

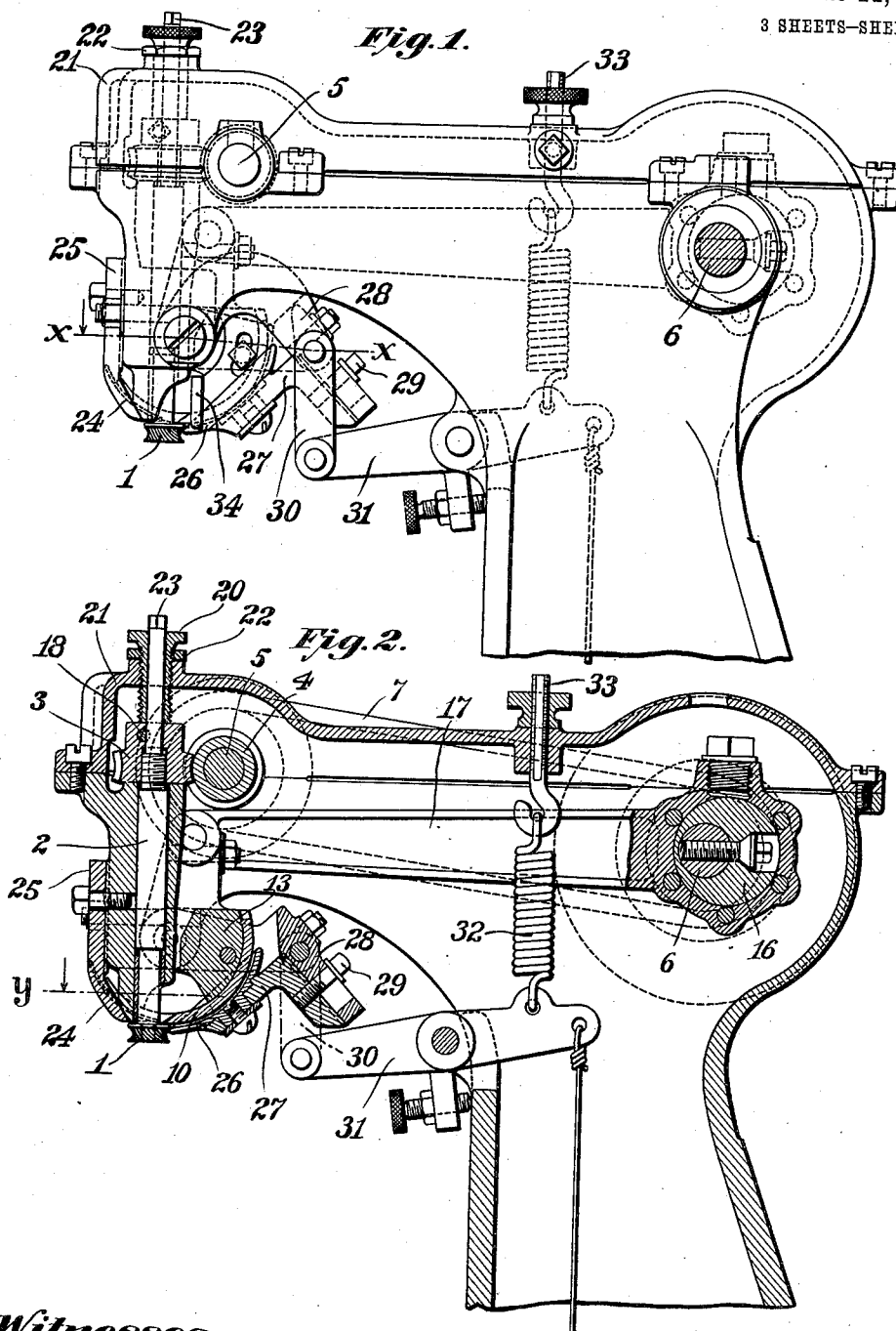
J. B. HADAWAY.
VAMP TRIMMING MACHINE.

