

F. WALTERS.  
Rock Drilling-Machines.

No. 134,951.

Patented Jan. 14, 1873.

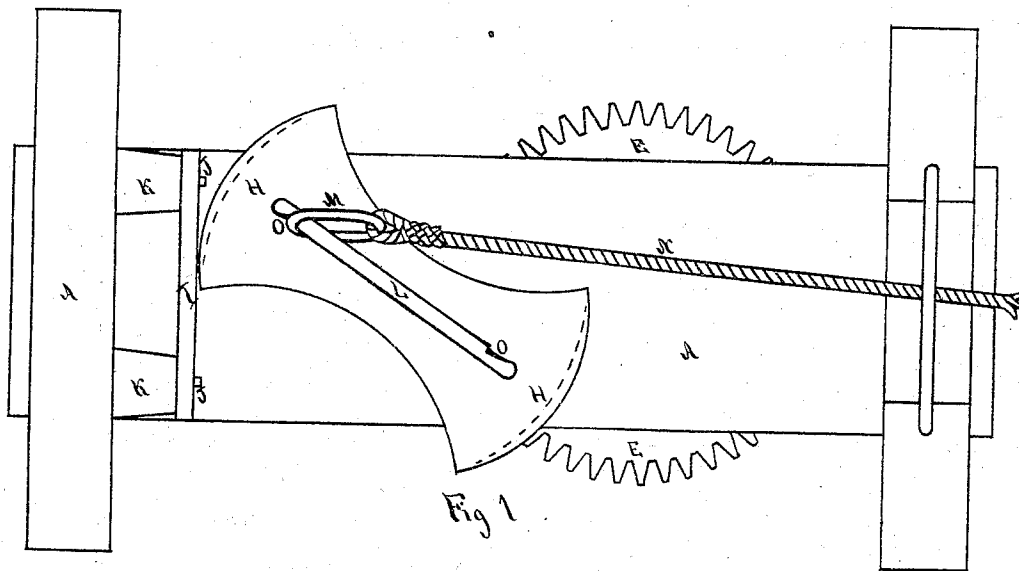


Fig 1

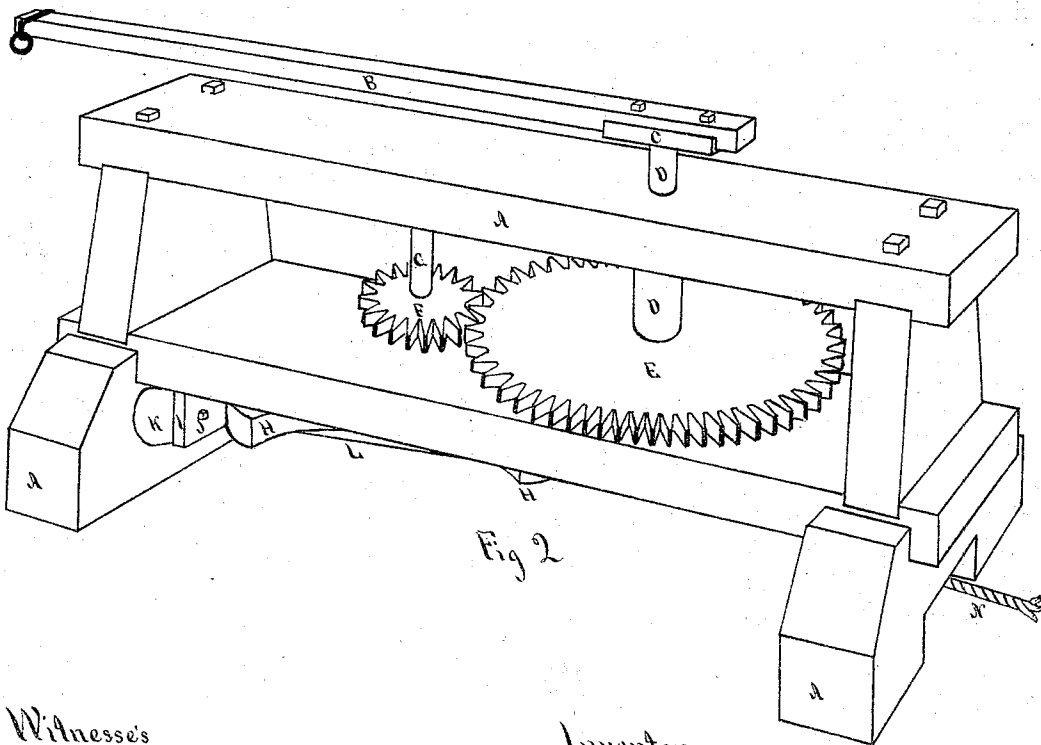


Fig 2

Witnesses  
J. H. Remington  
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# UNITED STATES PATENT OFFICE.

FRANK WALTERS, OF WATERTOWN, NEW YORK.

## IMPROVEMENT IN ROCK-DRILLING MACHINES.

Specification forming part of Letters Patent No. 134,951, dated January 14, 1873.

*To all whom it may concern:*

Be it known that I, FRANK WALTERS, of Watertown, Jefferson county, New York, have invented an Improvement in the Construction of Power Rock-Drills; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

The nature of my invention consists in the construction and arrangement of the parts of a drilling-machine which operate the drill.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the drawing, Figure 1 represents a bottom view of my improvement; Fig. 2, a perspective elevation.

Like letters refer to like parts.

A in the drawing represents the frame upon which the several parts are mounted; B, the sweep to which the horse is attached, is fixed in a hub, C, firmly secured on a vertical shaft, D, which has its bearings in the frame A. On the shaft D is fixed a toothed wheel, E, which meshes into the pinion F, which is on another vertical shaft, G, as shown. Under the frame A is a plate, H, and its function is similar to that of a cam. The plate H is secured at its center to the vertical shaft G, and its ends are eccentric, as shown, for the purpose of producing friction at a certain time. I is a slide, which plays on the bolts J or in a slot. Behind the slide I and on the frame A is a spring or springs, K. Under the plate H is a staple, L, which is for the purpose of operating the drill. Said staple is secured at each end of the plate H by a screw. There is also on the staple L a ring or link, M. The rope N is attached to the link M, passing out under the frame A, and is also attached at the other end to the drill. On opposite sides and at the ends of the staple L are notches O, cut in a winding form, and for the purpose of carrying the link M.

The operation of my improvement is as follows: When motion is given to the driving parts of the machine the plate H and staple L revolve, and by their revolution the link M is carried. This motion raises the drill by means of the rope N, which is attached to the link M. When the link has made nearly half a revolution, carried by the staple L and notch O, the weight of the drill will force it to slip from the notch O and take its position at the other end of the staple L, and in position for another stroke of the drill, and so on in continuous repetition during the operation of the drill.

The height to which the drill is raised is governed by the length of the staple L, which may be of different lengths. When the drill is being raised the full strain is on the horse, and this strain is suddenly removed when the drill falls. To prevent this sudden change I have arranged the slide in such a position that it will come in contact with the end of the plate H, thus forcing the slide I to press against the spring K. The advancing corner of the plate H comes in contact with the slide I a little before the drill falls, and the friction of the spring K against the slide I forces it to press against the plate H, and this rubbing of the two together will remove the sudden change which would otherwise occur.

The usual adjuncts of masts, &c., although not shown or described, are employed by me in operating my improvement.

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

The combination of the pivoted double-acting cam H provided with bail L and notches O O, slide I, spring K, and chain or rope N, all substantially as set forth.

FRANK WALTERS.

Witnesses:

F. H. REMINGTON,  
C. H. WALTERS.