BRUSH HAVING A DISPOSABLE PART AND EJECTOR THEREFOR

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ABSTRACT OF THE DISCLOSURE

The invention is a paint brush of the type having a disposable paint applying part. The part is comprised of soft spongy material attached to an extension on a fitting which is removably received in a socket on the handle. Within the handle is a reciprocable stem or plunger having a foot on the end engageable with the fitting on the disposable part. The plunger or stem is manually actuated, that is, reciprocatable to eject the disposable part of the brush from the socket in the handle.

This invention relates generally to improvements in brushes for applying paint or comparable materials and, more particularly, to a brush of this type having a disposable part. The disposable part is the paint-applying part of the brush corresponding to the bristles of known types of brushes. When it is desired to discard the disposable part of the brush it is separated from the handle. The herein invention provides novel and unique means for separating the disposable part from the handle. In the exemplary form of the invention described herein, the said means is in the form of an ejector which ejects the disposable part from a socket in the handle.

The problems of cleaning and keeping paint brushes clean is one that is well known in the art. Brushes must be cleaned before being stored even overnight in order that the bristles will remain soft and pliable rather than becoming rigid with hardened paint or other material. If the brush becomes clogged with hardened paint, it is, of course, not capable of being used as a paint brush. Cleaning brushes is a distasteful and tedious job. This is particularly true when the brush must be cleaned quite often. In the exemplary form of the invention, the paint-applying part of the brush is constructed as a disposable or throw-away element which is removable from the handle for disposal. Preferably, the paint-applying portion of the brush does not comprise bristles but rather a soft spongy material which may be one of various different plastic materials, including non-rigid foam made from a synthetic resin or plastic, such as polyester or polyurethane resins. The detachability of the paint-applying part of the brush is accomplished by providing a socket and fitting relationship between the disposable part and the handle. In this way the parts are securely held together while in use, but can be readily separated for disposing of the paint-applying portion or disposable part. Preferably, the socket is formed in the brush handle to detachably receive a fitting on the disposable part of the brush. The disposable part of the brush preferably comprises a member to which the spongy material is applied. In the exemplary form of the invention the brush is provided with a manually actuable ejector for separating the disposable part of the brush from the handle. It takes the form of an eject plunger or stem movable in a bore in the handle. The plunger has a foot which is engageable with the fitting on the disposable part of the brush within the socket on the handle. The plunger has a knob on the end for reciprocating it to eject the fitting from the socket. In this way the disposable part of the brush can be separated (i.e.), ejected and discarded without the necessity of touching it in any way or contacting the paint or liquid on it.

The primary object of the invention is accordingly to provide, in a brush having a disposable part, novel and unique means for separating the disposable part from the handle. A further object is to provide a construction wherein the said means takes the form of an ejector operable through the handle as described.

Further objects and additional advantages of the invention will become apparent from the following detailed description and annexed drawings, wherein:

FIGURE 1 is a perspective view of a preferred form of the invention;
FIGURE 2 is a sectional view taken along the line 2—2 of FIGURE 1;
FIGURE 3 is a sectional view of the brush taken along line 3—3 of FIGURE 3.

Figure 4 is an exploded view of the disposable part of the brush showing the soft spongy paint-applying material separated from the internal web and fitting member which is received in the socket.

Referring now more particularly to FIGURE 1 of the drawings, the invention comprises main parts which are the handle designated at 10 and the paint-applying portion as designated at 12. The handle has a part 11 to be grasped by the hand and an enlarged lower part designated at 14. This part is elongated transversely of the handle and has rounded end parts as designated at 16. Part 14 forms a socket to receive the disposable part of the brush, as will be described.

The disposable part of the brush as designated at 12 comprises a fitting adapted to be removably received in the socket 14 and this construction is shown in FIGURES 2, 3 and 4.

The handle and socket may be made from various materials including plastic materials which are inert with respect to solvents used with paints and varnishes and may be manufactured by molding processes or otherwise from synthetic resin or plastic such as nylon or polyethylene resins. In the preferred form of the invention shown, the grip part of the brush 11 is hollow.

Referring again to the disposable part of the brush, it comprises the support member designated generally at 18. This member has a fitting at the upper end thereof and designated at 20, having a particular construction so as to be frictionally but removably received within the socket 14 of the handle. This fitting comprises two transverse plate members designated at 22 and 24, being of a size and shape to fit snugly within the socket 14. Midway between these plate members and in a position normal to them is a strengthening and stiffening rib 26 as may be seen in FIGURE 2. A plurality of transverse stiffening ribs, designated at 28 and 30, extend outwardly from the vertical rib 26 to the edges of the plates 22 and 24. At the ends of the plates 22 and 24 are arcuate spacing members 32 and 34 having central ribs designated at 36. At these points of fitting 20 there are downwardly extending fingers similarly arcuate in cross-section as designated at 40 and 42. The configuration of the fitting as described is such as to enable it to be frictionally received and held within the skirt formed by the socket 14 on the handle 10, as shown in FIGURE 2. The ribs as shown at 36 and the extending fingers 40 and 42 fit snugly within the socket 14 so that the fitting 20 is firmly held therein but yet can be readily removed therefrom as will be described.

