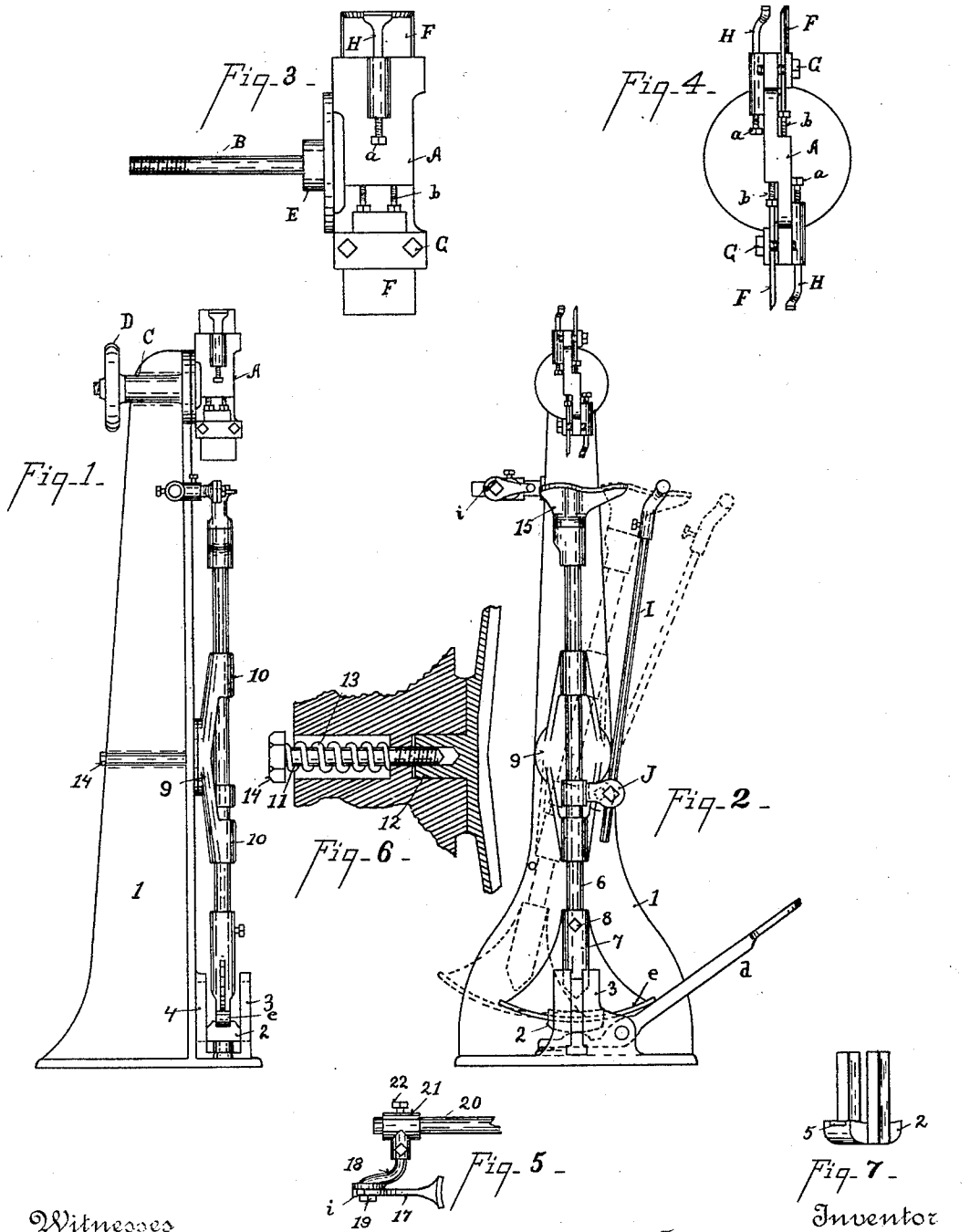


(No Model.)

S. ROSS, Jr.
HEEL BREASTING MACHINE.

No. 437,665.

Patented Sept. 30, 1890.



Witnesses
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UNITED STATES PATENT OFFICE.

SIMON ROSS, JR., OF CINCINNATI, OHIO, ASSIGNOR TO THE ROSS-MOYER MANUFACTURING COMPANY, OF SAME PLACE.

HEEL-BREASTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 437,665, dated September 30, 1890.

Application filed June 19, 1890. Serial No. 355,971. (No model.)

To all whom it may concern:

Be it known that I, SIMON ROSS, JR., a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Heel-Breasting Machines, of which the following is a specification.

My invention relates, primarily, to heel-breasting machines. It is adapted, however, to be used for other similar purposes.

The various features of my invention will be fully set forth in the description of the accompanying drawings, making a part of this specification, in which—

Figure 1 is an enlarged side elevation of the machine. Fig. 2 is a front elevation of the same. Fig. 3 is an enlarged detail view of the tool-head. Fig. 4 is a front elevation of the same. Fig. 5 is a top plan view of the detachable stop. Fig. 6 is a detail view of the sliding head. Fig. 7 is a perspective view of the sliding jack.

1 represents the frame of the machine. The operating mechanism mounted on said frame is composed, first, of the sliding jack 2, which is supported between the slots 3 of the bracket 4, so as to move freely up and down the jack. Said jack is provided with a slot 5, in which is stepped a spindle 6. Said spindle is preferably made sectional, consisting of the sleeve or socket 7, into which the spindle 6 proper is secured by means of the set-screw 8, so as to make the said spindle adjustable longitudinally. The bottom end of said sleeve or socket 7 is provided with a quadrant-shaped foot *e*, the rim of which moves freely in the slot 5 of the jack 2.

d represents a lever hinged to the frame of the machine, its forward end being rounded and projecting under the jack 2, the bottom of which jack is rounded off, so that as the foot-lever is raised the said jack will slide in its guides vertically, the round face of lever *d* moving transversely over the rounded face of the bottom of the jack, thereby raising the spindle in a vertical plane. Said spindle journals longitudinally in bracket 9, provided with bearings 10. Said bracket is provided with stud-shaft 12 and journals in the frame of the machine. In order to hold it normally

in position the screw 11 is tapped into the shaft 12.

