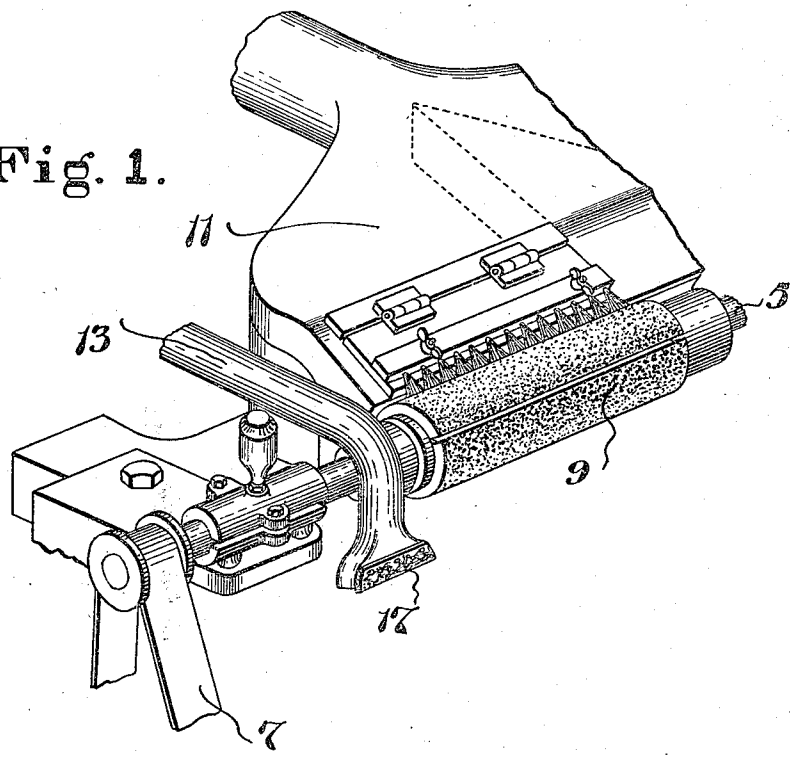
J. CAVANAGH.

METHOD OF AND APPARATUS FOR OPERATING UPON THE BOTTOMS OF BOOTS AND SHOES.

APPLICATION FILED SEPT. 6, 1917.

1,275,221. Patented Aug. 13, 1918.

Fig. 1.



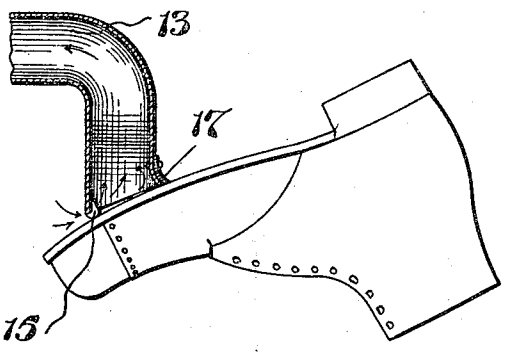
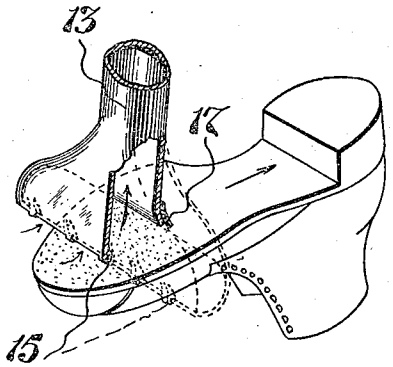


Fig. 2.

Fig. 3.



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METHOD OF AND APPARATUS FOR OPERATING UPON THE BOTTOMS OF BOOTS AND SHOES.

1,275,221. Specification of Letters Patent. Patented Aug. 13, 1918.

Application filed September 6, 1917. Serial No. 190,047.

To all whom it may concern:

Be it known that I, JAMES CAVANAGH, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Methods of and Apparatus for Operating upon the Bottoms of Boots and Shoes, 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 the preparation of the surface of a piece of stock such as the bottom of a boot or shoe to receive stain or other finishing material.

In the manufacture of boots and shoes it is customary to finish the tread surfaces of the soles and heel by buffing them, applying stain or other finishing material to the buffed surfaces, and then polishing the surfaces. The purpose of the buffing operation is to form a fine nap on the tread faces of the sole and heel to prepare them to receive the finishing material, but this purpose is defeated to some extent by the dust which collects in the nap. Rotary brushes have been used in an endeavor to remove this dust but without satisfactory results. It is difficult, if not impossible, to brush the dust out of the nap; and, to be at all effective, the brushing must be done in various directions, a treatment which greatly disturbs the nap and leaves it lying in different directions in different localities, whereas it is desirable that the dust should be removed without disturbing the nap more than is necessary and that, when the stain is applied, the nap should be lying all in one direction.

