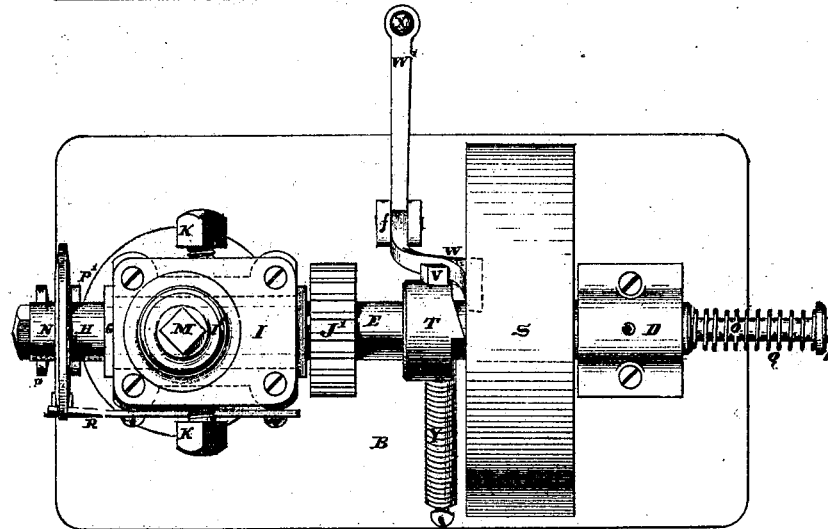
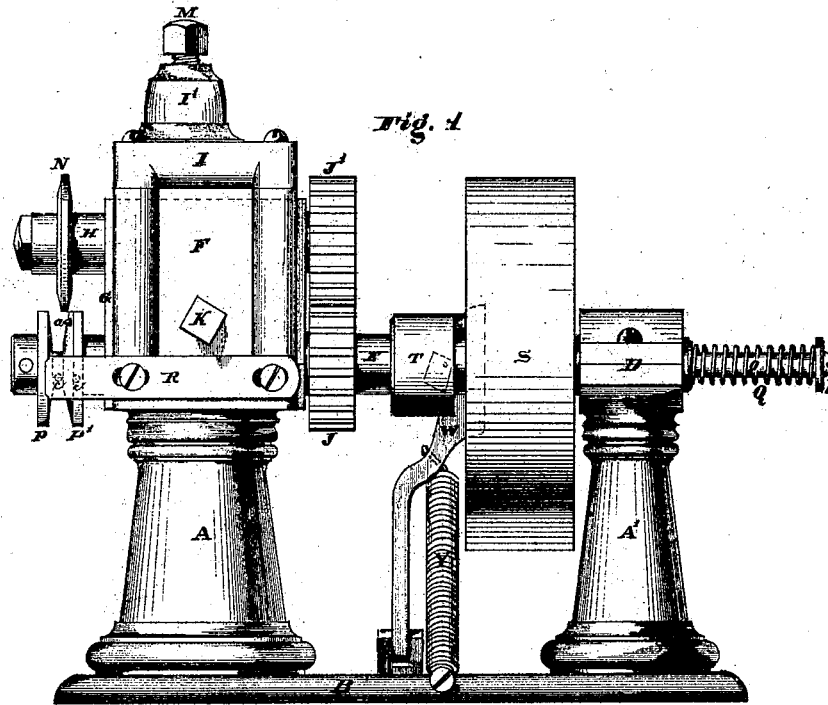


