

FLOCKED HAIR BRUSH
Background of the Invention

1. Field of the Invention.

The present invention relates generally to hair grooming devices and more particularly to hair brushes.

5 2. Description of the Invention.

Hair brushes conventionally have a plurality of bristles projecting from the outer surface of the brush body, with the portion of the outer surface between the bristles being smoothly coated. Although
10 this smooth coating reduces the friction between the brush and user's hair, so as to facilitate movement during the brushing process, it provides certain drawbacks. In particular, when the outer surface of the upper layer of hair, which is often the portion
15 of a coiffure most noticeable to others, is moved against the smooth outer surface of the brush body during grooming, there is a minimization of desired rubbing. The rubbing is necessary to provide the upper hair layer with the softness which facilitates
20 manageability, including the formation of curls when subsequently wound about a tubular structure, and to provide the outer surface with the glisten normally associated with healthy and attractive hair.

Similarly, the bristles themselves are typically
25 composed of plastic or metal, having a smooth external surface. During brushing, the relatively insubstantial frictional contact provided along the length of the hair strands by the lateral portions of the smooth bristles fails to produce, in the absence
30 of relatively numerous brushing strokes, the desired

softness or glisten to the numerous strands of hair brought in contact therewith.

5 It is accordingly an object of the present invention to provide a hair brush which provides enhanced rubbing by the outer surface of the brush body during brushing, so as to produce a softness and a glisten to the hair, with fewer brush strokes than presently available devices.

10 It is another object of the present invention to provide a hair brush having bristles with an outer surface having an improved surface which ameliorates the contact and rubbing along the length of the hair strands during brushing.

SUMMARY OF THE INVENTION

15 These and other objects are accomplished in accordance with the present invention wherein there is provided a hair brush comprising: a handle portion; and a tubular brushing portion extending from the handle portion and having a plurality of longitudinal ^{rows of} bristles projecting therefrom, at least
20 some of the bristles being suitably elongated for penetrating through multiple layers of hair, the brushing portion having flocking between the bristles for contacting the outer layer of hair during
25 grooming. In an alternative embodiment, both the tubular brushing portion and the bristles have flocking on their surfaces.

The flocking may be applied directly to the outer surface of the tubular portion, or,
30 alternatively, the flocking may be mounted on a strip or ribbon of material which is adhesively applied, or mechanically mounted, on to the outer surface of the tubular portion.

BRIEF DESCRIPTION OF THE DRAWINGS

35 The foregoing and other objects, characteristics and advantages of the present invention will be more

clearly understood from the following description when read in conjunction with the accompanying drawings, in which:

FIG. 1 is top plan view of a hair brush in accordance with the present invention;

FIG. 2 is a cross-sectional view taken along line 2-2 of FIG. 1;

FIG. 3 is a top plan view of an alternative embodiment of a hair brush in accordance with the present invention; and

FIG. 4 is a cross-sectional view taken along line 4-4 of FIG. 3.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to FIGS. 1 and 2, wherein the hair brush of the present invention, designated generally by the numeral 10, includes a handle portion 12 and a rotatable tubular brushing portion 14. The hair brush is hollow and has an inner mechanism which may be of any of the rotatable types disclosed in the art, which produce heat and/or steam, e.g. U.S. Patent No. 4,329,567 to Kunz, et al., commonly assigned herewith. An electric cord 16 connected to an outside power source energizes the inner mechanism.

The brushing portion 14 includes an inner tube 18 which serves to rotatably support an outer tube 20. The brush 10 has a locking mechanism generally indicated by the numeral 22, in accordance with devices known in the art. For example, a brake pad (not shown), which is mounted on the handle portion 12, is spring-loaded so as to engage a flange 13 of the outer tube 20 and prevent its rotation. Activation of a button 15 disengages the brake pad so as to permit the outer tube 10 to rotate freely about the inner tube 18. Other known braking mechanisms

include those disclosed in Belgian Patent No.867075, and U.S. Patents Nos. 4,314,137 and 4,365,140.

5 The outer tube 20 is preferably composed of aluminum and extends from the front end 23 to the rear end 24 of the flange 13 with grooves 26 running longitudinally along its length. The grooves 26 are preferably dovetail-shaped. Each groove 26 receives in sliding relationship a strip of material, generally indicated by the numeral 28, preferably composed of a rubbery plastic, which conducts the heat from the aluminum outer tube 20 into the hair in contact therewith during brushing or styling. The strips 28 each have a dovetail base 29 which mates with the grooves 26 so as to facilitate sliding of the strips into the grooves 26 while preventing the strip 28 from outward movement. Projecting from the base 29 of each strip 28 are bristles 30 having a length adequate to penetrate from the outer layer of hair through multiple layers, typically reaching the scalp. A length of about 6.5 mm has been found preferable. A cap 31 mounted at the end of the brushing portion 14 prevents the strips 28 from sliding out. The strips 28 may have apertures (not shown) to permit steam or other vapor to be expelled therethrough.

