(No Model.) 2 Sheets—Sheet 1.

L. LAKE.

LASTING MACHINE.

No. 491,894. Patented Feb. 14, 1893.

FIG. 4

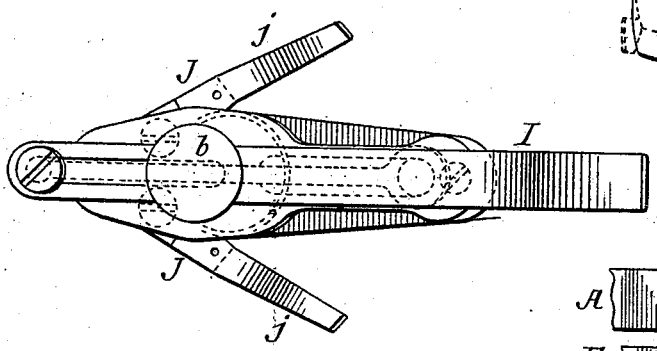


FIG. 1.

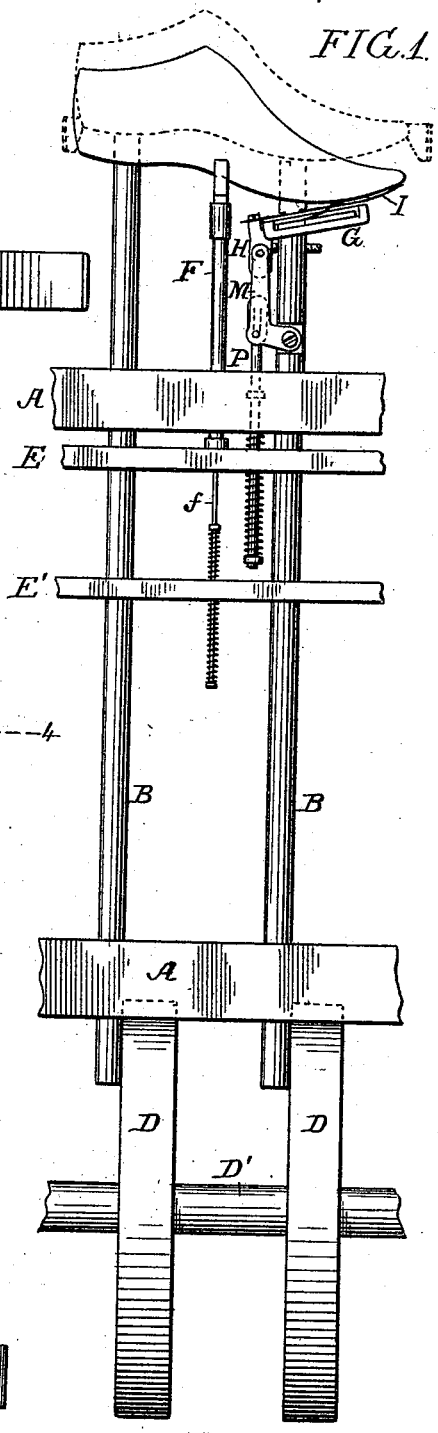


FIG. 5.

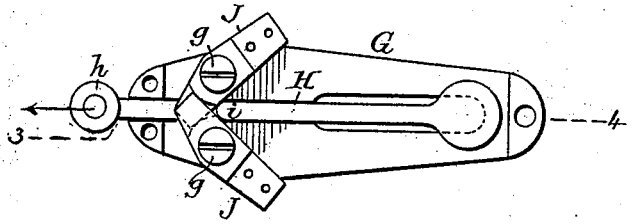


FIG. 6.

