

(No Model.)

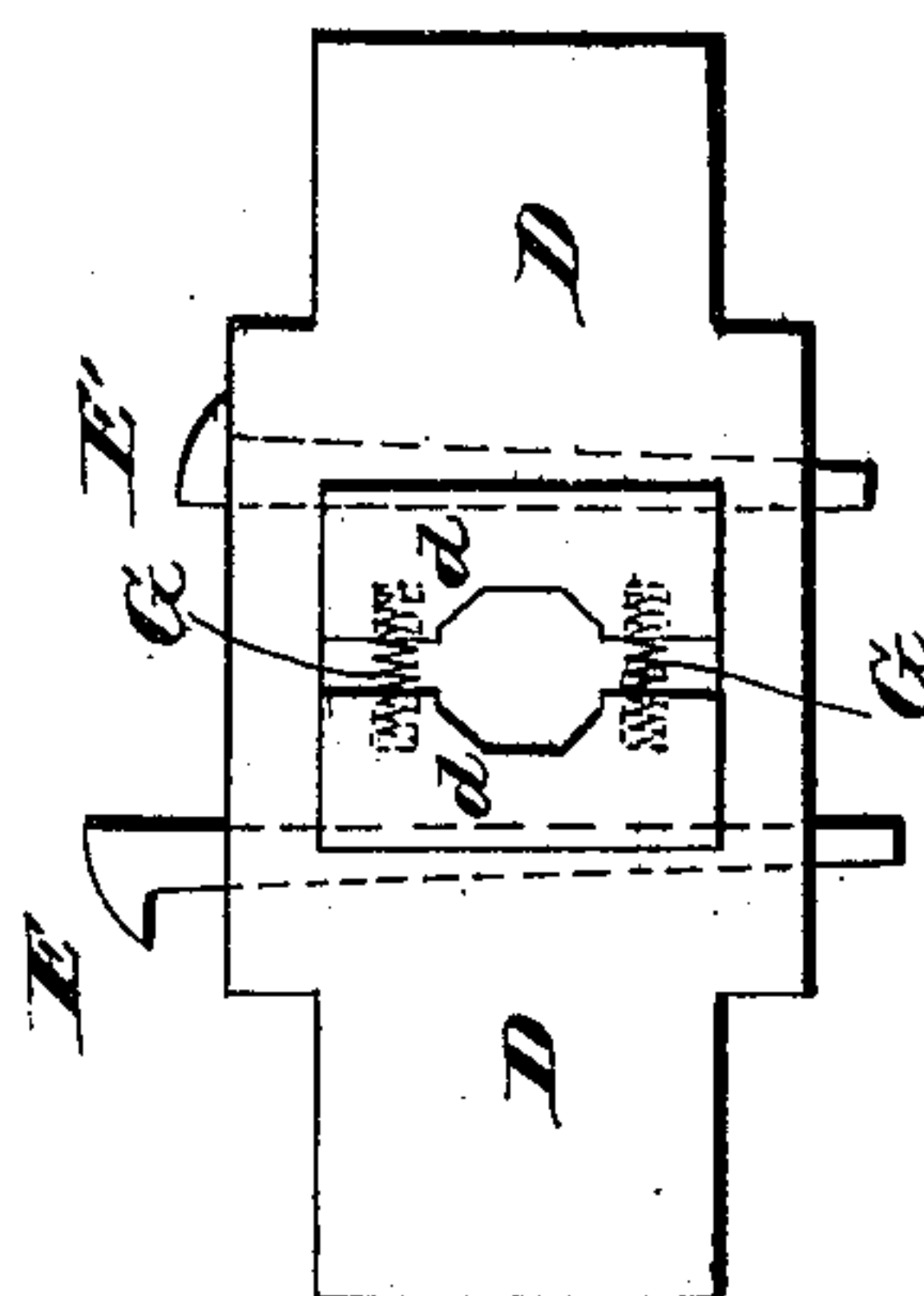
