

J. J. DODGE.
LASTING MACHINE.
APPLICATION FILED JUNE 12, 1909.

Patented Dec. 26, 1911.

4 SHEETS-SHEET 1.

1,012,996.

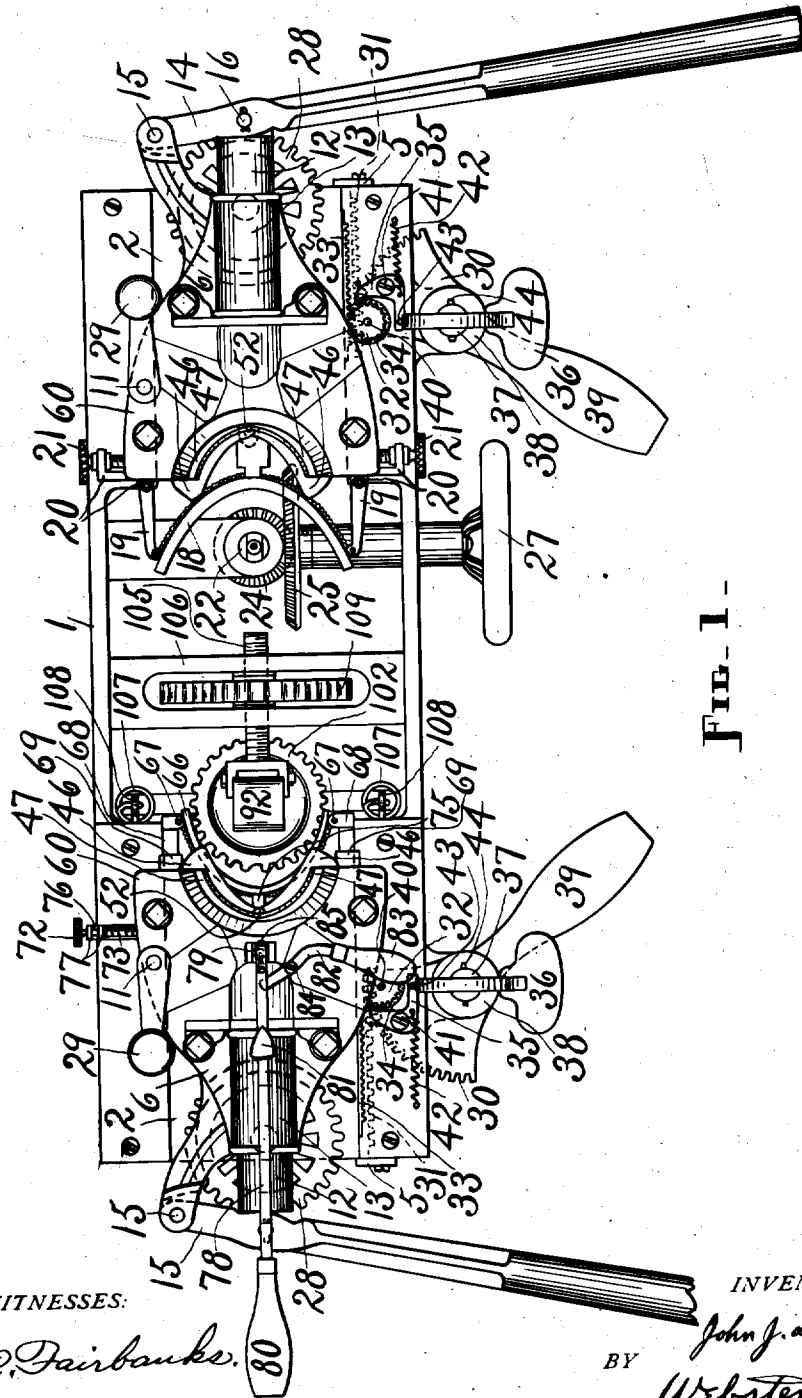


FIG. 1.

WITNESSES:

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M. S. Fairbanks

INVENTOR.

BY

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1,012,996.

