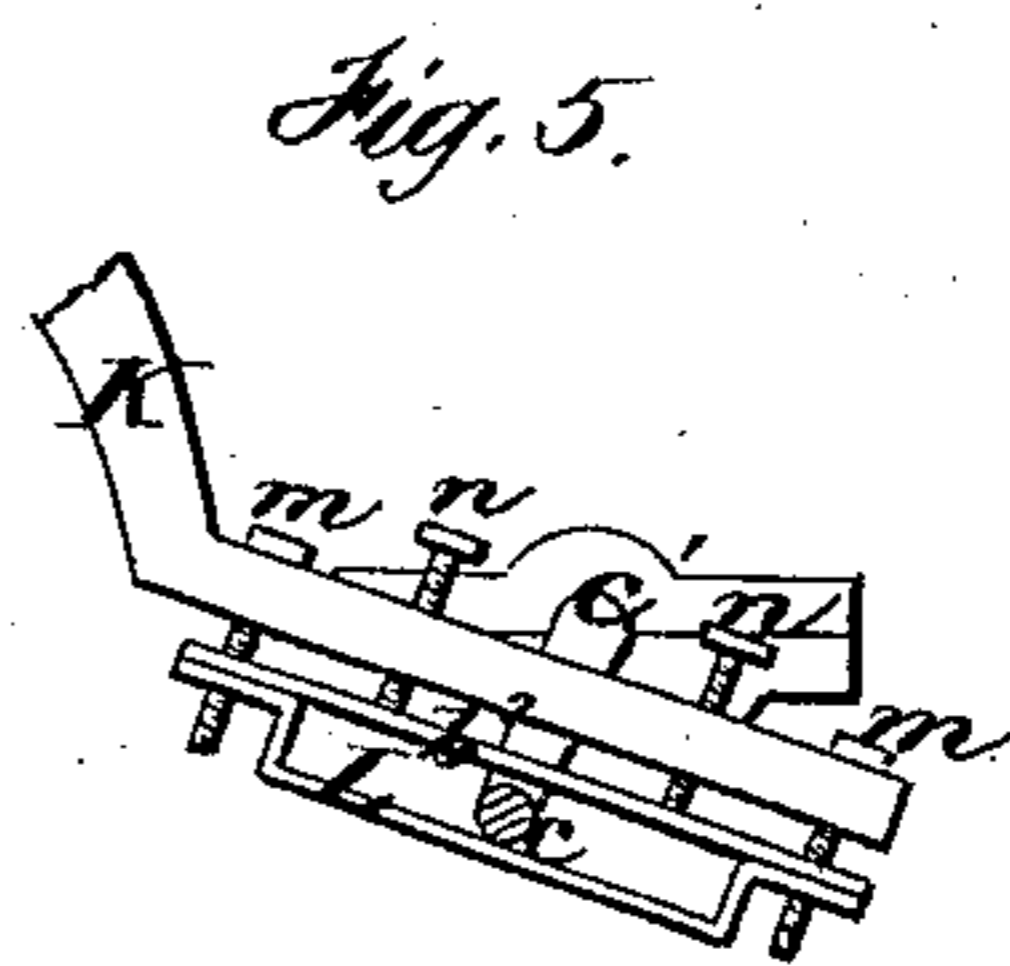
