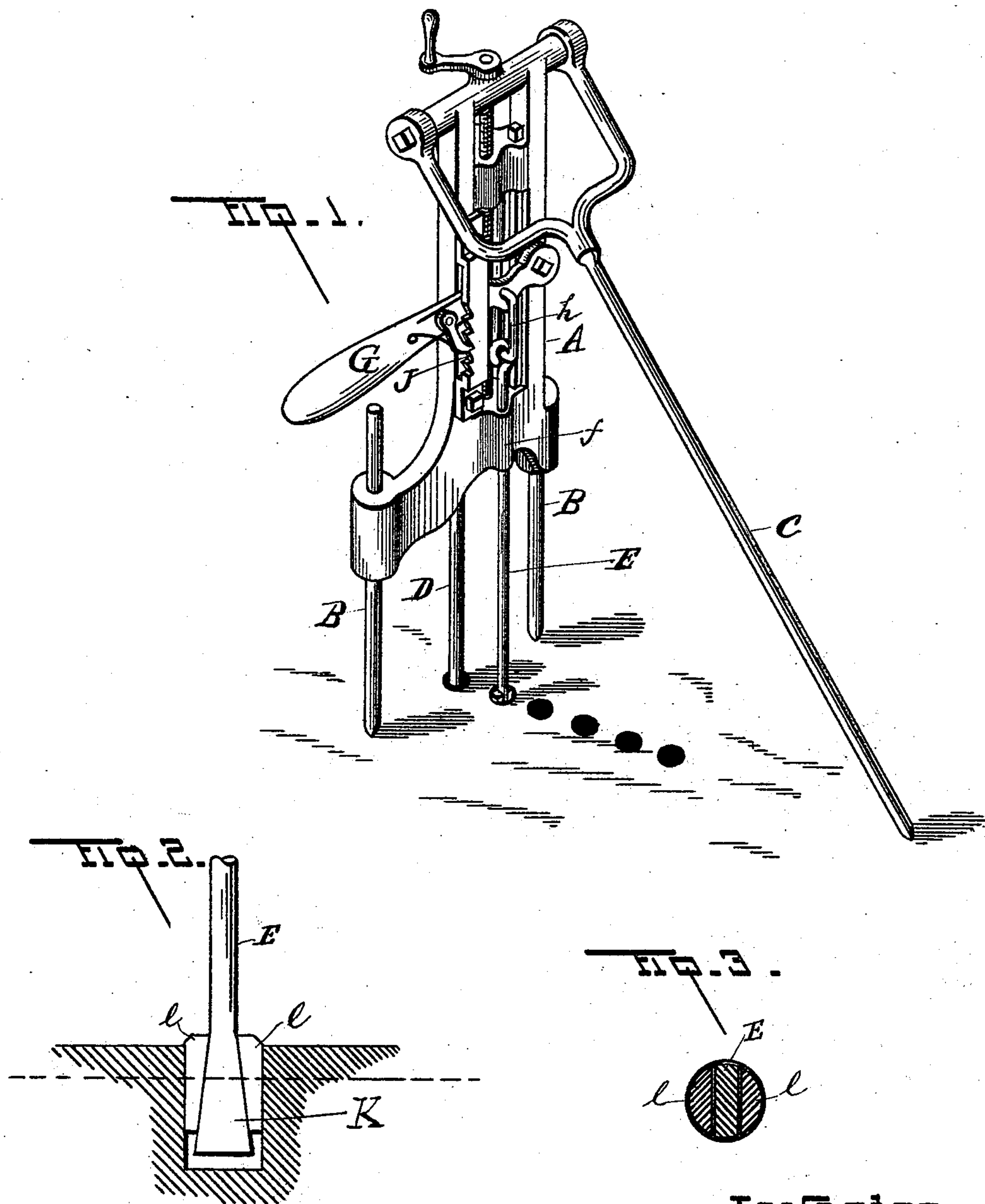


(No Model.)

I. N. DAY.
ROCK DRILLING AND BORING MACHINE.

No. 517,815.

Patented Apr. 3, 1894.



Witnesses

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UNITED STATES PATENT OFFICE.

ISAIAH N. DAY, OF SAN JOSÉ, CALIFORNIA.

ROCK DRILLING AND BORING MACHINE.

SPECIFICATION forming part of Letters Patent No. 517,815, dated April 3, 1894.

Application filed July 7, 1893. Serial No. 479,819. (No model.)

To all whom it may concern:

Be it known that I, ISAIAH N. DAY, a citizen of the United States, residing at San José, in the county of Santa Clara and State of California, have invented certain new and useful Improvements in Rock Drilling and Boring Machines; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

My invention relates to an improvement in that class of light steam or air operated drilling and boring machines which is used for drilling a series of holes in quarry stones and slabs, in order to split or reduce them to dimension stone. These drilling machines are usually weighted by placing upon or attaching to them (usually by securing upon the legs of the machine) heavy weights which anchor the machine and serve to resist the upward thrust and pressure of the drill. These weights are cumbersome and render the machine awkward and heavy to handle.

The object of my invention is to dispense with these weights and to provide a simple and effective anchoring device by which the machine is held against the upward thrust and pressure of the drill by an anchor rod extending downward from the machine and entering a hole in the rock or slab, where it is confined and held by a grip or clamp which binds against the wall of the hole, all as hereinafter more fully described.

Referring to the accompanying drawings, Figure 1 is a perspective view of the drilling machine showing the rear side, with anchoring device shown in position for work. Fig. 2 is a cross section of the lower end of anchor rod showing the clamps applied, and Fig. 3 is a horizontal section of the clamp and anchoring rod.

Let A represent the frame or main casting of a steam drilling or boring machine.

B. B. are the permanent legs; and C is the adjustable or movable leg.

D is the drill, which is operated by steam power.

To the main casting A, preferably on the side opposite the drill D, I connect a vertically sliding rod or bar E, which moves through a guide f on the casting. The upper

end of this rod or bar I connects with a horizontal lever G by means of a link h. The inner end of the lever is pivoted to the frame A, while its outer end moves along and can be set in a rack J. The lower end of the bar is preferably made square, and is gradually enlarged or thickened, as shown at K, Fig. 2.

If I am commencing to drill a series of holes, I first drill a preliminary or first hole by hand. I then set the machine so that the lower end of the bar or rod E enters into the hole. I then drive one or more wedges l down into the hole, so as to key or clamp the lower enlarged end of the rod or bar either against the sides of the hole or between the wedges as the case may be. When this is done I lift upward on the end of lever G until the upward strain on the rod or bar E presses the legs of the machine firmly down upon the rock or slab when I latch or engage the lever with the rack J. I can then proceed with the drilling or boring until the next hole is finished. When the second hole is thus finished I release the lever and grip, after which the machine can be easily lifted forward and the anchor rod placed and clamped in the last hole finished as in the first instance, and so on from hole to hole until all are finished. I thus do away with the clumsy and heavy weights heretofore used on the legs of the machine, and thereby render the machine much easier to handle and operate, and the anchorage is far more certain and satisfactory.

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

1. In a rock drilling or boring machine, an anchor rod adapted to anchor the machine to the rock or article operated on, and a rack on the machine, and a lever pivoted on said machine and connected to said rod and adapted to engage said rack, substantially as set forth.

2. In a rock drilling or boring machine, an anchor rod adapted to anchor the machine to the rock or article operated on, and a rack on the machine, a lever pivoted to the machine and adapted to engage said rack, and linked to said rod, substantially as specified.

ISAIAH N. DAY.

Witnesses:

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