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(54) **Title:** APPLICATOR FOR APPLYING A COSMETIC, MAKEUP OR CARE PRODUCT TO THE EYELASHES AND/OR EYEBROWS

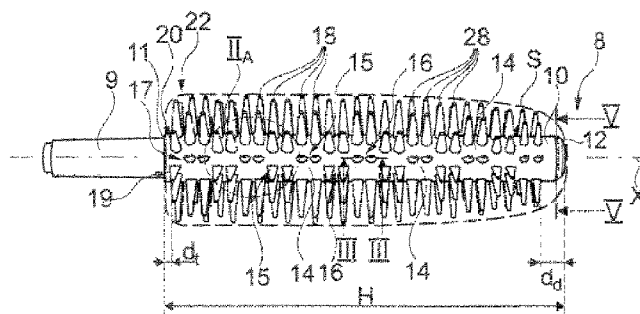


Fig. 2

(57) **Abstract:** Applicator (2) for applying a cosmetic, makeup or care product (P) to the eyelashes and/or eyebrows, having an application member (8) comprising a core (10) that extends along a longitudinal axis (X), and spikes (18) that are carried by the core (10) and are arranged in groups of spikes (15, 16) within longitudinal rows (17, 19), in which applicator the groups of spikes (15, 16) are preferably uniformly spaced along the longitudinal rows (17, 19) and each comprise at least two spikes (18), at least one longitudinal row (17) of spikes (18) being axially offset with respect to the consecutive longitudinal row (19), in such a way that at least one group of spikes (15) of the offset row (17) occupies the same axial position as a space (14) free of spikes between two groups of spikes (15, 16) of the consecutive row (19).



“Applicator for applying a cosmetic, makeup or care product to the eyelashes and/or eyebrows”

The present invention relates to an applicator for applying a cosmetic, makeup or care product to the eyelashes and/or eyebrows, for example mascara. The invention also relates to devices comprising the applicator and to a container containing the product to be applied.

The container is conventionally provided with a wiping member which wipes the stem of the applicator as it is withdrawn from the container. The behaviour of the application member on passing through the wiping member depends on numerous factors, such as the shape and nature of the lip of the wiping member and the arrangement of the application elements on the application member.

A compromise has to be found with regard to the quantity of product which is left on the application member for application of makeup. Excessive wiping of the application member causes the latter to be insufficiently loaded and obliges the user to frequently dip the applicator back into the container. Insufficient wiping leaves an excess of product that is difficult to manage and could result in clumps of product on poorly separated eyelashes.

EP 1 070 465 and EP 1 070 466 disclose combs having a row of teeth disposed in staggered rows, which are partially or entirely superposed.

EP 2 084 987 discloses a brush comprising rows of spikes disposed between rows of teeth of flattened cross section, the spikes alternating longitudinally with the teeth.

Design patent US D708 855 describes an applicator comprising axially offset longitudinal rows of groups of spikes.

There is a need to further improve applicators for applying a product, in particular mascara, to the eyelashes and/or eyebrows, in order to improve the performance thereof, and more particularly to promote the creation on the application member of zones that are more heavily laden with product, which allow easy application of makeup and rapid and abundant loading of the eyelashes and/or eyebrows, while retaining a satisfactory capacity to separate the latter.

The invention aims to meet this objective and the subject thereof, according to one of its aspects, is an applicator for applying a cosmetic, makeup or care product to the eyelashes and/or eyebrows, having an application member comprising:

- a core that extends along a longitudinal axis, and

- spikes that are carried by the core and are arranged in groups of spikes within longitudinal rows, in which applicator the groups of spikes are preferably uniformly spaced along the longitudinal rows and each comprise at least two spikes, at least one longitudinal row of spikes being axially offset with respect to the consecutive longitudinal row, in such a way that at least one group of spikes of the offset row occupies the same axial position as a space free of spikes between two groups of spikes of the consecutive row.

The invention makes it possible to obtain, on the application member, in particular in the spaces free of spikes, at least one zone that forms a reservoir, the contents of said zone not being much emptied during the extraction of the applicator, thus providing a surplus of product along the entire length of the core and on all sides after wiping. This surplus of product allows the eyelashes and/or eyebrows to be loaded with a large and satisfactory amount of product from the first application.

The applicator according to the invention makes it possible to separate the eyelashes and/or eyebrows, avoiding the formation of clumps, by virtue of the axial offset between the longitudinal rows of spikes.

