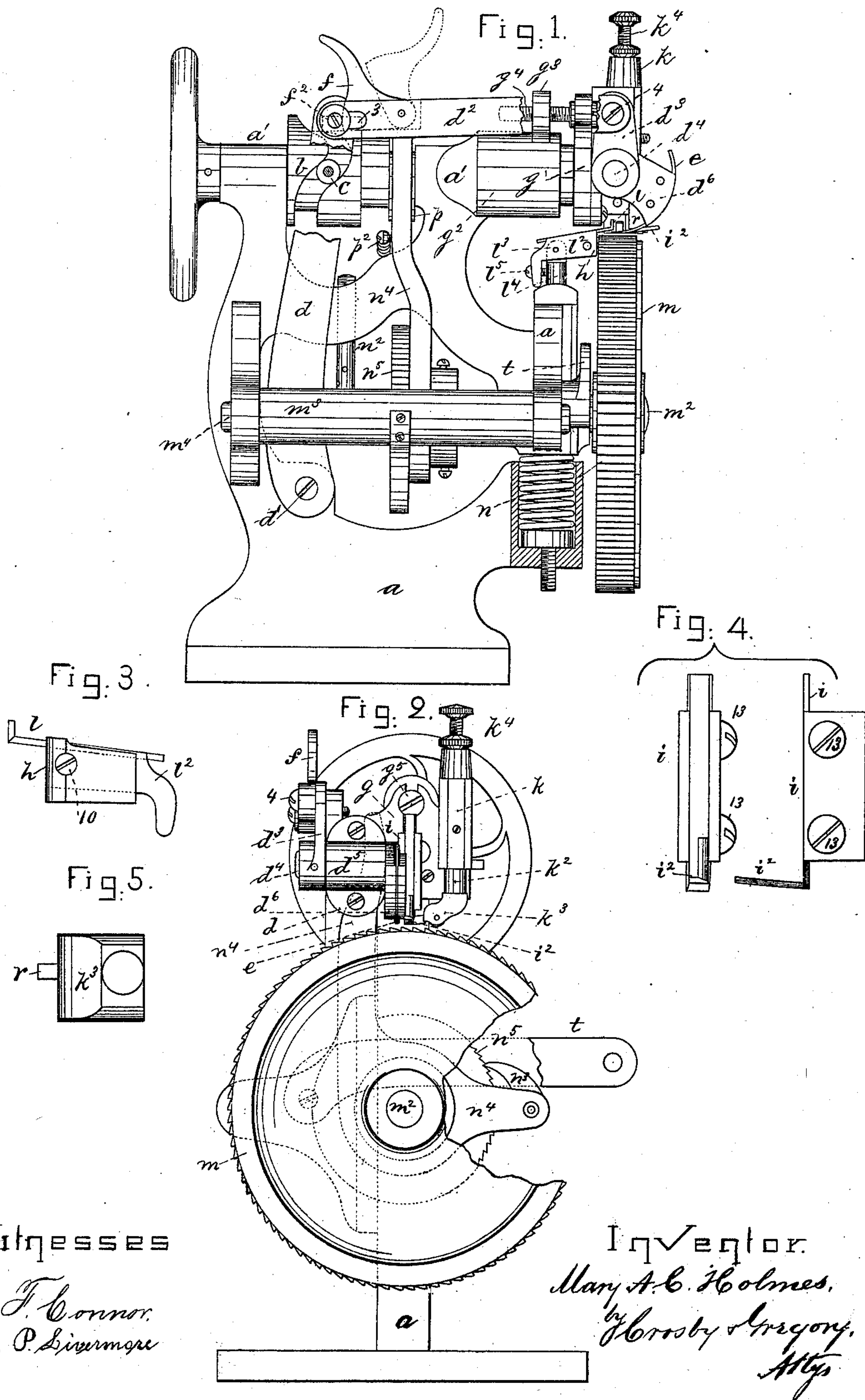


M. A. C. HOLMES.  
Machine for Channeling and Pricking Soles.  
No. 222,628. Patented Dec. 16, 1879.



Witnesses

S. F. Connor.  
Jos. P. Livermore

Inventor.  
Mary A. C. Holmes,  
by Crosby & Gregory,  
Attys



# UNITED STATES PATENT OFFICE.

MARY A. C. HOLMES, OF NEWPORT, RHODE ISLAND.

## IMPROVEMENT IN MACHINES FOR CHANNELING AND PRICKING SOLES.

Specification forming part of Letters Patent No. **222,628**, dated December 16, 1879; application filed November 3, 1879.

