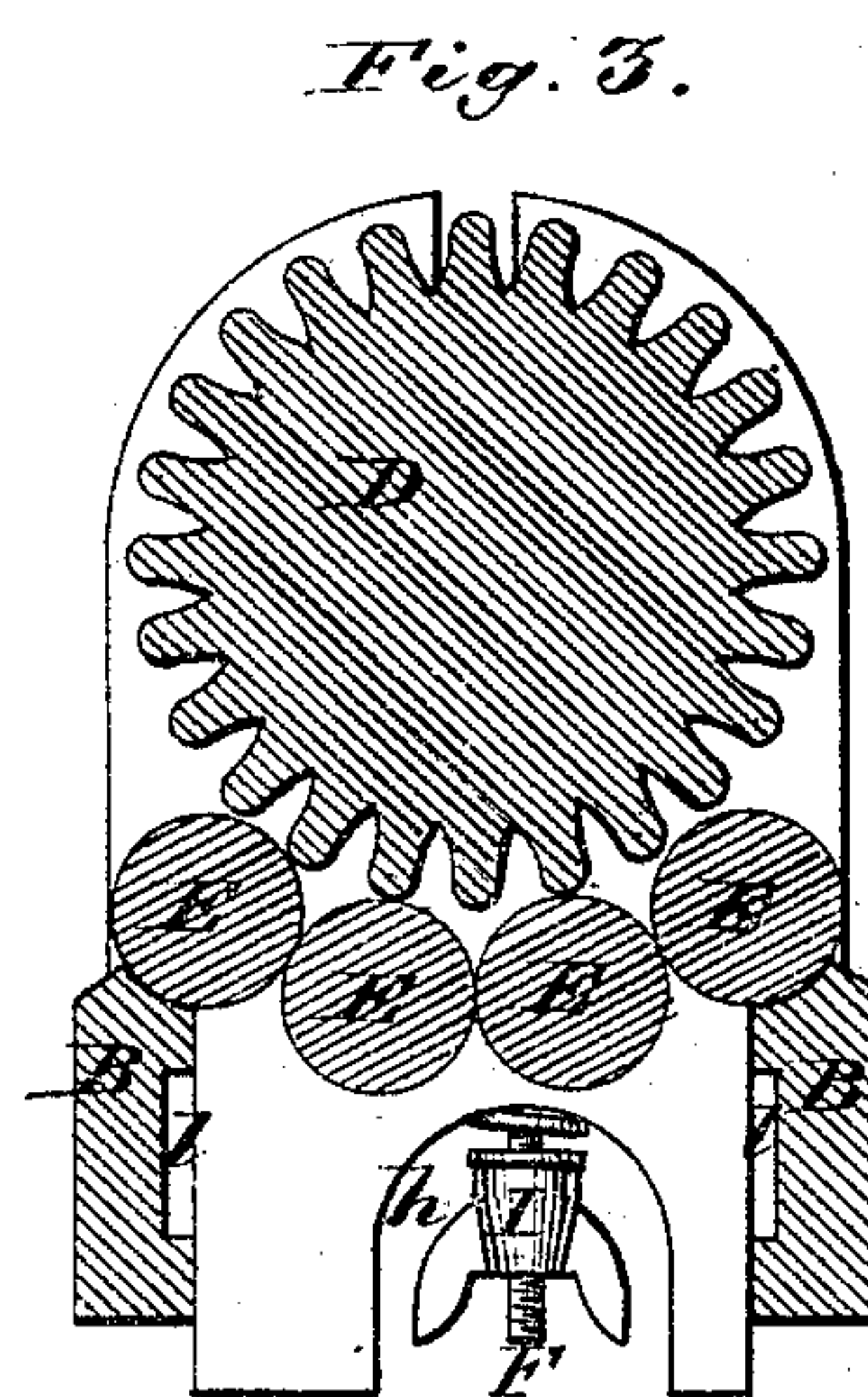