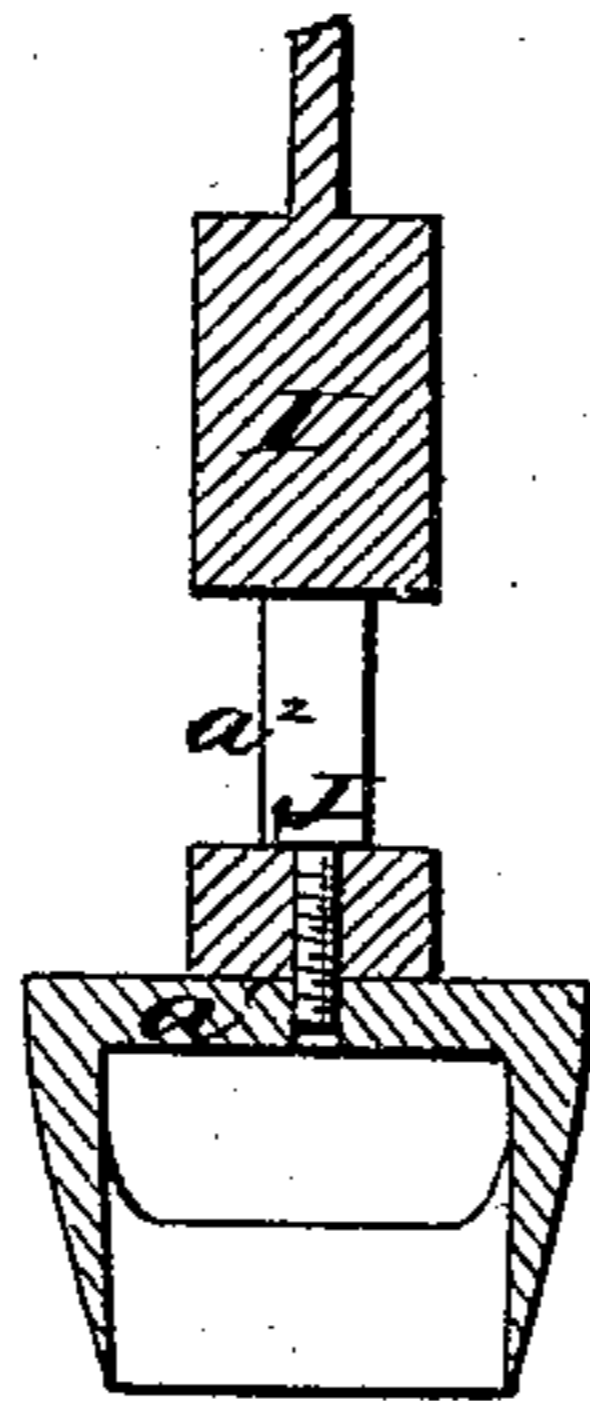
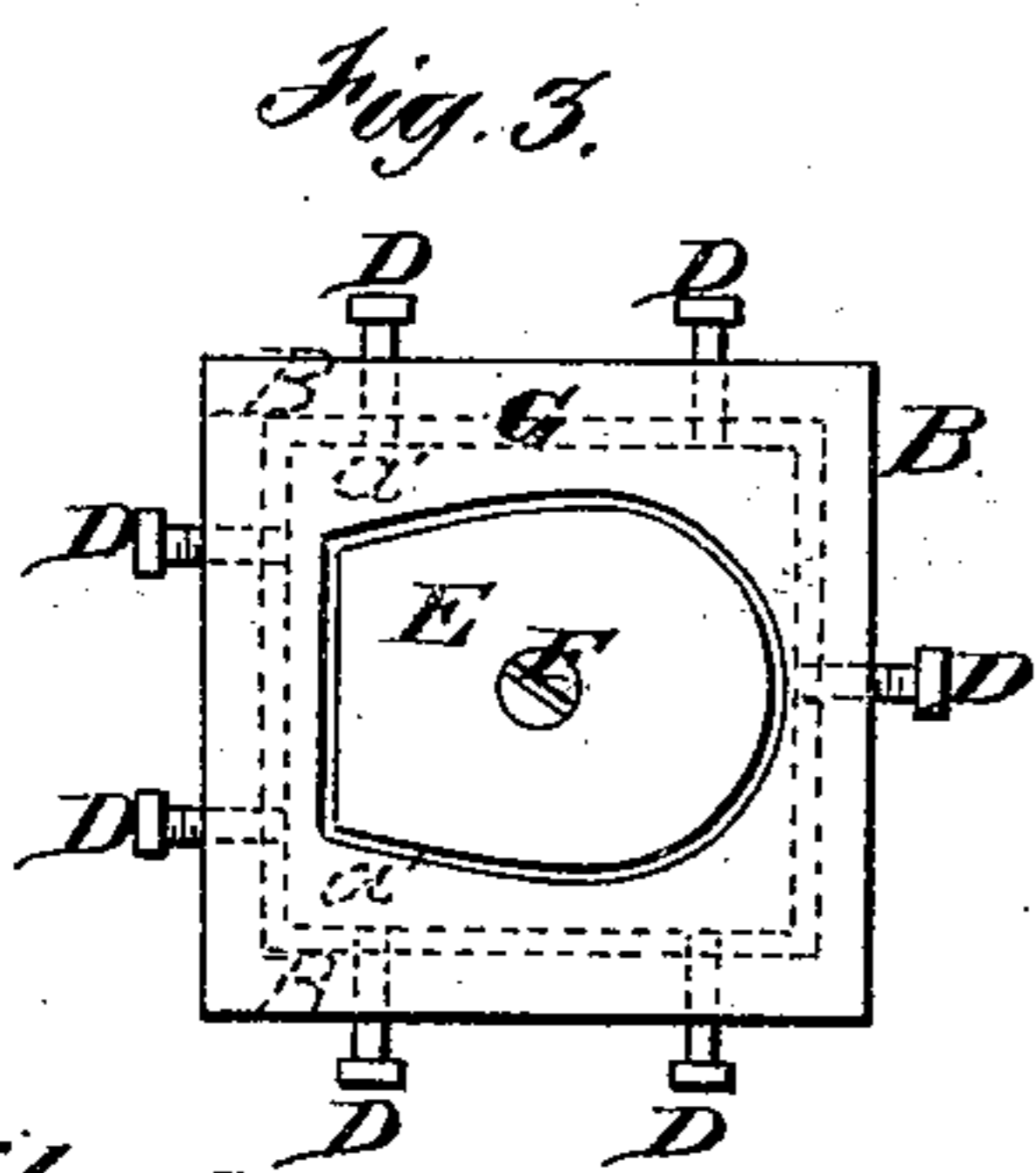
