(No Model.)

H. D. STONE.

MACHINE FOR APPLYING CEMENT, &c.

No. 478,031. Patented June 28, 1892.

Fig: 1.

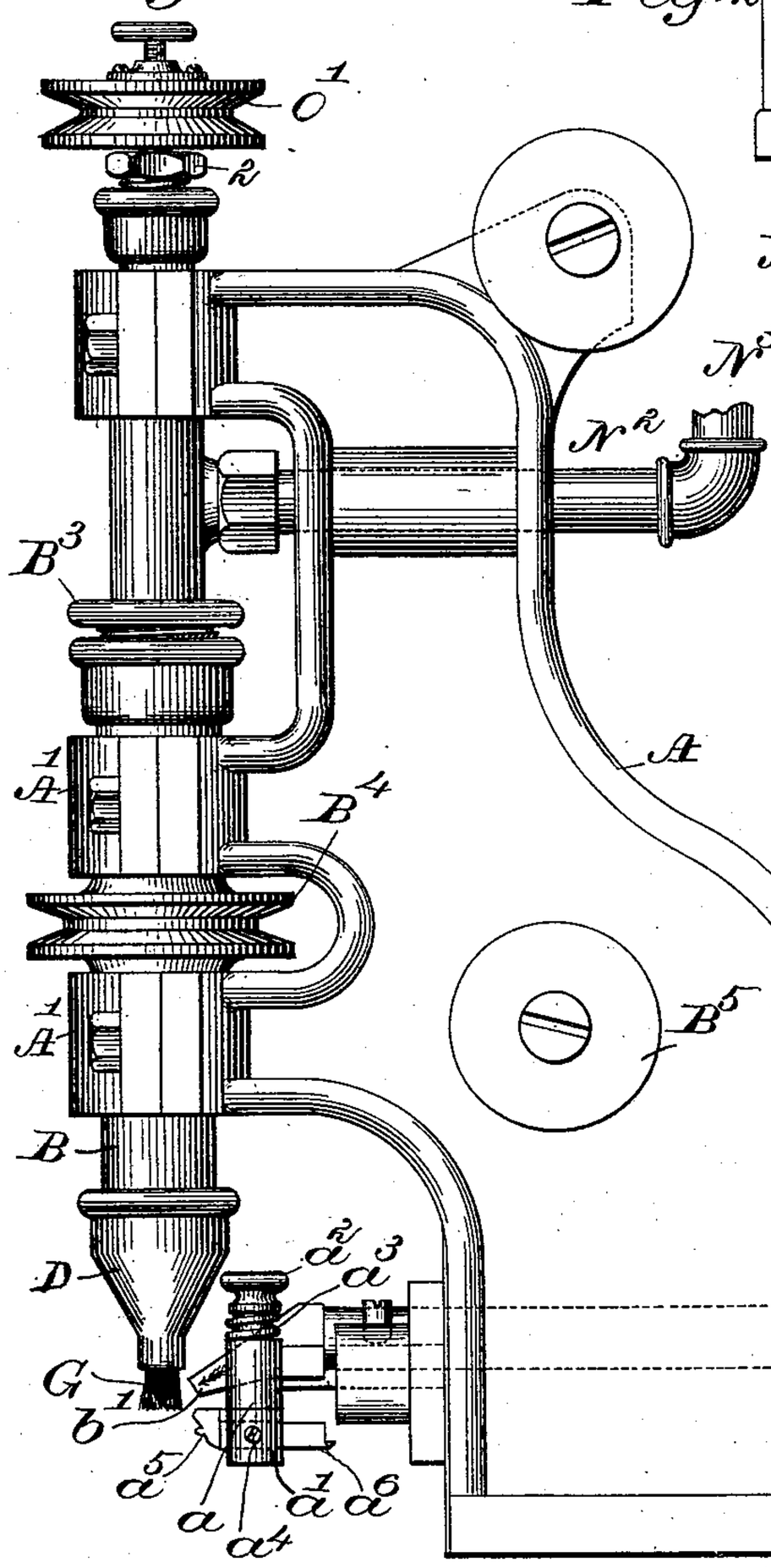


Fig: 2.

