

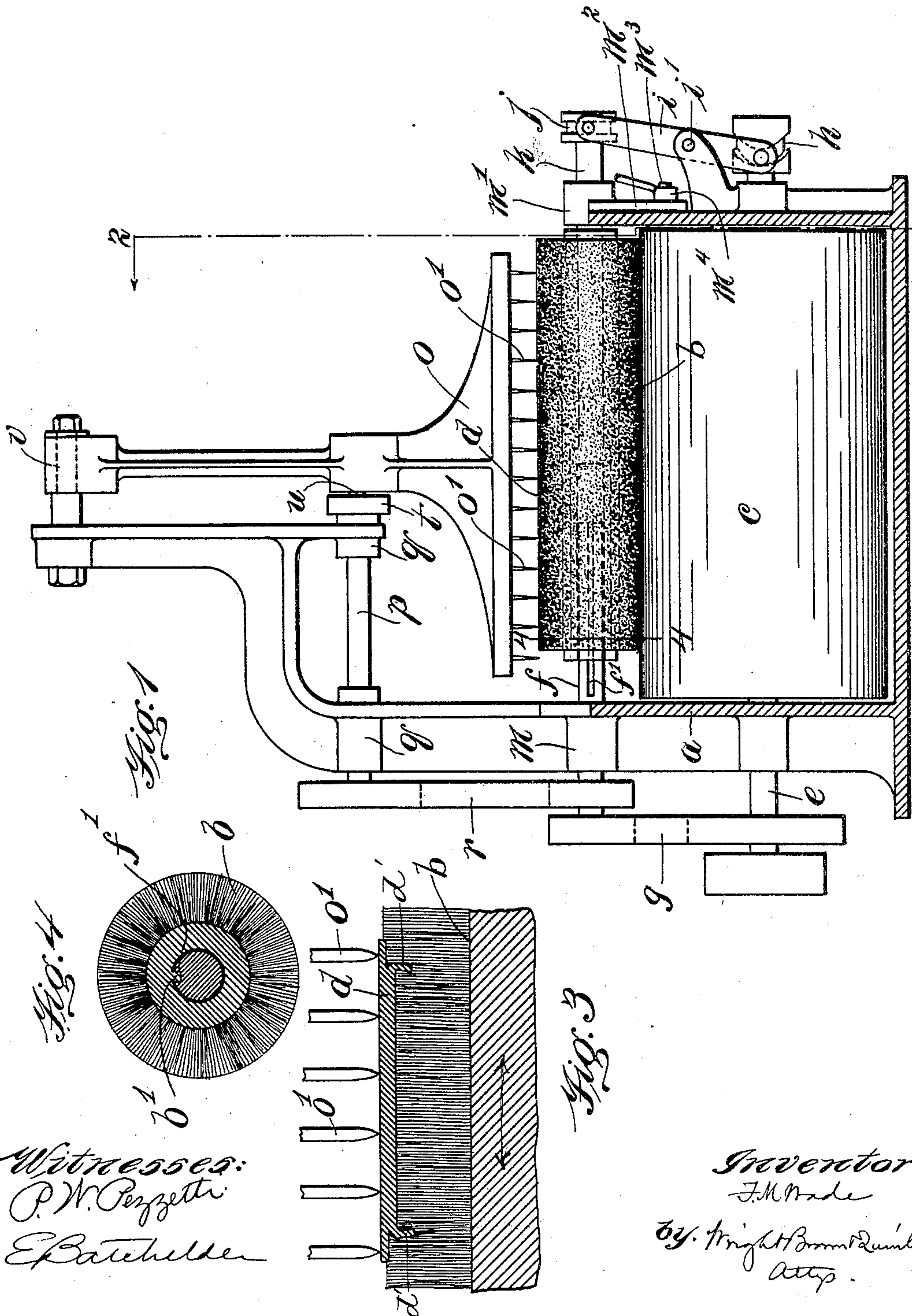
No. 773,607.

PATENTED NOV. 1, 1904.

F. M. WADE.  
CEMENTING MACHINE.  
APPLICATION FILED JAN. 2, 1904

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:  
P. W. Perzetti  
E. Batchelder

Inventor:  
F. M. Wade  
by: Wright, Brown & Quincy  
Atty.

