J. B. HADAWAY.

VAMP TRIMMING MACHINE.

APPLICATION FILED MAY 14, 1906.

968,555. Patented Aug. 30, 1910.

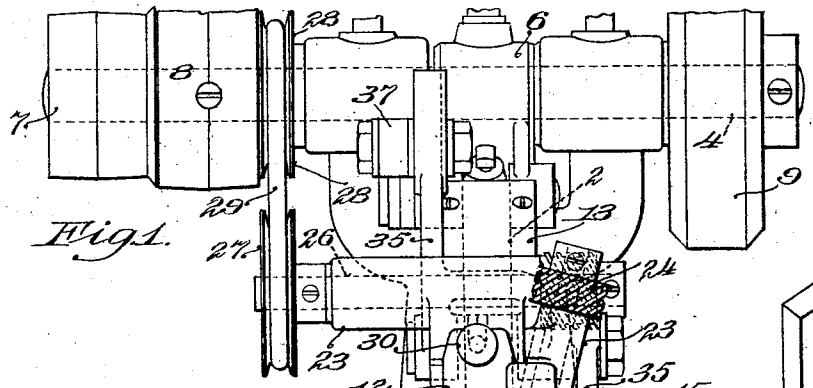

Fig. 1.

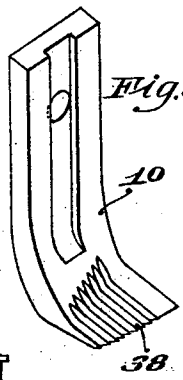

Fig. 5.

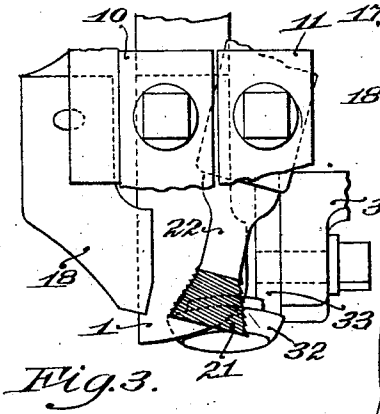

Fig. 3.

Fig. 2.

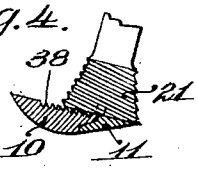

Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

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VAMP-TRIMMING MACHINE.

968,555. Specification of Letters Patent. **Patented Aug. 30, 1910.**

Application filed May 14, 1906. Serial No. 316,680.

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 present invention relates to vamp trimming machines which are adapted to trim the edges of the vamp and lining of a lasted shoe, and more particularly of a welted shoe, in order to prepare the shoe for the operation thereon of the inseam sewing machine.

Certain features of the present invention are also applicable to vamp trimming machines of that class known in the art as inseam trimming machines which act on the shoe after the inseam has been sewn, as will be obvious to those skilled in the art.

An object of the present invention is to provide a machine of the class above referred to with improved means for presenting the projecting edges of the vamp and lining to the trimming knives so that the vamp and lining may be trimmed off evenly around the shoe at the desired distance from the insole.

Another object of the present invention is to provide means in a machine of the class above referred to for assisting the operator in feeding the shoe so as to present successive portions of the vamp and lining to the action of the trimming knives.

Other objects of the present invention are to provide a machine of the class above referred to with improved trimming knives, and in general to improve the construction, arrangement and mode of operation of the various parts of vamp trimming machines.

With these objects in view a feature of the present invention contemplates the provision in a vamp trimming machine provided with a vamp trimming knife or knives, of a roll to direct the vamp and lining to the knife or knives arranged to overlap the blade of a trimming knife. When so arranged, the roll supports the vamp and lining close to the point of operation of the trimming knife or knives and guides them with certainty. This arrangement of the roll is of advantage whether or not the roll is so constructed as to exert an outward wiping action on the lining, and is considered to constitute a feature of the present invention whether or not the roll is provided with means for stretching the lining. To facilitate raising the vamp and lining away from the insole into a position to be directed to the trimming knife or knives, the roll is preferably made frusto-conical in shape with its base of larger diameter directed toward the shoe sole. This shape of roll also permits the roll to be arranged with its axis inclined to the sole so that the roll can overlap the trimming knife and at the same time a portion of the roll can be brought close to the surface of the sole. This shape of roll for guiding the vamp and lining in a vamp trimming machine is believed to be new and is considered to constitute a feature of the present invention whether or not the roll is arranged to overlap a trimming knife or is provided with means for stretching the lining.

