

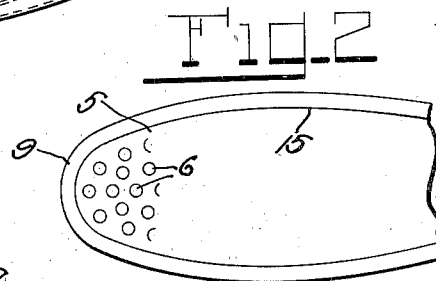
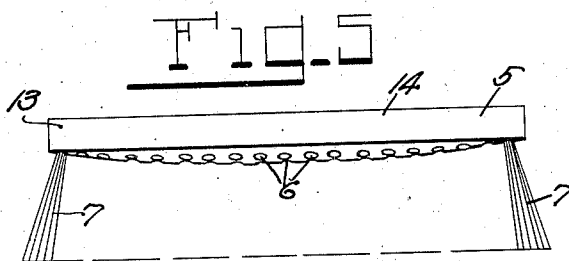
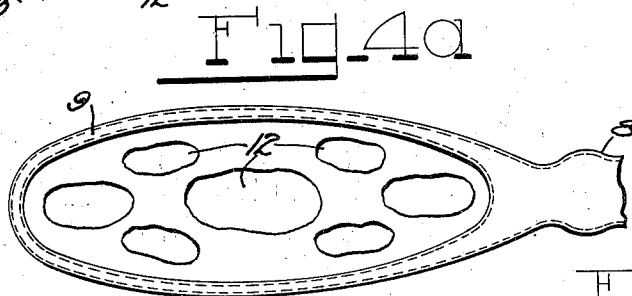
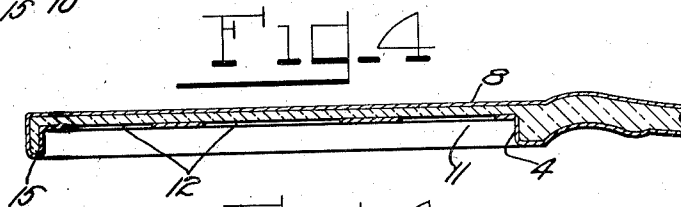
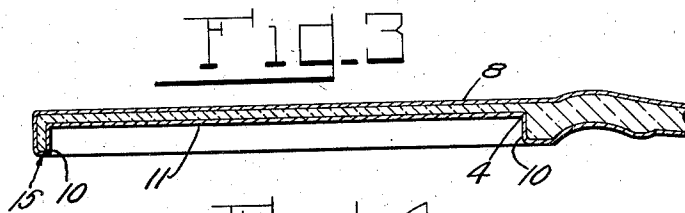
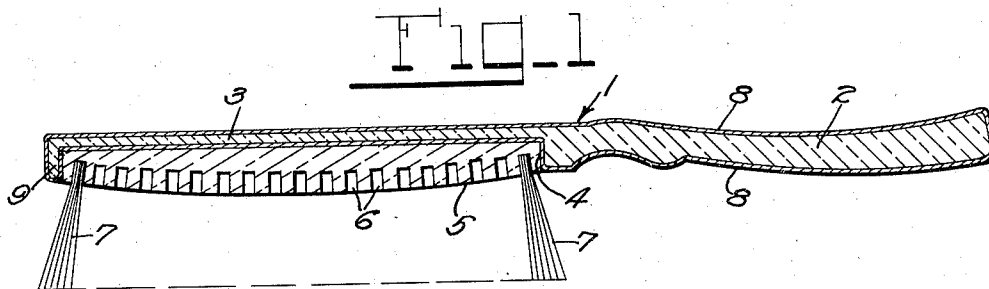
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METAL-PLATED PLASTIC BRUSH

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METAL-PLATED PLASTIC BRUSH

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2 Claims. (Cl. 15-159)

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This invention relates to improvements in brushes and to a method of making them. Heretofore attempts have been made to make toilet brushes with plastic backs and handles completely plated with metal to give the appearance of an all-metal brush. Notwithstanding the fact that it is possible by metal plating the plastic to produce a brush which has the appearance of having a solid metal back and handle, for instance, of silver or gold, such brushes have not proved satisfactory in use for several reasons. First: drilling the holes in the metal coated plastic and setting the bristles therein apparently expands the plastic material slightly so that the metal coating becomes separated from the plastic in the vicinity of the holes. The edge of the metal coating near the holes is also sharp and rough and tends to cut the bristles. When the brush is used, furthermore, water works between the metal coating and the plastic and tends to cause separation; possibly also differential expansion of the metal and the plastic tends to contribute to the same result. Attempts have been made to overcome these difficulties by masking the portion of the brush where the holes are drilled, but such masking produces rough and uneven edges which are hard to trim, and the method is not suitable for large scale production at moderate cost.

In accordance with my invention, I make a back and handle portion of plastic material such (for example) as polystyrene. In the underside of the head or back, I form a seat or socket large enough to hold a separately formed bristle block. This socket may easily be formed in the back at the time of making the back and handle. Preferably, the walls of the socket are thin and somewhat resilient. I make a separate block shaped to fit the socket in the back and drill bristle holes in the block. The block may be made of wood, plastic or other suitable materials, but I prefer to use plastic materials, as there are particular advantages in using plastic bristle blocks. The bristles may be secured in the holes of the block in any well known manner. I coat or plate the brush back and handle with metal so that all of the exterior surfaces are covered and at least the part of the inside wall of the socket near the edge. The metal coating may, if desired, completely cover the inside walls of the socket and also the bottom of the socket, but I prefer to leave some parts of the socket uncovered. In my preferred form, I leave several uncoated areas or bare spots for the purpose hereinafter explained.

