

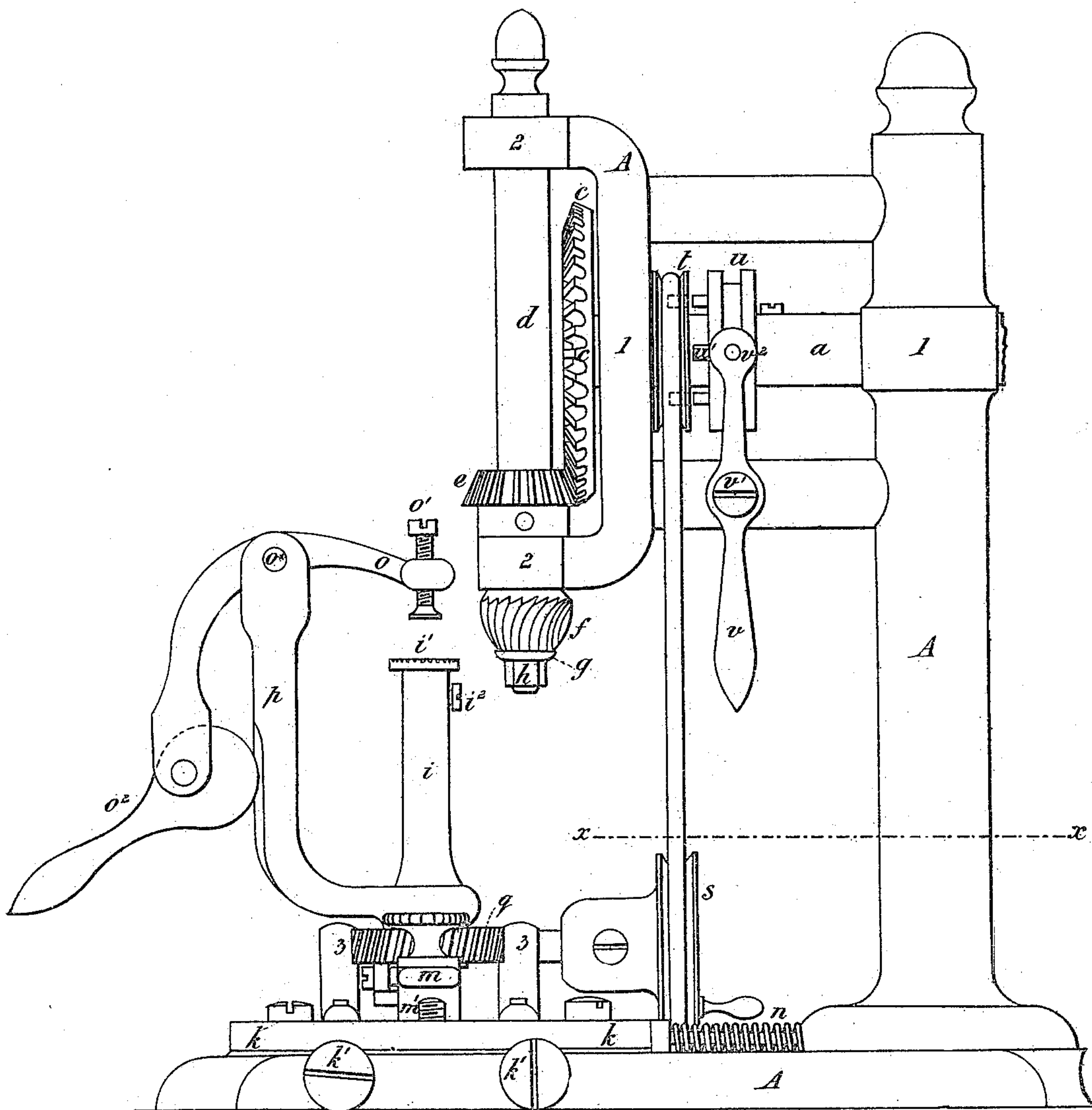
W. JACKSON.

MACHINE FOR TRIMMING THE SOLES AND HEELS OF BOOTS
AND SHOES.

No. 172,444.

Patented Jan. 18. 1876.

Fig. 1.



