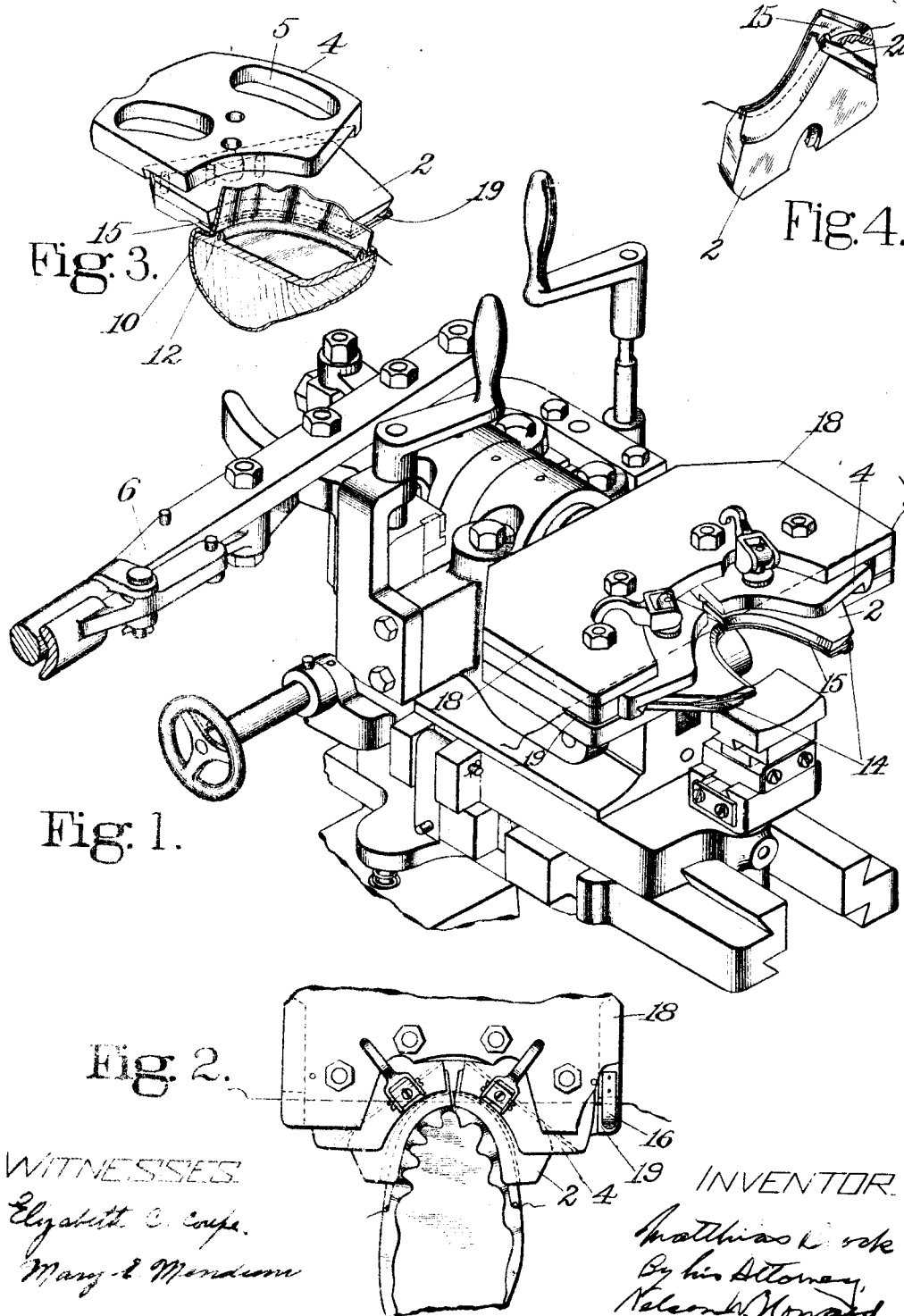


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END LASTING AND WIRING MECHANISM.
APPLICATION FILED JULY 11, 1910.

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Patented July 1, 1913.



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END LASTING AND WIRING MECHANISM.

