

A. A. MacLEOD.
TOE SPREADER.
APPLICATION FILED MAR. 9, 1911.

1,063,271.

Patented June 3, 1915

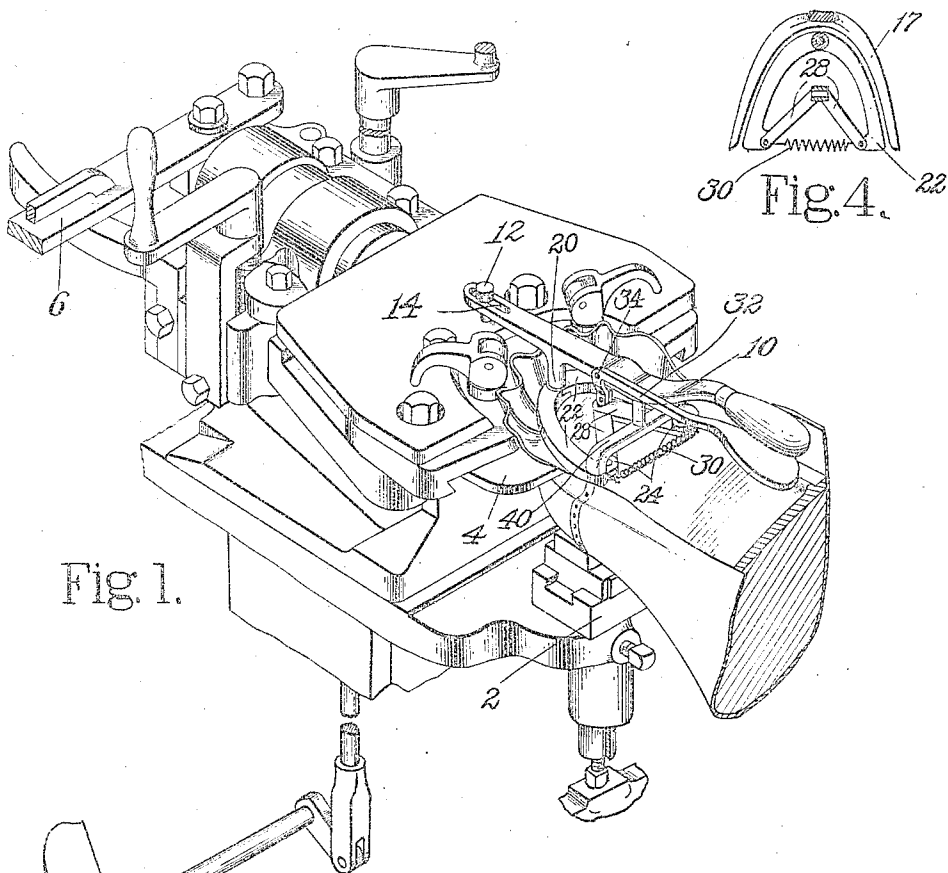


Fig. 1.

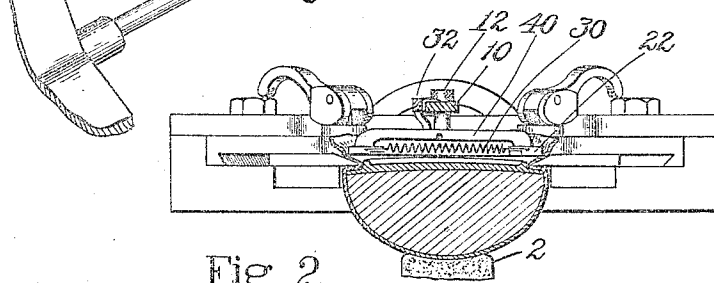


Fig. 2.

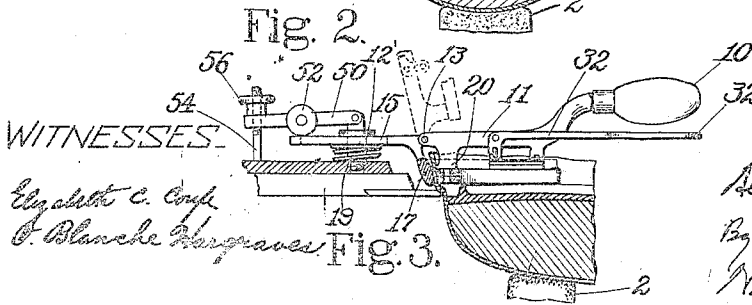


Fig. 3.

