

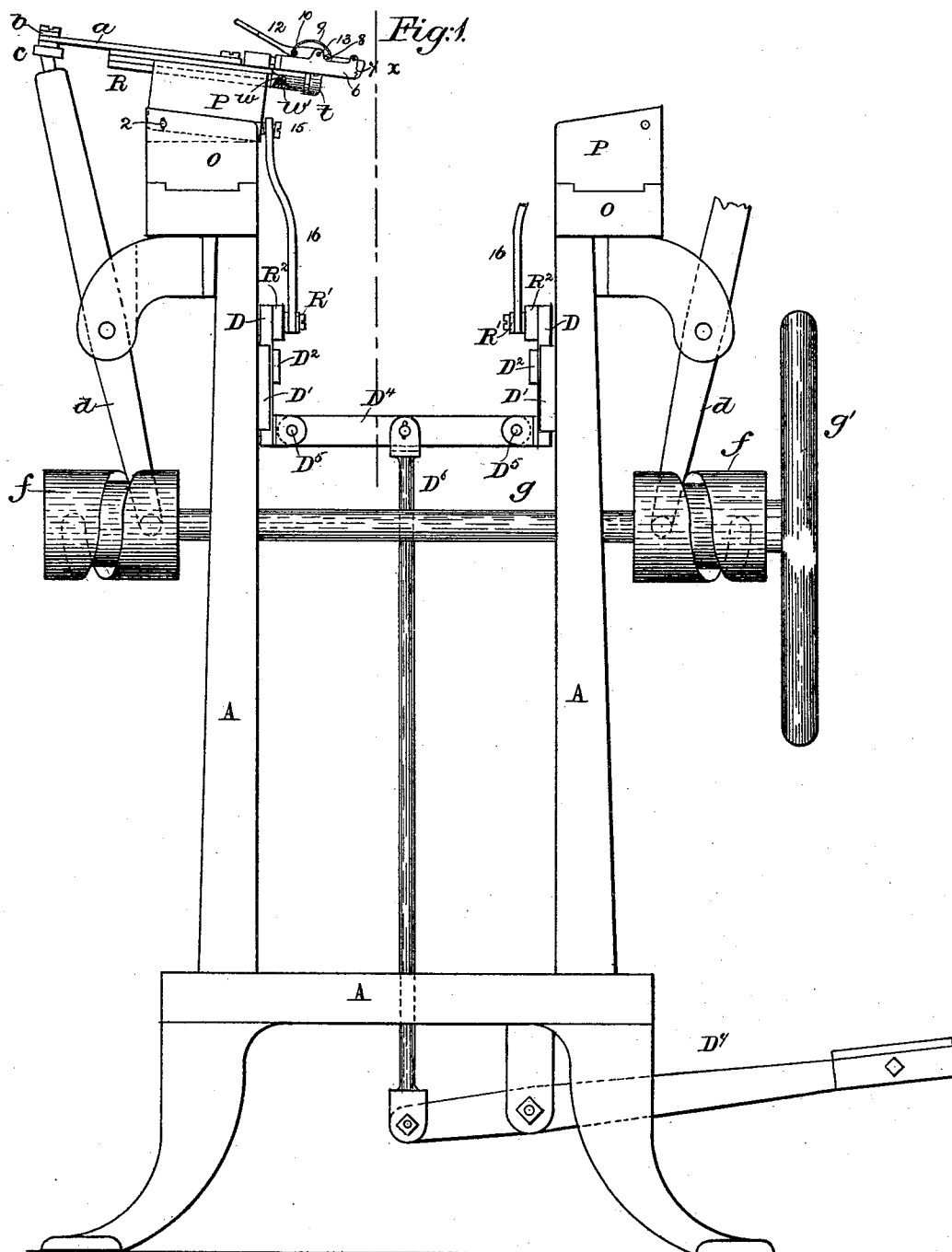
(No Model.)

2 Sheets—Sheet 1.

F. CHASE.
LASTING MACHINE.

No. 478,501.

Patented July 5, 1892.



Witnesses:

H. Y. Davis.

G. M. Coppenhaver

Inventor.

Frank Chase

by Crosby & Gregory
Attys.

