This invention relates to a polish applying shoe brush and more especially to an improved shoe brush having a hollow resilient handle for containing a quantity of liquid shoe polish and the like and including means for feeding the shoe polish out onto the bristles of the brush as required.

The primary object of this invention is to provide a bristled shoe brush for applying polish having a threaded bore therein in which the threaded open end of a resiliently walled tubular member, preferably of polyethylene, may be threadably inserted. The other end of the tubular member is closed and this tubular member acts as a handle and is adapted to contain a quantity of shoe polish to be applied by the brush. The brush having the threaded bore therein is also provided with a tapered bore therein disposed inwardly of the threaded bore and communicating therewith, the tapered wall of which is adapted to engage the open end of the resilient tubular member upon the same being threaded into the brush to compress the same to provide an effective seal.

It is another object of this invention to provide a shoe brush having a resilient handle of the type described and having a threaded bore therein adapted to receive said handle and a tapered bore communicating with said threaded bore for providing an effective seal and said brush also being provided with a plurality of bristles and a plastic distributing channel in the lower free end of said brush extending between some of said bristles and extending to the threaded bore for permitting shoe polish to flow from the tubular member through the plastic distributing channel to the bristles without clogging.

It is another object of this invention to provide a polish applying brush of the type described having a brush member and a resilient handle and said brush member having a threaded bore and a tapered bore for receiving the resilient handle, said brush member having a plurality of bristles and a plastic distributing channel at the lower surface thereof and wherein the bristles are positioned around said plastic distributing channel so as to trap the polish flowing through said channel to distribute the same evenly to said bristles and to prevent polish from flowing off the side edges of the shoe brush.

It is another object of this invention to provide a brush of the type described having a reservoir, the walls of the reservoir being flexible so as to be compressible by an operator to cause fluid disposed within the reservoir to flow through the channel in the brush for distribution by the bristles of the brush, the brush thus formed having a minimum of parts thus resulting in a brush which may be economically produced.

This application is a continuation-in-part of my co-pending application, Shoe Brush With Polish Reservoir, Serial No. 107,793, filed July 2, 1949, now abandoned.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds, when taken in connection with the accompanying drawings, in which—

Figure 1 is a top plan view of the improved shoe brush; 2
Figure 2 is a vertical sectional view taken along the line 2—2 in Figure 1 and illustrating the tapered bored in the brush member and the manner in which it seals the open end of the tubular handle when the same is in closed position; 5
Figure 3 is an enlarged view of the left-hand portion of Figure 2 showing the handle moved to open position and illustrating the manner in which polish is permitted to flow to the bristles; 10
Figure 4 is a view looking along the line 4—4 in Figure 3 particularly illustrating the arrangement of the bristles of the brush for entrapping the polish flowing thereto from the polish distributing channel or groove.

Referring more specifically to the drawings, the numeral 10 denotes a suitable brush head or member having a plurality of bristles 11 embedded therein and projecting from the lower side thereof, the lower surface of the brush head 10 preferably being planar as illustrated. The bristles 11 are arranged as shown in Figure 4 to provide a clear or open area 12 thereto. The bristles 11 are positioned one between each of the bristles in the first row from the area 12 and the third row of the bristles are positioned one between each of the bristles in the second row so that polish flowing to said bristles from the area 12 will be entrapped by said bristles and will not be permitted to flow between the bristles and to escape at the edge of the brush head 10. The polish will thus flow down the bristles 11 for application to shoes and the like.

The brush head 10 has a threaded bore 16 therein disposed at an angle relative to the lower planar surface of the brush head 10 and this threaded bore 16 communicates at its inner end with a tapered bore 17 formed in the brush head 10 in alignment with the threaded bore 16. The diameter of the inner portion of the tapered bore 17 is smaller than the diameter of the threaded bore 16. It will be observed in Figure 3 that the tapered bore 17 extends for only a short distance lengthwise, or a distance somewhat less than the width of one thread of the threaded bore 16.