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4 SHEETS—SHEET 2

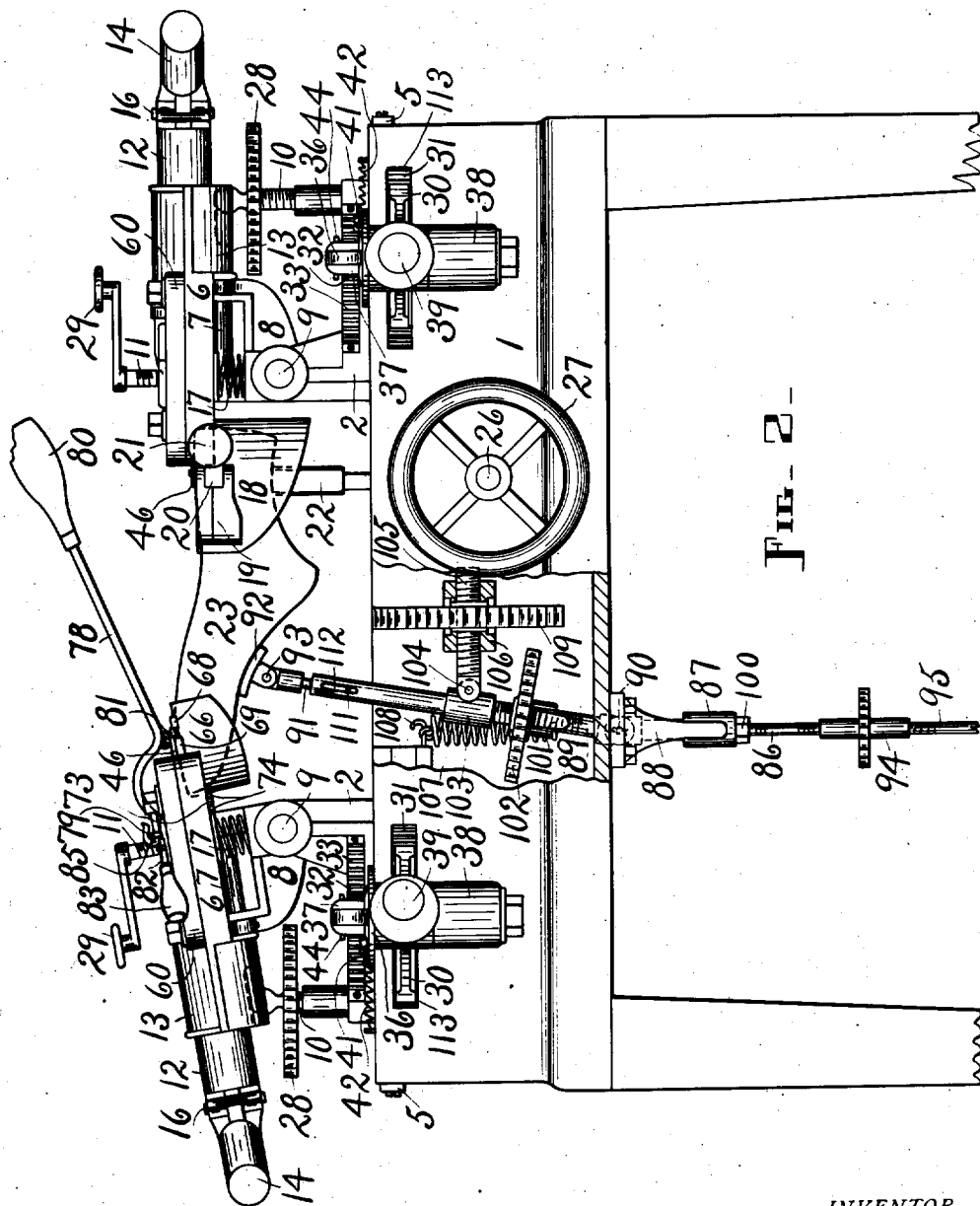


FIG. 2—

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4 SHEETS—SHEET 3.

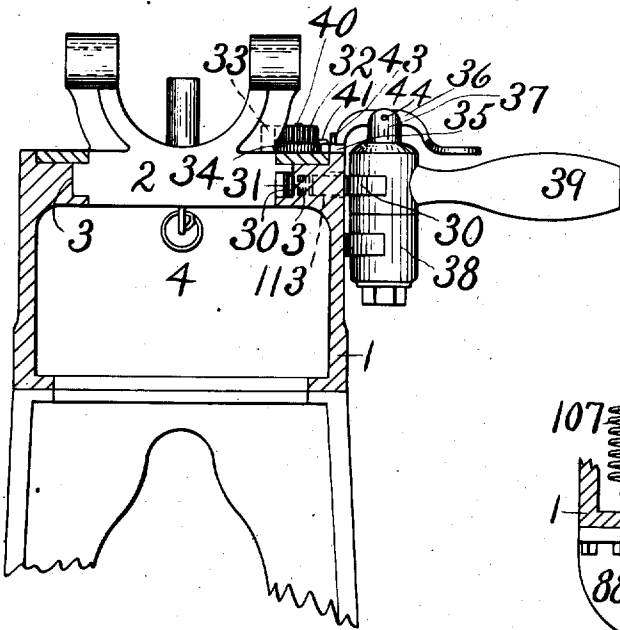


FIG. 3.

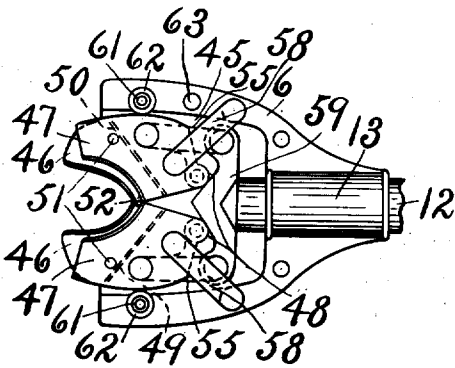


FIG. 7.

