W. C. WISE.

MACHINERY FOR FORMING COUNTER-STIFFENERS FOR BOOTS AND SHOES.

No. 180,978. Patented Aug. 8, 1876.

Fig. 1.

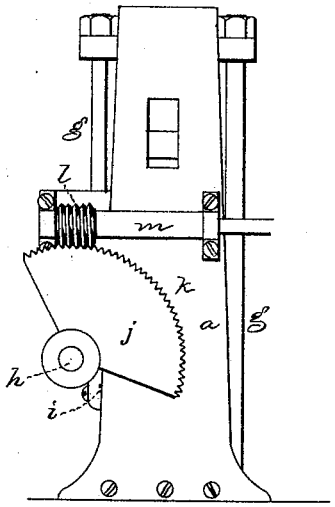


Fig. 2.

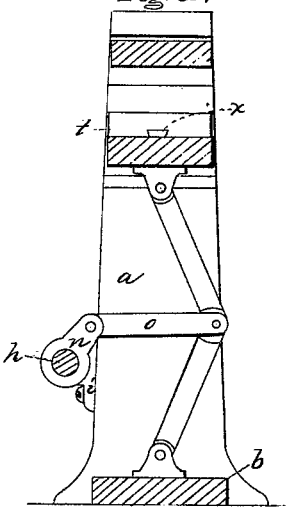
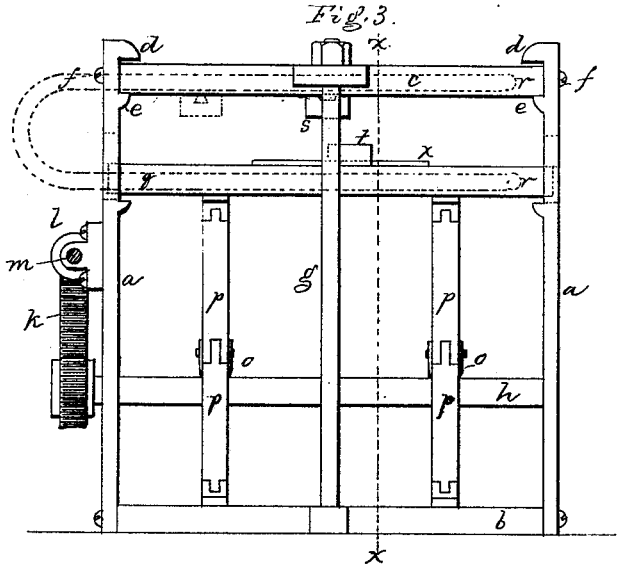


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

WILLIAM C. WISE, OF CHELSEA, MASSACHUSETTS.

IMPROVEMENT IN MACHINERY FOR FORMING COUNTER-STIFFENERS FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. **180,978**, dated August 8, 1876; application filed April 7, 1876.

To all whom it may concern:

Be it known that I, WILLIAM C. WISE, of Chelsea, in the county of Suffolk and State of Massachusetts, have invented an Improved Machine for Forming Heel-Stiffeners, of which the following is a specification:

This invention relates to a machine for forming or molding heel or counter stiffeners of india-rubber compound, leather-board, or leather for boots and shoes; and consists in a steam-heated platen by which one part of the mold is carried and heated, in combination with toggle-jointed arms, and mechanism for operating them, as hereinafter described, whereby the platen is raised and powerful pressure is produced to properly mold several stiffeners at each operation of the press.

Figure 1 is an end view of my machine; Fig. 2, a transverse section, taken through Fig. 1 on line *x x;* and Fig. 3 is a side view.

The end frames of the machine are connected with a bottom piece, *b*, and at top with a hollow steam-box or bed-piece, *c*, having its ends placed between lugs *d e*, and the screws *f* enter the ends of the bed *c* through elongated screw-holes, to permit the adjustment of the bed parallel with the surface of the platen, suitable wedge-blocks being used between the upper side of the bed-piece and the lugs *d*. Stay-rods *g g* prevent the bed-piece from springing at its center. The rock-shaft *h*, supported in suitable bearings *i*, has, at its end, a sector, *j*, with worm-teeth *k*, engaged by a worm-gear, *l*, on a shaft, *m*, this worm and sector being adapted to rock the shaft *h*, which is provided with arms *n*, connected by links *o* with the toggle-arms *p p* joined to the bottom piece *b*, and to the hollow steam-heated platen *q*, which is raised and lowered by the action of the rock-shaft and toggle-arms.

The bed-piece *c* and movable platen *q* are heated by steam through pipes connected with any suitable steam-chamber, and the steam may pass from one to the other through a flexible connecting-pipe joined with the bed and platen at *r r;* but for this purpose I prefer to use a long metallic pipe, as shown in dotted lines, Fig. 3. This metallic pipe is of such length as to spring sufficiently to permit the platen to rise and fall as far as necessary.

For molding the stiffeners from rubber compound, the platen and molds are heated sufficiently to vulcanize the rubber; but when stiffeners of leather or leather-board are being formed, the heat will be much less in degree.

The metallic molds *s t*—one attached to the bed-piece *c*, and the other to the platen—are concave and convex, as usual, to form a counter of the desired shape, and are grooved on their backs to receive a dovetailed rib, *x*, by which the molds are retained in position.

A sector like *k*, and a worm to operate it, may be placed at each end of the rock-shaft, and instead of using the links, I may use a cam to press against the toggle-arms to straighten them, and the weight of the platen, assisted or not by a spring, will bend the toggle-arms.

I may use a spring under each end of the platen that will be compressed when the platen is drawn down, and then, when it is desired to lift the platen, the springs will assist its upward movement, and make it easier for the shaft to straighten the toggle-arms.

The molds have frequently to be removed to be cleansed, and this is easily done by reason of their connection with the bed and platen through the dovetailed rib *x*.

The molds on the bed-piece will be connected each with a short transverse dovetailed rib. (See dotted lines at left of Fig. 3.)

When the molds are separated, the stiffeners should be left in the concave molds, and to insure their remaining there, a spring-catch is attached to each mold, and its end fits over the upper end of the stiffener at its back.

I claim—

1. In a machine for forming counter-stiffeners for boots and shoes, the combination of the heated bed-plate and platen and molds

and toggle-arms with a rock-shaft, sector, and worm-gear, and shaft to move the sector and rock-shaft, substantially as described.

2. The steam-heated platen and rib *x*, in combination with the mold *t*, grooved to embrace the rib to permit the attachment and removal of the molds, substantially as described.

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

WILLIAM CROSBY WISE.

Witnesses:
G. W. GREGORY,
S. B. KIDDER.