

(No Model.)

E. P. RICHARDSON.
HEEL BURNISHING MACHINE.

No. 466,258.

Patented Dec. 29, 1891.

Fig. 1.

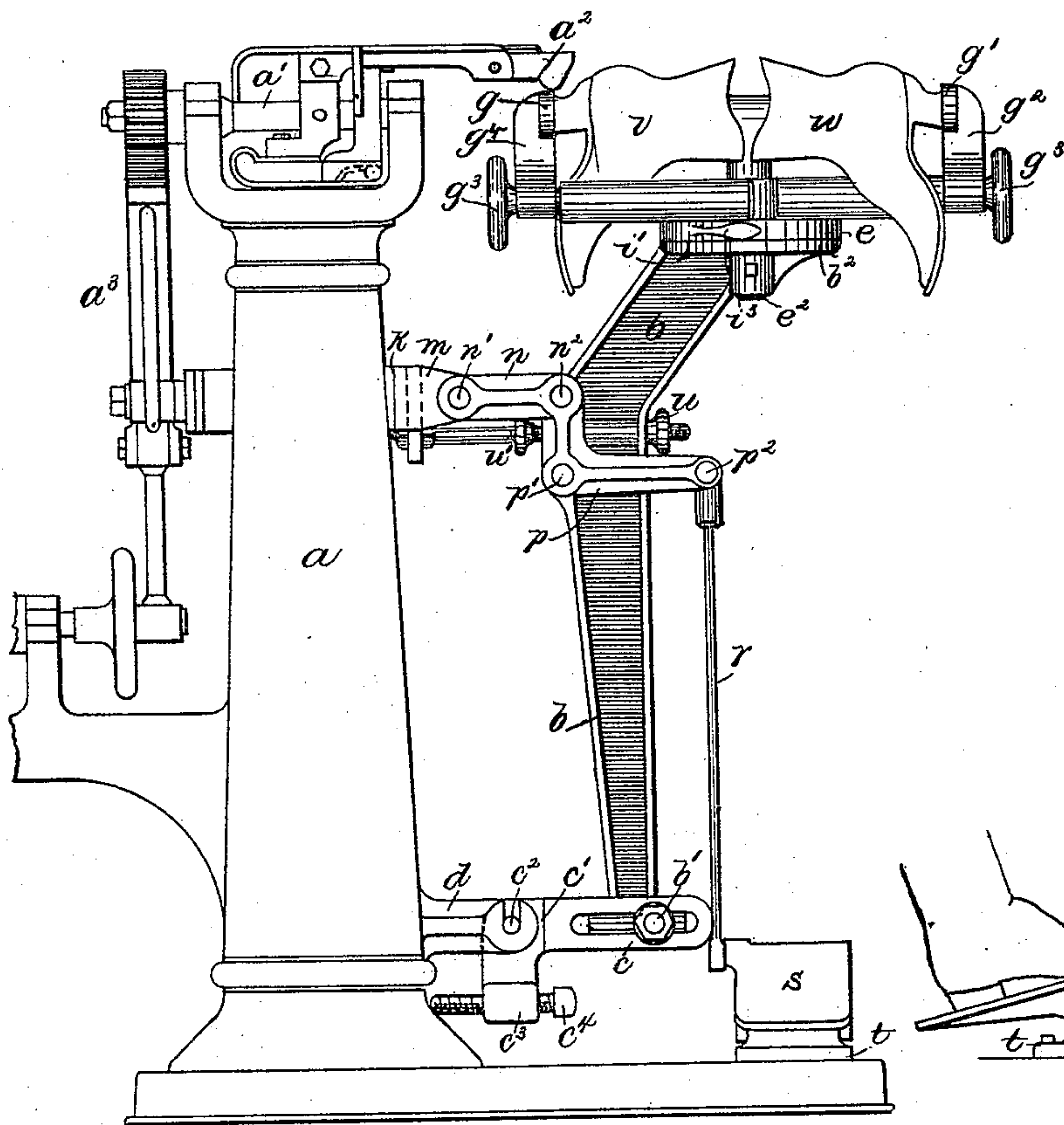


Fig. 2.