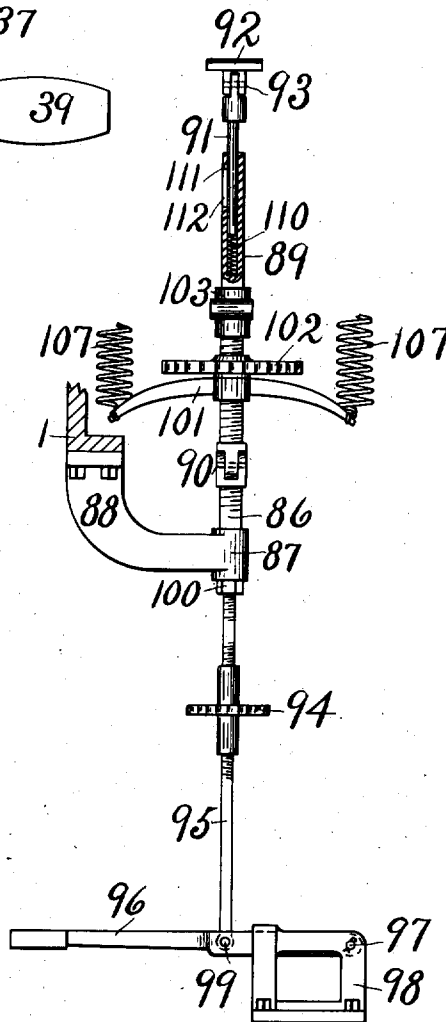


FIG. 4.

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4 SHEETS—SHEET 4.

1,012,996.

FIG. 5—

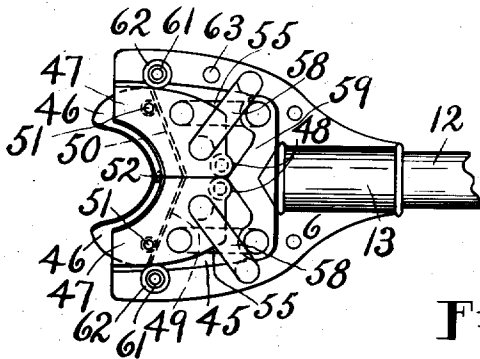


FIG. 6— FIG. 7—

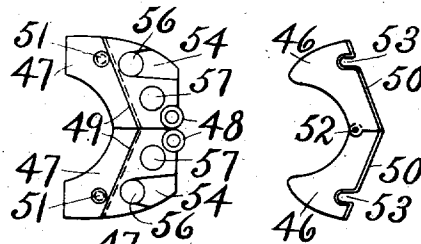


FIG. 8—



FIG. 10—

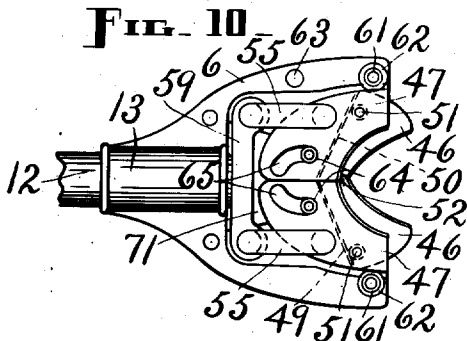


FIG. 11—

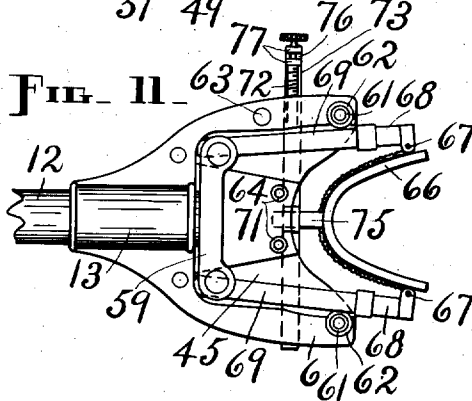


FIG. 12—



FIG. 13—

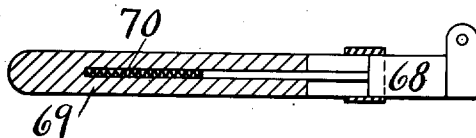
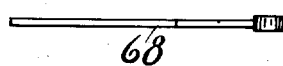


FIG. 14—

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UNITED STATES PATENT OFFICE.

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LASTING-MACHINE.

1,012,996.

Specification of Letters Patent.

Patented Dec. 26, 1911.

Application filed June 12, 1909. Serial No. 501,721.

To all whom it may concern:

Be it known that I, JOHN J. DOIDGE, a subject of the King of Great Britain, residing at South Framingham, in the county of Middlesex and State of Massachusetts, have invented a new and useful Lasting-Machine, of which the following is a specification.

The present invention relates to improvements in machines for manufacturing boots and shoes and more particularly to machines for preparing lasted shoes for sewing the upper and sole of a turned shoe, or the upper, insole and welt of a welted shoe, in the usual manner, such improvements residing in matters of construction distributed throughout the machine, as hereinafter set forth.

The object of my invention is to simplify the machine, enhance ease and facility of operation of the several mechanisms and devices which combined go to make up the machine, insure stability, provide for rapidity of operation, and accomplish better results than heretofore.

Other objects will appear in the course of the following description.

