MACHINE FOR BEVELING AND FLESHING SOLES.

1,029,009.


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To all whom it may concern:

Be it known that I, John J. Gillespie, a citizen of the United States, residing at Boston, in the county of Suffolk and Commonwealth of Massachusetts, have invented certain Improvements in Machines for Beveling and Fleshing Soles, 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 beveling and fleshing soles to prepare them for attachment to boots or shoes.

In the manufacture of certain kinds of boots and shoes it is desired to form a thin edge upon the fore parts of soles so that the portion of the sole at this point which is exposed to view in the completed shoe will be thin as compared with the actual thickness of the sole. According to a mode of procedure frequently adopted, the edges are reduced in thickness after channeling by beveling to a thin edge the marginal portion of the sole beneath the channel lip. After the sole has been secured to the shoe the channel lip is turned upon the beveled part and cemented in place. It is also desired in certain kinds of work to remove a thin layer of stock from the marginal portions of the flesh sides of soles prior to the application of the soles to shoes to facilitate subsequent edge making and edge finishing operations. As will be obvious, leather which has been treated in this way is firm and free from loose fibers and permits a suitable finish to be easily secured.

In making certain kinds of boots and shoes, more particularly in the production of McKay sewed shoes having thin edge soles, there is occasion both for fleshing and for forming a thin edge upon soles as above described, and heretofore the two operations have been separately and successively performed by two distinct machines.

The primary object of the present invention is to simplify and facilitate the performance of work of this kind.

Accordingly, my invention consists primarily in a machine capable both of fleshing the marginal part of one face of a sole and of beveling the edge of the sole upon its opposite face.

Heretofore in beveling and fleshing soles where the operations have been successively performed some difficulty has been experienced in producing edges uniform in thickness from point to point. According to the prior mode of procedure in which the thickness of the sole margin is materially reduced in the beveling operation before fleshing, the edge of the sole has not sufficient rigidity to permit an accurate fleshing operation. On the contrary, the edge of the sole is liable to be somewhat distorted as the fleshing device is acting, thus impairing the accuracy of this operation and producing an edge of uneven appearance. For this reason it is impracticable to produce an edge of extreme thinness where the two operations are performed successively.

A further object of the invention is to improve the accuracy of the fleshing operation and to this end an important feature of the present invention consists in the provision of a fleshing device and a beveling device arranged to act simultaneously upon opposite faces of the same part of a sole. The stock which is acted upon by these two devices is consequently of considerable thickness, and is sufficiently rigid to permit both operations to be accurately performed.

The machine herein shown and described includes a fleshing knife and a beveling knife and means for advancing a sole against these knives. The sole-advancing means which I prefer to use comprises a feed wheel for engaging the flesh side of the sole and a presser wheel for engaging the grain side of the sole, each of these wheels being arranged to engage the sole at a point on the sole inside of the part acted on by the knives. The cutting edges of the knives are preferably situated approximately in the plane of the axes of said wheels. A foot plate is arranged at one side of the wheels in position to be engaged by the flesh side of the sole, said foot plate being located in advance of the knives and extending into close proximity to the fleshing knife. The foot plate sustains the marginal part of the sole acted upon by the knives and limits the depth of the cut made by the fleshing knife. Said
marginal part of the sole is held against the foot plate in the machine herein shown by a lip-raising device hereinafter mentioned. An edge gage is preferably provided to position the edge of the sole in proper lateral relation to the knives. For the purpose of raising the channel lip upon the sole out of the way of the beveling knife, the present machine includes a lip-raising device which may conveniently consist of a deflecting member arranged to extend into the channel in advance of the beveling knife and deflect the lip into a raised position. The lip-raising device is preferably arranged to bear yieldingly upon the margin of the sole and to hold said margin against the foot plate at a point adjacent to the cutting edges of the knives. The part of the stock acted upon by said knives is thus accurately controlled in its position with relation to the knives since it is held between the lip-raising device and the foot plate.

Other features of the invention will be hereinafter described and defined in the claims.

In the drawings which illustrate a machine constituting one embodiment of the invention, Figure 1 is a view in front elevation of the machine; Fig. 2 is a perspective view from the front of the more important parts of the machine; Fig. 3 is a perspective view, from the rear, of a portion of the machine; Fig. 4 is a perspective view illustrating a portion of a sole and showing the nature of the operations performed by the machine.