During manufacture, it is possible to play with the spacing between the spikes of the groups of spikes on the one hand and with the spacing between the groups of spikes on the other hand and also with the axial offset between the longitudinal rows of spikes in order to adjust the extent to which the applicator is charged with product after wiping.

The expression "*longitudinal axis of the core*" denotes the line connecting all of the centres of mass of the cross sections of the core. The longitudinal axis may be a central axis, or even an axis of symmetry for the core, in particular when the core has a circular cross section or a cross section in the overall shape of a regular polygon. The longitudinal axis of the core may be rectilinear or curved and may be contained in a plane, which may be a plane of symmetry for some or even for all of the cross sections of the core. Preferably, the longitudinal axis of the core is rectilinear.

The term "*spike*" denotes an individualizable projecting element intended to come into engagement with the eyelashes and/or eyebrows.

The expression "*axially offset longitudinal rows*" should be understood as meaning that the spikes of the same rank in these rows do not occupy the same position along the longitudinal axis of the core.

Core and spikes

Each longitudinal row of spikes is preferably offset axially with respect to the consecutive longitudinal row.

5 Each group of spikes of at least one row preferably occupies the same axial position as the space free of spikes between two groups of spikes of the consecutive row, better still each group of spikes of the core occupies the same axial position as a space free of spikes between two groups of spikes of the consecutive rows.

The spikes of the same rank in every other longitudinal row can all occupy the same axial position along the longitudinal axis of the core.

10 The spacing between the consecutive groups of spikes is preferably constant within at least one longitudinal row, better still within each longitudinal row. In one variant, the spacing between the consecutive groups of spikes is variable within at least one longitudinal row and/or from one row to the other.

15 Within a longitudinal row, the spacing between two consecutive groups of spikes, measured at the base of the core between the outer flanks of the last spike of the first group and the first spike of the second group along the axis of the row containing the groups, can be between 0.3 mm and 2.5 mm, better still between 0.45 mm and 1.5 mm.

20 The axial offset between one longitudinal row of spikes and the consecutive longitudinal row can be greater than or equal to the length of a group of spikes of said consecutive row. The "*length of a group of spikes*" is to be understood as meaning the sum of the width of the spikes of the group and the spacing between said spikes. Preferably, the spikes are not superposed when the application member is observed from the side in a direction perpendicular to the longitudinal axis of the core.

25 The transversal distance between two consecutive groups of spikes occupying the same axial position, having a space free of spikes between them, measured at the base of the core between the outer flanks of the last spike of the first group and the first spike of the second group perpendicularly to the longitudinal axis of the core, can be greater than or equal to the length of one of said groups of spikes.

30 The spacing between the spikes of a group is preferably the same for all the groups. In one variant, the spacing between the spikes of a group differs from one group of spikes to another, within one longitudinal row and/or from one longitudinal row to another.

This spacing, measured along the longitudinal axis of the row containing the group, between the bases of the spikes, can be between 0.05 mm and 2.5 mm, better still between 0.4 mm and 1.3 mm.

All the groups of spikes advantageously comprise the same number of spikes.

5 In one variant, the number of spikes differs from one group of spikes to another, within one longitudinal row and/or from one longitudinal row to another.

The groups of spikes can comprise two or more than two spikes, for example three spikes or four spikes.

The number of spikes per longitudinal row can be between 10 and 48.

10 The implantation of the spikes may be such that the angular offset α about the longitudinal axis of the core, between the spikes of two consecutive crowns of spikes, in particular every two crowns of spikes, is non-zero, being preferably equal to half the angular pitch β between two consecutive spikes in one and the same crown. The core advantageously has an alternating sequence of two consecutive crowns of spikes that are
15 not mutually offset, then two consecutive crowns of spikes that are offset with respect to the two first crowns that are not mutually offset. A “*crown of spikes*” is to be understood as meaning a row in the circumferential direction formed by spikes that occupy one and the same axial position on the longitudinal axis of the core.

20 At least one longitudinal row can comprise an isolated spike at the proximal end of the core, better still every other longitudinal row comprises such a spike. A single crown of spikes is thus advantageously present at the proximal end of the core.

Within at least one group, the spikes are advantageously of the same height, better still within each group. In one variant, the height of the spikes varies within the same group.

25 Preferably, the height of the spikes varies, for example in a monotonous manner, along the longitudinal axis of the core. Within a longitudinal row, the height of the spikes preferably decreases in the direction of the distal end of the core, in particular along at least half the visible length of the application member. In one variant, the height of the spikes is constant along the longitudinal axis of the core.

