

(No Model.)

T. J. MURPHY.
ROCK DRILLING MACHINE.

No. 383,063.

Patented May 15, 1888.

Fig. 1.

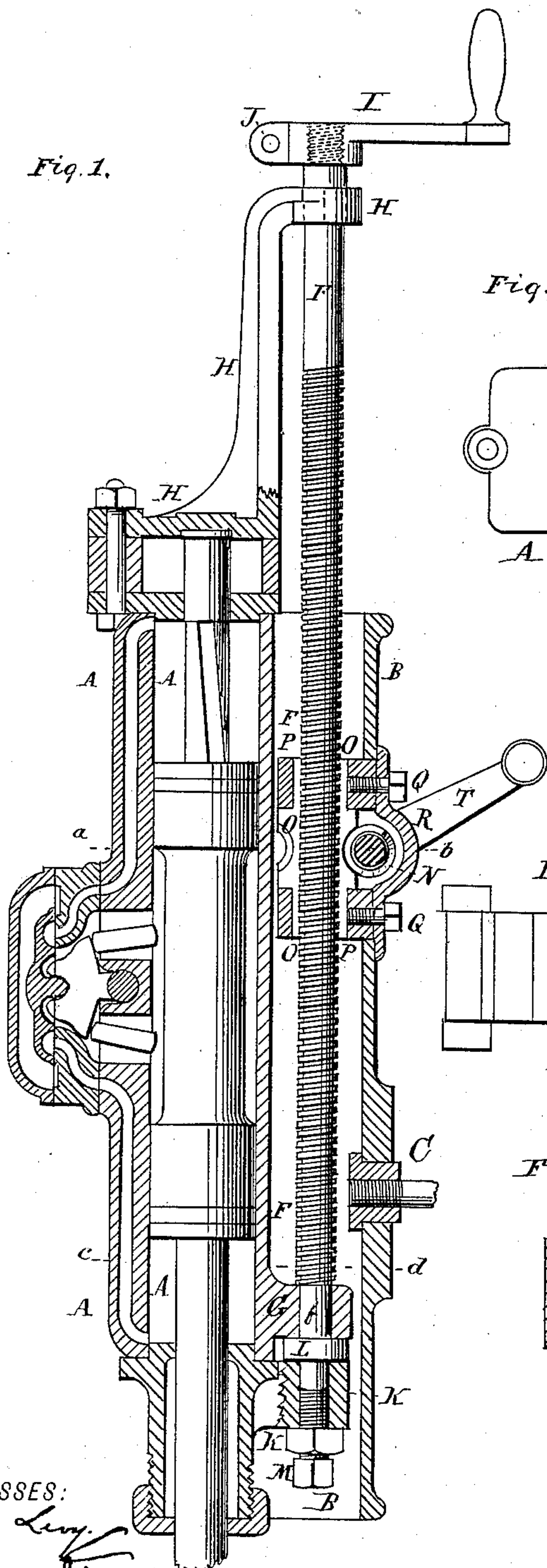


Fig. 2.