Attest
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Inventor
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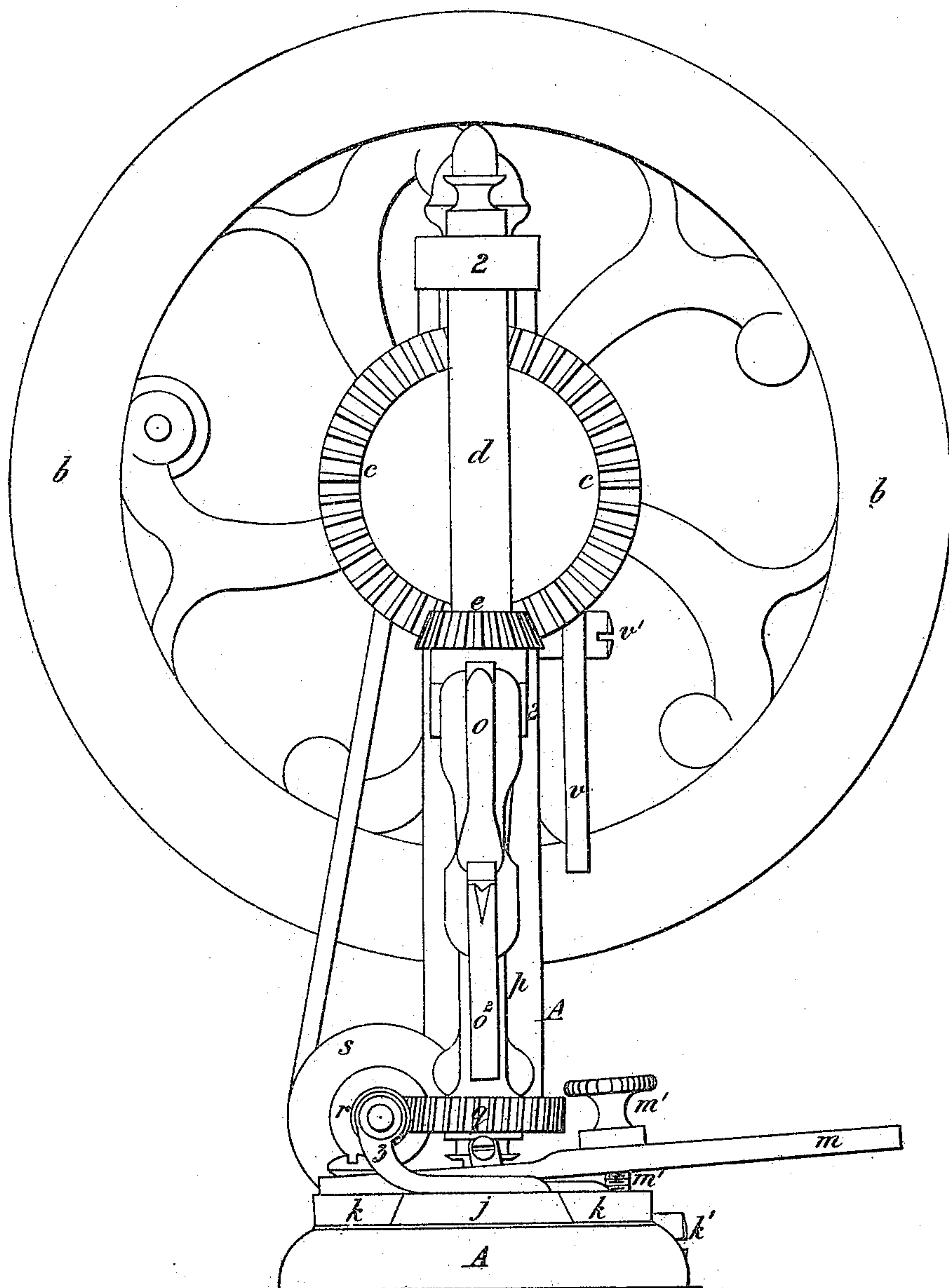
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Fig. 2.



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Fig. 3.

