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(54) **ABRADED SPIRAL WOUND BRUSH**

Publication Classification

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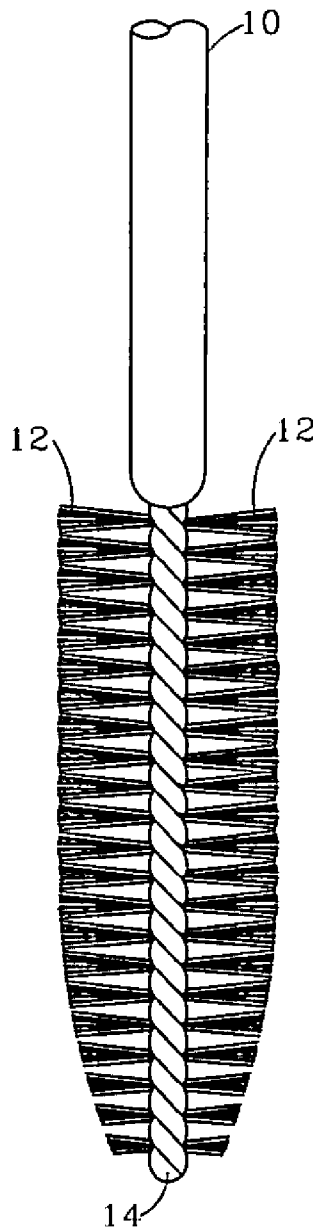
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(57) **ABSTRACT**

In a spiral wound brush for applying mascara and similar hair-streaking cosmetic products, the present invention replaces the sharply clipped ends common to the synthetic fibers typically employed with synthetic fibers having raggedly formed bristle ends for enhancing the pick up of the cosmetic product and for applying it thereafter with a softer feel.

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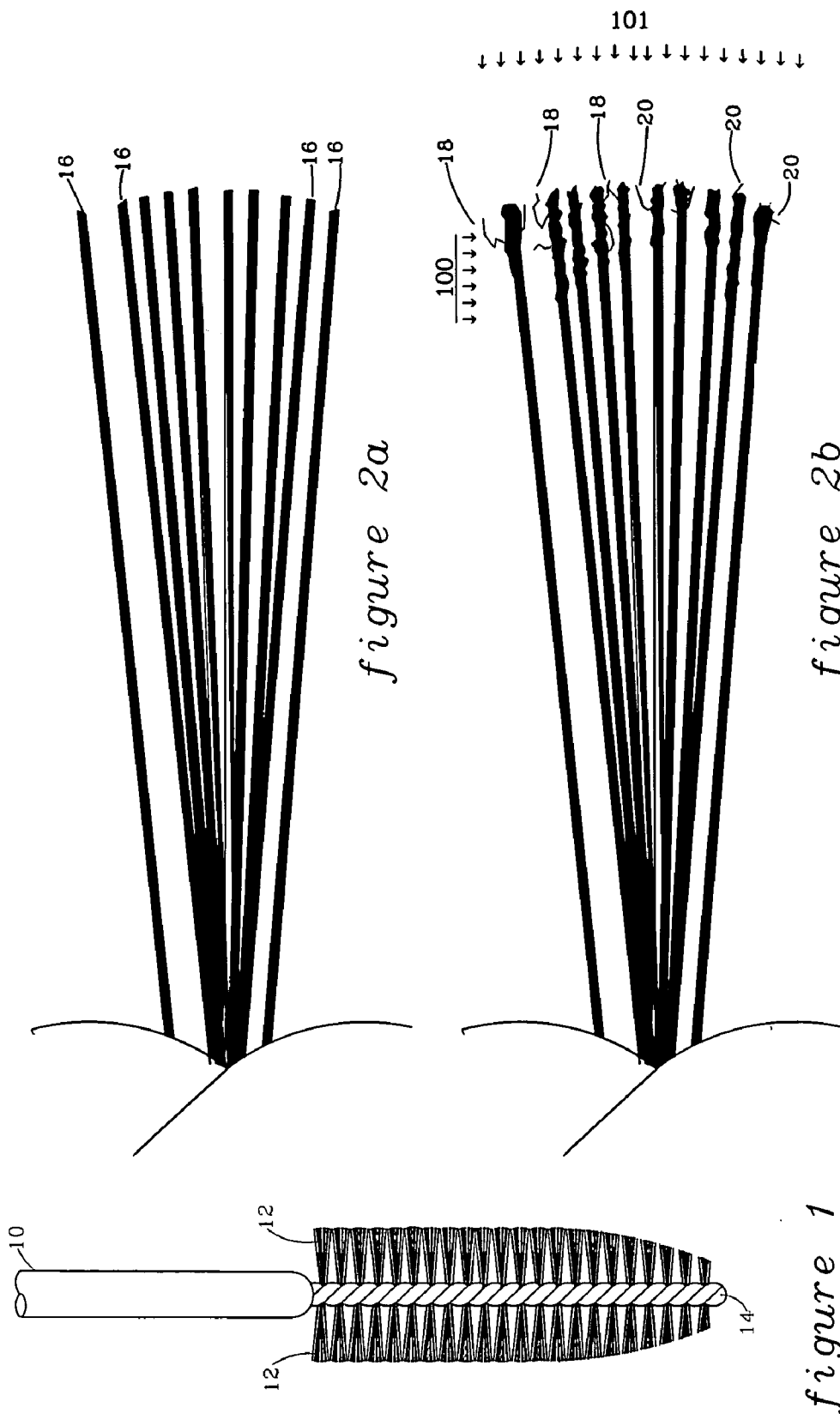