Those features of the present invention which relate to means for facilitating the feeding of the shoe through the machine, contemplate the provision of feeding mechanism arranged to operate upon the projecting edges of the vamp and lining. While this feature of the invention contemplates the provision of any suitable feeding means adapted to engage the projecting edges of the vamp and lining, in the preferred form of the invention the feeding of the shoe is accomplished by means of a pressure device coöperating with the rotating vamp and lining guide roll above referred to. The machine hereinafter specifically described as embodying the various features of the present invention in their preferred form is provided with a vibrating trimming knife and with a coöperating fixed knife. The pressure device which coöperates with the guiding roll is accordingly arranged to be

intermittently brought into contact with the roll, the engagement of the pressure device with the roll taking place while the vibrating knife is separated from the fixed knife so that the feeding movements imparted to the vamp and lining are intermittent and take place between successive actuations of the vibrating trimming knife. The movements of the pressure device toward the guiding roll not only serve to grip the vamp and lining between the pressure device and roll but also act to bend the vamp and lining inwardly toward the medial line of the shoe to insure the passage of the vamp and lining between the cutting edges of the trimming knives. To accommodate stock of different thicknesses the pressure device is preferably yieldingly mounted so that the vamp and lining are always gripped with the required pressure between the pressure device and guiding roll.

In the operation of vamp trimming machines difficulty is often experienced in causing the knives to make a clean smooth cut, the vamp and lining being forced rearwardly during the cutting stroke of the knives and slipping over the surface of the knife blades. To overcome this difficulty a feature of the present invention contemplates providing the supporting surface of one of the knives with serrations against which the vamp and lining are forced and by which they are held from slipping during the cutting action of the knives.

In addition to the features of invention above referred to, the present invention also consists in certain devices, combinations and arrangement of parts hereinafter described and claimed, the advantages of which will be obvious to those skilled in the art from the following description.

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

Figure 1 is a view in front elevation of a vamp trimming machine embodying the same in their preferred form; Fig. 2 is a view in side elevation of the machine illustrated in Fig. 1 with the main driving shaft shown in section; Fig. 3 is a detail view in front elevation on a somewhat larger scale of certain of the parts illustrated in Fig. 1; Fig. 4 is a detail sectional view showing the arrangement of the guiding roll, the fixed knife and fixed guide, and Fig. 5 is a detail perspective view on an enlarged scale of the fixed trimming knife.

The machine to which the preferred embodiments of the various features of the present invention have been applied is similar in the construction and arrangement of many of its parts to the vamp trimming machine disclosed in applicant's prior application No. 278,743, filed September 16, 1905, but since these parts are illustrated in the drawing they will be briefly described herein.

Referring to the drawing, 1 indicates a vibrating trimming knife which is secured to the lower end of a slide 2 mounted to reciprocate in an inclined guideway formed in the machine frame 3. Rapid vibrating movements are imparted to the trimming knife from a driving shaft 4 by means of an eccentric 5, secured to the shaft, and an eccentric strap 6, surrounding the eccentric, and pivotally connected to the upper end of the slide 2. The shaft 4 is journaled in the upper rear portion of the machine frame, and is provided with fast and loose pulleys 7 and 8, and with a balancing wheel 9. The vibrating trimming knife coöperates with a fixed trimming knife 10, the blade portion of which is arranged at an angle to the blade of the knife 1 so that the knife 1 cuts across the end of the knife 10. Extending in front of and beneath the fixed blade 10 is a fixed guide 11, the upper surface of which forms, in effect, a continuation of the upper surface of the blade 10, and the forward edge of which is made thin so as to bring the upper surface of the guide close to the surface of a shoe sole presented to the machine. The shanks of the knife 10 and guide 11 are secured to blocks adjustably mounted in a bracket 12, which projects from a plate 13, by which the slide 2 is retained in its guideway. The block to which the guide 11 is secured is indicated at 14, and is mounted on the bracket 12 so as to be adjustable horizontally thereon, a screw 15 mounted in the bracket 12 being provided for adjusting the block, and a bolt 16 being provided for holding the block in adjusted position. The fixed knife 10 is secured to a similar block 17, best shown in Fig. 1, and is adjusted and held in position by similar means. The object of these adjustments is to bring the fixed guide 11 into the desired position with relation to the fixed and vibrating knives, and to bring the fixed knife into the proper position with relation to the vibrating knife. During its backward movement the vibrating knife 1 is moved nearly or quite out of engagement with the fixed knife, and to maintain the cutting edge of the vibrating knife in alinement with the cutting edge of the fixed knife, a fixed guide 18 is provided, which bears directly against the blade of the vibrating knife. This guide is secured to a block 19, which block is mounted upon the machine frame at the lower end of the guideway for the slide 2, and is provided with a screw 20 by which it may be adjusted to move the guide 18 toward and from the vibrating trimming blade.