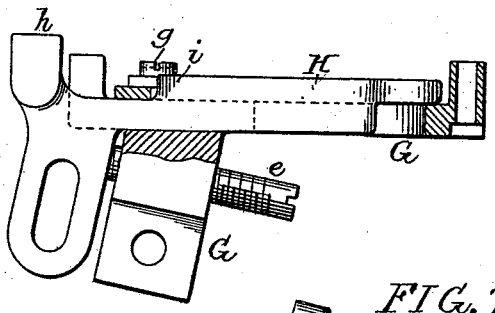
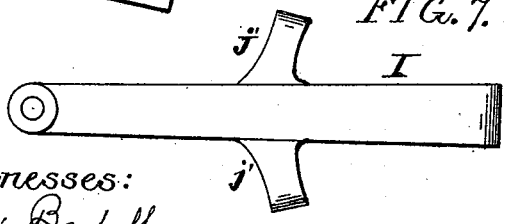


FIG. 7.



Witnesses:
Alex. Barkoff
Murray C. Boyer

Inventor:
Leon Lake
by his Attorneys
Howson & Howson

(No Model.) 2 Sheets—Sheet 2.

L. LAKE.

LASTING MACHINE.

No. 491,894. Patented Feb. 14, 1893.

FIG. 2.

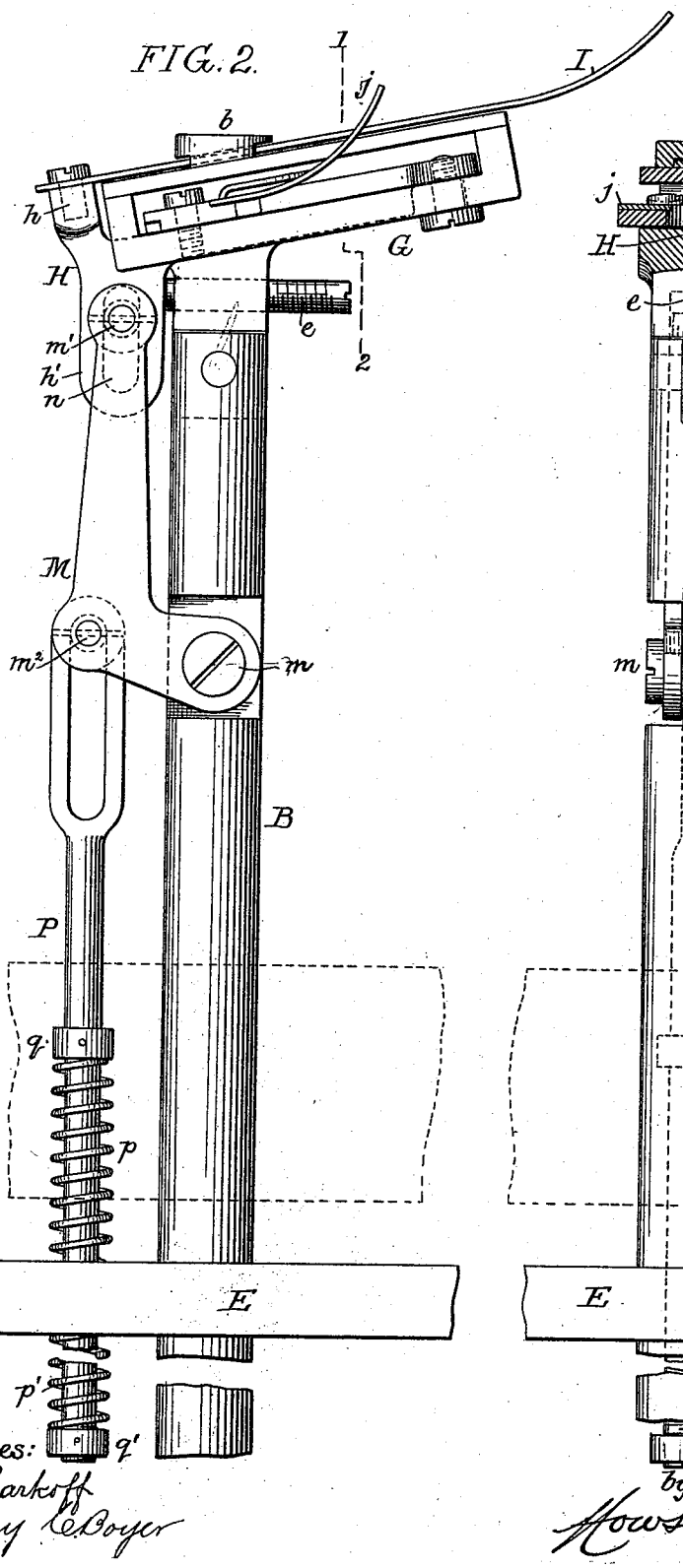
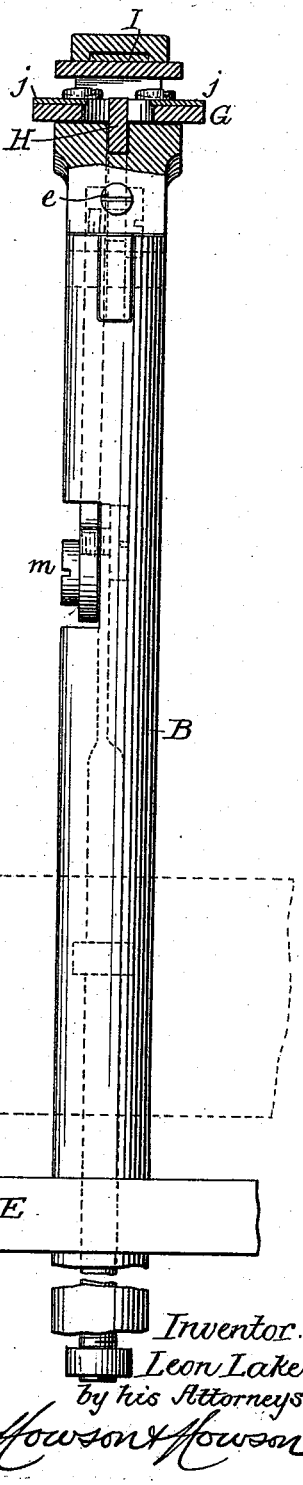