*H. H. Bigelow,* 2. Sheet. Sheet 1.  
*Heel Machine.*

*No. 113,009.*

*Patented Mar. 28, 1871.*



*Fig. 2*

*Witnesses.*

*Charles D. Dinsmore*  
*A. E. Pierce*

*Inventor.*

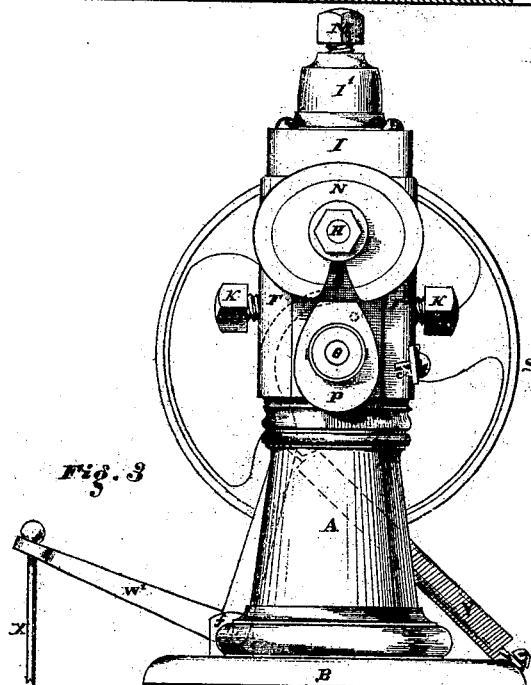
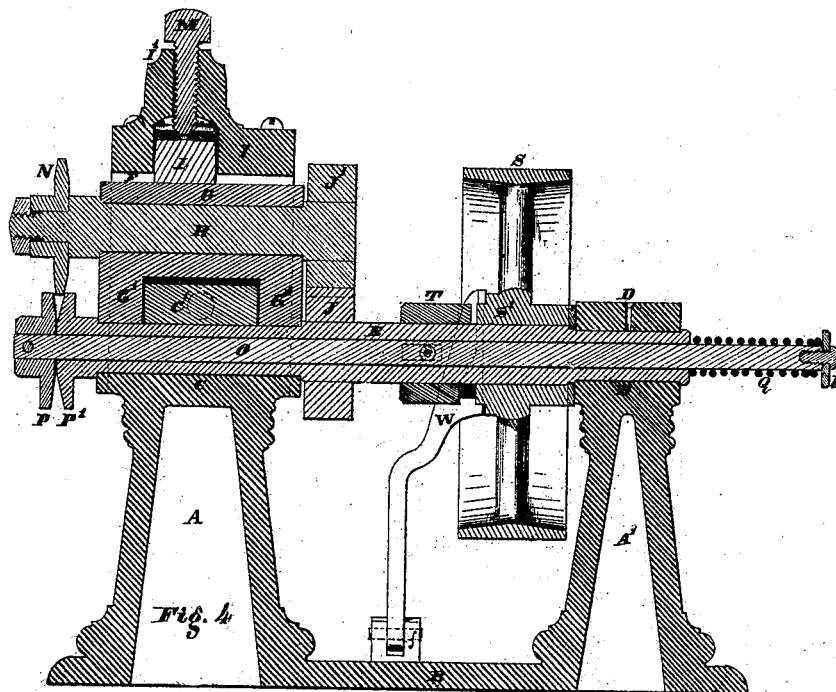
*Horace H. Bigelow*

*H. H. Bigelow,* 2. Sheets, Sheet 2.

*Heel Machine.*

*No 113,009.*

*Patented Mar. 28. 1871.*



*Witnesses.*

*Charles J. Sullivan*  
*A. C. Curcio.*

*Inventor:*

*Horace H. Bigelow*

# United States Patent Office.

HORACE H. BIGELOW, OF WORCESTER, MASSACHUSETTS.

Letters Patent No. 113,009, dated March 28, 1871.

## IMPROVEMENT IN MACHINES FOR TURNING RANDS FOR SHOES.

The Schedule referred to in these Letters Patent and making part of the same.

### *To all whom it may concern:*

Be it known that I, HORACE H. BIGELOW, of the city and county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Machines for Turning Rands; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing which forms a part of this specification, in which—

Figure 1 represents a front view of my improved rand-turning machine;

Figure 2 represents a plan view of the same;

Figure 3 represents an end view; and

Figure 4 represents a longitudinal vertical section through the center of the operating-shaft.

To enable those skilled in the art to which my invention belongs to make and use the same, I will proceed to describe it more in detail.

The nature of my invention consists in certain improvements in machines for turning rands, as hereafter explained.

In the drawing—

A A' indicate the supporting-standards, cast upon the bed-plate B, and surmounted by the bearings C and D, in which the main shaft E revolves.

The upper part of the standard A is extended at each side above the bearing C, thereby forming cheek-plates, F, between which a movable bearing, G, for supporting the shaft H, is arranged, to which the tops of the cheek-plates F are joined by means of a cap-plate, I, in the manner shown in the drawing.

J J' indicate spur-gears, by which the shafts E and H are connected for operation.

The bearing-piece G is provided with lugs G' at each end, which extend downward and fit the upper side of the shafts E, thereby preventing the shafts from being pressed too near each other.

The cap C', for holding the main shaft E upon its bearing C, is formed short enough to fit between the lugs G', and it is secured in position by set-screws K, arranged through the cheek-plates F.

