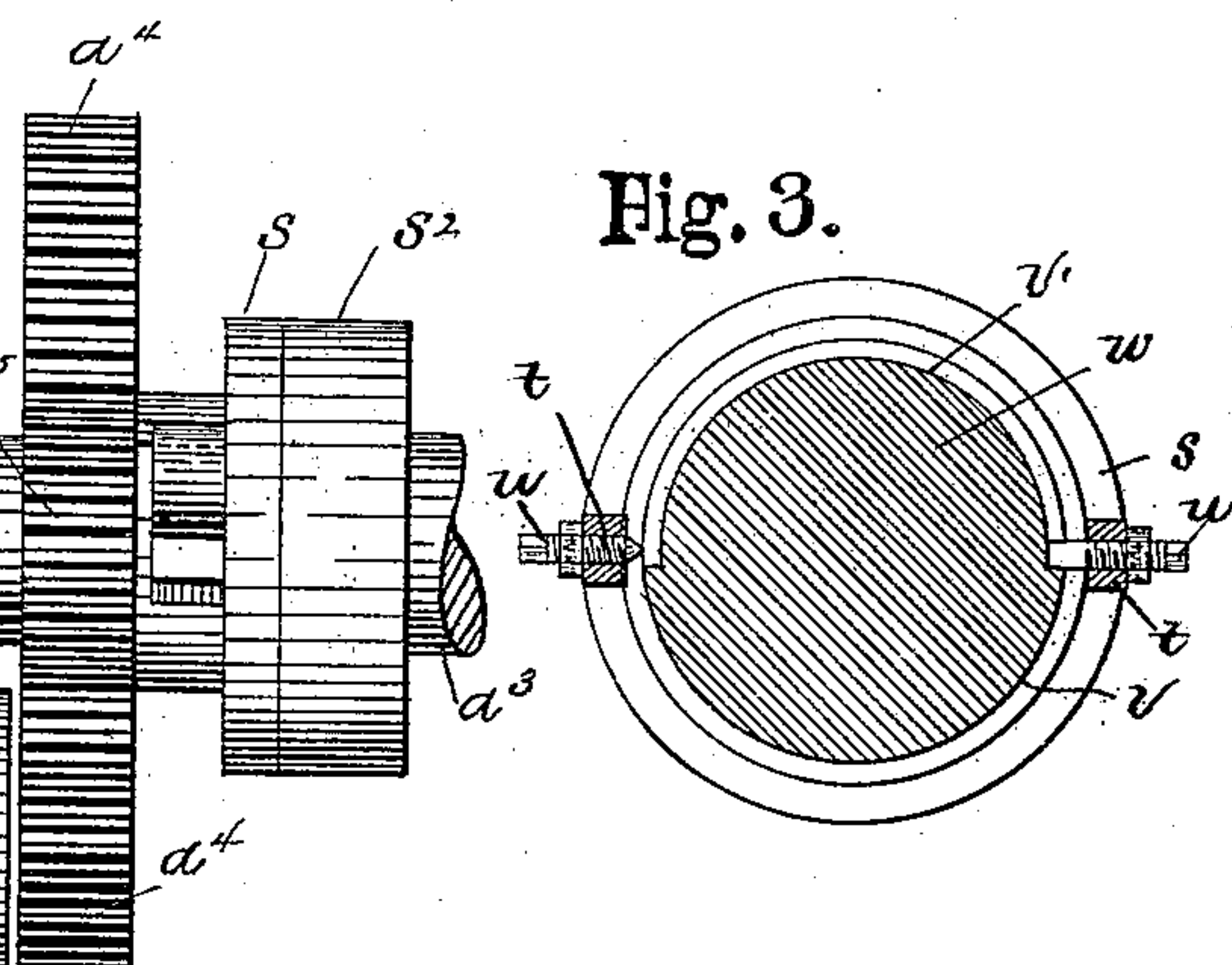
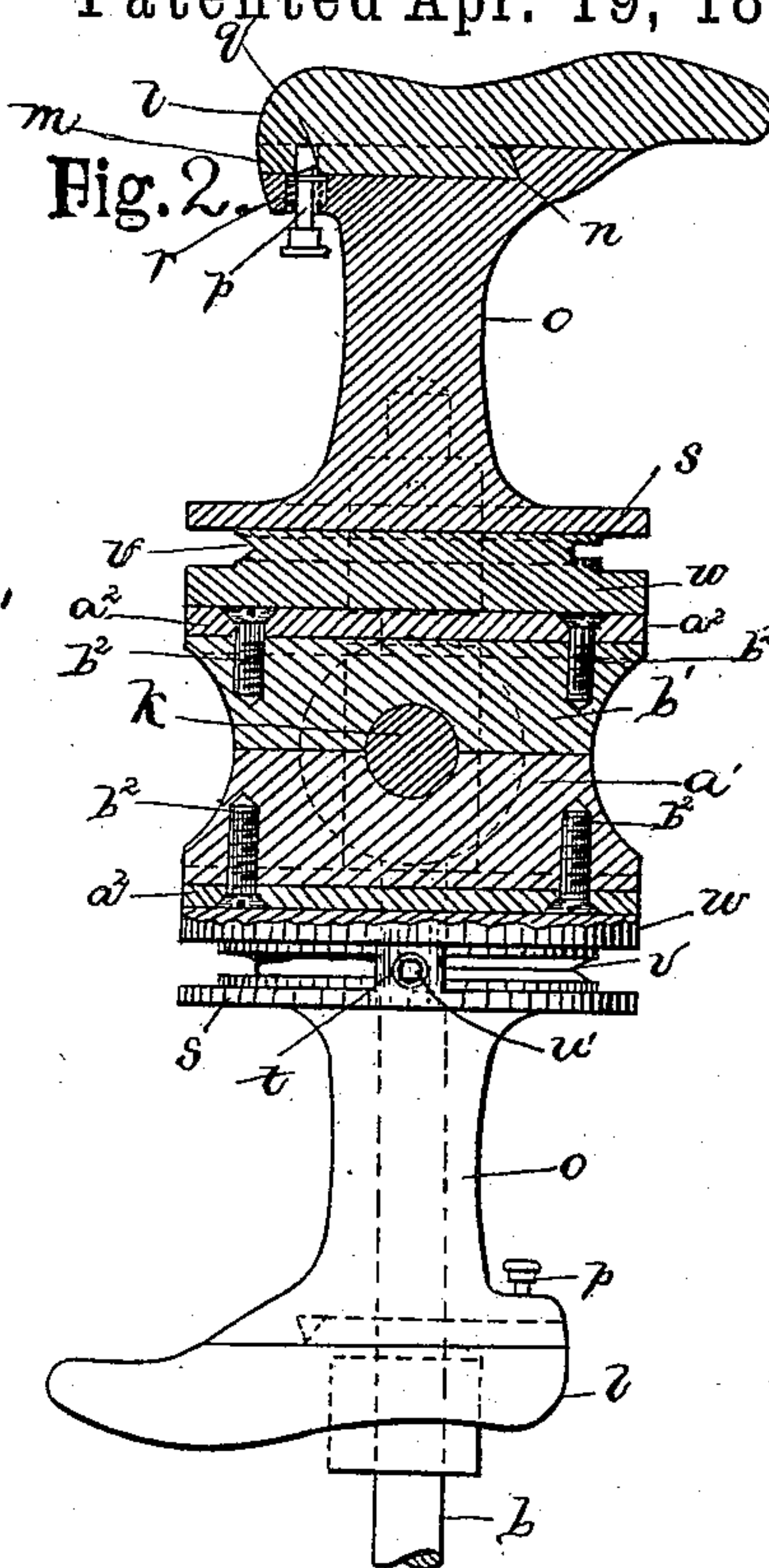