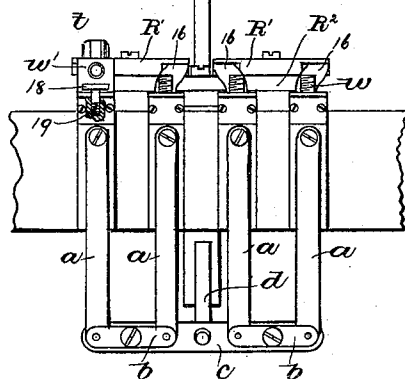
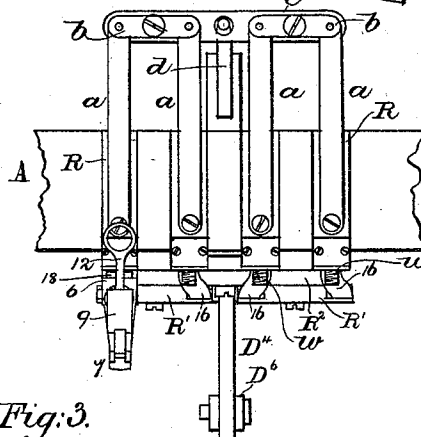
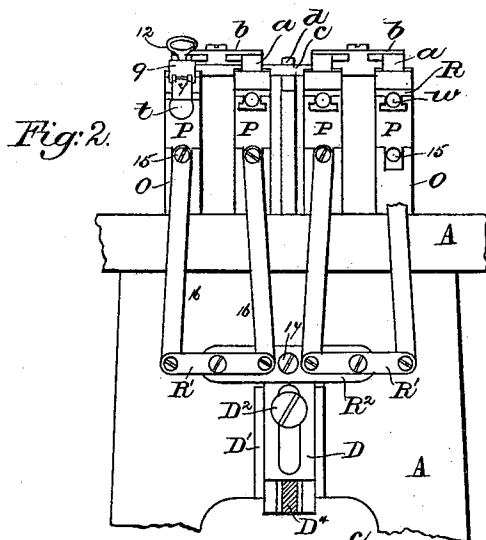
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UNITED STATES PATENT OFFICE.

FRANK CHASE, OF MALDEN, MASSACHUSETTS, ASSIGNOR TO THE CHASE
LASTING MACHINE COMPANY, OF PORTLAND, MAINE.

LASTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 478,501, dated July 5, 1892.

Application filed January 20, 1890. Serial No. 337,447. (No model.)

To all whom it may concern:

Be it known that I, FRANK CHASE, of Malden, county of Middlesex, 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 letters and figures on the drawings representing like parts.

This invention is intended as an improvement on that class of lasting-machines wherein nipper-wipers, pinchers, or pullers grasp and hold the upper along the ball and shank of the last while the upper is being stretched and fitted to the last, and I have herein shown my invention as embodied upon a machine substantially such as represented in United States Patents Nos. 337,925, 363,283, and 337,924 granted to me.

In Patent No. 363,283 the so-called "wiper-slides," which in practice carry pinchers or pullers or nipper-wipers such as represented in Patent No. 337,924, are joined by equalizers to enable the said nipper-wipers to act independently at the sides of the last in their horizontal movements when laying the edges of the upper over upon the inner sole on the last, and in the Patent No. 337,925 the pivoted blocks on which the wiper-slides are adapted to be reciprocated are described as connected in pairs to equalizing-bars, such construction enabling the upward movement of any one block and wiper-slide with attached nipper-wipers to stop whenever the upper at the particular part where it was grasped and held by the said nipper-wipers had been sufficiently stretched, such construction enabling the upper to be stretched more or less along the ball of the last and the shank according to the requirements or condition of the material; but in these two cases provision is not made to enable the nipper-wipers or pinchers along one side of the last to operate independently of the nipper-wipers or pinchers at the opposite side of the last, and to effect this independent action of the nipper-wipers or pinchers at one side of the last and enable them to stop in their vertical movement sooner or later with relation to the series of nipper-wipers or pinchers at the opposite side of the last I have introduced an equalizer between

the carriers, upon which are mounted the equalizers, which are connected to the blocks on which the wiper-slides reciprocate, the said equalizer extending across the machine at right angles to the length of the last, thus enabling one carrier to be stopped sooner or later with relation to the other carrier, according to variations in the upper at the opposite sides of the last—as, for instance, the upper at one side of the last may be longer than at the other side, or the upper at one side may be more elastic than the upper at the other side, the side of the upper which is the shorter and the side of the upper which is least elastic effecting the stopping of the vertical movement of the carrier the sooner, and vice versa.

Figure 1 is a partial end elevation of a portion of a lasting-machine to which my invention is applied, the toe and heel crimping mechanism being omitted, parts of the machine which are shown at the left of the drawings in full being omitted at the right of the drawings to avoid duplication of parts. Fig. 2 is a partial section in the line *x*, Fig. 1, looking to the left. Fig. 3 is a top or plan view of the parts shown in Fig. 1, the said figure showing, however, the wiper-bars at both sides, one of the wiper-bars being shown as provided with a nipper-wiper or pincher, it being understood in practice that each wiper-slide will have a suitable nipper-wiper or pincher attached thereto—such a nipper-wiper, for instance, as shown in United States Patent No. 337,924—one of the wiper-slides being broken out to show a spring and plunger; and Fig. 4, a sectional detail, somewhat enlarged, of one of the nipper-wipers or pinchers detached.