A tubular handle 20 of pliable or flexible plastic material such as polyethylene and the like is tiedably mounted in the threaded bore 16 of the brush head 10. The left-hand end of the tubular member or handle 20 in Figure 2 is open and is threaded exteriorly with the threading stopping short of the open end and the other or right-hand end is closed. The tubular member 20 is circular in cross-section and is of a type of resilient material which may be squeezed or compressed, which will inherently return to its normal circular cross-sectional shape upon being released for purposes to be later described. The tubular member 20 is also preferably transparent or translucent.

The handle 20 is adapted to contain a supply of liquid component such as liquid shoe polish indicated at 23.

The brush head 10 may be of any desired shape and although it is shown in the drawings as being of a plastic material or synthetic resin, it is understood that there are many other types of material which may be used in forming the brush head 10. The brush head 10 is provided with a polish distributing channel or groove 30 in the lower face thereof which is positioned in the area 12 and has an inclined upper wall 31 disposed in slanting relation or at an angle to the planar lower surface of the head 10 and which extends substantially in alignment with the handle 20. The channel or groove 30 thus formed extends to and communicates with the threaded
bore 16 to form a polish opening 32 between the channel 30 and the threaded bore 16. It will be observed that the polish opening 32 prevents polish clogging up at this point as would be the case if a bore were provided between the threaded bore 16 and the bristles 11. It is also to be noted that the polish opening 32 is positioned at a point adjacent the juncture of the tapered bore 17 with the threaded bore 16. The position of the opening 32 formed by the communication of the channel 30 with the threaded bore 16 is an important feature for proper operation of the invention.

Now in using a brush of this type, the handle 20 may be filled with a liquid component such as shoe polish 23 and when the brush is not in use, the left-hand end of the handle 20 may be turned to cause the free or open end thereof to seat within the tapered bore 17. Since the diameter of the narrow portion of the tapered bore is somewhat smaller than the diameter of the handle 20, the open end of the handle 20 will be compressed by the tapered bore 17 to provide an effective seal to prevent the fluid 23 from escaping from the handle 20. When it is desired to use the brush 10, the handle 20 may be turned in the opposite direction in the threaded bore 16 a very small amount, approximately one-fourth of a turn which is sufficient to move the open edge of the handle 20 out of engagement with the tapered bore 17. Since the polish opening 32 is positioned adjacent the juncture of the tapered bore 17 with the threaded bore 16 this very small amount of protrusion of the handle 20 will permit instantaneous flow of the polish 23 through the polish opening 32 into the groove 30 where it will flow along the surface 31 of the groove 30 into the area 12 and the bristles 11.

It has been found that in making a structure of this type without the tapered bore 17, an effective seal is not provided and this tapered bore 17 and its position relative to the threaded bore 16 and the polish opening 32 is believed to be significant. By the use of the tapered bore 17 a quick and effective seal is provided because the tapered walls of the bore 17 engage the wall of the free end of the tubular handle 20 and cause the same to be compressed inwardly to provide an air tight seal which prevents leakage of the shoe brush so that the same may be carried easily without fear of damage by leaking polish.

It should be noted that the groove 30 is provided for two purposes; namely, to eliminate the necessity of a bore between the threaded bore 16 and the bristles 11 and secondly to provide non-clogging distribution means for channeling the polish from the threaded bore 16 to the bristles 11. The bristles 11 are so arranged as to entrap the polish in the area 12 so that the polish will flow down the bristle and will not flow out and off of the sides of the brush head 10.

In use, it should be noted that since the tubular handle 20 is air tight, it is necessary that the walls of the tubular handle 20 be flexible so that an operator may squeeze the same to thus cause the fluid to be forced out of the opening 32 onto the bristles 11. After the desired amount of shoe polish has been permitted to flow to the bristles 11, the handle 20 may be rotated to close the opening 32 and then the shoe brush may be used in applying the polish to shoes or the like. Obviously, the handle 20 may be rotated to open the polish opening 32 as desired to permit the desired amount of polish to flow to the bristles.

It is preferable that the brush be operated by holding the head slightly downward with the bristles facing upwardly toward the operator. After rotating the handle 20 to uncover the opening 32, the operator may squeeze the handle 20, watching liquid flow into the trapping area 12. When sufficient liquid has accumulated in the area 12, the opening 32 is closed in the manner above described and the brush is turned over to permit the liquid to flow down the bristles toward the ends thereof for application to shoes and the like.