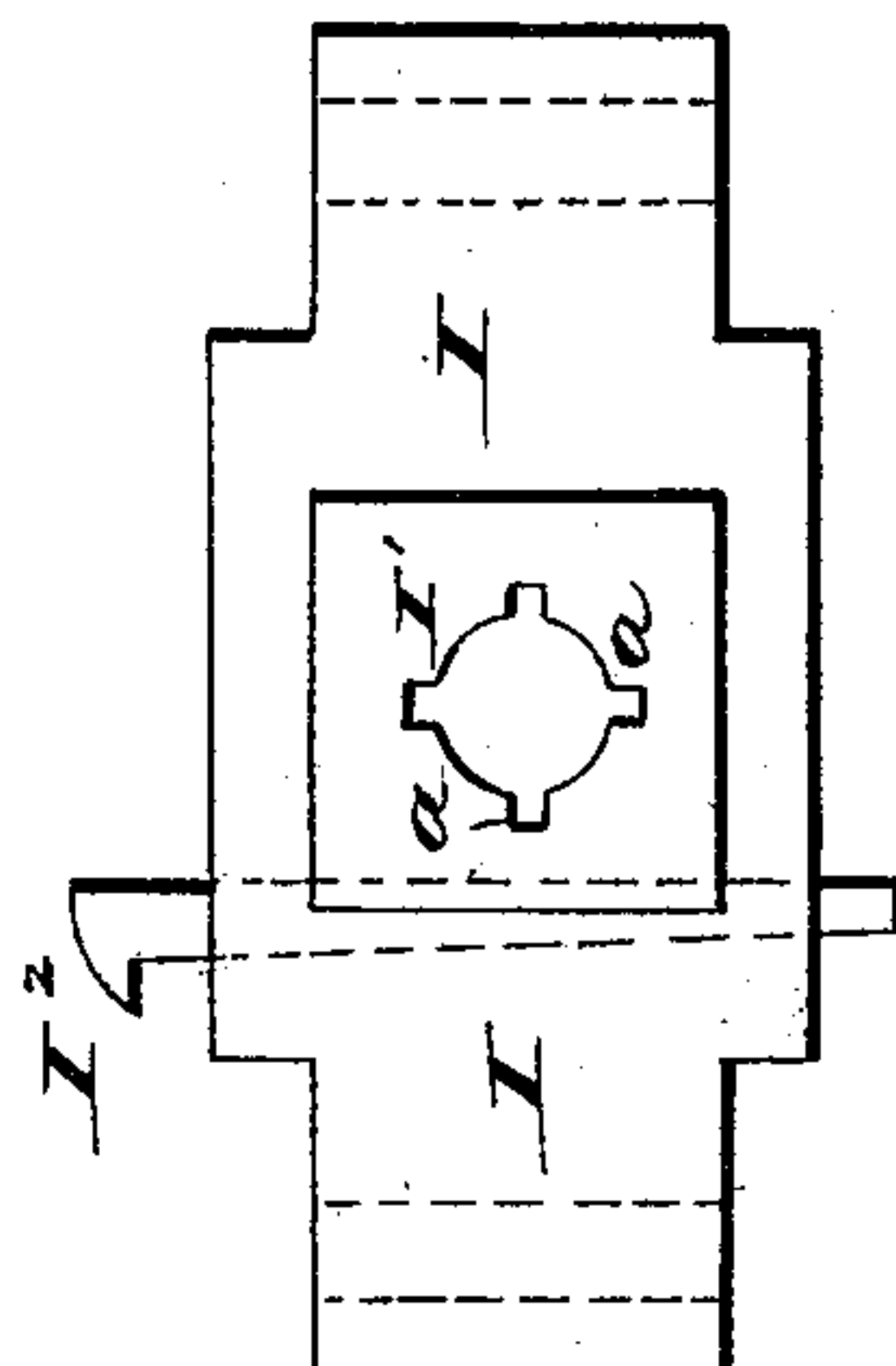
