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DUMLER(10) **Pub. No.: US 2009/0159094 A1**(43) **Pub. Date: Jun. 25, 2009**(54) **APPLICATOR FOR THE APPLICATION OF
COSMETIC PRODUCTS, IN PARTICULAR
MASCARA AND HAIR DYE PRODUCTS**(30) **Foreign Application Priority Data**

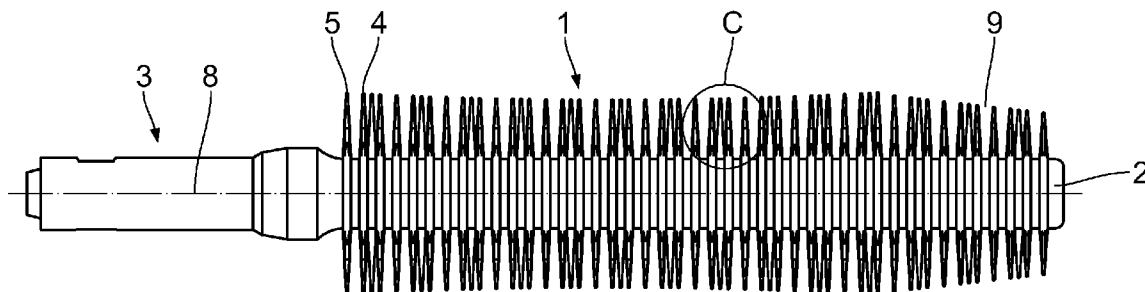
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Publication Classification(75) Inventor: **Norbert DUMLER, Ansbach (DE)**(51) **Int. Cl.**
A45D 40/26 (2006.01)(52) **U.S. Cl.** **132/218**(57) **ABSTRACT**

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In an applicator for the application of cosmetic products such as mascara, comprising an oblong base body with a wand extension and a plurality of disc-like fitting elements which are arranged substantially perpendicular to the longitudinal axis of the base body at a distance from one another, it is provided that the fitting comprises at least two segments, in particular halves, whose fitting elements are arranged at a different distance X1 or X2, respectively, from one another when seen in the longitudinal direction.

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Bechhofen-Waizendorf (DE)(21) Appl. No.: **12/341,932**(22) Filed: **Dec. 22, 2008**

