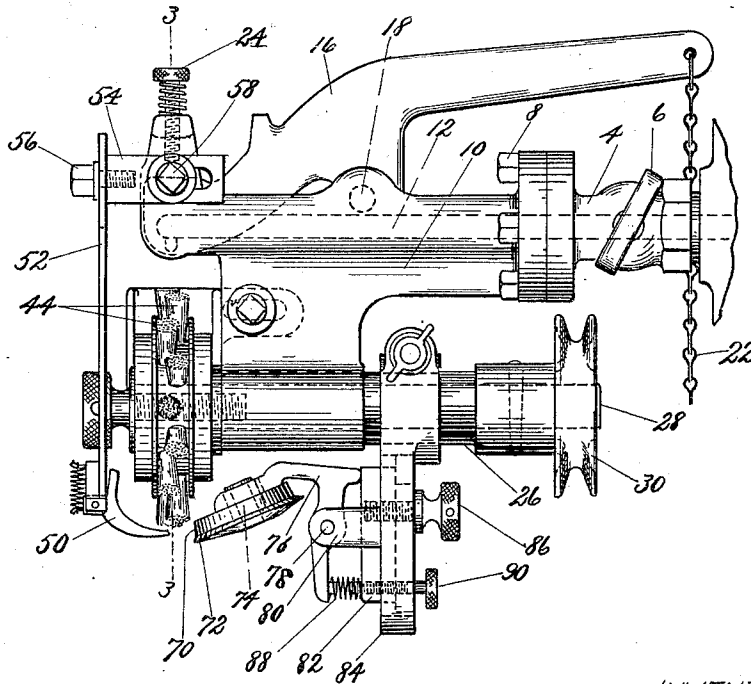
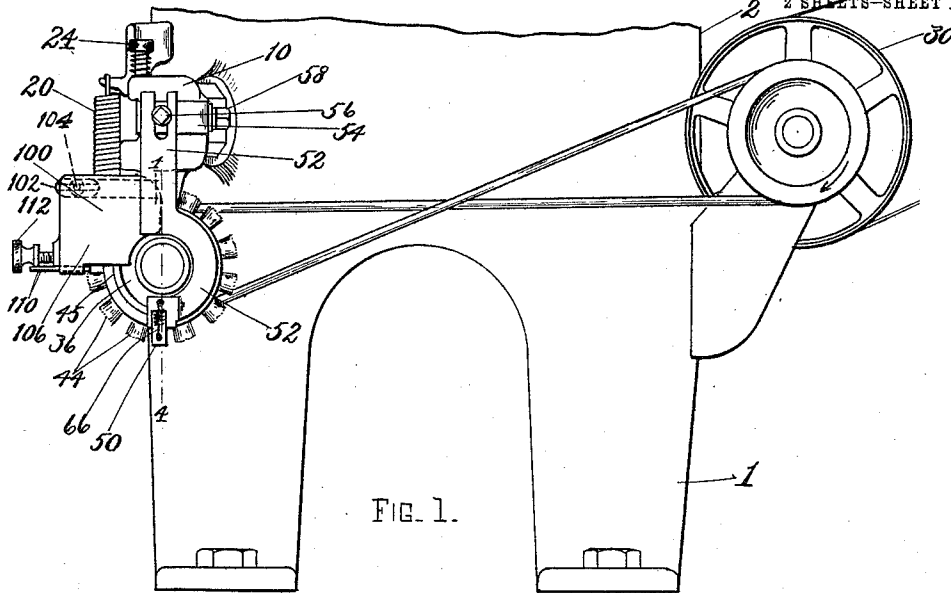


F. H. WARREN.
CEMENTING MACHINE.
APPLICATION FILED SEPT. 9, 1904.

1,030,623.

Patented June 25, 1912.

2 SHEETS-SHEET 1.



WITNESSES.

Edith C. Holbrook
Arthur L. Russell

FIG. 2.

INVENTOR.