30 The height of the spikes can be between 0.15 mm and 4.5 mm, better still between 0.3 mm and 3 mm. The “*height of a spike*” denotes the distance measured along the elongation axis of the spike between its free end and the base of the spike by way of

which the latter is connected to the core. The “*elongation axis of the spike*” denotes an axis which passes through the centres of mass of the cross sections of the spike.

The spikes can have a width of between 0.1 mm and 1 mm, better still between 0.35 mm and 0.65 mm. The “*width of a spike*” denotes the greatest transverse dimension of the spike, in section, along the longitudinal axis of the core.

The spikes can have a thickness of between 0.1 mm and 0.85 mm, better still between 0.3 mm and 0.75 mm. The “*thickness of a spike*” denotes the greatest transverse dimension of the spike, in section, perpendicularly to the elongation axis of the spike and to the longitudinal axis of the core.

The spikes of at least one group are advantageously of the same shape, better still all the spikes of a longitudinal row are of the same shape, or even better still all the spikes of the application member are of the same shape. In one variant, the shape of the spikes differs within groups and/or from one group to another.

The spikes may have any shape. The spikes advantageously have an asymmetric semi-conical shape, having a first face that has a first shape, in particular a plane shape, and a second face that has a second shape, for example a non-plane shape, in particular a rounded shape. In this case, all the plane faces are preferably oriented circumferentially in the same direction. In one variant, the spikes have a cylindrical or tapered shape, in particular a conical, frustoconical or pyramidal shape, in particular with a hexagonal base.

The cross section of the spikes is advantageously semicircular (or half-moon shaped). In one variant, the cross section of the spikes is substantially circular, elliptic or semi-elliptic, or it may also be for example polygonal, in particular hexagonal.

The spikes can each extend from the core along an elongation axis perpendicular to the surface of the core at the point at which the spikes are attached to the core. In a variant, the elongation axis of the spikes forms an angle other than 90° with the surface of the core at the point at which the spikes are attached to the core.

The free ends of the spikes of the application member define an envelope surface of the applicator member, which is for example in the form of a cylinder of revolution along at least a part of its length.

The envelope surface may have a greatest transverse dimension that is substantially constant along at least a part of the length of the application member, in particular along more than half the part of the core that carries the spikes.

The envelope surface may also have a cross section that varies along all or part of the length of the application member. The cross section of the envelope surface may for example have one or more extremes and for example at least one local minimum and two local maxima. The diameter of the envelope surface passing through the summit of the spikes of least height can be between 3 mm and 6.5 mm. The diameter of the envelope surface of the application member passing through the summit of the spikes of greatest height can be between 5 mm and 12 mm.

The spikes can terminate in a rounded free end, in particular in a hemisphere, of which the radius can be between 0.01 mm and 0.2 mm

10 The longitudinal rows of spikes are advantageously rectilinear.

The number of longitudinal rows may be even. There can be at least eight longitudinal rows of spikes, in particular between twelve and thirty-six rows, in particular sixteen rows.

15 The core may have a cross section, taken perpendicularly to its longitudinal axis, of any shape, in particular of a circular shape. The greatest cross section of the core, namely its diameter in the case where the cross section of the core has a circular shape, can be between 1.5 mm and 3.2 mm.

20 The core and the spikes can be moulded from one and the same material, or in a variant they can be made from at least two different materials. In implementation examples of the invention, the spikes are produced by overmoulding on the core.

The core and/or the spikes are preferably produced from a thermoplastic material.

Applicator

25 The applicator may have a stem that carries the application member at a first end and is fixed to a gripping member at a second end.

The core may be solid, being for example moulded with an end piece for fixing to the stem of the applicator. In one variant, the core is hollow.

30 The application member may be fixed to the stem by snap-fastening, adhesive bonding, welding, crimping, pressing, stapling, force-fitting, fitting in a cold state or fitting in a hot state, for example by an endpiece of the application member being mounted in a housing in the stem. In a variant, the stem is received in a housing provided in the core.

It is also possible for the stem and the application member to be moulded or not to be moulded in one piece and from the same thermoplastic material.

The spikes may be made of a material that is more or less rigid than a material used to produce the stem of the applicator to which the core is attached.

The core may extend along a longitudinal axis which, at at least one point along its length, forms a non-zero angle with the longitudinal axis of the stem to which the core is fixed. The application member may be angled at its attachment to the stem.

The stem may have a first, rigid portion that is extended on the distal side by a second, more flexible portion, for example made of elastomer, that carries the application member.