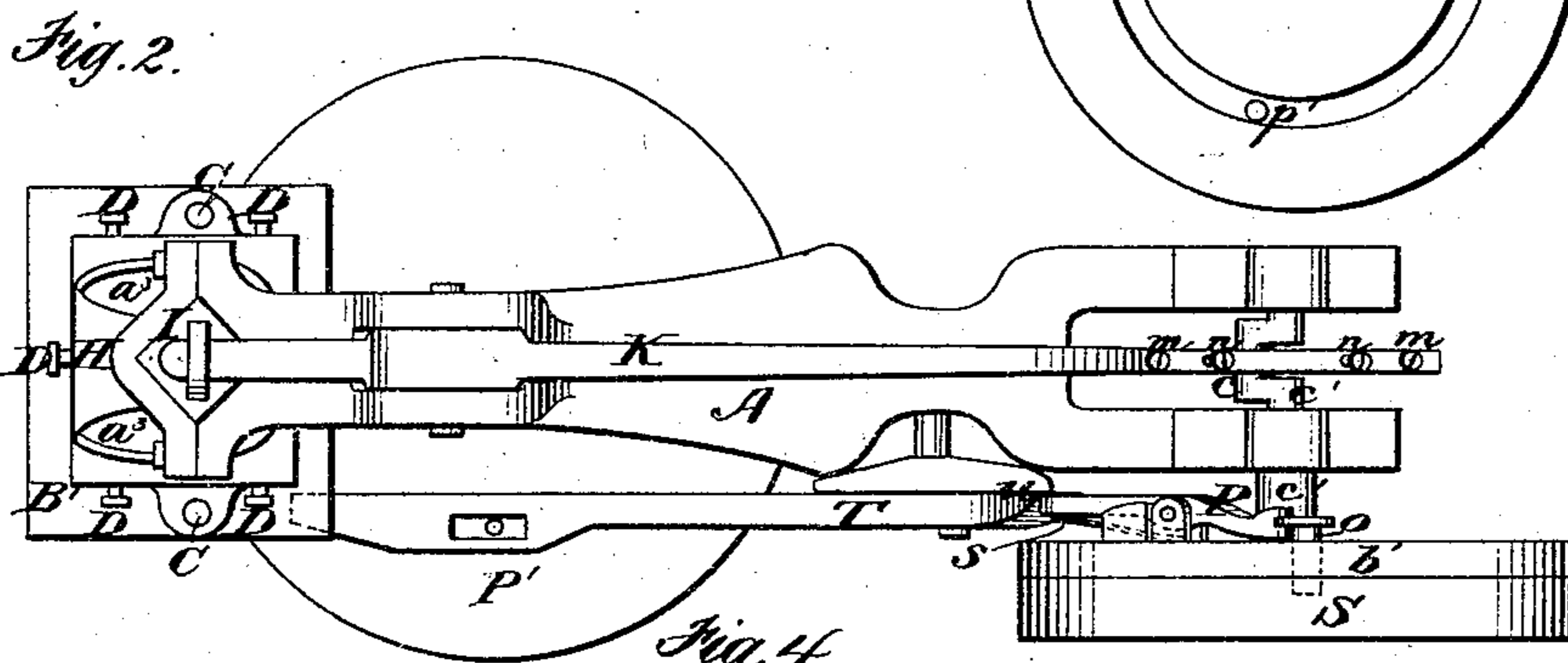
