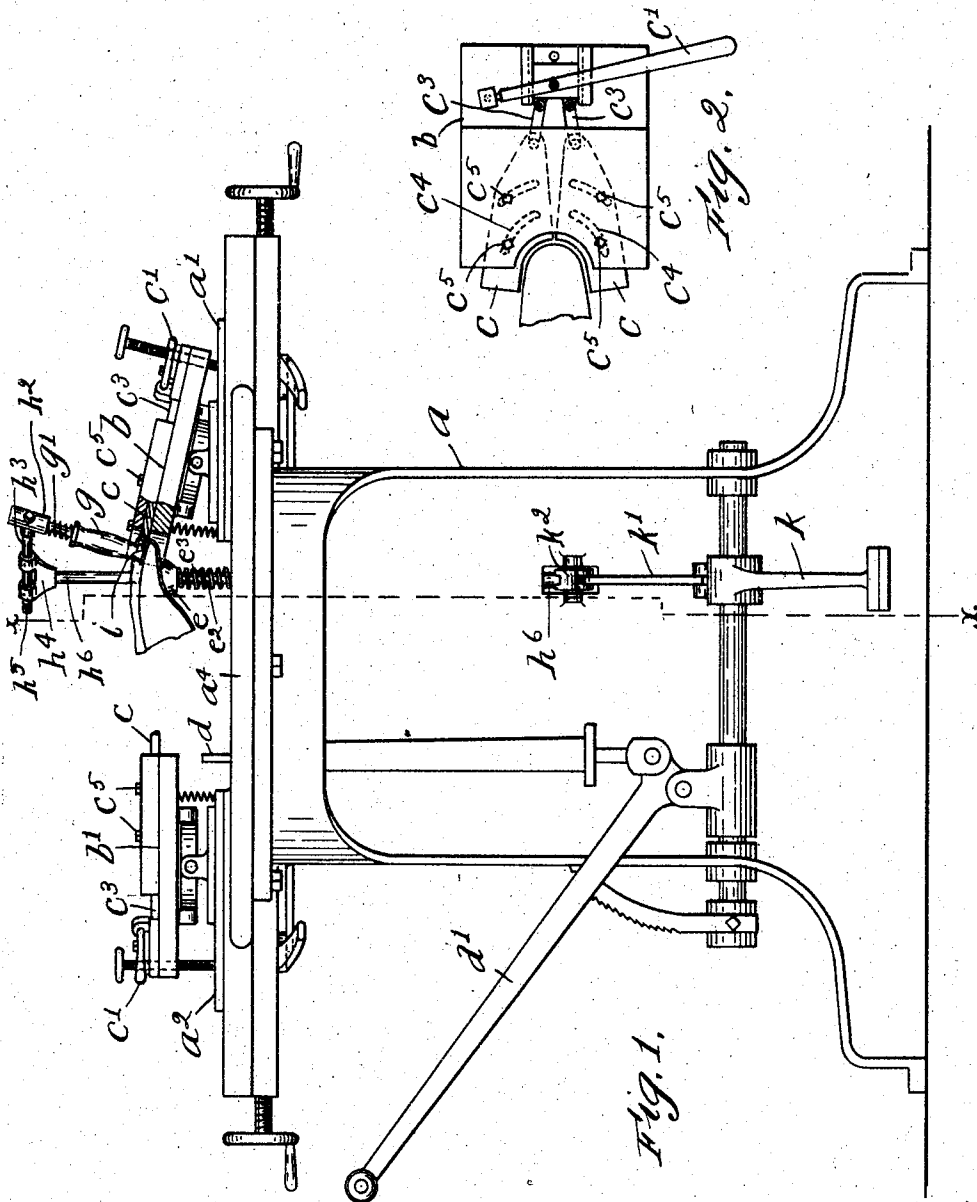


No. 780,996.

PATENTED JAN. 31, 1905.