APPLICATION FILED SEPT. 8, 1908. RENEWED APR. 17, 1912.

1,029,187.

Patented June 11, 1912.

3 SHEETS-SHEET 1.



Witnesses:

E. C. Wurdeman
Alfred H. Hildreth

Inventor:

John B. Hadaway
by his Attorneys
Phillip Van Euren & Fish

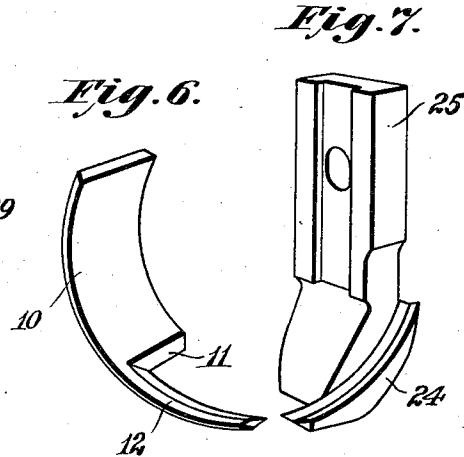
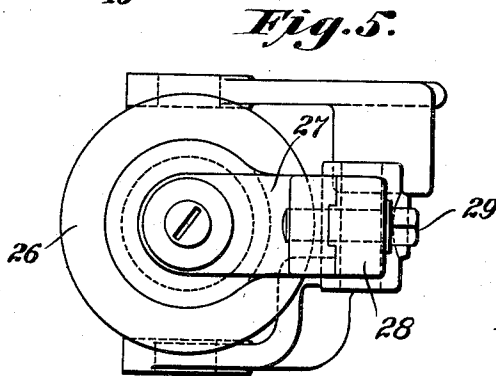
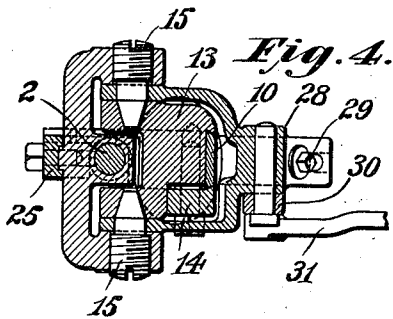
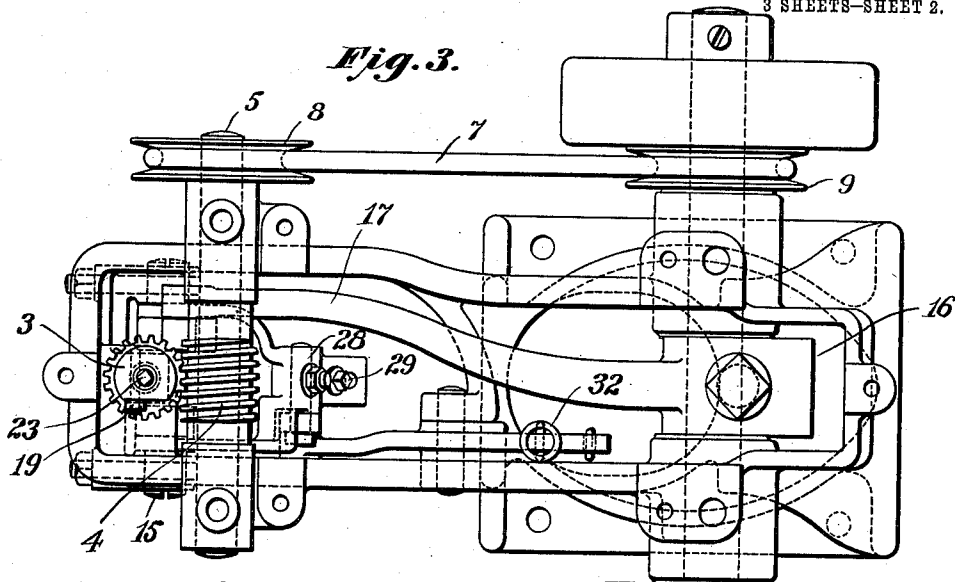
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3 SHEETS—SHEET 2.