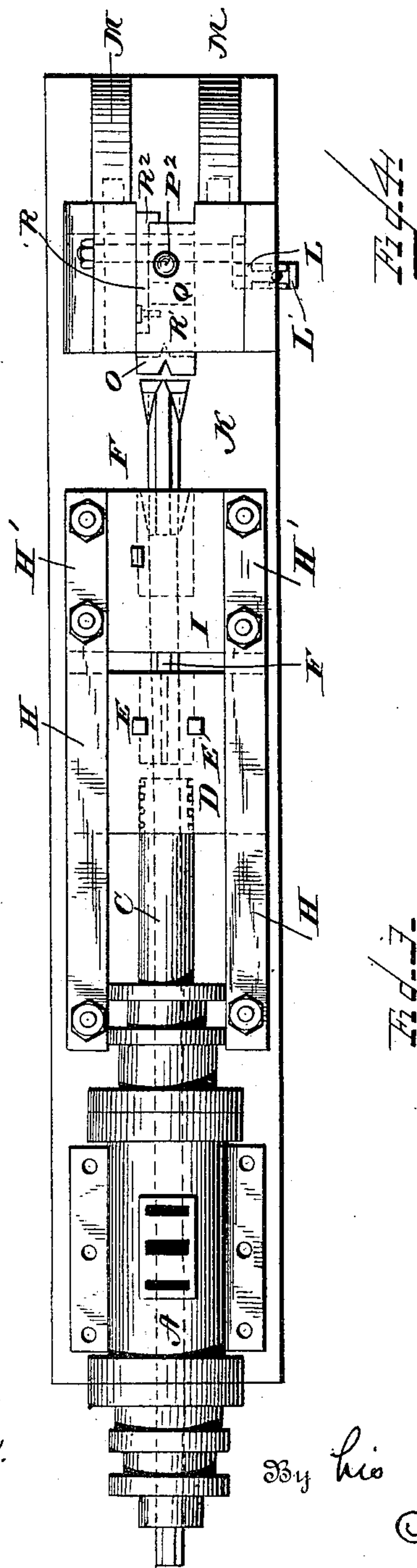
2 Sheets—Sheet 1.