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To all whom it may concern:

Be it known that I, MATTHIAS BROCK, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain improvements in End Lasting and Wiring Mechanisms, 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 machines for use in the manufacture of boots and shoes and particularly to apparatus for use in connection with the lasting of the toe portions of shoes. In this operation as carried on with the type of mechanism in which this invention is herein shown for the purpose of explanation, end embracing wipers are employed in working the upper over the toe portion of the shoe into position to be fastened to or upon the innersole. In the manufacture of welt and turn shoes in which the innersole or the sole has a lip or shoulder near its marginal edge it is the custom to secure the upper in lasted position by binding the upstanding edge of the upper against the abutment formed by the said lip or shoulder by a wire or other continuous material. In order to place the wire in binding relation to the overworked upper it has been necessary to displace the wipers or so manipulate them that in some degree they fail continuously to hold the upper. Two practices are common among lasting machine operators. With one type of machine in which there is opportunity to do so the binder strand is threaded across the machine in front of the shoe and under the wipers and then the wipers are raised or their holding pressure upon the shoe is relaxed while the wire is drawn in under them, between their lower faces and the upper that is overlaid on the feather or margin of the innersole, and tightened into binding relation to the upstanding edge portion of the upper. With another type of lasting machine in which the presence of a toe band renders the above described procedure impractical the wipers are partially backed off the shoe to present a narrow channel between their front edges and the upstanding upper. The operator then lays the binding material in this nar-

row channel and tightens it against the upper. In the raising of the wipers and also in backing them off their holding relation to the upper is disturbed and results in more or less disturbance of the position of the upper which they have just worked into the position where it ought to be fastened. If the upper has been overworked under tension it slackens back when the wipers partially release it. Not only is neither of these practices compatible with securing the upper while it is in the most favorable position but neither practice provides for the accurate positioning of the wire which is desirable in order to insure that it shall bind the upper most effectively.

It is an object of this invention to overcome these objectionable features and to secure more accurate positioning of the binder and more satisfactory binding of the upper in the position to which it has been overworked than has heretofore been obtained.

A very important feature of this invention consists in lasting means adapted for working an upper into lasted position and holding it under tension and having provision for guiding a binder into binding position against that portion of the upper held by the lasting means.

A further feature of this invention consists in toe binding means constructed and arranged for positioning a binder in predetermined binding position against the upstanding edge portion of the upper acted upon by the edge face of the wiper.

A preferred embodiment of the invention comprises a binder positioning member having a wire holding slot or groove in its face extending substantially parallel with the plane of the shoe bottom for placing the binder in a predetermined position against the upper material that is to be bound in place.

As herein shown, and in accordance with the preferred embodiment of the first mentioned feature of this invention, the end embracing wipers are provided in their acting face with a slot in which a wire may be held in position to be tightened into binding relation to the upper while the wipers remain stationary in the final position to which they have been moved in overworking the upper. This has the advantage that the upper is fastened without having any

chance to slack back, and also that the binder is placed in a uniform position with relation to the plane of the upstanding portion of upper that is to be bound by it whereby the best binding effect is obtained.

5 The preferred formation of the wire guiding means may for convenience be designated as "split" wipers. A feature of the invention in this is found in means for placing the wire against the upstanding portion of upper in a selected position above the foot of such portion of the upper. Shoes which are bound in lasted position at the toe by wire or other continuous material as

10 a temporary fastening are later sewed by a seam which extends transversely through the upstanding portion of upper and the lip. The binding wire as heretofore applied has frequently been so located that it was

15 liable to be struck by the needle of the sewing machine and also was liable to be sewed into the seam, thus causing annoyance and sometimes delay to the sewing machine operator. By the use of the present invention in which the wire is placed with certainty in a predetermined position, vertically considered, the slot in the wiper or other wire holder may be located so as to place the binder just above the location for

20 the line of stitches so that liability of striking it or sewing it into the seam is avoided.

25 These and other features of this invention will appear in connection with the following description of the preferred embodiment of the invention and will then be pointed out in the claims.