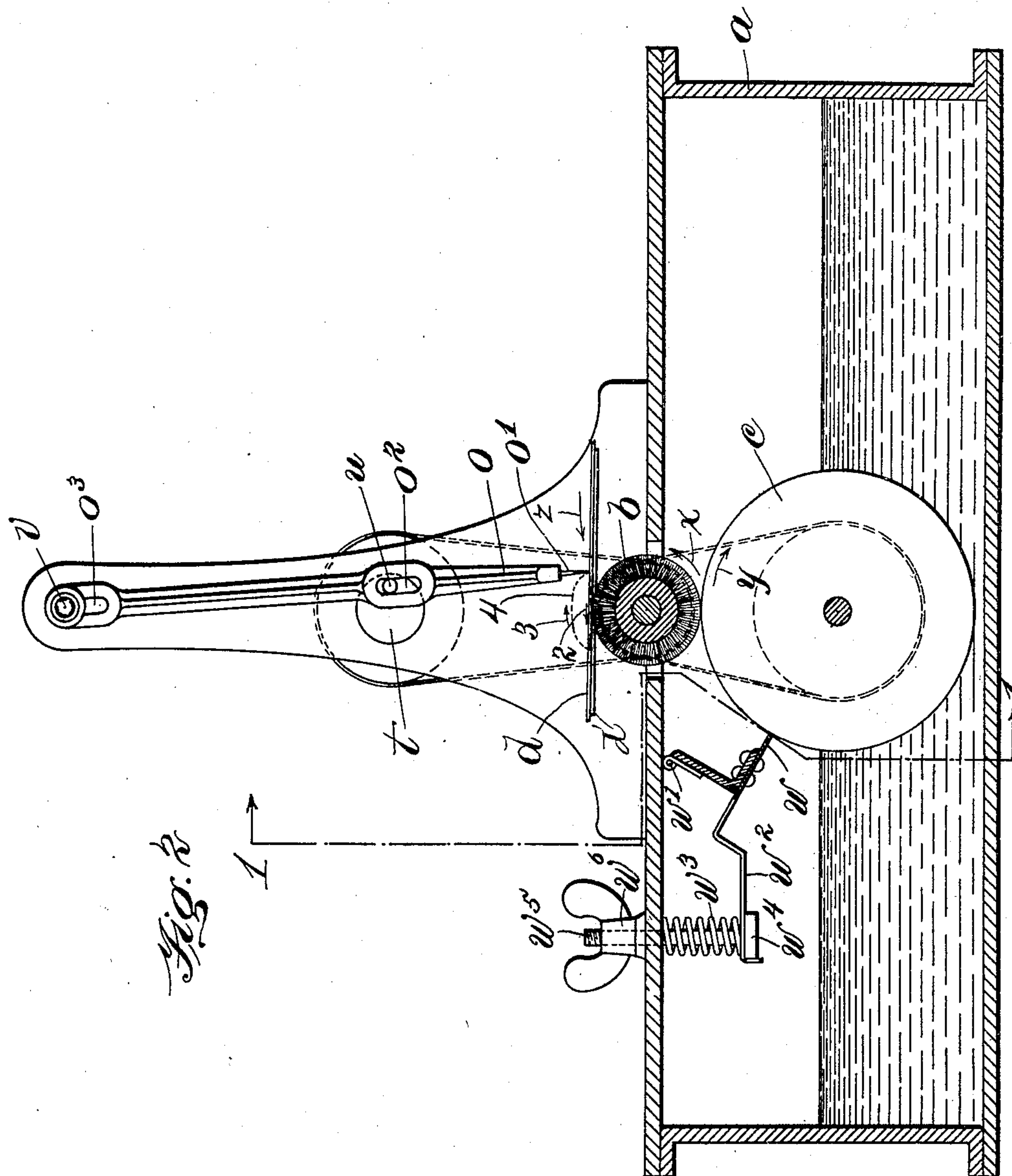
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P. W. Perzeth  
E. Batchelder

Inventor:  
F. M. Wade  
By Wright & Son, Dumbly  
Atty.



# UNITED STATES PATENT OFFICE.

FRED MYRON WADE, OF BROCKTON, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO GEORGE E. KEITH COMPANY, OF CAMPELLO, MASSACHUSETTS, A CORPORATION OF MAINE.

## CEMENTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 773,607, dated November 1, 1904.

Application filed January 2, 1904. Serial No. 187,427. (No model.)

*To all whom it may concern:*

Be it known that I, FRED MYRON WADE, of Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Cementing-Machines, of which the following is a specification.

