

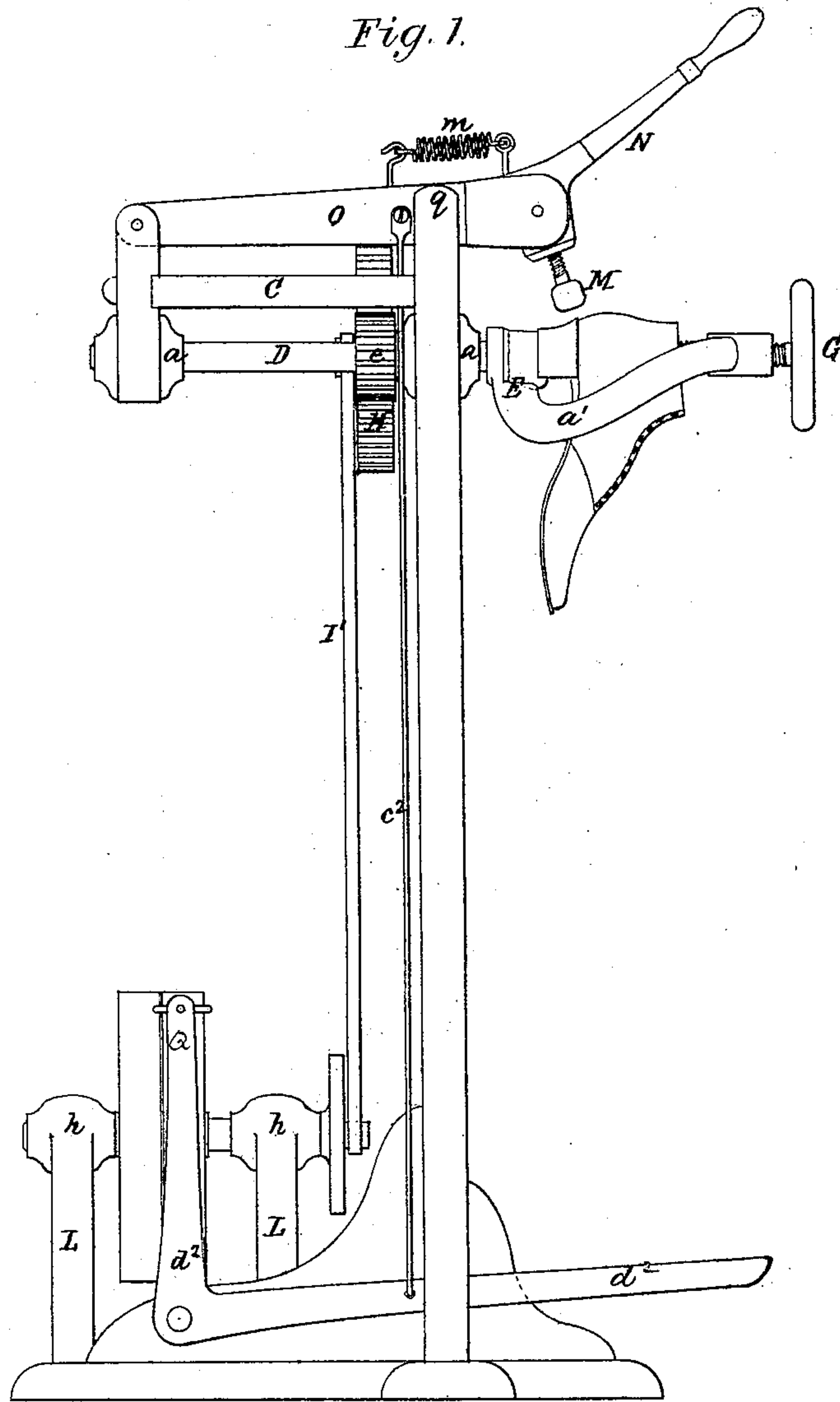
G. C. HAWKINS.

Machinery for Burnishing Boot and Shoe Heels.

No. 127,414.

Patented June 4, 1872.

Fig. 1.