Frank H. Warren
By his Attorney
Nelson W. Howard

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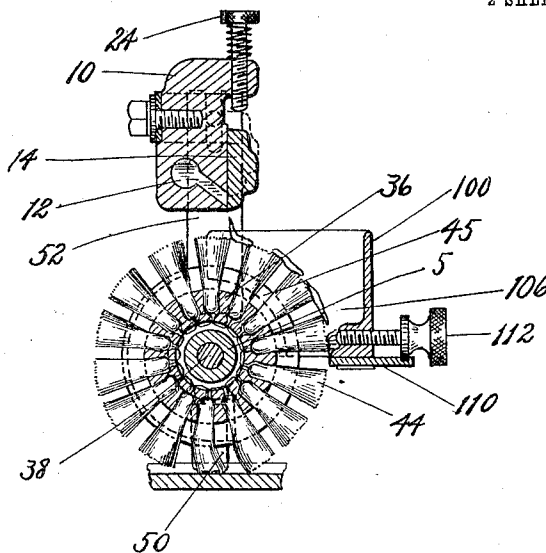


FIG. 3.

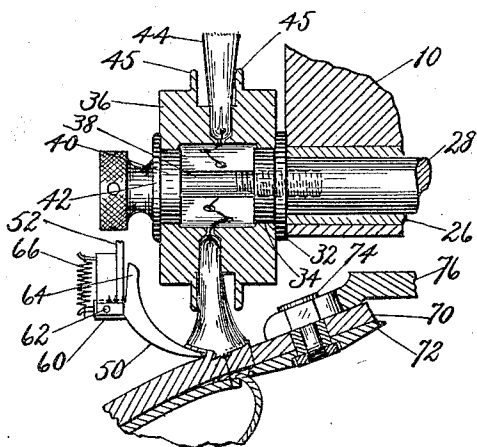


FIG. 4.

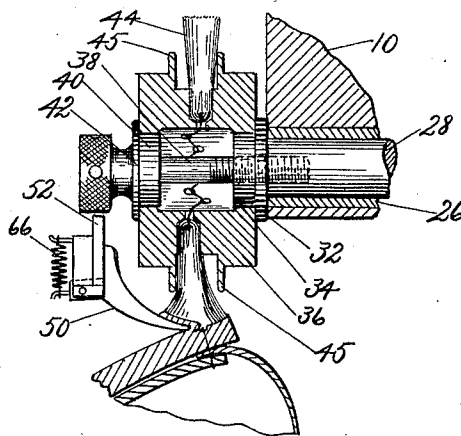


FIG. 5.

WITNESSES.

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Arthur L. Russell

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UNITED STATES PATENT OFFICE.

FRANK H. WARREN, OF SWAMPSCOTT, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

CEMENTING-MACHINE.

1,030,623.

Specification of Letters Patent.

Patented June 25, 1912.

Application filed September 9, 1904. Serial No. 223,850.

To all whom it may concern:

Be it known that I, FRANK H. WARREN, a citizen of the United States, residing at Swampscott, in the county of Essex and Commonwealth of Massachusetts, have invented certain Improvements in Cementing-Machines, 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 more particularly to machines for use in cementing the channels and channel-flaps of boots and shoes to prepare them for the channel-flap-laying operation.

It is customary in the manufacture of many grades of shoes to cut a channel in the face of the sole from its edge or near its edge inwardly, turning over on the face of the sole the lip or flap thus produced, and thereafter to insert through this channeled portion of the sole the line of fastenings which unites the sole to the upper or welt. After the line of fastenings has been inserted the channel-flap is turned back over the channel to cover and conceal the fastenings, the flap being secured in place by cement or other adhesive material. It is the practice to coat the channel-flap and the channel with cement before the flap is laid back over the channel so that the flap shall be securely retained in place, and one of the objects of the present invention is to provide improved means for applying cement to the channel-flap and channel of a sole, and a further object is to provide improved means for guiding the work so that the channel-flap and channeled portion of the sole are so presented to the cement-applying means that these parts may be thoroughly coated with cement without danger of the adjacent portions of the sole being smeared with the cement, for obviously any cement which gets on the adjacent parts of the shoe is wasted and also has usually to be cleaned off in finishing the shoe. Moreover, the sole requires to be wet for rendering the flap pliable before the channel-flap can be laid properly back over the channel, and if any cement gets on the face of the sole in the cementing operation it excludes the water from the portion covered by it

and produces a spot or "stain," as it is called, on the sole if the shoe is finished to have a light bottom. Also if the cement is permitted to get over the free edge of the flap and on the face of the sole it often sticks the edge of the flap to the sole so that the water is excluded from the portion of the sole covered by the flap as well as from the under side of the flap itself and these portions do not present an appearance uniform with the remainder of the sole when the shoe is finished to have a light bottom. As the coating of cement on the uppermost side of the flap also excludes the water, the flap is dampened imperfectly or not at all and is so stiff that difficulty is experienced in laying it back over the channel.