The guiding roll which constitutes the illustrated embodiment of one feature of the

present invention is indicated at 21, and as shown is frusto-conical in shape, and provided upon its peripheral surface with spiral ribs, which, during the rotation of the roll, are adapted to exert an outward wiping action on the lining of a shoe presented to the machine. The roll is arranged with its base of larger diameter directed downwardly toward the sole of a shoe placed in the machine, and is located above the fixed guide 11 and knife 10, as best shown in Fig. 4, the roll overlapping the fixed knife so that the roll engages the lining close to the point where the lining and vamp are acted upon by the cutting edges of the vibrating and fixed knives. The axis of the roll is arranged obliquely to the surface of the sole of a shoe placed in the machine, and, as is clearly illustrated in Fig. 4, a portion of the roll extends close to the surface of the sole at the forward edge of the fixed guide 11. The roll is thus in a position to engage the lining of the shoe close to the insole, and coöperates with the fixed guide 11 in raising the vamp and lining from the sole. The arrangement of the roll 21 above the fixed guide 11 and overlapping the fixed knife 10, not only brings the line of contact of the roll and lining close to the point of operation of the trimming knives, but also brings these parts into a comparatively small space so as not to interfere with the manipulation of the shoe by the operator when the toe portion of the shoe is being operated upon. The roll 21 is secured upon the lower end of a shaft 22 journaled in a bracket 23 mounted on the bracket 12, and a constant rotation is imparted to the shaft 22 and roll 21 by means of intermeshing spiral gears 24 and 25, a shaft 26 journaled in the bracket 23, to which shaft the spiral gear 25 is secured, belt pulleys 27 and 28 secured respectively to the shaft 26 and to the driving shaft 4, and a belt 29 passing over the pulleys. To enable the roll 21 to be placed in the required position with relation to the trimming knives, the bracket 23 is adjustably mounted upon the bracket 12, a screw 30 mounted in the bracket 12 being provided for adjusting the bracket 23 horizontally, and a bolt 31 being provided for holding the bracket 23 in adjusted position.

The pressure device which is brought intermittently into engagement with the roll 21, and which coöperates with the roll 21 in feeding the vamp and lining, and which also acts to bend the vamp and lining inwardly toward the medial line of the shoe, is indicated at 32. As shown this device consists of a small roll mounted upon a block 33, which is secured to an arm 34 pivotally mounted upon the lower end of a lever 35. The arm 34 is arranged to have a limited swinging movement on the lever 35, and is acted upon by a coiled spring 36, which tends to force the pressure device 32 toward the roll 21. The movement of the arm 34 with relation to the lever 35 under the force of the spring 36 is limited by coöperating stop projections on the arm and lever, as is clearly shown in Figs. 1 and 2. The pressure device is moved toward and from the roll 21 by means of a link 37, connecting the upper ends of the slide 2 and lever 35, the construction being such, as will be apparent from an inspection of Fig. 2, that the pressure device is moved toward the roll 21 during the backward stroke of the vibrating knife.

The serrations which prevent the upper and lining from slipping backward during the forward stroke of the vibrating knife are indicated at 38 in Figs. 4 and 5, and are formed upon the surface of the fixed knife which supports the vamp and lining against the thrust of the vibrating knife. It will be noted that these serrations are upon a permanent surface of the knife, that is, upon a surface which remains the same during the life of the knife, and which is not affected by the wearing away of the knife in grinding.

The operation of the machine has been indicated in connection with the description of the construction and arrangement of its different parts, and will be readily understood by those skilled in the art.

The various features of the present invention have been illustrated and described as embodied in a machine similar to the machine disclosed in applicant's prior application. It is to be understood, however, that they are not limited to use in this machine but are also capable of use in other forms of vamp trimming machines. It will also be understood that, except as defined in the claims, the various features of the invention are not limited to any specific construction or arrangement of parts.

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, vamp trimming knives, and a guiding roll arranged to overlap the blade of one of the trimming knives and acting to direct the vamp and lining between the cutting edges of the knives.

2. A vamp trimming machine, having, in combination, a vibrating trimming knife, a fixed knife coöperating therewith, a frusto-conical guiding roll overlapping the fixed knife and arranged to direct the vamp and lining between the cutting edges of the knives, and means for rotating the roll, said roll having its base of larger diameter directed toward the sole of a shoe placed in

the machine and having its axis oblique to the plane of the sole.

