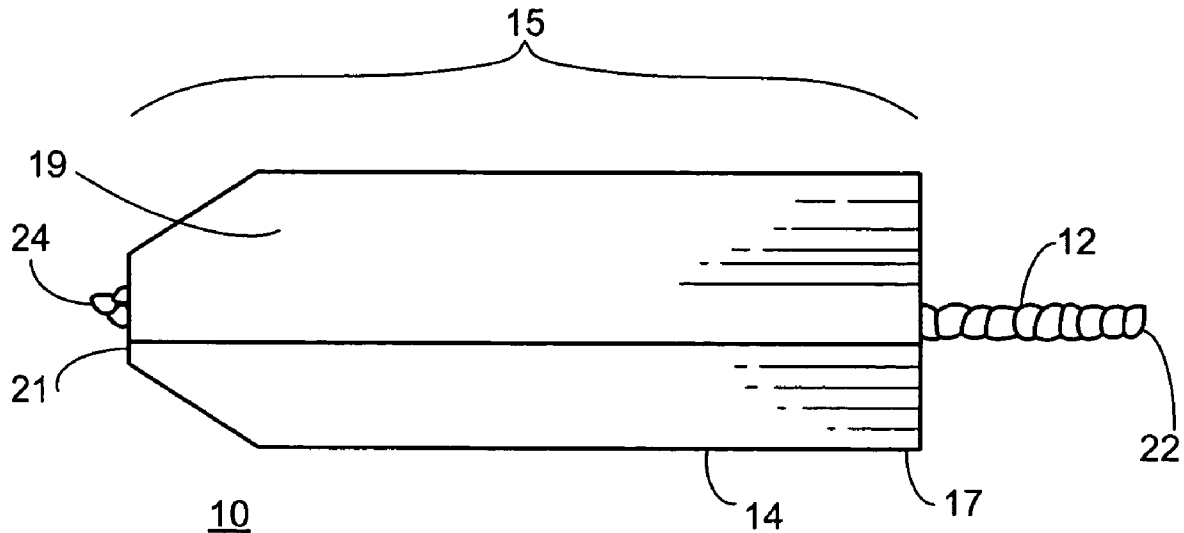




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(19) **United States**(12) **Patent Application Publication**
Schrepf(10) **Pub. No.: US 2008/0163884 A1**(43) **Pub. Date: Jul. 10, 2008**(54) **MASCARA BRUSH WITH CURVING
BRISTLE PORTION****Publication Classification**(76) Inventor: **Volker Schrepf**, East Islip, NY
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A46D 1/00 (2006.01)(52) **U.S. Cl. 132/217; 132/218; 15/206; 15/207;
15/207.2**(21) Appl. No.: **12/006,735**(22) Filed: **Jan. 4, 2008****Related U.S. Application Data**(60) Provisional application No. 60/879,649, filed on Jan.
10, 2007.(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 as well as for curling eyelashes.