A very important feature of the invention, therefore, consists in providing improved means for guiding the shoe to the cement-applying means. Said guiding means preferably includes means by which the lateral position of the shoe with relation to the cement-applying means may be accurately gaged as the sole is presented to said applying means. Also said guiding means, as herein shown, is arranged to cause the shoe when presented to the cement-applying means to occupy a plane inclined transversely to the acting face of the cement-applying means, so that the sole will be inclined downwardly and outwardly from the machine. The portion of the sole adjacent to the free edge of the channel-flap will thus be held sufficiently below the plane of said acting face of the cement-applying means to reduce greatly the danger of cement getting on the face of the sole.

The preferred embodiment of the invention includes a member adapted to extend under the overturned channel-flap for raising the free edge of said flap away from the face of the sole, so that said flap may be thoroughly coated with cement without the face of the sole being brought into close proximity to the cement-applying means. A channel-flap turned inwardly from the edge of the sole is necessarily crimped or folded at very convex portions of the sole—as, for example, at the toe. The member above mentioned which extends under the flap and raises it also partially straightens the crimped portions of the flap and there-

fore enables said portions to be more completely coated with cement than can be done if the crimped portions are not straightened. Preferably the said member will be arranged to engage the work immediately adjacent to the point where the cement-applying means is acting and will form a guard located between said cement-applying means and the face of the sole for preventing any cement passing from the brush to the face of the sole. Said member may and preferably will be formed as a finger adapted to extend under the entire width of the channel-flap and to engage with its edge under the stock at the base of the flap and thereby serve as a guide for determining the lateral position of the work with relation to the cement-applying means. The said member preferably will be mounted yieldingly and will be arranged to hold the work normally at a suitable distance below the cement-applying means, but to yield for enabling the work to be presented closer to the cement-applying means when desired. The guiding means includes as herein shown a shank or support upon which the work-engaging member above referred to is movably mounted. Preferably the work-engaging member is pivotally connected to the shank to enable it to swing in a vertical path toward and from the brush. The work-engaging member is preferably held normally in a plane outside of the path of the brush so that cement from the brush will not get on said member when no work is in position to be cemented. A stop is provided for limiting the movement of the engaging member and the work toward the brush when the work is pressed against said member.

Other features of the invention, including details of construction and combinations of parts, will be hereinafter described and pointed out in the claims.

A preferred construction embodying the invention is shown in the accompanying drawings and will now be described.

Figure 1 is an elevation of so much of a cementing-machine as is necessary to disclose the present invention. Fig. 2 is a side view of the cement-applying mechanism shown in Fig. 1. Fig. 3 is a section on the line 3-3 of Fig. 2. Fig. 4 is a section on the line 4-4 of Fig. 1. Fig. 5 is a view similar to Fig. 4, illustrating the use of one only of the guides, said guide occupying a different position from that occupied by it in Fig. 4.

The base 1 of the machine is adapted to stand on a bench or other support and sustains a cement reservoir 2 from which leads a supply pipe 4 provided with a stop valve 6. The cement-applying mechanism is attached by bolts 8 to the supply pipe and comprises as herein shown a casting 10 hav-

ing a conduit 12 connecting with the supply pipe, said conduit being closed by a gate 14 which is carried by a lever 16 pivoted at 18, and normally held by a spring 20 in the position shown in Figs. 2 and 3 with the gate closing the conduit. The lever is connected by a chain 22 with a treadle, not shown, by means of which it may be actuated for raising the gate to the dotted line position shown in Fig. 3 to allow the cement to flow from the conduit. The movement of the gate is adjustably limited by a stop screw 24 to regulate the flow of the cement from the conduit. The casting 10 supports a bearing 26 in which is mounted a shaft 28. The shaft is provided on one end with a pulley 30 by means of which it may be rotated from any suitable source of power, and upon its opposite end the shaft supports a cement-applying means, herein shown as a brush. The shaft 28 is provided on the end which supports the brush with a flange 32 and an enlarged portion 34. The enlarged portion is adapted to receive the hub 36 of the brush, which is clamped against the flange 32 by a screw bolt 38 having an enlarged portion 40, corresponding to the enlarged portion 34 of the shaft, and a flange 42 between which and the flange 32 on the shaft the brush is rigidly held. Secured to the hub in usual manner to project radially therefrom is a series of bunches of bristles 44. The bunches of bristles are herein shown as arranged in staggered relation to give the desired width to the brush, and the hub is preferably provided on each side of the bristles with a flange 45 which gives lateral support to the bristles and restricts the extent to which the brush may spread during the cementing operation. This construction of brush has the advantage that the bristles may be of such length as to form a brush which is very flexible in the direction of its rotation, whereby it can adapt itself to the irregular surface to be coated, and yet spreading of the brush in the direction of its width is greatly restricted.