J. B. MAAS.

MACHINE FOR DRESSING ROCK DRILLS.

No. 368,296.

Patented Aug. 16, 1887.



Witnesses  
Frank L. Curand.  
A. F. Green.

By his Attorney

Frank A. Fort.

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(No Model.)

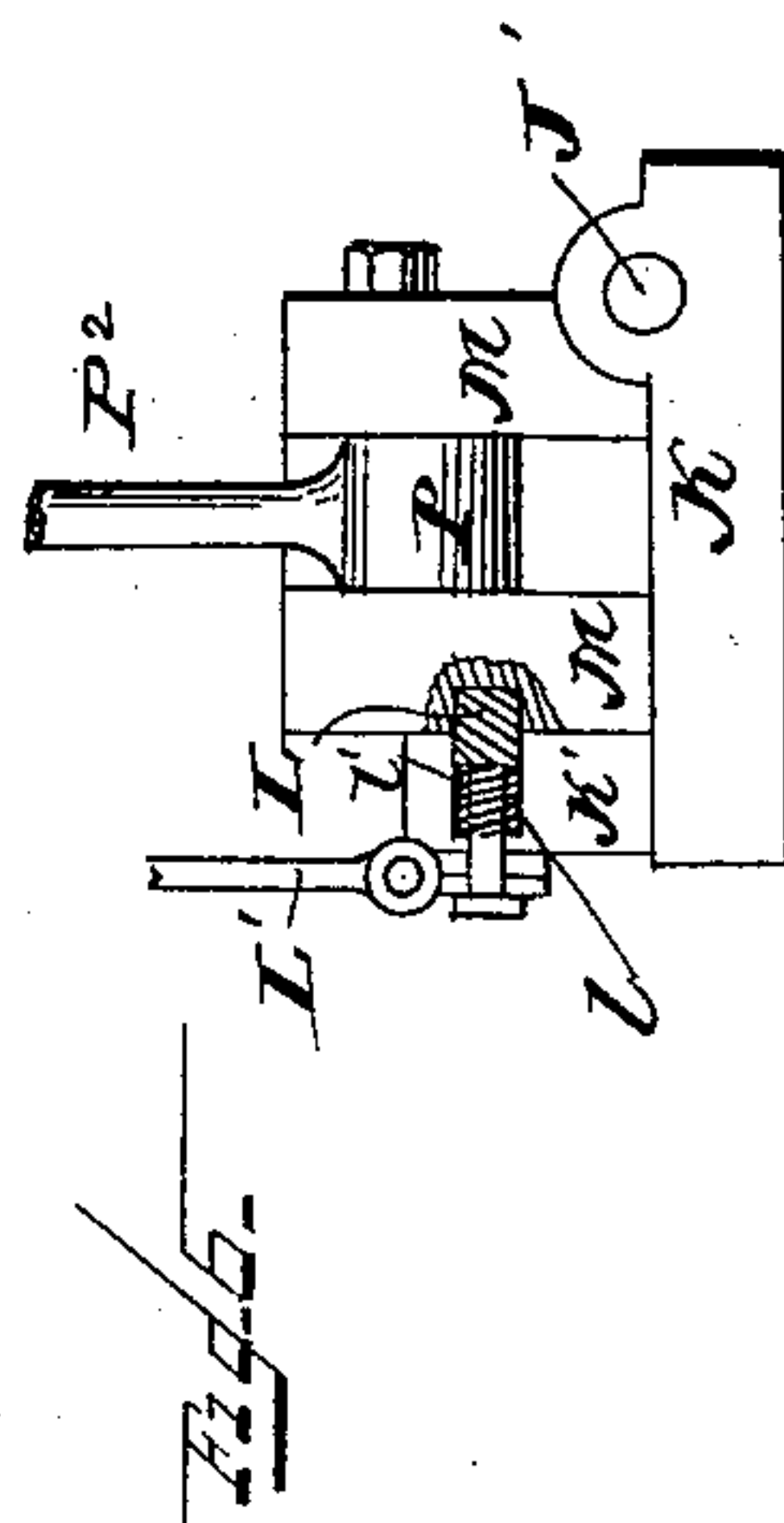
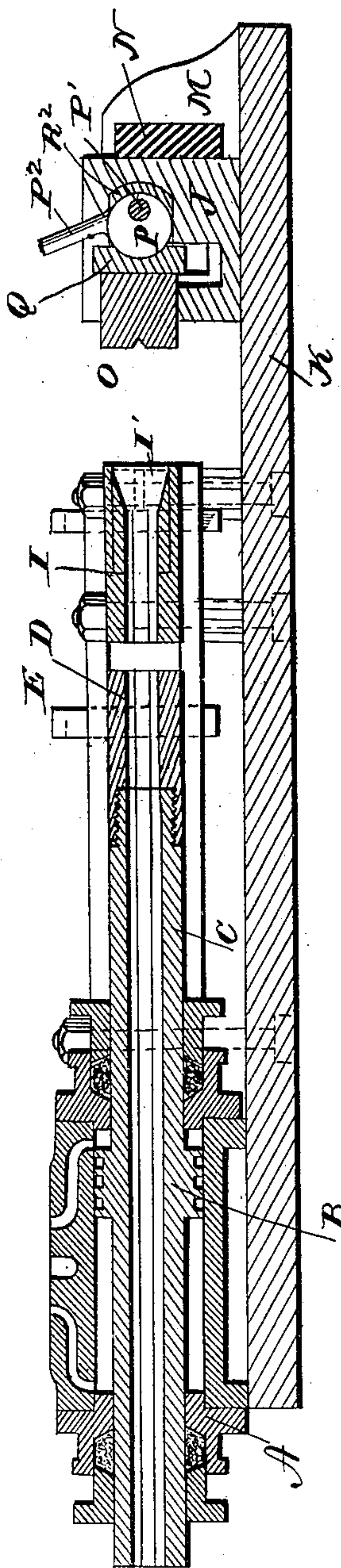
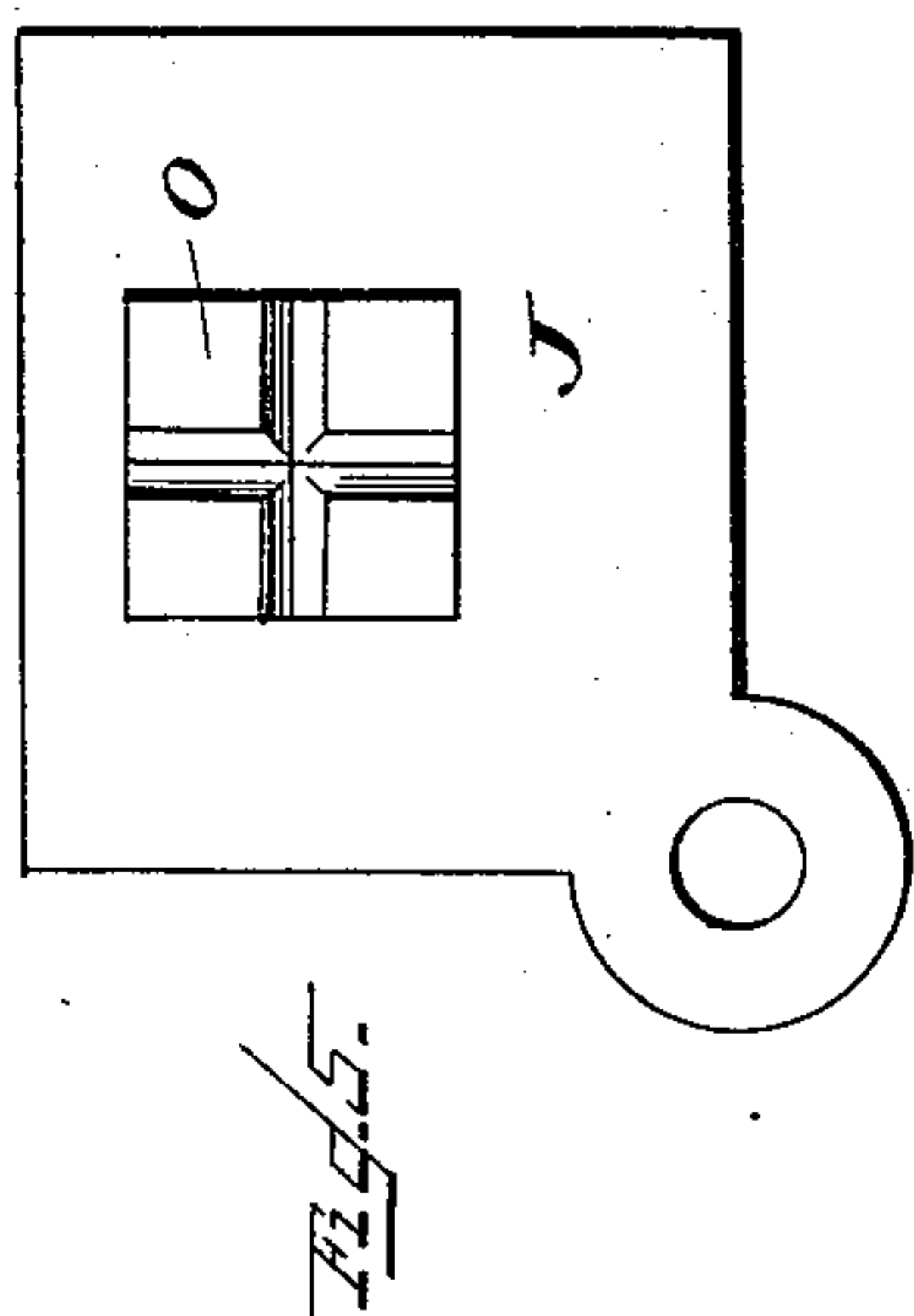
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# UNITED STATES PATENT OFFICE.

