

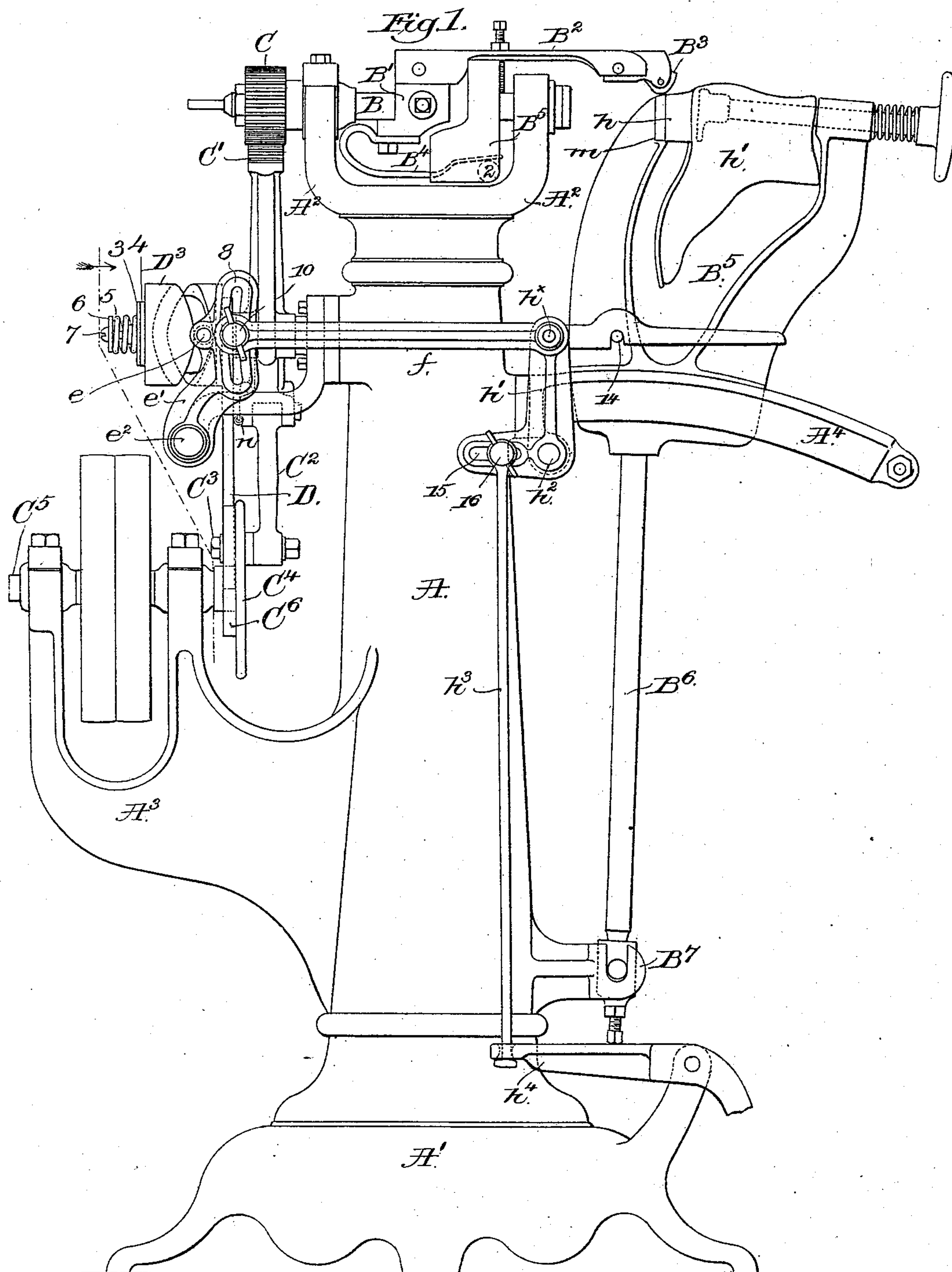
(No Model.)

2 Sheets—Sheet 1.

E. P. RICHARDSON.
HEEL BURNISHING MACHINE.

No. 455,871.

Patented July 14, 1891.



Witnesses.

John F. C. Printker
Fred S. Greenleaf

Inventor.

Everett P. Richardson
by Crosby & Gregory
attys.