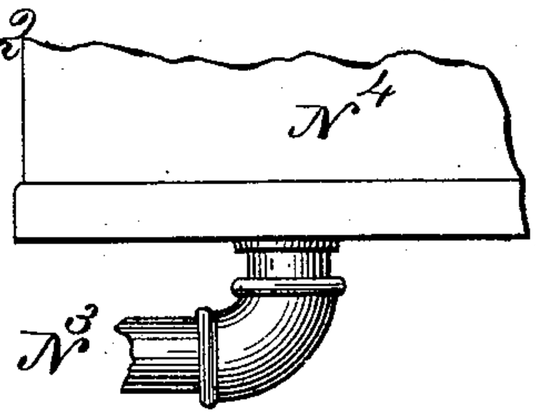


Fig: 3.

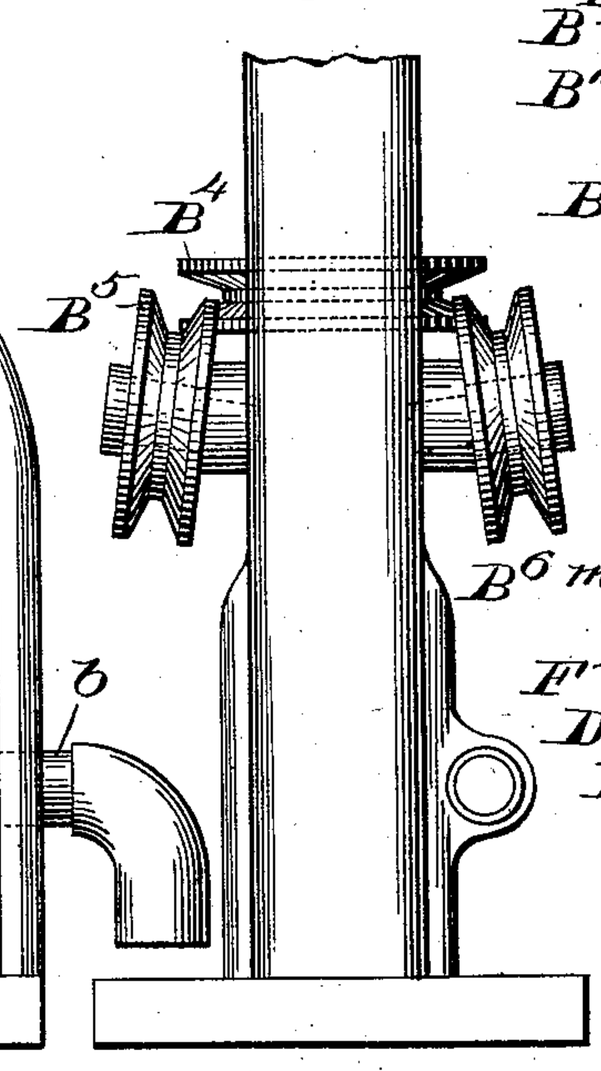


Fig: 4.

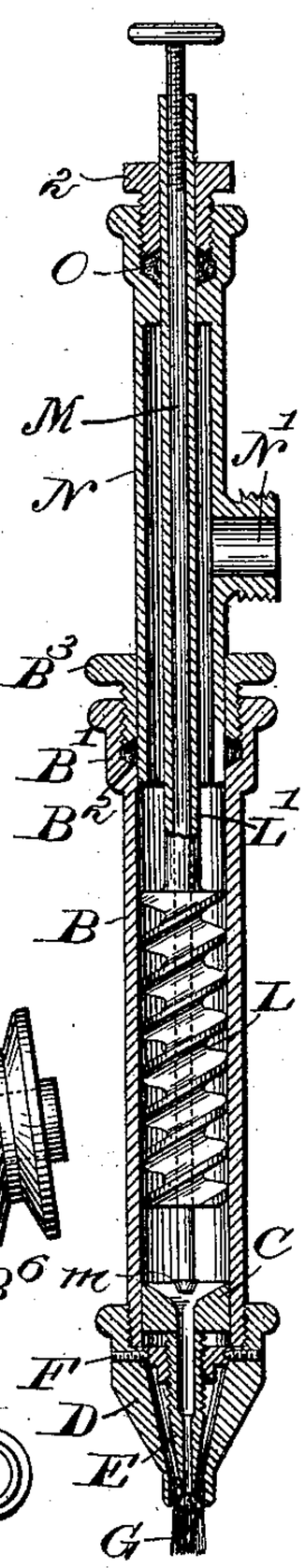
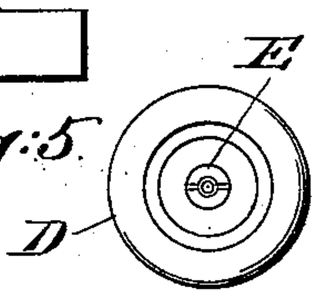


Fig: 5.



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UNITED STATES PATENT OFFICE.