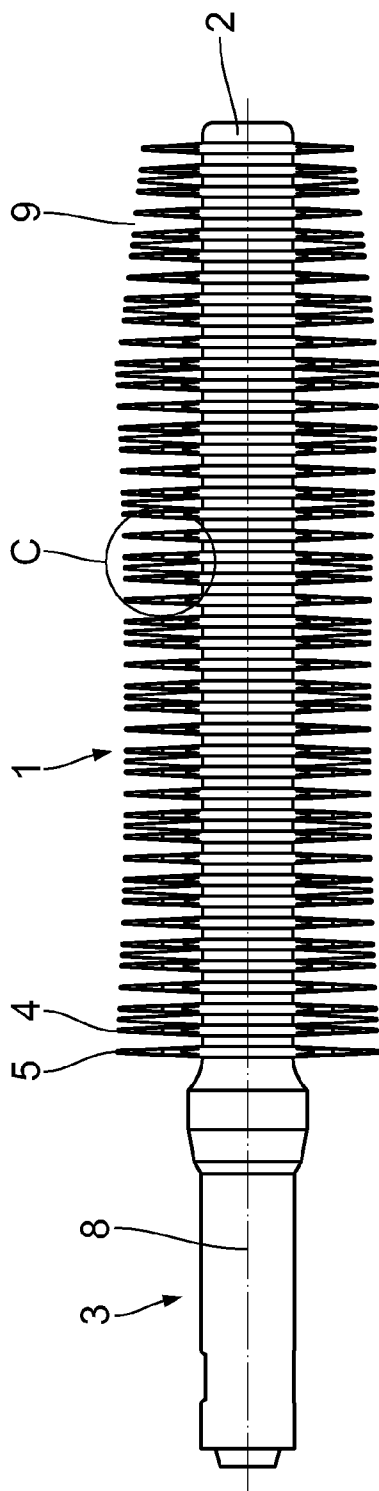


Fig. 1

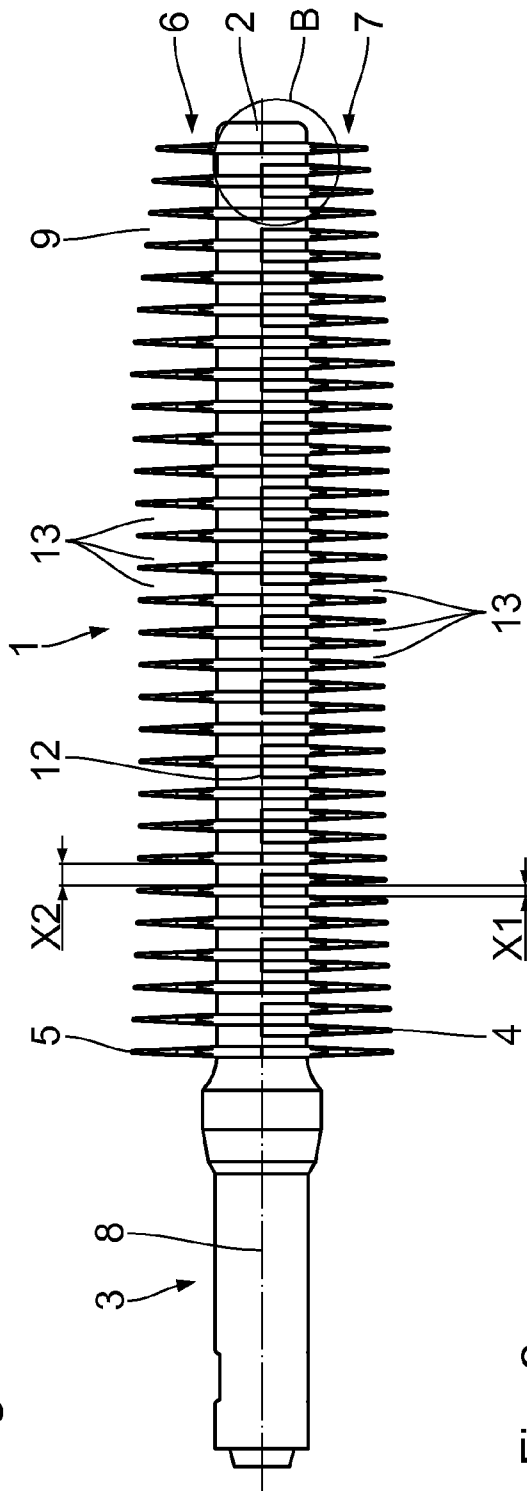


Fig. 2

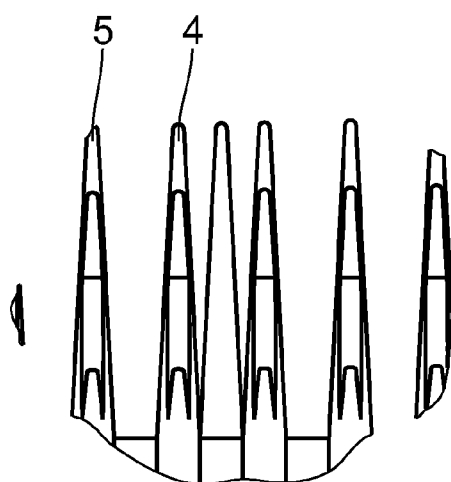


Fig. 3

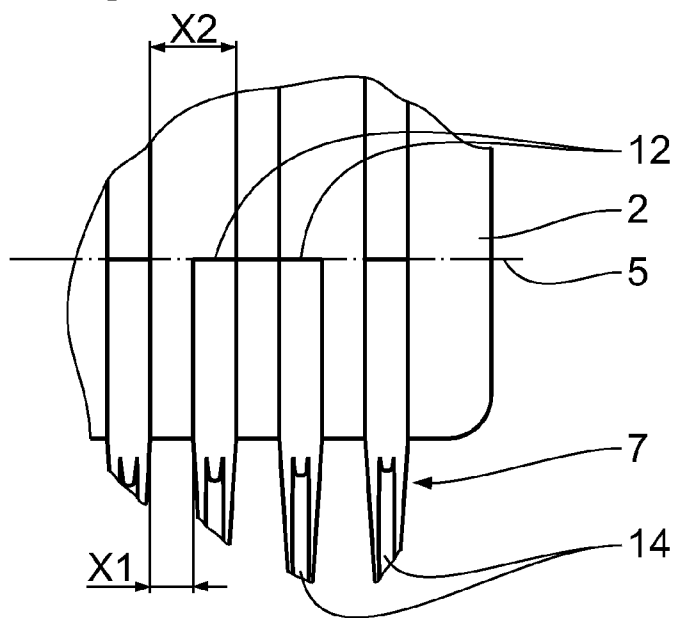


Fig. 4

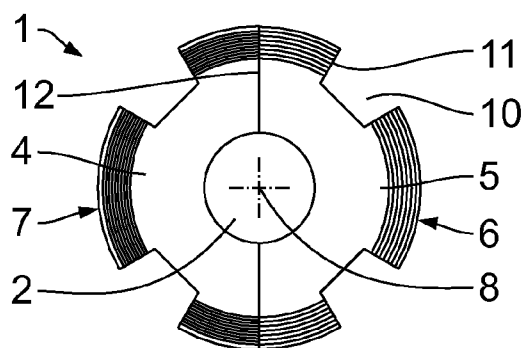


Fig. 5

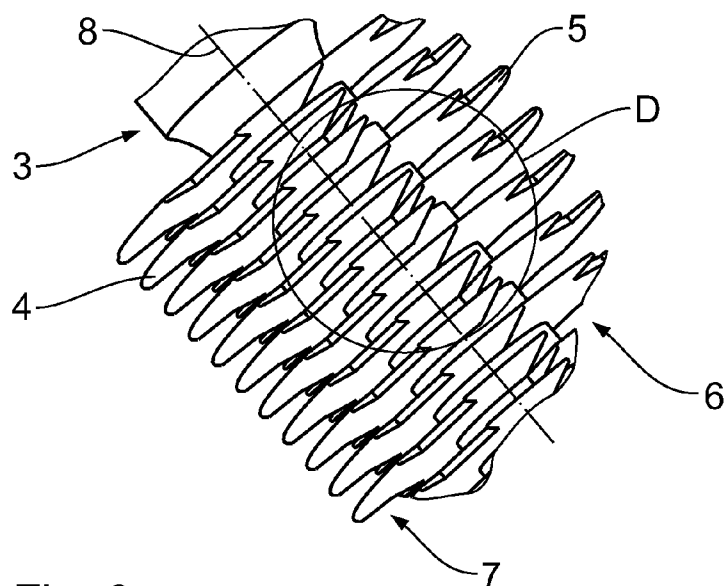


Fig. 6

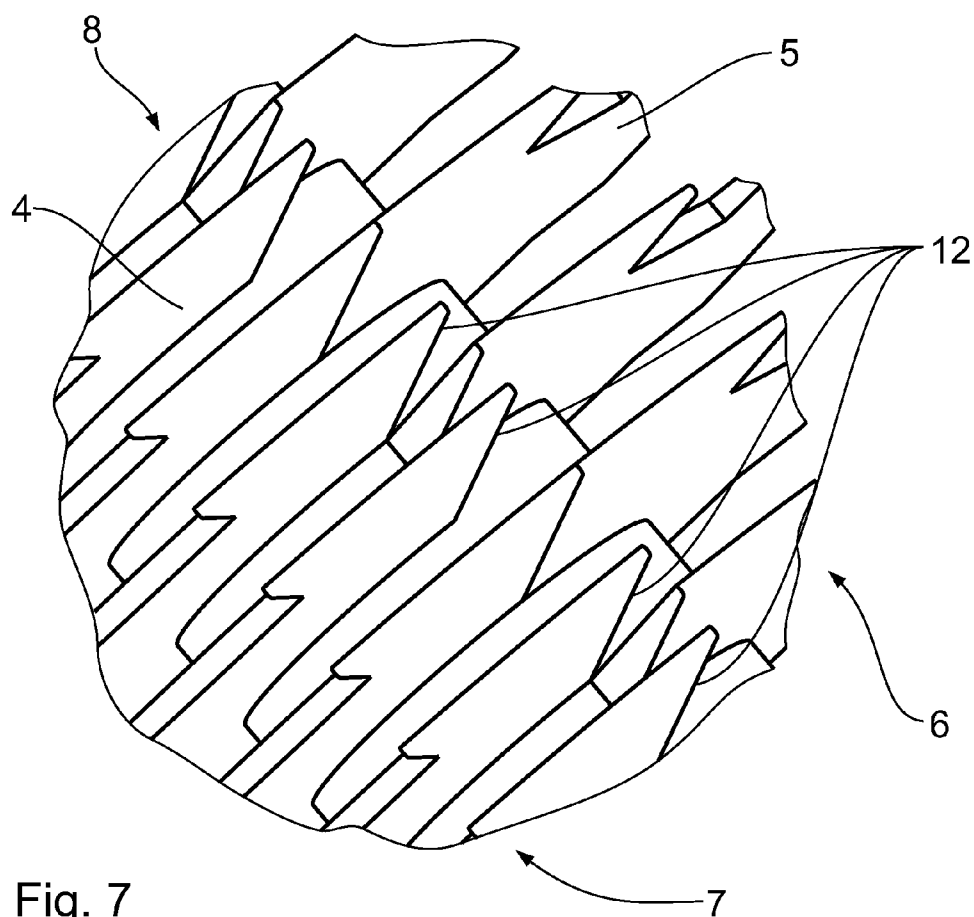


Fig. 7

APPLICATOR FOR THE APPLICATION OF COSMETIC PRODUCTS, IN PARTICULAR MASCARA AND HAIR DYE PRODUCTS

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The invention relates to an applicator for the application of cosmetic products and hair dye products such as mascara, the applicator comprising an oblong base body with a wand extension and a plurality of disc-like fitting elements which are arranged substantially perpendicular to the longitudinal axis of the base body at a distance from one another.

[0003] 2. Background Art