FIG. 3.



Witnesses:
Alex. Barkoff
Murray & Boyer

Inventor:
Leon Lake
by his Attorneys
Howson & Howson

UNITED STATES PATENT OFFICE.

LEON LAKE, OF HORNELLSVILLE, NEW YORK, ASSIGNOR TO THE WHIFFEN-LAKE LASTING MACHINE COMPANY, OF HAMMONTON, NEW JERSEY.

LASTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 491,894, dated February 14, 1893.

Application filed July 27, 1891. Serial No. 400,827. (No model.)

To all whom it may concern:

Be it known that I, LEON LAKE, a citizen of the United States, and a resident of Hornellsville, Steuben county, New York, have invented certain Improvements in Lasting-Machines, of which the following is a specification.

The object of my invention is to construct a device by which the thin insoles of shoes will be spread in a machine during the process of lasting. This object I attain in the following manner, reference being had to the accompanying drawings, in which—

Figure 1, is a side view of sufficient of a lasting machine to illustrate my invention, the view showing the last in position; Fig. 2, is a side view of the spreading device drawn to a larger scale than Fig. 1; Fig. 3, is a section on the line 1—2, Fig. 2; Fig. 4, is a plan view; Fig. 5, is a plan view with the top plates removed; Fig. 6, is a section on the line 3—4, Fig. 5; and Fig. 7, is a view of a modification.

Shoes are now provided in some cases with very thin insoles, so thin in fact that it is a difficult matter to last over them, as they will wrinkle and bulge when pressure is applied to force the upper around the last, and in lasting machines, it has been almost impossible to last an upper on a thin insole without causing the latter to bulge. To overcome this difficulty in lasting machines, the apparatus which I will now proceed to describe has been devised.