Gardner C. Hawkins  
by his attorney  
A. Hollis

Witnesses:  
C. B. Pottingham  
J. R. Pottingham

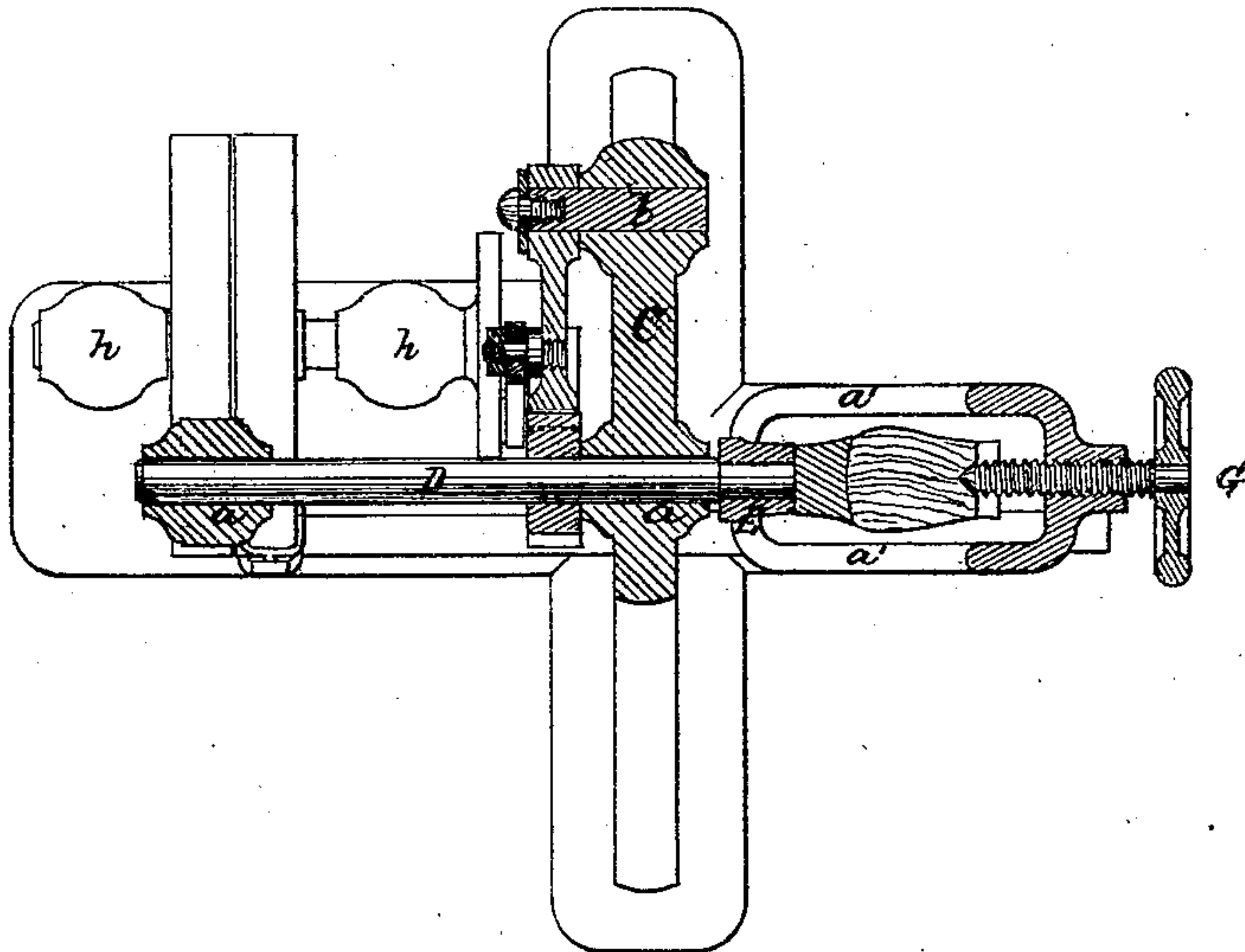
