May 9, 1944. J. G. BAUMGARTNER 2,348,515

BRUSH

Filed Feb. 25, 1942

Fig. 1.

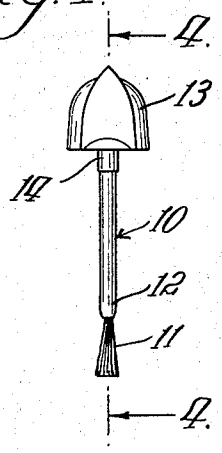


Fig. 2.

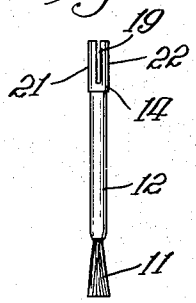


Fig. 3.

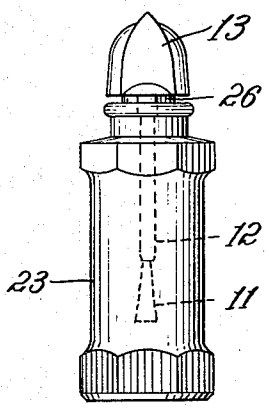


Fig. 4.

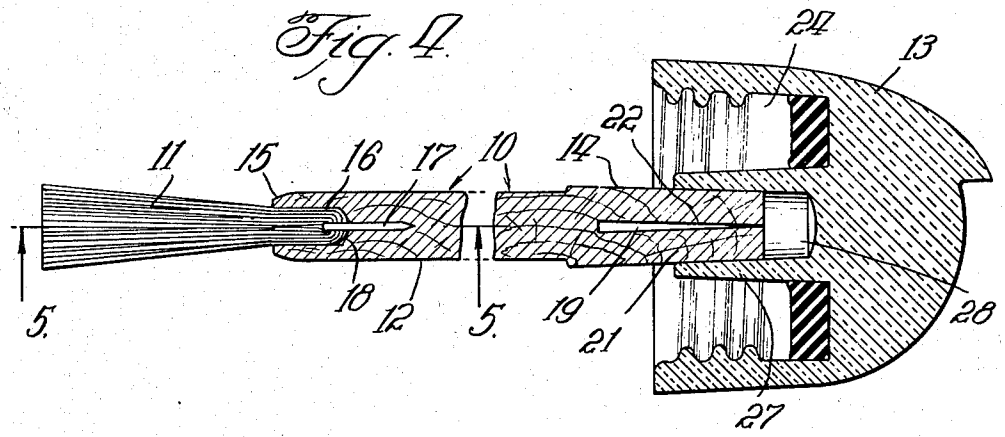
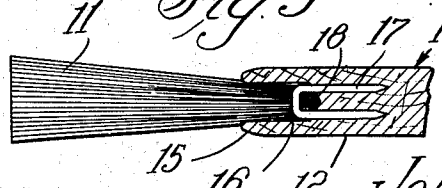


Fig. 5



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BRUSH

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Application February 25, 1942, Serial No. 432,288

4 Claims. (Cl. 15—195)

This invention relates generally to brushes and in particular to a brush adapted for use in applying finger nail liquids, in artists work and the like.

Brushes now commonly used in applying finger nail liquids, paste, glue and the like, and also rather extensively in fine painting work generally include a tubular handle rolled from a flat piece of thin metal. The bristle portion of these brushes is usually inserted within one end of the handle which is pinched or squeezed at such one end to secure the bristles thereto. A finger gripping portion for these brushes, which also serves in many instances as a cap for the container holding the liquid or paint to be applied, is generally provided with a cavity adapted to receive in frictional engagement the other end of the handle. Because of the thin metal used in the construction of the handle, the handle is easily jammed on being inserted within the cavity in the cap or finger gripping portion. As a result the handle often times is incapable of being frictionally engaged with the cap. Cement, therefore, is usually required to accomplish the securing together of the cap and brush handle. It is apparent, of course, that on cracking of the cement the handle and cap are readily separable.

A further disadvantage in these prior art brushes is that the handles are generally made of tin which is readily acted upon by the lacquer commonly used in paints and in finger nail liquids. Attempts to use plastic handles to overcome this objection to metal handles have not been entirely satisfactory because the plastic is also attacked by lacquer.

Also these brushes whether made with plastic or metal handles are relatively expensive to manufacture both because of the materials utilized in their construction and the large amount of hand work required in their assembly.

