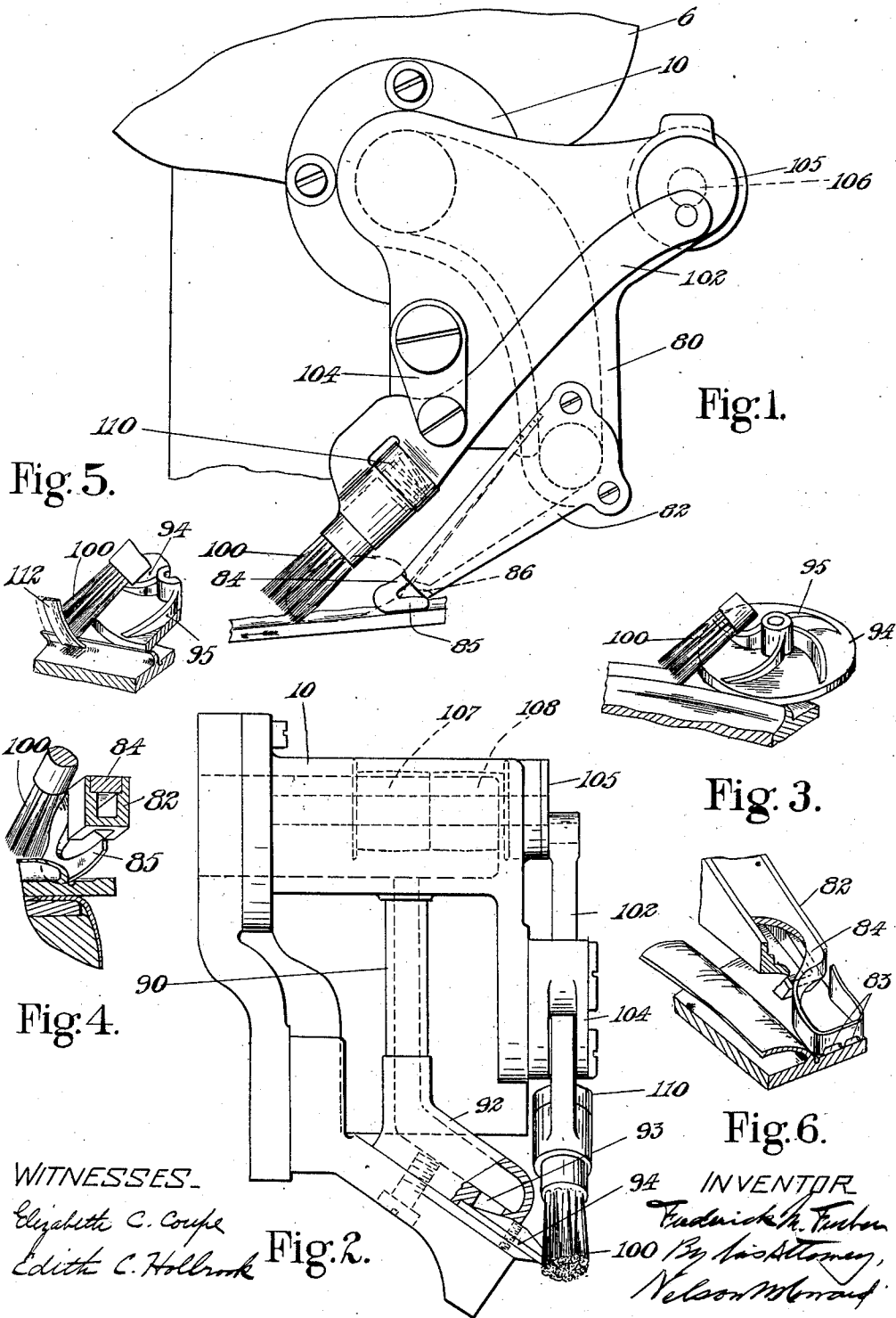


F. M. FURBER.
CEMENTING MACHINE.
APPLICATION FILED APR. 24, 1908.

1,043,086.

Patented Nov. 5, 1912.



WITNESSES.