HENRIE D. STONE, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO GEORGE A. WHITE, OF SAME PLACE.

MACHINE FOR APPLYING CEMENT, &c.

SPECIFICATION forming part of Letters Patent No. 478,031, dated June 28, 1892.

Application filed February 8, 1892. Serial No. 420,631. (No model.)

To all whom it may concern:

Be it known that I, HENRIE D. STONE, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Machines for Applying Cement, Paste, &c., of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In the production of boots or shoes and other leather-work wherein stitches are made in a channel, to be thereafter concealed by turning down over the stitches the lip of the channel, it is customary to by hand apply to the channel and to its lip cement or paste of some sort to keep the lip in place over the stitches, or it may be other fastenings, as nails or pegs, whichever may have been used to unite the leather. I have devised an automatic machine for this purpose.

The machine illustrating my invention, as herein embodied, shows a sleeve provided at one end with a hollow nose, a feeding-piston, and a valve to control the passage between the sleeve and nose. Preferably the nose will be terminated with a brush or some equivalent substance by which to apply a liquid cement or paste. For shoe-work the best results are obtained by the employment of india-rubber cement, it containing naphtha; but owing to the dangerous nature of this cement and stringency of insurance underwriters but a small quantity of naphtha cement can be had at any one time or place in the factory. Usually the barrel of cement is kept at a distance from the factory and the operators get a small amount as needed. The naphtha of the cement, if not kept in a closed vessel, quickly volatilizes, and even when kept in small quantities and exposed, as it must be for the operator to get at it with his brush, the use of this naphtha cement is the source of many fires. In accordance with the plan and mechanism proposed by me, the cement-tank may be set at a distance from the factory and its contents can be taken to the machine through a pipe, and the only portion of the cement which is exposed is that on the brush and after the cement is on the shoe.

I have provided the machine with a feeder in the form of a screw, it acting to feed the cement or paste and to force it through the brush.

The machine is also shown as having a gage for the edge of the sole, while the brush applies cement or paste in the channel, and so, also, I have shown an air-pipe by which to conduct air of proper or desired temperature to the work being cemented or pasted.

Figure 1, in side elevation, represents a machine embodying in one form my invention. Fig. 2 represents a portion of the cement-tank, supposed to be removed from the factory if of a dangerous nature; Fig. 3, a partial rear side elevation; Fig. 4, a vertical central section taken through the sleeve and nose and the parts within the sleeve, the upper pulley shown in Fig. 1 being omitted; and Fig. 5 is a top view of the nose and feed-tube E, detached.

The head A, of any suitable shape, has proper bearings for the working parts.

In the form in which I have herein embodied my invention the machine has a hollow sleeve B, provided with a valve-seat C, and at the lower end of the sleeve is a nose D, the inner walls of which will preferably be conical, tapering inwardly toward the lower end of the nose. The nose has within it a conical feed-tube E, held in place by suitable screws F, the bristles constituting the brush G being held in place between the tapering interior of the nose and the tapering exterior of the feed-tube. The nose is shown as screwed upon the lower end of the sleeve, the latter resting in bearings A′ A′ and having at its upper end a ring B′, which receives a suitable packing B^2, acted upon by a gland B^3. In the drawings the sleeve is shown as provided with a pulley B^4, which is adapted to be driven by a belt (not shown) extended from some suitable pulley on a driver-shaft. The sleeve contains, as shown, a feeder represented as a screw-piston L, having a hollow shank L′, through which is extended the valve-rod M, having the valve *m* to co-operate with the seat C, the valve-rod being threaded at its upper end (see Fig. 4) to enable it to be raised or lowered, as desired, to open or more or less close the outlet in the seat, and thus regulate the quantity of material, cement or otherwise, to be forced out of the nose and brush.

The sleeve B surrounds the lower end of the pipe N, having an inlet N′ in communication by suitable pipes N^2 N^3 with a reservoir N^4 for the naphtha or other cement, which may be located at a distance from the building or in some fire-proof apartment. The upper end of the hollow shank of the feeder is extended through a stuffing-box O of usual construction, and above the gland 2 thereof the said shank (see Fig. 1) is provided with a pulley O′, which may be driven by a suitable belt driven from some suitable shaft. (Not shown.)