13 represents a coil-spring surrounding the screw 11, so as to take up lost motion and apply resistance to the journal. Frictional resistance would be an equivalent, but it cannot be so readily and nicely adjusted.

14 represents a head for turning the shaft to secure tension for the spring. As it is desirable to oscillate this spindle in a horizontal direction, as shown by dotted lines, Fig. 2, the bracket allows said oscillation of the spindle, the quadrant-foot *e* moving through the jack. It will thus be seen that the spindle is operated vertically by means of the foot-treadle *d*. It is moved horizontally by means of its journal-bearings 10, and it is adjusted vertically by being made in sections.

15 represents a last, which is provided with a socket to engage over the top of the spindle 6.

17 represents a stop which is secured to bracket 18 by set-screw 19.

20 represents a stud-shaft projecting out from the base of the machine, on which is secured a sleeve 21 by means of the set-screw 22, so as to make the stop adjustable longitudinally on said shaft to accommodate different sizes of shoes. The stop 17 may be turned upon its center out of the way if it is not desired to use it.

i represents a lug, against which the arm 17 strikes, so as to limit its downward movement, a portion of said arm being cut away, so as to allow the arm to be raised in a vertical position.

A represents the tool-head. It is provided with the stud B, journaling in the bearing pierced through the frame at C.

D represents a hand-wheel tapped onto the shaft B for drawing the head tight and holding it stationary in the frame.

E represents a boss or enlargement of the shaft journaling in the frame, so as to sustain the weight of the head and relieve the shaft from strain.

F represents knives secured to the tool-head by means of set-screw G.

H represents stops placed in the rear of the knives F, so as to limit the downward stroke

or cutting of the knife. They are regulated by means of set-screws *a*. *b* represents adjusting-screws upon which the knives F rest.

It will be observed that either one of the knives F may be brought into use by slackening the hand-wheel D and allowing the tool-head to be turned upon its axis.

Several advantages are obtained by oscillating or revolving the tool-head upon its axis B. It is frequently desired to drive the tool A in an angular direction by slackening hand-wheel D. The knife F may be adjusted to cut out any desired angle to the vertical line and be tightened up. As the spindle rises in a vertical plane an angular cut will be obtained.

Mode of operation: When it is desired to breast the heels of boots or shoes, they are placed upon the last. The stop 17 is adjusted upon the bracket 20 to fit the desired size of boot. The operator brings the spindle 6 forward in the position shown in dotted lines, places the boot or shoe on the last, and it is turned back until the heel of the same strikes the stop 17. The knife F is adjusted to the desired angle. The operator places his foot on the treadle *d*, pushes the same down rapidly, which elevates the shoe on the last against the edge of the knife, and obtains the desired cut. The operator then removes his foot from the treadle, when the weight of the spindle and jack will bring it in the normal position shown in Fig. 2. By reason of having the bracket 9 secured by a spiral spring 13 and screw 11 the tension of the spring is such that the operator can rotate spindle 6 on its bearing for putting on and taking off the shoe, yet when it is carried back into its position the spring will hold it in said position sufficiently firm for cutting. Besides, the weight of the spindle tends also to keep it in vertical planes.

I represents a rest secured to the bracket J below the axial journal of said bracket, which serves as a rest for the toe of heavy boots and shoes. Said rest may be removed when not in use.

Having described my invention, what I claim is—

1. In a heel-breasting machine, the combination of the vibratory bracket 9, the treadle *d*, the spindle 6, journaled in said bracket and

having a convex face engaged with the convex face of said treadle, and guides for compelling the spindle to ride in a vertical plane as the treadle is depressed, whereby said spindle can be moved in either a vertical or a rotary plane at the will of the operator, substantially as described.

2. In a heel-breasting machine, the spindle 6, journaled vertically in the bracket 10 and stepped upon the jack 2, in combination with the foot-treadle *d*, substantially as specified.

3. In a heel-breasting machine, the sectional shaft 6, provided with the quadrantal-shaped foot *e*, in combination with the jack 2, elevating-lever *d*, and the vertical journals 10, substantially as herein specified.

4. In combination with the vertical spindle 6, carrying the last 7, the adjustable stop 17 in the form of a hinged arm adapted to turn up out of use, substantially as specified.

5. A spindle 6, journaled longitudinally on the bracket 10, which is journaled upon a rotary adjusting-shaft 9 and provided at its foot with the quadrant *e*, stepped upon jack 2, which jack is in turn stepped upon the treadle *d*, whereby a vertical and a rotary motion of the spindle are obtained, substantially as specified.

6. In a heel-breasting machine, the combination of the vertically-movable spindle 6 for carrying the last 15, the rotary tool-head A, having an adjusting stud or axis B, knives F, carried by said tool-head, the adjusting-screws *b* upon which said knives rest, and a hand-wheel on the stud B for adjusting the tool-head to give any desired inclination to the knives, substantially as described.

7. The spindle 6, journaled in bracket 9, which is in turn journaled in the frame of the machine, in combination with the spring 13 and with adjusting-screw 11, whereby the said journal is normally held in working position and allowed to yield under strain, substantially as specified.

In testimony whereof I have hereunto set my hand.

SIMON ROSS, JR.

Witnesses:

C. W. MILES,
T. SIMMONS.