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BRUSH

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BRUSH

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This invention relates to improvements in the brush-making art. This art is a very old one, and few improvements have been made since the first brushes came into use. Brushes were first made by taking small bunches of bristles, tying each bunch with a thread, dipping it into hot pitch or resin and inserting it into a hole of a brush back. Brushes were also made by taking double lengths of bristles, mechanically bending each length in the middle, putting a wire staple around the bend and driving the wire ends of the staple into the brush back. In the case of hair brushes the individual tufts are called knots; in the case of a shaving brush, there is only one knot.

The present invention relates to new and improved brushes, more particularly to the type of brushes wherein synthetic bristles are used. Synthetic bristles used at the present time are known as monofilaments made of plastic materials, amongst which may be mentioned the polymerides, the vinyls and the polyethylenes. According to the means practiced by this invention, it is possible by applying heat to the bristles, to weld them together, thus making a knot which is permanent and which does not rely on a mechanical means or on a bond of adhesive resin or glue to secure together the synthetic or natural bristles.

One of the defects in brush making is that the adhesive used does not last as long as the bristles or monofilaments; the adhesives lose their adhesion with age, causing the bristle to fall out. The mechanical bond often causes chafing where the metal passes over the bristle. With friction, the bristle or monofilament wears out, breaking and falling out of the brush.

An advantage of the method according to this invention, is that the welded knot when inserted into the hole of the holder, while still hot or warm can be used as the adhesive to retain the knot in the hole.

Another advantage is that according to this invention, the monofilaments can be fed from spools into the knot, making machining a more continuous process; whereas in conventional brush making the bristle or monofilaments are cut to specific lengths and then inserted by a reciprocating method into the brush.

It is therefore an object of the present invention to simply and efficiently construct a brush having monofilament bristles.

Another object of this invention is to provide brushes in which sets of synthetic bristles or monofilaments are welded together forming tufts or knots.

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These and other objects and advantages will be in part obvious from the annexed drawing and in part hereinafter indicated in connection therewith by the following analysis of this invention, which accordingly consists in the features of construction, combination of parts and in the unique relations of the members and in the relative proportioning and disposition thereof.

The drawings depict certain forms of the invention and will enable others skilled in the art so fully to comprehend the underlying features thereof that they may embody the same by the modifications in structure and relation contemplated by this invention.

In the drawings:

Figs. 1-4 inclusive illustrate a brush and various stages of its manufacture, wherein Fig. 1 shows the plurality of monofilaments or brush being welded to form a knot or tuft and being inserted in a hollow member;

Fig. 2 shows the weld of the knot or tuft in engagement with said member;

Fig. 3 shows the handle of the brush and

Fig. 4 shows partly in section the completed brush.

Referring now to Figs 1-4 inclusive which illustrate a shaving brush and steps in its manufacture, the numeral 50 indicates a plurality of synthetic bristles or monofilaments welded together at one of their ends, the weld or welded knot being indicated as 51. Numeral 52 indicates the heat appliance having the flame 53. A hollow member or ferrule 54 is internally threaded as indicated at 57 and is provided with the reduced opening 55 forming a shoulder 56 against which abuts the weld or knot 51. The weld or knot being the result of the flexible monofilaments made of synthetic material is capable of flexing or altering its shape under pressure. A brush handle 58 has a hand-engaging portion 59 and a reduced threaded portion 60 which forms at its juncture with 59 a shoulder 61. The free end of the threaded portion 60 is rounded or dome-shaped. As clearly seen in Fig. 4, when the handle 58 is made to tightly threadedly engage the ferrule 54, the dome-shaped end 62 will press against the weld portion 51 causing it to assume substantially the shape or contour of the end 62, one of the results being that bristles spread out causing the knot or tuft to flare out, and another result being that the knot or tuft is securely locked in position in lock-nut fashion.

From the foregoing it is seen that there has herein been provided a brush having a plurality

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of monofilaments which are welded together at one of their ends and being free at their other ends providing a knot or tuft, an internally threaded hollow member with a reduced opening at one end, the knot or tuft extending through the reduced opening with the welded portion abutting against the reduced opening, a holder being provided which has a threaded portion engaging the threads of the member, the threaded portion having a dome-shaped end pressing against the welded portion whereby the latter is made to conform with the contour of the dome-shaped end and cause the plurality of monofilaments to flare out.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent, is:

1. A brush comprising a plurality of monofilaments welded together at one of their ends and being free at their other ends providing a knot or tuft, an internally threaded hollow member having a reduced opening at one end, said knot or tuft extending through said reduced opening with the welded portion abutting against said reduced opening, and a holder having a threaded portion engaging the threads of said member, said threaded portion having a dome-shaped end pressing against said welded portion whereby the latter is made to conform with the contour of said dome-shaped end and cause said plurality of monofilaments to flare out.

2. A brush comprising a tuft consisting of a plurality of monofilaments, said tuft having said monofilaments welded together at one of

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its ends and being free at its other end, a hollow member having a reduced opening at one end, said tuft extending through said reduced opening with its welded end abutting against said reduced opening, and a holder having a portion extending within said member, said portion having a dome-shaped end pressing against said welded end whereby the latter is made to conform with the contour of said dome-shaped end.

3. A brush comprising a plurality of monofilaments welded together at one end to provide a knot having a bead at said one end, a hollow member formed with an opening having a marginal seat at the inner side thereof, said knot extending outwardly through said opening with said bead thereof abutting against said seat, and a holder in said hollow member formed with a convex end bearing against said welded end of the knot whereby said welded end is made to conform to said convex end of the holder to cause said monofilaments to flare out.

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