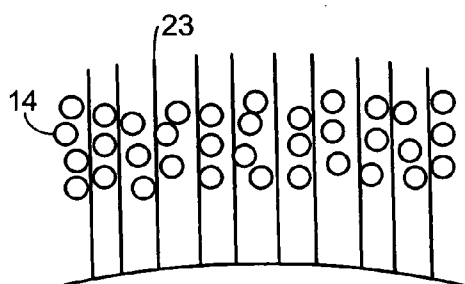


FIG. 1
PRIOR ART

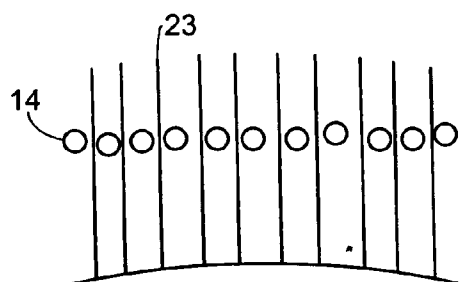


FIG. 8

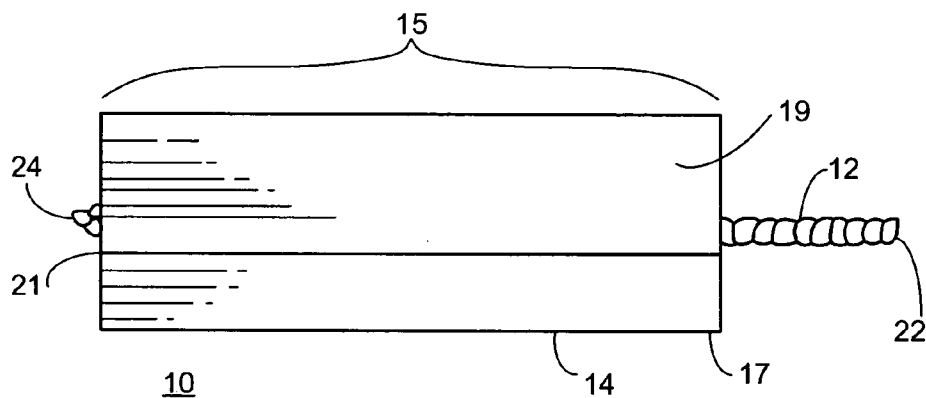


FIG. 2

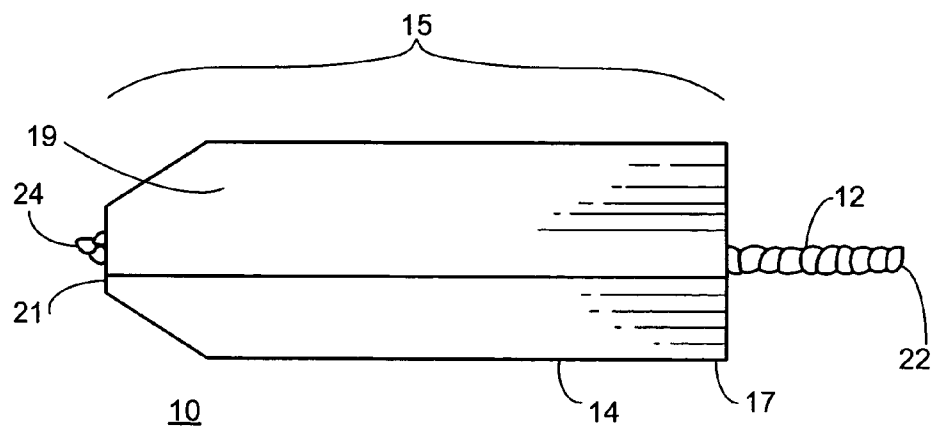


FIG. 3

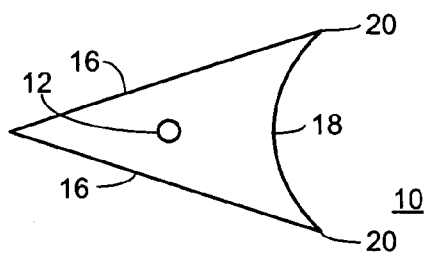


FIG. 4

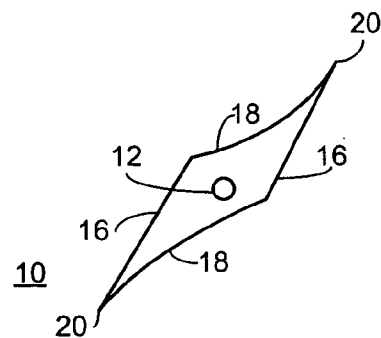


FIG. 5

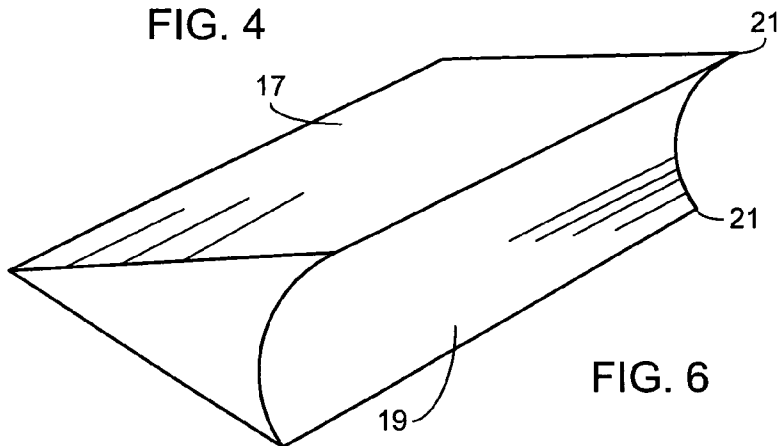


FIG. 6

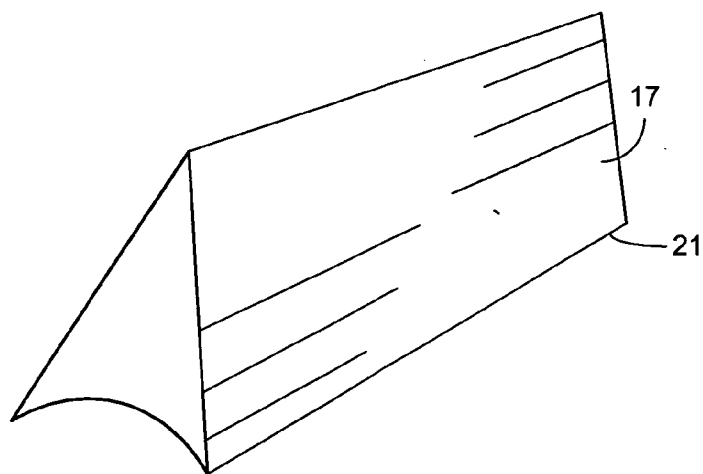


FIG. 7

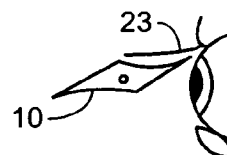


FIG. 9

MASCARA BRUSH WITH CURVING BRISTLE PORTION

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Application No. 60/879,649 filed Jan. 10, 2007, hereby incorporated by reference.

BACKGROUND OF THE INVENTION

[0002] This invention relates to brushes for applying mascara.

[0003] The typical 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, with progressively shorter bristles, toward the distal end of the brush. Other bristle array profiles have been proposed, 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] Some bristle array profiles, for example the type proposed in U.S. Pat. No. 4,898,193, the entire disclosure of which is incorporated herein by this reference, have been proposed in an attempt to provide additional functionality to more traditional brushes. As shown in this patent, a bristle array is formed having two slopes meet to form a ridge. This ridge is designed to aid in combing of the lashes, that is separating the lashes either before or after applying the mascara. However, because adjacent slopes described in this patent form at least a 60° angle or have a planar portion between the edges of the slopes, the ridge is wide. As shown in FIG. 1, such a wide ridge presents several rows of fibers to

the user's lashes and thus is less effective at penetrating and separating the lashes than is desired.

[0007] While conventional brushes of a cylindrical or tapered shape can be used to apply mascara, achieving a satisfactory comb-through can be difficult to achieve without using a separate implement such as a small plastic comb. Additionally, such brushes require a user to employ a separate device to curl the eyelashes, which is potentially dangerous to the user and which commonly breaks off some of the lashes. Since ease of use is a primary goal, a mascara brush able to apply a large amount of mascara, comb-through the lashes and curl them is desirable.

SUMMARY OF THE INVENTION

[0008] 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.

[0009] Another object is to provide such a brush having portions respectively adapted for: (1) delivering mascara to a user's lashes; (2) combing delivered mascara through the lashes; and/or (3) curling the user's lashes.

[0010] 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.

[0011] 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 at least one planar slope and at least one concave slope such that the two slopes form a narrow ridge where they meet.