The subject matter of this application relates more especially and specifically to lasting mechanisms and devices operating in the vicinity of the ends of the last, including among other features locking and releasing means for one or both carriages, wiper actuating means, a last clasp and its appurtenances, and last toe supports.

Referring to the accompanying drawings, in which similar reference characters indicate similar parts throughout the several views, Figure 1 is a top plan of a machine embodying a practical form of my invention, the parts being generally in their inactive positions; Fig. 2, a front elevation of said machine with a last in place and the parts generally in their active positions, a portion of the frame or bed being broken out to disclose more fully the toe support for the last underneath; Fig. 3, a cross-section through the bed and an end view of one of the carriages, showing the operating mechanism for such carriage; Fig. 4, a detail of the aforesaid support; Fig. 5, a top plan of one of the wiper heads with its wiper holders and wipers, the cover plate having been removed; Fig. 6, a bottom plan of the wiper holders shown in the preceding

view; Fig. 7, a bottom view of the wipers; Fig. 8, a view of said holders looking at one edge; Fig. 9, (Sheet 3), a top plan of the parts which appear in Fig. 5, showing the wipers advanced; Fig. 10, a top plan of a slightly modified form of wiper head and wiper holders, the cover plate having been removed; Fig. 11, a top plan of a wiper head provided with a last clasp, the wiper holders and wipers being omitted; Fig. 12, an enlarged edge view of one of the clasp sheaths; Fig. 13, an enlarged edge view of the corresponding plunger, and, Fig. 14, an enlarged top plan of the members shown in the two preceding views assembled.

Although the machine shown in Figs. 1 and 2 is designed for Goodyear work or welt shoes, it is adaptable for McKay work or turned shoes, even without resorting to the changes for which provision is made and as explained in detail further on in this specification.

In the first three views appear a suitably supported horizontal frame or bed 1, a carriage 2 slidingly mounted at each end of said bed in horizontal slideways 3 in the top thereof, a spring 4 to tension such carriage toward the adjacent end of the bed, a lug 5 at such end to limit the outward movement of the carriage, a head 6 pivotally mounted at 7 longitudinally of the bed to a carrier 8 which in turn is pivotally mounted at 9 transversely of the bed to said carriage, an adjusting screw 10 for the longitudinal adjustment of said head, an adjusting screw 11 for the lateral or transverse adjustment of said head, a plunger 12 in the outer terminal or neck 13 of the head, an operating arm or lever 14 for such plunger, such lever being pivoted at 15 to an extension from the head and at 16 to the outer end of said plunger, a spring 17 which coöperates with the adjusting screw 11, a heel strap or clasp 18 pivotally attached to two arms 19 which in turn are pivotally attached to a corresponding number of slides 20 mounted for lateral adjustment in the right-hand head through the medium of thumb-screws 21—21, and a post or jack 22 for a last 23, which jack is rendered vertically adjustable by means of two bevel-gears 24 and 25, a shaft 26, and a hand-wheel 27, all of which parts are structurally and functionally old and well-known and need not be described at greater length

excepting as may be necessary in some cases in order to render clear an understanding of the new elements and features and the combinations into which they may enter.

28 and 29 are handles for the adjusting screws 10 and 11, respectively.

Each of the carriages 2 is or may be moved by hand in either direction in the slideways 3 through the direct medium of a segment 30 which meshes with a rack 31; and the carriage is locked automatically and released manually through the direct medium of a pinion 32 which meshes with a rack 33, and a ratchet 34 and pawl 35, and a trip 36, respectively. The segment 30 is mounted on a vertical pin or stud 37 that rises from a lug 38 on the front of the bed 1, and said segment is provided with an operating-handle 39. The segment operates in and through a slot 113 in the front side of the bed 1. The rack 31 is behind the segment on that part of the base of the carriage which is in the front slideway 3. The pinion 32 and ratchet 34 are integral or fastened together and mounted loose on a vertical pin or stud 40 rising from the top of the bed, and the pawl 35 is pivotally mounted at 41 on the bed and normally held in engagement with said ratchet by a spring 42 attached at one end to said pawl and at the other end to the bed, the pivot 41 being between the ratchet-engaging end of the pawl and the point where said spring is attached to the pawl. The rack 33 is behind the ratchet 34 on the carriage above the bed. The free end or heel of the pawl, which is immediately behind the back end of the trip 36, carries a pin 43. The trip 36 is pivoted intermediate of its ends to the stud 37 at 44; its back end is in contact with the pin 43, and its front end is of a convenient shape to be pressed by the thumb of a hand grasping the handle 39.

As stated, each carriage 2 is provided with the equipment just described, hence by grasping and swinging outward, that is, toward the adjacent end of the machine, either handle 39 the corresponding carriage is advanced toward the last 23, through the medium of the segment 30 to which said handle is attached and the rack 31 which meshes with said segment, and such carriage is locked against retreat instantly such movement of said handle ceases, owing to the engagement between the rack 33 with which the carriage is provided, the meshing pinion 32, and the associated pawl and ratchet, the latter having permitted said pinion to rotate freely as the carriage advanced but operating instantly to lock the parts when the carriage stopped.