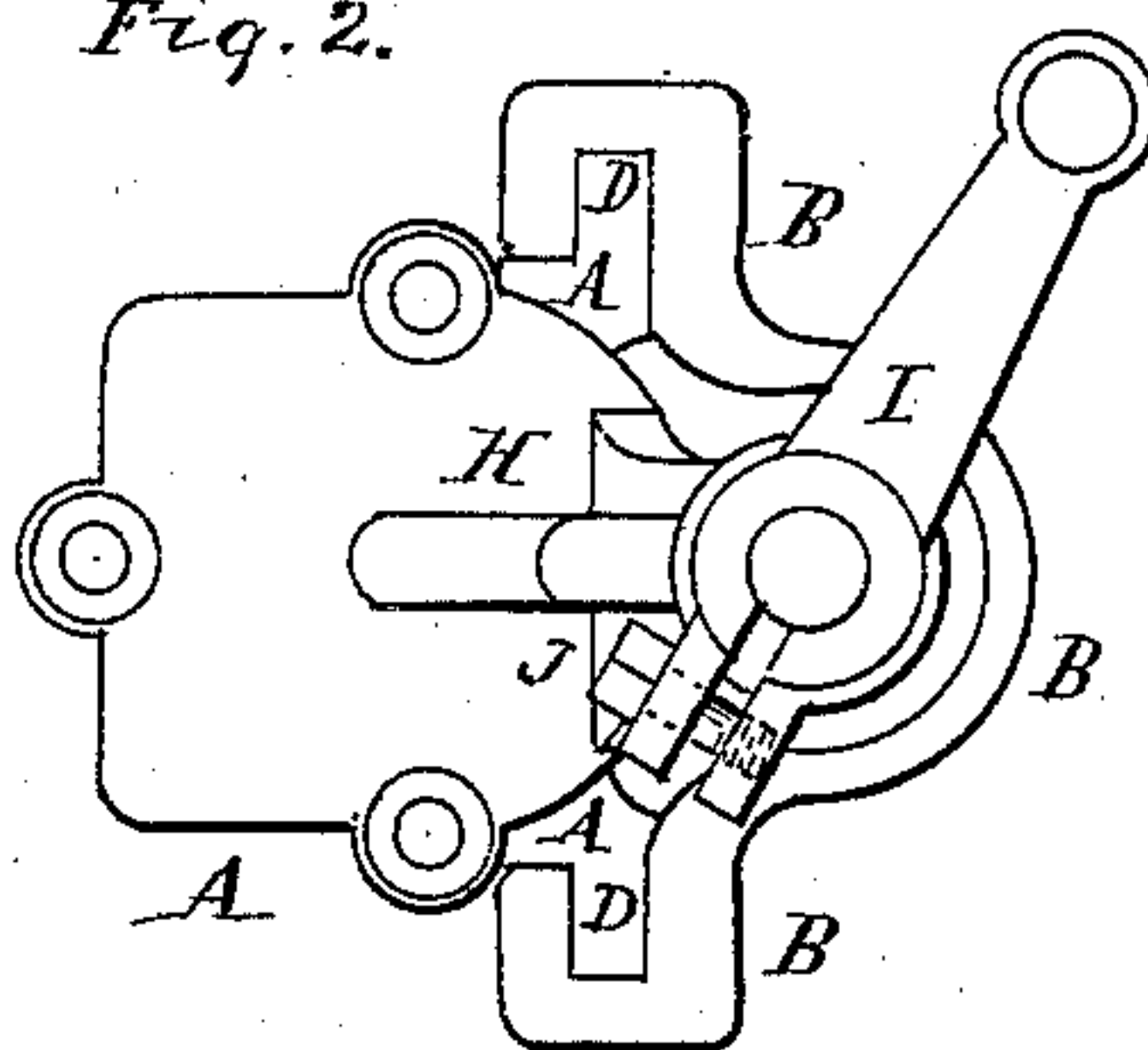


Fig. 4.

