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(54) **MASCARA BRUSH WITH VISIBLY DISTINCT FUNCTIONAL PORTIONS**

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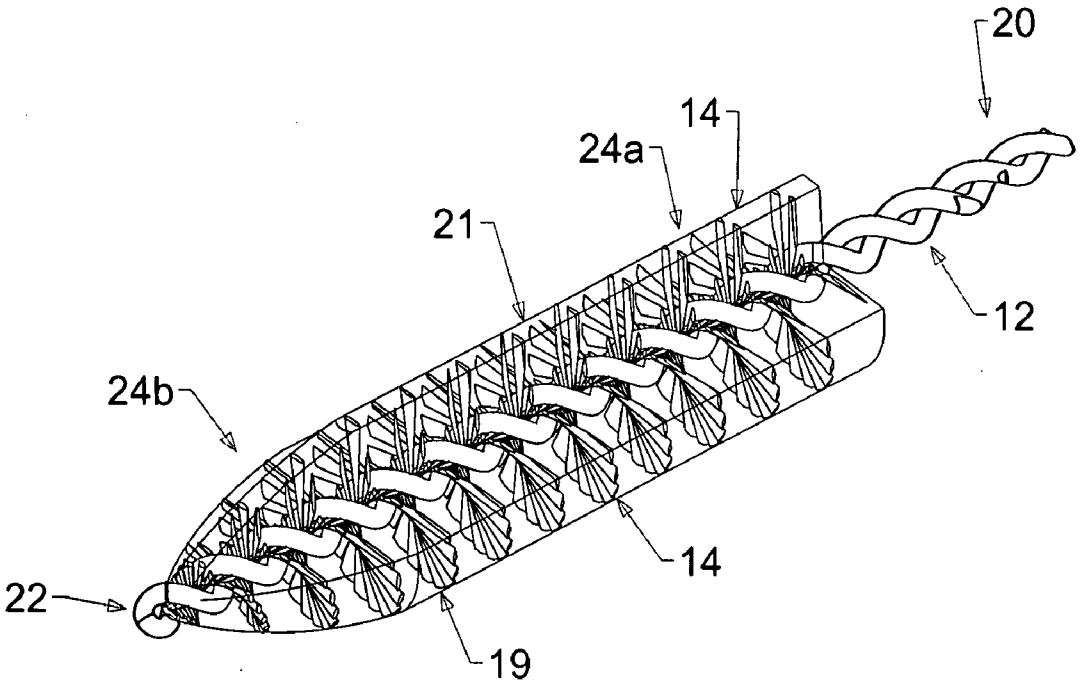
(57) **ABSTRACT**

A brush for applying mascara or the like, having a cross-sectional bristle array with two visibly distinct portions for respectively performing different mascara-applying and combing functions.



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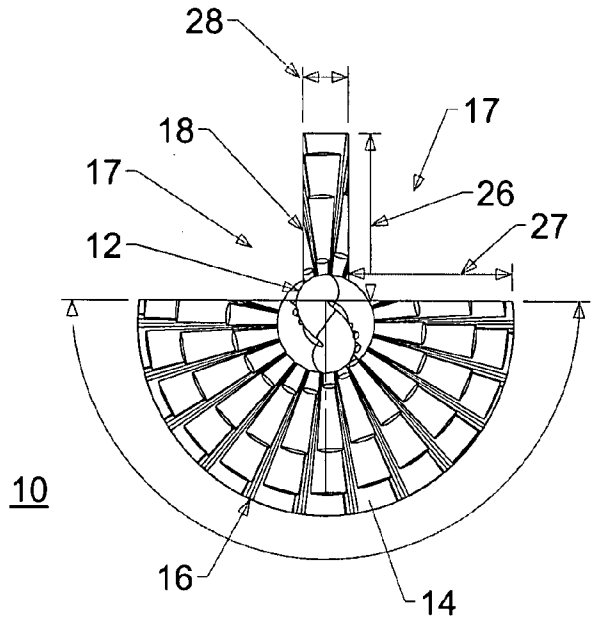