By again grasping the handle 39 previously noted and pressing down on the front end of the trip 36 the release of the associated carriage is effected and said car-

riage is then returned to its starting point at the adjacent end of the bed. The release of the carriage is effected because, when the trip 36 is rocked on its pivot 44, it acts on the pin 43 to actuate the pawl 35 out of engagement with the ratchet 34, thus leaving the pinion 32 free and thereby enabling the rack 33 and the carriage to move outward. The spring 4 which has one end attached to said carriage performs its usual function.

Referring next more particularly to Figs. 5, 6, 7, 8 and 9 for a clear understanding of the head 6 mounted on either carriage 2, and the mechanism contained in said head, it will be observed that such head is recessed at 45 to accommodate a pair of wipers 46 and a pair of wiper holders 47 together with the operating mechanism for the same, and is cut out at the end opposite the neck 13 as usual. The holders 47 are not fastened together, but have edges which come together when said holders are drawn in, as best shown in Figs. 5 and 6, the abutting edges then coinciding with the longitudinal center of the head 6. At the inner ends of the holders 47 underneath are two anti-friction rollers 48 which are in close proximity when said holders are drawn in. The holders are cut out at their outer ends in the same manner as the head. The outer portions of the holders are cut away on the bottom to receive the wipers 46, two undercut shoulders 49 being formed and arranged at the proper angle to each other to afford confining abutments for beveled edges 50—50 at the back of said wipers. Headed studs 51—51 are set in the thin portions of the holders, in front of the shoulders 50. The wipers 46, which are pivotally connected at 52, are slotted at 53—53 to receive the shanks of the studs 51 with the heads of such studs in engagement with the bottoms of said wipers. The working front portions of the wipers extend beyond the indented edges of the head 6 and holders 47, and are not unlike other wipers of a similar type in shape and function.

The undersides of the thick portions of the holders 47 are recessed at 54—54 to accommodate a pair of links 55, and have holes 56—56 therein for the pivot studs at the front ends of such links, and holes 57—57 therein for the pivot studs at the front or inner ends of a second pair of links 58, such recesses and holes being plainly seen in Fig. 6. The links 55 pivotally connect the holders 47 with opposite ends of a cross-head 59 at the inner end of the plunger 12 in the recess 45 in the head 6, and the links 58 pivotally connect said holders with said head 6. The cross-head 59 is provided with a central pointed or angular part which bears between the rollers 48 and is adapted to separate said rollers and the holders with

the wipers when said cross-head is forced toward the open head of the head. A cover plate 60, shown in the first two views, is bolted to the head 6 over the recess 45 therein. Mounted on two bosses 61 on opposite sides of the head 6 near the front end are horizontal anti-friction rollers 62—62 for the holders 47, said rollers being so located as to form abutments for the lateral edges of said holders.

63 represents a hole through the head 6 for the associated adjusting screw 11.

From the foregoing it is seen that the wipers 46 are held securely between the floor of the recess 45 and the thin parts of the holders 47, and that said wipers and their holders are firmly connected or fastened together by means of the headed studs 51 and the undercut shoulders 49; and it is seen further that, when the cross-head 59 is advanced by the plunger 12, it forces said holders forward with the wipers ahead of it and at the same time separates the holders at the back and so causes the wipers to turn on their pivot 52 and their working edges to draw in, until the members are disposed as shown in Fig. 9, the links 55 and 58 being tributary in bringing about the desired result, and the rollers 48 and 62 serving to facilitate the operation. The holders 47 and the wipers are drawn back into the head 6 and the movable parts restored to their former or initial positions when the plunger 12 is moved outward again. The wiping operation at either the heel or toe end of the last, by which the upper is laid down or wiped over the insole preparatory to being tacked or otherwise secured thereto, is essentially the same in this machine and with the mechanism described above as in other machines for a similar purpose.

For McKay or turned work, where it is desirable to advance the wipers a short distance before "wiping in," the rollers 48 and the links 58 may be omitted, and in place of these members two rollers 64 may be provided in the recess 45 and a cam slot 65 in each holder 47 for one of said last-mentioned rollers—see Fig. 10. Otherwise the construction of the wiper devices is the same as before. The slots 65 are of such shape and so located in the holders 47 that, when the latter are drawn in, the front portions of such slots are parallel while the rear portions converge or approach each other. When actuated forward the cross-head 59 in this case does not act directly on the holders 47 to separate or open them, either at the start as in the other case, or at any time, but through the sole agency of the links 55 said cross-head moves said holders with their wipers 46 outward in and from the recess 45. During the first part of the aforesaid outward movement of these holders and while the rollers 64 are in the par-

allel portions of the slots 65 said holders remain closed, but as soon as the converging portions of said slots arrive at said rollers the holders commence to open or separate, with the wiper pivot 52 as a fulcrum in precisely the same way as did the other holders, and to cause the working edges of the wipers to swing toward each other, since said wipers are locked fast to the holders and move in exact accord with them or rather are moved by them. The wipers are retracted and with the other movable members of this construction return to initial position upon the outward movement of the operating plunger 12 therefor.