A. HEBERT.
LASTING MACHINE.
APPLICATION FILED MAY 7, 1903.

2 SHEETS—SHEET 1.



Witnesses:

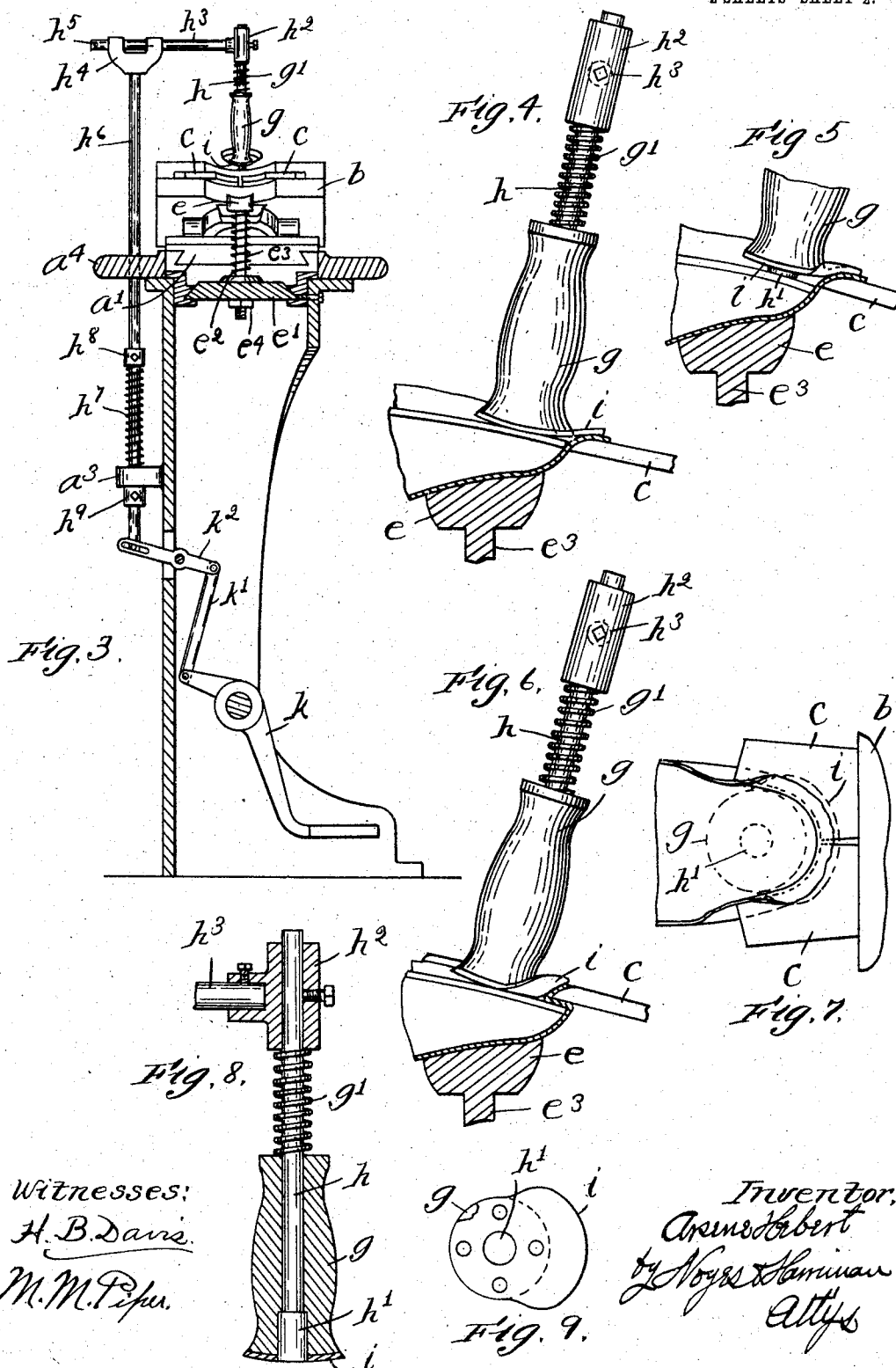
H. B. Davis.
M. M. Fehn.

Inventor:

A. Hebert
By August Hemmick
Att'y

A. HEBERT.
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2 SHEETS—SHEET 2.



Witnesses:
H. B. Davis.
M. M. Piper.

Inventor:
Armand Hebert
by Noyes & Hamman
Attys

UNITED STATES PATENT OFFICE.

ARSENE HEBERT, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HERBERT B. NEWTON, OF BOSTON, MASSACHUSETTS.

LASTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 780,996, dated January 31, 1905.

Application filed May 7, 1903. Serial No. 155,979.