The machine is provided with guiding means to assist the operator in properly presenting the work to the cement-applying means. As herein shown, this guiding means comprises a guide 50 arranged to engage the face of the shoe sole at the inner side of the channel. The guide 50 is shown as a finger pivotally connected to and extending laterally from a shank or support 52, which is vertically adjustable on a bracket 54 to which it is held by a binding screw 56. The bracket is itself adjustable in the direction of the width of the brush and is secured to the casting 10 by a clamping bolt 58. The guide finger 50 is provided with a lateral extension 60 through which passes the pivot pin 62 which connects the

guide to its shank or support 52. The rocking movement of the guide in one direction is limited by the engagement of its upper face with the adjacent lower face of the shank or support and in the other direction is limited by the engagement of a lug 64 on the guide with the adjacent side face of the shank 52. A spring 66 connected to the guide and to the shank holds the guide normally rocked downwardly, as shown in Figs. 2 and 3, but permits it to be raised by the pressure of the work against it into the position shown in Fig. 5. The guide will be secured by the binding screw 56 to position the shoe at the desired elevation with relation to the cement-applying brush, and the spring 66 will permit the guide to be raised for pressing more firmly against the brush any portions of the work which may need to be so presented to the brush. It is found in practice that the position of the overturned channel-flap with relation to the face of the sole varies, as illustrated in Figs. 4 and 5, so that sometimes the shoe requires to be pressed against the brush more firmly than at other times in order to cause the brush to coat the channel thoroughly with cement.

The guide 50 holds the face of the sole adjacent to the parts to be cemented in a plane below the cement-applying means and permits the shoe to be tipped about its point of contact with the guide as may be required to present the surfaces to be cemented, comprising the depressed channel and the overturned channel-flap, in approximately the plane of the face of the brush. It will be observed that in so presenting the parts to be cemented the shoe is guided in a plane oblique to the face of the brush so that the face of the sole is inclined outwardly and downwardly from the brush, as illustrated, and that portion of the face of the sole adjacent to the very edge of the channel-flap is thereby held out of reach of the brush so that there is little danger of the sole being smeared with cement from the brush. Preferably also the guide finger will be arranged to engage the sole immediately adjacent to the point where the brush is applying cement, and will, therefore, act as a guard interposed between the brush and the face of the sole for preventing cement from getting over the edge of the channel-flap and on the sole. For the best results the guide 50 will be constructed and arranged to extend under the channel flap so that it may engage the base of the channel-flap and thereby position the shoe laterally with relation to the width of the brush, as well as position the shoe vertically with relation to the brush. The guide will thus prevent the shoe from being so positioned with relation to the brush that the brush will extend over the free edge of the channel-flap, in which case it would be likely to drop cement

upon the face of the sole. When the guide is constructed and arranged to extend under the channel-flap as illustrated, said guide serves to raise the free edge of the channel-flap from the face of the sole in case the flap has been overturned to lie close to the sole. Said guide will also straighten or partially straighten the crimps or folds which are usually found where the channel-flap is turned inwardly from the toe and other very convex portions of the sole edge. By thus straightening out the folds or crimps in the channel-flap the flap can be much more thoroughly coated with cement than would otherwise be practicable. If the guide is positioned to extend under the acting face of the brush, as herein shown, it will also support the channel-flap against the pressure of the brush as the cement is being applied to the flap.