A toe strap or clasp 66, similar to the heel clasp 18 excepting that the former is shaped to conform more or less closely to the toe portion of the last 23 while the latter is shaped to conform more or less closely to the heel portion of said last, has its terminals pivotally attached at 67—67 to the heads of two plungers 68 which fit into a corresponding number of sheaths 69. Each plunger 68 is arranged to slide in its sheath 69, and is tensioned outwardly by means of a spring 70 in said sheath behind said plunger. The sheaths are designed to lie in the recess 45 in the head 6 at the toe end of the machine, with their outer or rear ends bearing against the rear wall of said recess between the sides of the recess and a raised part 71 of the floor of the recess, which raised part is provided in the head 6, last described, to support the cross-head and the other movable members above the floor for said sheaths.

Arranged for longitudinal adjustment, by means of a screw 72 tapped into the back side of the left-hand head 6, is a bar or slide 73 located beneath said head in two parallel transverse ribs 74 which form a slide-way on the bottom of the head for such bar. Slidingly mounted in the slide 73 at right-angles thereto is a short bar 75 which has its front end connected with the clasp 66 between the pivotal points 67. A slotted upright 76 at the back end of the slide 73 is received between two flanges 77 on the screw 72 near its head, and the slide and screw are thus connected for longitudinal movement, so that said slide follows said screw in whichever direction it may be moved by turning it in or out of the head 6. By operating the screw 72 the bar 75 can be located so as to be exactly in line with the longitudinal center of the last; this is important because it is necessary in order to adjust the clasp 66 to the best advantage to provide an anchorage as it were at this point for said clasp. The clasp 66 is brought into contact with the toe of the last 23 at the time the left-hand head 6 is actuated forward, and such contact is close

and tight owing to the presence of the spring-pressed plungers 68 in the mechanism by means of which and the adjustable bar 75 said clasp is able to fit itself accurately to the engaging portion of the last. 5 When the head 6 is advanced the bar 75 slips backward in the slide 73, or more correctly the latter moves forward on the bar.

The clasp 66 and its appurtenances can be used in connection with the wiper mechanism for the Goodyear work as well as with that for the McKay work; furthermore, said clasp and appurtenances need not necessarily be employed at all, but may be omitted 15 altogether from the left-hand head 6.

The clasps 18 and 66 are of usual construction.

A depressor 78, for the toe of the last, consists of a suitably bent rod having one end 20 pivotally attached at 79 to the top of the left-hand cover plate 60 and a handle 80 at the opposite end of said rod, and provided with a foot piece 81 that is loosely connected with the rod at a point which will enable said foot piece to be brought down onto the 25 last, or the insole of a shoe thereon, a short distance from the extreme toe end of said last. A latch 82 may be provided for the depressor 78, such latch having a handle 83 and being pivoted at 84 on the aforesaid plate 60. The position of the latch 82 relative to the pivot 79 is such as to permit the former to be moved by the handle 83 so as to bring the rear end of said latch beneath 30 a short projection 85 on the depressor 78 when the latter is in operative position, such projection then lying immediately to the left of the pivot 79. The operation of the depressor and its latch will be more fully explained in connection with the toe support 40 for the last which will now be taken up.

It is necessary to support the toe of the last quite firmly and for this purpose I provide in addition to the depressor 78, which 45 is of the nature of a support as will be presently made plain, the device illustrated in Fig. 4 and in Figs. 1 and 2. This device comprises a vertical rod 86 slidably mounted in a sleeve 87 at the back end of an angular bracket 88 which is securely bolted to the 50 bottom of the bed 1, a second rod 89 upwardly spring-pressed and pivoted to the first at 90 in such a manner that said second rod can swing in the longitudinal central plane of the last 23, within which plane said rods are situated, an upwardly spring-pressed plunger 91 carried by said rod 89 55 and supporting a rest 92 which is pivoted at 93 to the head of said plunger, the pivot 93 being parallel with the pivot 90, a turn-buckle 94 and an extension 95 of the rod 86, and a treadle 96. Said treadle is pivotally connected at 97 with a fixed frame 98 which may be so constructed as to limit the upward 65 movement of the treadle. The extension 95

is pivoted at 99 to the treadle 96, and the turn-buckle 94 connects adjacent terminals of said extension and the rod 86, which terminals have right and left screw-threads to engage similar screw-threads in said turn-buckle. This turn-buckle provides for increasing or decreasing the length of the supporting column for the rest 92. A check-nut 100 threaded to the rod 86 below the sleeve 87 limits the upward movement of 75 said rod and permits such limit of movement to be changed.