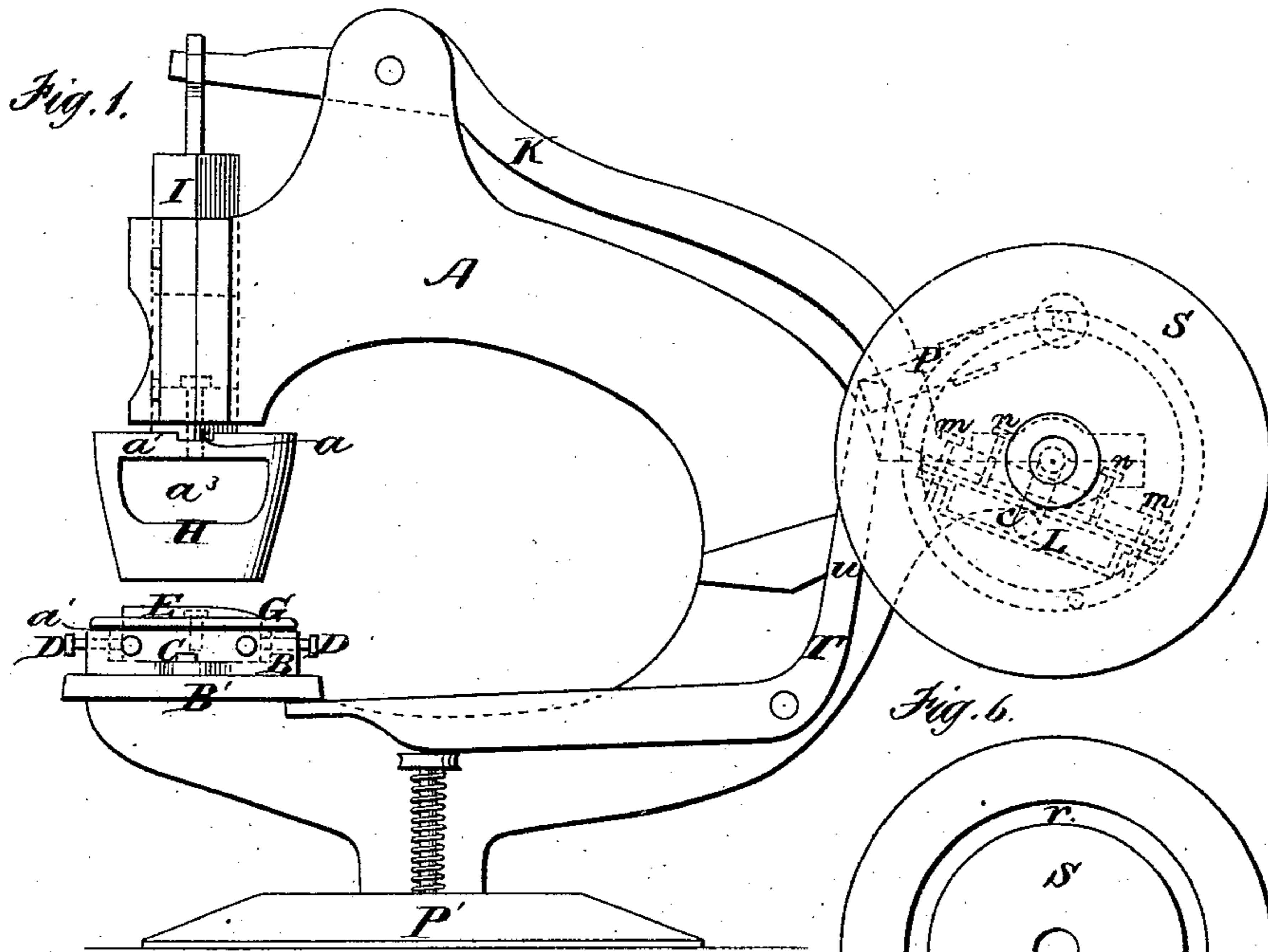