The machine shown in the drawings by way of illustrating one embodiment of the invention comprises a suitable frame in which is journaled a shaft 10. A shaft 12, arranged to be rotated from a convenient source of power through a hand-controlled clutch mechanism 14, is provided to actuate shaft 10. Said shaft 10 is provided at its outer end with a toothed or corrugated feed wheel 16. A head 18 is pivotally supported at one end upon the frame of the machine and carries a rotatable shaft 30 which is connected with the shaft 10 by suitable gears. A presser wheel 29 having a smooth periphery is secured upon the outer end of the shaft 20. The head 18 is supported adjacent to its outer end by a set screw 24 inserted in the frame and is held yieldingly in contact with said set screw by a spring 26 acting through a rod 28 connected to the head. A lever 31 to which is connected a treadle rod 30 bears upon the rod 28 and permits the head 18 to be raised in inserting a sole in the machine.

The frame of the machine is provided adjacent to the feed wheel 16 upon opposite sides of the shaft 10 with vertical guideways in which slides 32 and 34 are arranged for vertical movement. The slide 32 carries at its upper end a holder for a beveling knife 33, and is provided at its lower end with a tapped hole to receive the threaded end of a rod 35. A shoulder is upon said rod 35 engaged to a block 37 having a lateral extension arranged in the path of the end of the lever 31. A spring 38 holds the rod 35 and the slide 32 normally in a depressed position, and by turning the rod 35 the elevation of said slide 32 may be varied as desired. It will be seen that the slide 32 may be raised by the treadle rod 30 in case it is desired to elevate the beveling knife in inserting a sole in the machine. The position of the slide 34 is controlled by a threaded rod 40, cooperating with a spring 42 provided to take up any backlash of the slide upon said rod 40. Said slide 34 carries at its upper end a holder for a fleshing knife 43.

The holder for the beveling knife and that of the fleshing knife are the same in construction, and therefore but one needs to be described. The holder for the beveling knife 33 comprises a cylindrical stem 44 inserted in a perforation in the forked end of the slide 32. A clamp 46 encircles the stem 44 between the arms of the fork and may be drawn against said stem to clamp it in fixed position by a nut 48. The stem 44 is enlarged at its forward end to form a recessed member 49 which constitutes a seat for the knife 33 and said stem 44 is provided with a longitudinal bore to receive the stem of a clamping member 50, a nut 52 cooperating with the threaded end of said stem to draw the clamping member 50 against the knife and thus hold it in fixed position. It will be seen that the holder is arranged for adjustment about a horizontal axis parallel with the line of movement of the sole, so that the inclination of the knife with relation to the face of the sole may be varied. The holder may also be adjusted forwardly or rearwardly if desired. The cutting edges of the knives 33 and 43 are preferably substantially in the plane of the axes of the wheels 16 and 22 and said knives are, accordingly, arranged upon the inner side of said wheels. A foot plate 54 is provided on the inner side of the feed wheel 16, said foot plate terminating in close proximity to the edge of the knife 43, the edge of the foot plate being preferably parallel to the edge of said knife. An edge gage 56 is arranged upon the foot plate 54 and may be adjusted laterally, if desired, to vary its distance from the feed wheel 16.

Mounted upon the head 18 is a lip-raising device comprising a stem 58 having at its lower end a deflecting member formed to extend into the channel and deflect the lip into a raised position. The stem 58 is arranged for a limited amount of vertical movement upon the head 18 and is held.
yieldingly in its lowest position by a spring 60. As will appear from Figs. 2 and 3, the lower or acting end of the stem 55 is arranged closely adjacent to the knives 59 and 45. The arrangement is also such that the position in which the lip-raising device is held by the spring 60 may be varied. The tension of the spring 60 may also be adjusted if desired.