[0012] Typically, the proximal end of the core engages an end of a stem having an opposite end secured within a mascara container cap.

[0013] Specifically, the invention may be embodied in a brush in which the point where the planar and concave slopes meet, the ridge, contains only a single row of bristles so that it may be used for combing delivered mascara through the lashes while the concave slope may be used for delivering mascara from a container to a user's lashes and/or for curling the user's lashes. Alternatively, the planar slope may be used to deliver a lighter application of mascara.

[0014] Further, in accordance with one embodiment of the invention, the transverse cross-section of the envelope is substantially uniform in dimensions along at least a major portion of the envelope. Thus, while the envelope can taper toward the distal end of the array, a substantial longitudinal ridge parallel to the rectilinear axis of the core is provided to aid the user for combing.

[0015] 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 tech-

nique involved in using this brush. The mascara product builds up on the concave slope and, to a lesser extent, on the planar slope, which gives clearly recognizable heavily loaded and lightly loaded application zones. Additionally, the ridge, 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, the concave slope can be used to curl the lashes, obviating the need for a separate eyelash curler. Because the combing and curling regions are stored within the mascara container, there is no risk of damage and/or contamination to the comb or of contamination of other objects with mascara.

BRIEF DESCRIPTION OF THE DRAWINGS

[0016] FIG. 1 is a cross-sectional top view showing a prior art mascara brush in contact with a user's lashes;

[0017] FIG. 2 is a side view of a mascara brush having a non-tapered side notional envelope embodying the present invention in a particular form;

[0018] FIG. 3 is a side view of another mascara brush having a tapered side notional envelope embodying the present invention in another form;

[0019] FIG. 4 is a cross-sectional view of a mascara brush having one concave slope embodying the present invention in a particular form;

[0020] FIG. 5 is a cross-sectional view of another mascara brush having two concave slopes embodying the present invention in another particular form;

[0021] FIG. 6 is a perspective view of a mascara brush having one concave slope embodying the present invention in a particular form;

[0022] FIG. 7 is a perspective view of the mascara brush of FIG. 6 that has been rotated to show a different side of the brush;

[0023] FIG. 8 is a cross-sectional top view showing a mascara brush in contact with a user's lashes embodying the present invention in a particular form; and

[0024] FIG. 9 is a cross-sectional end view showing the use of a mascara brush to comb the user's lashes embodying the present invention in a particular form.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0025] FIGS. 2, 4, 6 and 7 show an embodiment of the invention. Similar to conventional brushes, the brush 10 has an elongated, axially rectilinear core 12 constituted of two helically twisted-together runs of metal wire, and a multiplicity of fibers or bristles 14. The bristles 14 (for example nylon fibers) form an array 15, each bristle clamped between the two runs of wire and having opposed free tips extending radially outwardly therefrom. 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 22 and a distal end 24 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 stem of a mascara container cap. The manufacture and arrangement of such structures are well known in the art, and accordingly need not be further described.

[0026] A conventional brush typically has 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 a conventional brush is subjected to a trimming step by being rotated through trimming heads to produce brushes of conventional round (cylindrical and/or tapering conical) profile.

[0027] In contrast, in accordance with this invention, the bristles are further trimmed (after initial assembly with the wire core) so that their cut free ends define a notional envelope which has a transverse cross-sectional profile, see FIG. 4, having, in a plane perpendicular to the rectilinear axis of the wire core 12, at least one planar region 16 and at least one concave region 18 meeting at a point 20. The angle formed where planar region 16 and concave region 18 meet is generally small and in embodiments of this invention is generally no greater than 30°. Because the transverse cross-sectional profile of the notional envelope of bristles extends along at least a portion of the length of the brush, the planar region 16 defines a planar slope 17, the concave region 18 defines a concave slope 19 and the point 20 defines a narrow ridge 21 along the brush. As shown in FIG. 3, these slopes can taper toward the distal end of the brush as the brush tapers.