figure 1

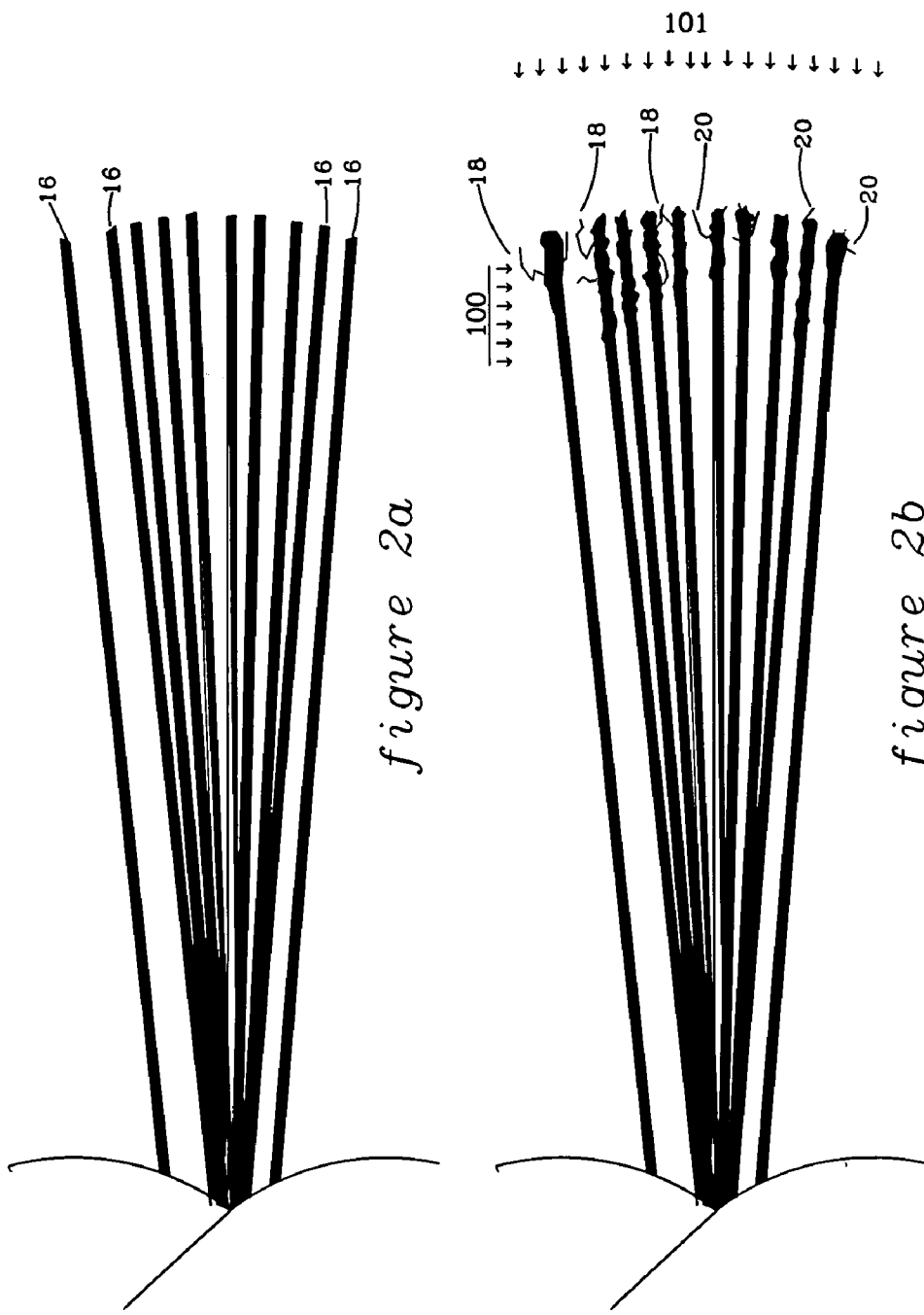


figure 2a

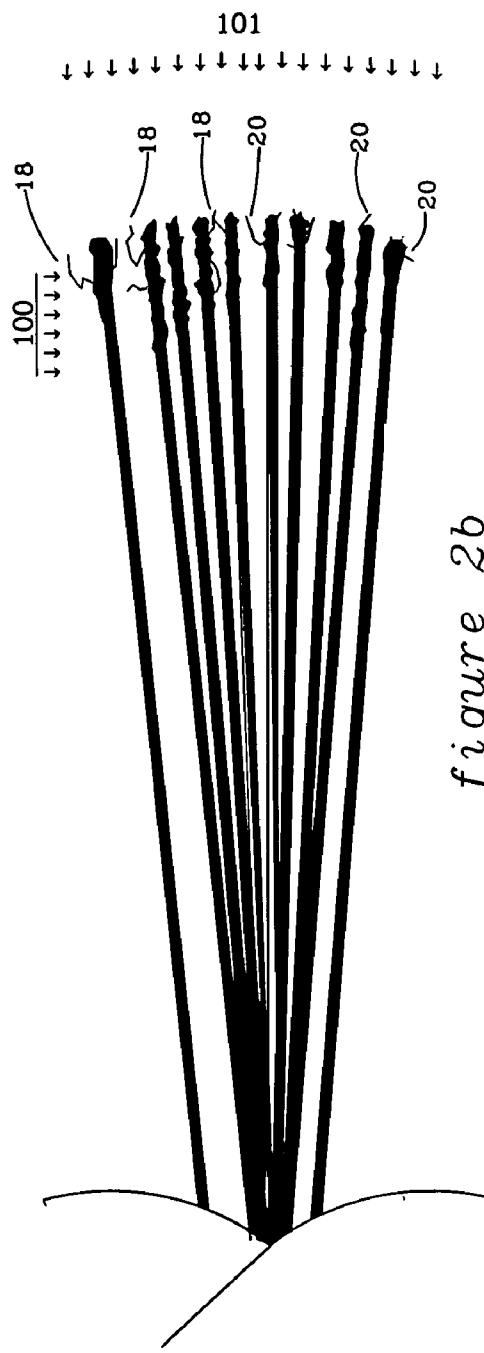


figure 2b

ABRADED SPIRAL WOUND BRUSH

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] None

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

[0002] Research and development of this invention and Application have not been federally sponsored, and no rights are given under any Federal program.