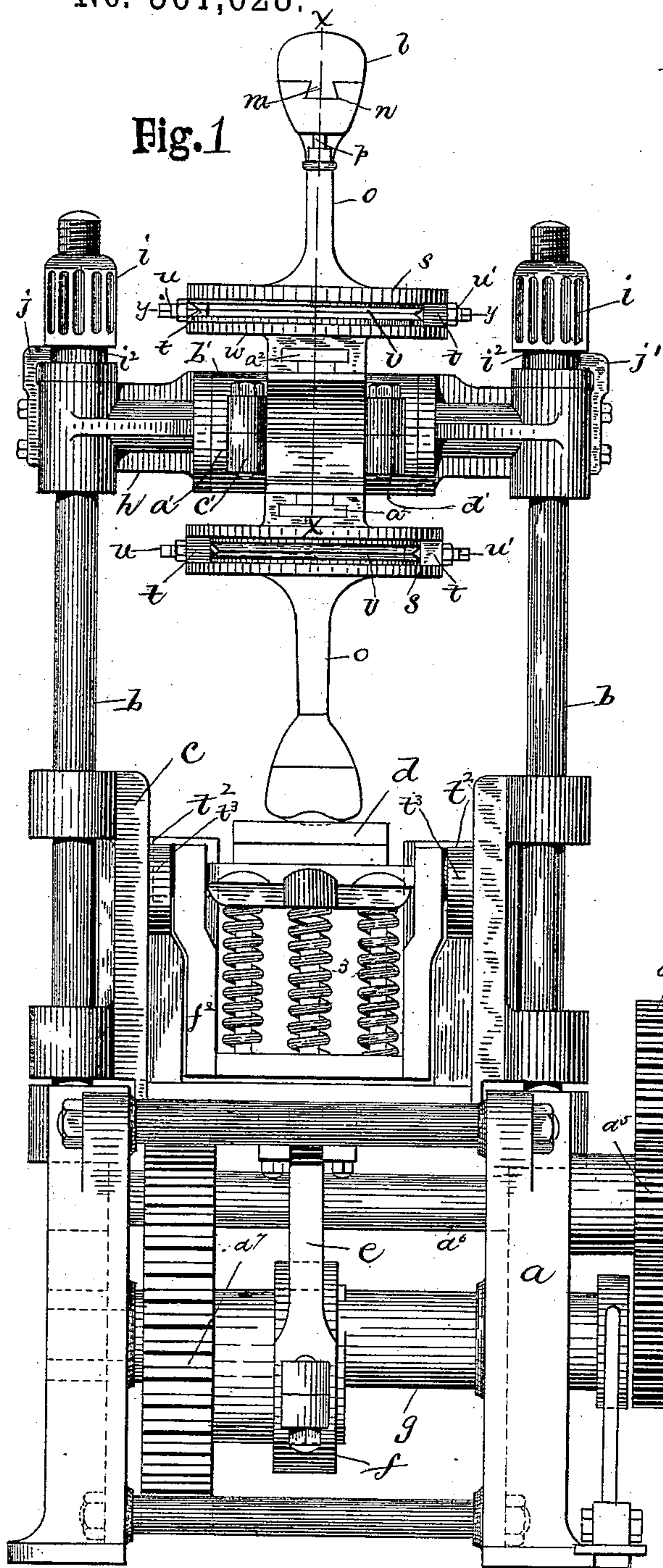