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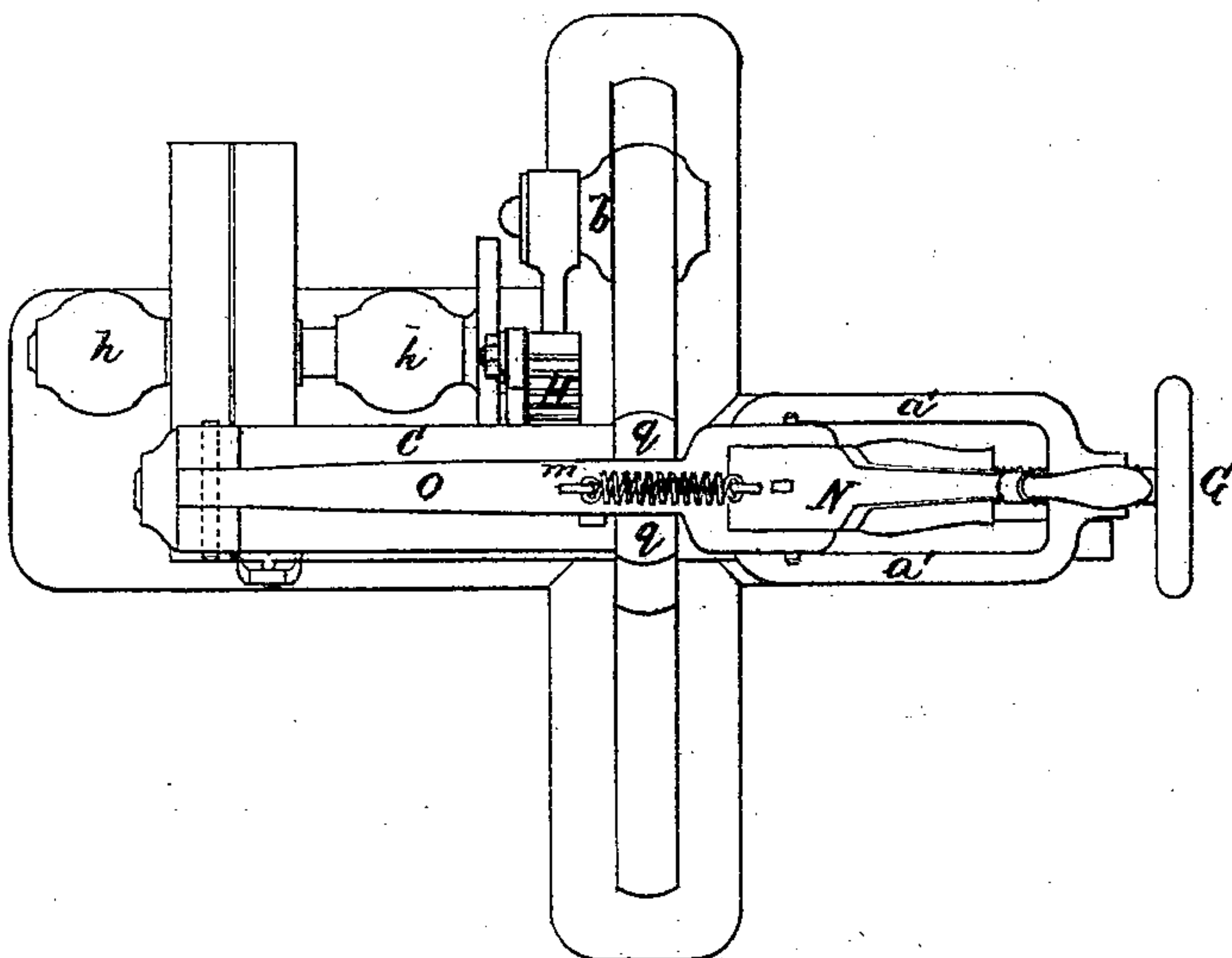
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*Fig. 5.*