The visible length of the application member may be between 15 mm and 35 mm, better still between 22 mm and 29 mm.

The applicator can have a total of between 80 and 1296 spikes, better still between 96 and 864 spikes.

Application device

A further subject of the invention is a device for packaging and applying a product to the eyelashes and/or eyebrows, having an applicator according to the invention, as defined above, and a container containing the product to be applied.

The gripping member of the applicator may form a cap for closing the container.

The container may have a wiping member suitable for wiping the stem and the application member.

The product is preferably a mascara.

The invention may be better understood from reading the following detailed description of a non-limiting implementation example thereof, and with reference to the attached drawing, in which:

- Figure 1 is a schematic elevation view, in partial longitudinal section, of an exemplary packaging and application device produced in accordance with the invention,
- Figure 2 shows a perspective view of the application member from Figure 1 on its own,
- Figure 2A shows a detail of the application member from Figure 2,
- Figure 3 is a section along III-III of a detail of the application member from Figure 2,

- Figure 4 is a flat developed view illustrating the arrangement of some of the spikes on the surface of the core of an application member according to the invention, and

- Figure 5 is a section along VI-VI of the application member from Figure 2.

5 Figure 1 shows a packaging and application device 1 produced in accordance with the invention, having an applicator 2 and an associated container 3 containing a product P to be applied to the eyelashes and/or eyebrows, for example mascara or a care product.

10 The container 3 has, in the example in question, a threaded neck 4 and the applicator 2 has a closure cap 5 designed to be fixed on the neck 4 so as to close the container 3 in a sealed manner when it is not in use, the closure cap 5 also forming a gripping member for the applicator 2.

15 The latter has a stem 7 of longitudinal axis Y, which is attached at its upper end to the closure cap 5 and at its lower end to an application member 8. The latter comprises a core 10 carrying spikes 18 which extend from the core 10 and all about the latter. As will be seen in Figure 2, the first spike 18 along the longitudinal axis X of the core 10, starting from the stem 7, is arranged at a non-zero distance d_l from the proximal end 11 of the core. The last spike 18 along the longitudinal axis X of the core 10, starting from the stem 7, is arranged at a non-zero distance d_d from the distal end 12 of the core 10.

20 The container 3 also has a wiping member 6, inserted into the neck 4.

25 This wiping member 6, which may be of any suitable type, has, in the example in question, a lip designed to wipe the stem 7 and the application member 8 when the applicator 2 is withdrawn from the container 3. The lip defines a wiping orifice 6a having a diameter φ_a adapted to that of the stem 7. The wiping member 6 may be made of elastomer. The wiping orifice 6a has, for example, a circular shape.

The diameter φ_a of the wiping orifice 6a is typically between 3 and 5.75 mm.

30 In the example illustrated, the stem 7 has a circular cross section, but if the stem 7 has some other section, this does not depart from the scope of the present invention, it then being possible to fix the cap 5 on the container 3 in some other way than by screwing, if necessary. The wiping member 6 is adapted to the shape of the stem 7 and to that of the application member 8, if appropriate.

Preferably, and as in the example in question, the longitudinal axis Y of the stem 7 is rectilinear and coincident with the longitudinal axis of the container 3 when the

applicator 2 is in place thereon, but if the stem 7 is not rectilinear, forming for example an elbow, this does not depart from the scope of the present invention.

If need be, the stem 7 may have an annular narrowing at its portion that is positioned opposite the lip of the wiping member 6, so as not to mechanically stress the latter unduly during storage.

As illustrated in Figure 2, the application member 8 may have an endpiece 9 for fixing it in a corresponding housing of the stem 7.

The application member 8 may be fixed to the stem 7 by any means, and in particular by force-fitting, snap-fastening, adhesive bonding, welding, stapling or crimping, in this housing.

With reference to Figure 2, it can be seen that the core 10 has a shape that is elongate along a longitudinal axis X, which is rectilinear in the example described. The longitudinal axis X may be central, as illustrated.

The visible length H of the application member 8 is, for example, equal to 25.5 mm.

In the example illustrated, the spikes 18 each extend from the core 10 along an elongation axis W perpendicular to the surface of the core at the point at which the spike 18 is attached to the core 10.

In the example described, the spikes 18 are arranged in groups of spikes 15, 16 within sixteen rectilinear longitudinal rows 17, 19, 20, as can be seen in particular in Figure 2, each longitudinal row 17 of spikes being offset axially with respect to the consecutive longitudinal rows 19, 20.