*To all whom it may concern:*

Be it known that I, MARY A. C. HOLMES, of the city and county of Newport, State of Rhode Island, have invented an Improvement in Machines for Channeling and Pricking Soles, of which the following description, in connection with the accompanying drawings, is a specification.

This invention relates to improvements in machines for channeling and pricking inner soles, to be used in connection with welted work or outer soles for turned work, the object being to channel this kind of soles and prick through and provide the raised rib or wale of leather left between the two cutters with a series of holes uniformly spaced, to be subsequently filled in with thread by hand.

In this my invention the leather sole to be channeled and pricked rests with its grain side upon a feeding-wheel, herein shown as having the bearing for its shaft so supported by a spring that the feeding-wheel may be raised or lowered.

The feeding-wheel, located to act upon the grain side of the sole, leaves ample room for the channeling and edge-beveling cutters to act, and obviates tearing or disturbing the position of the rib or wale left on the flesh side of the sole by the channeling or beveling operation, and through which pass the threads to unite the upper to the inner or to be turned sole, whereas if the feed were to operate upon the flesh side of the sole and engage this rib or wale it would be greatly injured, if not destroyed.

The channel-cutter is made vertically adjustable on its holder, which holder, together with the presser-foot guiding-socket, and the bearing which holds the shaft of the perforating-awl, are all attached to a separate head made horizontally adjustable toward and from the edge-gage which bears against the edge of the sole, the adjustment of said head horizontally providing for cutting the channel at the inner edge of the rib or wale at a greater or less distance from the edge of the sole.

The edge-beveling cutter is held in a block pivoted upon an adjustable post, so as to incline the cutter to correspond with the desired inclination of the bevel of the edge of the sole outside the rib or wale, and also so as to raise or lower it, to leave the extreme edge of the sole of proper thickness, and so

also to adapt the machine to different thicknesses of stock.

The piercing-instrument is so connected with its actuating mechanism that its action may be stopped or interrupted while the channeling operation is going on, this being especially desirable, to permit the cutters to first act to form part of the rib or wale, after which the piercing-instrument is thrown into action to pierce the rib or wale at the rear of the cutters.

Figure 1 represents, in side elevation and partial section, a channeling and piercing machine containing my invention; Fig. 2, a front elevation thereof; Fig. 3, a detail of the block or carrier for the beveling-cutter; Fig. 4, a detail of the holder for the channel-cutter; Fig. 5, a top view of the presser-foot detached, to show its forward extension to act upon the rib or wale and keep it down between the cutters.

The frame-work *a* is of proper shape to sustain the working parts, and has bearings *a'* to receive the main rotating shaft, upon which is the grooved cam-hub *b*, to receive the roller-stud *c* on the lever *d*, pivoted at *d'*, and connected by link *d<sup>2</sup>* with the arm *d<sup>3</sup>* of the rock-shaft *d<sup>4</sup>*, held in bearing *d<sup>5</sup>*, the opposite end of the rock-shaft having an arm, *d<sup>6</sup>*, which, at one side, is provided with a suitable clamp, by which to secure the curved awl or piercing-instrument *e* to the said arm. The vibration of the lever *d* by the cam-hub *b* will cause the piercing-instrument to reciprocate in the arc of a circle; but if it is desired that the said instrument shall not operate when the said cam-hub rotates, then it is only necessary to lift or turn the disconnecting device *f* (shown as a short latch pivoted to the link *d<sup>2</sup>*, see Fig. 1) into the position shown in dotted lines. This disconnecting device, when turned down, as in full lines, acts at one end against the connecting-pin *f<sup>2</sup>*, fixed at the upper end of lever *d*, and fitted to a slot, 3, (see Fig. 1,) in the link.

When the pin *f<sup>3</sup>* and device *f* are in contact, and lever *d* is moved, the piercing-instrument must also be moved; but when *f* is raised, as in dotted lines, the pin *f<sup>2</sup>* moves in the slot 3, and the link *d<sup>2</sup>* and piercing-instrument remain at rest, and the piercing-instrument may be kept up from contact with the leather of the sole.



It is obvious that other forms of disconnecting devices may be used without departing from my invention—as, for instance, the roller-stud  $c$  might be so held on the lever  $d$  as to be withdrawn from the groove of the cam-hub, or the end of the link  $d^2$  might be made as a hook to be quickly applied to or disconnected from the pin 4.

The bearing  $d^2$  is connected with a head,  $g$ , having a sleeve to enter a guide,  $g^2$ , and an ear,  $g^3$ , connected with the said guide  $g^2$ , which has in it an adjusting-screw,  $g^4$ , having a grooved head,  $g^5$ , to embrace a part of the said head  $g$ , and cause it to be moved horizontally toward and from the edge-gage  $h$  for the edge of the sole being channeled, as the said adjusting-screw  $g^4$  is rotated in one or the other direction.