The frame-work A, of suitable shape to sustain the working parts, has a cross-shaft *g*, provided with a hand-wheel *g'*, by which the same may be rotated by hand in either direction; but the said shaft in practice will also be provided with a gear to be engaged by a pinion, as in Patent No. 363,283. The shaft *g* has two cams *ff*, which, as in the Patent No. 363,283, engage roller or other studs at the lower ends of vertical levers *d*, upon the upper ends of which are pivoted like levers *c*, upon which in turn are pivoted two pairs

of equalizing-levers *b*, each of the said equalizing-levers *b* having pivoted to its opposite end a connecting-rod *a*, which in turn is pivoted to one of the wiper-slides *R*, each wiper-slide, as herein shown, having a suitable foot or projection to enter a suitable guideway in a block *P*, pivoted at its outer end, as at 2, upon a slide *O*, the said slide resting upon a part of the frame-work; but the said slides are preferably made so that they may be adjusted lengthwise of the last upon the frame-work to thus adapt the wiper-slides and the parts to be carried by them—as, for instance, the nipper-wipers to be described—so that the said nipper-wipers or pinchers may be properly placed with relation to each other according to the length of the last, and also to the configuration thereof.

I will now describe the particular nipper-wipers or pinchers herein illustrated, referring, preferably, to Figs. 1 and 4, the latter showing the said parts enlarged and in section.

Each wiper-slide has at its front end a screw-threaded portion *w*, upon which is screwed a base *w'*, having a second screw 5, which acts to hold in place the lower member 6 of the nipper-wiper or pincher, the upper member thereof consisting, essentially, of a jaw 7, pivoted at 8 to one end of a spring 9, the opposite end of the spring being jointed at 10 to a lever 12, pivoted at 13 between ears of the lower nipper member 6, the said nipper-wipers being substantially such as represented in Patent No. 337,924 and having substantially the same purpose and function.

The nipper-wiper herein specifically shown has, it will be noticed, an independent spring 9, whereas in the Patent No. 337,924 referred to the spring is made a part of the upper jaw member.

Each block *P* has at its inner end a suitable stud or projection 15, to which is loosely jointed the upper end of a connecting-rod 16, the said connecting-rods being jointed in pairs to the opposite ends of equalizers *R'*. The connecting-rods 16 and the equalizers *R'*, to which they are attached, are all substantially the same as in Patent No. 337,925. Herein two of the equalizers *R'* are pivoted upon an auxiliary equalizer *R²*, in turn pivoted at 17 upon the carrier *D*, the said carrier being shown as slotted and as fitted into a vertical guideway *D'*, a stud-screw *D²* being extended through the slot of the said carrier to aid in keeping it in place in the guideway. There is a carrier and guideway at each side of the machine, and these two carriers are connected across the machine at right angles to the length of the last by an equalizer *D⁴*, which is jointed at its ends by suitable pivots *D⁵* to the said carriers, the said equalizer between its ends being in turn jointed upon a lifting-rod *D⁶*, actuated, as herein represented, by a suitable foot-treadle *D⁷*. It being supposed that each block *P* at both sides of the machine has a like wiper-slide and nipper-

wiper or pincher of usual shape connected to it, and that the nipper-wipers have been opened and the edges of the upper grasped between their jaws, so that the said nipper-wipers hold the upper firmly, the operator will put his foot upon the treadle *D⁷* and lift the rod *D⁶* and the equalizer *D⁴*, lifting the carriers *D*, so as to lift the auxiliary equalizers *R²* at both sides of the machine, and with them the equalizers *R'*, and through the connecting-rods 16 lift the blocks and the nipper-wipers to stretch the upper vertically while on the last, the last remaining down and being held by any suitable downholds. In this stretching operation the vertical movement of the nipper-wipers holding the upper are free to stop at one side of the last sooner or later than the nipper-wipers at the opposite side of the last to thus enable the said nipper-wipers to properly stretch the upper vertically at the opposite sides of the last, and during this operation each nipper-wiper in each set of nipper-wipers at one side of the last is free to stop sooner or later in its vertical movement with relation to the nipper-wipers of that set of nipper-wipers at that side of the last, and thereafter the operator will turn the shaft *g* to cause the wiper-slides and nipper-wipers to be moved toward each other to lay the upper over upon the inner sole. In the rising movement of the nipper-wipers, as described, through the equalizer *D⁴* it will be noticed that any nipper-wiper in the two sets of nipper-wipers located along opposite sides of the last may be stopped, while the nipper-wiper opposite it in the other set continues to rise, and in addition thereto any one or more nipper-wipers of either set may stop, according to the requirements of the upper, as provided for in Patent No. 337,925, and as the wiper-slides are moved horizontally to carry the upper over upon the inner sole the said slides through the connecting-rods *a* and the equalizers *b* and *c* may stop sooner or later, according to the configuration of the last or the requirements of the upper.