Auxiliary guides 70 and 72 are constructed and arranged to engage respectively with the edge of the sole and with the lower side of the sole or the welt in the rand crease. Said guides are shown as disks mounted for free rotation about an inclined pivot pin 74 which is adjustably secured in the forked end of a holder 76. The holder is pivoted at 78 between lugs 80 extending laterally from a block 82. The block is adjustable vertically upon the slotted lower portion of a bracket or hanger 84, being held in position on said bracket by a clamping bolt 86. The bracket is clamped upon the bearing 26 heretofore described, being adjustable with relation to said bearing toward or from the cement-applying brush, as well as angularly adjustable about the axis of rotation of the brush. The guide 72 is shaped to enter the rand-crease and to form a support for the edge of the shoe, and said guides 70 and 72 are mounted at an inclination to the face of the brush so that the work will be guided with the face of the sole in a plane oblique to the face of the brush. The holder 76 is arranged to have a limited amount of tipping movement, whereby the guides may move vertically to adapt the guide 72 to support soles of varying thickness. The holder is normally tipped toward its uppermost position with its rear face in engagement with the adjacent face of the block 82 by means of a spring 88 engaging a depending portion of the holder. A stop screw 90 is adjustably mounted in the bracket and limits the extent of the downward tipping movement of the holder and the guides.

By means of the guide 50 and the auxiliary guides 70 and 72 the shoe may be positioned with great accuracy relative to the cement-applying means and the cement-applying means caused to coat thoroughly the entire width of the channel and channel-flap without smearing any cement upon any other portions of the shoe.

While I have herein described and have shown in Figs. 2 and 4 guiding means for engaging the welt crease and the edge of the sole on one side of the cement-applying brush and another guiding means for engaging the face of the sole and the channel-flap on the other side of the cement-applying brush, it is found in practice that good results can be obtained by the use of one of these guiding means without the other and I have illustrated in Fig. 5 the use of the guide 50 without the guides 70 and 72. It will, of course, be understood that the invention is broad enough to cover a machine equipped with either as well as with both of said guiding means.

As herein shown, the machine is provided with a box 100 having an arm 102 by means of which it is adjustably secured to the casting 10 by a clamping bolt 104. The sides 106 of the box embrace the ends of the hub 36 and the sides of the flanges 45 of the brush, and the bottom of the box is slotted to permit the bristles to pass freely there-through. The box is provided on its lower side with a plate 110 movable toward and from the periphery of the brush by means of an adjusting screw 112, said plate acting as a gage to regulate the amount of cement carried on the periphery of the brush.

In the operation of the machine a shoe to be cemented is presented bottom upwardly with the channel and overturned channel-flap against the periphery of the brush, as illustrated in the drawings, the lateral and vertical position of the shoe being determined by the guide or guides, as above described. The foot treadle is then depressed to raise the gate 14 and permit the cement to flow from the reservoir and conduit upon the brush, which being rotated in the direction of the arrow in Fig. 3 carries the cement toward the box 100, and if the cement flows on the brush more rapidly than it is required, the superfluous cement collects temporarily in the box, as indicated in Fig. 3. In practice it is necessary to hold the gate open but a short time in order to permit the discharge of the amount of cement required for cementing a single shoe. The spring 20 is then allowed to close the gate and the shoe is moved under the brush to permit the application of the cement to the whole length of the channel and channel-flap, the shoe being positioned and guided in its movements, as heretofore described.

It is obvious that the machine of this invention may be used for other purposes than applying cement to the channel and channel-flap, as for example, it might be used for applying cement to the welt and in seam of a welted shoe preparatory to laying the outersole of the shoe.

Having disclosed the nature of the invention and fully described a construction em-

bodiment of the several features thereof, I claim as new and desire to secure by Letters Patent of the United States:—

1. In a cement-applying machine, the combination with means for applying cement to one face of a shoe sole, of guiding means arranged to be engaged by the edge of the sole, and guiding means arranged to be engaged by the face of the sole opposite to that on which cement is being applied.

2. In a cement-applying machine, the combination with means for applying cement to the sole of a shoe, of independently movable devices arranged to be engaged by the edge and face of the shoe sole for guiding and supporting the shoe with relation to the cement-applying means.

3. In a cement-applying machine, the combination with rotatable means for applying cement to a shoe sole, of guiding means to engage the sole when presented to the cement-applying means, said guiding means being arranged to position the shoe with the face of the sole in a plane oblique to the axis of rotation of the cement-applying means.