C. E. HOLLAND.  
BEATING OUT MACHINE.

No. 361,628.

Patented Apr. 19, 1887.



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# UNITED STATES PATENT OFFICE.

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BOOT AND SHOE SOLE LAYING COMPANY, OF SAME PLACE.

## BEATING-OUT MACHINE.

SPECIFICATION forming part of Letters Patent No. 361,628, dated April 19, 1887.

Application filed February 8, 1887. Serial No. 226,916. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES E. HOLLAND, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Beating-Out Machines, of which the following is a specification.

This invention relates to machines for "beating out" or leveling boot and shoe soles so that they will be given a symmetrical appearance and have the proper shape imparted thereto. In machines of this class it is usual to provide two lasts having supporting-arms attached to a cross-head adjustable on standards rigidly secured to a frame or base, a shaping-pad adapted to be moved up against the lasted shoe, and means for applying pressure thereto, the arrangement being such that while one sole is being acted on by the shaping-pad the other may be in a position to be applied or removed by the attendant.

My invention has for its object to provide certain improvements relating to the construction of the cross-head and adjustable devices therefor, the last-supports, and devices for operating the same, all of which I will now proceed to describe.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a front elevation of a beating-out machine embodying my improvements. Fig. 2 is a sectional view of a portion of the machine on the line  $x x$ , Fig. 1. Fig. 3 is a section on the line  $y y$ , Fig. 1.

The same letters of reference indicate the same parts in all the figures.

In the drawings,  $a$  represents the frame or base of the machine, to which are rigidly secured upright standards  $b b$ , adapted to serve as guides for the sliding frame  $c$ , on which is located the shaping-pad  $d$ , adapted to be moved up against the lasted boot or shoe by an arm,  $e$ . Said shaping-pad is preferably made of metal, adapted to fit the bottom of a last, and is supported by a frame,  $f^2$ , provided with trunnions  $t^2 t^2$ , journaled in sockets  $t^3 t^3$  in the sliding frame  $c$ . The pad  $d$  is supported upon a number of stout spiral springs, 3, which support the pad with a yielding pressure, the pad

being adapted to be depressed as the frame  $c$  is raised.

Arm  $e$  is pivoted to ears on the lower end of the sliding frame and surrounds an eccentric,  $f$ , on a shaft,  $g$ , journaled in bearings in the base  $a$ , and driven by any suitable power applied to shaft  $a^3$  (shown as broken off, Fig. 1) and gear  $a^4$ , attached to shaft  $a^3$  and meshing with a gear,  $a^5$ , on shaft  $a^6$ , which shaft has a gear meshing with gear  $a^7$  on shaft  $g$ . The cross-head  $h$  is adjustable longitudinally on the upright standards by means of nuts  $i i$ , having grooves  $i^2$ , into which project lugs  $j j'$ , bolted to the cross-head. This engagement enables the nuts to raise or lower the cross-head when they are turned on the threaded upper ends of the standards. Said cross-head is constructed so as to permit of the rotation of the last-supporting devices thereon, and has a central cylindrical portion,  $k$ , on which the central portion of said supporting devices may be rotated. (See Fig. 1.)