From the foregoing description it will be understood that all the strains put upon the upper by or through the movements of the nipper-wipers or pinchers are equalized, so that the upper will not be unduly stretched at any one point, either vertically or when laying the upper over upon the inner sole, and the upper having been stretched sufficiently in any line in which it is grasped by the nipper-wipers a nipper-wiper will stop and a nipper-wiper opposite it at the other side of the last or a nipper-wiper alongside of it at the same side of the last may continue its movement until the part of the upper grasped by it has been sufficiently stretched.

The two equalizers *R'* *R²* and connecting-rods 16 constitute, as herein represented, the connecting devices between the nipper-wipers or pinchers and the carriers *D*.

Referring to Fig. 3, it will be noticed that I have removed from six of the wiper-slides

the blocks w' , which carry the nipper-wipers, and that but one of the slides has a nipper-wiper thereon, and that slide opposite the one carrying the nipper-wiper is shown as containing a block w' . Each wiper-slide, as shown, however, in but two of the said slides in Fig. 3, will in practice have a T-headed plunger 18, acted upon by a spring 19, which in practice will bear against the square rear end of the lower jaw 6, which jaw is pivoted loosely upon a boss at the upper side of the block w' and is held loosely thereon by the screw 5. These plungers normally serve the purpose of preventing undue vibration of the nipper-wipers upon or about the bosses which receive the screws 5. One of these plungers is shown in Fig. 3 as acting upon the jaw 6 of a nipper-wiper.

It will be understood in practice that each wiper-slide will be provided with a nipper-wiper, so that there will be two series of nipper-wipers, one at each side of the last.

In practice the end of each block w' next to the last will preferably have attached to it a piece of india-rubber or leather t , shaped substantially as shown in Fig. 4, the said piece contacting with the outside of the upper opposite the edge of the inner sole and aiding in holding the upper in place, and also obviating marring the upper.

I claim—

1. A lasting-machine comprising the following instrumentalities, viz: two series of vertically-moving nipper-wipers or pinchers, one at each side of the last, means, substantially as described, for moving the said nipper-wipers longitudinally toward the last, and independent actuating mechanism for each series of nipper-wipers, said actuating mechanism containing equalizers and unyielding connections actuated by them and in operative connection with the nipper-wipers to lift the same vertically, combined with an equalizer D^4 , connecting the two sets of actuating mechanisms for imparting vertical movement to the two series of nipper-wipers or pinchers, substantially as set forth.

2. A lasting-machine containing the following instrumentalities, viz: two series of nipper-wipers or pinchers, one at each side of the last, wiper-slides, equalizers connected to the said slides, means to reciprocate the said wiper-slides transversely of the shoe, guides in which the said slides reciprocate, equalizers R' R^2 at opposite sides of the last, connecting-rods 16 between the said equalizers R' and the said blocks, and the carriers D and equalizer D^4 , connecting the said carriers at opposite sides of the last, substantially as described.

3. In a lasting-machine, a nipper-wiper composed of a jaw 6, a movable jaw 7, sliding thereon, a lever 12, and an independent spring pivotally attached to and connecting the jaw 7 and the said lever 12, to operate substantially as described.

4. A lasting-machine comprising the following instrumentalities, viz: two series of vertically-moving nipper-wipers or pinchers, one at each side of the last, means, substantially as described, for moving the said nipper-wipers longitudinally toward the last, and independent actuating mechanism for each series of nipper-wipers, said actuating mechanism containing equalizers and unyielding connections actuated by them and in operative connection with the nipper-wipers to lift the same vertically, combined with a centrally-pivoted equalizer-bar D^4 , connecting the two sets of actuating mechanisms, the pivot of said equalizer-bar being arranged approximately under the longitudinal center of the last, and devices to raise and lower the said equalizer-bar to effect the arrest of the vertical movement of nipper-wipers at one side of the last before the termination of the vertical movement of the nipper-wipers at the other side of the last, substantially as set forth.

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

FRANK CHASE.

Witnesses:

B. DEWAR,
E. J. BENNETT.