Figure 1 is a perspective view of an end lasting mechanism embodying this invention and showing a binding wire placed for use on the next shoe that is lasted; Fig. 2 is a plan view showing the shoe lasted and the wire drawn out of the wipers and anchored to fasten the upper in lasted position; Fig. 3 is a perspective detail on a larger scale and shows the relation of the wire holding slot in a wiper to the upstanding portion of the upper material which is to be bound against the lip of the innersole; Fig. 4 is a

50 The toe lasting mechanism of the drawings may be like that of a well known commercial lasting machine of the "bed" type and needs no further description than to state that the wipers 2, which are removably

55 mounted on wiper carriers 4 having cam slots 5 by which the direction of their advancing and closing movement is controlled, are actuated by connections with the hand lever 6. In the lasting operation, as is well

60 understood, the wipers are employed to work the upper over the edge of the last and innersole and inwardly across the feather or reduced marginal portion 10 of the innersole into position against the lip

65 12 of the innersole to which it is to be

bound. The wipers 2 are herein provided with a slot 15 extending substantially parallel with their upper and lower faces from their acting edges backwardly toward their operating mechanism and forming a binder holding and positioning recess. The slot is preferably so extended as to permit the wire to be drawn in a substantially right line across the machine, as indicated in Fig. 1, in placing it in position for use. This formation presents horizontally split wipers the lower half of which is of course sufficiently thick and stiff to prevent objectionable springing while overwiping the upper and forming it upon the marginal edge of the shoe. The mouths of the slot in the two wipers are preferably flared as at 14 to facilitate the insertion of the wire which may easily be put into place by merely stretching it across between the wiper ends and drawing it backwardly into the position shown in Fig. 1. A friction holder 16 may be provided to retain the end of the binder on one side of the machine while the strand runs to a usual reel and tension control at the other side. As herein shown, the wiper guiding portions 18 of the machine head are extended forwardly to give desirable support and rigidity to the wipers and are cut away or slotted as at 19 in continuation of the wiper slot. The wiper holders 4 support the wiper plates 2 in such relation, see Fig. 3, that the slot 15 is below the holders and the end portions of the wire extend under the holders 4 and into the slots 19 in the cap 18. This arrangement makes it unnecessary to slot the holders 4 in order to allow the wire to extend across the machine in front of the shoe as shown in Fig. 1. The wipers 2 might be each made in two plates, as indicated in Fig. 3, with the wire holding recess between them or any other convenient manufacturing expedient may be adopted. The portion of the wiper below the slot 15 will preferably be made of suitable thickness to place the wire in such a relation to the foot of the upstanding portion of the upper that it will be above the stitching line which is at or near the angle between the horizontal and vertical faces of the upper in a turn shoe and usually somewhat above the angle in a welt shoe.

In using the invention the operator prepares the machine by positioning the binder as shown in Fig. 1, that is, by placing a strand of binder material or an unformed binder as distinguished from a bent or bowed binder, in the split wipers. He then lasts the toe of the shoe in the usual way and causes the wipers to remain in their final advanced and depressed position for forming the upper into the angle between the feather 10 and lip 12 of the innersole. While the wipers continue to hold the up-

per in this lasted position without opportunity for relaxation or displacement the free end of the binder may be brought forward and anchored at the back side of the shoe and then the strand seized and drawn forward in the slot 15 and tightened against the upper as in Fig. 3 and finally anchored as in Fig. 3 without any possibility of disturbing the upper. By applying the binder as described at a predetermined elevation which may be the same all around the toe the binder can safely be placed high enough to avoid all liability of its being stitched into the inseam. This invention is not to be confused with the prior suggestions of a shelf of other formation on the wiper plates into which a thread or wire was to be bowed or bent in order that it might be carried around the shoe end by the advancing and closing wipers. The present invention requires no time-consuming manipulation of the binder in order to introduce it in position to be used and no special devices for retaining it.

In Fig. 4 is shown a wiper provided with a spring clamp 20 to hold the end of the binder within the slot. In this construction the wiper slot is not necessarily as deep as in the wipers shown in the other figures but may be merely a deep groove into which a body portion of the binding material may be retained behind the spring clamps 20.

