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A. L. SALTZMAN

2,274,002

PAINT BRUSH

Filed March 21, 1940

FIG. 1.

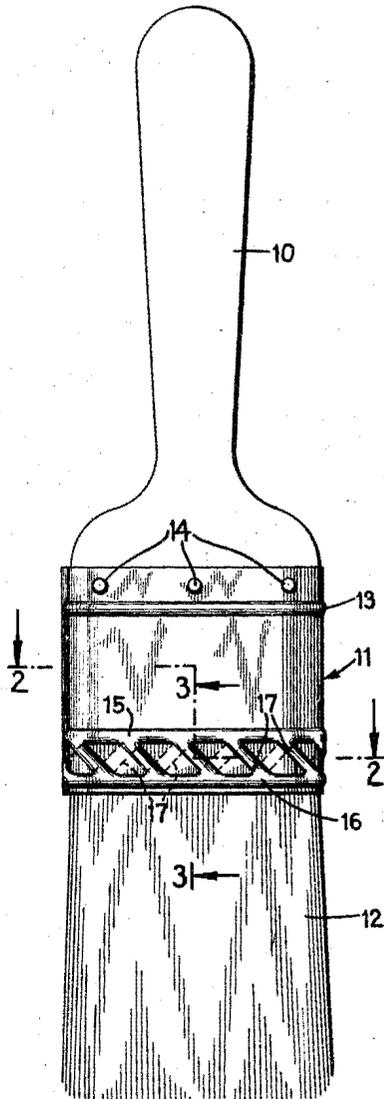


FIG. 2.

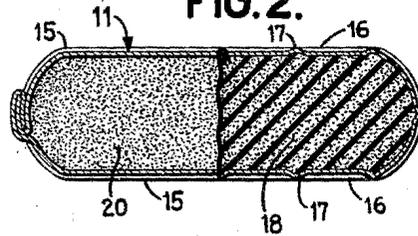


FIG. 3.

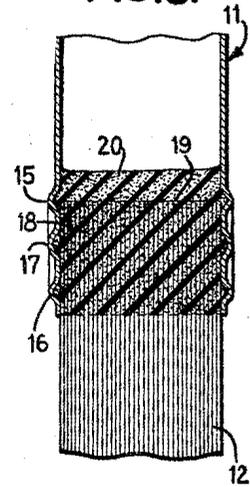


FIG. 4.

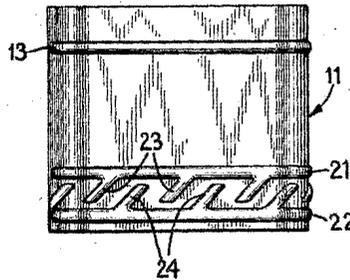
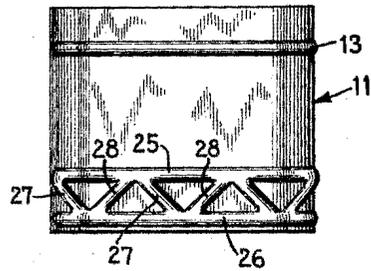


FIG. 5.



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PAINT BRUSH

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tion of New Jersey

Application March 21, 1940, Serial No. 325,123

5 Claims. (Cl. 15—193)

This invention relates to an improved paint brush and more particularly to the formation of the ferrule of such a brush and the relationship thereof to the bristle knot or brushing body.

A feature of the invention is the formation of the lower end of the ferrule of a paint brush to provide firm, interlocking ridges and depressions between the ferrule and the bristle body or the adhesive material or cement surrounding the butt of said body. Toward this end the ferrule is formed with a plurality of depressions on its inner surface which extend in part around the ferrule and in part in a direction at an angle thereto. The depressions or parts thereof which are disposed diagonally of the ferrule are at an appropriate angle so as not to present an indentation of substantial dimension in a direction parallel with the bristles. Thus, interlocking elements are provided on the ferrule and bristle knot which will effectively prevent both transverse and longitudinal shifting of the bristles relative to the ferrule without danger of displacing any portion of the bristles from the main body.

More specifically the invention contemplates, in its preferred form, the provision of a plurality of heads extending around the ferrule adjacent its lower, or bristle-receiving, end and a series of angularly disposed passages communicating with one or more of the heads and permitting the free flow of the cementing material from the head or heads into such passages.

An object of the invention has been to provide a brush, having the features and advantages stated, which is simple and economical to produce and at the same time presents a particularly attractive appearance.

Other objects, features and advantages of the invention will appear from a detailed description of an illustrative form of the same which will now be given in conjunction with the accompanying drawing, in which:

Fig. 1 is an elevational view of a brush embodying the invention.

Fig. 2 is an enlarged transverse section through the brush along the broken line 2—2 of Fig. 1.

Fig. 3 is an enlarged longitudinal section along the line 3—3 of Fig. 1.

Fig. 4 is an elevational view of a modified form of ferrule, and

Fig. 5 is an elevational view of a further modified form of ferrule which may be employed in connection with the invention.