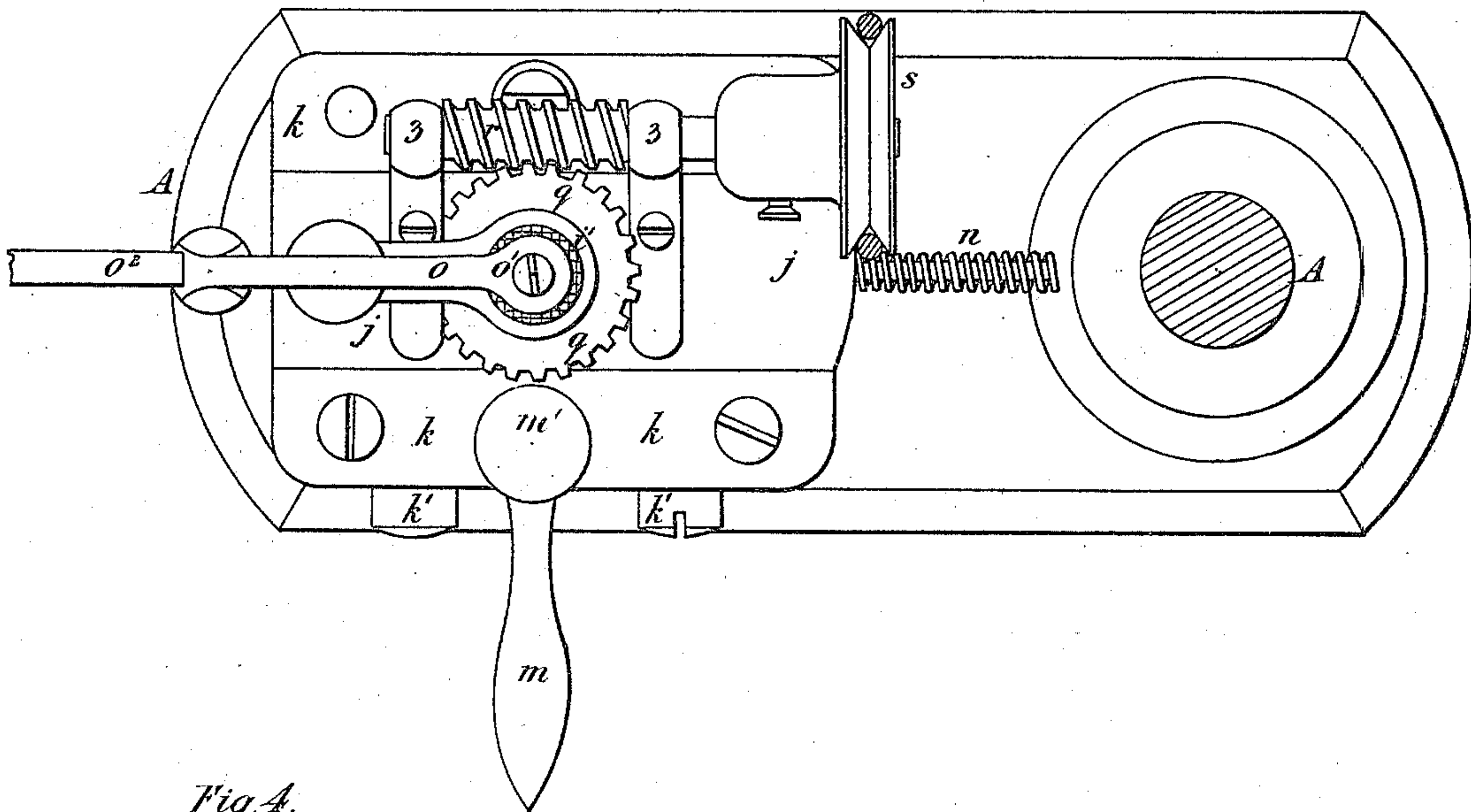


Fig. 4.