It is thus seen that there is provided a shoe brush having a brush head with bristles therein and a threaded bore therein in which a tubular handle is threadably mounted. The brush head is provided with a tapered bore adapted to engage the end of the threaded bore for effectively holding the same against the tubular member being rotated to its limit within the threaded bore. The brush head is also provided with a channel in the lower face thereof for distributing polish to the bristles, said channel communicating with said threaded bore and forming an opening positioned adjacent the juncture of the threaded bore with the tapered bore. By means of this invention, a shoe brush is provided in which a very small rotation of the handle is required to obtain flow of fluid to the bristles and in which an equally small rotation of the handle in the opposite direction will immediately shut off the flow of fluid and give an effective air tight seal. This is advantageous because if the handle had to be turned very far in order to permit the fluid to flow to the bristles the handle would then be loose relative to the brush head and the brush would be unable to effectively apply polishing to shoes or the like with a wobbly or loose handle.

In the drawings and specification, there has been set forth a preferred embodiment of the invention and although specific terms are employed, they are used in a generic and descriptive sense only and not for purposes of limitation, the scope of the invention being defined in the claims.

I claim:

1. In a brush having a brush head provided with side walls and a planar bottom wall and having bristles projecting from the planar bottom wall and having a removable handle member for containing a fluid, the combination of said brush head having a cylindrical threaded bore therein opening at one side wall and extending at an angle to the bottom wall and terminating short of said bottom wall, said handle being tubular and compressible and having an exteriorly threaded open end adapted to be screwed into said threaded bore, said brush head also having a tapered bore therein aligned with and forming a continuation of the inner end of the threaded bore and being of substantially smaller length than the threaded bore, said handle having a portion on the open end of the threaded portion which is free of threading and having a diameter substantially the same as but not exceeding the diameter of the tapered bore at the juncture of said tapered bore and said threaded bore, said tapered bore being adapted to engage the free end of said tubular handle for compressing the same to provide an effective seal upon the tubular member being threadably inserted in the threaded bore and tightened therein, said brush head having a channel therein opening at the planar bottom wall, the innermost wall of the channel being inclined, a portion of said channel communicating with the inner end of the threaded bore at the juncture of the inner end of the threaded bore with the tapered bore, whereby, upon said tubular handle being loosened in said threaded bore, said handle end will be moved to a position to uncover the channel, fluid in said tubular member may flow into said channel to be distributed by said channel to the brush of said brush and upon said handle being tightened in the threaded bore the open end of the handle will wedge against the tapered bore and close the channel to prevent further fluid from being discharged through said channel.

2. An improvement in a brush having a brush head, said brush head including side walls, a planar bottom wall provided with bristles and a removable reservoir handle member for containing a liquid, said improvement comprising said brush head having a threaded cylindrical bore therein of substantially the same diameter as
the reservoir handle, said threaded bore opening at one side wall and terminating short of the other side wall and the bottom wall, said handle being tubular and having a flexible threaded open end adapted to seat in said threaded bore, said brush head having a tapered bore therein aligned with and forming a continuation of the inner end of the threaded bore and being of substantially smaller length than the threaded bore, said reservoir handle having a portion on the open end of the threaded portion which is free of threading and having a diameter substantially the same as but not exceeding the diameter of the tapered bore at the junction of said tapered bore and the threaded bore, the narrowmost portion of said tapered bore being of less diameter than the diameter of the open end of said reservoir handle, said tapered bore being adapted to engage the free open end of said reservoir handle for compressing the same to provide an effective seal upon the handle being threadably inserted and tightened in the threaded bore, said brush head having a channel therein opening at the planar bottom wall, said channel extending to said threaded bore and forming an opening in the side wall thereof at its junction with the tapered bore, whereby, upon said handle being unscrewed in said threaded bore its open end will be moved to a position to uncover the opening so that fluid in said tubular member may flow through said opening to be distributed by said channel to the bristles of said brush head and upon said handle being screwed home in the threaded bore, an effective seal will be provided to prevent further liquid from being discharged to the bristles of the brush.

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