FIG. 1

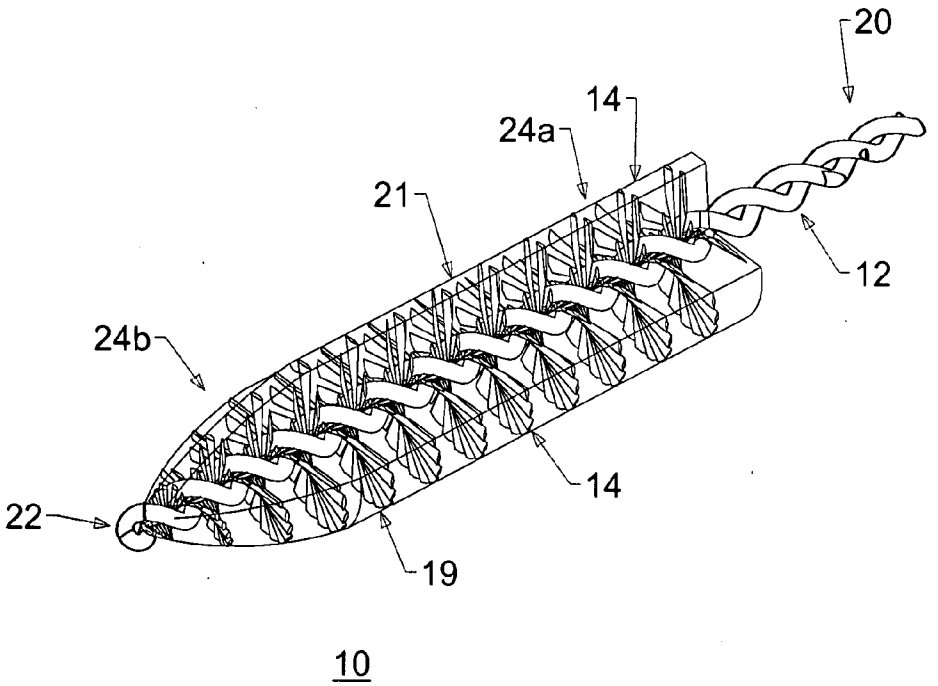

FIG. 2

MASCARA BRUSH WITH VISIBLY DISTINCT FUNCTIONAL PORTIONS

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Application No. 60/849,344 filed Oct. 4, 2006, hereby incorporated by reference.

BACKGROUND OF THE INVENTION

[0002] This invention relates to twisted-in-wire bristle brushes for applying mascara.

[0003] The type of brush with which the invention is specifically concerned is a mascara brush having an axially elongated twisted wire core with a multiplicity of fibers such as bristles clamped at their midpoints in the core and extending radially outwardly therefrom to form a brush bristle array surrounding the core over a substantial portion of the length of the core, typically to the outer (distal) end of the core. The core is constituted of two runs of wire, which may be initially separate but are more usually opposed legs of a single U-shaped wire, twisted together into an axially rectilinear helix to hold the bristles between them. This combination of a twisted wire core and a radiating array of bristles clamped in the core provides a simple, low-cost and effective brush structure for application of mascara.

[0004] Such mascara brushes are well known and widely used in the cosmetics industry. Commonly, the proximal end of the brush is mounted within the threaded cap of a mascara container, so that the brush projects into the container when the cap is in the container-closing position. Upon removal of the cap, the brush carries a quantity of mascara out of the container, and is manipulated to deliver and apply the mascara to the user's eyelashes, the cap serving as a handle for the brush.

[0005] In many conventional mascara brushes of the described twisted wire and bristle construction, the overall profile of the brush bristle array (such profile being the notional envelope defined by the bristle extremities) is cylindrical and/or smoothly tapering, that is with progressively shorter bristles, toward the distal end of the brush. Other bristle array profiles have been proposed, see for example in U.S. Pat. No. 5,357,987, the entire disclosure of which is incorporated herein by this reference. As shown in this U.S. patent, for example, to achieve these profiles the brush fibers can be cut or trimmed after initial assembly to produce specialized profile configurations. The bristles within the profile may be arranged in discrete though closely spaced helical rows corresponding to the helical turns of the wire core, or they may be distributed substantially uniformly.

[0006] While conventional brushes of a cylindrical or tapered shape can be used to apply mascara, achieving a satisfactory comb-through, that is to separate the lashes either before or after applying the mascara, can be difficult to achieve without using a separate implement such as a small plastic comb. Since ease of use is a primary goal, a mascara brush able to both apply a large amount of mascara and comb-through the lashes is desirable.

SUMMARY OF THE INVENTION

[0007] An object of the present invention is to provide a bristle brush, for applying cosmetic material such as mascara or the like, combining within a single structure diverse applicator characteristics respectively suited to the performance of specifically different functions in the application of the cosmetic material, and capable of being enclosed within a container of the material when not in use.

[0008] Another object is to provide such a brush having portions respectively adapted for: (1) delivering mascara to a user's lashes; and/or (2) combing delivered mascara through the lashes.

[0009] A further object is to provide such a brush enabling the user to determine selectively the amount of mascara applied, by using different portions of the brush, and then to comb the mascara through the lashes.