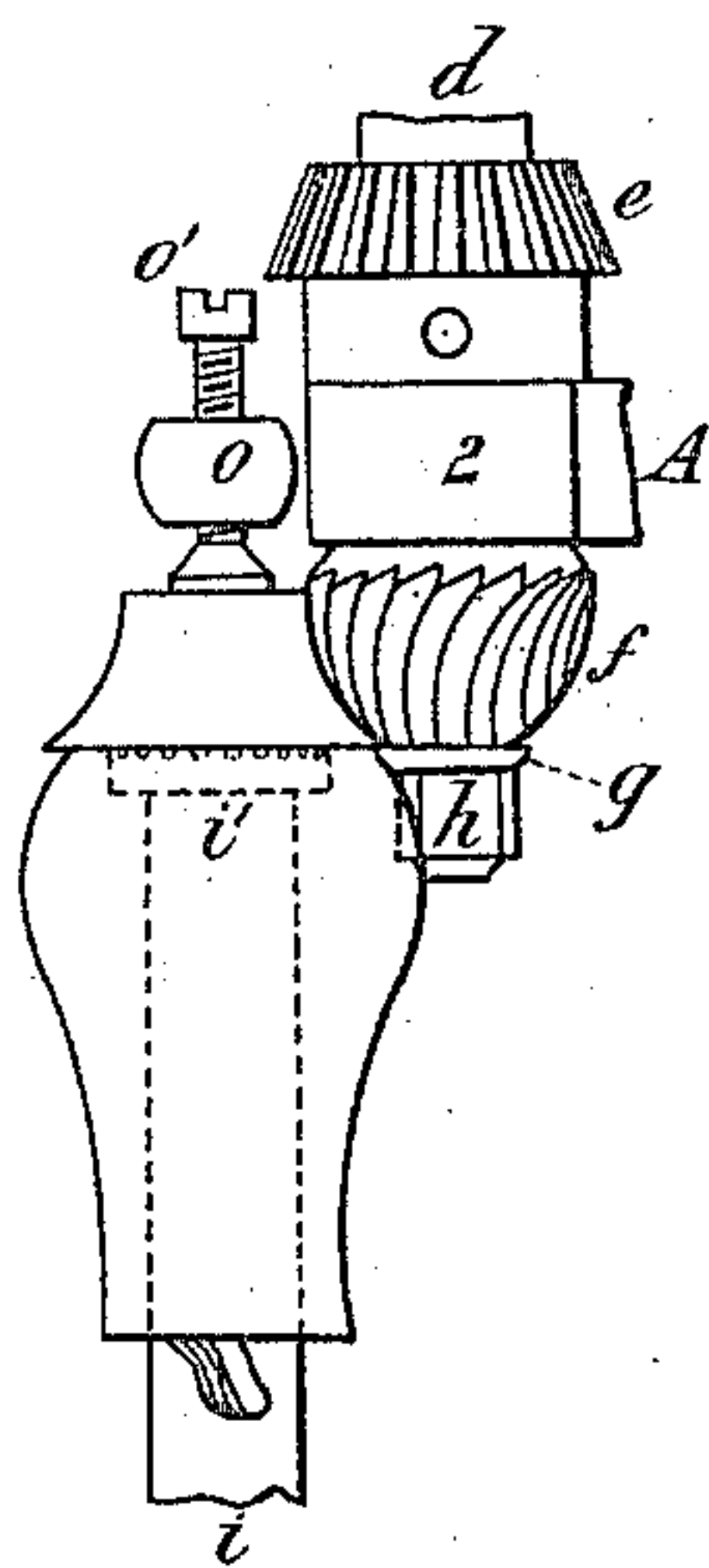
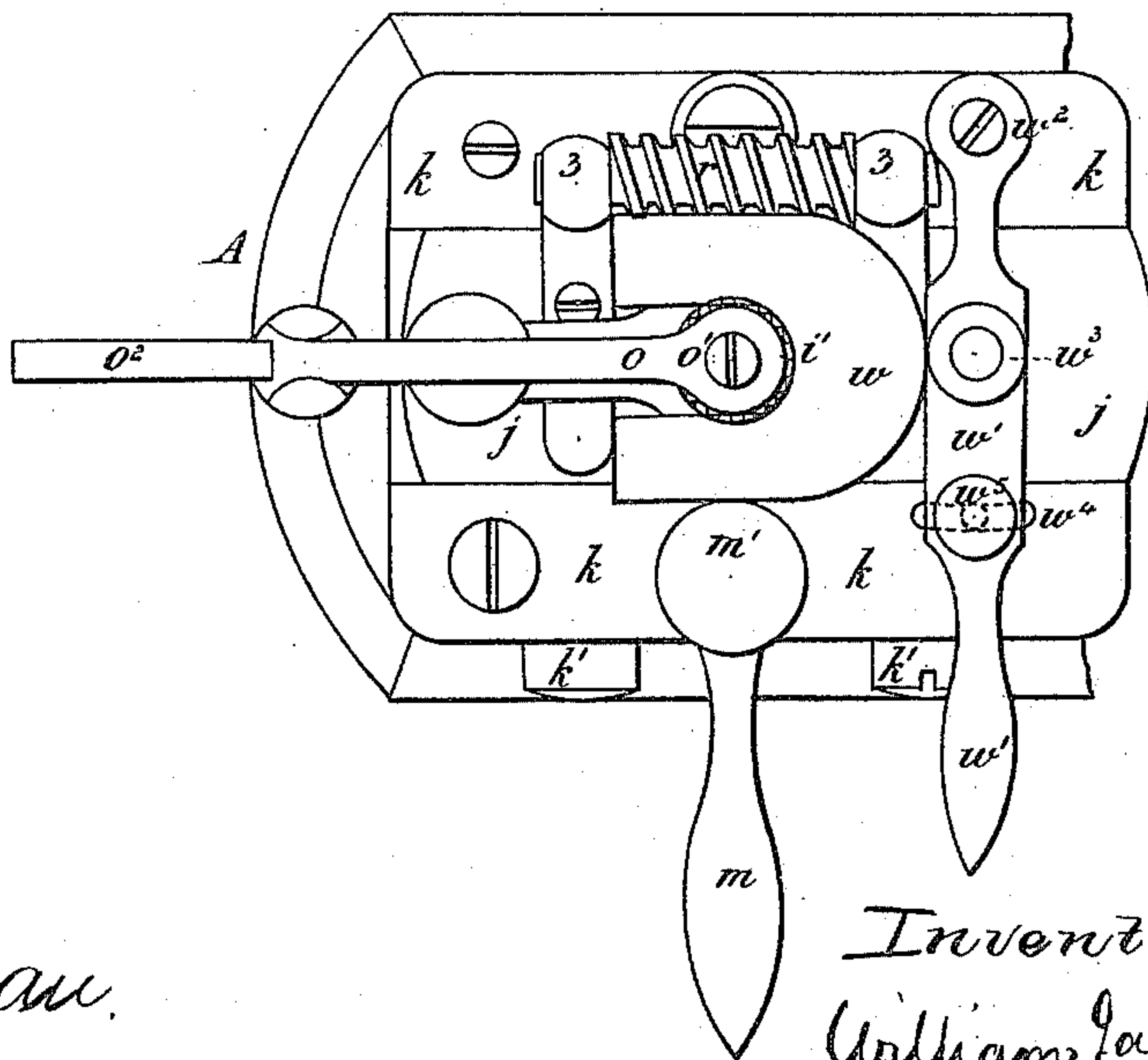