Elizabeth C. Couper
Edith C. Hollbrook

Fig. 2.

INVENTOR

Fredrick H. Furber
By his Attorney,
Nelson McManis

UNITED STATES PATENT OFFICE.

FREDERICK M. FURBER, OF LYNN, MASSACHUSETTS, ASSIGNOR TO UNITED SHOE MACHINERY COMPANY, OF PATERSON, NEW JERSEY, A CORPORATION OF NEW JERSEY.

CEMENTING-MACHINE.

1,043,086.

Specification of Letters Patent.

Patented Nov. 5, 1912.

Application filed April 24, 1908. Serial No. 428,976.

To all whom it may concern:

Be it known that I, FREDERICK M. FURBER, a citizen of the United States, residing at Lynn, 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 applying liquid material, such as cement, to shoes or other stock and particularly to machines for applying cement to the channeled portions of the soles of shoes.

An object of the invention is to provide a novel cement applying machine in which the delivery of cement will be controlled by the position of the work to be coated, the flow of cement being automatically stopped when the work is withdrawn from position to receive it, and preferably also being automatically started when the shoe is presented in position to be coated.

A further object of the invention is to provide means for controlling the delivery of cement in relation to the rate at which the work is advanced for receiving its coating, and still another object is to provide improved means for spreading the cement on the work.

A novel construction for applying the cement, which forms a very important feature of this invention, comprises a brush arranged to spread the cement by successive wiping movements over the work in somewhat the same manner that a hand painter spreads paint over a surface being coated.

In the embodiment of the invention shown the brush has a movement in an orbital path, wiping over the stock then rising and going back and downwardly to wipe again, the work being advanced at desired speed so that each portion may be wiped over as many times as may be required to obtain the desired coating. With this type of brush may be used means independent of the brush for delivering or assisting in placing the cement which the brush spreads over the stock. In one form of this means a delivery member is arranged to discharge cement upon the feather of the shoe sole in advance of the brush. The brush in its

stroke spreads the cement thus delivered and also it may sweep over the discharge end of the delivery member in a way to take up a portion of cement therefrom. Preferably, the delivery member will be constructed and arranged to discharge the cement at or near the angle formed by the feather and lip of the sole where it can most readily find its way or be worked by the brush into the angle.

In accordance with another feature of the invention in a machine for applying cement to the channel surfaces of a shoe sole for causing the lip and feather to adhere for covering the sole fastenings, the discharge member is constructed and arranged to extend to the working surface of the brush and engage the sole in the angle at the base of the lip and form a guide for positioning the work both vertically and laterally. There may be employed in combination with this guide a channel lip lifting device arranged to extend under the edge of the overturned lip and raise the edge from the sole so that the full width of the lip may be coated without liability of spreading cement upon the face of the sole. The channel lip lifting device does not need to be long enough to touch the face of the sole and it may be vibrated to facilitate the raising of the lip and also the feeding of the shoe, particularly around the toe where the lip is usually crinkled or puckered.

In one form of the invention herein shown the cement delivery member is formed as a rotary disk adapted to be turned by contact with the feather of the sole and the base of the lip and having pockets by which cement is presented in predetermined portions and in proportions to the rate at which the work is advanced. This constitutes a very important feature of this invention and one of its advantages is that no cement is delivered upon the work until the shoe, having been properly positioned, begins to advance whereupon the delivery of cement is at once commenced and finally ceases again as soon as the feed of the shoe is stopped. No flooding or other waste of cement is therefore possible. The delivery member is preferably arranged to discharge the cement in the angle against the base of the lip and also to present it in the path of the distributing brush which both takes cement

from the pockets and also spreads that which is discharged against the base of the lip.

These and other features of the invention, including numerous details of construction and combinations of parts, will be more fully explained in connection with the drawings and will then be pointed out in the claims.

Figure 1 is an end elevation of a preferred construction in which a reciprocating brush is employed; Fig. 2 is a side view showing the reciprocating brush used with a combined shoe guiding foot and cement delivery member; Fig. 3 is a perspective view of the guiding foot shown in Fig. 2. Fig. 4 is another view of a portion of the construction shown in Fig. 1. Fig. 5 shows the relation of a lip raising device to the shoe guiding means illustrated in Fig. 3, and Fig. 6 shows a modified form of shoe guiding means.