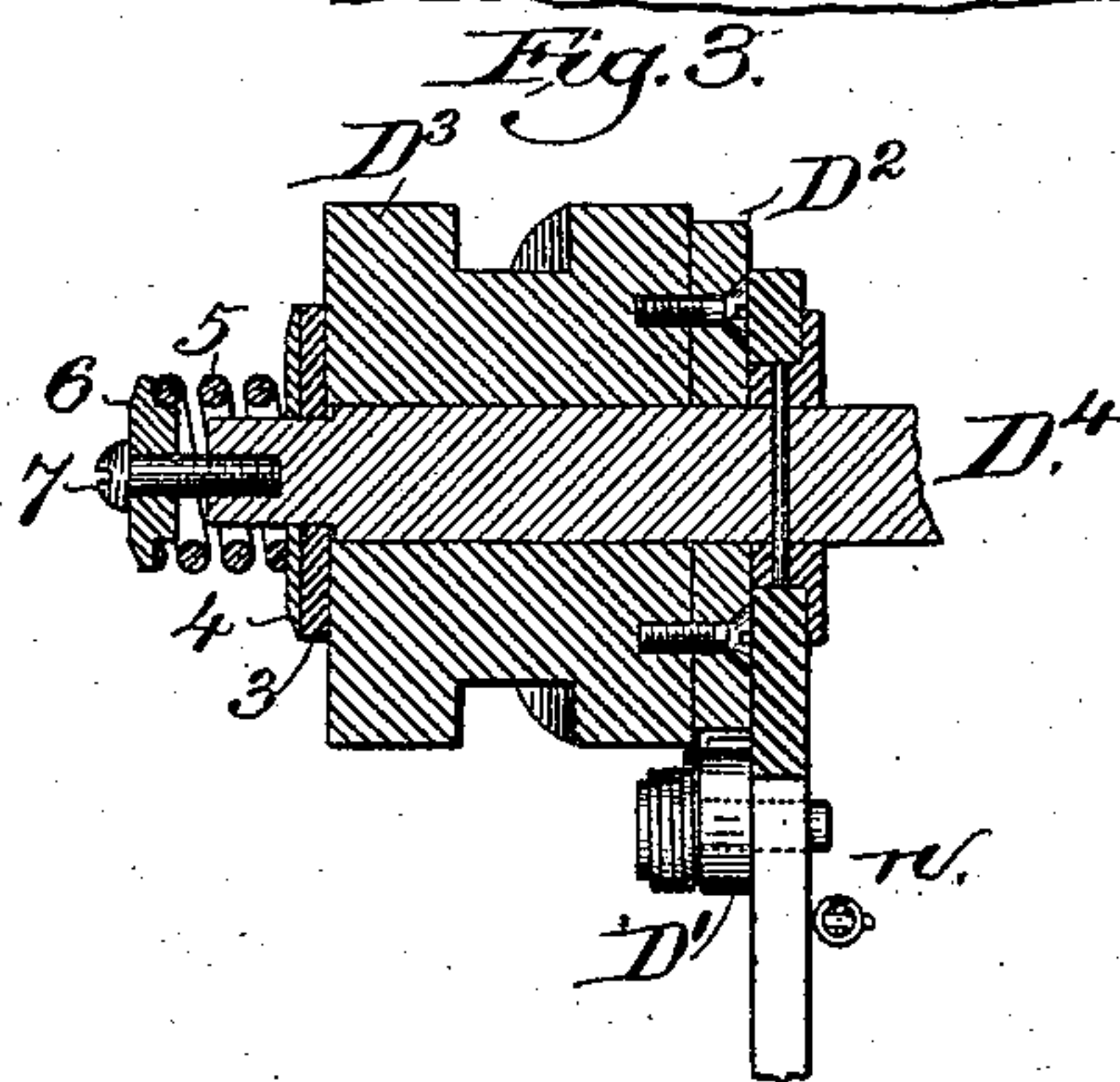
