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S. M. SHULMAN

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PAINT BRUSH

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FIG. 2

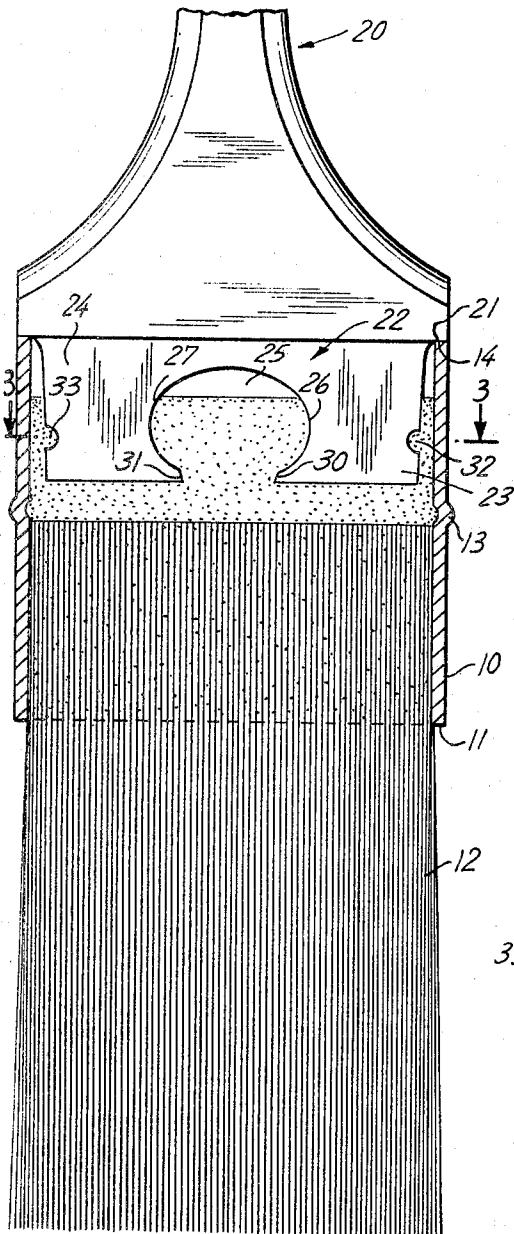


FIG. 1

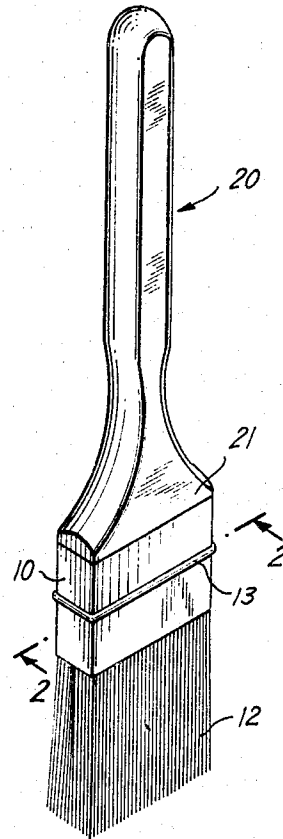
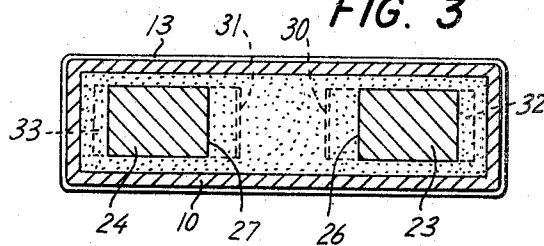


FIG. 3



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PAINT BRUSH

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1 Claim. (Cl. 15—193)

This invention relates to a paint brush, and more particularly to an improved paint brush of the type wherein the handle portion is cemented within a ferrule by a block of cement which also serves to maintain a bristle knot in the ferrule.

Still more particularly, this invention relates to an improved brush construction of the type described wherein the handle is positively and permanently bonded within the ferrule.

In certain structures heretofore known, there has been employed the concept of supporting a knot of bristles within the lower opening of the ferrule, disposing a layer of self-curing cement above the bristles and inserting in the upper opening of the ferrule, a handle, the lower terminal edges of which are immersed in the pool of liquid cement. In such structures, the cured cement maintains both the bristles and the handle against removal.

Such known cemented brush structures have required the use of handles molded to fit within the ferrule. In one form, the lower portions of the handle must be molded within precise limits of tolerance to define small clearance spaces between the outer wall of the handle and the inner wall of the ferrule, to achieve the desired binding force. Other forms make use of the deformability of plastic to provide firm anchorage of the handle.

The use of wood handles in a brush wherein the components are held together solely by cement has been attempted but has heretofore proved unsuccessful on a commercial basis. Such wooden handles cannot, of course, be formed consistently to the dimensional tolerances with which plastic can be molded, and cannot be deformed to any significant degree, and hence have been, to assure firm anchorage, provided with overhanging shoulders and the like.

The failure of such wood handled, cement united structures has been occasioned by cracking or splitting off of portions of the handle immersed within the cement.

The present invention relates to an improved brush structure of the cement united type, employing a wooden handle wherein a novel configuration of the handle, particularly at the lower terminal portions thereof, enables the production of a satisfactory brush of the cement united type having a wooden handle.