E. FISHER.
Heel Cutting-Machinery.

No. 153,556.

Patented July 28, 1874.



Witnesses.
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UNITED STATES PATENT OFFICE

EDWIN FISHER, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN HEEL-CUTTING MACHINERY.

Specification forming part of Letters Patent No. **153,556**, dated July 28, 1874; application filed June 20, 1874.

To all whom it may concern:

Be it known that I, EDWIN FISHER, of the city and county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Machines for Cutting Out Heel-Lifts for Boots and Shoes; and I do hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 is a side elevation, and Fig. 2 a top view, of my improved machine. Figs. 3, 4, 5, and 6 are detached views of parts in detail.

Similar letters of reference in the accompanying drawings denote the same parts.

My invention relates to improvements in machines for cutting out heel-lifts; and it consists, first, in the employment of a hollow die or cutter, provided with side openings for cutting out the heel-lifts, in combination with an adjustable binder and block, the construction and operation of which is hereinafter more fully set forth, the lifts after being cut passing up partly through the die, and out through the side openings made in it into a receptacle arranged in a convenient manner, the hollow form of the die permitting the ready vertical adjustment of the binder and block. My invention further consists in the employment of a block and binder for the heel-lifts, which are vertically adjustable in the hollow die. My invention further consists in attaching the plunger to the die by means of a screw-bolt, the lower face of the plunger being provided with a projection which engages with the upper face of the die to prevent it from turning. My invention also consists in applying an adjustable yoke to the rear end of the die-lever by means of which the descent or cut of the die may be varied and regulated at pleasure. My invention further consists in the employment of certain devices, hereinafter more fully set forth, by means of which an intermittent motion is given to the die.

In the accompanying drawings, A is the curved frame of the machine, resting on the base-plate P'. B is an iron box fastened to the bed B' of the machine by the screws C C passing through holes in lugs attached to the bottom of the box, and projecting beyond its

sides. a^1 is a block of iron, somewhat smaller than the cross-section of the box, which is inserted in the latter, and which can be adjusted vertically by means of the screw F, and secured in its adjusted position by means of the set-screws D D passing through the sides of the box B, and bearing against the block a^1 . On the top of the box is doweled, or otherwise removably attached, a leather binder, E, of the form of a boot or shoe heel, the whole being securely fastened in the box B, by the screw F passing through the center of the box and block. G is a plate of iron or rawhide, its central portion being cut, as shown, which is secured on the top of the box B after the block a^1 and die H have been properly adjusted. Between the plate G and leather binder E is an opening, which is filled at the commencement of the operation by the fiber from the flesh side of the leather, after which the opening is kept filled by the action of the machine. H is a hollow die or cutter, provided with openings $a^3 a^3$ at its sides for the escape of the heel-lifts after they have been cut by the die, which pass up through the die, each lift as it is cut forcing up those above it until they are discharged through the openings $a^3 a^3$ in said die into a receptacle, which may be conveniently arranged near to or attached to the machine. Dies thus formed are less expensive than those of the ordinary construction, and permit the adjustment of the block a^1 and binder E. I is the plunger, provided on its front side with an opening, a^2 , to allow the insertion of a screw-bolt, J, which passes through a screw-threaded orifice in the base of the plunger, and thence through the upper plate a^1 of the die, thus attaching the plunger to the die. On the lower face of the plunger is a projection, a , which fits over the upper plate, a^1 , of the die, thus preventing the latter from turning. To the upper end of the plunger I is articulated the die-lever K fulcrumed in lugs attached to the upper part of the curved frame A. To vary the descent or cut of the die H, I arrange on the rear end of the die-lever K, a rectangular yoke, L, connected to said lever by the screws $m m$, which pass through the rear end of the die-lever, and through lugs on the sides of the yoke $n n$ are screws, which also pass through the rear end