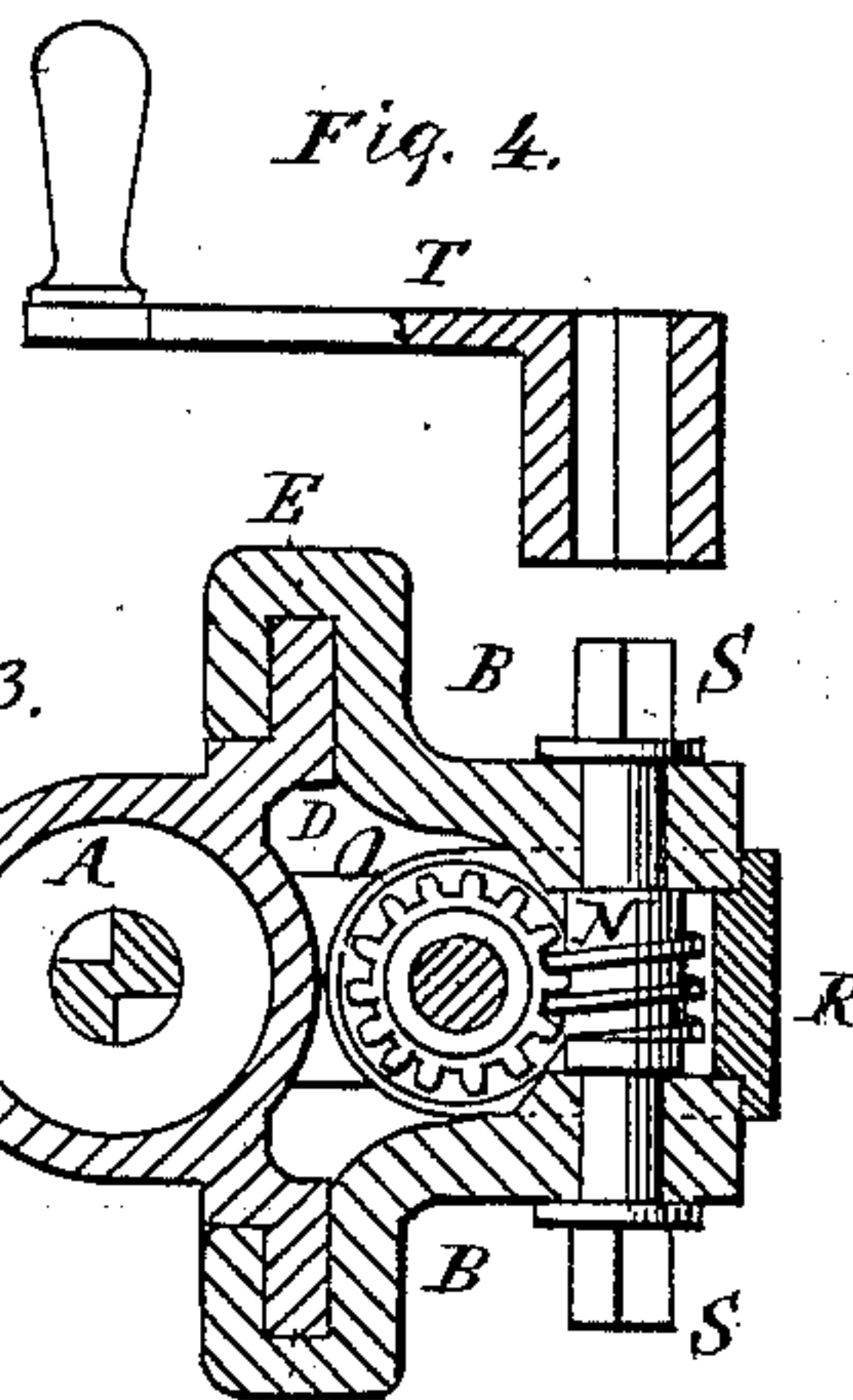


Fig. 3.