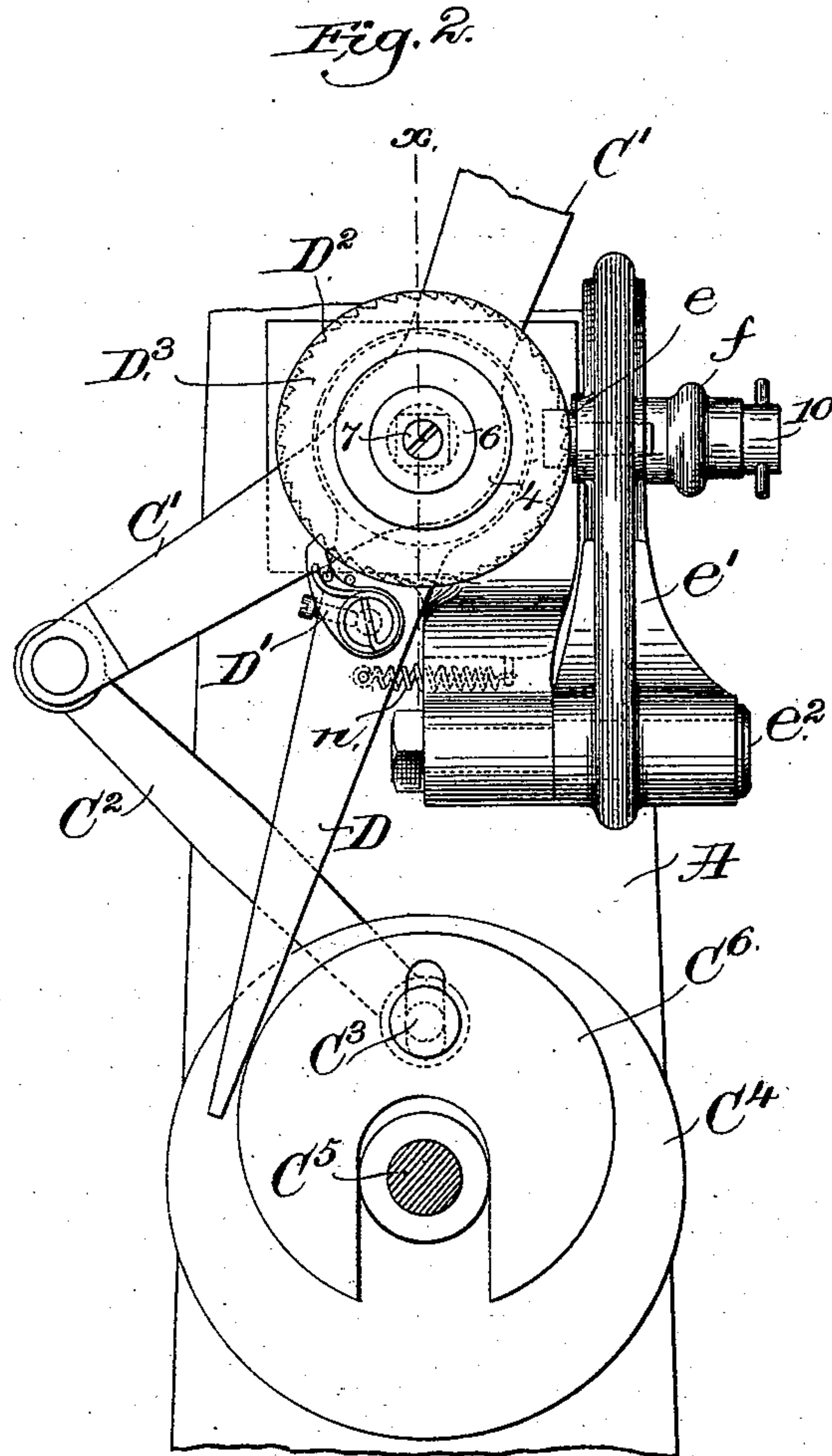
(No Model.)