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The bristle block is not plated. It is fitted into the socket so that the sides of the block fit closely against the walls of the socket, resting against the metal coating on the inside walls of the socket near the outer edge or margin. The bristle block may be secured to the brush back in the following manner: When the bottom of the socket is completely metal coated, I first place on the metal coated surface a polyvinyl acetate base cement, and place on the top surface of the uncoated bristle block a type of cement that is suitable for the material of which the block is made. For example, if the bristle block is made of methacrylate resin, I use a methacrylate cement on the block. When uncoated patches are left in the bottom of the socket, as in my preferred form, I use a suitable plastic bonding material which, when the block is pressed against the bottom of the socket, serves to hold the uncoated block to the unplated bonding areas of the back. If the block and back are made of plastic materials such, for example, as methacrylate resin, a corresponding plastic cement such as methacrylate cement, is used for the purpose. Thus when corresponding plastics and plastic cements are used, the brush back and bristle block may be fused or bonded to each other so as to become integral at the bonding areas.

When the bristle block is secured in place in the socket, the metal plating, so far as can be seen from the outside, terminates in a smooth, rounded, surface which forms a rim around the uncoated plastic block. In other words, an intermediate portion of the coating as actually applied to the brush body serves as the end portion or margin between the coated and uncoated parts of the completed brush as it appears externally.

The nature of my invention will best be understood from the following description with reference to the accompanying drawing, in which:

Fig. 1 is a longitudinal section of a brush embodying the invention;

Fig. 2 is a fragmentary bottom plan view showing a part of the brush;

Fig. 3 is a detail view in longitudinal section of the brush back shown in Fig. 1;

Fig. 4 is a view similar to Fig. 3 showing a different form of plating from that employed in Fig. 3;

Fig. 4a is a bottom plan view of the brush back shown in Fig. 4; and

Fig. 5 is a view in side elevation of a bristle block.

The brush shown has an integrally formed part generally indicated at 1 which comprises

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a handle 2 and a head 3. A recess 4 is formed in the under side of the head. A separately formed bristle block 5 is adapted to be secured in the recess 4. The block has bristle holes 6 in which bristle tufts 7 are secured by cementing or stapling. Before the bristle block is secured in place, the part 1 is provided with a metal coat 8 which covers all of the exposed surfaces and also covers at least a part of the inside surface of the thin wall or lip 9 surrounding the recess 4. The marginal portion of the wall of the recess which must be covered by the metal coating is indicated generally at 10 in Fig. 3. The seat 11 of the socket or recess 4 may likewise be metal coated, but I prefer to leave at least some part of the interior of the socket uncovered, as illustrated, for example, by the irregular patches 12 shown in Figs. 4 and 4a. These uncoated patches serve as bonding areas. When the bristle block 5 is secured in the recess 4, the side walls 13 of the block fit closely against the metal coating 8 on the inside surfaces of the walls of the socket 4, at least in the marginal portions indicated at 10. The top or upper surface 14 of the bristle block is secured to the brush back by cementing it either to the metal plated socket shown in Fig. 3 or by forming an integral bond with the uncoated patches 12 shown in Figs. 4 and 4a. In this preferred form, I employ a plastic block and back and use a corresponding type of plastic cement. The block is pressed firmly into the socket so that the cement covering the bonding areas serves to fuse the plastic materials of the block and back. The block and back may be heated to facilitate bonding if the bristles are added later.

The metal coating applied to the brush back does not terminate at the line where the rim of the walls of the recess 4 and the side walls 13 of the bristle block meet. As explained above, the coating extends at least into the area designated at 10 in Fig. 3 and may possibly extend throughout the recess. However, the completed brush as viewed externally shows a smooth unbroken line where the coating ostensibly ends in the juncture between the rim of the socket

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and the edges of the bristle block. Thus the end of the metal coating, as viewed externally, has a smooth rounded surface as indicated at 15. The brush structure and method of making it which I have described thus avoids the use of masks and also makes it possible to avoid drilling holes through the metal coating with consequent injury to the coating itself and to the bristles when they are set in place.

I claim:

1. In a toilet brush, in combination, a unitary handle and back portion of a moldable plastic material plated with a metallic coat and having a recess formed in the underside of the back portion with relatively thin walls, the inside portion of said walls also being plated, and a bristle block adapted to be held in the recess, the sides of the block hiding the metal plated inner walls of the recess except for a smooth rounded portion thereof at the outer edge so that externally the metal plating of the completed brush appears to terminate in said smooth rounded margin.

2. In a toilet brush, in combination, a plastic brush back having a socket formed in the face thereof, an adherent metallic coating covering the back and the part of the socket adjacent the face of the brush back, and an uncoated bristle-block fitted into the socket so that it covers the coating in the socket but leaves exposed an intermediate portion of the coating on the face of the brush back which in the completed brush appears to be the end of the plated portion.

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