of the die-lever, and bear upon the top plate, b'' , of the yoke L. The yoke L surrounds the crank c of the axle c' , to which the power is applied, and by means of the construction described it will be seen that, by unscrewing the screws $m m$, and screwing up the screws $n n$ bearing upon the top plate, b' , of the yoke L, the end of the lever K will be raised relatively to the crank c to produce a deeper cut of the die. S is loose pulley hung on the axle c' , to which the power is applied. The wheel S is provided with an annular groove, r , in which is situated a projection or pin, p' . b' is a wheel fast to the axle c' , and turning with it, in contact with the loose pulley S, and provided on its outer face with a pin, o , which moves in the annular ring or groove r in the loose pulley, and is moved in and out of its seat in a perforation in the wheel b' by a lever, P, fulcrumed in ears attached to the inner face of the wheel b' . S is a spring under the outer end of the lever P, the function of which is to press the pin o into the annular groove r in the pulley S. T is a lever having its fulcrum in a stud projecting from the side of the curved frame A. The rear end of the lever is bent upwardly, as seen at u , to come in contact with the outer end of the lever P in the revolution of the wheel b' , thus throwing the pin o out of the annular groove r , and allowing the pulley S to revolve without carrying the wheel b' until the lever P has passed the bent end u of the lever T, when the pin o again falls in the annular groove r , and comes in contact with the projection p' in said groove, when both wheels revolve together. By this construction it will be seen that an intermittent motion is given the die, to allow sufficient time for the introduction of the leather from which the heel-lifts are cut. A treadle is attached to the outer end of the lever T, by means of which the bent end u of the lever may be thrown up, so as not to engage with the lever P on the wheel b' in the revolution of the latter.

The operation of the machine is as follows: The leather is placed between the die H and the binder E. The latter having been adjusted, the operator then places his foot upon

the treadle, drawing down the front end of the lever T, disconnecting the levers T and P; the spring s throws the pin o into the annular groove r , and the die will descend, cutting the leather as the operator desires.

I claim as my invention—

1. In a machine for cutting heel-lifts, the hollow die H attached to the plunger I, and provided with side openings $a^3 a^3$ for the discharge of the heel-lifts, in combination with the block a^1 and binder E, vertically adjustable in the hollow die H, substantially as described, and for the purposes set forth.

2. The block a^1 and leather binder E attached thereto, in combination with the box B and screws F and D D by means of which the block and binder may be vertically adjusted, and secured after adjustment, substantially as described, and for the purpose set forth.

3. The plunger I, provided with an opening, a^2 , in its side for the insertion of a screw-threaded bolt, and a projection, a , in its base, in combination with the die H, by means of which the die and plunger are securely attached, and the former prevented from turning, as described.

4. The yoke L and crank c' , in combination with the lever K and screws $m m n n$, to regulate the descent or cut of the die, substantially as described, and for the purposes set forth.

5. The loose pulley S, provided with the annular groove r and pin p' , and wheel b' , having lever P, pin o , and spring s , in combination with the lever T to cause an intermittent motion to be given to the die, substantially as described, and for the purpose set forth.

6. The adjustable block a^1 and the leather binder E, in combination with the hollow die H and recessed plunger I, lever K, adjustable yoke L, pulleys S b' , levers T P, and pins $o p'$, the whole arranged, constructed, and operated in the manner and for the purpose set forth.

EDWIN FISHER.

Witnesses:

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