One of the most important features of my improvements is the construction of the last-supporting devices in such manner that the operator may work on the shoe with either the toe or heel portion of the same toward or from him. It is usual in machines of this class to construct the last supports in such manner as that they are only adapted to be rotated on the cross-head and always stand in the same position to the operator. In some machines the heel portion of the shoe will be toward the operator, and in others the toe portion, so that when one becomes accustomed to working on the shoe in one position it becomes inconvenient to work in any other, and when an operator changes from one machine to another, where these conditions exist, it causes inconvenience, as will be readily seen.

To obviate the objections just enumerated, I have constructed my machine so that the lasted shoe can be operated upon from either the heel or toe of the same, as may be desired. To this end I divide the last-supporting devices in sections so arranged as to form swivels on which the lasts can be rotated, as I will now proceed to explain.

The last  $b$  is constructed with a dovetail por-



tion, *m*, fitted to slide into a dovetail groove, *n*, in the last-supporting arm *o*. A pin, *p*, enters a socket formed in the last, for the purpose of holding the last in position on its supporting-arm. Said pin is constructed with a shoulder on its upper end, with which engages a spring, *r*. The top of pin *p* is beveled, so that the lower side thereof shall come below the surface of groove *n*, and will be depressed by the dovetail portion of the last whenever the same is applied to the supporting-arm, and is adapted to coincide with hole *q* when the last has been placed in its normal position on its support, and thus hold the last firmly in place, and when necessary to remove the last, pin *p* can be depressed by pulling it down a sufficient distance to allow the last to be removed, as will be readily understood by reference to Fig. 2.

The upper portion of the last-support consists of an arm, *o*, having a circular base, *s*, provided with lugs *t t*, set opposite each other on the periphery of said circular base. Pins *u u'*, screw-threaded in said lugs, are adapted to enter the grooves *v v'* of the lower portion, *w*, of said support, Figs. 1 and 3. The V-shaped groove *v* cut in the periphery of the portion *w* serves as a guide for pin *u* when the upper portion of the last-support is to be rotated, said pin serving to hold the upper portion in place and permit of its free rotation by the operator.

It will be seen by reference to Fig 3 that pin *u'* extends farther into the part *w* than pin *u*. This arrangement is for the purpose of providing a stop to govern the rotation of the part *s* and last-supporting arms *o*, as said pin will allow said portion *s* to turn only one-half of a revolution, which movement will bring the toe or heel portion of the shoe toward the operator.

The last-supporting arms *o* and their swiveled base are secured to a rotary head journaled on a support or bearing, *k*, of the cross-head, and adapted to rotate thereon. Said rotary head is constructed in two parts, *a' b'*, provided with ears *d' c'* to receive bolts, by which means said parts are secured in position on the cross-head and are adapted to be readily detached from the same. Each part *a' b'* of the rotary head is provided with a tongue, *a<sup>2</sup>*,

adapted to engage with a groove in the circular base *w*, and thereby secure the same to the rotary head. Said tongues *a<sup>2</sup>* are secured to the parts *a' b'* of the rotary head by screws *b<sup>2</sup>*, or may be made integral therewith. This construction permits of the ready removal of the several parts, for convenience in repairing or other purposes. The head is rotated by hand to bring the desired part of the last to the front.

In case it is desirable to stop the rotation of the driving-shaft automatically when the shaping-pad is at the extreme of its movement, the means employed for this purpose are of the same nature as those shown and described in an application filed by me for a patent for improvements in sole-laying machines, filed on even date with this application, the construction and operation of said means being identically the same.

I claim—

1. In a beating-out or leveling machine, the combination, with the sole-pressing pad or die and mechanism for operating the same, of the rotary head having the independently-rotatable last-supporting arms, whereby the last may be turned to present either end at the front of the machine.

2. The rotary head journaled on a supporting cross-head or holder, combined with the last-supporting arms connected to said head by means substantially as described, whereby said arms are adapted to be turned independently to present either end of the last at the front of the machine, as set forth.

3. The combination of a support or bearing, *ask*, the rotary head journaled on said bearing and having the circular plates *w*, peripherally grooved, and the last-supporting arms adapted to rotate on said plates and having the circular bases *s*, provided with lugs *tt*, and pins *u u'*, projecting into the grooves of the plates *w*, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 26th day of January, 1887.

CHAS. E. HOLLAND.

Witnesses:

C. F. BROWN,  
ARTHUR W. CROSSLEY.