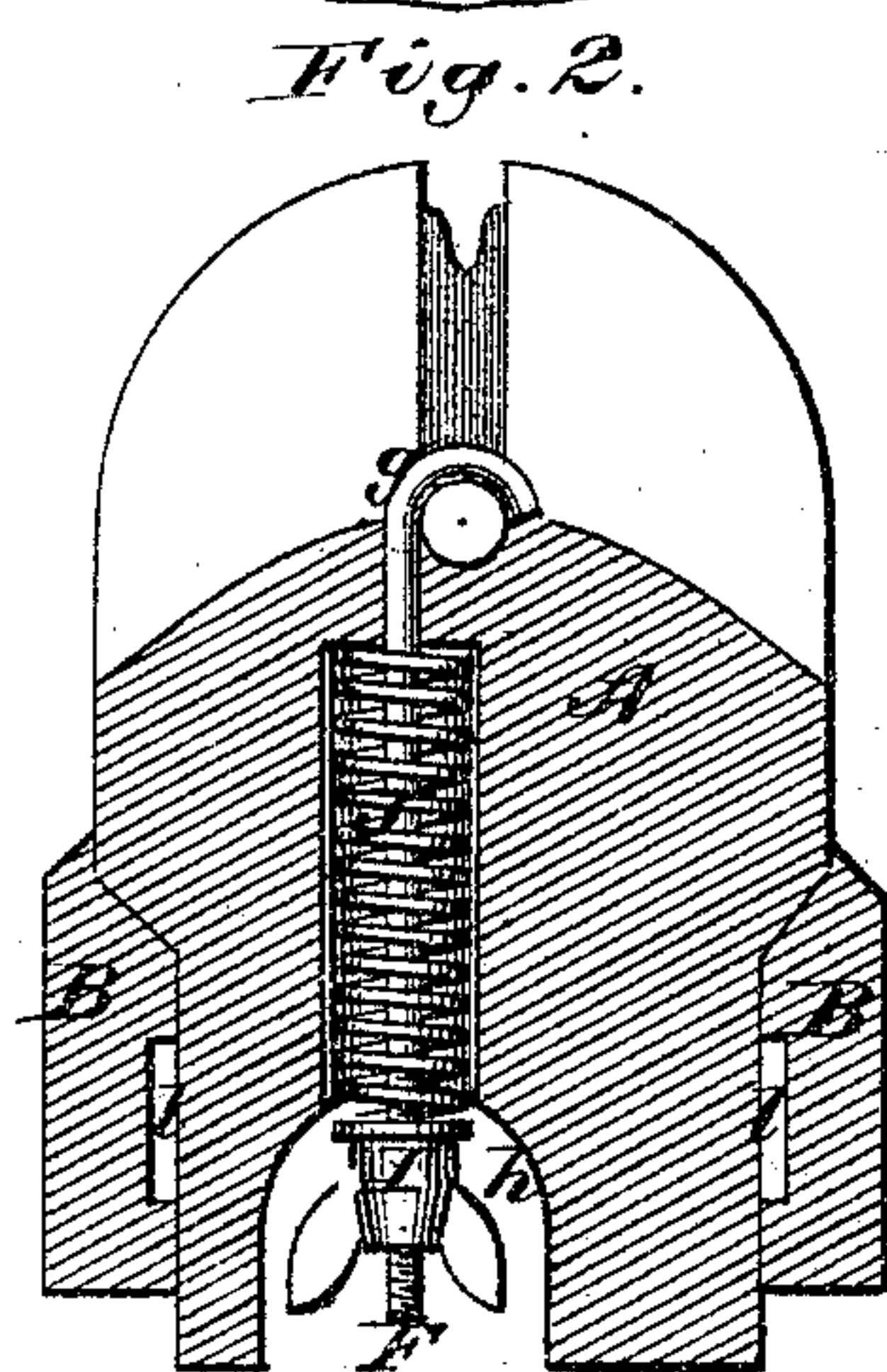
