

June 11, 1968

F. DOSKOCIL ETAL

3,387,311

SHOE CLEANING MACHINE

Filed July 21, 1965

2 Sheets-Sheet 1

FIG. 1

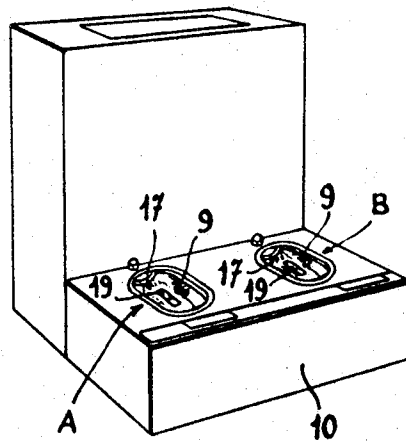
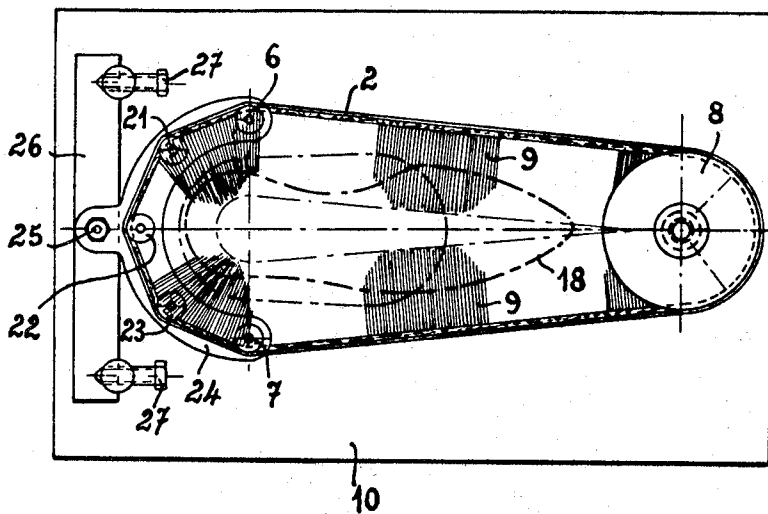


FIG. 4



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FIG. 3

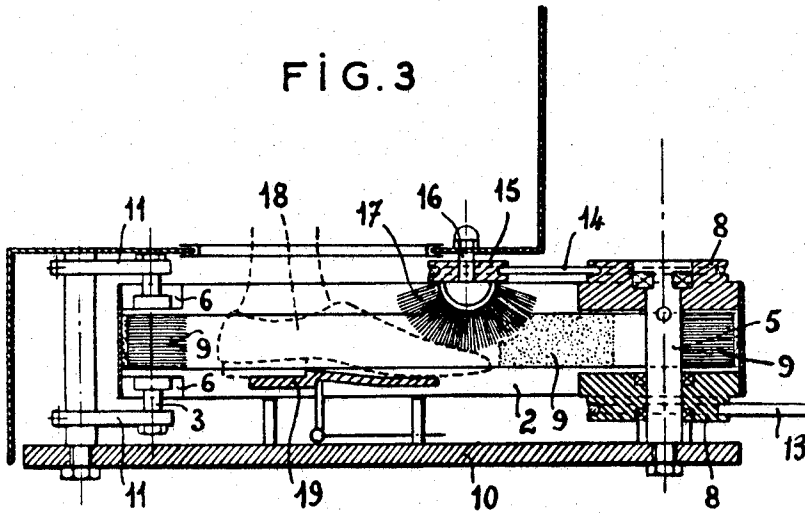
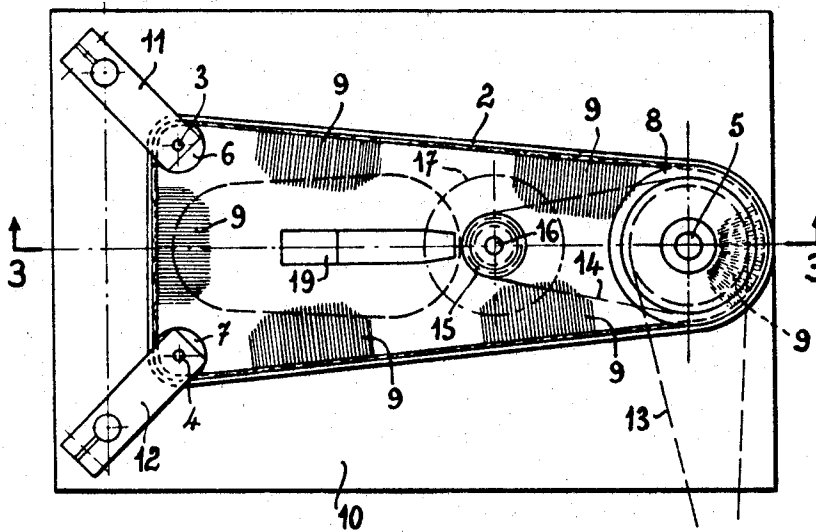


