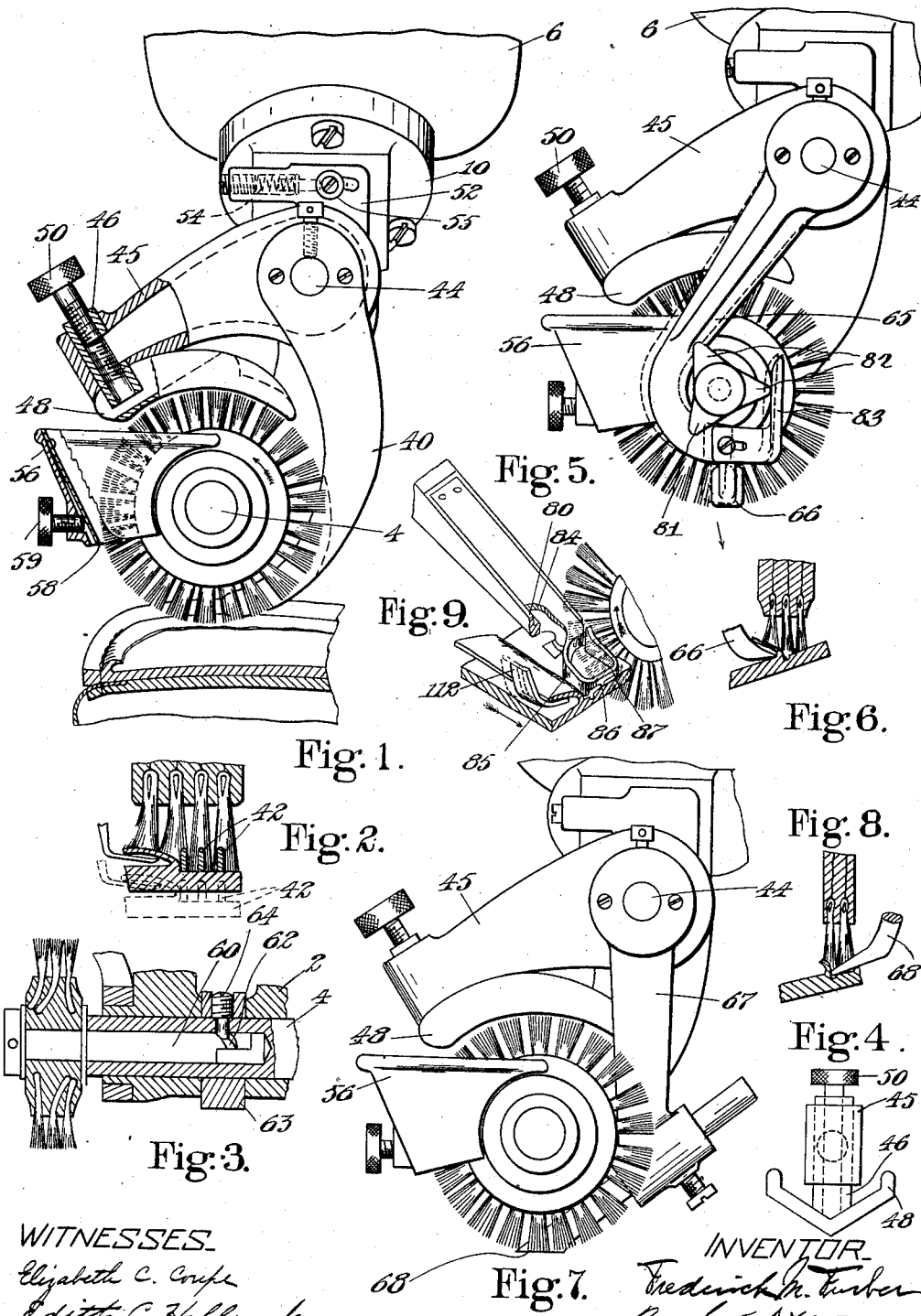


F. M. FURBER.
CEMENTING MACHINE.
APPLICATION FILED APR. 24, 1908.

1,043,084.

Patented Nov. 5, 1912.



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CEMENTING-MACHINE.

1,043,084.

Specification of Letters Patent.

Patented Nov. 5, 1912.

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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be controlled by the position of the work to be coated, the flow of cement being automatically stopped when the work is withdrawn from position to receive it, and preferably also being automatically started when the shoe is presented in position to be coated.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 very important feature of this invention consists in a machine arranged to provide a continuous flow of cement while the work is in place with means for automatically shutting off the delivery of cement when the work is withdrawn from receiving position. Preferably, also, means is provided for starting the flow of the cement when the work is moved toward or into its receiving-position, and insuring the continued flow until the work is withdrawn. By stopping the delivery of cement automatically when the shoe is withdrawn, waste of cement is avoided and also objectionable overloading of the cement-applying brush which is likely to occur when the operator controls a valve by a foot treadle and often fails to shut it off as soon as a shoe is finished. By also starting the cement automatically the use of the usual treadle can be entirely avoided and economy in the use of cement effected because cement will only be delivered while the shoe is in position to receive it. This broad feature of the invention is capable of being embodied in many different constructions and herein are shown

several of the forms of mechanism devised by me which are characterized by this invention.