Having explained the nature of this invention and described a preferred embodiment thereof, I claim as new and desire to secure by Letters Patent of the United States:—

1. A machine of the class described having, in combination, end embracing wipers having in their acting edge a continuous binder receiving recess which is substantially deeper at the outer ends of the wipers than it is at the ends of the wipers which are adjacent to each other to permit the strand of binding material to extend in approximately a right line across the machine in front of the toe of the shoe.

2. A machine of the class described having, in combination, end embracing wipers having therein a binder receiving recess formed to hold substantially throughout their length a strand of binding material between the upper and lower faces of the wipers, said recess being deeper at the outer than at the adjacent ends of the wipers to permit the strand to extend transversely across the machine in front of the toe of the shoe without necessarily preliminarily bending or shaping the wire for the purpose.

3. A machine of the class described having, in combination, split end embracing wipers, and means for actuating said wipers to overwork an upper, said wipers presenting between their upper and lower sections

a binder receiving recess which permits the binder to extend wholly within said recess across the machine in a substantially straight line when the wipers are fully open, serving to support a binder in position to be drawn into position to secure the upper.

4. In a machine of the class described, means for working an upper into lasted position and holding it under tension, said overworking means having provision for supporting out of contact with the upper during such overworking movement a binder extending in a substantially right line transversely of the machine and guiding the binder into binding position against that portion of the upper held by the lasting means.

5. In a machine of the class described, means for working an upper into lasted position and holding it under tension, said overworking means having provision for supporting out of contact with the upper during such overworking movement an unformed binder or strand of binder material extended transversely across the machine and guiding said binder into binding relation to the shoe.

6. In a machine of the class described, end embracing wipers having a slot extending through the wipers from the ends of the wipers which engage the sides of the toe backwardly, substantially as far as the portion of the edge that acts at the tip of the toe.

7. In a machine of the class described, end embracing wipers split from their front ends backwardly to form a guide-way substantially deeper at the front ends of the wipers than at their adjacent ends for a strand of binding material to be extended across the machine in the rear of the acting edge of the wipers.

8. In a machine of the class described, end embracing wipers split from their front ends backwardly to form a guide-way substantially deeper at the front ends of the wipers than at their adjacent ends for a strand of binding material to be extended across the machine in the rear of the acting edge of the wipers, and retaining means for the free end of the strand at one side of the machine.

9. In a machine of the class described, end embracing wipers split from their front ends backwardly to form a guide-way for a strand of binding material and having flaring lips at the front ends of the split wipers to facilitate the insertion of the binder.

10. In a machine of the class described, split end embracing wipers to hold a strand of binding material and wiper supports that are slotted to receive the end portions of the strand and allow it to extend across the machine back of the acting edge of the wipers.

11. In a machine of the class described,

split end embracing wipers adapted to receive a binder strand, and means for supporting the end portions of the binder back of the foremost portions of the acting edge of the wipers.

12. In a machine of the class described, toe embracing wiper plates comprising upper and lower leaves with a wire guiding space between them formed to permit the wire to extend therethrough transversely across the machine, substantially as and for the purpose described.

13. In a machine of the class described, toe embracing wipers and means for supporting a strand of binding wire in predetermined vertical relation between the upper and lower faces of the wipers and extending in a substantially right line transversely across the machine in front of the shoe.

14. In a machine of the class described, toe embracing wipers and means for supporting a strand of binding wire extended transversely across the machine in a substantially right line in front of the shoe and for guiding the strand in predetermined vertical relation between the lower and the upper faces of the wipers throughout the length of the binder as the latter is drawn

into toe binding relation to the overwiped upper.

15. In a machine of the class described, toe embracing wipers 2, holders 4 in which the wipers are mounted to project below the lower face of the holder, and a wire guiding slot in the wipers which is located vertically to permit the end portions of the wire to pass under the holder in extending transversely across the machine in front of the shoe.

16. A machine of the class described having, in combination, end embracing wipers having therein a binder receiving recess formed substantially deeper at the free ends of the wipers than at their adjacent ends to permit a strand of binding material to extend across the machine in front of the toe of the shoe, and means carried by the wipers to retain the binder in the recess.

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

MATTHIAS BROCK.

Witnesses:

ELIZABETH C. COUPE,
JAMES R. HODDER.