FIG. 2



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SHOE CLEANING MACHINE

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Claims priority, application France, July 24, 1964, 983,041, Patent 1,415,597; July 9, 1965, 46,207, Patent 88,561

5 Claims. (Cl. 15—36)

ABSTRACT OF THE DISCLOSURE

A shoe cleaning machine having a cleaning station constituted by an endless belt having bundles of bristles at the central part of the inner side of the belt, said belt being stretched between rollers with vertical axes associated in pairs and causing the belt to follow a substantially triangular path.

The present invention relates to a shoe-cleaning machine, that is, a machine adapted to dust, polish and shine shoes.

Said machine comprises one or more cleaning stations constituted each by an endless belt, the inner side of which centrally carries evenly spaced bundles of bristles, said belt being stretched between rollers coupled in pairs and having vertical axes, in a manner such that the belt follows a substantially triangular path, that is, a path corresponding to the contour of a shoe, the rollers in each pair being coaxial and spaced from one another by a distance at least equal to the width of the bristle bundles, at least one of said rollers being rotatively driven with a constant speed in one direction or with periodic reversal of the direction of rotation, while a plate, possibly covered with a pad, is disposed below the endless belt to serve as a rest for the shoe to be cleaned.

The spacing of the bristle bundles prevents them from overlapping each other when they pass between rollers of small diameters.

Each bundle of bristles comprises bristles of different lengths in order that the machine may fit various sizes of shoes.

With regard to the polishing operation, which takes place after the dusting stage and before the shining operation, a shoe polish supply system injects polish of a definite color into the bristle bundles on the endless belt.

Obviously, each station is arranged for a definite polish color or for a definite range of colors.

In order properly to clean the top of a shoe, there is also provided a brush in the shape of a portion of a sphere, which brush is disposed in the corner opposite the smaller side of the triangle constituted by the endless belt and hangs from a vertical spindle rotatively driven together with said belt. Said brush, which is disposed above the area adapted to receive the front end of a shoe, ensures thus a very good cleaning of the upper part of said shoe.

The whole machine is covered with a casing including elongated openings above each cleaning station.

The three stages of the complete cycle, to wit, dusting, polishing and shining are advantageously automatic and controlled by one operation only, for instance with a push-button or with a coin.

According to a further embodiment of said machine, the smaller side of the triangle constituted by the endless belt is arcuated by means of one or more pairs of intermediate rollers in order better to fit the outline of the heel of a shoe.

The invention will be clearly understood from the following description and the appended diagrammatic draw-

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ing which illustrates, by way of non-limiting example, two embodiments of the machine of the invention. In said drawing:

FIGURE 1 is perspective view of a first embodiment of a machine according to the invention;

FIGURE 2 is a plan view of the machine of the invention as seen from above, with the casing removed;

FIGURE 3 is a sectional view along line 3—3 of FIGURE 2;

FIGURE 4 is a top plan view, similar to FIGURE 2, of a modified embodiment of the machine of the invention.