WITNESSES.

Elizabeth C. Cook
O. Blanche Hargraves

INVENTOR.

Albert A. MacLeod
By his Attorney,
Nelson & Howard

UNITED STATES PATENT OFFICE.

ALBERT A. MACLEOD, OF SWAMPSCOTT, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

TOE-SPREADER.

1,063,271.

Specification of Letters Patent.

Patented June 3, 1913.

Application filed March 9, 1911. Serial No. 613,297.

To all whom it may concern:

Be it known that I, ALBERT A. MACLEOD, a citizen of the United States, residing at Swampscott, in the county of Essex and State of Massachusetts, have invented certain Improvements in Toe-Spreaders, of which the following description, in connection with the accompanying drawings, is a specification, like reference characters on the drawings indicating like parts in the several figures.

This invention relates to lasting machines and particularly to mechanism to be applied or incorporated in machines of the type known as bed lasting machines such as is shown, for example, in U. S. Letters Patent to Breck, No. 1,018,477, granted Feb. 27, 1912. In lasting the toe portion of a shoe upper upon machines of this type it is customary for the operator to close the toe lasting plates in at a point somewhat below the plane of the insole and to press them against the upper on the last while he moves them upward. The pressure and friction of the lasting plates, or wipers, tend to smooth the upper out against the last, to draw it tight, and to gather the fullness to a point above the plane of the last bottom. Frequently a hand tool is used to press the upper outwardly upon the top faces of the wipers to increase their tensioning and smoothing effect.

An object of the present invention is to provide auxiliary means to be used in connection with the usual toe lasting mechanism for more effectually performing the toe lasting operation and, as embodied, the invention comprises a novel spreader adapted to be attached to the toe-head of the lasting machine in position to be moved by a hand lever at the will of the operator against the upstanding margin of the upper material at the toe to force the same outwardly and downwardly against the toe lasting plates or wipers during their upwardly rubbing and inwiping movements.

An important feature of the invention consists in provision for enabling the operator to expand the spreader, that is, to move its sides or wings outwardly to lay the upper out on the side portions of the wipers. This affords an obvious advantage over devices which have only a movement length-

wise of the shoe as heretofore proposed. As shown herein the spreader is made in a plurality of parts connected together at their front ends and there is operatively associated with the hand lever a device, in the form of an underlying finger lever, for swinging the lateral parts outwardly about said connection. This outward movement of the side members or wings being a pivotal one spreads the upper at the sides and corners of the toe forwardly as well as outwardly and thereby offsets to some degree the rearward component of the usual advancing and closing movement of the wipers which act, as is well known, to work the upper backwardly at the sides of the toe. The combined forward and outward direction of this expanding movement of the spreader is also advantageous in its effect in laying the upper out on the wipers more free from wrinkles than would result if the movement were directly forward only. The expansibility of the spreader also adapts it for use with different widths of lasts. Another characteristic of the illustrated spreader, and one which distinguishes it from the so-called "retarders" known to me, is that its sides or ways are made to extend backwardly to or even beyond the wipers whereby it is effective in cooperation with the rear portions of the wipers in producing a stretching of the upper at the sides of the toe where heretofore most difficulty has been experienced in lasting toes tightly.

In some classes of work it is desirable that the margin of the upper at the toe be seized and subjected to considerable tension. At the same time it is advantageous to smooth out the wrinkles of the tightly drawn upper so far as possible and to hold it under tension in its smooth condition during the inward movement of the wipers over the last.

In the use of the spreader as thus far described, it has been assumed that the upper would be outspread and clamped down upon the toe wipers and excellent results are obtained by so doing. Another feature of the invention, however, comprises means cooperating with the expansible spreader to clamp and hold the upper without gripping it against the wiper, an object of this feature of the invention being to hold the up-

per independently of the wipers and of the wiper closing movement to reduce the liability of wrinkles or fullness being worked into the overlapped upper material on the edge of the shoe bottom by the wipers. In an illustrated embodiment of this feature of the invention there is interposed between the portion of the apparatus which is attached to the toe-head of the machine and the expansible spreader, a jaw against which the expansible spreader may grip the upper. This jaw is preferably curved to substantially the shape of the toe portion of the shoe so that it may embrace the sides as well as the end of the toe and its inner edge has a contour corresponding substantially to that of the spreader. The lateral expansibility of the wings of the spreader enables the upper to be gripped at the sides of the toe against the cooperating portions of the outer jaw. For some classes of work this gripping of the upper at the sides of the toe may be sufficient without a like gripping at the end of the toe because it is at the sides of the toe that the action of the wipers is least effective in stretching and shaping the upper and also because with some styles of last having "high" toes special difficulties are presented in drawing the upper down to the last at the sides of the toe.