REFERENCE TO A MICROFICHE APPENDIX NOT APPLICABLE

BACKGROUND OF THE INVENTION

[0003] 1. Field of the Invention

[0004] This invention relates to spiral wound brushes for applying mascara and similar face-color cosmetic products, in general, and to a construction which enhances pick up of the cosmetic product and which provides a more softer feel in its application.

[0005] 2. Description of the Related Art

[0006] As will be appreciated by those skilled in the art, spiral wound brushes for applying mascara and similar hair-color cosmetic products commonly employ synthetic fiber bristles having sharply clipped ends. Whether the fibers be extruded as solid, or as hollow cylindrical flexible tubes, their sharply clipped ends limit their ability to pick up the cosmetic product to begin with, and the feel one experiences when the product is applied and laid down. As will become clear from the following description, the present invention promotes the ability to provide a softer feel and to enhance the transfer of cosmetic product from its package to the user by providing synthetic fiber bristles with characteristics more akin to those exhibited by natural animal hair.

SUMMARY OF THE INVENTION

[0007] Thus, and in accordance with the invention, the synthetic fibers of the spiral wound brush offering these improvements are provided with raggedly formed bristle ends rather than the angular geometric presentation which typifies clipped extruded synthetic fibers. Such improvements will be appreciated whether the brush utilizes hollow or solid synthetic fibers, whether the fibers be polyamide resins or extruded from other polymers, and whether the fibers be used for mascara or other hair-coloring cosmetic product, picked up from a reservoir and transferred to apply.

[0008] As will be described, a preferred embodiment of the invention gives this ragged formation to the bristle ends by employing an abrasive medium either perpendicularly or laterally to the fibers. Utilizing a rotating cylindrical abrading wheel, for example, this abrades the ends to produce an appearance similar to that of a higher-end paint brush where animal bristles are utilized in the picking up and smoothly laying down of paint. In this embodiment to be described, moreover, the spiral wound brush is provided with a solid or hollow, synthetic polyamide fiber abraded by an aluminum oxide or Carborundum wheel. The fibers in spiral wound brushes such as those employed for mascara application and streaking one's hair have a secondary purpose: combing and

separating the lashes or hair. Since the treatment described herein only affects the extruded ends, there is no deterrent to this function. Enhanced results could also be had by using certain corrosive organic or inorganic chemical exposure to the fibers. Such alternative arrangement, however, would require an additional expense for removal or neutralization of any corrosive chemicals that might be employed to eliminate the harmful results that might possibly arise from any residue coming close to a user's eyes.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] These and other features of the present invention will be more clearly understood from a consideration of the following description, taken in connection with the accompanying drawings, in which:

[0010] **FIG. 1** is an illustration of a spiral wound brush as might be utilized to apply cosmetics—and, more particularly, mascara and similar hair-streaking cosmetic products;

[0011] **FIG. 2a** illustrates the typical clipped synthetic fiber bristle brush strands as typify the present manufacture of spiral wound brushes of this type; and

[0012] **FIG. 2b** is an illustration of the synthetic fiber bristle brush strands as constructed in accordance with the teachings of this invention.

DETAILED DESCRIPTION OF THE INVENTION

[0013] Referring to the Drawings, the spiral wound brush of **FIG. 1** includes a handle **10** and pluralities of strands of bristle fibers **12** outwardly extending from its core **14** at regular intervals angularly in a helical orientation. (For purposes of clarity, only two such series of strands **12** are shown.) **FIG. 2a** is a magnified illustration of the strands **12** as characterize present spiral wound brush constructions in which the synthetic fibers employed exhibit sharply clipped ends **16** commonly resulting from the fiber trimming. As will be understood, this follows whether the fibers be extruded as solid, or as hollow, cylindrical flexible rods. Ten such strands are shown in **FIG. 2a**, but fewer or greater numbers may be utilized depending upon the manufactured design.