JOHN B. MAAS, OF HUMBOLDT, MICHIGAN.

## MACHINE FOR DRESSING ROCK-DRILLS.

SPECIFICATION forming part of Letters Patent No. 368,296, dated August 16, 1887.

Application filed January 27, 1887. Serial No. 225,692. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN B. MAAS, a citizen of the United States, residing at Humboldt, in the county of Marquette and State of Michigan, have invented certain new and useful Improve-  
5 ments in Rock-Drill-Dressing Machines; 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  
10 which it appertains to make and use the same.

My invention is a rock-drill-dressing machine; and it consists in the parts which will be hereinafter described, and pointed out in the claims.

15 In the accompanying drawings, Figure 1 is a top plan view, and Fig. 2 a central longitudinal sectional view. In these two views the cylinder and valve seat are shown. Fig. 3 is a front view of a cross-head provided with two  
20 steel jaws, said jaws being held in place by keys and springs. Fig. 4 is a front elevation of an interchangeable die secured in the outer block or head. Fig. 5 is a front view of the hinged block. Fig. 6 is an end view of a  
25 hinged block, the eccentric mounted therein, and a spring-actuated catch for securing the block and holding the same in position.

Like letters indicate like parts in the several views.

30 A represents the cylinder, provided with valve-seat and ports; B, the piston, and C the piston-rod. This rod is hollow and extends outward at both ends of the cylinder.

D indicates the cross-head and chuck combined, secured to one end of the piston-rod. Said cross-head is provided with two steel  
35 jaws, *d d*.

E E' are two keys for securing the jaws to the cross-head. The key E' remains station-  
40 ary, except when it is desired to remove the jaws. The other key, E, is employed to force the jaws together and hold the drill F firmly while it is being dressed. The springs G, which are seated in each jaw, respectively,  
45 serve to hold said jaws apart when the key is loosened, so as to permit the drill to be easily moved in or out.

A chuck similar to the one just described may be attached to the other end of the hollow  
50 piston-rod; but for the purpose of the applica-

tion the illustration and description of a single chuck will suffice.

H H represent guides for the cross-head D.

H' H' indicate side bars, which are continu-  
55 ations of the guides H, and may be and are shown in the drawings as integral therewith.

I represents a block or head firmly secured by bolts between the side bars, H'. Said head is provided with a longitudinal opening in  
60 alignment with the openings in the cross-head and piston-rod. This head is also provided with a removable die, I'. Said die is held in place by the key I<sup>2</sup>. The opening in said die is provided with a series of recesses, *a a*—that  
65 is to say, said opening is in the nature of a cross. The drill in cross-section is in the form of the opening in this die. Several sizes of dies are employed, each adapted to conform to the several sizes of drill.

J represents a hinged block. Said block is  
70 hinged at J' to the bed-plate K.

K' indicates a block secured to the bed-plate. The inner side of said block is provided with a recess for the reception of a  
75 spring-actuated catch, L. This catch consists of a shank provided on each end with a head, so as to form inner shoulders. A spiral spring, L', (see Fig. 6,) encircles the shank of the catch. This spring is mounted in the recess l, and in-  
80 terposed between the inner end of said recess and the inner shoulder of the catch, so as to normally engage and lock the hinged block.

L' is a handle for withdrawing the catch.