*Fig. 2.*



Gardner C. Hawkins  
by his atty  
Mollok

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J. R. Nottingham

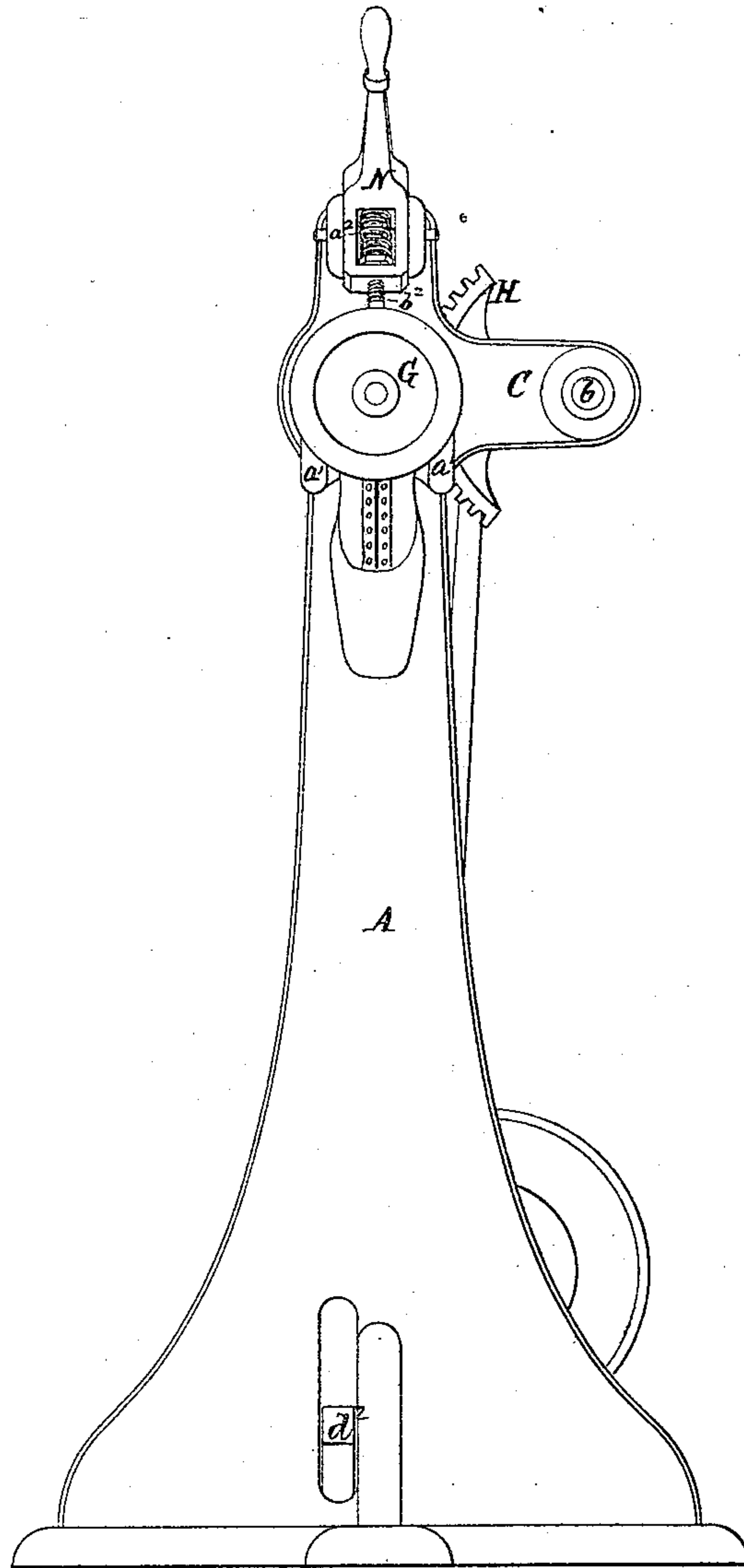
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Fig. 3.