It is an object of this invention, therefore, to provide an improved brush.

Another object of this invention is to provide an improved brush for applying finger nail liquids.

Yet another object of this invention is to provide an improved brush adapted for detail application of liquids which is simple and rugged in construction, efficient in operation, and comprised of but a relatively few number of parts which are easily machined and assembled with a minimum of hand work so as to appreciably reduce the manufacturing costs of the brush.

A feature of this invention is found in the provision of a finger nail brush having a wooden handle with one end adapted to have bristles secured directly thereto by staple means.

A further feature of this invention is found in the provision of a brush for applying liquids from within a container, which is provided with a wooden handle having a bristle portion secured directly to one end thereof, and having its opposite end constructed for positive frictional engagement with the cap for the container.

Further objects, features, and advantages of this invention will become apparent from the following description when taken in connection with the accompanying drawing in which:

Fig. 1 shows in actual size a complete assembly of the brush of this invention;

Fig. 2 is illustrated similarly to Fig. 1, with the finger gripping portion removed from the brush;

Fig. 3 illustrates the brush of Fig. 1 in assembly relation with a container for the liquid to be applied by the brush;

Fig. 4 is an enlarged longitudinal sectional view as seen along the line 4—4 in Fig. 1; and

Fig. 5 is a fragmentary sectional view taken along the line 5—5 in Fig. 4.

In practicing this invention there is provided a small brush adapted for applying finger nail liquids, or for use in artists work which includes a wooden handle with a diameter of about one-eighth of an inch having a bristle portion at one end and a finger gripping portion at the other end thereof. A brush of this type having a wooden handle has never been available commercially because of the many difficulties encountered in the attempts made to use a wooden handle of such small diameter. However, a wooden handle is very desirable from an operating standpoint because it is impervious to lacquer and the like, and further is much cheaper in cost than the metal and plastic handles in the prior art brushes. The matter of cost is very important in these small brushes because very large quantities of them are used every year. Thus any small saving resulting from an improvement in the making of an individual brush assumes large proportions when considered in terms of quantity production.

Referring to the drawing the brush of this invention is shown in actual size in Fig. 1 and includes a handle 10 with a bristle portion 11 at one end 12 and a finger gripping portion 13 at the other end 14 thereof. Handle 10 is composed of wood and from a consideration of Fig. 1

is seen to be of a diameter on the order of about one-eighth of an inch.

The end 12 of the handle 10 (Figs. 3 and 4) is provided with a cavity 16 extending axially therein to a depth which is at least equal to the diameter of the handle 10. The bristle portion 11 is receivable within the cavity 16 and is secured directly to the handle 10 by a staple 17 straddling the bristle portion 11 and inserted within the cavity 16 for anchoring at the bottom 18 thereof. The staple 17 is located entirely within the handle 10 with the leg portions thereof extended axially of the handle. The bottom 18 of the cavity 16 is of a substantially concave form to accommodate the bristle portion 11 and provide for a more firm holding of the bristle portion by the staple 17. By virtue of the depth of the cavity 16 all of the bristles in the bristle portion 11 are retained or guided by the wall of the cavity so as to extend substantially axially outwardly from the handle end 12 to form a single tuft at such end.

In the use of the brush, on dipping of the bristle portion 11 within the liquid to be applied, the end 12 of the handle 10 is often times also dipped. With an end 12 of straight form the liquid running off the handle 10 accumulates at the end 12 in droplet form, and either dries at such end or drops off the end at a point remote from the point of liquid application. This action of the accumulated liquid is eliminated in the present invention by rounding the outer periphery of the handle 10 at the end 12, as indicated at 15, to provide for a flow of the liquid from the handle to the point of application at the bristle portion 11. The handle end 12 is thus always retained clean and free of any liquid accumulation.

The end 14 of the handle 10 is provided with an axially extending slot 19 dividing the end 14 into portions 21 and 22 for a purpose to be later explained (Figs. 2 and 4).

The finger gripping portion 13, is of a construction such that it may be used as a cap or a cover for a bottle or the like 23 containing the liquid to be applied by the brush. Although the finger gripping portion is illustrated as adapted for use on a bottle for finger nail liquids it is to be understood that the invention is not to be so limited since other types of finger gripping portions may be utilized with the handle 10 and bristle portion 11. It is obvious also that the brush is completely operative without the portion 13. The finger portion 13 is formed with a peripherally threaded bore 24 adapted for threaded engagement with the threaded neck portion 26 of the bottle 23 (Figs. 3 and 4). In concentric arrangement with the bore 24 and extended axially thereof is a projection 27 having an axial cavity 28 therein.