Referring now to Figs. 1 to 3 of the drawing,

the brush may comprise a conventional handle 10 formed of wood or other appropriate material and of a shape and size enabling it to be readily grasped. At the lower end of the handle there is provided a ferrule 11, formed preferably of sheet metal, and extending from the lower end of this is a brushing body 12 of any appropriate form, preferably consisting of a group or body of bristles. Adjacent the upper end of the ferrule there is formed a bead 13 extending around the ferrule, this serving the purpose of strengthening the ferrule and also the purpose of ornamentation. Any suitable means, such as nails 14, may be employed for securing the handle in place in the upper end of the ferrule.

Adjacent its lower end the ferrule is preferably provided with a pair of transversely extending beads 15 and 16 appropriately spaced. These beads are connected by a series of diagonally disposed ribs 17 which may either be parallel, as shown, or may be disposed in any other appropriate relation. They may be either closely or widely spaced, as desired, so long as a sufficient number of the ribs is provided around the ferrule to place the beads 15 and 16 in appropriate communication, or to provide, in themselves, adequate reinforcement of the ferrule and adequate interlocking of the ferrule with the cementing agent, as will be explained. It will be understood that at the inner surface of the ferrule, depressions or channels will be provided at the points forming the beads and ribs. The small parallelogram-like surfaces shown in Figure 1 between adjacent ribs are flush with the main portion of the ferrule on both the inner and outer surfaces of the latter. As indicated by the dotted-line showing of the ribs on the opposite side of the brush, in Figure 1, these are inclined in the opposite direction from those shown in full lines, thus serving to better lock the bristle knot against displacement in the ferrule.

The upper end 18 of the bristle body 12 may be of any appropriate form. It may either be square-cut across the top, as indicated at 19, or it may be provided with an appropriate concavity which is complementary to the form of the brushing end of the bristles. The upper end of the bristle body is preferably impregnated with a suitable adhesive or cementing substance, such as rubber cement, which is applied to the bristle butt in any convenient way, as by dipping the bristle butt into a bath of the cement after partially inserting it in the ferrule or by pouring the cement into the ferrule after the knot has been fully inserted. If the dipping method is

followed, the thoroughly impregnated bristle butt, upon being finally positioned in the ferrule, may have an excess of the cement squeezed from the knot, if the cement has not yet been fully dried, and this excess may then be permitted to flow into the channels formed by the beads 15 and 16 and the ribs 17. However, if the knot is finally positioned after the cement has been fully dried, the extra pouring of cement, to be presently mentioned, will be depended upon to flow around the end of the knot and into the channels formed by the beads and ribs. So also, if the cement is applied only after the bristle knot is inserted in the ferrule, it will seep into the spaces between the bristles as well as around the bristles and into the channels mentioned. Preferably the bristle butt will be inserted in the ferrule to a plane adjacent that of the center of the bead 15, as indicated in Fig. 3, although it may be inserted to a plane either somewhat above or below the bead 15, as desired. After the first layer of cement, applied by dipping or pouring as explained, has dried to a desirable extent, a second layer 20 of the cement, or similar adhesive material, may be poured over the top of the bristle butt. It will be understood that this is accomplished before the handle 10 is inserted in the upper end of the ferrule.

As indicated, the cement or bonding material, of either the first or the second pouring, or both, is allowed to seep or flow about the butt ends of the bristles to a desired distance, and also into the adjacent beads and ribs. At the same time the cement is suitably subjected to drying or evaporation to a desired degree. Then after the layer 20 has dried suitably, the assembled butt and ferrule, as a whole, is treated to a solidifying or hardening process, such as vulcanizing if a rubber compound is used, thus firmly bonding the bristle ends, one to the other, and the mass to the ferrule.

It will be seen that in the construction described, a very firm bond will be provided between the bristle knot and ferrule and these will become a substantially unitary structure. These elements will be interlocked by virtue of the projecting portions of the cement inter-engaging with the recesses formed by the inner surfaces of the beads and ribs. The interlocking projections and recesses are such that the bristle body is not only held against longitudinal movement but also against transverse twisting movement within the ferrule. The bond or anchorage between the bristle body and ferrule may be sufficiently sturdy to avoid the necessity of the usual nails which are passed through the lower end of a conventional brush, particularly in brushes of the larger sizes. Should it be desired to supplement the interlocking action of the ribs and beading, nails may, if desired, be employed, these being passed through some, or all, of the spaces formed between the ribs 17.

It will be understood that even if a material is used for the ferrule to which the cementitious material will not bond or adhere, the key-like formations in the beadings and ribs will securely hold the bristle butt in and to the ferrule, resulting in a rigidly united, fixed structure, similar to that previously described.