This invention has for its object to provide a machine adapted to apply liquid cement evenly and thoroughly to surfaces occupying different angles relatively to each other, and particularly to the surfaces presented by a lip turned outwardly from one side of a leather sole, the sides of the lip standing substantially at right angles with the surface of the sole from which it projects.

The invention consists in a cementing-machine comprising a rotary cement-applying brush and means for reciprocating said brush endwise, the rotary movements of the brush causing it to transfer cement from a reservoir to the surface of a sole held against it, while the endwise movements of the brush cause the brush to apply the cement to the sides of the lip which projects outwardly from the side of the sole on which the brush is acting.

The invention also consists in other improvements relating to the guiding and feeding of the sole and to the separation of the brush from the machine to the end that it may be placed in a bath of naphtha or other solvent of the rubber-cement employed in order that it may be freed from the surplus cement, which would otherwise harden upon it.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a transverse section through the cement-tank of a cementing-machine embodying my invention and an end view of the mechanism in which my invention is embodied. Fig. 2 represents a section on line 2 2 of Fig. 1 and an elevation of the parts at the left of said line. Fig. 3 represents an enlargement of a portion of Fig. 1. Fig. 4 represents a section on line 4 4 of Fig. 1.

The same reference characters indicate the same parts in all the figures.

In the drawings, *a* represents a reservoir

adapted to contain liquid cement, and *b* represents a rotary brush, a part of which projects downwardly into the reservoir *a*, while a part projects above the reservoir, the brush being preferably supplied with cement by means of a roll *c*, which is journaled in the reservoir and is partly immersed in the cement, its upper portion being in contact with the lower portion of the brush. The roll *c* and brush *b* are rotated in the directions indicated by the arrows *x y* in Fig. 2. To the brush *b* is imparted an endwise-reciprocating movement which causes it to move crosswise of the lip or flange *d'*, which projects outwardly from one side of a sole *d*. The sole is held in contact with the upper portion of the brush and is moved at right angles with the axis of rotation of the brush and in the direction indicated by the arrow *z* in Fig. 2. It will be seen that the rotation of the brush causes it to raise cement from the roll *c* and apply it to the surface of the sole. The endwise movements of the brush cause the brush material in which the lip *d'* is embedded, as shown in Fig. 3, to press alternately against opposite sides of said lip, and thus thoroughly coat all portions of the lip with the cement.

The means shown in this embodiment of my invention for rotating and reciprocating the brush are as follows: *e* represents a shaft to which the roll *c* is affixed, said shaft being journaled in fixed bearings and rotated by power applied in any suitable way. *f* represents a shaft journaled in a fixed bearing *m* above the shaft *e* and rotated by power imparted from the shaft *e* through a belt *g*, running on pulleys affixed to the shafts *e* and *f*. The shaft *f* is provided with a coupling member *f'*, here shown as a longitudinal groove, with which is slidably engaged a complementary coupling member *b'*, affixed to the brush *b*, the member *b'* being here shown as a key having a sliding fit in the groove *f'*. The shaft *f* therefore imparts rotation to the brush, and the brush is free to move endwise upon the shaft *f* while rotating therewith. *h* represents a cam affixed to the shaft *e*, and *i*



represents a lever fulcrumed at  $i'$  and engaged at one end with the cam  $h$  and at the other end with a grooved collar  $j$ , affixed to a shaft  $k$ , which in turn is affixed to the brush and projects from one end thereof. The shaft  $k$  and the brush are movable endwise together in a fixed bearing  $m'$ . The lever  $i$  is oscillated by the rotation of the cam  $h$  and imparts an endwise-reciprocating movement to the shaft  $k$  and brush  $b$ .