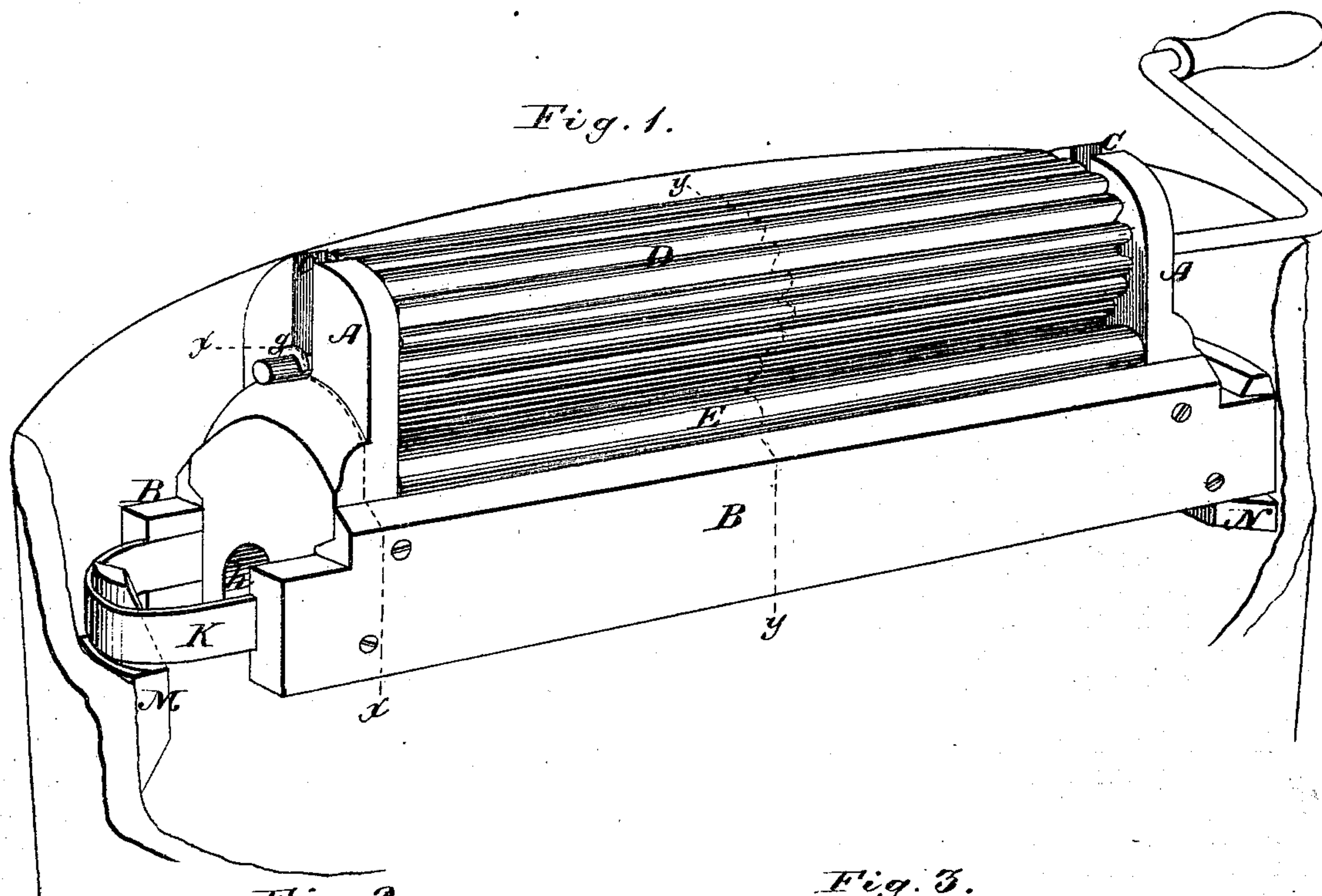