I have mounted upon the frame of the machine an arm having at its outer end a bearing *a*, in which I have placed the shank of a block *a′*, the upper end of the said shank being screw-threaded and having applied or secured to it a nut, as a^2, a spring a^3 surrounding the shank between the nut and the upper end of the bearing. The lower end of the block is bifurcated and has adjustably connected with it by a suitable screw, as a^4, an edge-gage a^5 a^6, the said edge-gage in this present embodiment of my invention being shown as double-ended, so that either end thereof may be put outermost to contact with the edge of the shoe having the channel in which the liquid cement or paste is to be applied, the opposite ends of the gage being differently shaped to thus better adapt it to different varieties of work.

The frame-work also supports a suitable pipe, as *b*, in communication with a narrow pipe *b′*, the mouth of which terminates near the point where the cement is being applied to the sole or other article. This air-pipe is or will in practice be connected in suitable manner with a fan or blower, (not shown,) which may be of any usual variety.

In the form in which I have shown my invention as embodied in the drawings I have provided for rotating both the sleeve B and the feeder L, and in practice I may rotate either one or both of them, it being possible to obtain excellent results by rotating only the sleeve, for when the sleeve rotates and the feeder stands still it will be obvious that the material contained in the sleeve and surrounding the several blades of the feeder will be made to travel downwardly and be forced out through the valve-opening, provided the valve is lifted. The same result will be obtained by leaving the sleeve at rest and rotating the feeder; but it is preferable to rotate the sleeve, as the brush works somewhat better if it is rotated, while it acts to apply cement or paste or other liquid, whatever may be used in the channel of the sole, or to the leather or other material. Whichever is rotated, the sleeve or the feeder, it will be obvious that the tendency is to produce a vacuum back of the feeder, so as to draw or suck the liquid substance, cement, paste, or whatever may be used from the suitable tank N^4 along through the pipes N^3 N^2 into the pipe N in communication with the sleeve B. While the channel-cement is being applied to the channel the operator will hold the lasted and bottomed shoe in his hands with the edge of the sole against the proper gage, the bottom of the sole or the parts thereof having the channel being held against the brush or substance employed to deliver the cement or paste.

By employing a mechanism substantially such as described for applying naphtha cement the fire-risks are greatly lessened and waste of material is also largely obviated, as only just the amount of material which is necessary to be used is delivered, and that upon the spot where it is required.

By the device described the operator may not only apply cement in the channel, but also to the under side of the lip of the upturned channel.

By adjustment of the valve referred to and timing the speed of rotation of whichever part may be rotated to effect the flow of the material the quantity of material discharged at the brush may be thoroughly controlled, and thus obviate too great a discharge of material, which would exude from the channel when the channel-lip is pressed or rolled down in usual manner.

I desire it to be understood that the machine herein described may be used to apply cement, paste, or other liquid to many different articles in the mechanic arts. So the invention is not to be limited to the use in connection only with channels in shoe-work.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A nose containing a brush, a connected hollow sleeve and a contained auger-like feeder, and means to rotate one of them, whereby the material contained in the sleeve may be forced therefrom through the nose and be delivered by the brush, substantially as described.

2. The hollow sleeve, the nose connected thereto, a valve-seat, and a valve, combined with a feeder having a hollow shank and the valve-rod extended therethrough, to operate substantially as described.

3. A pipe, as N, a suitable tank in communication therewith, a hollow sleeve in communication with said pipe, a movable feeder contained within the sleeve, a nose, a brush attached to the delivery end thereof, and valve carried by the sleeve between said feeder and nose, combined with actuating means whereby the feeder may be moved in said sleeve and made to force the material through the valve and nose and draw the material from the tank into the pipe N, the combination being and operating substantially as described.

4. In a machine for applying cementitious material to leather, a nose containing a brush and means to supply the said nose with cementitious material, combined with a bearing, a shank therein having a bifurcated end, and an edge-gage held in said bifurcated end and

against which the edge of the sole of the shoe may be held while a part thereof is being cemented, substantially as described.

5. In a machine for applying cementitious material to a channel in a sole, a nose containing a brush and means, including an auger-like feeder, to supply the said nose with cementitious material, combined with an edge-gage against which the edge of the sole of the shoe may be held while the channel thereof is being cemented and with an air-pipe having its outlet adjacent to the brush to conduct air to the material being treated at or near the point where the cementitious material is applied to the work, substantially as described.

6. In a machine for cementing channels of boots and shoes, the following instrumentalities, viz: a rotating sleeve containing a valve-seat, a nose, and pipes intermediate the said sleeve, and a source of supply for cementitious material, and an auger-like feeder in said sleeves, and means to rotate the sleeve and brush, to operate substantially as described.

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

HENRIE D. STONE.

Witnesses:

GEO. W. GREGORY,

EDWARD F. ALLEN.