[0010] To these and other ends, the present invention broadly contemplates the provision of a mascara brush having an elongated wire core having two runs of wire helically twisted together about a rectilinear axis to form a succession of turns, and an array of bristles projecting outwardly around the succession of turns, the array including, in each turn, a plurality of bristles each clamped between the runs of wire and having opposed free tips extending radially therefrom, the array having a proximal end and a distal end spaced apart along the rectilinear axis and the tips of the bristles of the array defining a notional envelope, wherein, as a particular feature of the invention, the envelope is constituted of a generally semi-cylindrical portion extending along the core axis and an opposed narrow ridge, the shaped combing portion, also extending along the core axis and projecting radially therefrom in a direction opposed to the semi-cylindrical portion, for respectively performing different mascara-applying functions. Typically, the proximal end of the core engages an end of a stem having an opposite end secured within a mascara container cap.

[0011] Specifically, the invention may be embodied in a brush in which the semi-cylindrical bristle portion may be used for delivering mascara from a container to a user's lashes and the shaped combing portion may be used for combing delivered mascara through the lashes. Alternatively, the shaped combing portion may be used to deliver a very light application of mascara.

[0012] Further, in accordance with the invention, the transverse cross-section of the envelope is substantially uniform in dimensions along at least a major portion of the envelope. Also, the envelope can taper toward the distal end of the array; and the aforesaid major portion of the envelope advantageously has extended longitudinal edges parallel to the rectilinear axis of the core.

[0013] The unusual shape of the brush of the present invention offers the consumer the quick and easy application that is demanded, yet there is no special skill or newly-learned technique involved in using this brush. The mascara product builds up on the semi-cylindrical portion and, to a far lesser extent, on the shaped combing portion, which gives clearly recognizable heavily loaded and lightly loaded application zones. Additionally, the shaped combing portion, which is clearly identifiable as such, allows the user to comb through the lashes to separate them without needing to carry a separate combing device. Furthermore, because the comb-

ing portion is stored within the mascara container, there is no risk of damage to the comb or of contamination of other objects with mascara.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] FIG. **1** is a cross-sectional view of a mascara brush embodying the present invention in a particular form; and

[0015] FIG. **2** is a perspective view of a mascara brush embodying the present invention in a particular form.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0016] Referring to the drawings, the embodiment of the invention there shown is a brush **10** comprising an elongated, axially rectilinear core **12** constituted of two helically twisted-together runs of metal wire, and a multiplicity of fibers or bristles **14** (for example, nylon fibers) each clamped between the two runs of wire and having opposed free tips extending radially outwardly therefrom to form two brush bristle arrays **16** and **18** surrounding the core over a substantial portion of the length of the core. The manufacture and arrangement of such structures are well known in the art, and accordingly need not be further described. The two wire runs may be separate lengths of wire or opposed legs of a single initially U-shaped wire. The core has a proximal end **20** and a distal end **22** to which the bristle array extends, the proximal end of the bristle array being spaced distally from the proximal end of the core so as to leave an exposed proximal length of the core for mounting in the plastic stem of a mascara container cap.

[0017] As thus far described, the brush array **10** may be generally conventional. A conventional brush, however, would typically have a continuous, smoothly cylindrical and/or tapering bristle array profile. It will be understood that when the bristles are initially mounted in the twisted wire core, their free ends project for somewhat randomly unequal distances therefrom, and accordingly the brush is subjected to a trimming step. To produce brushes of conventional round (cylindrical and/or tapering conical) profile, the brushes are rotated through trimmer heads.

[0018] In contrast, in accordance with the present invention, the bristles are trimmed away in two regions **17** after initial assembly with the wire core so that their cut free ends define a notional envelope which has a semi-circular transverse cross-sectional profile or semi-circular region **16** in a plane perpendicular to the rectilinear axis of the wire core **12** and a narrow transverse cross sectional profile or narrow region **18**. The notional envelope of bristles extends for at least a major, proximal portion **24***a* of the length of the brush, although the envelope may taper distally, as shown at **24***b*. In other words, from a three-dimensional perspective, as shown in FIG. **2**, the brush **10** has a semi-cylindrical portion **19** and a ridge portion or ridge **21**.

[0019] FIG. **1** illustrates the transverse profile of the notional envelope of at least the (proximally disposed) major portion of the brush array of the invention. In this case, the major portion of the bristle array has an envelope with a semi-circular region **16** that extends for approximately 180 degrees around the wire core **12** and a narrow region **18** located opposite of the semi-circular region **16**. The narrow region **18** has a radial portion **26** which extends outward from the wire core **12** and is approximately equal to the length **27** of the bristles that form semi-circular region **16**, and an outward facing portion **28**, which is perpendicular to radial portion **26**. Outward facing portion **28** is generally, but need not be, narrower than radial portion **26**. The outward facing portion **28** can define any type of face but, in one embodiment, the face is flat. In other embodiments, this surface can be rounded, angled, saw-toothed etcetera.