In the operation of the machine above described, a channeled sole is inserted between the feed roll and the presser roll at the point where it is desired to commence the beveling and fleshing operation. As the sole is placed in the machine the lower end of the lip-raising device is inserted in the channel. By manipulating the clutch mechanism, the sole is now advanced against the knives at the rate desired. The channel lip is raised by the lip-raising device out of the way of the beveling knife and the latter bevels the sole beneath the channel lip in the manner indicated in Fig. 4. At the same time the fleshing knife removes a thin layer of stock from the lower side of the sole, as is also shown in Fig. 4. The thickness of this layer of stock is determined by the extent to which the edge of the fleshing knife is held above the edge of the foot plate 64, upon which the portion of the sole being acted upon by the knives is supported. The marginal part of the sole is pressed upon the foot plate by the lip-raising device 58 and this part of the sole is therefore prevented from moving away from the foot plate in the movement of the sole against the knives. It will be noted that the toothed feed wheel engages the flesh side of the sole where its indentations are not injurious, the grain side being engaged by the smooth presser wheel. Engagement of the sole with the edge gage 56 insures a proper relation of the sole to the knives in a lateral direction transverse to the line of feed.

The beveling and fleshing operation may be performed upon the sole from one side of the heel to a similar point upon the opposite side of the sole. The turning of the sole in operating at the toe is easily effected, the arrangement of the knives with their edges in substantially the same plane facilitating a smooth action of said knives in going about this part of the sole.

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

1. A machine for preparing channeled shoe soles for attachment to boots or shoes, having, in combination, means for fleshing the marginal part of the flesh side of a sole and means for simultaneously beveling the sole to a thin edge upon its opposite side beneath the channel lip.

2. A machine for preparing channeled shoe soles for attachment to boots or shoes, having, in combination, a knife for removing a layer of stock from the marginal part of the flesh side of a sole, a knife for beveling the sole to a thin edge upon its opposite side beneath the channel lip, means for advancing a sole against said knives and means under the control of the operator for imparting a relative separating movement to said knives.

3. A machine for preparing channeled shoe soles for attachment to boots or shoes, having in combination, a device for removing a layer of stock from the marginal part of the flesh side of a sole, a device for simultaneously beveling the sole to a thin edge upon its opposite side beneath the channel lip, means for advancing a sole against said knives and means under the control of the operator for imparting a relative separating movement to said knives.

4. A machine for preparing channeled shoe soles for attachment to boots or shoes, having in combination, a device for removing a layer of stock from the marginal part of the flesh side of a sole, and a device for simultaneously beveling the sole to a thin edge upon its opposite side beneath the channel lip, said devices being arranged to act simultaneously upon the sole at approximately the same point.

5. A machine for preparing channeled shoe soles for attachment to boots or shoes, having in combination, a device for removing a layer of stock from the margin of the flesh side of a sole, a device for beveling the sole to a thin edge beneath the channel lip, and means for advancing the sole against said knives, and a lip-raising device arranged in advance of the beveling knife for raising the channel lip out of proximity to said knife.

6. A machine for preparing channeled shoe soles for attachment to boots or shoes, having in combination, means for advancing a sole in a predetermined path, a fleshing knife for removing a layer of stock from the margin of the flesh side of the sole, a knife for beveling the sole beneath a channel lip upon its opposite face, a lip-raising device formed to enter the channel in advance of the beveling knife, and arranged to bear yieldingly upon the sole adjacent to its edge and to maintain in proper relation to the knives the portion of the sole acted upon by said knives and means under the control of the operator for successively moving said lip-raising device and said beveling knife away from the fleshing knife.

7. A machine for preparing channeled shoe soles for attachment to boots or shoes, having, in combination, a feed wheel arranged for movement about a horizontal axis, a presser for holding a sole in engagement with the feed wheel, a knife for removing a layer of stock of substantially uniform thickness from the marginal part of the face of the sole engaged by the feed wheel, and a knife for beveling the sole to a thin edge beneath the channel lip.
thin edge upon its opposite face beneath the channel lip, said knives having their cutting edges in substantially vertical alinement with the axis of the feed wheel.

8. A machine for preparing channeled soles for attachment to boots and shoes having in combination a knife for removing a layer of stock from the marginal part of the flesh side of a sole, yielding means for holding said knife from movement in one direction, a knife for beveling the sole to a thin edge upon its opposite side beneath the channel lip, yielding means for similarly holding said beveling knife and means for advancing a sole against said knives.

9. A machine for operating upon channeled soles having in combination a support, a knife for fleshing the margin of the flesh side of a sole, yielding means for preventing movement of said knife away from said support, a knife for beveling the sole to a thin edge beneath the channel lip, yielding means for similarly holding said beveling knife and means for feeding a sole to said knives.

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

JOHN J. GILLESPIE.

Witnesses:
BERNARD BARROWS,
ALLAN H. BARROWS.

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