[0004] An applicator of the generic type is disclosed in U.S. Pat. No. 3,892,248. In this applicator, it is furthermore provided already that the discs are arranged asymmetrically relative to the base body in such a way that they stick out further on one side of the base body than on the other.

[0005] Also, it is already known from EP 0 038 524 to injection-mold an envelope, which is made of a second material and carries the discs, around a core of a first material. Furthermore, this disclosure describes that the discs may be provided with recesses which are in line with each other in the longitudinal direction.

[0006] Other applicators with disc-like fittings are known from EP 1 752 065 A1, U.S. Pat. No. 6,345,626 B1 and US 2002/0014251 A1.

SUMMARY OF THE INVENTION

[0007] Expanding upon this, it is the object of the invention to design an applicator of the generic type in such a way as to optimize the transfer and application properties for the cosmetic product and, when used as a mascara applicator, to guarantee a reliable and defined separation of the lashes as well as an even application of color up to the tip of the lash.

[0008] This object is achieved according to the invention that the fitting comprises at least two segments, in particular halves, whose fitting elements **4**, **5** are arranged at different distances from each other when seen in the longitudinal direction.

[0009] Seen in the circumferential direction, this produces a varying fitting density which causes excess mascara to be wiped off and thus removed from the lashes when the applicator is rolled along the lashes in a guided manner during the application.

[0010] The fitting elements and the core of the applicator may be injection-molded as one piece from the same material or from different materials.

[0011] In the second case, the core may consist of PP (polypropylene) and the fitting elements may consist of TPE (thermoplastic elastomer), for example.

[0012] The distance between the fitting elements, which are arranged at a smaller distance from each other, may amount to between 0.2 mm and 1.5 mm, preferably to approximately 0.6 mm.