In accordance with a further feature of this invention and one which is embodied in a preferred construction, there is also provision for gripping the upper against the outer jaw at the end of the toe as well as at the sides and the force with which the upper is gripped at the end of the toe is or may be variable independently of the force with which it is gripped at the sides of the toe. As herein shown, this is provided by forming the outer jaw rigid with the portion of the spreader which is attached to the toe lasting head and pivotally connecting the spreader thereto at the middle of the toe and above the jaws so that downward pressure on the hand lever will cause the inner jaw or expansible spreader to grip the upper against the inner face of the outer jaw. By varying this pressure on the hand lever with reference to the force applied to the underlying finger lever for expanding the spreader, the relative force with which the upper is gripped and held at the end and at the sides of the toe can be varied. It is to be noted as an advantage of the described constructions that the spreader is entirely controlled by the right hand of the operator while with the left hand he advances and closes the wipers by their usual operative lever or it may be raises and lowers them by a foot treadle with which the machine of the patent is provided. The amount of downward pressure upon the hand lever of the spreader and the upward pressure upon the underlying finger lever will be regulated

by the sense of feeling and the requirements of the work as the operator watches the stretching and shaping of the upper.

The foregoing and other features of the invention, including certain combinations of parts and important details of construction will appear more fully from the following description of the illustrated apparatus and will then be pointed out in the claims.

Figure 1 represents the toe lasting head of a lasting machine having mechanism embodying my invention applied thereto. Fig. 2 is a sectional view of Fig. 1 taken in a plane located just to the rear of the ends of the spreader blades. Fig. 3 is a fragmentary longitudinal section of a modified construction embodying my invention, and Fig. 4 is a fragmentary horizontal section of Fig. 3 taken above the plane of the jaws in Fig. 3.

I have shown in Fig. 1 the toe lasting head of a lasting machine of the type shown in the patent above referred to with one embodiment of my invention applied thereto. The toe rest of the lasting machine is indicated at 2. 4 indicates one of the wipers, the corresponding one on the opposite side of the sole being hidden. These wipers are advanced and closed by the manipulation of the lever 6. In this type of machine the toe-head is arranged to be raised and lowered by means of a foot treadle mechanism shown in Fig. 1 and which is fully disclosed in the patent referred to. A lever 10 has a handle at one end and at the other a slot 14 through which rises a post having a milled head 12. By this means the lever is secured to the lasting head in a manner to provide for longitudinal and swinging movements thereof. A stud 20 depends from the under side of the lever 10 and to this stud are pivoted plates 22 which together constitute the inner jaw of the spreader. At the rear ends the spreader members are provided with lugs 24 to which are pivoted links 28, the opposite ends of which are pivoted to each other and to the short arm of a bell crank lever 32. This lever is pivoted at 34 to the lever 10 and is provided at the end of its long arm with a finger piece underlying the handle of the lever 10 wherefrom this lever 32 has been above designated for convenience as the "underlying finger lever." It will be clear that by manipulation of this lever 32 relatively to the lever 10 the toggle formed by the links 28 may be straightened to move outwardly the rear ends of the spreader plates 22 and spread the upper out over the wipers 4 and by depression of the handled end of lever 10, the upper can be gripped down upon the top faces of the wipers. Alternatively the spreader may be positioned opposite to the edge faces of the wipers and by expanding the side members the upper may be gripped against the edge faces of the wipers which, in that case, 130