4. In a cement-applying machine, the combination with means for applying cement to a shoe sole, of means arranged to engage the face of the sole and to guide the shoe with relation to the cement-applying means the point of engagement being so located that the face of the sole will occupy a plane oblique to the plane of the acting face of said applying means while being coated with cement.

5. In a machine of the class described, the combination with means for applying cement to the marginal portion of the bottom of a shoe, of means arranged to engage the shoe upon opposite sides of the cement-applying means, for guiding the shoe with the face of the shoe bottom in the desired plane with relation to the acting face of the cement-applying means.

6. In a machine of the class described, the combination with means for applying cement to a shoe sole, of a guide comprising a shank, a laterally extending finger pivotally connected to the shank, and a spring for holding the finger in normal position, said finger being adapted to yield upwardly to allow the work to be moved toward the cement-applying means.

7. In a cement-applying machine, the combination with means for applying cement to the channel of a shoe sole, of means for insuring the presentation of the shoe to the cement-applying means with the face of the sole in a plane oblique to the plane of the acting face of the cement-applying means.

8. A channel cementing machine, having, in combination, a rotary cement applying

brush, and a channel flap guide, arranged to support the flap in contact with the brush, substantially as described.

9. A cementing machine comprising a brush, means for delivering cement thereto, a channel-flap-turning device and means for supporting the same adjacent one side of said brush, said means permitting said turning device to be moved longitudinally of the brush, and a spring normally acting to hold the flap-engaging portion of said turning device adjacent the end of said brush, substantially as described.

10. In a cement-applying machine, the combination with means for applying cement to the channel and channel-flap of a sole, of guiding means constructed and arranged to extend under the channel-flap for engaging the sole at the base of the channel-flap and to yield vertically and laterally to permit the position of the sole with relation to the cement-applying means to be varied.

11. The combination with a cement reservoir, of means for transferring cement therefrom and applying said cement directly to the two narrow channel-surfaces to be cemented together, and means for supporting the leather at the opposite sides of said channel and holding the surfaces being cemented in engagement with said cementing means.

12. The combination with a cement reservoir, of means for applying cement therefrom to the opposite channel surfaces to be cemented together, and a support for holding the back of the channel-flap toward said cement applying means, said support being provided with means permitting it to yield vertically and laterally of said applying means.

13. In a machine for cementing the channel of a sole the combination with a rotatable cement applying member of guiding means engaging the face and lip of the sole to aid in the presentation of the sole, said guiding means being constructed and arranged to permit angular movement of the sole while maintaining the plane of the sole oblique to the axis of rotation of the cement applying member in all positions in which said member contacts with the channel of said sole.

14. In a cement applying machine the combination with means for applying cement to the sole of a shoe of independently rotatable devices for engaging the edge and face of the sole, a spring normally holding said devices in a given position with respect to the cement applying means, and means

for varying the extent of movement permitted said devices.

15. In a cement applying machine the combination with a rotary member for applying cement to the sole of a shoe of guiding means comprising a rotary disk of a given diameter to engage the edge of the sole and a second disk of greater diameter to enter the rand-crease, the planes of said disks being inclined to the plane of that portion of the cement applying member which is operative in any given position.

16. In a machine for applying cement to the margin of a sole the combination with cement applying means of guiding means comprising a shank and a work-engaging member movably connected therewith, a spring for holding said member away from the cement applying means and a stop to limit the movement of said member toward the cement applying means when the sole is pressed against it.

17. In a machine for applying cement to the channel and channel flap of a sole the combination with cement applying means of guiding means comprising a shank and a contact piece pivoted thereto and having a portion shaped to extend under the channel flap.

18. In a machine for applying cement to the channel and channel flap of a sole the combination with a rotary brush and means for applying cement thereto of a channel flap guide having its shank bent around the shaft of the brush.

19. In a machine for cementing the margins of soles the combination with cement applying means of means constructed and arranged to be engaged by the face and edge of the sole for guiding said sole in a plane oblique to that of the acting portion of the face of the cement applying means, and means permitting said guiding means to be adjusted in said oblique plane.

20. In a machine for applying cement to the channel and channel flap of a sole the combination with cement applying means of a shank and a channel-flap engaging guide yieldingly mounted thereon, said guide having provision whereby presentation of the sole in position to be cemented holds said guide rigid with respect to said shank.

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

FRANK H. WARREN.

Witnesses:

ARTHUR L. RUSSELL,
WELLS L. CHURCH.