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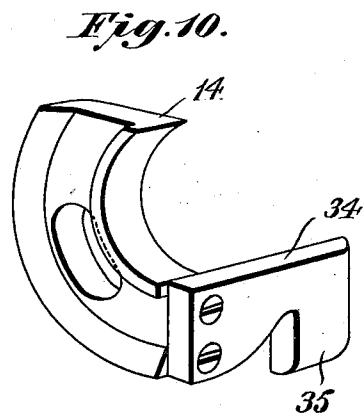
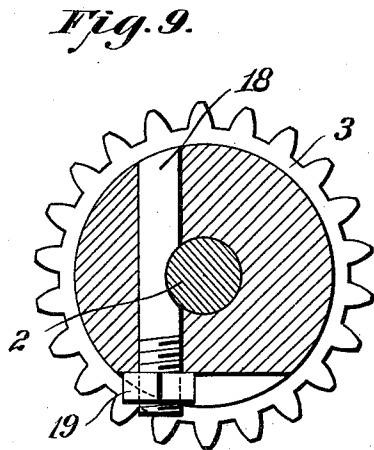
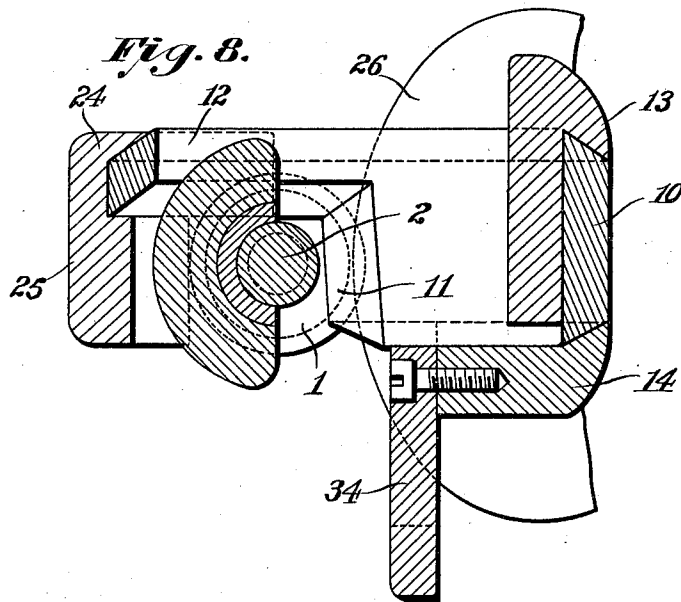
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3 SHEETS-SHEET 3.



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN B. HADAWAY, OF BROCKTON, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

VAMP-TRIMMING MACHINE.

1,029,187.

Specification of Letters Patent.

Patented June 11, 1912.

Application filed September 8, 1906, Serial No. 333,773. Renewed April 17, 1912. Serial No. 691,504.

To all whom it may concern:

Be it known that I, JOHN B. HADAWAY, a citizen of the United States, residing at Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Vamp-Trimming Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of the present invention is to improve the construction, arrangement and mode of operation of the various parts of vamp trimming machines and with this object in view the invention consists in devices, combinations and arrangements of parts hereinafter described and claimed the advantages of which will be obvious to those skilled in the art from the following description.

The several features of the present invention will be clearly understood from an inspection of the accompanying drawings in which—

Figure 1 is a view in side elevation of a vamp trimming machine embodying the same in their preferred form. Fig. 2 is a central longitudinal sectional view of the machine illustrated in Fig. 1. Fig. 3 is a plan view of the machine illustrated in Fig. 1 with the casing at the upper portion of the machine frame removed. Fig. 4 is a detail sectional plan view on the line $x-x$ of Fig. 1. Fig. 5 is a detail inverted plan view on an enlarged scale illustrating a presser roll and the manner in which it is mounted. Fig. 6 is a detail perspective view on an enlarged scale of the vibrating trimming knife. Fig. 7 is a detail perspective view on an enlarged scale of the guide for the projection on the vibrating trimming knife. Fig. 8 is a detail sectional plan view on a still larger scale taken on the line $y-y$ of Fig. 2. Fig. 9 is a detail sectional plan view on the same scale as Fig. 8, illustrating a clamping device for holding a worm gear upon the shaft of the guiding roll, and Fig. 10 is a detail perspective view on the same scale as Figs. 8 and 9 illustrating the clamp for the vibrating trimming knife and the vibrating vamp bending device and guide.