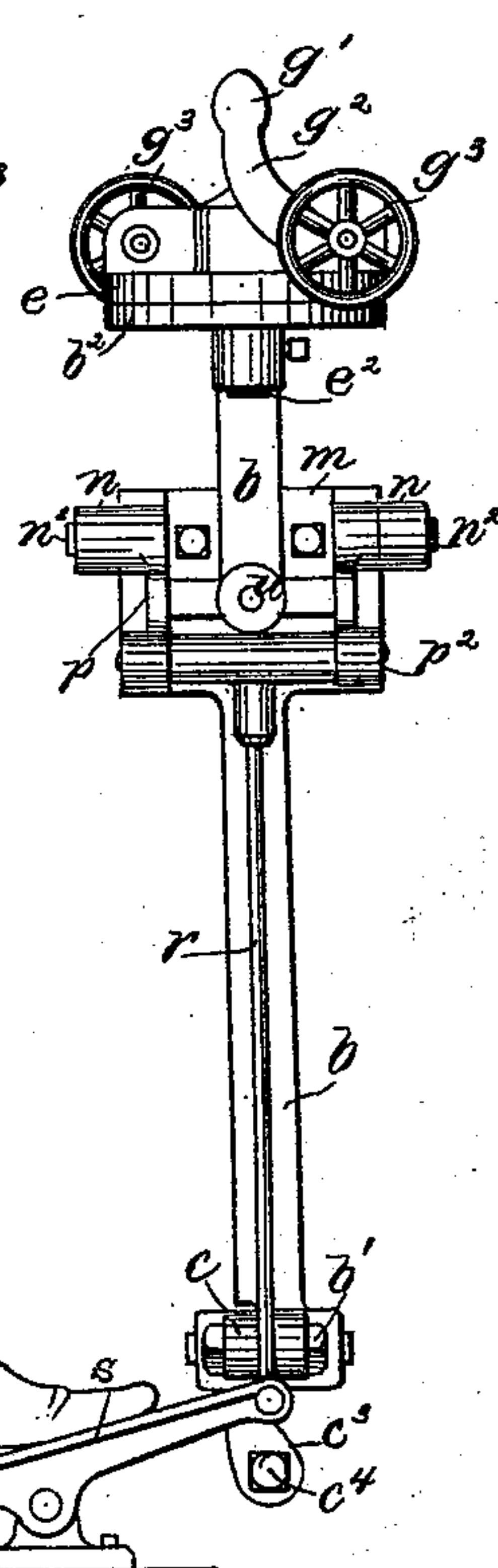


Fig. 3.