serve as outer jaws cooperating with the outer side face of the spreader members for gripping the upper. It is contemplated, however, that when the spreader has only those elements thus far described it will be used to clamp the upper down upon the top face of the wipers as shown in Figs. 1 and 2 of the drawings. The spreader plates are held in their contracted position by a helical spring 30 having its ends attached to the rear ends of the spreader members 22. To give rigidity to the rear ends of the spreader members relatively to the lever 10 a yoke 40 is provided which is attached by a stud to the lower side of the lever 10 and has downwardly directed ends having sliding engagement with the rear ends of the spreader plates 22 or, it may be, having pin and slot connections with the said rear ends. In the most general use of this form of my invention, after the upper has been outspread over the wipers the handle of the lever 10 is grasped by the operator and the finger lever 32 pressed to cause the members 22 to lie over the edge of the wiper and to spread and wipe outwardly over the upper that is on the wipers to smooth it free from wrinkles. The handle 10 is then depressed and the plates 22 clamp the upper against the wiper plates, which are then moved upward to tension the upper and shape it to the last and then inwardly to lay it into lasted position. During the advancing and closing movement of the wipers for laying the upper into lasted position upon the margin of the shoe bottom the spreader may or may not accompany the wipers or may accompany them to a limited extent in accordance with the judgment of the operator. For example, if he sees that the upper is sufficiently stretched at the end of the toe but would be better for additional stretching at one or both sides of the toe he will allow the spreader to move rearwardly with the wipers and relatively to the post 12 while with the finger lever 32 he will compel the spreader at one or at both sides of the toe to continue to hold the upper outwardly so that the wiper in closing is obliged to overcome the frictional resistance or retarding effect of the spreader. The expanding feature not only enables the operator to adjust the size of the spreader to correspond to different sizes and shapes of last toes, but enables him to first clamp the upper at the point of the toe and then by expanding the spreader to extend the gripping or clamping action toward the ends of the wipers, this method of manipulation tending to rub or iron out any folds or incipient wrinkles in the upstanding margin of the upper. The manipulations described or any of them may be repeated if necessary to shape the upper material properly to the last when it has been so shaped and the wiper plates

have been brought in over the edge of the insole to clamp the upper thereagainst, the operation of wiring the toe, or otherwise securing the upper, is performed.

In Figs. 3 and 4 a more complex form of the spreader is illustrated in which an outer jaw 17 is added to cooperate with the jaws 22 in the manner earlier suggested. Also, in the construction embodying this outer jaw, the lever 10 is preferably, although not necessarily, formed in two parts which I have designated in Fig. 3 as 11 and 15, these parts being connected at 13 by a horizontal pivot. The part 15 has a downwardly extending portion which rigidly supports the jaw 17 which extends about and is co-extensive with the spreader members 22. The member 15 is attached to the toe-head in the same manner as the end of the lever 10 in Fig. 1, but a stiff spring 19 is preferably provided beneath the part 15 to hold it firmly against the head of the post 12. In the use of the spreader as thus equipped the upper will be outspread over the wipers and against the inner face of the jaw 17 while the portions of the spreader located inside and above said jaw 17 are turned up into the dotted line position in Fig. 3. Said parts will thereafter be turned down and the expansible members 22 will be spread to grip the upper free from wrinkles against the outer jaw by force determined at the sides and the end of the toe respectively by the pressure applied upwardly on the finger lever 32 and downwardly upon the hand lever 10. If the upper is gripped by the spreader while the wipers and therefore the spreaders are a substantial distance below the plane of the last bottom, then the rising movement of the wipers with the spreader will cause a very substantial stretching of the upper upwardly, the spreader jaws serving as grippers which, after having been closed upon the upper, are uplifted by the engagement of the wipers with them or with the jaw 17 as will be plain from Fig. 3. As I am advised, it is new by this invention to apply to the edge of an upper a gripper or clamp and then to raise the wipers and cause them by their engagement with said gripper or clamp fast to the upper edge to pull or stretch the upper upwardly preparatory to overwiping the upper. This feature of the invention is to be distinguished from the suggestion in the patent to Whiffen and Lake No. 502,506 of an upper which has been prepared for lasting by attaching permanently to its edge a rib that will prevent it from slipping between the jaws of a gripper. By expanding the inner jaw the gripping effect is caused to take place progressively and simultaneously upon both sides of the jaws from the portion first gripped at the toe toward the ends of the jaws. For the purpose of increasing