[0013] The distance between the fitting elements, which are arranged at a larger distance from each other, advantageously amounts to between 0.6 mm and 2.5 mm, preferably to approximately 0.9 mm.

[0014] Likewise, an embodiment is conceivable in which the first fitting elements are injection-molded as one piece with a half of the base body and the second fitting elements

are injection-molded as one piece with a second half of the base body and the two halves of the base body are connected with each other.

[0015] Expanding upon this, it is conceivable as well for the halves of the base body to be connected with each other in one mold by means of two components (injection-molding).

[0016] The first and/or second fitting elements advantageously comprise recesses which are in line with each other in the longitudinal direction, wherein the flanks of the recesses advantageously extend in the radial direction.

[0017] The radially outer regions of the fitting elements may be provided with grooves which extend in the circumferential direction.

[0018] The invention will hereinafter be described in more detail by means of a preferred embodiment in conjunction with the drawing.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] FIG. 1 is a side view of an applicator according to the invention;

[0020] FIG. 2 is a side view which is rotated through 90° relative to the illustration of FIG. 1;

[0021] FIG. 3 is an enlarged view of the region C in FIG. 1;

[0022] FIG. 4 is an enlarged view of the region B in FIG. 2;

[0023] FIG. 5 is a view of the applicator along the central longitudinal axis, seen from the right-hand side of FIG. 2;

[0024] FIG. 6 is a perspective view of the applicator in the region of the wand extension; and

[0025] FIG. 7 is an enlarged view of the region D in FIG. 6.

DESCRIPTION OF THE PREFERRED EMBODIMENT

[0026] An applicator **1** shown in the drawing comprises a base body **2** which is formed like an oblong or rod-shaped core and includes a wand extension **3**, wherein the base body **2** is provided with disc-like or disc-segment-like fitting elements **4**, **5** which are arranged at an axial distance of X1 or X2, respectively, from one another.

[0027] As can be seen from FIG. 2, the applicator **1** comprises two halves **6**, **7** on both sides of a longitudinal symmetry plane which contains a central longitudinal axis **8**.

[0028] The fitting elements **4**, **5** are injection-molded as one piece with the rod-shaped core of the base body **2** comprising the halves **6**, **7**.

[0029] Production may be performed by means of a one-component injection molding process and a two-component injection molding process, wherein the 1-c process produces integral pieces while the 2-c process offers a choice between the following production methods:

[0030] sandwich process;

[0031] 2-c process which includes over-injection of the first and second molds;

[0032] 2-c moltrusion.

[0033] Seen in the axial direction, i.e. in the direction of the central longitudinal axis **8**, the first fitting elements **4** of the half **7** are arranged at a distance X1 from one another which is smaller than the axial distance X2 between the second fitting elements **5**, with the result that the (axial) density of the fitting elements on half **7** exceeds that on half **6**.

[0034] Naturally, the lashes taper towards the tip. Therefore, the fitting elements **4** and **5** taper towards their radially outer edge so as to ensure a relatively even application of color from the root to the tip of the lash after being immersed

into the coloring matter for the first time. The fitting elements **4, 5** have a larger axial width at their basis, in other words at the point of contact with the base body **2**, than at their outer edge. Axially adjacent fitting elements **4, 5** therefore form an axial gap **13** which tapers inwardly for accommodating the coloring matter and the lashes which are immersed therein. Each of the gaps **13** has two side walls which converge to form a V and which are formed by the adjacent fitting elements **4, 5**.

[0035] The rolling movement generated by the consumer, in conjunction with the simultaneous linear movement from the root to the tip of the lash, causes the coloring matter, which adheres to the lash after being immersed therein, to be wiped off evenly at the inventive shoulder **12** (cf. FIG. **4**) which is formed by the transition from the region of lower fitting-element density to the region of higher fitting-element density, thus ensuring an even application of color from the root to the tip of the lash.