DANIEL W. NORRIS.

Improvement in Washing Machines.

No. 123,041.

Patented Jan. 23, 1872.



Witnesses.
J. F. Brown.
H. J. Ellsworth.

Inventor:
Daniel W. Norris
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UNITED STATES PATENT OFFICE.

DANIEL W. NORRIS, OF NORMAL, ILLINOIS, ASSIGNOR TO MICHAEL NEILL
OF SAME PLACE.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. 123,041, dated January 23, 1872.

To all whom it may concern:

Be it known that I, DANIEL W. NORRIS, of Normal, in the county of McLean and State of Illinois, have invented certain new and useful Improvements in Washing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a perspective view of my improved machine applied to a tub, the latter being partly broken away. Fig. 2 is a transverse section of the same in the line *x x*, Fig. 1; and Fig. 3 is a transverse section in the line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts in the several figures of the drawing.

My invention has for its object to improve the construction and operation of that class of washing-machines which is applicable to an ordinary wash-tub, for the purpose of supplying a better and cheaper machine to the public. To this end, the invention consists, first, in constructing the frame of the machine in such a manner as to afford strong and durable bearings for the journals of the washing-rollers, and to prevent the clothes from being torn or otherwise injured during the operation of washing, by contact with such journals or with the devices by which the upper pressing-roller is held and adjusted in its bearings. A further advantage resulting from my improved frame consists in preventing the dirty water expressed from the clothes from again coming in contact with the latter before flowing into the tub. In machines of this class, as heretofore constructed, the bottom of the frame directs the dirty water back upon the clothes before they fall into the tub, thereby retarding the process of cleansing. In my frame the whole bottom is left open, so that the dirty water shall fall directly into the tub as fast as it is pressed out of the clothes. The invention further consists in the means employed for adjusting the pressure of the upper roller, and in the adaptation of such means to permit the removal of the roller, when desired. The invention further consists in making the frame of a washing-machine of this class adjustable to fit tubs of different sizes.

In the accompanying drawing, A are the ends, secured together by the side pieces B, so as to form an oblong or rectangular frame. The end pieces are each formed with a shoulder upon their outer faces, extending above the side pieces to the lower end of the vertical slots *c*, which receive the journals of the large corrugated pressing-roller D, one of which is provided with the operating-crank, as shown. E are the lower rollers, formed with smooth surfaces and arranged in the arc of a circle between the ends of the frame, the outer ones extending to or a little over the side pieces B. By constructing the frame in this manner to receive the rollers the whole bottom is left open, so that the dirty water expressed from the clothes between the upper and lower rollers shall flow directly into the tub without obstruction. F are bolts or rods, passing vertically through the thickest part of the end pieces, and formed with a hook, *g*, at their upper ends to catch over the journals of the large roller D outside the slotted portion of the end pieces. The lower ends of the hook-rods terminate in a recess, *h*, in the ends B, and are threaded to receive a thumb-nut, I, also located within the recess, so as to bear against the lower ends of spiral or other springs J, which are let into sockets in the end pieces and surround the hook-rods. By operating the nuts the tension of the springs is regulated to adjust the yielding pressure of the roller D upon the clothes being washed. When it becomes desirable to remove the roller D from its bearings for any purpose, the nuts I are screwed down upon the rods until they reach the ends thereof, where they may be arrested by small heads formed upon the rods by hammering after the nuts have been applied. By continuing to turn the nuts, and, at the same time, pushing the rods upward to compress the springs, the hooks *g* are lifted and turned to one side, thereby releasing the journals of the upper roller, so that the latter can be readily removed from its bearings. K is a metal loop, whose sides fit with close contact within grooves *l* formed in the proximate faces of the side pieces B. The loop may be made slightly elastic, if desired, so that when its sides are compressed and inserted in the grooves they will hold the loop in place by expansion. In

applying the machine to a wash-tub this loop is fitted over a short stud, M, affixed to the inside of the tub, and the opposite projecting ends of the frame are inserted in a bracket, N, attached to the opposite side of the tub, as shown in Fig. 1. By moving the loop K out or in within the groove *l* the frame is lengthened or shortened to accommodate tubs of different sizes, as will be readily understood. The clothes are prevented from being torn or otherwise injured by contact with the journals of the rollers and the nuts I by the side pieces and the inclosing sides of the recesses *h*.

Having thus described my invention, what I claim is—

1. The frame of the washing-machine, con-

structed with the slotted recessed ends A and grooved side pieces B, substantially as described, for the purpose specified.

2. In combination with the recessed ends A and the journals of the roller D, I claim the hook-rods F, springs J, and thumb-nuts I, arranged to operate substantially as described, for the purposes specified.

3. A washing-machine, having its frame adjustable by means of the loop K or its equivalent, to adapt it to tubs of different sizes, substantially as described.

DANIEL W. NORRIS.

Witnesses:

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