the gripping effect when desired a lever 50 is pivoted to the head of the post 12 and provided with a roll 52 adapted to bear upon the rear end of the member 15. The opposite end of the lever 50 is adjustably held in position by a rod 54 attached to the lasting head and provided with a milled nut 56 which bears upon the upper side of the lever 50. This device tends to increase the effect of the spring 19 so that greater pressure may be applied by the inner to the outer jaw at the end of the toe before the portion 15 will be forced out of its normal horizontal position. The slot 14 permits the device to be adjusted longitudinally of the shoe to bring the gripping plane of the jaws somewhat beyond the plane of the edge of the toe of the insole so that as the toe head is raised and the upper brought under tension it will meet with a minimum of frictional resistance by reason of its engagement with the toe portion of the last and will be held away from the edge or feather of the insole and the raising of the feather from the last, because of the friction of the upper against its edge, will be avoided. In the use of this form of the device the operator will wipe up the toe portion of the upper with the lasting plates, as described, and will then bring down the inner jaw 22 inside the upstanding margin of the upper at the toe by movement of the lever 11 about the pivot 13 and will grip said margin of the upper stock as described. The toe head may now be further raised and the desired tension applied to the upper by advancing the wiper against the upper to force it in beyond the edge of the last, or the upper may be tensioned by simply raising the toe-head while the upper is held between the jaws as described and the wipers may be wiped in when they have been raised above the upper surface of the insole to hold the upper in lasted position during the operation of wiring the toe or otherwise securing the upper temporarily in lasted position.

Having now described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:—

1. A toe lasting mechanism having, in combination, a vertically movable head, inwardly moving wipers thereon, an expandible spreader, and manually actuated mechanism for positively spreading the upper out over the wipers and clamping it thereon with a degree of force controlled by the operator during the vertical movement of the head for stretching the upper.

2. A toe lasting machine having, in combination, a vertically moving head, inwardly moving wipers thereon; a spreader pivotally mounted upon the toe-head, and arranged for manual manipulation against the upstanding margin of the toe portion of the upper to clamp the same against the wipers

with a force controlled by the operator during the movement of the wipers.

3. A lasting machine having, in combination, a vertically moving toe-head, inwardly moving wipers, a spreader and operating means for forcing the upstanding marginal portion of the upper against the wipers at the end of the toe, and additional means for thereafter progressively advancing the operative action of the spreader toward the ends of the wipers at the sides of the toe.

4. A device of the class described, comprising spreader plates pivoted together and shaped, when their free ends are moved outwardly, to conform to the curve of the wipers, manually operated means for moving the spreader forwardly over the wipers and down upon them, and means also manually operated for moving outwardly the free ends of the plates.

5. In a lasting machine, a vertically movable lasting head, forwardly and inwardly moving wipers, and operating means for forcing the upper outwardly first against the portion of greatest curvature of the wipers and then at the will of the operator outwardly against the straighter portions thereof at the two sides simultaneously.

6. A device of the class described comprising a spreader support adapted to be mounted upon the toe-head of a lasting machine for movement both longitudinally of the shoe and for lateral bodily swinging movement, a spreader depending from said support and composed of a plurality of parts pivoted together and manual means by which relative movement of said parts may be effected to expand the spreader during its operation on the work.

7. In a lasting machine, the combination with vertically movable toe embracing wipers having forward and closing movements, of means comprising cooperating gripping members conforming to the shape of the toe for seizing the upstanding margin of the toe portion of the upper and holding the same against movement in its plane during the inwiping movement of the wiper and a manually operated device by which said means may be given, independently of the wipers, an upper tensioning movement.

8. In a lasting machine the combination with a vertically movable head and inwardly moving toe embracing wipers thereon, of upper grippers independent of the wipers arranged to close upon all portions of the upstanding margin of the toe portion of the upper and be moved by the wipers to effect tensioning of the upper by the upwardly moving toe-head.

9. In a lasting machine the combination with a vertically movable toe head and inwardly moving wipers, of gripping jaws comprising a rigid outer jaw and an expandible inner jaw said expandible jaw be-

ing mounted for movement relatively to the rigid jaw to clamp the upper first at the middle of the toe, and means whereby the gripping effect may be extended longitudinally of the gripping surfaces in both directions to smooth the upper and then hold the same against the tensioning force applied by movement of the wipers relatively over the last.

10. A device of the class described, comprising a rigid jaw adapted to be mounted upon the toe-head of a lasting machine, an expansible jaw adapted to cooperate with the rigid jaw, means for effecting the forcing of a portion of the expansible jaw against the toe portion of the rigid jaw, and means for expanding the expansible jaw against the side portions of the rigid jaw.