3. A vamp trimming machine, having, in combination, vamp trimming knives, beyond the lip of the insole and feeding mechanism arranged to operate upon the projecting edges of the vamp and lining of a lasted shoe and feed the vamp and lining to the trimming knives.

4. A vamp trimming machine, having, in combination, vamp trimming knives, a rotating guiding roll arranged to act upon the vamp and lining in proximity to the trimming knives and direct the vamp and lining between the cutting edges of the knives, and a pressure device coöperating with the guide roll to feed the vamp and lining to the knives.

5. A vamp trimming machine, having, in combination, vamp trimming knives, a rotating guide roll arranged to act upon the vamp and lining in proximity to the trimming knives, a pressure device, and means for moving the pressure device toward the guide roll to intermittently clamp and feed the vamp and lining to the trimming knives.

6. A vamp trimming machine, having, in combination, a vibrating trimming knife, a knife coöperating therewith, a rotating guide roll arranged to act upon the vamp and lining in proximity to the trimming knives, a pressure device movable toward and from the guide roll, and means for moving the pressure device toward the guide roll during the backward stroke of the vibrating knife to intermittently clamp and feed the vamp and lining.

7. A vamp trimming machine, having, in combination, vamp trimming knives, a rotating guide roll arranged to act upon the vamp and lining in proximity to the trimming knives, a yieldingly mounted pressure device, and means for moving the pressure device toward the guide roll to intermittently clamp and feed the vamp and lining.

8. A vamp trimming machine, having, in combination, a vamp trimming knife, and a knife coöperating therewith having a permanent work supporting surface provided with serrations to hold the work in position during the action of the trimming knife.

9. A vamp trimming machine, having, in combination, a vibrating trimming knife, and a fixed coöperating knife having a permanent surface provided with serrations to hold the work in position during the action of the vibrating knife.

10. A vamp trimming machine, having, in combination, vamp trimming knives, a guide roll arranged to act upon the vamp and lining in proximity to the trimming knives and a yieldingly mounted pressure device coöperating with the roll to feed the vamp and lining to the trimming knives.

11. A vamp trimming machine, having, in combination, vamp trimming knives, a feeding mechanism comprising members arranged to grip between them the projecting edges of the vamp and lining of a lasted shoe beyond the lip of the insole and feed the vamp and lining to the trimming knives.

12. A vamp trimming machine, having, in combination, vamp trimming mechanism including a vamp trimming knife, and a guiding roll arranged to overlap the blade of the trimming knife and to extend inside of the vamp and lining.

13. A vamp trimming machine, having, in combination, vamp trimming mechanism including a vamp trimming knife, and a frusto conical guiding roll located in close proximity to the knife and arranged to extend inside of the vamp and lining said roll having its base of larger diameter directed toward the sole of a shoe placed in the machine.

14. A vamp trimming machine, having, in combination, vamp trimming mechanism including a vamp trimming knife, and a guiding roll overlapping the knife and arranged to extend inside of the vamp and lining said roll having its axis oblique to the plane of the sole of a shoe placed in the machine.

15. A vamp trimming machine, having, in combination, vamp trimming mechanism including a vamp trimming knife, a guide to bear against the shoe sole in proximity to the knife and a guiding roll having its base directed toward the knife and guide and arranged to extend inside of the vamp and lining.

16. A vamp trimming machine, having, in combination, vamp trimming mechanism including a vamp trimming knife, a guide extending beneath the knife and arranged to bear on the shoe sole, and a guiding roll located above the knife with its base directed toward the knife and arranged to extend inside of the vamp and lining.

17. A vamp trimming machine, having, in combination, vamp trimming mechanism including a vamp trimming knife, a guide extending beneath the knife and arranged to bear on the shoe sole, and a guide located above the knife and extending inside of the vamp and lining.

18. A vamp trimming machine, having, in combination, vamp trimming mechanism including a vamp trimming knife, and a frusto conical guiding roll located in close proximity to the knife and arranged to extend inside of the vamp and lining, said roll being provided with spiral ribs upon its peripheral surface to exert an outward wiping action on the lining and having its base of larger diameter directed toward the sole of a shoe placed in the machine.

19. A vamp trimming machine, having, in combination, vamp trimming mechanism in-

cluding a vamp trimming knife, and a frusto conical guiding roll overlapping the knife and arranged to extend inside of the vamp and lining, said roll having its base of larger diameter directed toward the sole of a shoe placed in the machine and having its axis oblique to the plane of the sole.

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

JOHN B. HADAWAY.

Witnesses:
FRED O. FISH,
FARNUM F. DORSEY.