To all whom it may concern:

Be it known that I, ARSENE HEBERT, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Lasting-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention relates to that class of lasting-machines which are employed to last the heel and toe portions only of shoes and which are commonly known as "wiping-machines." In machines of this class a pair of wipers or jaws are usually employed, said wipers being mounted on a head which is movable longitudinally of the jack, cam-and-lever mechanism being employed which is adapted to swing the wipers together and at the same time to move them longitudinally of the jack. In securing good results with machines of this character it is often necessary for the operator to pull or stretch the upper in various ways with pincers or other devices in order to remove wrinkles which are usually formed in the upper by the wiping-in process. It is also usual to stretch the upper over the end of the toe of the last as tightly as possible before the wipers are operated in order to prevent puckering or wrinkling when the upper is wiped in. Considerable time is consumed in so manipulating the upper that it will be drawn smoothly over the toe when the lasting operation is finished, it often being necessary to do the wiping operation over several times before the shoe is perfectly lasted at the toe.

The object of my invention is to provide a wiping-machine of the character above referred to with simple and effective means for preventing puckering or wrinkling of the upper as it is wiped in, said means to be easily under the control of the operator and readily adaptable to the varying conditions which are usually encountered.

In the drawings, Figure 1 is a side elevation of a wiping-machine provided with my invention. Fig. 2 is a detail plan view of one pair of wipers and the operating means therefor. Fig. 3 is a cross-section on line *x x* of Fig. 1. Figs. 4, 5, and 6 are views show-

ing different steps in the wiping operation. Fig. 7 is a plan view of the wipers in the position shown in Fig. 6. Fig. 8 is a detail view in cross-section of the presser-foot and plunger. Fig. 9 is an end view thereof.

The frame *a* of the machine is provided with two carriages *a' a''*, which are slidably mounted in the upper end thereof, each carriage having a head *b b'* mounted thereon and connected thereto by a universal joint in the usual manner. Each head is provided with a pair of wiping-jaws or wipers *c c'*, each pair being adapted to beswung together and moved longitudinally simultaneously by the levers *c' c''*, which are connected thereto by links *c' c''*, bolts *c'* in the heads passing through curved slots *c'*, formed in the wipers, so as to give said wipers a swinging movement as they are moved longitudinally.

The jack of the machine comprises the usual heel-post *d*, which may be adjusted vertically by means of the hand-lever *d'*, and a toe-rest *e*, which is carried on the end of a post *e'*, the latter being mounted on a block *e'*. Said block is arranged in guideways formed in the upper end of the frame, so that it may be moved to and from the heel-post, and the post *e'* passes through the block and slides vertically therein. A spring *e'* encircles the post and is interposed between the head *e* and the block, thereby tending to draw the nut *e'* on the lower end of the post up against the under side of the block.

A foot or holder *g* is slidably and rotatably mounted upon a plunger *h*, the latter passing through the middle of said foot and having an enlarged head *h'* on its lower end, forming a shoulder which engages a corresponding shoulder within the foot, as shown in Fig. 8. The foot is made in the form of a handle which may be conveniently grasped in the hand. The upper end of the plunger *h* is adjustably secured in a coupling *h'*, and a spring *g'* is interposed between said coupling and the upper end of the foot *g*. The coupling *h'* is provided with a socket, in which the outer end of a horizontally-extending rod *h'* is secured at right angles to plunger *h*, said rod *h'* being journaled in a pair of bearings formed in the upper end of a support *h'* and having a pin *h'*

in its end opposite the coupling h^2 , which prevents its withdrawal from the bearings, but permits longitudinal as well as rotatable movement therein. Said support h^1 is rotatably mounted upon the upper end of a vertically-movable rod h^6 , which passes through brackets a^3 a^4 in the frame of the machine, and said rod h^6 is normally pressed upward by a spring h^7 , which is mounted thereon and is interposed between bracket a^3 and a collar h^8 on the rod, as shown in Fig. 3, a collar h^9 on the rod below the bracket a^3 serving to limit the upward movement of the rod h^6 .

A foot-lever h is pivoted to the frame of the machine and is connected to the lower end of the rod h^6 by a link h' and a lever h^2 , so that when the treadle on the lever h is depressed the rod h^2 will be drawn downwardly. The lower end of the foot g is preferably made slightly convex, as shown in Fig. 8, and a flexible upper engaging lip i , preferably of stout leather, is secured flesh side out to the lower end of said foot. Said lip projects to one side of the foot and is shaped to correspond in a general way with the shape of the toes of the shoes which are to be lasted.