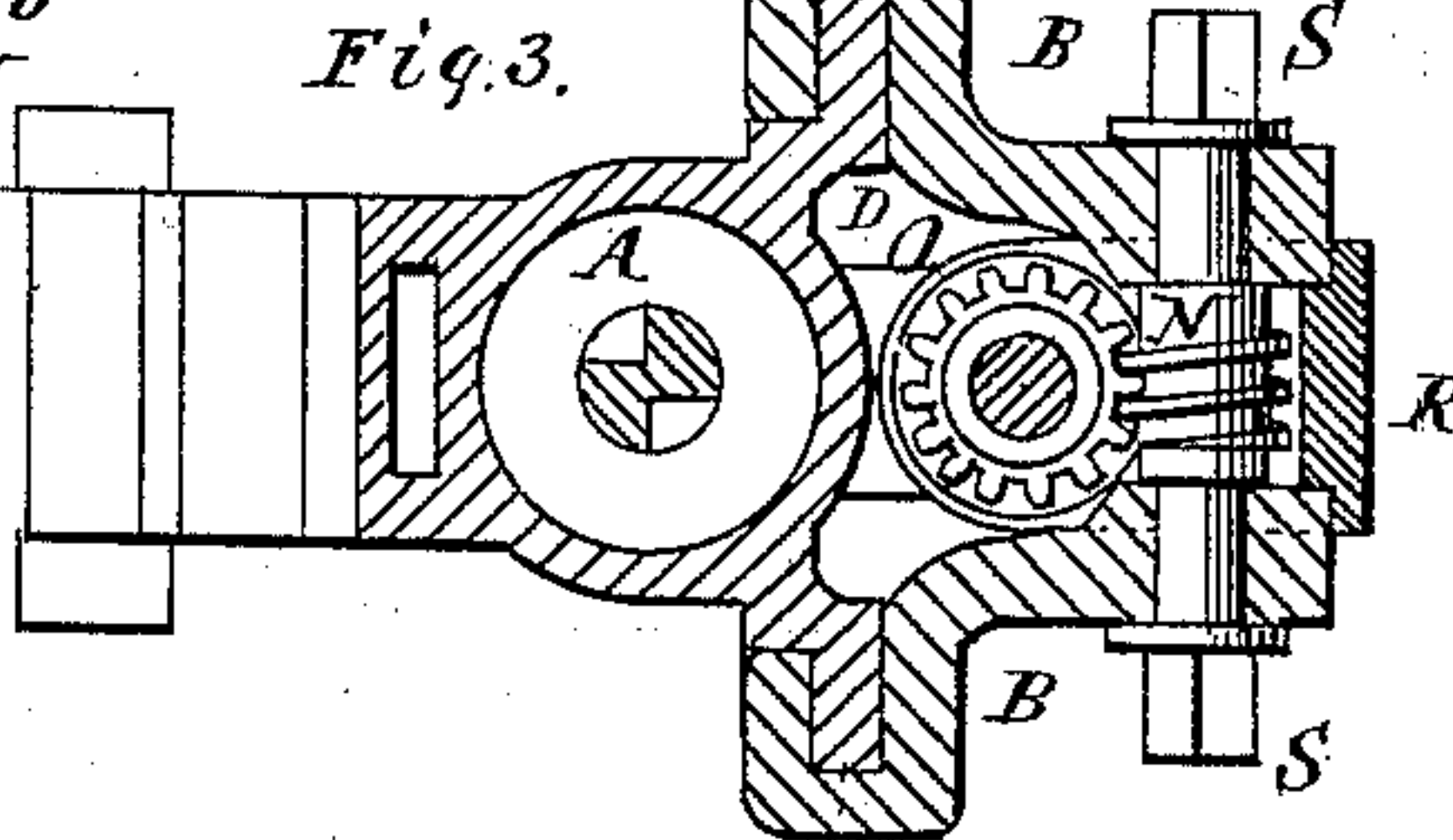
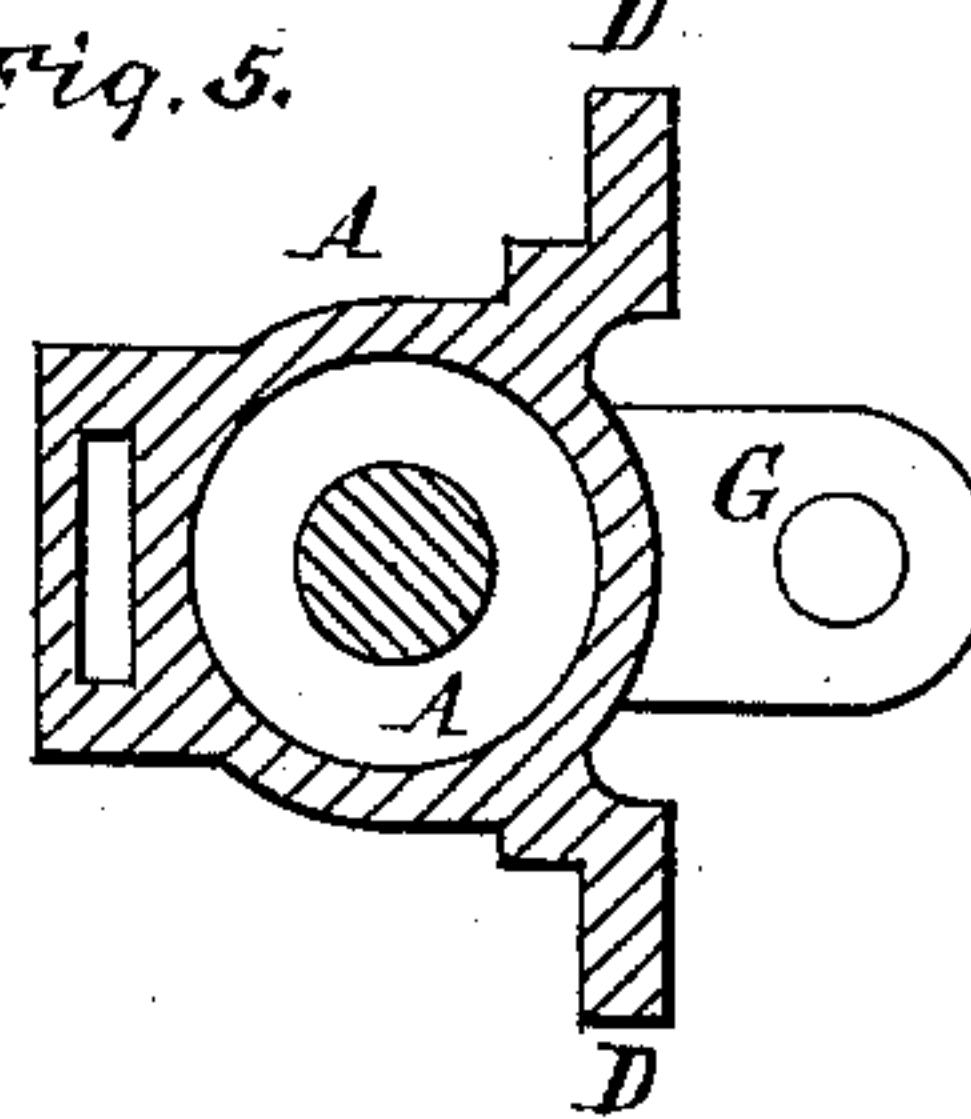