The guiding roll for the vamp and lining is indicated at 1 and, as illustrated, is arranged with its axis perpendicular and with its lower end directed toward the sole of a shoe which is placed in the machine. The roll is designed to act upon the lining and raise the lining and vamp upwardly from the sole of a shoe into a position to be acted upon by the trimming knives, and to enable it to act to better advantage in raising the lining, it is provided with a peripheral surface which is concave longitudinally of the roll. A constant rotary movement is imparted to the roll, and to enable the roll to stretch the lining so that it will be trimmed evenly at all portions of the shoe, the peripheral surface of the roll is provided with spiral grooves and ribs so that the roll exerts an outward wiping action on the lining. The roll is secured upon the lower end of a vertical shaft 2, which is mounted in the front portion of the machine frame, and a constant rotary movement is imparted to the shaft and roll by means of a worm gear 3 secured to the shaft and meshing with a worm 4 upon a horizontal shaft 5, which shaft is constantly rotated from the main driving shaft 6, journaled in the rear portion of the machine frame, by means of a belt 7 passing over pulleys 8 and 9 on the shafts 5 and 6.

The knife which works across the end of the guiding roll remote from the sole of a shoe placed in the machine, is indicated at 10, and as illustrated consists of a blade curved in the arc of a circle and provided with a cutting edge 11 and with a projection 12 extending beyond the cutting edge. The knife 10 is secured in a knife carrier 13 by means of a clamping block 14, illustrated in detail in Fig. 10, and the carrier 13 is pivotally mounted upon the conical inner ends of pivot pins 15, having a screw-threaded engagement with the frame of the machine, as best illustrated in Fig. 4, whereby the pins may be adjusted to take up wear. The carrier 13 is adapted to oscillate about the pivot pins as a center so as to vibrate the trimming knife 10 across the upper end of the guiding roll 1. A rapid oscillatory movement is imparted to the carrier 13 from an eccentric 16 on the shaft 6, through an eccentric strap and link 17

which is pivotally connected at its forward end to an arm projecting upwardly from the carrier.

In the embodiment of the invention illustrated in the drawings the knife which co-operates with the vibrating knife 10 is formed upon the guiding roll, the upper end of the guiding roll being ground smooth and flat so as to provide a circular cutting edge to coöperate with the cutting edge 11 of the vibrating knife. The manner in which the vibrating knife coöperates with the knife at the upper end of the guiding roll will be clearly understood from an inspection of Fig. 8 which shows the vibrating knife in the position which it occupies at the end of its forward stroke. As will be apparent from this figure the projection 12 on the trimming knife passes at one side of the shaft 2 to which the guiding roll is secured, and the cutting edge 11 of the vibrating knife moves across the upper end of the roll toward and from the shaft, the cutting edge being in close proximity to the shaft when the knife is in its forward position. The axis of the roll is substantially in alinement with the center of the knife edge 11 and the center of the knife edge moves diametrically across the upper end of the guiding roll. The cutting edges of the trimming knives thus operate at the point about which the shoe is swung during the vamp trimming operation, and the manipulation of the shoe by the operator during the trimming operation does not displace the shoe with relation to the knives.

