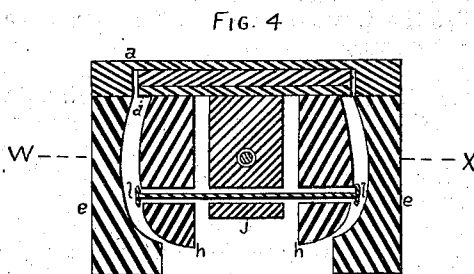
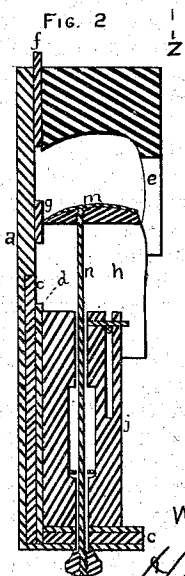
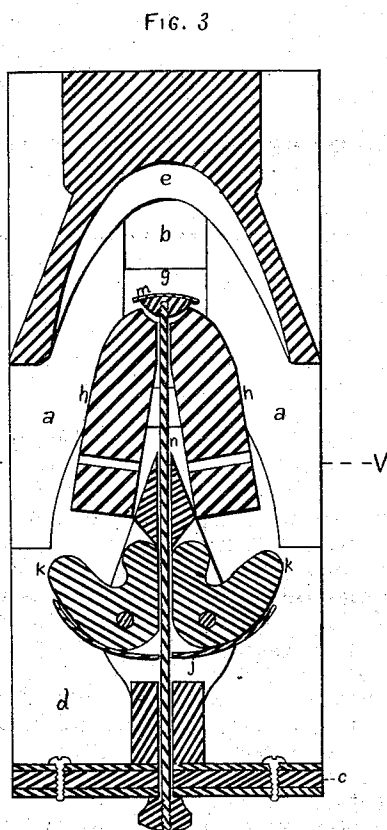
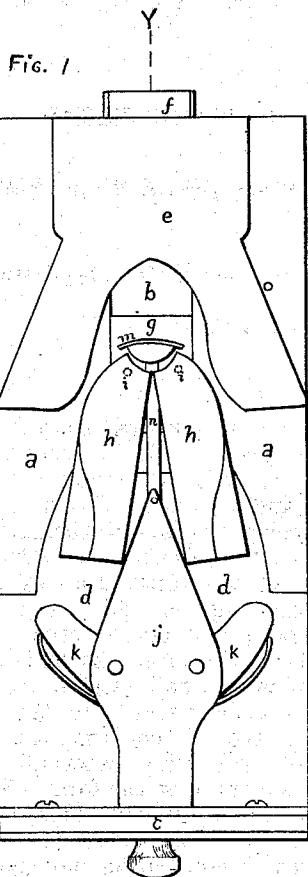


N. J. SIMONDS.
Machinery for Molding Shoe-Stiffenings.
 No. 155,594 Patented Oct. 6, 1874.



WITNESSES.

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UNITED STATES PATENT OFFICE.

NATHAN J. SIMONDS, OF WOBURN, MASSACHUSETTS.

IMPROVEMENT IN MACHINERY FOR MOLDING SHOE-STIFFENINGS.

Specification forming part of Letters Patent No. **155,594**, dated October 6, 1874; application filed June 30, 1873.

CASE A.

To all whom it may concern:

Be it known that I, NATHAN J. SIMONDS, of Woburn, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Machinery for Molding Boot and Shoe Stiffenings, of which the following is a specification:

This invention relates to machinery, by which the heel-stiffenings of boots and shoes are molded or pressed into the exact form which it is desired that they shall occupy when incorporated in the boot or shoe; and the invention consists in a solid mold and an expanding form, between which the stiffenings are pressed into the required shape, either by moving the mold toward the form, or the form toward the mold, or by imparting a motion to each; and the invention further consists in the peculiar construction of the form, as also in the elastic packing, combined with the mold and form, by which to equalize the pressure upon stiffenings of varying thickness.

Figure 1 is a front elevation. Fig. 2 is a diminished vertical section, taken on line *y z*, Fig. 1. Fig. 3 is a vertical section taken on line *W X*, Fig. 4. Fig. 4 is a horizontal section taken on line *U V*, Figs. 1 and 3. Fig. 5 is a detached view, showing a modification of the devices for expanding the form.

In the drawings, *a* is the vertical angle of the bed-plate, in which is formed a dove-tailed groove, *b*, and a recess or diminished thickness for the reception of the elastic packing *c*, and metal plate *d*, as shown in Figs. 1, 2, and 4. *e* is the solid or undivided mold, the interior or concave surface of which corresponds in configuration or form to the desired exterior form of the molded stiffening. This mold is rigidly secured to the vertically-sliding dovetailed plate *f*, which fits into groove *b* in plate *a*. *g* is also a dovetailed plate sliding in groove *b*, and to this plate the halves *h h* of the expanding form are pivoted at the points indicated by the dotted circles *i i*, Fig. 1. The exterior of this form, when expanded, fits into the interior

of mold *e*. *j* is a wedge-shaped expander, secured to plate *d*. In a recess in this expander are pivoted the cams *k k*, as shown in Figs. 1 and 3. *l* is an elastic cord or contracting-spring attached to the halves of the form, and moving freely in a vertical slot in wedge *j*, and constantly drawing the halves of the form against the wedge. *m* is a cap, covering the joint between the halves of the form at its apex, so that the interior of the stiffening shall receive a smooth finish, and not be forced into the space between the halves of the form, the cap, when in position, presenting externally a continuation of the curve of the form. This cap is secured to rod *n*, which slides in a central hole in the expander, as shown.

A vertical reciprocating movement of the desired distance and rapidity may be imparted to mold *e* by any of the well-known devices adapted to such movements, and a spring or other device may be arranged to automatically raise the form *h h* when the mold rises.

In practical use the operator is seated in front of the machine, as it is shown in Fig. 1, and holding the stiffening by its end, and bending it to the curvature of the form, places it thereon, with the top edge bearing against plate *g*. When the machine is set in motion the mold descends, forcing down the form, the lower ends of which coming in contact with the cams *k*, which project from wedge *j*, and throwing out the concealed horns which force asunder the halves of the form, impart a powerful lateral pressure to the stiffening, the horizontal portion of elastic packing *c* compensating for variations in thickness of stiffenings at the apex, while the vertical part of the packing performs the same office in relation to the lower flange of the stiffening, which is turned between the outer flanges of the mold and the front of the form.

In Fig. 5 *o o* are connecting-rods, the ends of which are, respectively, pivoted to the form and expander, as shown. When thus

constructed the expander may be dispensed with, and the lower ends of the rods pivoted to studs secured in plate *d*.

What I claim as my invention is—

1. The external mold *e*, and divided form *h h*, substantially as and for the purposes specified.

2. In combination with the divided form, the cap *m*, substantially as described and shown.

3. In combination with mold *e* and form

h h, the elastic packing *c*, when arranged to operate substantially as described and shown.

4. The combination of mold *e*, divided form *h h*, and cams *k k*, substantially as described and shown.

NATHAN J. SIMONDS.

Witnesses:

EBEN HUTCHINSON,
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