The conductor 10 which leads from a suitable reservoir 6 is formed with a depending portion 80 to which is rigidly attached a trough-shaped member 82 for delivering the cement directly to the work and into position to be spread by the brush. The upper face of this member receives a close fitting spring plate 84 which normally rests against the end wall of the trough and closes the trough. This spring plate 84 is extended below the trough to form a guide or foot 85 shaped to engage the feather of the sole and the base of the channel flap, thereby positioning the shoe laterally and vertically. The foot may be lifted by the pressure of the work against it to open the trough as indicated in dotted lines in Fig. 1 and permit the cement to flow between the lower face of the plate 84 and the end wall of the trough. The trough is provided at 86 with a stop face to limit the upward movement of the foot and thereby limit the discharge of cement.

In Fig. 2 the conductor 10 is connected by a tube 90 with a cement box 92 supported in fixed position with relation to the frame of the machine. The cement box has an inclined floor with an opening at 93 leading to the upper face of a cement delivering member 94. This member is in the form of a disk rotatable about an axis that is inclined to the vertical, one half of the disk being covered by and closely fitting against the upper side of the cement box. The disk is provided on its upper face with curved tapering wings or blades 95 extending from the hub of the disk approximately to its periphery. This disk provided with the wings presents a series of pockets into which cement flows through the opening 93. The lower face of the disk is adapted to engage with the feather of the sole and the peripheral edge of the disk may be engaged with

the base of the channel flap to position the shoe. The disk is turned by the advance movement of the work held in engagement with it. The disk, therefore, delivers cement to the work in measured quantities in proportion to the rate at which the work is advanced beginning to deliver when the feed of the work begins and stopping when the feed stops. The inclination of the disk causes the cement to flow from it toward the base of the channel flap. Any form of cement distributing brush may be used with the cement delivering means shown in Figs. 1 and 2.

The brush 100 which is shown in Figs. 1 and 2 is carried by an arm 102 that is suspended by a link 104 and connected at its upper end to an eccentric 105 on a counter shaft 106 that has a driving pulley 107 and a loose pulley 108. The brush receives a reciprocating movement lengthwise of the channel the path of which movement may be substantially that indicated by dotted lines in Fig. 1. With the construction shown in Fig. 1, the brush sweeps over the foot 85 and during its rise from the work takes up cement as it escapes from under the plate 84 and in its next forward stroke lays the cement over the feather and channel flap by a wiping movement. This movement of the brush is very similar to that by which a hand painter applies cement to his work. With the construction shown in Fig. 2 the brush sweeps over the disk 94, taking up more or less of the cement from the pockets therein and lays or distributes it upon the work by the same wiping action as that above described.

The brush is actuated continuously so that by varying the rate at which the shoe is advanced the operator can cause the cement to be more thoroughly spread and worked into the stock at the parts of the shoe requiring greatest care, as the toe when the lip is crumpled, and can pass quickly over the straight parts that require less care. The nut 110 furnishes means for varying the position of the brush and thereby varying its wiping action. It is characteristic of this construction that the cement is not fed in proportion to the movement of the brush or the pressure of the work but only in proportion to the feed of the work so that there is no danger of flooding the work by rounding the toe slowly and carefully. A lip lifting device 112 may be used if desired to assist in presenting the lip thus facilitating the coating operation especially at the toe where the crumpled portions of the lip are apt to be laid down against the face of the sole. The lip lifting device may be vibrated if desired to facilitate the feeding of the shoe and the lifting of the lip.

In the construction shown in Fig. 4 the foot 85 is shown as comprising a blade adapt-

ed to run in the channel against the base of the channel lip and divide the bristles of the brush so as to keep the brush spread and in condition to coat both the feather and the lip of the sole.