The end 14 of the handle is of a diameter corresponding substantially to the diameter of the cavity 28. As shown in Fig. 4 the cavity 28 is of a tapered form inwardly thereof so that the handle end 14 is readily received at the open end thereof. On insertion of the handle end 14 within the cavity 28 the portions 21 and 22 at such end, by virtue of the slot 19, are adapted to be yieldably moved inwardly toward each other but act to exert a pressure against the wall of the cavity 28 to frictionally engage the handle 10 with the finger portion 13 in fixed relative positions. It is seen, therefore, that the handle 10 is positively secured with the finger portion 13 merely by pressing the handle within the cavity 28. By virtue of the yieldable construction of the handle end 19 a positive frictional engagement is assured over a relatively large tolerance in the corresponding sizes of the diameter of the handle end 19 and the cavity 28. Although the cavity 28 is shown as of tapered form it is to be understood that the cavity 28 may be of straight form with the open end thereof counterbored an amount sufficient to initially receive the handle end 19 for insertion within the cavity. On the continued movement of the handle end 19 within the straight cavity the side portions 21 and 22 will be squeezed together in the manner above described.

From a consideration of the above description and drawing, therefore, it is seen that the invention provides a wooden handle brush for applying finger nail liquids or adapted for use in fine painting work and the like which is rugged in construction and relatively inexpensive in cost. Although the handle is of a relatively small diameter it is completely rigid over its entire length. Since it is not attacked by the lacquer commonly used in finger nail liquids and paints its rigidity is retained over its entire service life. In fact the lacquer tends to preserve the wood so as to prolong its normal service life. The direct connection of a bristle portion at one end of the handle by a staple, and of a finger gripping portion at the other end of the handle in a frictional engagement simplifies and speeds up the assembly of the brush and appreciably reduces the number of manual operations required in such assembly. By virtue of the savings in assembly time and also in the cost of the materials used in the construction of the brush it is capable of being economically produced in large quantities.

Although the invention has been described with reference to a specific embodiment thereof it is to be understood that it is not to be so limited since changes can be made therein which are within the full intended scope of this invention as defined by the appended claims.

I claim:

1. A brush including a wooden handle of relatively small diameter having an axially extending cavity at one end thereof, with the wall of said cavity being straight over its axial length, and said cavity having a diameter equal substantially to twice the thickness of said wall, a bristle portion receivable in said cavity, and a staple inserted entirely within said cavity and anchored in the bottom of said cavity for securing said bristle portion directly to said handle.

2. A brush including a wooden handle having a diameter on the order of one eighth of an inch, said handle having an axially extending cavity centered at one end thereof, said cavity having an axial length equal to substantially the diameter of said wooden handle, with the wall of said cavity being of a straight form over the complete axial length thereof, and said cavity having a diameter equal approximately to double the thickness of said wall, a bristle portion receivable in said cavity, and means anchored in the bottom of said cavity and engaged with said bristle portion to hold the bristle portion in said cavity, with the wall of said cavity supporting said bristle portion for extension outwardly from said one end of the handle in a direction substantially axially of said handle.

3. A brush including a wooden member serving as a handle having at one end a bored cavity with a closed bottom, a thin cylindrical wall defining said bored cavity, with said wall being in-

tegral with said wooden member and having an outside surface of substantially the same contour and size as the adjacent portion of the wooden member, bristles extending into said bored cavity to the bottom thereof, and a staple having legs frictionally secured in said wooden member at the bottom of the bored cavity and securing said bristles, with said thin cylindrical wall supporting said bristles for extension outwardly from said one end of the wooden member in a direction substantially axially thereof.

4. A brush including a wooden member of relatively small diameter having a cylindrical bore in one end extending axially thereof, said wooden member including integral therewith a relatively thin wall of substantially the same thickness over its length and constituting the wall defining the cylindrical bore, bristles extending into said bore, and a staple for securing said bristles to said wooden member straddling said bristles and having legs anchored in the wooden member at the bottom of said cylindrical bore, with the wall of said bore acting to support said bristles so that they extend in a substantially axial direction from the one end of the wooden member.

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