Accordingly, it is an object of the invention to provide an improved brush structure wherein a bristle knot and a wooden handle are permanently supported in a ferrule by a block of cured cement disposed within the ferrule and interposed between the bristles and the lower portion of the brush handle.

A further object of the invention is the provision of a cement united brush having a handle of novel configuration whereby the tendency of the handle to crack and split loose, and thereby become disengaged from the brush structure, is substantially overcome, permitting the use of a wooden handle whereas in prior devices a plastic handle was required.

To attain these objects and such further objects as may appear herein or be hereinafter pointed out, reference is made to the accompanying drawings, forming a part hereof, in which:

FIGURE 1 is a perspective view of a brush in accordance with the invention;

FIGURE 2 is a magnified vertical section taken on the line 2—2 of FIGURE 1;

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FIGURE 3 is a horizontal section taken on the line 3—3 of FIGURE 2.

In accordance with the invention, there is provided a ferrule 10 of hollow tubular configuration, the ferrule being preferably formed of thin gauge metal or the like. In the lower end 11 of the ferrule 10 there is disposed a knot of bristles 12 which initially may be supported within the end of the ferrule by a wedge member (not shown). Optionally but preferably, a circumferential bulge or groove 13 may be formed about the ferrule to augment the anchorage afforded by the cured cement.

A handle 20, which is preferably fabricated of wood, includes a downwardly directed shoulder 21 which serves, upon insertion into the ferrule, to abut the upper edge 14 of the ferrule 10, thereby to limit the depthwise penetration of the handle when it is inserted into the ferrule. The handle, in the area below the shoulder 21, includes a lower anchoring portion 22 of generally U-shaped configuration, with the leg portions 23, 24 being downwardly directed. The leg portions 23, 24, as best seen in FIGURE 3, may be of any desired widthwise distance, the preferred distance being such as to provide a considerable clearance area between the portions and the ferrule, to permit a free circulation of cement in these areas.

Between the leg portions 23, 24 there is defined a central aperture 25 having the configuration of a downwardly directed C. It has been determined that by forming the side defining portions 26, 27 of the aperture in the form of smooth, downwardly and inwardly directed curves, increased anchorage is attained without fear of the lowermost portion or portions cracking or splitting and thus breaking away from the remainder of the handle, thereby to leave the structure susceptible to being separated by an outwardly directed force applied parallel to the axis of the ferrule.

The lowermost ends 30, 31 of the legs 23, 24, respectively, form the closest points of approach of the area defining aperture 25, it being understood that said aperture, by reason of the proximity of the portions 30, 31, defines a non-reentrant angle.

Optionally but preferably, the legs 23, 24 are provided additionally with transversely extending grooves 32, 33, further to augment the anchoring force and to improve circulation of the liquid cement.

The device is assembled by disposing a quantity of liquid self-curing cement, preferably epoxy cement, directly above the bristle knot 12 which has previously been disposed in the lower end 11 of the ferrule. The quantity of cement is metered so that the amount displaced upon insertion of the lower portion 22 of the handle 20 will not be sufficient to overflow the ferrule and thus leak over the upper edge 14 thereof. The handle is inserted until the shoulder 21 abuts upper edge 14 of the ferrule, whereupon the cement is permitted to cure with the parts supported in the aforesaid united condition. When the cement is hardened, the brush is ready for use.

It has been determined that the curved configuration of the central aperture 25 adjacent the points of closest approach 30, 31 contributes significantly to the ability of the handle to resist an outward force exerted in a direction which tends to separate the handle from the ferrule.

Unobviously and unexpectedly, the provision of a curved non-reentrant aperture greatly increases the force required to fracture the aforementioned portions of the brush handle structure.

While the grooves 32, 33 formed in the outer sides of the handle contribute to the anchoring of the handle, the primary anchoring forces are those which result from the disposition of the hardened cement within the C-shaped, downwardly open aperture above set forth.

Having thus described the invention and illustrated its

use, what is claimed as new and is desired to be secured by Letters Patent is:

A paint brush construction comprising a tubular ferrule, a knot of bristles inserted part way into said ferrule substantially to seal one end of said ferrule, a hardened mass of cured, resinous cement disposed atop said bristle knot in firm adhesive connection with portions of said ferrule, and an integral handle including a gripping portion extending outwardly of said ferrule, a shoulder portion abutting the upper edge of said ferrule and a retention portion disposed in said ferrule, said retention portion having a lower portion disposed beneath the level of resinous composition in said ferrule, said lower portion being of a generally U shaped structure with the downwardly directed leg portions of said structure defining therebetween an opening of the general shape of a downwardly directed C, the walls of said opening sloping gradually arcuately upwardly and transversely outwardly away from the center line of said ferrule, and outwardly opening grooves of substantial depth formed on the outer side edges of said leg portions, said grooves having inclined wall portions formed on the outer side edges

of said leg portions, said lower portion of said handle being disposed beneath the surface of said cement to a depth whereat said cement covers said grooves completely and substantial parts of said leg portions are disposed beneath the surface of said cement, all upwardly facing parts of said handle beneath said surface being curvingly inclined with respect to the surface of said cement.

References Cited by the Examiner

UNITED STATES PATENTS

247,247	9/1881	Gruber	15—192 X
3,153,801	10/1964	Weiss et al.	15—193
3,192,549	7/1965	Weiss et al.	15—192

FOREIGN PATENTS

1,211,201	10/1959	France.
1,130,790	6/1962	Germany.
852,199	10/1960	Great Britain.

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