Loosely mounted on the rod 89 is a cross-bar 101, threaded to said rod above said cross-bar is an adjusting wheel 102, and 80 loose on the rod above said wheel is a sleeve 103 to the right-hand side of which at 104 is pivoted one end of a horizontal screw 105 loosely mounted in a slotted cross piece 106 extending between the front and back sides 85 of the bed 1. The cross-bar 101 is tensioned upwardly against the wheel 102 by two springs 107, each of which springs is attached at the lower end to one end of said cross-bar and at the upper end to a hook 90 108 fastened to the bed 1. The tension of the springs 107 is varied by turning the wheel 102 up or down on the rod 89 to decrease or increase such tension. An adjusting wheel 109 is mounted on the screw 105, in threaded 95 engagement therewith, between the sides of the slot in the cross piece 106, and by turning this wheel in one direction the rod 89 is rocked on the pivot 90 to the right, and by turning said wheel in the opposite direction 100 said rod is rocked to the left, provision thus being made for positioning the rest 92 at any point longitudinally against the instep of the last 23. A comparatively light spring 110 is placed in the bore in the rod 89 for 105 the plunger 91 and serves to press the latter upwardly, and there is a pin 111 which projects from said plunger into a slot 112 in said rod to limit the upward movement of the plunger and prevent the same from turning. 110

The above described column support for the toe or instep of the last 23 is capable of being adjusted to this or any last with great exactitude, as will be readily perceived. 115

In practice, after the column support has been properly adjusted through the medium of the turn-buckle 94, check-nut 100, and wheels 102 and 109, the depressor 78 is 120 swung over with its foot-piece 81 on the last, the treadle 96 is depressed to draw down said column support against the resiliency of the springs 107, said depressor is forced down until the upper surface of the toe of 125 said last is carried down on a level with the underside of the adjacent wipers, the latch 82 is moved into position to lock the depressor, and said treadle is released to allow the rest 92 to be firmly set against the last. 130

Thus the last is securely held at the toe as well as at the heel.

It is not deemed necessary to go into the operation of the machine as a whole and in detail, inasmuch as such description would in the main consist merely of a recapitulation of what has gone before coupled with a description which applies to any ordinary lasting machine, but in a very general way the operation may be set out as follows: A last with a shoe in process of manufacture thereon is first placed on the jack 22, and then the handles 39 are grasped and swung outward or away from each other to advance the carriages 2 until the clasps 18 and 66 bear hard against the heel and toe, respectively, of said last, with the shoe upper between, the automatic locks for the carriage-actuating mechanism operating to retain said carriages in whatever position they may be left when said handles are released. In the event that the clasp 66 be not employed, the left-hand carriage 2 is advanced only far enough to position the head 6 thereon near to the toe of the last but not in contact therewith. Next the depressor 78 and the rest 92 through the medium of their co-operating and supporting parts and members are manipulated to position and grasp the last at or near the toe end. Now the heel wipers are actuated by means of the right-hand lever 14 and intervening parts to turn over onto the last the projecting portions of the upper at this end, and following this wiping of the heel the toe wipers are actuated by means of the left-hand lever 14 and intervening parts to turn over onto the last the projecting portions of the upper at the toe end. Finally, after the wipers at both ends have performed their work and been retracted, the treadle 96 is depressed long enough to allow the depressor 78 to be unlatched and thrown over to the left out of the way, the trips 36 are operated to unlock the carriages 2, said carriages are moved outward to free the last from the appurtenances carried by the heads 6 at their inner ends, and said last is taken off of the jack 22. The machine is now ready for a repetition of the several operations just explained, or will be as soon as another last and shoe are placed therein.

It is understood, of course, that the wiped portions of the upper are tacked, taped, or otherwise fastened to the insole while held in place by the wipers.

I do not desire to limit myself to the details of construction which I have illustrated and described, since they may be varied to suit different requirements.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, in a lasting machine, with a suitable bed, and a carriage for wiper mechanism mounted for reciprocal

movement on said bed, of oscillatory actuating means mounted at one side of said bed for such carriage, and means also mounted at one side of said bed to lock automatically such carriage at various points in its inward travel.

2. The combination, in a lasting machine, with a suitable bed, and a carriage for wiper mechanism mounted for reciprocal movement on said bed, of oscillatory actuating means mounted at one side of said bed for such carriage, and means also mounted at one side of said bed to lock automatically such carriage at any point in its inward travel, to hold it against outward movement, without interfering with such inward travel of the carriage.

3. The combination, in a lasting machine, with a suitable bed, and a carriage for the wiper mechanism mounted to reciprocate in such bed, such carriage being provided with two racks one above the other, of a segment mounted on said bed in engaging relation to one of said racks, a pinion also mounted on said bed in engaging relation to the other of said racks, and a pawl and ratchet for said pinion.

4. The combination, in a lasting machine, with a suitable bed, and a carriage for the wiper mechanism mounted to reciprocate in such bed, such carriage being provided with two racks one above the other, of a segment mounted on said bed to operatively engage one of said racks, a pinion also mounted on said bed to mesh with the other of said racks, a ratchet fast to said pinion, a pawl for said ratchet, and a trip arranged to actuate said pawl out of engagement with said ratchet.

5. The combination, in a lasting machine, with a suitable wiper head provided with guiding abutments for wiper holders, such abutments being at opposite edges but outside of the course for such holders, of wipers and wiper holders in such head, such wipers being connected with said holders and the latter being arranged to slide in said head with their outer edges in contact with said abutments, a plunger provided with a cross-head in the wiper head, link connections between said cross-head and said holders, and means to cause said holders to separate at the back with said wipers and so to actuate the working edges of the wipers toward each other when the holders are advanced.

