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METHOD OF PAINTING SHOE BUCKLES

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Fig. 1.

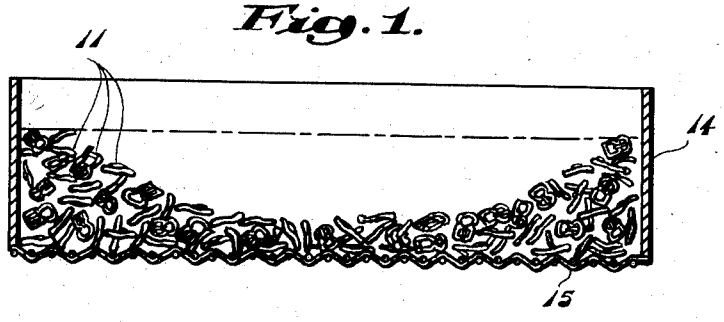


Fig. 2.

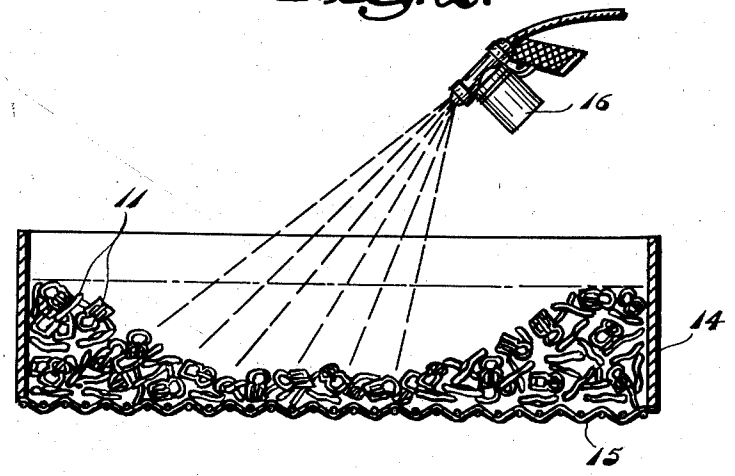


Fig. 4.



Fig. 3.

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METHOD OF PAINTING SHOE BUCKLES

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1 Claim. (Cl. 117—104)

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This invention relates to improvements in methods of painting shoe buckles or other small articles which are to be coated on all surfaces with paint, enamel, or other coating material sprayed thereon.

The principal purpose of the invention is to provide a novel spray-painting method which will ensure that all exposed surfaces of shoe buckles or the like are adequately coated at a minimum expenditure of time and labor.

The conventional method of painting shoe buckles, as heretofore practiced, has involved the arduous and time-consuming labor of placing the buckles by hand on a screen or other support, so that the buckles lie flat and spaced from each other; spraying paint on the uppermost surfaces of the buckles; drying the paint in a heated chamber; then manually turning each of the buckles upside down and lifting the tongue of each buckle; and finally applying a second spray coat to the unpainted surface of the buckles, and drying the second coat. This procedure involves close and precise hand work, requires a long period of time, and limits the quantity of buckles which may be spray coated on a screen of a given size, with the result that the cost of painting shoe buckles has averaged between 35¢ and 40¢ per gross.

The improved method herein disclosed substantially reduces the manual labor and time heretofore required, and permits a gross of buckles to be painted at a cost of not over 6¢ or 7¢. The new method involves the dumping of a pile or mass of shoe buckles onto a support, such as a tray or other receptacle, preferably having a bottom screen of conventional nature, so that the buckles are scattered over the screen in the position in which they happen to fall thereon, without handling by the operator; spraying paint or enamel on the mass of scattered buckles, by directing a spray gun from various angles with respect to the supporting screen, so that all exposed surfaces of the buckles are coated; drying the paint or enamel, preferably in a baking oven, without changing the position of the buckles on the screen; then removing the screen from the oven and agitating or tumbling the partially painted buckles, either by shaking the screen or merely by dumping the mass of buckles into another tray; again spray painting the exposed surfaces of the buckles from various angles, and drying the newly applied coat; and repeating the steps of tumbling or dumping the mass of dried buckles from one tray to another, and repainting the exposed surfaces of the buckles in their

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new positions, until all surfaces of the buckles, including the tongues and rollers, are coated. The number of operations necessary to completely coat all the buckles of the mass will depend upon the size and quantity of the buckles, the size of the tray and the desired thickness of the coating; but for a given quantity of buckles the time expended will be very much less than that required to paint the same quantity by the old method. Furthermore, as aforesaid, a much larger quantity of buckles may be thoroughly painted on a support of a given size, by following the method herein disclosed.