Fig. 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

THOMAS JAMES MURPHY, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO
ROGER POTTER, OF SAME PLACE.

ROCK-DRILLING MACHINE.

SPECIFICATION forming part of Letters Patent No. 383,063, dated May 15, 1888.

Application filed July 27, 1887. Serial No. 245,455. (No model.)

To all whom it may concern:

Be it known that I, THOMAS JAMES MURPHY, a citizen of the United States, and a resident of the city, county, and State of New York, have invented a new and useful Improvement in Rock-Drilling Machines, of which the following is a specification.

This invention relates, in rock-drilling machines, to improvements in the construction of the up-and-down adjusting mechanism and its details for the power-cylinder and drill-stock of the machine.

In the drawings hereto annexed, Figure 1 represents a vertical longitudinal section of the machine detached from the tripod to the same. Fig. 2 is a top view of the top of the same. Fig. 3 is a horizontal section of the machine at the line *a b* shown in Fig. 1. Fig. 4 is a detached sectional side view of the crank for operating the worm-gear of the same. Fig. 5 is a detached horizontal section of the lower portion at the line *c d* of the power-cylinder.

A represents the power-cylinder, which is furnished with the usual piston, its rod, the valve and its gear, and the steam and exhaust ports.

B represents the cylinder guide-piece, which is attached at C to the tripod of the machine, and the cylinder has the vertical guide-flanges D, which slide in the guide-grooves E of the piece B.

F is the up and down adjusting-screw for the cylinder A, which has on its bottom end a rearward-projecting eye or lug, G, for a bearing, in which said screw is guided at its lower portion, *f*. For the top end of said screw is provided a vertical guide-piece, H, which has a base bolted to the top head of the cylinder. Said screw is fitted in said guide-piece H to allow it being revolved, and its end above said piece H is threaded, and a hand-crank, I, is fitted over it, which crank has a split hub provided with opposite ears, through which a lateral screw, J, is employed for tightening and clamping the threaded end of the adjusting-screw F.