M M are two brackets rigidly secured to the bed-plate immediately back of the hinged  
85 block. The inner sides of said brackets are recessed and each provided with a rubber, N. These rubbers are to cushion the shock as the drill is driven against the die O. This die is recessed (cross-shaped) on its face, and the face  
90 of the drill, by being repeatedly forced or driven against said die, is made to assume the cross form—that is to say, when the drill is finished the cross is raised on its face. The die  
95 O is mounted and longitudinally adjustable in an opening in the hinged block J. P represents an eccentric mounted on a shaft, P'. Said eccentric is provided with a handle, P<sup>2</sup>.

Q indicates a loose steel block interposed  
100 between the eccentric and die O. Said block



is recessed on one side, so as to conform to the periphery of the eccentric.

R represents a strap or bar for connecting the eccentric with the die O. The forward end of the strap is provided with an inwardly-projecting pin, R', which engages the die O, the rear end of said strap being provided with a heel-piece, R<sup>2</sup>, which is curved so as to conform to the eccentric. Said heel-piece lies back of the eccentric. It will thus be observed that by revolving the eccentric back or forward a like movement is imparted to the die O and interposed block Q. By means of the eccentric and its immediately-connected parts the adjustment of the die O is effected. The adjustment of said die is necessary in up-setting and dressing the drill.

The operation of my invention is as follows: The hinged block J, after disengaging the pin L, is turned outward. The drill to be dressed is inserted into and through the removable die I' and through the fixed block I, and thence into the chuck or cross-head D, and into the hollow piston-rod. The drill is firmly held and secured in the chuck. When the drill, chuck, and piston-rod are thus firmly united and forced inward, the hinged block J may be turned inward and secured by catch. Then by admitting air or steam into the cylinder the piston-rod, chuck, and drill are reciprocated. The head of the drill on each outward stroke is driven against the face of the die O. The neck of the drill on the return-stroke is shaped by the die I' in the fixed block or head I. This back-stroke will impart the cross or wing shape to the drill, and at the same time reduce said drill to its proper size.

The advantages of my invention are that it will form a new drill or dress an old one quicker than the same work can be done by hand; that the steel is not injured by overheating, as is generally the case with hand-made drills; that the drill is kept true and exact in size; that there is not so much waste as in hand-made drills, and that by thus producing a true and proper shaped drill the drilling-machine will work easier and produce better results.

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

1. The combination of a hollow piston-rod provided on its outer end with a chuck, and a fixed block immediately in front of the chuck, said block and chuck being provided, respec-

tively, with an opening each in alignment with the other and both in alignment with the opening in the piston, substantially as specified.

2. The combination of a piston-rod provided on its outer end with a chuck, a fixed block provided with an opening, and a die secured in said opening, said chuck and die each being provided with an opening, the openings aforesaid in the chuck, block, and die being in alignment, substantially as described.

3. The combination of a piston-rod provided on its outer end with a chuck, said chuck consisting in a cross-head provided with spring-actuated jaws, and keys for tightening and loosening said jaws, substantially as specified.

4. The combination of a piston-rod provided on its outer end with a chuck, and a fixed block in front of said chuck, said chuck and block being each provided with an opening in alignment, the opening in the block being provided with a removable die, said die being provided with an opening in alignment with the openings in the chuck and block aforesaid, substantially as specified.

5. The combination, with the hinged block herein specified, of an adjustable die secured in said block, substantially as described.

6. The combination, with the hinged block herein specified, of an adjustable die secured in said block, and an eccentric for actuating said die, substantially as described.

7. The combination, with the hinged block herein specified, of an adjustable die secured in said block, an eccentric for actuating said die, and a bar or strap connecting said eccentric and die, substantially as described.

8. The combination, with the hinged block herein specified, of an adjustable die secured in said block, an eccentric for actuating said die, a bar or strap connecting said eccentric and die, and a block interposed between the die and eccentric, substantially as described.

9. The combination, with the hinged block herein specified, of brackets located in the rear of said block, and rubbers interposed between said block and brackets, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN B. MAAS.

Witnesses:

RUDOLPH J. MAAS,  
WILLIAM J. MAAS.