[0028] To achieve the described cross-sectional profile, the newly assembled brush, rather than, or in addition to, being rotated past trimmer heads, is passed through a shaper that forms the described planar slope 17 and the concave slope 19.

[0029] A particular advantage of the brush of the present invention is ease of control over the amount of mascara applied to the lashes 23. When the brush has been withdrawn from the container for transport of mascara to a user's lashes 23, the concave slope 19 applies a heavy load of mascara whereas the planar slope 17 will apply a comparatively smaller load of mascara because most of the bristles do not simultaneously contact the user's lashes 23. Thus the user can selectively apply a small or large amount of mascara to one's lashes 23 by using respectively either the planar slope 17 or the concave slope 19.

[0030] Additionally, the ridge 21, because of its narrow size, acts as a comb. Thus, when delivery/application of the mascara to the lashes is complete, the user can employ the ridge 21 of the brush to comb the delivered mascara through the lashes. The long bristles of the ridge 21 provide effective combing action and, because the ridge does not carry a large amount of mascara, the combing operation does not overload the lashes with mascara. Indeed, because of the narrowness of the ridge 21, only one row is generally available which allows the bristles to more effectively act as a comb than multiple rows of bristles; contrast prior art FIG. 1 with FIG. 8.

[0031] Further, the concave slope 19, because of its curved shape, can be used to curl a user's lashes as shown in FIG. 9. Thus when delivery/application of the mascara to the lashes is complete, the user can employ the concave slope 19 of the brush to curl the lashes without using a separate cosmetic device.

[0032] In addition, the difference in shape between the planar slope 17 and the concave slope 19 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 and curling of lashes employs the concave slope 19, application of small amounts of mascara employs the planar slope 17, and combing employs ridge 21.

[0033] In the embodiment as shown in FIG. 5, a different number of planar regions 16 and concave regions 18 can be provided. Thus, for example, two planar slopes 16 and two concave slopes 18 could be provided allowing for an alternate

level of mascara to be applied. In other embodiments, (not shown) there can be more than two planar slopes **16** and/or concave slopes **18**.

[0034] 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 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 the improvement comprises:

(c) the envelope having a cross-section, in a plane perpendicular to the rectilinear axis, which comprises at least one planar region and at least one concave region forming a point between the at least one planar region and the at least one concave region.

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 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 the improvement comprises:

(c) the envelope comprising a generally parallelogram-like shape with two opposing planar slopes and two opposing concave slopes, each of the slopes extending along

the rectilinear axis from the proximal end to the distal end of the array such that a narrow ridge is formed where each planar region meets a concave region at an acute angle.

3. A mascara brush as defined in claim **1**, wherein the envelope tapers distally toward the core at least adjacent the distal end of the array.

4. A mascara brush comprising:

(a) a core;

(b) an array of bristles attached to and extending along the core, each bristle having a free tip, such that the array defines at least two slopes, the at least two slopes meeting along a ridge, wherein the at least two slopes form an angle of less than 60 degrees along the ridge.

5. The mascara brush of claim **4** wherein the at least two slopes forming an angle of less than 60 degrees along the ridge comprise a planar slope and a concave slope.

6. A method of applying mascara to a user's lashes wherein the user:

(a) applies mascara to a mascara brush,

(b) selects a planar slope or a concave slope of the mascara brush, and

(c) runs the selected slope of the mascara brush through the user's lashes.

7. The method according to claim **6** wherein the user selects a concave slope of the mascara brush to apply a heavy load of mascara to the user's lashes.

8. The method according to claim **6** wherein the user selects a planar slope of the mascara brush to apply a light load of mascara to the user's lashes.

9. A method of combing a user's lashes wherein the user runs a narrow ridge of a mascara brush through the user's lashes so as to separate the user's lashes.

10. A method of curling a user's lashes wherein the user pushes a concave slope of a mascara brush against the lashes such that the lashes are bent to approximately follow the contour of the mascara brush's concave slope.

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