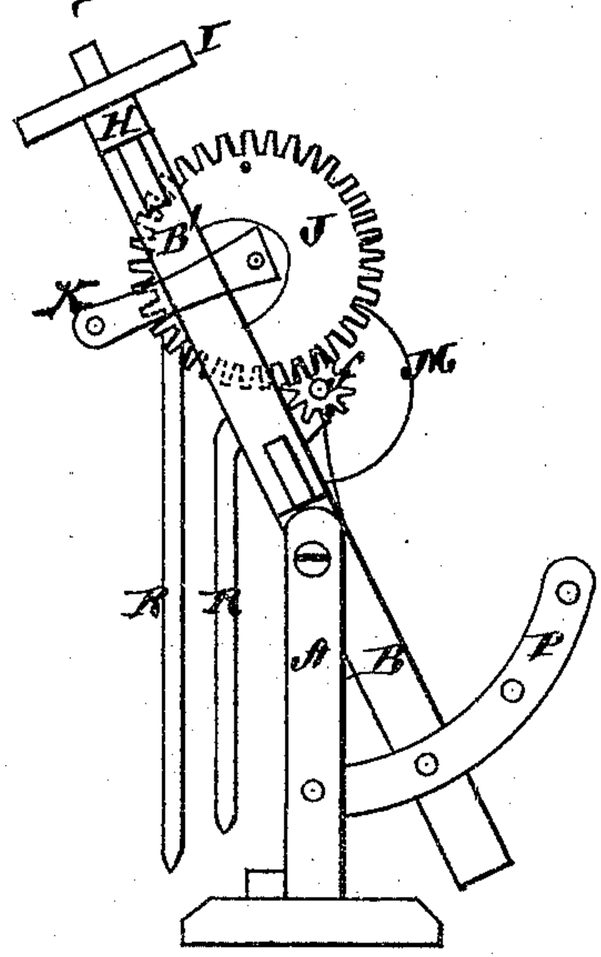


Fig. 3.

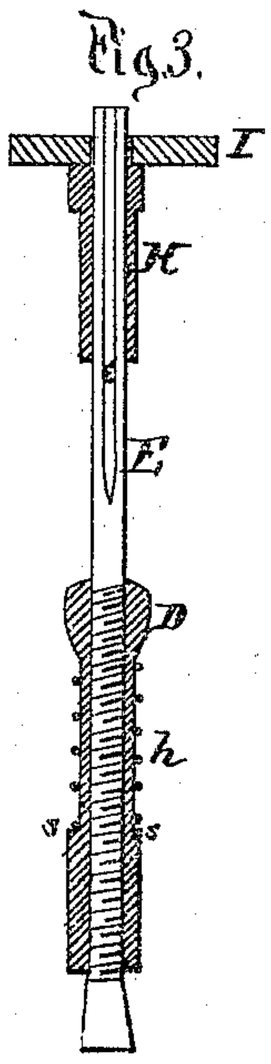
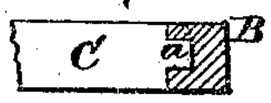


Fig. 4.



Witnesses:

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UNITED STATES PATENT OFFICE.

DAVID W. BRICHER, OF CLAY LICK, PENNSYLVANIA.

IMPROVEMENT IN ROCK-DRILLING MACHINES.

Specification forming part of Letters Patent No. **130,471**, dated August 13, 1872.

To all whom it may concern:

Be it known that I, DAVID W. BRICHER, of Clay Lick, in the county of Franklin and in the State of Pennsylvania, have invented certain new and useful Improvements in Stone-Drilling Machine; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the construction and arrangement of a "stone-drilling machine," as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a front elevation, and Fig. 2 a side view, of my machine. Fig. 3 is an enlarged view of the drill-shaft with devices attached to the same, and Fig. 4 is a section of the frame.

A A represent two standards, each having a suitable foot or bed piece, and the two bed-pieces connected by a cross-bar. In the upper ends of the standards A A is pivoted a frame, B, consisting merely of two side pieces and a top bar, the frame being open at the lower end. The two side pieces of the frame B are grooved longitudinally on their inner sides, and in the same moves a gate or frame, C, this frame having tenons *a* on their sides fitting in the grooves in the side pieces of the frame B. Through holes in the top and bottom bars of the frame C passes a sleeve, D, provided with a circumferential flange, *b*, at its upper end to prevent it from passing down through the frame, and wings *i i* pass downward from said flange through grooves in the top bar of the frame C to prevent the sleeve from turning, but still allow it to move up and down. The interior of the sleeve D is provided with female-screw threads, and the drill-shaft E has corresponding male-screw threads, so that the shaft can be screwed up and down in the same. The upper end of the drill-shaft E passes through a sleeve, H, running through a hole in the top bar of the swinging frame B. Through the side of this sleeve H is passed a set-screw, *d*, which goes into a groove, *e*, running lengthwise of the shaft E for a suitable distance. At the upper end of the sleeve H is a hand-wheel, I, by means of which the sleeve is turned to feed the drill-shaft up or down through the sleeve D by means of the screw *d* entering the groove *e*, while these parts allow the shaft to move up and down without moving the sleeve or wheel. At the upper end of the swinging frame B, on one side, is an additional frame, B′, within which is placed a large cog-wheel, J, turned by a crank, K, attached to the outer end of its shaft. This cog-wheel J gears with a pinion, *f*, upon the end of a crank-shaft, L, having its bearings in boxes upon the swinging frame, and provided on its other end with a fly-wheel, M. The crank-shaft L is, by a pitman, N, connected with the sliding frame or gate C, and thus the same, with the drill, obtains a rapid reciprocating motion. Around the sleeve D is placed a spiral spring, *h*, the ends of which bear against the top bar of the frame C and a collar or shoulder, *s*, on the sleeve. The object of this spring is to cause the drill to give a yielding blow and prevent the breaking of any part of the machine by the concussion.

The drilling may be done at any angle desired by adjusting the swinging frame B between two curved arms, P P, projecting forward from the standards A A, and holding said frame between them at any point by screws *m m*. The swinging frame is also supported by pivoted braces R R.

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

1. The hollow screw-sleeve D, provided with flange *b*, wings *i i*, and shoulder *s*, in combination with the spring *h* and screw drill-shaft E, substantially as and for the purposes herein set forth.

2. The combination of the posts A A, swinging frame B, curved arms P P, set-screws *m m*, sliding frame C carrying the drill-shaft E, crank K, gears J *f*, crank-shaft L, and pitman N, all constructed and arranged substantially as and for the purposes herein set forth.

3. In combination with the adjustable swinging frame B and sliding or reciprocating frame C, operated by the means herein described, the drill-shaft E, screw-sleeve D, spring *h*, sleeve H, and hand-wheel I, all constructed and arranged substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 9th day of May, 1872.

DAVID W. BRICHER.

Witnesses:

JOHN SMITH,

PATTERSON BRUBAKER.