The object of the present invention is to prepare the surfaces of pieces of stock such, for example, as the bottoms of boots and shoes in a novel and improved manner to receive stain or other finishing material. To this end a nap is first formed on the surface, the nap is then raised so that the dust may be more easily dislodged, the dust is removed while the nap remains raised and then the clean nap is laid smoothly all in one direction. Preferably the nap is formed by presenting the surface to a buffing roll, and the raising of the nap, the removal of the dust and the laying of the nap are accomplished by drawing the buffed shoe across the mouth of a suction conduit one wall of said mouth being constructed and arranged to direct a current of air in a direction to raise the nap and remove the dust, the opposite wall being formed with a wiper which, as the shoe is drawn along, lays the nap uniformly in one direction. The result is a surface substantially free from dust and having a nap laid smoothly in one direction so that the stain, when applied, will produce a uniform shade of color throughout the entire extent of the buffed surface.

Referring now to the accompanying drawings,—

Figure 1 is a perspective of a portion of a machine for operating upon the bottoms of boots and shoes;

Fig. 2 is an elevation, partly in section, showing a shoe presented to the suction conduit, and

Fig. 3 is a perspective, also partly in section, of the shoe and conduit.

Referring first to Fig. 1, there is shown a portion of the head of a buffing machine. A rotary shaft 5 driven by belt 7 carries a buffing roll 9 having a cover of abrasive material to which the bottom of the shoe is presented in order to form a nap thereon. This nap gives to the bottom of the shoe a velvety surface particularly adapted to receive the stain or other finishing material which is usually applied. A dust hood 11 is provided to remove the dust thrown off by the roll, but a considerable amount of dust becomes lodged in the nap. In order to remove this last-named dust from the nap as well as to lay the clean nap uniformly in one direction, a suction conduit 13 is located adjacent to the buffing roll, said conduit being connected to any suitable suction apparatus which conveniently may be the blower (not shown) connected to the outlet of the dust hood 11. The mouth of this conduit is shaped as shown so as to permit the bottom of a shoe to be drawn across it. The rear wall of the mouth is provided with projections 15 so that when a shoe is drawn across said mouth, passages for air beneath the edge of the wall will be provided. The opposite or forward wall of the conduit is constructed to form a substantially tight joint with the bottom of the

shoe. In the illustrative machine this forward wall has fast to it a wiper 17 of felt or similar yielding material which projects slightly below the edge of the metal to which it is fastened.

In the operation of the machine the bottom of the shoe is first presented to the buffing roll to form a nap and is then drawn across the mouth of the suction conduit in the direction indicated by the large arrow in Fig. 3. During this movement of the shoe a current of air—indicated by the small arrows in Figs. 2 and 3—is drawn under the edge of the rear wall of the mouth of the conduit in a direction to raise or lift up the nap, and this current of air passes through the raised nap and serves also to carry away the dust which has become lodged in the nap during the buffing operation. As the shoe is drawn along, this raised and cleaned nap is engaged by the wiper 17 and laid uniformly in one direction.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A method of preparing the surface of a piece of stock to receive finishing material which consists in forming a nap on the surface thereof, raising the nap by force applied in one direction, removing the dust while the nap is raised, and finally laying the nap by force applied in another direction.

2. A method of preparing the surface of a piece of stock to receive finishing material which consists in forming a nap on the surface thereof, progressively raising the nap, by force applied in one direction, progressively removing the dust while the nap is raised, and progressively laying the nap by force applied in a different direction.

3. A method of preparing the surface of a piece of stock to receive finishing material which consists in buffing the stock to form a nap on the surface thereof, directing a current of air upon said surface to raise the nap and at the same time remove the dust generated by the nap-forming operation, and finally laying the nap in a direction counter to that in which it was raised.

4. A machine of the class described, having, in combination, a buffing tool adapted to form a nap on the surface of a piece of work presented to it, and a suction conduit across the mouth of which the buffed surface may be drawn, said conduit being located adjacent to said tool and being constructed and arranged to raise the nap and to remove from it the dust generated by the buffing operation.

5. A machine of the class described, having, in combination, a buffing tool adapted to form a nap on the surface of a piece of work presented to it, and a suction conduit across the mouth of which the buffed surface may be drawn, one wall of the mouth being formed with a passageway to direct the current of air upon the stock to raise the nap and to remove the dust generated by the buffing operation, the opposite wall forming a substantially tight joint with the stock.

6. A machine of the class described, having, in combination, a buffing tool adapted to form a nap on the surface of a piece of work presented to it, a suction conduit across the mouth of which the buffed surface may be drawn, means located on the edge of one wall of said mouth to provide passage for a current of air beneath said edge to raise the nap in one direction and to remove from the raised nap the dust generated by the buffing operation, and yielding means on the opposite wall for preventing passage of air and for laying the nap in the opposite direction.

7. A machine of the class described, having, in combination, a buffing tool adapted to form a nap on the surface of a piece of work presented to it, a suction conduit across the mouth of which the buffed surface may be drawn, said conduit being located adjacent to said tool and being adapted to remove from the raised nap the dust generated by the buffing operation, and means located at the mouth of said conduit for laying the nap after the removal of the dust.

8. A machine of the class described, having, in combination, means for forming a nap on the surface of a piece of work presented to it, and suction means for removing from the nap the dust which becomes lodged in it during the nap forming operation.

9. A method of preparing the surface of a piece of stock to receive finishing material which consists in buffing the surface and then drawing the buffed surface across the mouth of a suction conduit.

In testimony whereof I have signed my name to this specification.

JAMES CAVANAGH.

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