To more readily describe my invention I will state that the device is especially applicable to the lasting machine invented by David Lake, and set forth in an application for patent bearing even date herewith. In this machine the last is mounted on suitable supports, nippers engage the upper at the edge to hold it while the last is forced into it, and presser pads press the edge of the upper under the last and onto the insole, and it is this pressure that causes the very thin sole to buckle, so that when the shoe is made up a ridge is formed on the inside of the shoe. By my improved device the insole is retained in its flat position until the presser pads securely bind the edges of the upper to the insole, after which the device is released.

A is the frame of the machine in which the last supports B, B slide, being raised and lowered by the cams D, D mounted on the driven cam shaft D′.

E is the upper grip plate on which are mounted the nippers F, (one of which is shown in Fig. 1) E′ being the lower grip or jaw plate to which are connected the rods *f*, which act to move the jaws of the nippers. These plates E, E′ are raised and lowered by cams on the cam shaft D′ in the manner substantially as shown and described in the application of David Lake alluded to above.

Mounted on the toe standard B is a head G and in this head slides a block H to which is secured at the point *h*, the spring presser plate I which presses the toe portion of the insole against the last. This spring plate I is guided in the head *b* of the toe standard as clearly shown in Fig. 2. Pivoted at *g*, *g*, on each side of the slideway H are two arms J, J to which are secured the spring fingers *j*, *j* which tend to force the insole against the upper on each side of the ball of the last. The arms J, J overlap at the rear as shown in Fig. 5, and are in the path of the projection *i* of the block H, so that when the block is moved in the direction of the arrow, Fig. 5, the two arms J, J are retracted. This is done as the presser pads commence to press the upper onto the insole.

M is a lever pivoted at *m* to the toe standard as clearly shown in Fig. 2, this lever having a pin *m′* which is adapted to a slot *n* in an arm *h′* of the block H. This lever M is connected at m^2 to a rod P which passes through the upper grip plate E and is connected thereto by means of springs *p*, *p′* situated above and below the plate E and confined in position by sleeves or nuts *q*, *q′*. Thus it will be seen that when the plate E is depressed to depress the nippers so that the pressing pads will have a clear way, the side spring fingers *j*, *j* will be retracted for the purpose above described.

In order to adjust the side fingers *j* for different widths of shoes, I move the block H longitudinally by means of the adjusting screws *e*, Fig. 2, so that a projection *i* acts on the arms J, J to retract the same as shown in Fig. 5.

In Fig. 7 I have shown the spring plate I,

having fingers j' which may be substituted for the fingers j, j, this device being used in cases where it is not desirable to retract the side arms.

I claim as my invention:—

1. The combination in a lasting machine, of the last support, the lasting mechanism, a retractible insole holder having movable arms for engaging the insole, and connections substantially as described between the retractible insole holder and the lasting mechanism, substantially as specified.

2. The combination of the standard, the head, pivoted arms on said head, having spring fingers, a block adapted to slide in said head and acting on said arms to extend or retract them, substantially as set forth.

3. The combination of the standard, the head carried thereby, a block sliding in said head, a spring plate carried by said block, arms pivoted to the head, and having portions in the path of the block so that on the movement of said block the arms will be acted upon, substantially as and for the purpose set forth.

4. The combination of the standard, the head thereon, a sliding block adapted to said head, spring plates carried by said standard, arms pivoted to the head and acted upon by the block, and a set screw for adjusting the block in the head, substantially as and for the purpose set forth.

5. The combination in a lasting machine, of the last support, grippers for drawing the upper upon the last, a movable gripper plate, a standard, a head on said standard, arms pivoted to said head, a sliding block, a pivoted lever acting on said sliding block, and a rod connected to said lever and to the movable gripper plate whereby, on the depression of the said gripper plate the arms will be retracted, substantially as and for the purpose set forth.

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

LEON LAKE.

Witnesses:
DAVID LAKE,
CHARLES CADOGAN.