The holder  $i$  for the channel-cutter  $i^2$ , having a right-angled cutting-edge, is connected with the head  $g$ , as is also the guide or stand  $k$  for the stem  $k^2$  of the presser-foot  $k^3$ , which is held pressed down in any usual way—as, for instance, by a spiral spring within the stand  $k$ , all as common in sewing-machines. Adjusting this head  $g$  by the screw  $g^4$  enables the cutter  $i^2$  to cut the channel in the sole, so as to leave the rib or wale more or less remote from the edge of the sole, and the piercing-instrument is by the same movement brought in position to properly pierce the said rib or wale, it, during all its adjustments, taking the same direction or course through the said rib or wale.

The presser is shown as provided with a roller to lessen friction of the leather upon it.

The edge beveling or chamfering cutter  $l$ , having also a right-angled cutting-edge, as shown clearly in Fig. 3, is adjustably held by the screw 10 between cheeks of the box  $l^2$ , pivoted at  $l^3$  on a vertically-adjustable post,  $l^4$ .

An adjusting-screw,  $l^5$ , in the box bears against the said post, and tips the box so as to incline the edge of its cutter more or less with relation to the surface of the feeding-wheel and support  $m$ , so as to bevel or chamfer the sole edge at a greater or less angle; and by elevating the post  $l^4$  the cutter  $l$  may be made to leave the outer edge of the sole of the desired thickness.

The edge-gage for the edge of the sole is herein shown as connected with the block  $l^2$  by the screw 10.

Adjusting the cutter  $l$  longitudinally in its box  $l^2$  adapts it to cut the incline outside the rib or wale of greater or less width, and the distance apart of the right-angled corners of the two cutters  $l$   $i^2$  governs the width of the rib or wale.

Adjusting the cutter  $i^2$  vertically, as may be done by screws 13 13, enables the channel at the inner side of the rib to be cut to the proper depth.

The shaft  $m^2$  of the feed-wheel and support  $m$  turns in a long bearing-sleeve,  $m^3$ , pivoted at  $m^4$ . It is held pressed upward by a strong spring,  $n$ .

The upward position of the bearing, and consequently of the top of the wheel, is determined by the adjustable stop  $n^2$ , and the feed-shaft  $m^2$  is rotated by a pawl,  $n^3$ , of a pawl-carrier,  $n^4$ , the pawl engaging a ratchet-wheel,  $n^5$ , fixed on the shaft  $m^2$ .

The pawl-carrier (shown in Fig. 1 and also in dotted lines, Fig. 2) is actuated by the cam  $p$  on the main shaft. (See Fig. 1.) A spring,  $p^2$ , holds the end of  $n^4$  against the cam  $p$ .

In Fig. 5 I have shown the presser-foot with its forward extension,  $r$ , to extend between the cutters  $i^2$   $l$ , and bear upon the leather to be left between them to form the rib or wale, this extension  $r$  holding the leather down firmly between the two cutters, and preventing the rib or wale from being torn up or off.

The bearing  $m^3$ , shaft  $m^2$ , and wheel  $m$  may be depressed, when desired, by the lever  $t$ , pivoted at its rear end upon the frame-work  $a$ , the said lever being extended at right angles across the shaft  $m^2$ . This lever is in Fig. 2 shown as broken off, to illustrate the pawl and ratchet behind it.

I claim—

1. In a sole channeling and perforating machine, a feeding-wheel which is also a yielding support for the grain side of the sole, combined with the channel-cutter, and a beveling or chamfering cutter, and a piercing-instrument to pierce the rib or wale formed by the said cutters, substantially as described.

2. In a sole channeling and perforating machine, a yielding presser-foot to bear upon the upper side of the sole, a feed-wheel to sustain the under side of the sole, and the channeling and beveling cutters located above the sole, combined with the perforating-instrument, substantially as described.

3. The channel and edge-beveling cutters and the piercing-instrument, combined with the presser-foot, provided with the forward extension to bear upon the rib or wale of the sole between the cutters, substantially as described.

4. In a sole channeling and perforating machine, the combination, with the channel and edge-beveling cutters, of a piercing-instrument and connecting mechanism between it and its operating-cams, to permit the cutters to operate upon the sole while the piercing-instrument remains at rest, for the purpose set forth.

5. In a sole channeling and perforating machine, the combination, with the adjustable sole-edge-beveling cutter, of a channeling-cutter and perforating-instrument made laterally movable with relation to the beveling-cutter and its holder, substantially as and for the purpose described.

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

Witnesses: MARY A. C. HOLMES.  
N. E. WHITNEY,  
L. F. CONNOR.