The ribs or webs 26, 28 and 30 give the fitting sufficient strength and rigidity that it can be held in the socket frictionally in such a way that the brush can be used as such but yet the fitting is readily removable from the socket.

The part 18 has an extension or web part 46 extending downwardly from the lower plate or member 24,
This part is integral with the fitting 20. The unit 18 may preferably be made of any variety of materials suitable to this purpose. It may be preferably manufactured by a molding process from suitable synthetic resin or plastic, such as polyurethane or polyethylene resins. The web or extension 46 is thinner at the lower end and tapers towards the lower end as shown. It has a plurality of transverse ribs such as shown at 48 which contribute a slight amount of stiffening to the extension. The extension also preferably has an integral extending part or extension 46 formed outwardly from the lower edge. The construction is such as to provide flexibility in the extension member comparable to that of a ordinary bristle brush.

The paint-applying part of the brush itself comprises the envelope 52 made of a soft spongy material which will absorb and hold paint and for applying the paint to a surface. The extension 46 contributes sufficient stiffness to the envelope 52 to make it suitable for paint-applying purposes. A suitable material for this element is a non-rigid foam made from a synthetic resin or plastic, such as polyester or polyurethane resins. Other materials may be used; however, the material 52 is formed with an internal slot, as designated at 54, shaped to fit over the extension 46 on the fitting 20. The slot 54 may extend between circular bores 56 and 58 at its ends. The end part of the envelope 52 is preferably tapered as shown at 62. The envelope 52 slips over the extension 46 of the fitting 20 and it is secured to the upper part of the extension 46 by integral extending pins or projections as shown at 64 and 66, which extend into the spongy material 52 within skirt 14 as shown in FIGURE 2. As may be observed, the unit 18 may be formed as a single element and the method of attachment of the envelope 52 is extremely simple and economical but yet very effective for its purpose. Its upper part may be simply stretched at slot 54 and slipped over extension 46 and the projections forced into the spongy material. Several of the projections may be provided on each side of extension 46. If desired, the envelope may be permanently attached to the fitting 20, as by staples through the upper part of the envelope and extension 46. The envelope and fitting may be discarded and disposed of as a unit.

Simplified, but extremely effective means are provided for separating the disposable part of the brush from the handle. The handle in the form of the invention is hollow, the grip part 11 having a bore 70. Movable longitudinally of a handle is a plunger or stem 71 having a foot or pusher 72 on its inner end within the socket 16. The stem 11 has a knob 73 on its opposite end adjacent the end of handle 11. A skirt 74 is preferably formed integrally with knob 73 and has a sliding fit on the tubular end part of handle 11.

When it is desired to discard the disposable part of the brush, the plunger 71 need only be reciprocated in handle 10 to cause the foot 72 to exert force against fitting 70 which is ejected from its holding socket 16. As will be observed, the ejection (i.e., the separation of the disposable part of the brush for discard is accomplished without the necessity of touching the disposable part at all, which part would have paint or other material on it.

From the foregoing, those skilled in the art will observe that the invention described herein realizes and achieves all of the objects and advantages as set forth in the foregoing as well as having many additional advantages which are apparent from the detailed description. The brush can be very economically made and the disposable part of the brush can be ejected and discarded by a very simple but effective manipulation. The construction is such as to make possible very simplified and inexpensive fabrication and production.

The foregoing describes and illustrates a preferred form of the invention. The disclosure is intended to be illustrative rather than limiting upon the invention which is to be accorded the full scope of the claim appended hereto. Various equivalent departures may be made from the details of construction and assembly as described herein without departing from the spirit and scope of the invention.

What is claimed is:

A brush for the application of paint and the like comprising in combination, means forming a handle part providing a grip for holding the brush, the said brush having a disposable part detachably connected to the handle, the disposable part comprising soft material for absorbing and applying paint, manually actuable means for detaching and separating the disposable part from the handle, said disposable part comprising a fitting having an extension projecting therefrom said projection being flexible and having an envelope of soft, spongy, resilient, and paint absorbent material thereon, the said handle having a socket to receive said fitting, said manually actuable means comprising a plunger extending through a bore in said handle, said plunger having an end part positioned in said socket for engaging said fitting and ejecting the fitting therefrom and having a knob at its opposite end for reciprocating the plunger in the bore of the handle, the handle of the brush having an elongated grip and widened part, the said socket having substantially the same configuration as the widened part, the said fitting comprising a structure having the same configuration as the cavity in the socket to be received therein, and the plunger having a foot part on its inner end adapted to engage said fitting for ejecting it.

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