The guiding roll is removably secured to the lower end of the shaft 2 in any desired manner, as for instance, by being screwed thereon, the upper surface of the roll bearing against a shoulder of the shaft. By this construction the upper surface of the roll will occupy the same position with relation to the vibrating trimming knife whenever it is replaced in the machine after the upper surface of the roll has been ground to sharpen the knife at the upper end of the roll. To enable the roll to be adjusted to bring its upper surface into the proper position with relation to the upper edge of the vibrating knife means are provided for adjusting the shaft 2 vertically. This adjusting means is best illustrated in Fig. 2. As shown in this figure the shaft 2 has a screw-threaded engagement with the worm gear 3, and the worm gear is secured to the shaft by means of a locking pin 18. This locking pin, is illustrated in detail in Fig. 9 and is provided with a notch through which the shaft 2 passes, and with a screw-threaded end upon which is an operating nut 19 by which the pin can be moved longitudinally to clamp the shaft. The worm gear 3 is held from longitudinal movement by means of a seat on the frame of the ma-

chine below the gear and by means of a sleeve 20 above the gear having a screw-threaded engagement with a removable casing 21 bolted upon the upper portion of the machine frame. The sleeve 20 is held in position by means of a locking nut 22 and the upper end of the shaft 2 is provided with a squared portion 23 by means of which it can be rotated. Normally the worm gear 3 is clamped to the shaft 2 so as to rotate therewith by means of the locking pin 18. When it is desired to adjust the shaft 2 vertically the pin 18 is actuated to release the shaft and then the shaft is rotated. The worm gear 3 is held stationary by means of the worm 4, and by reason of the screw-threaded engagement of the shaft with the worm gear a vertical movement is imparted to the shaft.

At each backward movement of the vibrating trimming knife the cutting edge 11 is separated from the guiding roll, and in order to maintain the cutting edge 11 in the proper position with relation to the upper surface of the guiding roll, a guide is provided which coöperates with the projection 12 on the vibrating knife. This guide is best illustrated in Fig. 7 and consists of a suitably grooved projection 24 at one side of and at the lower end of a block 25 secured upon the front portion of the machine frame, as indicated in Figs. 1 and 2, so as to be capable of a vertical adjustment.

The guiding roll 1 in addition to raising the vamp and lining and directing them between the cutting edges of the trimming knives, acts as a gage to determine the distance from the sole at which the vamp and lining are cut. The roll, however, acts inside of the vamp and lining and does not prevent the shoe from being tipped so as to cause the vamp and lining to be trimmed too close to the sole. In the machine illustrated in the drawings a guiding means is provided which is adapted to act on the outside of the vamp and afford a means for regulating the distance of the cut from the insole in addition to the guiding roll 1. As shown, this guiding means consists of a frusto-conical roll 26 mounted upon an oblique axis and provided in its upper end with a recess in which the vibrating trimming knife moves. The roll 26 extends beneath the vibrating trimming knife in close proximity thereto and by engaging the vamp near the edge of the shoe sole limits the upward movement which can be imparted to the shoe. In addition to acting as a guiding means or height gage this roll also acts as a guard to prevent the lasting tacks from being engaged by the trimming knives and also coöperates with the guiding roll to feed the shoe. The roll 26 is yieldingly pressed toward the guiding roll 1 so that the vamp and lining are pressed be-

tween the two rolls, and the rolls tend continuously to feed the work, the peripheral speed of the guiding roll, however, being somewhat greater than the speed at which the work is fed to cause the lining to be stretched. The roll 26 is mounted in a block 27 which block is mounted in a carrier 28 so as to be vertically adjustable therein, the block being secured to the carrier by a clamp screw 29 passing through a slot in the carrier. The carrier 28 is pivotally mounted upon the pivoted pins 15 outside of the carrier 13 for the vibrating trimming knife so that the roll 26 is bodily movable about an axis coincident with the axis about which the vibrating knife moves. A link 30 connects the carrier 28 to one end of a lever 31 and the other end of the lever 31 is acted upon by a coiled spring 32 connecting the lever to a rod 33 adjustably mounted in the casing 21 at the upper portion of the machine frame, the spring 32 through the connections above described acting to force the roll 26 yieldingly toward the guiding roll 1. The rear end of the lever 31 is connected to a foot treadle not shown by means of which the roll 26 can be moved rearwardly when work is to be inserted in the machine.