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM JACKSON, OF LONDON, ENGLAND.

IMPROVEMENT IN MACHINES FOR TRIMMING THE SOLES AND HEELS OF BOOTS AND SHOES.

Specification forming part of Letters Patent No. **172,444**, dated January 18, 1876; application filed October 8, 1875.

To all whom it may concern:

Be it known that I, WILLIAM JACKSON, of London, England, have invented an Improved Machine for Cutting and Shaping the Soles and Heels of Boots and Shoes, of which the following is a specification:

My invention relates to an improved machine for cutting and shaping the soles and heels of boots and shoes; and consists in the novel construction and arrangement of the parts of the machine, as hereinafter described. The principal parts of the said machine are as follows, namely: a rotary cutter or knife, an adjustable rotating post for supporting the boot or shoe while it is subjected to the action of the said cutter, a peculiar device for securing the boot or shoe upon the post, and mechanism for rotating the said post, and for stopping its rotation without stopping the rotation of the main shaft and the cutter.

The said invention is illustrated in the accompanying drawings, which I will now proceed to explain.

Figure 1 is a side elevation of my improved machine. Fig. 2 is a front elevation of the same. Fig. 3 is a plan or top view, partly in section on the line $x x$, Fig. 1. Fig. 4 shows detached portions of the said machine, with a boot-heel being cut by the same. Fig. 5 illustrates a modification of the said machine.

Like letters indicate the same parts throughout the drawing.

A is a strong frame or standard of cast-iron or other suitable material, properly constructed to support the working parts of the machine. a is the main or driving shaft, supported to turn freely in suitable bearings 1 1 in the said frame. b is the driving-wheel on the outer end of the shaft a , and c is a bevel-tooth wheel on the inner end of the said shaft. d is a vertical shaft, fitted to turn freely in bearings 2 2 in the frame A. This shaft has on it a bevel-pinion, e , which is geared with the aforesaid bevel-wheel c . At the lower end of this shaft d I fix the cutter f , as clearly shown in Fig. 1. Below the said cutter I place the washer g , whose edge projects far enough to work in the seam between the upper and the heel or sole of a boot or shoe placed in the said machine, as clearly shown in Fig. 4. This washer turns loosely or independently of the cutter. The