[0036] The outer contour, in other words the envelope of the fitting elements **4, 5**, may have very different geometries at the outer end remote from the wand extension **3**, for example a cylindrical shape, a cylindro-conical shape, a curved shape, the shape of a football or of a fir tree. In the described embodiment, this outer contour has a conical taper **9** at its outer axial end. In the central region, the outer contour is concave.

[0037] In the present embodiment, the fitting elements **4, 5** are symmetrical to the central longitudinal axis **8**. Alternatively, they may also be arranged in such a way as to be staggered with respect to the central longitudinal axis **8**. The present embodiment further shows two segments (=halves **6, 7**) of the wiping elements, in other words the fitting elements **4, 5**, which extend in each case along 180°. There may however also be provided up to sixteen of such segments, wherein the axial distance of the fitting elements **4, 5** may vary from segment to segment, for instance in such a way that there is a continuous increase in the circumferential direction.

[0038] The fitting elements **4, 5** resemble a disc or a disc segment. This means that they extend in each case across an angular range of at least 22.5° in the circumferential direction and that they have in each case two axial side walls which extend in the circumferential direction as well. The extension of the fitting elements **4, 5** in the circumferential direction therefore exceeds that in the axial direction in particular several times.

[0039] The fitting elements **4, 5** are provided with recesses **10** whose flanks **11** extend radially outwardly and are in line with each other in the axial direction (cf. FIG. **5**).

[0040] Furthermore, the radially outer edges of the fitting elements **4, 5** may be provided with grooves **14** which extend in the circumferential direction (cf. FIG. **4**).

What is claimed is:

1. An applicator (1) for the application of cosmetic products such as mascara, comprising an oblong base body (2) with a wand extension (3) and a plurality of disc-like fitting elements (4, 5) which are arranged substantially perpendicu-

lar to a longitudinal axis (8) of the base body (2) at an axial distance (X1 or X2, respectively) from one another, wherein the applicator (1) comprises at least two segments whose fitting elements (4, 5) are at a different axial distance (X1 or X2, respectively) from one another when seen in the longitudinal direction.

2. An applicator according to claim 1, wherein the at least two segments are halves (6, 7).

3. An applicator according to claim 1, wherein a core (2) of the applicator (1) consists of a first material and the fitting elements (4, 5) consist of a second material.

4. An applicator according to claim 1, wherein a core (2) of the applicator (1) and the fitting elements (4, 5) consist of a same material.

5. An applicator according to claim 1, wherein the fitting elements (4, 5) consist of a thermoplastic elastomer.

6. An applicator according to claim 1, wherein the distance (X1) between the first fitting elements (4) relative to one another amounts to between 0.2 mm and 1.5 mm.

7. An applicator according to claim 1, wherein the distance (X1) between the first fitting elements (4) relative to one another amounts to approximately 0.6 mm.

8. An applicator according to claim 1, wherein the distance (X2) of the second fitting elements (5) relative to one another amounts to between 0.6 mm and 2.5 mm.

9. An applicator according to claim 1, wherein the distance (X2) of the second fitting elements (5) relative to one another amounts to approximately 0.9 mm.

10. An applicator according to claim 1, wherein the first fitting elements (4) are injection-molded as one piece with a first half of the base body and the second fitting elements (5) are injection-molded as one piece with a second half of the base body and the two halves of the base body are connected with each other.

11. An applicator according to claim 10, wherein the two halves of the base body are connected with each other in one mold by means of two-component injection molding.

12. An applicator according to claim 1, wherein at least one of the first and second fitting elements (4, 5) comprise recesses (10) which are in line with each other in the longitudinal direction.

13. An applicator according to claim 12, wherein the flanks (11) of the recesses (10) extend outwardly in a radial direction.

14. An applicator according to claim 1, wherein radially outer regions of the fitting elements (4, 5) are provided with grooves (14) which extend in the circumferential direction.

15. An applicator according to claim 1, wherein the axial gaps (13) between the adjacent fitting elements (4, 5) taper inwardly.

16. An applicator according to claim 1, wherein the fitting elements (4, 5) extend across an angular range of at least 22.5° in the circumferential direction.

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