[0020] In one embodiment, radial portion **26** is approximately 3.45 millimeters (0.136 inches) and outward facing portion **28** is approximately 3.17 millimeters (0.125 inches). In another embodiment, radial portion **26** is approximately 3.78 millimeters (0.149 inches) and outward facing portion **28** is approximately 0.79 millimeters (0.031 inches). To achieve the described cross-sectional profile, the newly assembled brush (rather than being rotated past trimmer heads) is passed through a shaper that forms the described semi-circular region **16** and the narrow region **18**.

[0021] A particular advantage of the brush of the present invention is ease of control over the amount of mascara applied to the lashes. When the brush has been withdrawn from the container for transport of mascara to a user's lashes, the semi-cylindrical portion **19** bears a heavy load of mascara whereas the ridge **21** bears a comparatively smaller load of mascara because fewer bristles are available to hold mascara. The shape of the outward facing portion **28** can also affect the amount of mascara borne by the ridge **21**. Thus the user can selectively apply a small or large amount of mascara to one's lashes by using respectively either the ridge **21** or the semi-cylindrical portion **19** to apply mascara to the lashes.

[0022] Further, the ridge **21** because of its narrow size has few bristles along its width, and therefore can act as a comb. Thus, when delivery/application of the mascara to the lashes is complete, the user can employ the combing portion or ridge **21** of the brush to comb the delivered mascara through the lashes. The long bristles of the narrow region **18** provide effective combing action and, because this region does not carry a large amount of mascara, the combing operation does not overload the lashes with mascara.

[0023] In addition, the difference in shape between the semi-circular region **16** and the narrow region **18** clearly indicates to the user which region of the brush is to be employed for each function, that is application of large amounts of mascara (semi-cylindrical portion **19**) and application of small amounts of mascara or combing (ridge **21**).

[0024] In another embodiment, more than one partially circular region **16** and/or narrow region **18** can be provided. Thus, for example, two narrow regions **18** of different widths could be provided allowing for an intermediate level of mascara to be applied.

[0025] This invention is not limited to the features and embodiments hereinabove specifically set forth, but may be carried out in other ways without departure from its spirit.

What is claimed is:

1. A mascara brush including:

(a) an elongated wire core having two runs of wire helically twisted together about a rectilinear axis forming a succession of turns, and

(b) an array of bristles projecting outwardly around said succession of turns, said array including, in each turn, a plurality of bristles each clamped between the runs of wire and having opposed free tips extending radially therefrom, the array having a proximal end and a distal end spaced apart along the rectilinear axis and the tips of the bristles of the array defining a notional envelope,

wherein the improvement comprises:

(c) said envelope having a cross-section, in a plane perpendicular to said rectilinear axis, which consists essentially of a generally semicircular portion and a narrow portion projecting from said axis in a direction opposite to the semicircular portion.

2. A mascara brush including:

(a) an elongated wire core having two runs of wire helically twisted together about a rectilinear axis forming a succession of turns, and

(b) an array of bristles projecting outwardly around said succession of turns, said array including, in each turn, a plurality of bristles each clamped between the runs of wire and having opposed free tips extending radially therefrom, the array having a proximal end and a distal end spaced apart along the rectilinear axis and the tips of the bristles of the array defining a notional envelope,

wherein the improvement comprises:

(c) said envelope having a shape which consists essentially of a generally semi-cylindrical portion and a ridge, both extending along said rectilinear axis from the proximal end to the distal end of the array, the ridge projecting radially with respect to the axis in a direction away from the semi-cylindrical portion and having a width substantially smaller than the maximum cross-sectional dimension of the semi-cylindrical portion.

3. A mascara brush as defined in claim **2**, wherein the envelope tapers distally toward the core at least adjacent the distal end of the array.

4. A method of applying mascara using the mascara brush of claim **2**, comprising the steps of:

applying mascara to the array of bristles;

applying mascara from the semi-cylindrical portion of the array to a user's lashes; and

combing the applied mascara on the user's lashes with the ridge of the array.

5. A method of manufacturing a mascara brush comprising the steps of:

twisting two runs of wire together to clamp a plurality of bristles between the runs and thereby form an elongated core from which the bristles form an outwardly projecting array, and

trimming the array of bristles to form the array into a semi-cylindrical portion and a ridge.

6. The method of claim **5** wherein the trimming step further comprises the step of:

trimming the array of bristles to form the array into a cylindrical shape.

7. The method of claim **6** in which the cylindrical shape further comprises a tapered portion.

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