In Figure 4 there is illustrated a modified form of ferrule, which may be employed in accordance with the present invention. The ferrule 11 may, as before, have a bead 13 extending around the same adjacent its top. Adjacent its lower end the ferrule may be provided with a pair of beads

21 and 22 extending around the same. These may be spaced substantially the same as the beads 15 and 16 of the first embodiment or slightly more, if desired. However, in lieu of providing a single set of ribs extending from one bead to the other, there may be provided a series of downwardly extending ribs 23 disposed diagonally from the bead 21 toward the bead 22 but terminating some distance from bead 22. Similarly, a series of ribs 24 may extend upwardly in a diagonal direction from the lower bead 22 toward the bead 21 but may terminate some distance from the bead 21. The series of ribs 24 may, as shown, be interspersed between the ribs 23, but, if desired, either the ribs 23 or the ribs 24 may be omitted and the series of ribs retained may, in that case, be spaced somewhat closer together. It will be apparent that in the use of this ferrule in the same manner as explained in connection with the ferrule of the first embodiment, a firm interlocking action will be produced between the bristle knot and ferrule which will form a rigid, substantially unitary structure.

Referring now to Fig. 5, there is shown a further modified arrangement of ribbing at the lower end of the ferrule. As in the other forms, a pair of transversely extending beads 25 and 26 may be provided around the ferrule. These beads may be connected by a series of diagonally disposed ribs 27 inclined in one direction and a series of diagonally disposed ribs 28 inclined in the opposite direction. The arrangement may be such that a series of triangular spaces is provided between the diagonal sets of ribs 27 and 28 and the beads 25 and 26, or if the spacing of the ribs is greater, the intervening spaces may be of trapezoidal form. As a further variation, the ribs 27 might extend downwardly from bead 25 and terminate a slight distance from bead 26 while ribs 28 may extend upwardly from bead 26 and terminate slightly short of bead 25. It will be seen that the ribs and beads of the ferrule of Figure 5 will function in substantially the same way as the ribs and beads of the first-described form and will provide an effective bond and interlock between the bristle knot and ferrule.

A variety of other arrangements of beads and diagonally disposed connecting ribs, capable of forming a number of different, attractive designs, will suggest themselves in the light of the foregoing. The ribs may, if desired, be curved from one bead to the other in lieu of being straight, as indicated in Figs. 1, 4 and 5. One or both of the beads might be omitted, if desired, and the ribs alone depended upon to impart the desired stiffening effect and to provide the interlocking action.

While certain illustrative forms of the invention have been disclosed in detail, and certain modifications have been suggested, it will be understood that numerous other changes may be made in the construction and arrangement of the ferrule and bristle knot without departing from the general principles and scope of the invention. The terms and expressions employed herein have been used as terms of description and not of limitation.

What I claim is:

1. A paint brush which comprises a bristle body, a ferrule for retaining said bristle body, said ferrule having a plurality of circumferentially extending beads, and a plurality of ribs inter-connecting said beads, said ribs being dis-

posed diagonally between said beads at a substantial acute angle to the length of the bristles in said bristle body, said beads and ribs presenting recesses on their inner sides, and cementing means binding the end of said bristle body and interlocking with the recesses on the inner sides of said beads and ribs.

2. A paint brush which comprises a bristle body, a ferrule surrounding one end of said bristle body and retaining the same, said ferrule having a plurality of circumferentially extending beads in the region of the retained end of said bristle body and having also a plurality of ribs extending in different directions serving to inter-connect said beads, the longitudinal center line of each of said ribs extending across a plurality of bristles in said bristle body, said beads and ribs presenting recesses on their inner sides and cementing means binding the ends of the bristles of said bristle body and interlocking with the recesses on the inner sides of said beads and ribs.

3. A paint brush which comprises a bristle body, a ferrule surrounding one end of said bristle body and retaining the same, said ferrule having a plurality of ribs extending diagonally at a substantial acute angle with respect to the length of the ferrule and disposed adjacent the bristle body retaining end thereof, said ribs presenting recesses of substantial width on their inner sides extending at said acute angle to the length of the bristles in said bristle body, and cementing means binding the end of the bristles of said bristle body and interlocking with the recesses on the inner sides of said ribs.

4. A paint brush which comprises a bristle body, a ferrule surrounding one end of said bristle body and retaining the same, said ferrule having a plurality of circumferentially extending beads in the region of the retained end of said bristle body and having also a plurality of ribs extending diagonally at a substantial acute angle with respect to the length of the bristles in said bristle body from one of said beads toward the other but terminating a slight distance from said other bead, said beads and ribs presenting recesses on their inner sides and cementing means binding the ends of the bristles of said bristle body and interlocking with the recesses on the inner sides of said beads and ribs.

5. A paint brush which comprises a bristle body, a ferrule surrounding one end of said bristle body and retaining the same, said ferrule having a plurality of circumferentially extending beads in the region of the retained end of said bristle body and having also a plurality of ribs extending diagonally from one of said beads toward the other but terminating a slight distance from said other bead, and having another series of ribs extending diagonally from said other bead toward said one bead but terminating a slight distance therefrom, the ribs of both of said series crossing the bristles of said bristle body at a substantial acute angle, said beads and ribs presenting recesses on their inner sides and cementing means binding the ends of the bristles of said bristle body and interlocking with the recesses on the inner sides of said beads and ribs.

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