FIGURE 1 shows a machine according to the invention including two cleaning stations A and B, that is, one for black shoes and one for light-color shoes.

The whole machine is covered with a casing 1 in which two elongated openings are cut out, which openings give access to the stations A and B.

Each cleaning station includes an endless belt 2, which is stretched along a substantially triangular outline corresponding approximately to that of a shoe by means of rollers having vertical axes 3, 4, 5 and carried by the frame 10 of the machine. Said rollers are coupled in pairs 6, 7, 8 respectively. The rollers in each pair are coaxial and spaced from each other by a certain distance. The endless belt 2 carries centrally on its inner side, a number of evenly spaced bundles of bristles 9. The above-mentioned spacing of the rollers in each pair is slightly greater than the width of a bristle bundle 9, so that the endless belt 2 can be driven into rotation in one direction or in the other without its travel being hampered by the bristle bundle 9.

The pairs of rollers 6 and 7 are carried by brackets 11 and 12 respectively, the position of which is adjustable, said brackets making it possible to stretch the endless belt 2 to a variable extent. The pair of rollers 8 is constituted by two rollers of large diameter each having a groove of trapezoidal section adapted to receive V-belts, 13 and 14 respectively. Through the belt 13 the lower roller of the pair of rollers 8 is driven in a uniform or alternating rotary motion from a motor (not shown in the drawing). Through the belt 14 the upper roller of said pair transmits the rotary motion of its spindle 5 to a pulley 15 keyed to a vertical spindle 16. Said pulley 15 carries a downwardly directed brush 17 in the shape of a portion of a sphere.

As shown in FIGURE 2, when a shoe 18 is laid on the supporting plate 19 disposed below the endless belt 2 and substantially at the center of the triangle formed by the latter, the front end of said shoe 18 comes into contact with the bristles of the brush 17.

FIGURE 4 shows a modification of said machine in which the smaller side of the triangle constituted by the endless belt 2, that is, that side between the pairs of rollers 6 and 7, is arcuated by means of intermediate pairs of rollers such as, in the present example, the three pairs of rollers 21, 22, 23, which are carried, as well as the pairs of rollers 6 and 7, by a single support 24 pivotally mounted at the center of its rear portion on a vertical pin 25 carried by a slide 26 adapted to be shifted by means of a screw 27 on the frame 10 of the machine; this arrangement makes it possible for the endless belt 2 better to fit the shape of the heel of a shoe.

Obviously, the invention is not limited to the sole embodiment of said machine described hereinabove by way of non-limiting example; it covers, on the contrary, all variations thereof falling within the scope of the appended claims.

What we claim is:

1. A shoe cleaning machine comprising at least one cleaning station constituted by a driven endless belt having an inner and an outer surface, bundles of bristles

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evenly spaced on the inner surface of the belt along the central axis thereof, pairs of rollers spatially arranged at the vertices of a triangle and engaging the belt to stretch the same and form a substantially triangular configuration therefor corresponding to the outline of a shoe, the rollers in each pair being coaxial and spaced from each other by a distance at least equal to the width of said bundles of bristles to enable passage of the bundles between the rollers, at least one of said rollers being driven in rotation thereby to drive the belt and a plate disposed below said endless belt for supporting the shoe to be cleaned.

2. A shoe cleaning machine as claimed in claim 1, wherein each bundle of bristles comprises bristles of different lengths.

3. A shoe cleaning machine as claimed in claim 1 comprising a brush in the shape of a portion of a sphere which is positioned in the angle opposite to the smaller side of the triangle constituted by said endless belt, and a vertical spindle supporting said brush and driven in rotation together with said endless belt.

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4. A shoe cleaning machine as claimed in claim 1 further comprising at least one pair of intermediate rollers engaging the belt at the smaller side of the triangular configuration thereof such that the belt conforms to the outline of the heel of a shoe.

5. A shoe cleaning machine as claimed in claim 1 comprising a casing enclosing the machine and having elongated openings at each cleaning station.

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