said cutter and washer are securely held upon the said shaft by a nut, h , or by other suitable devices which will permit the cutter to be readily removed and replaced, so that I may exchange one cutter for another without delay when required. i is the post or arm which supports the boot or shoe whose sole or heel is being shaped. This post is fitted to turn in a bearing in the sliding plate j , which works between the guides k , that are screwed upon the bed of the frame A, the said plate and guides having their edges dovetailed, and one of the said guides being made adjustable laterally by means of screws k' , or other suitable means, to allow it to be adjusted to the plate j when required. m is a lever for adjusting or setting the post i nearer to or farther from the cutter f . m' is a screw passed through the said lever, with its point resting on the guide-plate below it. By means of this screw I adjust the post vertically to any required position. n is a spring tending to keep the said post away from the cutter when the said lever is released. The disk or block i^1 at the top of the post is preferably roughened on its upper surface, and it is secured by a screw, i^2 , or by other means which permit it to be readily removed and replaced. o is a clamping arm or lever, whose fulcrum is at o^* in the bracket p , which is fixed or formed on the post i . The said arm o is provided with an adjusting clamping-screw, o^1 , between which and the block i^1 the boot or shoe is held while being operated upon. The outer extremity of the arm o is provided with an eccentric handle, o^2 , whereby the said arm is readily made fast and released, to allow the boot or shoe to be readily and conveniently put upon the post i , secured thereon, and removed when finished. q is a worm-wheel fixed on the post i , and geared with the worm r , which turns in the bearings 3, fixed on the plate j . The shaft of this worm carries a pulley, s , which is geared by a belt or band with the pulley t on the main shaft a . This pulley t is arranged in combination with the sliding disk u , which is provided with pins or studs arranged to enter holes in the pulley t when the disk u is pressed against the said pulley. This disk is fitted to slide on a feather or key, u' , on the shaft a , so that it will slide endwise on the said shaft, but is compelled

to turn with the same. v is a lever whose fulcrum is at v^1 , and which has at its end v^2 a pin or stud, which projects into the groove or channel in the periphery of the disk u . By means of this lever the said disk is moved into, or out of, connection with the pulley t .

In using my improved machine the boot or shoe is placed on the post i , and secured thereon by the clamping-lever. Then the said post is adjusted by means of the lever m , and secured by the screw m' in the proper position for the cutter to act on the sole or heel of the said boot or shoe. The post i having been turned into the proper position to commence cutting, the disk u is moved into connection with the pulley t . The driving-shaft a and cutter being continually rotating, motion is communicated by the belt or band to the worm r , and from this worm to the worm-wheel q , whereby the post i , with the boot or shoe thereon, is rotated. As it rotates the rapidly-revolving cutter f cuts and shapes the surface of the sole or heel, and as the post arrives at a position opposite to that in which it was first adjusted, the disk u is drawn out of connection with the pulley t . The post can then be turned back by rotating the pulley s , the clamp-arm slackened, and the boot removed from the said post, and another one placed thereon, the above operations being repeated without stopping the driving-shaft a .

In some instances I so arrange the lever v that it is acted on by a projecting arm or rod on the post i or bracket p , or by other suitable means, to effect the adjustment of the lever v automatically, so that the machine will be self-acting with regard to this part of its operation.

In Fig. 5 I have illustrated an automatic device to be used in shaping heels with square fronts. This device consists of a cam or tem-

plet, w , fixed on the post i , and a lever, w^1 , whose fulcrum is at w^2 on the plate k . The said lever has an anti-friction roller, w^3 , against which the edge of the cam w works. This cam, as it rotates with the post, causes the latter to so adjust itself to the cutter as to give automatically the required shape to the heel. The said lever is formed with a slot at w^4 , through which is passed a screw, w^5 , whereby the said lever and roller can be secured in any required position, according to the shape or size of the heel.

The chief advantages of my improved machine are as follows, namely: The boot or shoe is held on the post or support by clamping mechanism instead of by hand, the work is accomplished with great rapidity, and the soles or heels of the boots or shoes can be perfectly shaped without the employment of skilled labor.

I claim as my invention—

1. In combination, the pivoted arm o , the set-screw o^1 , and the locking-cam o^2 , for the purpose of clamping a shoe to the rotating post, substantially as described.

2. In combination with the post i , the worm r , worm-wheel q , the sliding plate j , the guides k , lever m , and spring n , substantially as described, for the purpose of rotating said post, and advancing or withdrawing the same from the cutter without stopping the rotation of the post.

3. In combination with the post i , the cam w , slotted lever w^1 , roller w^3 , and screw w^5 , substantially as described, for the purpose of automatically adjusting the post to the cutter.

W. JACKSON.

Witnesses:

HY. JAS. NOONS,
JAS. EDWARDS.