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.

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, partly in section, of a preferred construction. Fig. 2 is a section through the brush and work guiding foot, a lip-lifting device being shown in the position which it occupies when used with this construction; Fig. 3 is a section showing the fastening for the brush; Fig. 4 is a detail of the cement shut-off; Fig. 5 shows a modified arrangement of the shoe guiding foot together with a lip-lifting device and means for vibrating said device; Fig. 6 is a section of Fig. 5; Fig. 7 shows a further arrangement of the shoe guiding foot especially adapted for welt work; Fig. 8 is a section of Fig. 7; Fig. 9 shows a modification.

In Figs. 1 and 2 a construction is shown in which a driven brush may be employed and in which delivery of cement is controlled by a work guide 40 provided with

blades 42, as shown in Fig. 2, that extend circumferentially with relation to the brush and between or among the bristles. The blades are preferably arranged with relation to the brush for the front blade or the one shown at the left in Fig. 2 to engage the base of the channel flap and form a guide for determining the lateral position of the shoe with relation to the brush. The work guiding faces of the blades 42 are not concentric with relation to the brush and therefore permit the work to be positioned more or less closely to the brush by resting it at different points on the blades or by rocking it about the ends of the blades which terminate approximately under the axis of the brush. The guide 40 is fast to a rocker or shaft 44, which also carries an arm 45 that has a cement passageway communicating with the main portion of the conductor 10, which in turn leads from a suitable reservoir 6. The outer end of the arm 45 is provided with a depending tube 46, the lower end of which is adapted to fit and rest upon a trough 48, shown in Fig. 4, that is supported in fixed position with relation to the frame of the machine. A screw 50 is adjustable in the tube 46 to vary the size of the opening from the arm passage into the tube and control the flow of cement when the tube is raised from the trough. The rock-shaft 44 carries a plate 52 in which is mounted a spring 54 acting against a stud 55 that extends through a slot in the plate and into the conductor 10. The parts just described are so arranged that the lower end of the tube 46 normally rests by the weight of the parts and the pressure of the spring 54 against the upper face of the trough 48, thus stopping the flow of cement into the trough and from thence to the brush. When the parts are in this position the blades 42 are located below the periphery of the brush, as indicated in dotted lines in Fig. 2. When the work is presented to the machine the blades are lifted into the full line position in Fig. 2 and through the rockshaft 44 the tube 46 is lifted into the position shown in Fig. 1 to permit the flow of cement into the trough and from thence to the brush. As soon as the work is withdrawn from the brush the tube and the plates will be reversely moved to shut off the cement automatically. A cement box 56 may be supported in the relation to the brush illustrated in Fig. 1 and provided with a gate 58 that can be set by the screw 59 in position to regulate the quantity of cement carried by the brush.

The brush may be connected to a forward extension of the shaft 4 by the locking connection shown in Fig. 3 which comprises a bolt 60 having a cam slot 62 adapted to receive the inner end of a screw 64. The en-

larged head of the bolt 60 is provided with openings to receive a spanner wrench by means of which it may be turned to clamp the brush against the end of the shaft. The slot 62 is inclined in the direction to cause the brush to be more firmly locked by the resistance offered by the work to the rotation of the brush.

In Fig. 5 the guide arm 40 is shown as replaced by an arm 65 that extends over the front side of the brush and is provided with a work guide 66 adapted to extend under the channel flap, as shown in Fig. 6. In order that the guide or lip-lifting device 66 may be vibrated, an extension 81 provided with arms 82 is screwed on the end of the brush shaft, and a member 83 is adjustably fastened to the arm 65 by the screw which holds the lip-lifting device 66 in place, said member being adjusted so as to be engaged by the arms 82 when cement is flowing to the brush.

Fig. 7 shows the guide arm 40 of Fig. 1 replaced by an arm 67 which adjustably supports a guide or foot 68 arranged at the rear side of the brush and adapted to extend across in engagement with the feather of the sole and bear against the base of the channel flap as indicated at Fig. 8.

Fig. 9 shows a device 112 for lifting the edge portion of the channel lip and supporting it for the brush to coat the lip with cement without liability of smearing the face of the sole. The lip lifting device preferably is so formed and proportioned with relation to the shoe positioning and guiding means that it does not touch the face of the sole. In this respect this device is distinguished from that shown in my prior application, Serial No. 211,215, filed June 4, 1904. An advantage for this present construction is that the lifting device will not soil or mar the sole.