11. An upper seizing device, comprising a rigid jaw, a cooperating jaw constructed and arranged for change of contour into and out of correspondence with said rigid jaw, contour changing means for said cooperating jaw, and means for operating the jaws.

12. A device of the class described, having in combination, a rigid jaw contoured to conform substantially to the shape of a toe portion of a shoe sole, a cooperating jaw, and means for operating the jaws, said jaws being constructed and arranged to apply a gripping pressure to an upper placed between them, first at the portion of the toe having the greatest curvature, and to extend the gripping action in both directions from said portion.

13. In a lasting machine having a vertically movable toe-head and forwardly and inwardly moving wipers, the combination of a spreader having two portions pivoted together at the toe, a hand lever for forcing the portion of the spreader at the pivot over and down upon the wipers and a hand lever independent of the wipers whereby the free ends of the spreader may be expanded over the end portions of the wipers.

14. In a device of the class described, a spreader support, comprising a lever provided with a handle at one end, a slot at the other, a headed stud passing through said slot and adapted to be secured to the toe-head of a lasting machine, spreader plates pivoted to each other and to said lever upon the under side thereof, and means for separating the free ends of the spreader plates.

15. In a device of the class described, a spreader support adapted to be mounted upon the toe-head of a lasting machine for movement longitudinally of the shoe and for lateral swinging movement and having a depending projection, spreader blades pivoted to said projection, links connecting the free ends of the spreader blades, and means for operating the links to expand and contract the spreader.

16. In a device of the class described, a

spreader support adapted to be mounted in the toe-head of a lasting machine for movement longitudinally of the shoe and for lateral swinging movement and having a depending projection, spreader members pivoted to said projection, and a yoke secured to said support and having depending ends resting upon the free ends of the spreader member, and means for expanding the spreader.

17. In a lasting machine, upper wiping means to press the upper inward over the insole at the toe, upper gripping means comprising an unyielding jaw located outside of and extending above the toe portion of the upper, an inner jaw cooperating and co-extensive with the outer jaw, and means arranged for operation at the will of the operator for changing the gripping surface of said inner jaw into and out of conformity with the gripping surface of said outer jaw.

18. A toe lasting mechanism comprising a toe rest, a toe embracing wiper, means for effecting relative vertical movement of the last and the wiper to stretch the upper toward the plane of the shoe bottom, and means constructed and arranged to grip and hold the edge of the upper independent of the wipers and for preventing the upper from slipping between the wiper and the last during such relative movement.

19. A toe lasting mechanism comprising a toe rest, a toe embracing wiper, means for effecting relative vertical movement of the last and the wiper to stretch the upper toward the plane of the shoe bottom, and curved jaws constructed and arranged to be affixed to the edge of the upper for such vertical movement and to be engaged by the wipers during such movement or alternatively to be manually lifted independently of the wipers.

20. A toe lasting mechanism having, in combination, toe embracing wipers, operating means for advancing and closing the wipers, a spreader arranged to clamp the upper in outspread condition over the wipers, and manual means for expanding the spreader laterally to clamp the upper at the sides of the toe preparatory to the closing of the wipers over the last bottom.

21. A toe lasting mechanism having, in combination, toe embracing wipers, operating means for advancing and closing the wipers, a spreader comprising a hand tool and having a hand lever by which it is movable forwardly to spread the upper at the end of the toe over the wipers, and another hand lever for expanding the spreader laterally to spread the side portions of the upper over the wipers at the sides of the toe.

22. A toe lasting mechanism having, in combination, toe embracing wipers, operating means for advancing and closing the wipers, a head carrying wipers, and a

spreader pivotally and slidingly connected to said head and extending rearwardly over the wipers with a handle located over the shoe bottom, said spreader having provision for forward movement to smooth the upper over the top face of the wipers and being laterally expansible to spread the upper at the sides of the toe outwardly over the wipers.

23. A toe lasting mechanism having, in combination, toe embracing wipers, operating means for advancing and closing the wipers, a spreader comprising lateral wings substantially co-extensive with the wipers and pivotally connected at the middle of the toe and extending rearwardly, and manual means for expanding said wings to spread and hold the upper from the sides of the toe over the wipers independently of the operation of the wipers.