The operation of the device as described is as follows: The shoe is "pulled over," the upper being secured to the inner sole at each side of the tip, as is usual in preparing a shoe for the lasting process. The last is then placed upon the jack in the usual manner. The parts are so arranged that the spring e^3 on the post e^2 will force the toe-rest e upwardly to such an extent that the bottom of the inner sole of the shoe is held at some distance above the lower surface of the wipers, as indicated in Fig. 4. The operator then grasps the foot g and by pressing down upon the foot-lever h moves the lip i down close to the bottom of the sole. He then moves the projecting portion of the lip i along on the bottom of the sole toward the toe of the shoe, so that the lip bends the portion of the upper which is to be doubled over onto the inner sole back on top of the jaws c in the position shown in Fig. 4. As the treadle is pressed down the lip i will be pressed against the upper with a force corresponding to the tension of spring g' . Further downward movement of the treadle h forces the plunger h against the inner sole, pressing the toe of the last and the toe-rest downwardly until the bottom of the inner sole is on a level with the underside of the wipers. (See Fig. 5.) It will be observed that during the time the toe of the last is being forced downwardly by the plunger h the edge portion of the upper will be firmly grasped between the lip i and the jaws, so that the upper will be drawn tightly over the toe portion of the last as the last is forced downwardly. The upper is thus stretched tightly over the toe of the last, and while it is thus held taut the wipers are advanced and fold it onto the bottom of the inner sole, the

parts finally assuming the positions shown in Fig. 6.

The feature of stretching the upper over the toe of the last before the wipers begin to fold the upper over onto the inner sole is of great importance, for in order that the upper may be drawn smoothly over the toe it must be pulled or stretched into the correct position on the last before it is wiped in. After the wipers have begun to move over the bottom of the inner sole it is immaterial whether the upper is held by the foot or lip or not. As the wipers are moved in over the inner sole they tend to push back the inner sole, which is then insecurely held on the last. With my invention, however, the plunger h holds the inner sole securely down on the last while the wipers are being advanced, so that they cannot push back the inner sole. When the upper has been wiped into place, the foot-lever h will be released and the foot g swung to one side, so that the operator may secure the upper in place by tacks in the usual manner, after which the jaws will be thrown back and the lasting operation may be finished by hand. By this means all puckering or wrinkling of the leather at the toe is avoided without the use of pincers or other clamping devices for stretching the upper, so that the exposed portion of the upper will lie smoothly over the toe when the operation is completed.

The above-described device is exceedingly simple, so that an unskilled operator has but little difficulty in learning to operate the machine, and as it is mounted so that it is universally movable it may be readily adapted to different conditions.

While the above-described device is especially designed and adapted to be employed in lasting the toe end of a shoe, yet it may be used in lasting the heel end or other parts of a shoe without material modification.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a lasting-machine, the combination of a yieldingly-supported last-rest, a pair of wipers movable above said rest, an upper engaging foot above said wipers, supporting means therefor permitting universal horizontal movement of said foot, last-engaging means carried by said support and vertically movable with relation to said foot, and means whereby said supporting means may be depressed, substantially as described.

2. In a lasting-machine, the combination of a yieldingly-supported last-rest, a pair of wipers movable above said rest, an upper-engaging foot above said wipers, supporting means therefor permitting swinging, and universal horizontal movement of said foot, last-engaging means carried by said support and vertically movable with relation to said foot, and means whereby said supporting means may be depressed, substantially as described.

3. In a lasting-machine, the combination of a yieldingly-supported last-rest, a pair of wipers movable thereover, a vertically-movable rod, means for drawing it down, a trans-
5 versely-extending arm slidably mounted on said rod and arranged to swing about the longitudinal center thereof, a depending plunger connected to said arm, and an upper-engag-
10 ing foot carried by said arm and movable independently of said plunger, substantially as described.

4. In a lasting-machine, the combination of a yieldingly-supported last-rest, a pair of wipers movable thereover, a vertically-mov-
15 able rod, means for drawing it down, a trans-

versely-extending arm slidably mounted on said rod and arranged to swing about the longitudinal center thereof, a depending plunger connected to said arm, a foot slidably and rotably mounted thereon having a transversely-
20 extending upper-engaging portion and a spring for pressing said foot downward, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two sub-
25 scribing witnesses.

ARSENE HEBERT.

Witnesses:

LOUIS H. HARRIMAN,
H. B. DAVIS.