[0014] As previously mentioned, the present invention follows from the recognition that natural animal hair picks up more material in any given utilization, and lays it down more evenly and softly in application—and that this results because of their absence of sharply clipped ends. With their random orientation and the modification of the present invention, the spiral wound brush simulates this natural animal hair by providing the bristle ends of the fibers with a ragged formation, as shown at **18, 20** in **FIG. 2b**. In accordance with the invention, this can be had by abrading the fiber bristles with a rotating cylindrical abrading wheel of design whose abrasion force is applied either perpendicularly or laterally against the ends of the bristles. Such forces are indicated in **FIG. 2b** by the arrows **100** and **101**, respectively. (Alternatively, although not as preferable because of economic and control drawbacks, and because of the need for taking greater safety precautions, the ragged appearance to the bristle ends could be had through corrosive organic or inorganic chemical exposure of the fibers.)

[0015] In the preferred embodiment of the invention—and more particularly one which exhibits a great softness of feel

and an ease of transfer of mascara or similar hair-color cosmetic products—the synthetic fibers of the invention are selected of polyamide resin. Other synthetic polymer fibers could be employed, and solid synthetic fibers could likewise be utilized instead of the preferred hollow synthetic fiber of the invention. In either event—namely, whether hollow or solid synthetic fibers are used, and regardless of whether they be polyamide or other polymer resins—acting on the fiber bristles to give the ragged formation rather than one of sharply clipped ends provides the benefits of softer feel of application and enhanced ease of cosmetic product transference.

[0016] While there have been described what are considered to be preferred embodiments of the present invention, it will be readily appreciated by those skilled in the art that modifications can be made without departing from the scope of the teachings herein. For at least such reason, therefore, resort should be had to the claims appended hereto for a true understanding of the invention.

1. In a spiral wound brush for applying cosmetic products, the improvement comprising:

providing said brush with extruded synthetic fibers of like diameter along the lengths thereof having raggedly formed bristle ends for picking up the cosmetic product and for thereafter transferring same for application.

2. The improvement of claim 1 providing said brush with extruded synthetic fibers of like diameter along the lengths thereof having raggedly formed bristle ends for the picking up and subsequent transferring of one of mascara and hair-streaking cosmetic products.

3. The improvement of claim 1 wherein said brush is provided with one of hollow and solid extruded synthetic fibers.

4. The improvement of claim 1 wherein said brush is provided with one of hollow and solid extruded synthetic polymer fibers.

5. The improvement of claim 1 wherein said brush is provided with one of hollow and solid extruded synthetic polyamide fibers.

6. The improvement of claim 13 wherein said bristle ends are formed by a rotating cylindrical abrading wheel.

7. (canceled)

8. The improvement of claim 13 wherein said abraded bristle ends are formed by a rotating cylindrical abrading wheel applying an abrasion force perpendicularly to the extruded synthetic fibers.

9. The improvement of claim 13 wherein said abraded bristle ends are formed by a rotating cylindrical abrading wheel applying an abrasion force laterally along the extruded synthetic fibers.

10. The improvement of claim 1 wherein said brush is provided with one of hollow and solid extruded synthetic fibers whose ends are subjected to one of organic and inorganic chemical exposure.

11. The improvement of claim 1 wherein said brush is provided with hollow extruded synthetic polyamide fibers.

12. (canceled)

13. In a spiral wound brush for applying cosmetic products, the improvement comprising:

providing said brush with extruded synthetic fibers of like diameter along the lengths thereof having raggedly formed, abraded bristle ends for picking up the cosmetic product and for thereafter transferring same for application.

14. The improvement of claim 13 providing said brush with extruded synthetic fibers of like diameter along the lengths thereof having raggedly formed, abraded bristle ends for the picking up and subsequent transferring of one of mascara and hair-streaking cosmetic products.

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