25 The body portions 32 situated between the strips 28 are coated with flocking 34. This can be done by methods well known in the art. For example, as described in U.S. Patent No.3,888,266 to Weldon et al., the short filaments are applied electrostatically on to a surface coated with a thin layer of glue. A myriad of synthetic plastic materials are appropriate for the filament composition. The preferred filaments of the present

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invention are composed of nylon and have a length of less than about 2.5 mm with a denier of about 22. Clearly, other lengths and fineness are suitable. These filaments 34 have one end secured by glue to the surface of the brushing portion 14, and are oriented in a direction generally normal to the surface and outwardly therefrom, while terminating in a free outer end. There are tens of thousands of filaments per square inch of surface, the density being adequate to prevent penetration of multiple layers of hair into the flocked surface. The non-hygroscopic nature of the material makes it particularly effective for use with hair treated with liquids, since little of the liquid is absorbed by the material but rather is available to chemically treat the hair.

In accordance with the present invention, an alternative approach utilizes a flocked strip or ribbon. The flocking material is electrostatically mounted on a flat ribbon of heat-resistant material, such as a polyester, having a coating of glue. The ribbon is provided with an underside which is suitable for mechanical mounting on the brushing portion. For example, the ribbon is equipped with a dovetail base which mates with a dovetail groove in the brushing portion. More preferably, however, attachment to the brushing portion can be achieved by removing a protective strip from the underside of the ribbon, so as to expose an adhesive coating, followed by contacting and adhering the ribbon to the brushing portion. With an appropriate adhesive, the ribbon can be removed from the brushing portion so as to permit replacement. The choice of adhesive is also dependent on the temperature reached and on whether

steam is expelled through apertures in the tubular brushing surface.

5 During brushing, the flocking between the bristles retains the hair thereagainst, reduces hair slippage along the brush body, and improves rubbing of the hair strand, all of which are desirable when the brushing portion is in the locked position and the unlocked, or rotatable, position.

10 When in a locked position, the hair may be brushed with, or wound about, the brushing portion. During brushing, the bristles penetrate through layers of the user's hair towards the scalp, while the flocked outer surface of the brushing portion contacts the outer surface of the external layer of
15 hair so as to produce an ameliorated rubbing effect along the strands of hair piled thereagainst and brought in contact therewith. Also, the flocking acts to grasp the hair so as to retain the hair thereagainst during the sliding or rubbing of the
20 hair along the flocked surface during brushing. The enhanced rubbing produces softer hair and a glisten with few brush strokes. The softer hair facilitates manageability, including the formation of curls, when the hair is subsequently wound about the brushing
25 portion.

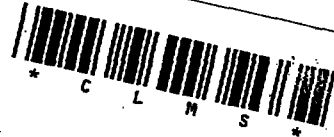
When the hair is wound about the locked brushing portion to achieve curling, the flocked surface in conjunction with the bristles permits tensioning of the wound hair without slippage, and, consequently,
30 greater tightness can be obtained, resulting in a better curl. Upon release of the locking mechanism so as to permit rotation of the brushing portion, the stroke required to remove the hair from the brushing portion rubs the hair strands longitudinally during

its release.

FIGS. 3 and 4 show another embodiment of the present invention, wherein components of the structure similar to those shown in FIGS. 1 and 2 are designated with the same reference numerals having a prime appended thereto. A rotatable hair brush, generally designated by 10', has a handle 12' and a brushing portion 14', which includes a completely flocked outer surface 32' and a completely flocked bristle 30'. Partial flocking of the surface 32' and bristles 30' is also contemplated. This is preferably achieved by coating an integrally molded plastic mandrel with a layer of glue and applying the flocking in an electrostatic field. With this structural arrangement, multiple hairs beneath the outer layer are grasped by each of the lateral elongated flocked bristle surfaces 30' and rubbed therealong during the brushing process so as to produce soft hair and a glisten.

Flocking of the bristles alone, while contemplated, is not as preferable as flocking both the outer surface and bristles.

While the invention has been described above with respect to specific embodiments, it should be clear that these embodiments are given by way of example and shall not be deemed as limiting the scope of the invention, except in accordance with the scope of the appended claims.



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CLAIMS

1. A hair brush comprising:
a handle portion; and
a tubular brushing portion extending from said handle portion and having a plurality of longitudinal
5 rows of bristles projecting therefrom, at least some of said bristles being suitably elongated for penetrating through multiple layers of hair, said brushing portion having flocking between said bristles for contacting the outer hair layer during movement of
10 said bristles through said layers of hair.
 2. The hair brush of claim 1 wherein said bristles include at least some flocking on the outer surface.
 3. The hair brush of claim 1 or 2 wherein said
15 bristles extend in longitudinal rows along said tubular body portion, and said flocking between said bristles extends longitudinally between said rows.
 4. The hair brush of claim 1, 2 or 3 wherein said bristles and tubular body portion are completely
flocked.
 - 20 5. The hair brush of claim 1, 2, 3 or 4 wherein said flocking between said bristles is mounted on a ribbon or strip which is secured to the outer surface of said tubular portion.
 6. The hair brush of claim 5 wherein said
25 flocking-bearing strip or ribbon is removable.
 7. The hair brush of claim 1, 2, 3 or 4 wherein said flocking between said bristles is adhesively applied directly to said tubular portion.
 8. The hair brush of any of claims 1 to 7 wherein
30 said tubular brushing portion is rotatably lockable with respect to said handle portion.
 9. A hair brush as claimed in claim 1, substantially as described with reference to Figures 1 and 2, or Figures 3 and 4, of the accompanying drawings.
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