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by his attorney  
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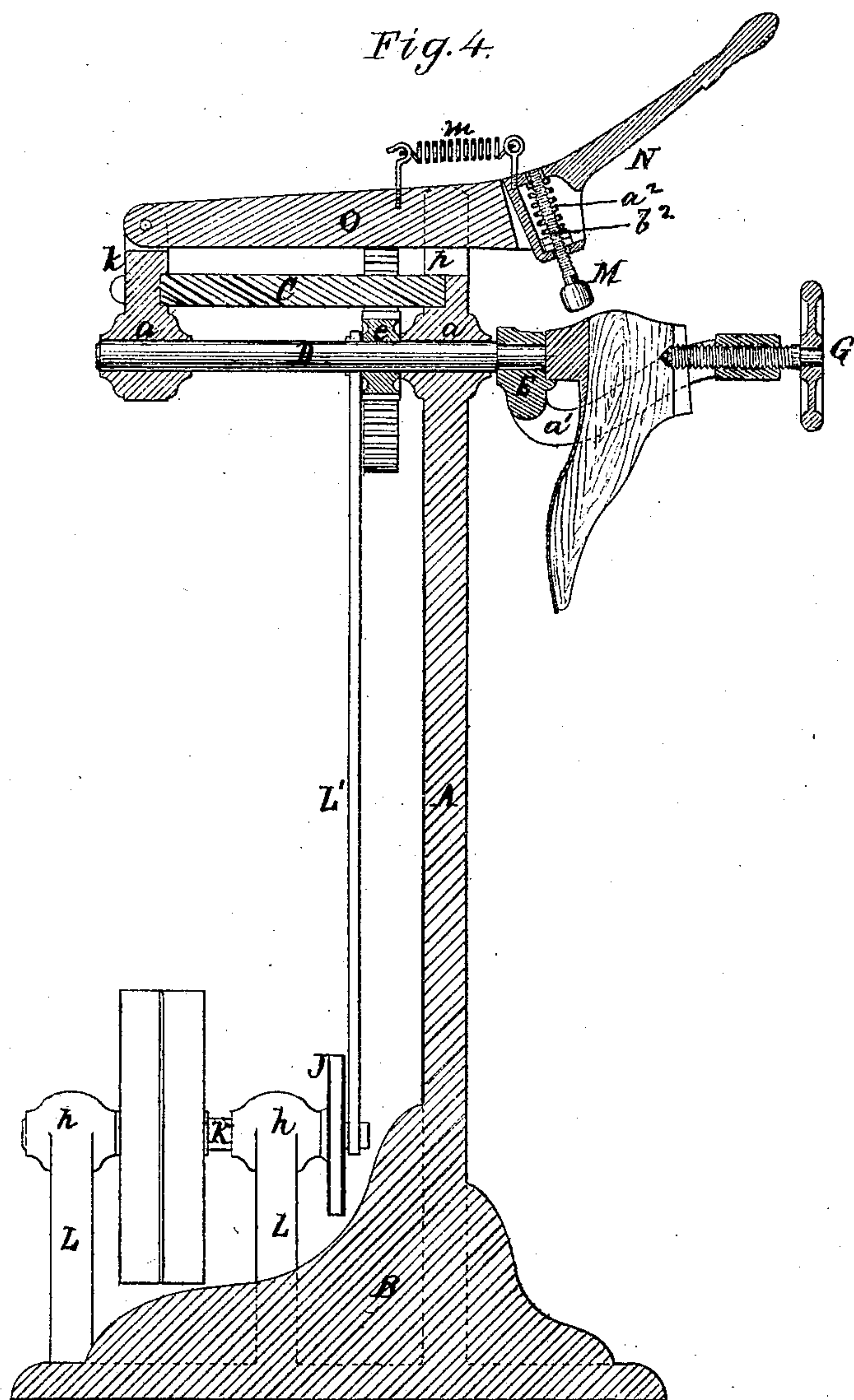
Witnesses:  
C. B. Nottingham.  
J. Nottingham

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*Gardner C. Hawkins*  
*by his attorney*  
*C. Pollard*

*Witnesses:*  
*C. B. Nottingham*  
*J. Nottingham*



# UNITED STATES PATENT OFFICE.

GARDNER C. HAWKINS, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN MACHINES FOR BURNISHING BOOT AND SHOE HEELS.

Specification forming part of Letters Patent No. 127,414, dated June 4, 1872; antedated May 15, 1872.

Be it known that I, GARDNER C. HAWKINS, of Boston, in the county of Suffolk and State of Massachusetts, have made an invention of certain new and useful Improvements in Machines for Burnishing the Heels of Boots and Shoes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

Figure 1 is a side elevation; Fig. 2, a plane; Fig. 3, a front-end elevation; Fig. 4, a vertical, central, and longitudinal section; and Fig. 5, a horizontal section of a machine embodying my improvements, the latter section being taken through the jack-actuating shaft.

The invention herein embodied may be considered as an improvement upon the machinery shown and described in Letters Patent of the United States, numbered 113,658, and issued on the 11th day of April, 1871, to myself, A. G. Mead, and Vivian K. Spear, for improved machinery for polishing or burnishing the heels of boots and shoes.