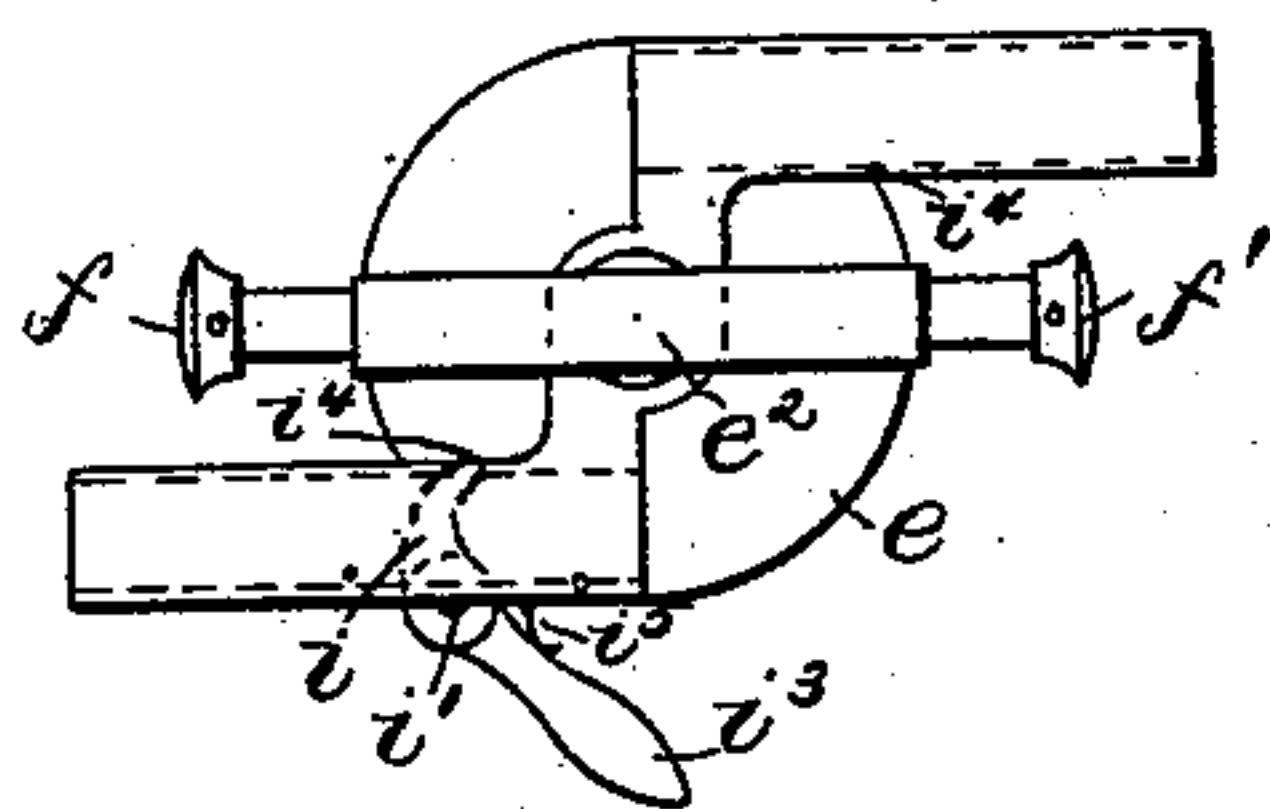
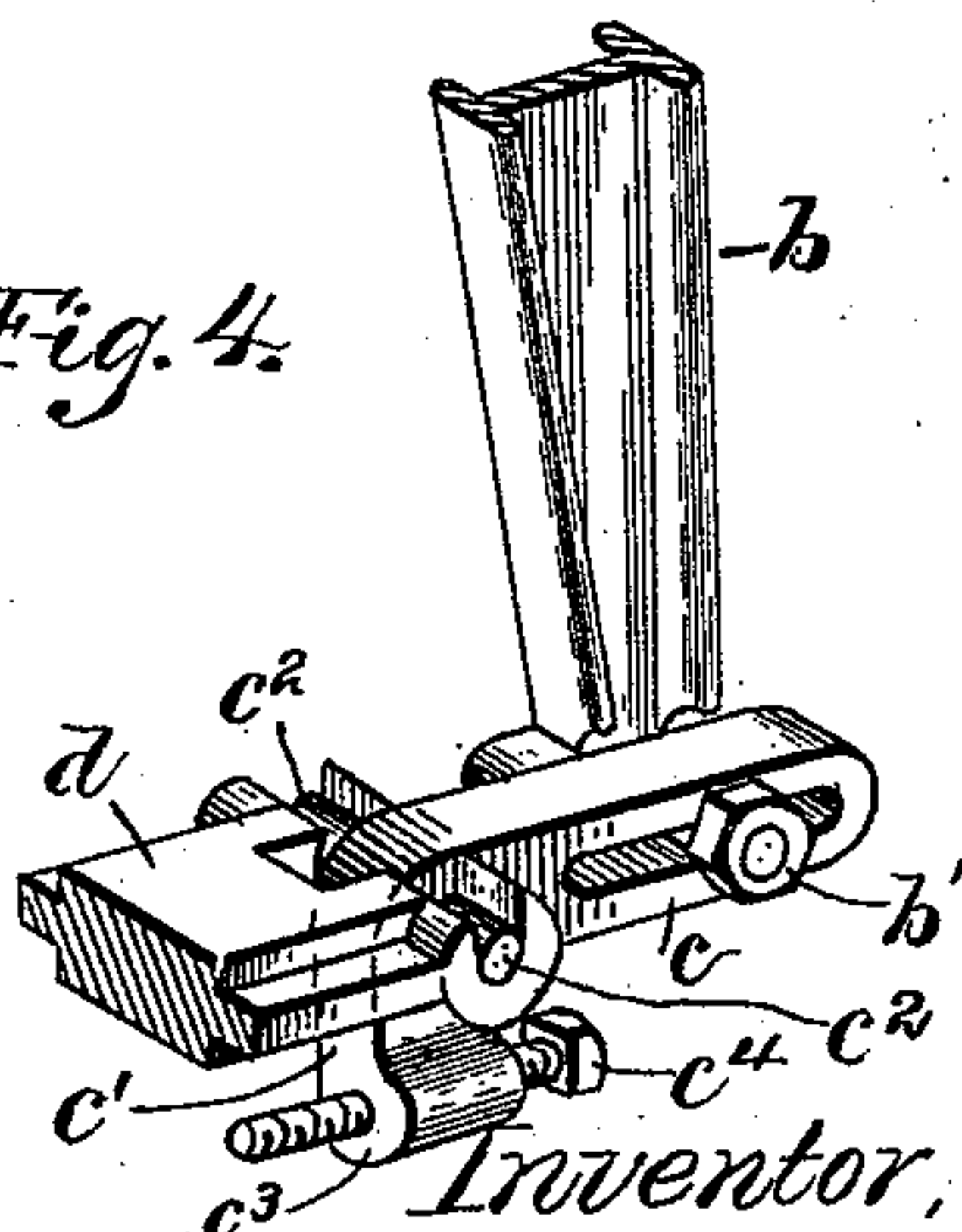