The roll 26 engages the vamp and cooperates with the guiding roll 1 in presenting the vamp and lining to the trimming knives. To bend the vamp inwardly and insure its proper presentation to the knives, a vibrating bending device is provided which engages the vamp in advance of the trimming knives and also acts upon the vamp both above and below the plane in which the trimming knives cut. This vibrating bending device is indicated at 34 and is secured upon the forward end of the clamp 14 which secures the vibrating trimming knife to the carrier 13. The vibrating vamp bending device is illustrated in Fig. 10.

As will be seen from an inspection of this figure and also from an inspection of Fig. 1, the vamp bending device consists of a plate which is notched to receive the edge of the roll 26 and which extends at one side of the trimming knives and beyond the roll 26. The bending device moves toward and from the vamp with the trimming knife and acts upon the vamp above the plane in which the trimming knives cut and above the roll 26 so as to direct the vamp properly between the knives and prevent its upper edge from turning outwardly over the roll 26. It will also be seen from an inspection of Figs. 1 and 10 that a portion of the vamp bending device extends below the plane in which the knife cuts and is rounded off as indicated at 35. This portion of the vamp bending device is adapted to contact with the vamp near the edge of the shoe sole and thus act as a

guide for the shoe and limit the upward movements which can be imparted thereto in substantially the same manner as the roll 26. The vibrating movement imparted to the bending device is extremely rapid so that no upward movement of the shoe is permitted during the backward movements of the bending device and the device acts as a guide in substantially the same manner as if it were stationary.

The nature and scope of the present invention having been indicated and a machine embodying the various features thereof in their preferred form having been specifically described what is claimed is:

1. A vamp trimming machine, having, in combination, a guide roll for the vamp and lining having one end directed toward the sole of a shoe placed in the machine and being provided with a peripheral surface concave longitudinally of the roll, a vibrating trimming knife working across the other end of the roll, a knife cooperating with said vibrating knife to trim the vamp and lining and means for rotating the roll.

2. A vamp trimming machine, having, in combination, vamp trimming knives, a guiding roll for the vamp and lining, means for rotating the roll and a guard arranged to extend between a trimming knife and the lasting tacks of a shoe placed in the machine and to cooperate with said roll to feed the shoe.

3. A vamp trimming machine, having, in combination, vamp trimming knives, a guide roll for the vamp and lining, means for rotating said roll, and a presser roll located beneath one of the knives and cooperating with said guiding roll to feed the shoe.

4. A vamp trimming machine, having, in combination, vamp trimming knives and means acting continuously on the vamp and lining to feed the shoe.

5. A vamp trimming machine, having, in combination, vamp trimming knives, and guiding means in continuous engagement with both the vamp and the lining for guiding the vamp and lining to the knives.

6. A vamp trimming machine, having, in combination, a vibrating trimming knife mounted to move about an axis substantially parallel to the direction in which the work is fed to the knife, and a wheel located beneath the knife and provided in its upper surface with a recess in which the trimming knife moves.

7. A vamp trimming machine having, in combination, a trimming knife arranged to extend inside of the vamp of a lasted shoe, a vibrating trimming knife cooperating therewith to trim the projecting edges of the vamp and lining of the shoe and a vibrating vamp bending device extending at one side of the vibrating knife and

below the plane of the knife arranged to engage the vamp and bend the vamp inwardly toward the medial line of the shoe.

8. A vamp trimming machine, having, in
5 combination, a vamp trimming knife arranged to trim the projecting edges of the vamp and lining of a lasted shoe, a guide to bear against the insole and determine the position of the shoe with relation to
10 the knives and a vibrating vamp bending

device arranged to engage the vamp and press the vamp into the shoulder at the edge of the insole.

In testimony whereof I affix my signature, in presence of two witnesses.

JOHN B. HADAWAY.

Witnesses:

FRED O. FISH,

ALFRED H. HILDRETH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."