Although the operation of this machine is admirable, and its mechanical organization very perfect, it has been found desirable, under some circumstances, and with a restricted class of heels, to revolve the heel about the burnishing-tool, in contradistinction to the system shown in Letters Patent before named.

Although in some previous machines a boot has been turned about by hand, under a vibrating burnishing-tool while the latter effects the polishing of the heel-edge, my present invention may be said to consist, primarily, in the system of moving the boot-heel, whereby the necessary motion is obtained to polish its edge as distinguished from the present practice, in which the polish is effected by a movable burnishing-tool acting upon the heel; and secondarily, my invention will be found to consist in providing a means whereby the free motion of the burnishing-tool in any direction is permitted at the option of the workman, in order to adapt it to irregular curves or contracted places where a tool operating in one given path cannot be made available—this freedom of motion and accessibility being, in fact, the main purpose of the invention.

This invention then consists, first, in the employment of a proper carriage or jack, up-

on which the boot is supported, and to which a suitable motion is imparted, such as will best effect the polishing of the heel, whether this motion is vibratory, reciprocating, or a partly or entirely rotary one; and secondly, the invention consists in mounting the burnishing-tool, or its carrier, in such manner that it is susceptible of free motion in several directions, the devices for effecting this latter result being hereinafter explained.

The drawing accompanying this specification represents, at A, an upright standard or pedestal, erected upon a suitable base, B, and carrying at top a horizontal bracket or headstock, C, projecting laterally and rearward from it, the standard and bracket constituting the main frame of the machine. D, in the drawing, represents a horizontal rocker-shaft, mounted and revolving in suitable bearings *a a*, formed in or applied to the bracket C, such shaft mounting, at its front extremity, a moving carriage, E, which supports the boot and effects its movement under the action of the burnishing-tool, this carriage being usually denominated a "jack," and consisting, in the present case, of an open oblong frame, through the outer end or head of which a screw, G, or its equivalent, passes, in order to enter the boot and clamp the heel of the latter firmly between it and the inner termination or base of the jack, as shown in Fig. 4, the said base constituting the heel-rest or abutment against which the tread of the heel abuts. The sides or arms *a'* of the jack should, by preference, slope downward toward the standard of the machine, in order to afford ample room for the sweep of the jack about the burnishing-tool.

As before intimated, any proper motion may be imparted to the jack or to the boot, such as will produce the best results; but I prefer to give a reciprocating rotary movement to the same in the arc of a circle, of such an extent as to subject the entire heel-edge at one sweep to the action of the burnisher; and I have shown in the accompanying drawing a device for effecting such a movement, which consists simply of an oscillating toothed sector, H, mounted upon a horizontal stud, *b*, projecting rearward from an arm, C, which makes part of the standard A, the sector being disposed horizontally opposite the rocker-shaft D, so as to engage with a pinion, *e*,



mounted upon the said shaft D, the oscillations of the sector in a vertical path being effected by a pitman, L', one end of which is pivoted to said sector, while its lower extremity is pivoted to the wrist-pin of a crank or crank-wheel, J, which latter in turn is mounted upon and revolved by a second horizontal shaft, K, which is supported within boxes *h h*, affixed to uprights L L, erected upon the base B, before named, the shaft being put in rotation by pulleys, in the usual manner, and constituting the driving-shaft of the machine.

Rotations of the driving-shaft K effect, through the agency of the crank-wheel J, pitman L', sector H, and pinion *e*, vibratory or reciprocating movements in the arc of a circle of the jack E and the boot carried by it; consequently, if a burnishing-tool or agent is pressed in contact with the heel-edge during its reciprocations, such heel will be polished or burnished.

The tool for effecting the burnishing of the heel-edge is represented in the accompanying drawing, at M, as mounted within and depending from a hollow-headed lever, N, the head of this lever projecting beyond the front face of the standard A, and fulcrumed horizontally within the front extremity of a horizontal bar, or carrier, O, the rear extremity of this carrier being pivoted to the rear standard *k* of the bracket C, before mentioned, while the forward part of the carrier plays within a vertical slot or way, *p*, formed in the opposite standard *q* of said bracket.