6. The combination, in a lasting machine, with a suitable wiper head, of pivotally connected wipers and holders therefor in such head, such wipers being attached to such holders and the latter being arranged to slide in said head, a plunger provided with a cross-head in the wiper head, link connections between such cross-head and said holders, and means to cause said holders to separate at the back and to turn

with the wipers on the wiper pivot as a center or fulcrum to close in the working edges of the wipers when the holders are advanced.

- 5 7. The combination, in a lasting machine, with a suitable wiper head, of pivotally connected wipers and holders therefor in such head, such wipers being attached to such holders and the latter being arranged to
10 slide in said head, guiding abutments for the lateral edges of the holders, a plunger provided with a cross-head in the wiper head, link connections between said cross-head and said holders, and means to cause
15 said holders to separate at the back and to turn with the wipers on the wiper pivot as a center or fulcrum to close in the working edges of the wipers as the holders are advanced.
- 20 8. The combination, in a lasting-machine, with a recessed wiper head, and wiper-holder mechanism in the recess in said head, of sheaths located in such recess under said mechanism and having end portions in such
25 recess, spring-pressed plungers extending from said sheaths, and a flexible clasp connected with said plungers.

9. The combination, in a lasting machine,

with a suitable wiper head provided with a transverse slideway, of a slide in such slideway, means to adjust such slide longitudinally in such slideway, a flexible clasp, supporting means carried by said head for the ends of such clasp, and an intermediate slip connection between said clasp and said slide, whereby said connection is moved laterally with said slide and free movement between the two longitudinally of said connection is permitted.

10. The combination, in a lasting machine, with a suitable wiper head provided with a slideway, of a slide in such slideway, means to adjust such slide longitudinally, sheaths carried by said head, spring-pressed plungers extending from such sheaths, a flexible clasp connected with said plungers, and a member in sliding relation to said slide and connected with said clasp, such member being arranged at right-angles to said slide and adapted to be moved laterally thereby.

JOHN J. DOIDGE.

Witnesses:

RICHARD H. LONG,
EUGENE A. CLARK.

Corrections in Letters Patent No. 1,012,996.

It is hereby certified that the assignee in Letters Patent No. 1,012,996, granted December 26, 1911, upon the application of John J. Doidge, of South Framingham, Massachusetts, for an improvement in "Lasting-Machines," was erroneously described and specified as "R. H. Long Machinery Company," whereas, said assignee should have been described and specified as *The R. H. Long Machinery Company*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 13th day of February, A. D., 1912.

[SEAL.]

C. C. BILLINGS,
Acting Commissioner of Patents.

with the wipers on the wiper pivot as a center or fulcrum to close in the working edges of the wipers when the holders are advanced.

- 5 7. The combination, in a lasting machine, with a suitable wiper head, of pivotally connected wipers and holders therefor in such head, such wipers being attached to such holders and the latter being arranged to
10 slide in said head, guiding abutments for the lateral edges of the holders, a plunger provided with a cross-head in the wiper head, link connections between said cross-head and said holders, and means to cause
15 said holders to separate at the back and to turn with the wipers on the wiper pivot as a center or fulcrum to close in the working edges of the wipers as the holders are advanced.
- 20 8. The combination, in a lasting-machine, with a recessed wiper head, and wiper-holder mechanism in the recess in said head, of sheaths located in such recess under said mechanism and having end portions in such
25 recess, spring-pressed plungers extending from said sheaths, and a flexible clasp connected with said plungers.

9. The combination, in a lasting machine,

with a suitable wiper head provided with a transverse slideway, of a slide in such slideway, means to adjust such slide longitudinally in such slideway, a flexible clasp, supporting means carried by said head for the ends of such clasp, and an intermediate slip connection between said clasp and said slide, whereby said connection is moved laterally with said slide and free movement between the two longitudinally of said connection is permitted.

10. The combination, in a lasting machine, with a suitable wiper head provided with a slideway, of a slide in such slideway, means to adjust such slide longitudinally, sheaths carried by said head, spring-pressed plungers extending from such sheaths, a flexible clasp connected with said plungers, and a member in sliding relation to said slide and connected with said clasp, such member being arranged at right-angles to said slide and adapted to be moved laterally thereby.

JOHN J. DOIDGE.

Witnesses:

RICHARD H. LONG,
EUGENE A. CLARK.

Corrections in Letters Patent No. 1,012,996.

It is hereby certified that the assignee in Letters Patent No. 1,012,996, granted December 26, 1911, upon the application of John J. Doidge, of South Framingham, Massachusetts, for an improvement in "Lasting-Machines," was erroneously described and specified as "R. H. Long Machinery Company," whereas, said assignee should have been described and specified as *The R. H. Long Machinery Company*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 13th day of February, A. D., 1912.

[SEAL.]

C. C. BILLINGS,
Acting Commissioner of Patents.

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