A feeding member is located above the brush and is adapted to guide the sole  $d$  and prevent its edgewise displacement by the endwise movements of the brush and also to impart a progressive feed movement to the sole in a direction at right angles to the axis of rotation of the brush. The feed member, as here shown, comprises a lever  $o$  and a plurality of teeth  $o'$ , affixed to said lever and located over the brush in position to bear on the upper side of the sole  $d$ . The teeth  $o$  are preferably sharp or acute-angled at their lower ends, so that they exert a sufficient hold on the sole to prevent its movement in the direction of the endwise movements of the brush. Means are employed for imparting feeding and return movements to the feed member, the feeding movement being accomplished when the teeth  $o'$  are engaged with the sole and being in the direction indicated by the arrow 2 in Fig. 2, while the return movement is effected when the teeth are raised from the sole and is in the direction indicated by the arrow 3 in Fig. 2. The means here shown for effecting said movements of the feed member comprise a shaft  $p$ , journaled in bearings  $q$ , the shaft being driven by power imparted from the shaft  $f$  through a belt  $r$ , a disk  $t$ , affixed to the shaft  $b$  and having an eccentric wrist-pin  $u$ , said wrist-pin entering a longitudinal slot  $o^2$  in the feed member, and a fixed fulcrum-pin  $v$ , entering a longitudinal slot  $o^3$  in the upper portion of the feed member  $o$ . The slot  $o^2$  is so arranged and proportioned relatively to the path of movement of the wrist-pin  $u$  that said wrist-pin alternately oscillates and raises and lowers the feed member, so that the movement of the lower ends of the pins is on the endless path indicated by the dotted line 4 in Fig. 2. The feed member therefore feeds the work forward step by step in addition to its function, above described, of preventing edgewise displacement of the sole by the endwise movements of the brush.

In operating the machine the operator introduces one end of the sole between the feed member and the brush, holding the opposite end in one hand and grasping the advancing end after it has been projected sufficiently to the rear of the brush. In this way the operator controls the sole until its under surface and the sides of the lip  $d'$  have been thoroughly coated with cement, the sole being withdrawn by the operator after it has passed from the brush.

The brush is preferably removable from the machine, so that when not in use it may be placed in a bath of naphtha or other solvent of the cement employed. This cement usually contains rubber in solution and is therefore of a viscous nature and accumulates and hardens on the brush when the latter is allowed to stand unused. By inserting the brush in a bath of naphtha the accumulations of dry cement are removed and the brush is rendered suitable for use. In the present case I have shown as the provisions for permitting the removal and application of the brush a detachable support  $m^2$  for the bearing  $m'$ , in which the shaft  $k$  is journaled, said support being secured to one side of the reservoir  $a$  by a bolt  $m^3$  and clamping-nut  $m^4$ . By removing the nut  $m^4$  the bearing  $m'$ , shaft  $k$ , and brush  $b$  may be withdrawn endwise from the reservoir and from the driving-shaft  $f$ .

I do not limit myself to the details of mechanism here shown, it being obvious that said details may be variously modified without departing from the spirit of my invention.

In Fig. 2 I show a scraper  $w$ , which bears upon the roll  $c$  and removes the surplus cement therefrom, preventing the brush from being overcharged. The scraper  $w$  is hinged at  $w'$  to the top of the reservoir and has an arm  $w^2$ , which is engaged by a spring  $w^3$  with the head  $w^4$  of a bolt  $w^5$ .  $w^6$  is a nut engaged with the bolt  $w^5$ . By adjusting said nut the pressure of the scraper  $w$  on the roll  $c$  may be varied.

While I have alluded to the member  $b$  as a "brush" and have shown it as comprising bristles radiating from a hub, I do not wish to be understood as limiting myself to a cement-applying member the acting portion of which is composed of bristles. Said member may be of any suitable material and construction which will permit it to conform closely to the shape of the article presented to it and embrace projections and recesses on said article.

I claim—

1. A cementing-machine comprising a cement-applying brush mounted to rotate and move endwise, means for imparting rotary and endwise-reciprocating movement to said brush, and means for preventing edgewise displacement of a sole by the endwise movements of the brush.

2. A cementing-machine comprising a cement-applying brush mounted to rotate and move endwise, means for imparting rotary and endwise-reciprocating movement to said brush, a feeding member having spurs or teeth to engage and prevent the edgewise displacement of a sole, and means for operating said feeding member.

3. A cementing-machine comprising a rotary cement-applying brush, a feeding member having sole-engaging teeth, means for imparting work-feeding and return movements



to the feeding member, and means for imparting endwise-reciprocating movements to said brush.

4. A cementing-machine comprising means  
5 for applying cement to the surface of an article to be treated in a direction at an angle to the normal line of feed of such article, and means for preventing the article from being diverted from said line of feed.
- 10 5. A cementing-machine comprising a cement-applying member and a holding mem-

ber for engaging the article to be treated, one of said members being laterally movable relatively to the other whereby cement will be applied to surfaces occupying different angles 15 relatively to each other.

In testimony whereof I have affixed my signature in presence of two witnesses.

FRED MYRON WADE.

Witnesses:

FRANCIS B. LOWE,

GEORGE FRENCH COLE.