A strong spring, L, of rubber or other suitable material, is arranged upon the top of the bearing G within a recess formed in the cap-plate I, and a set-screw, M, for governing the pressure of the spring upon the bearing, is arranged through the projection I' upon the top of the cap-piece I.

A pressing-cam, N, is secured upon the outer end of the top shaft H for pressing the rand between the forming-cams or jaws P P', one of which is fixed to the end of the main shaft E, and the other to the end of a rod, O, which extends through the center of the main shaft H, the latter being formed hollow for its reception.

The forming-cams P P' are made in the shape re-

quired to fit the heel, and their inner sides are beveled off to fit the bevel of the rand.

A pointed stud, a, is set in one corner of the cam P' for holding the end of the rand at the start.

A spring, Q, is placed around the end of the center rod O, between the end of shaft H and the head b of the rod, for the purpose of drawing the cams or jaws P P' closely together for compressing the rand.

The pressing-cam N is made of the proper shape to match the cams P P', so that when the shafts H and E are revolved the cams will roll together with an equal pressure throughout the whole revolution. The cam N is recessed out at one side, so as to facilitate entering and removing the rand.

A bar, R, is secured to the front of the machine, which is provided with two backward-projecting studs or pins c, which form a guide for the rand as it is drawn into the machine.

A driving-pulley, S, is arranged loosely upon the main shaft E, and the hub S' thereof is furnished with clutch-teeth upon one of its ends which engage with a similar tooth upon the clutch-ring T when the latter is moved up against the pulley-hub S'.

The clutch-ring is secured to the center spindle O by means of a pin, e, which passes through the parts from side to side.

A longitudinal slot is formed in the shaft E, through which the pin e passes, thus permitting the action of the ring and center spindle in a direction parallel to their axis independently of the main shaft.

The clutch-ring T is provided with a projecting lug, V, which runs against a beveled starting-lever, W, and forces forward the ring to release the clutch from the teeth on the pulley-hub S'.

The starting-lever W is made in bell-crank form, and is fulcrumed at its heel between projecting ear-pieces f f on the bed-plate B, while the rear arm thereof, W', is connected by a rod or strap, X, to some suitable operating treadle beneath the table upon which the machine stands.

A spring, Y, is attached to the starting-lever W for the purpose of drawing its upper beveled end forward against the pulley-hub S'; upon which is formed a suitable shoulder to guide and steady the end of said lever.

The clutch-ring T, center rod O, and forming-cam P work in concert, and are moved to the right by the spring Q, and to the left by the lug V and beveled starting-lever W.

The operation of my improved rand-turning machine is as follows:

The operator passes the end of the rand upward between the guide-studs c and rests it against the spur a; he then places his foot upon the treadle and depresses the rear arm W', which swings back the

starting-lever W and releases the lug V and clutch-ring T, when the spring Q throws the center rod O to the right, which closes the cam P against the rand and moves the clutch-ring T up to the end of the hub S, so that their teeth engage, and the pulley S, being in motion, causes the shafts E H and cams P P' and N to revolve. The cam N runs upon the top of the rand and forces it down between the forming-cams P P', which press it into the desired form.

When the shaft E has made one revolution the lug V runs onto the beveled end of the starting-lever, whereby the ring T and center rod O are carried to the left far enough to disengage the clutch-teeth and thus stop the motion of the shaft, and also to separate the cams or jaws P P', so as to release the rand, which is then removed from the machine turned to the proper form.

Having described my improved machine for turning rands,

What I claim therein as new and of my invention, and desire to secure by Letters Patent, is—

1. The combination, with the forming-cams or jaws

P P', of the pressing-cam N, substantially as and for the purposes set forth.

2. The combination, with the shafts E and H, of the center rod O, forming-cams or jaws P P', pressing-cam N, and spring Q, substantially as and for the purpose set forth.

3. The combination, with the shafts E and H, center rod O, and cams N P P', of the bearing-piece G G', spring L, and adjusting-screw M, substantially as and for the purposes set forth.

4. The combination, with the shaft E and rod O, of the clutch-ring T, starting-lever W, and spring Q, substantially as and for the purposes set forth.

5. The combination, with the cams or jaws P P', of the bar R, provided with guide-pins c, substantially as and for the purposes set forth.

6. The combination, with the cams or jaws P P', of the holding stud or point a, substantially as and for the purposes set forth.

Witnesses:

HORACE H. BIGELOW.

CHAS. H. BURLEIGH.

A. E. PEIRCE.