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

EVERETT P. RICHARDSON, OF LAWRENCE, MASSACHUSETTS, ASSIGNOR TO
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HEEL-BURNISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 466,258, dated December 29, 1891.

Application filed October 9, 1890. Serial No. 367,504. (No model.)

To all whom it may concern:

Be it known that I, EVERETT P. RICHARDSON, of Lawrence, county of Essex, State of Massachusetts, have invented an Improvement in Heel-Burnishing Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention relating to heel-burnishing machines is embodied in a machine in which the burnishing-tool and its adjusting mechanism are of the construction found in the well-known Tapley heel-burnishing machines, shown in patent to Hawkins, Meade, and Spear, No. 113,658, dated April 11, 1871, and in many later patents.

In my machine I use novel means for moving the jack and boot or shoe held therein in and out with relation to the burnishing-tool in the direction at right angles to the stroke of the tool and also for giving the heel the requisite rising and falling movement during its in-and-out movement. These means consist in pivoting the jack-support in a certain relation to the tool, so as to cause the rising-and-falling movement of the heel when the said support is swung in and out on its pivot, and also in connecting mechanism between the frame-work of the machine and the jack support and a treadle, whereby the operator is enabled to produce the in-and-out movement of the jack-support on its pivot by an easy natural motion of his foot while his hands are free to jack the boot on the member of the double jack that is not presented to the tool.

The invention also consists in various details of construction of the jack and its supporting and co-operating devices, which will be hereinafter described and claimed.

Figure 1 is a side elevation of a burnishing-machine provided with appliances for holding and operating the boot or shoe embodying this invention; Fig. 2, a front elevation of the jack and co-operating devices; Fig. 3, a plan view of a portion of the jack. Fig. 4 is a perspective view of the means for pivoting the jack-support.

The column or frame-work a , the oscillating shaft a' , the burnishing-tool a^2 , and the

actuating mechanism a^3 for said shaft and tool may be of any suitable or usual construction, being shown as substantially the same as in Letters Patent No. 235,115, dated December 7, 1880, to which reference may be had, these parts of themselves constituting no part of the present invention.