In Fig. 9 the lip lifting device is indicated as having vibratory movement which reduces the liability of its catching upon the crumpled portions of the lip at the toe of the shoe. In this figure I have also shown a different form of work guide and a modified construction of supplying means by which the cement is delivered directly upon the work. The brush serves as a spreader for this cement and it may also take up some cement from the delivery device. This device comprises the conductor section 80 in the form of a trough covered by the spring plate 84. This plate has a foot 85 to be engaged by the feather and the base of the lip of the shoe. The foot thus forms a work guide and also a direct connection by which the plate 84 may be lifted, moved to open the conductor and control the discharge of the cement. The foot 85 may be shaped as shown to form a well within its

walls to retain a small quantity of cement and spread it as the shoe is moved under the ribs 86 of the foot. The outer wall 87 forms a guard to prevent the cement flowing over the edge of the sole.

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 rotary brush and a guide arranged during the application of the work to the brush to extend circumferentially with relation to said brush and between the bristles thereof, said guide comprising a plurality of blades.

2. A cementing machine having a brush and a plurality of circumferentially disposed stock guiding members arranged during the application of the work to the brush to extend into the brush and engage different portions of the face of the stock.

3. A cementing machine having a rotatable brush and a work guiding member stationary during the application of cement arranged to extend at that time between the bristles of said brush and adapted to engage the work at the base of the lip of a channeled sole.

4. A cementing machine having a rotatable brush and a work guiding member stationary during the application of cement arranged to extend at that time between the bristles of the brush and formed to permit the work to be pressed more or less firmly against the brush by rocking it about the guiding member.

5. A cementing machine having a rotatable brush and a work guiding member stationary during the application of cement arranged to extend at that time between the bristles of said brush and having different portions of its work guiding surface located in different axial relations to the working surface of the brush.

6. A cementing machine having a rotatable brush and a work guiding member stationary during the application of cement arranged to extend at that time between the bristles of said brush and having its work guiding face arranged eccentrically with relation to said brush.

7. A channel cementing machine, having means for spreading cement and a guide arranged at the inner side of the spreader and extending over the feather of the sole into position for engagement with the base of the channel lip.

8. A cementing machine, having cement supplying means, including a movable conductor, a shut-off, and work guiding means arranged to actuate the conductor relatively to the shut-off to start and stop the cement.

9. A cementing machine, having cement

supplying means, including a conductor 45 65 and the shut-off 48, the adjusting device 50 and the work guide arranged to move the conductor and shut-off relatively to start and stop the cement.

10. A channel cementing machine, having cement supplying means comprising the movable conductor arm 45, the shut-off 48, the guide adapted to be engaged by the work and to lift the conductor arm to start the cement, and the spring 54 for reversely moving the conductor to stop the cement.

11. A cementing machine, having cement applying means and cement supplying means including a trough having inclined walls, a conductor having an outlet end 80 shaped to fit the trough and normally closed by it, and means for lifting the conductor to permit the flow of cement into the trough.

12. In a cementing machine, the combination with a brush, of the tubular shaft 4, 85 the brush spindle 60 having the slot 62 inclined as shown with relation to the direction of rotation and the locking means 63, 64.

13. A channel cementing machine having guiding means for engaging the feather of the sole of an inverted shoe at the base of the lip to position the shoe vertically and laterally, combined with a lip lifting device located in a plane wholly above the face of the sole.

14. A channel cementing machine having guiding means for engaging the feather of the sole of an inverted shoe at the base of the lip to position the shoe vertically and laterally, combined with a lip lifting device, and means for vibrating the lifting device lengthwise of the lip.

15. A machine for applying cement to the feather and one face of the overturned lip of an out-sole having guiding means for engaging said feather and a lip-lifting device for engaging the under side of said overturned lip.

16. A channel cementing machine having a device to engage the feather and lip to guide the shoe and a vibratory device to extend under the lip to lift it from the face of the sole.

17. A channel cementing machine having cement supplying means including a movable conductor, a shut-off and work guiding means arranged to actuate the conductor relatively to the shut-off to start and stop the flow of cement, in combination with a lip-lifting device.

18. A channel cementing machine having cement supplying means including a movable conductor, a shut-off and work guiding means arranged to actuate the conductor relatively to the shut-off to start and stop the flow of cement, in combination with a lip-lifting device, and means for vibrating said device.

19. A cementing machine having cement
supplying means, a brush, means for actuat-
ing it to spread the cement, and a work
guide movable independently of the brush
5 and connected with the supplying means to
actuate the latter.

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."