In Fig. 6 the foot is shown as including a portion extending transversely along the feather and a portion extending backwardly toward the trough 82. This construction provides a well at the end of the trough into which the cement is discharged and from which the brush takes up some cement as it rises from the work. The transverse member of the foot has grooves 83 through which the cement is discharged on the feather of the sole as the shoe is advanced beneath the foot.

Certain features shown and described in this application are claimed in applicant's copending applications Ser. Nos. 211,215, 428,974, and 428,975.

Having explained the nature of this invention, and described a mechanism embodying the same in the preferred form, I claim as new and desire to secure by Letters Patent of the United States:—

1. A channel cementing machine having a cement receptacle, a rotary disk extending into said receptacle and adapted to abut with its periphery the base of the flap of a channeled sole and thereby serve as a guide, said disk being provided on its upper face with wings whereby as the sole is advanced the cement is taken from said receptacle and delivered to the channel of the sole.

2. A cementing machine, having a cement supplying conductor terminating in a rotatable disk having pockets on its side face and arranged to discharge cement directly upon the work.

3. A cementing machine, having a cement supplying conductor terminating in a disk rotatable about an axis oblique to the vertical and provided on its upper face with wings forming cement carrying pockets.

4. A cementing machine having a cement supplying conductor terminating in a carrier constructed and arranged to deliver cement in proportion to the advance movement of the work, and a brush to spread said cement, there being a free and unobstructed space beneath said carrier and brush to permit manual presentation of the work.

5. In a cementing machine, work positioning means, a brush mounted in inclined relation to the work, and actuating mechanism for causing the brush to wipe over the work, lift, and return to starting position while maintaining said inclined relation.

6. In a cementing machine, work positioning means, a brush mounted in inclined relation to the work, actuating mechanism for causing the brush to wipe over the work, then lift and return to starting position

while out of contact with the work, and a cement carrier over which the brush wipes as it lifts from the work.

7. In a cementing machine, a brush, actuating mechanism therefor constructed and arranged to impart to the brush a movement in an orbital path, and means independent of the brush for delivering cement into position to be spread by the brush.

8. In a cementing machine, a brush, actuating mechanism therefor constructed and arranged to impart to the brush a movement in an orbital path, and cement delivering means actuated independently of the brush.

9. In a cementing machine, a reciprocating brush having a wiping movement over the work, actuating mechanism therefor having provision for holding the brush out of contact with the work during its return stroke, and adjusting means for varying the wiping action of the brush.

10. In a cementing machine, a reciprocating brush having a wiping movement over the work, continuously moving actuating mechanism therefor, and means for supplying cement in proportion to the feed of the work.

11. In a cementing machine, means for supplying cement in proportion to the advance of the work, a cement spreader, and means for actuating it independently of the advance of the work whereby the cement may be more thoroughly spread upon the work at one point than at another when desired without proportionally increasing the quantity of cement applied.

12. A channel cementing machine, having a continuously moving spreading brush and means for supplying cement in proportion to the rate of advance of the work whereby the cement is thoroughly worked into the channel and the crumpled lip at the toe where the feed of the shoe is relatively slower than it is at the sides where the advance of the shoe is more rapid but without correspondingly increasing the quantity of cement applied at the toe.

13. A channel cementing machine comprising a rotatable disk provided with curved wings to form cement carrying pockets and arranged to guide the work and to deliver cement upon it.

14. A channel cementing machine comprising a rotatable disk provided with wings to form cement carrying pockets, said disk being arranged to deliver cement to the channel, and a brush to spread the cement.

15. A machine for applying cement to the channel of the sole of a shoe having, in combination, a brush, means for causing said brush to travel in an orbital path, there being a free and unobstructed space beneath said brush to permit manual presentation of

a shoe, and means for supplying cement to said channel.

16. A machine for applying cement to the channel of the sole of a shoe having, in combination, a brush, means for causing said brush to travel in an orbital path, there being a free and unobstructed space beneath said brush to permit manual presentation of a shoe, and means becoming operative upon

presentation of a shoe for supplying cement to said channel.

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

FREDERICK M. FURBER.

Witnesses:

ARTHUR L. RUSSELL,
JAMES R. HODDER.

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