2 Sheets—Sheet 2.

E. P. RICHARDSON.
HEEL BURNISHING MACHINE.

No. 455,871.

Patented July 14, 1891.



Witnesses.
John F. C. Pringle
Fred S. Greenleaf

Inventor:
Everett P. Richardson,
by Crosby & Gregory
attys.

UNITED STATES PATENT OFFICE.

EVERETT P. RICHARDSON, OF LAWRENCE, MASSACHUSETTS, ASSIGNOR TO
THE STANLEY MANUFACTURING COMPANY, OF PORTLAND, MAINE.

HEEL-BURNISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 455,871, dated July 14, 1891.

Application filed November 4, 1890. Serial No. 370,332. (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 and figures on the drawings representing like parts.

This invention has for its object to provide a heel-burnishing machine with means for automatically moving the jack to carry the heel to be burnished under the oscillating tool.

In accordance with my invention the machine has been provided with a cam which in its rotation actuates a link in engagement with the jack.

Figure 1 in side elevation represents a heel-burnishing machine embodying my invention; Fig. 2, an enlarged partial elevation looking at the machine shown in Fig. 1 from the left, and Fig. 3 a partial section in the line *x*.

The frame-work consists, essentially, of the column A, having a suitable base A', arms A², a stand A³, and a yoke A⁴. The arms A² have suitable bearings for the oscillating shaft B, having fast on it a block B', to which is jointed the arm B², carrying the burnishing-tool B³, a spring B⁴, secured to the block and acting on a pin 2 of the key B⁵, secured to the arm B², normally acting to keep the tool down into its lowest position and on the heel *h* of the shoe *h'*, mounted in the jack B⁵, having a shank or rod B⁶, in the stand B', the jack being placed in the yoke. The shaft B has fast on it the pinion C, which is engaged by the sector-lever C', connected by link C² with a cross-pin C³ of a disk or plate C⁴ on a short shaft C⁵, mounted in bearings of the stand A³, the sector-lever in its movement oscillating the shaft B and carrying the burnishing-tool about the heel from breast to breast. The disk C⁴ has a cam C⁶ attached to it, which as the shaft C⁵ is rotated acts on an arm of and moves a lever D; carrying a pawl D', thus causing the said pawl to engage and rotate a ratchet-toothed gear D², fast to the cam D³, loose on a stud D⁴, thus rotating the said cam-hub step by step, the overrotation or movement of the cam, due to momen-

tum, being prevented by the washers 3 4, the washer 4 being acted upon by a spring 5, controlled by a collar 6, held in place by a screw 7. The groove of the cam D³ receives a roller or other stud *e* of a lever *e'*, pivoted at *e*² and slotted at 8 to receive a clamping-bolt 10, adjustable in said slot toward and from the center *e*². The bolt 10 enters one end of a latch or catch *f*, having a notch to engage a pin 14 of the jack, and as the cam is rotated the jack is gradually moved to cause the heel to travel horizontally or from top lift to heel-seat end, or vice-versa, while the cam rotates.

It is well understood that the jack has to be raised in order to enable the tool to properly reach the breast-carriers, and to do this automatically I have jointed the link *f* at *h*^x to an elbow-lever *h'*, pivoted at *h*², one arm of the lever being slotted at 15 to receive a bolt 16, inserted through the upper end of a connecting-rod *h*³, extended through a radius-bar or treadle *h*⁴. The jack is shown in its highest position and the tool B³ rests on the top-lift guide or pattern-plate *m*.

On starting the machine the jack will be pulled to the left, and as the tool contacts with the heel toward the heel-seat end the radius-bar *h*⁴ is lowered, permitting the jack to descend. The pawl-carrier is kept in contact with the cam C⁶ by the spring *n*. By adjusting the bolt 10 in the slot of the lever *e'* the jack may be moved for a greater or less distance, according to the length of the heel. By adjusting the bolt 16 in the slot 15 the jack may be moved more or less vertically to provide for varying-sized heels.

It will be noticed herein that the cam for actuating the jack is moved intermittently, so that as it is moved to carry the heel in the direction of its length under the vibrating burnishing-tool it has times of movement and of rest, so that the burnishing-tool when acting upon the heel has a straight stroke about the heel parallel with the junction of the edges of the heel-lifts, whereas if the jack derives its horizontal movement from a worm or from a continuously-rotating cam, as has been done prior to my invention, the stroke of the tool upon the heel would be spiral to a certain extent with relation to the length of the heel, and the advantage of a still point, due to an

intermitting movement of the jack is of very great advantage while the tool is burnishing the heel near the heel-seat. It will also be noticed that the connections between the cam and

5 the jack are reduced to the minimum, I employing only a lever and a link, thus making a direct connection, the lever affording provision for adjustment of the position of the heel under the tool, whereas prior to my invention, wherein devices intermediate a cam
10 or a worm have been used, the said devices have been composed of numerous parts or pieces.

I claim—

15 1. In a heel-burnishing machine, an oscillating arm or lever, an attached burnishing-tool, a jack, an intermittingly-rotating cam, and connections between it and the said jack to move the same horizontally under the vibrat-
20 ing tool, substantially as set forth.

2. In a heel-burnishing machine, an oscillating arm or lever, an attached burnishing-tool, a jack, an intermittingly-rotating cam, and connections between it and the said jack to
25 move the same horizontally under the vibrating tool and with the elbow-lever, connecting-rod, and bar to move the jack vertically, substantially as described.

3. In a heel-burnishing machine, the jack,
30 the hooked link, and the lever to which it is

connected, combined with the cam-hub to move the said lever, and the pawl, pawl-carrier, and ratchet to rotate the said cam, substantially as described.

4. In a heel-burnishing machine, the rotating cam-hub, devices to intermittingly rotate the said hub, the lever *e'*, actuated thereby, and the link *f*, adjustably connected thereto, combined with the jack, to operate substantially as described. 35

5. The link *f* and means to actuate it to move the jack horizontally under the tool, and the bar *h'* and lever *h'*, connected to the said link *f*, combined with the connecting-rod *h'*, attached to the said lever, to operate sub-
40 stantially as described. 45

6. In a heel-burnishing machine, the jack, and a cam to move it, combined with a lever moved directly by the said cam, and with a hook connecting the said lever directly with a
50 part of the said jack, to operate substantially as described.

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

EVERETT P. RICHARDSON.

Witnesses:

EMMA J. BENNETT,
BERNICE J. NOYES.