The parts belonging to the present invention are so constructed that they can be applied to the Tapley machines now in use without alteration of said machines by merely removing some of the old parts and substituting those of the present invention.

The devices for supporting the boot or shoe while the heel is presented to the burnishing-tool a^2 comprise a jack-support b , pivoted upon a bolt b' , secured in a slotted arm c of an elbow-lever c' , having pivot projections c^2 , supported in the usual step d of the Tapley machines, and having its arm c^3 provided with an adjusting-screw c^4 , that bears against the lower part of the upright a , determining the height of the slotted arm c , which may be raised or lowered by turning the screw c^4 in or out.

The distance of the pivotal point of the jack-support b from the upright of the machine may be varied and adjusted by setting the bolt or pivot b' in definite positions in the slot of the arm c , which provides for such adjustment of the support.

The jack-support b is provided at its top with a platform b^2 , upon which is pivoted a plate or turn-table e , provided with a double-jacking device or means for clamping and holding two shoes at opposite sides of the axis e^2 of the said turn-table. The double-jacking device consists of two heel-seats $f f'$, (see Fig. 3,) which rest against the heel inside the shoe, and corresponding movable heel-plates $g g'$, supported on arms g^2 , operated by screws provided with suitable handles g^3 , by means of which the heel-plates $g g'$ may be moved toward and from the heel-seats $f f'$, so as to bear against the top lift or tread of the heel and clamp the same, as shown in Fig. 1, or to release the heel and permit the shoe to be withdrawn after the heel is burnished and permit another shoe to be substituted. The heel-seats $f f'$ may be held in fixed relation to the

axis of the turn-table, so as to afford a definite limit to the movement of the heel toward the burnishing-tool for the purpose of preventing the tool from passing beyond the heel, and thus damaging the upper of the shoe.

The turn-table e may be locked with either of the heel-holding devices in line with the axis of the shaft a' of the burnishing-tool by means of a clutch or locking device consisting of a dog i , pivoted in a lug upon the supporting-plate b^2 and provided with a handle i^3 , by which the dog may be moved in and out with relation to the plate, so as to engage and disengage corresponding notches i^4 (see Fig. 3) on opposite sides of the turn-table e . A spring i^5 (see Fig. 3) tends to throw the dog into the notch, so that after the heel has been burnished on the member of the jack nearest the tool a^2 , and a shoe has been placed on the opposite jack by the operator during the burnishing operation, the operator has merely to turn the handle i^3 and cause the dog to disengage the notch in which it has been resting, and then turn the entire turn-table and double jack half around, when the dog will enter the other notch and lock the jack with the shoe that has last been placed thereon in position to be operated upon by the burnishing-tool.

The general construction of the jack just described enables the operator to remove the burnished shoe and jack another one on the member of the jacking device remote from the tool while the shoe previously jacked on the opposite member is being operated upon by the tool, so that the single burnishing-tool and its actuating appliances perform double duty without loss of time in the operation of jacking the shoes, as the time required for rotating the turn-table is extremely small.

In order that the burnishing operation may be properly performed on a shoe-heel held in one member of the jack without withdrawing the attention of the operator from the operation of jacking a shoe in the other member of the jack, means must be provided for moving the heel that is being burnished in and out with relation to the burnishing-tool—that is, toward and from the column or upright a . This may be accomplished by one of the several automatic devices previously invented for this purpose, some of which are shown in patent to Keighley, No. 266,838, dated October 31, 1882, and to Keighley and Blaisdell, No. 269,061, dated December 12, 1882, or to Addy, No. 328,371, dated October 13, 1885, any of which devices might be employed in combination with the novel jacking devices hereinbefore described. In accordance with the present invention, however, means are provided by which the operator can produce the requisite movement of the jack by an easy and natural motion of the foot, while his hands are free for jacking the shoe.