The bottom head of the cylinder has a similar opposite lug, K, to the lug G, and between both is made a space, in which the screw F is provided with a strong head or collar, L, and

the final bottom end of said screw is fitted into the top end of the lug K, which is furnished through its bottom end with a suitable strong steel set-screw, M, to bear against the end of the screw F, and thereby take part in the thrust and friction against the bottom side of the collar L. By means of the lugs K and G and the collar L the screw F and the cylinder A are more solidly and durably jointed than heretofore against the powerful jar caused from the operation of the machine. At the upper portion of the cylinder-guide B is arranged the hand adjusting-worm N, which engages the worm-gear O, which is threaded to serve as the screw-nut for the screw F, and for this purpose is fitted on both ends in the bearings P P, which are attached to the inner side of the guide B by means of the screws Q Q. Said bearings are attached to the cap R, by means of which a large opening made in the cylinder-guide B is covered. The worm N has an arbor, of which both ends pass through the opposite sides of the guide B, in which they are properly guided, and said ends project beyond said sides and have square heads S S, upon either of which the hand-crank T is readily applied with its square core in its hub, so that by turning with the hand-crank T the worm N the worm-gear or screw-nut O is turned on the screw F, and thereby the screw F, with the cylinder A and its attached parts, is moved up or down, according to the direction in which the hand-crank T is moved.

By turning the screw F the cylinder A is quickly raised or lowered for inserting or raising the drill into or out the hole drilling. By operating the worm the gradual feeding of the drill is performed with accuracy and great convenience.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a rock-drilling machine, the combination, with the power or driving cylinder and the guide for the same, of a cylinder-adjusting screw provided with smooth-faced portions or journals at or near its opposite ends, an upwardly-extending guide-arm secured at its lower portion to a head of the driving-cylinder and provided with a bearing in its upper portion to receive one journal of the ad-

justing-screw, a crank upon the screw above the guide-arm, a lug projecting from the cylinder, and in which the opposite journal of the screw operates, a set-screw or the like bearing
5 against the adjusting-screw, and a gear-wheel, worm, and crank, substantially as described.

2. In a rock-drilling machine, the combination, with the power or driving cylinder and a guide in which the cylinder operates, of a
10 cylinder-adjusting screw provided with journals at or near its opposite ends, an upwardly-extending guide-arm secured at one end to the cylinder and provided with a bearing in its opposite end, in which one journal of the screw
15 operates, a threaded portion upon the end of the screw beyond the outer journal, a hand-crank provided with a split head or hub adapted to fit over said threaded portion, a tightening-screw for said hub, a lug project-
20 ing from the cylinder, and in which the opposite portion of the adjusting-screw is journaled, and a set-screw or the like to bear upon the lower end of the cylinder-adjusting screw, sub-
stantially as described.

25 3. The combination, in a rock-drilling machine, with a driving-cylinder and a guide in which the same operates, of a cylinder-adjust-

ing screw journaled at one end in a guide-arm carried by the cylinder, and at its opposite portion in a lug projecting from the cylinder, 30 a collar or head secured to one end of the screw, a lug, and a set-screw passing through said lug and adapted to engage the collar, substantially as described.

4. The combination, in a rock-drilling ma- 35 chine, with a driving-cylinder and a guide in which the same operates, of a cylinder-adjusting screw journaled near its opposite ends in bearings carried by said cylinder, a worm-gear upon said screw and internally threaded, 40 bearings in which said gear is journaled, a cap secured to the cylinder-guide and to which said bearings are secured, a worm journaled in the cylinder-guide and provided with projecting ends, and a crank to operate the worm, 45 substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 15th day of April, 1887.

THOMAS JAMES MURPHY.

Witnesses:

JOHN J. HAROLD,
ROGER POTTER.