The handle of the lever N departs from the carrier *o* at an angle, in order to obtain the proper range of movement by which the burnishing-tool is permitted to traverse the edge of the heel laterally; and the said lever is maintained in its normal position at such an angle and within the furcated head of the carrier by a coiled spring, shown at *m* in the drawing, or by any suitable means.

While, then, the mode of mounting the carrier within the head-stock C permits of the necessary elevations of the burnisher from the heel when the latter is polished, or its descent thereupon when beginning the work of polishing; and while we have obtained, in the pivoting of the lever N to the said carrier *o*, the means of effecting a lateral traverse of the heel-edge by the burnisher in order to subject all parts of the said heel-edge to its action, it is desirable or necessary to insure a direct yielding or elastic pressure between the burnisher-tool and its lever or other support, in order to relieve the abrupt and rigid impact of the two which would otherwise result; and to this end I dispose within the head of the lever N, or other object carrying the burnisher, a spring, *a*<sup>2</sup>, which envelops the shank *b*<sup>2</sup> of the burnisher, and, by the elasticity which it exerts between the shank and head, seems to effect the desired result.

The elevation or depression of the burnisher or its lever N and carrier *o* may be effected by any suitable mechanical means, that shown

in the accompanying drawing consisting of a rod or pitman, *c*<sup>2</sup>, the upper end of which is connected with the carrier, and its lower end with a treadle, *d*<sup>2</sup>, the latter being disposed immediately above the base of the machine-frame and fulcrumed to the rear side of the latter, as represented.

It may be found desirable to erect upon the rear end of the treadle *d*<sup>2</sup> a shipper, Q, so disposed, with respect to the driving-shaft, its pulleys, and belt, as, when the said treadle is depressed in the act of forcing the burnisher to its work upon the heel, the shipper shall force the belt to the fast pulley and put the heel and boot in motion; and, vice versa, when the burnisher is elevated from off the heel, and its labor ceases, the shipper carries the belt to the loose pulley, and the movement of the foot ceases.

Although I have in the accompanying drawing represented the burnisher so applied as to have no motion in itself whereby it might act upon the heel, in conjunction with the movement of the latter, to effect the desired finish, it may be found in practice desirable and useful to impart vibratory or other movement both to the heel and burnisher in order that the labor of polishing may be divided between them.

As it is desirable or necessary to impart a certain degree of heat to the burnisher I combine therewith a lamp, candle, gas-jet, or any other agent whereby the result may be obtained.

#### *Claims.*

1. I claim, in machinery for burnishing the heels of boots and shoes, the arrangement of the burnishing-tool, substantially in the manner shown and described, whereby it or its carrier is permitted a free motion not only vertically to and from the heel-edge, but horizontally, or substantially so, with respect to such heel, for purposes stated.

2. I claim, in machinery for burnishing the heels of boots and shoes, the burnishing-tool, when arranged in the manner substantially as herein shown and described, whereby, in connection with the free vertical and horizontal motion last above named, it possesses a yielding or elastic union with its carrier or support, for purposes stated.

3. I claim, in an organized machine for burnishing the heels of boots and shoes, the combination, with the boot-support or jack and the burnisher, of the devices for effecting the vibratory or other proper motion of the boot-support, and for permitting free yielding movements of the burnisher in any desired direction with respect to the heel, substantially as herein shown and set forth.

4. I claim the construction of the jack herein explained, the same consisting of the frame or yoke E with its arms *a*<sup>1</sup> sloping as explained, and the screw G, or its equivalent, substantially as before set forth.

5. I claim, in combination, the jack E, suit-



ably mounted and driven, and the burnisher M, the latter having a variable or self-adjusting connection with its carrier, and possessing free vertical or horizontal, or both vertical and horizontal, motion, essentially as herein described.

6. I claim, in a machine for burnishing boot and shoe heels, the arrangement of mechanism, substantially as herein shown and de-

scribed, whereby the act of the operator in depressing the burnishing-tool toward or upon the heel-edge, shall slip the driving-belt from the "loose" to the "fast" pulley, and vice versa, substantially as herein shown and set forth.

GARDNER C. HAWKINS.

Witnesses:

EDWARD GRIFFITH,

GEO. A. LORING.