The usual yoke-plate k of the Tapley machine has bolted upon it a bracket m , to which

links n are pivotally connected at one end by bolts n' , the other ends of said links being pivotally connected by a bolt n^2 with a pair of elbow-levers p , pivotally connected by a bolt p' with the jack-support b and having their free ends connected by a bolt p^2 with the rod r , connected with a treadle or foot-lever s , pivoted upon a stand t . By this construction and arrangement an up-and-down movement of the rod r , such as produced by rocking the foot resting on the treadle t , produces an inward-and-outward movement of the joint p' between the lever p and jack-support b , causing the said jack-support to rock on its pivot b' and causing the upper part of the said jack and the shoe-support thereon to move inward and outward with relation to the burnishing-tool a^2 . This inward-and-outward movement may be limited by adjustable stops $u u'$.

It is essential that the heel that is being burnished should rise and fall in its outward-and-inward movement with relation to the burnishing-tool in order to so cause the throw of the tool as to cause it to travel fully from one to the other edge of the heel-breast. In the usual Tapley machines this rising-and-falling movement is effected by a foot-lever or treadle actuated by the foot of the operator, which treadle, however, does not produce the inward-and-outward movement of the heel. The rising-and-falling movement is effected in the present invention by placing the pivot b' , upon which the jack-support moves, somewhat farther from the upright a of the machine than the plane in which the burnishing-tool vibrates, so that as the heel moves out and in on an arc of which the pivot b' is the center it has a rising-and-falling movement with relation to the tool or to the axis of the tool-carrying rock-shaft a' , the amount of which movement may be varied and adjusted by changing or adjusting the position of the pivot b' in the slot of its supporting-arm c , while the actual height of the jack with relation to the tool-shaft may be varied and adjusted by means of the adjusting-screw c^4 of the elbow-lever c , and by means of these two adjustments the position and path of movement of the jack may be properly adjusted for all kinds of heels.

The operation of the present machine is substantially as follows: The operator having jacked the shoe v and turned it to the position adjacent to the tool a^2 , where it is held by the dog or locking device i , causes it to travel under the action of the tool a^2 by means of the foot-lever, and while the heel of the shoe v is being thus burnished the operator is engaged in jacking the shoe w . As soon as the heel of the shoe v is burnished the operator withdraws the jack from under the operation of the tool by means of the foot-lever s , and then turns the handle i^3 to unlock the turn-table e and revolves the same until it is engaged by the locking device i with the shoe w in position to be burnished, and while

the heel of the shoe *w* is being burnished he removes the shoe *v* from the jack and replaces it by another one.

5 The construction and arrangement of the jack are such that the operator can jack the shoes without changing his position and that the burnished heel can be readily beaded.

I claim—

10 1. A heel-burnishing machine comprising a burnishing-tool, a jack, a jack-support, a slotted arm in which the jack-support is pivoted adjustably in a vertical plane outside of the vertical plane of the burnishing-tool relatively to the standard, and means to rock
15 said support, whereby both the vibrating and the rising-and-falling movements are imparted to the jack, substantially as described.

20 2. A heel-burnishing machine comprising a burnishing-tool, a double jack, a jack-support, an adjustable elbow-lever, in which the jack-support is pivoted out of vertical line with the burnishing-tool, elbow-levers pivoted to said support and jointed to the machine-frame, a treadle, and a rod connecting the
25 treadle and elbow-levers, substantially as described.

3. A heel-burnishing machine comprising a

burnishing-tool, a double jack, a jack-support, an elbow-lever pivotally connected to the frame and having a slotted arm to which
30 said support is adjustably pivoted, and means to rock said support, thereby imparting both the vibrating and rising-and-falling movement to the jack, substantially as described.

4. A heel-burnishing machine comprising a
35 burnishing-tool, a double jack, a jack-support, an elbow-lever pivotally connected to the frame and having a slotted arm to which said support is adjustably pivoted, an adjusting-screw to vary the elevation of such
40 slotted arm, a treadle, connecting-rod, and elbow-levers connecting the jack-support and frame and operable to rock said support and thereby impart both the vibrating and rising-and-falling movement to the jack, sub-
45 stantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EVERETT P. RICHARDSON.

Witnesses:

JOHN R. POOR,
GRACE B. ABBOTT.