The improved process is diagrammatically illustrated in the accompanying drawings, in which,

Fig. 1 is a sectional view of a screen-bottomed tray upon which a mass of shoe buckles has been scattered;

Fig. 2 is a view similar to Fig. 1, showing the application of paint by a conventional spray gun to the exposed or accessible surfaces of the scattered buckles in the mass;

Fig. 3 illustrates the step of dumping a mass of partially painted buckles from one tray to another tray, whereby the buckles are tumbled and scattered in shifted positions, to expose unpainted surfaces thereof; and

Fig. 4 is a plan view of a coated shoe buckle of a type which may be satisfactorily painted by the improved process.

The painting of shoe buckles of the type shown, for example, in Fig. 4, has been difficult to accomplish satisfactorily, not only because the buckles 11 are of such a form that they present top, bottom and lateral surfaces of small areas, but also because the tongue 12 and roller 13 of the buckles must be coated on all exposed surfaces. Dipping of the buckles in a coating bath is unsatisfactory because the paint lodges in the hinge of the tongue and under the roller, so that the tongue and roller will not move freely. Brush painting is obviously too arduous and time-consuming for quantity output. Spray painting has proved most satisfactory, but the conventional spray painting procedures, as above described, have been laborious, time-consuming and costly.

In accordance with the present invention, a mass of shoe buckles is dumped from a pail or other container into a tray 14 or other receptacle, preferably having a heavy screen 15 constituting its bottom. The screen may be of ¼" mesh, if desired. Other types of supports may obviously be employed in place of the tray herein illustrated. The buckles are in sufficient number to form a relatively thick mass or layer of super-

posed buckles scattered in an overlapping relation on the supporting surface. The layer may be of uniform thickness, or of varying or irregular thickness with more buckles around the margin of the tray, if desired, as shown in Figs. 1 and 2.

All exposed and accessible surfaces of the scattered buckles are coated with a suitable paint or enamel, by a conventional spray gun 16, as indicated in Fig. 2, the spray gun being directed on to the mass of buckles from a variety of points and angles, to coat as much of the surface of as many buckles as feasible in the initial coating step. The partially coated buckles are then dried, preferably by placing the tray 14 in a drying oven, without disturbing the positions of the buckles therein.

After drying of the first paint application, the tray 14 is removed from the oven and the buckles therein are dumped into a second tray 16, preferably having a similar bottom screen 17, as indicated in Fig. 3. Such dumping of the mass will tumble the individual buckles and shift their positions relative to each other; but the buckles may be tumbled or agitated by first shaking the tray 14, if desired. The buckles tumbled into the tray 16 will again be scattered over the screen 17 in a scattered mass, so that many unpainted surfaces will be exposed for a second application of the paint or enamel.

Paint is next sprayed on the buckles in the tray 16 from a variety of angles or positions, as in the first coating operation, and the tray is placed in a drying oven. The operation of dumping or tumbling the buckles from the tray 16 onto another tray (which may be the tray 14), spraying all exposed surfaces, and drying the mass of buckles in the tray, is repeated, as aforesaid, until all portions of all buckles, including the tongues and rollers, have been thoroughly painted, as determined from observation.

It will be appreciated that small portions of some buckles will receive several coats of the spray or enamel, but this factor does not detract from the desired appearance of the painted buckles; for the paint or enamel used is conventionally in a very thin solution. It is only necessary, in the ordinary case, that all surface portions of the buckles receive at least one coat of the paint or enamel.

As previously stated, the practice of the improved method of painting buckles or the like materially reduces the painting cost per gross, even though more spraying and drying operations

are required than in the old and conventional process, because hand manipulation of the individual buckles is entirely eliminated. Although the improved method was devised primarily for the painting of small buckles such as used on shoes and other wearing apparel, it may be practiced to advantage in spray painting other small metal articles, and it will be understood that the term "shoe buckles" as used in the following claims is intended to include analogous metal articles. It will also be understood that the practice of the process is not intended to be limited to the use of the apparatus shown on the drawings to illustrate these steps of the process; for it is apparent that other forms of supports may be employed to receive the mass of buckles, and that mechanical devices may be utilized to convey the supported mass from the spray-coating stage to the drying stage.

We claim:

A method of painting shoe buckles of the roller and hinged tongue type which consists in depositing a mass of buckles onto a screen-like support so that the buckles are scattered over the support in a variety of positions and in irregular relation, spray-painting the exposed surfaces of the buckles by directing the spray from a variety of angles onto the mass of scattered buckles while the buckles are at rest on the support, drying the partially painted buckles without changing the relative positions of the buckles on the support, transferring the dried buckles from said support to a second screen-like support while agitating the buckles so that they are scattered in a new variety of shifted positions and in different irregular relation on the second support, again spray-painting the exposed surfaces of the new mass of scattered buckles while the same are at rest on the second support, drying the buckles on the second support, and repeating the transferring and agitating, spray-painting, and drying steps until all exposed surfaces of the buckles have been coated with paint.

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