24. A toe lasting mechanism having, in combination, toe embracing wipers, operating means for advancing and closing the wipers, an expansible spreader having a hand lever by which it may be pressed down upon the upper, and an underlying finger lever by which it may be laterally expanded to spread the upper from the sides of the toe over the wipers.

25. A toe spreader for use with the toe lasting mechanism, said spreader comprising expansible side members, a hand lever by which it may be forced downwardly into clamping engagement with the upper and an underlying finger lever by which its side members may be moved outwardly to spread the upper and the sides of the toe over the wipers.

26. An expansible spreader for use with toe lasting mechanism comprising an outer curved jaw and inner jaw members pivotally connected together at the end of the toe, and means connected to the free ends of the jaws for expanding said inner members to cause them to grip the upper against the outer jaw.

27. An expansible spreader for use with toe lasting mechanism comprising an outer curved jaw and inner jaw members pivotally connected together at the end of the toe, means for actuating said inner members to grip the upper at the end of the toe against the outer jaw, and additional means for expanding said inner members to grip the upper at the sides of the toe against the outer jaw.

28. In a device of the class described, an outer jaw curved to receive the upper of the toe portion of the shoe, an inner jaw comprising relatively movable members, operating means for actuating the inner jaw forwardly to grip the upper of the end of the toe and for actuating said members laterally to grip the upper at the sides of the toe, said operating means having provision

for varying at will the force with which the upper is gripped at the end and sides of the toe.

29. In a device of the class described, an outer jaw curved to receive the upper of the toe portion of the shoe, an inner jaw comprising relatively movable members, a lever 10 for actuating the inner jaw members forwardly to grip the upper of the end of the toe against the outer jaw, and the underlying finger lever 32 for spreading the inner members to grip the upper of the sides of the toe against the outer jaw.

30. A toe lasting mechanism having, in combination, toe embracing wipers, operating means for advancing and closing the wipers, and a spreader arranged to clamp the upper independently of the wipers in outspread condition relatively to the wipers at the end and sides of the toe.

31. A toe lasting mechanism having, in combination, toe embracing wipers, operating means for advancing and closing the wipers, and a spreader arranged to spread the upper free from wrinkles over the wipers and comprising relatively movable members to clamp the upper independently of the wipers at the end and sides of the toe and hold it during the operation of the wipers.

32. A device of the class described having, in combination, a continuous toe shaped outer jaw, a jointed inner jaw, and means for forcing the inner jaw toward the outer jaw to spread the upper thereagainst and to hold the upper gripped between the jaws.

33. A device of the class described having, in combination, a rigid jaw having a face arranged in substantial parallelism to the outer contour of the toe of a last, an expansible inner jaw and means to operate said inner jaw to spread the upper into contact with the face of the rigid jaw and hold the upper in gripping engagement therewith.

34. A device of the class described having, in combination, a continuous rigid outer jaw having its inner face arranged in substantial parallelism to the contour of the toe portion of a last bottom, an inner jaw composed of two members jointed together and conforming, when the outer ends are separated, to the contour of the face of the outer jaw, means for forcing the jointed portion of the inner jaw against the central portion of the outer jaw, and means for separating the free ends of the inner jaw members to expand the upper at the sides of the toe and grip it against the end portions of the outer jaw.

35. A machine of the class described having, in combination, wipers, grippers comprising a curved outer jaw and an inner gripping member formed in relatively turning sections, means to actuate said sections to engage the inner side of the upper at the

sides and end of the toe of the shoe and spread it outwardly against the outer jaw, and means for actuating said wipers to further tension and overlay the upper.

5 36. A toe lasting mechanism, having in combination, toe embracing wipers and operating means for advancing and closing the wipers, a spreader and means for applying pressure directly to the two end portions of the spreader.

10 37. A toe lasting mechanism, having in combination, toe embracing wipers, operating means for advancing and closing the wipers, a spreader, and means for applying pressure at the two ends of the spreader simultaneously to hold the upper more securely at the end of the toe and at the ends

of the tip seam than at the corners of the toe.

38. A toe lasting machine, having in combination, toe embracing wipers, operating means for advancing and closing the wipers and a bow-shaped spreader and means for positively holding down the ends of the bow against the overlapped upper at the ends of the tip seam.

20
25
In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERT A. MACLEOD.

Witnesses:

ARTHUR L. RUSSELL,
HERBERT W. KENVAY.