Preferably, as illustrated, the groups of spikes 15, 16 are uniformly spaced along the longitudinal rows 17, 19, 20 and each comprise two spikes 18. In a variant not illustrated, the groups of spikes 15, 16 comprise more than two spikes 18, for example three or four spikes. In another variant, the number of spikes 18 differs from one group of spikes 15 to another, within one longitudinal row 17, 19, 20 and/or from one longitudinal row to another.

Preferably, and as in the example described, the spacing S_p between the spikes 18 of a group 15, 16 is the same for each group. In a variant not illustrated, the spacing S_p between the spikes 18 of a group 15, 16 differs from one group of spikes to another, within one longitudinal row 17, 19, 20 and/or from one longitudinal row to another.

This spacing S_p can be between 0.05 mm and 2.5 mm.

In the example in question, the spacing S_g between each consecutive group of spikes 15, 16 is advantageously constant within each longitudinal row 17, 19, 20. In a variant not illustrated, the spacing S_g is variable within at least one longitudinal row and/or from one row to the other.

5 As is shown in Figure 4, the spacing S_g between two consecutive groups of spikes 15, 16, measured at the base of the core 10 between the outer flanks 18a of the last spike of the first group 15 and the first spike of the second group 16, along the axis of the row 17 containing the groups, can be between 0.45 mm and 1.5 mm.

10 Each longitudinal row 17 of spikes 18 is advantageously axially offset with respect to the consecutive longitudinal row 19, in such a way that each group of spikes 15 of the offset row 17 occupies the same axial position as the space 14 free of spikes between two groups of spikes 15, 16 of the consecutive row 19, as can be seen in particular in Figures 2, 2A and 4.

15 The spikes 18 in every other longitudinal row advantageously all occupy the same axial position along the longitudinal axis X of the core 10, as illustrated in Figure 2, for example between the longitudinal rows 17 and 20.

As is shown in Figure 4, the axial offset D_a between one longitudinal row 17 of spikes 18 and the consecutive longitudinal row 19 is greater than the length L_g of a group of spikes 15 of said consecutive row 19.

20 As is shown in Figure 4, the transversal distance D_T between two consecutive groups of spikes 15 occupying the same axial position, having a space 14 free of spikes between them is greater than or equal to the length L_g of one of said groups 15 of spikes.

25 As is shown in particular in Figure 2, every other longitudinal row comprises an isolated spike 18 at the proximal end 11 of the core 10. A single crown 22 of spikes 18 is thus advantageously arranged at the proximal end 11 of the core 10. The longitudinal rows comprising this isolated spike can comprise one spike less than the other rows, for example thirteen spikes 18 as opposed to fourteen spikes.

30 As can be seen in Figures 4 and 5, the implantation of the spikes 18 may be such that the angle α about the longitudinal axis X of the core 10 between two consecutive crowns 20 and 21 of spikes 18, said crowns each being formed by spikes 18 that occupy one and the same axial position on the longitudinal axis X of the core 10, is non-zero, being for example equal to half the angular pitch β between two consecutive spikes in a crown.

In the example in question, the spikes 18 are advantageously of the same height within each group of spikes 15, 16. In a variant not illustrated, the height of the spikes 18 varies within the same group.

Preferably, and as in the example described, the height of the spikes 18 within the longitudinal rows decreases in the direction of the distal end 12 of the core 10. In a variant not illustrated, the height of the spikes 18 is constant along the longitudinal axis X of the core 10.

The height h_p of the spikes 18 can be between 0.15 mm and 0.45 mm.

The width l_p of the spikes 18 can be between 0.1 mm and 1 mm.

The thickness e_p of the spikes 18 can be between 0.1 mm and 0.85 mm.

The spikes 18 can have diverse shapes, optionally varying within a group 15, 16 and/or from one group to another. In the example in question, and as can be seen in particular in Figure 2A, all the spikes 18 have a semi-conical shape, each having a first face 18b that is plane and a second face 18c that is rounded. All the plane faces 18b are preferably oriented circumferentially in the same direction. However, the invention is not limited to one particular type of spikes.

In the example in question, the free ends 28 of the spikes 18 define an envelope surface S of the application member 8, having a rectilinear longitudinal axis that is coincident with the longitudinal axis X of the core 10, and is rotationally symmetrical about said axis X.

The spikes 18, in the example in question, are made in one piece with the core 10 by moulding of thermoplastic material.

In order to mould the application member 8, use can be made of any thermoplastic material which is or is not relatively rigid, for example SEBS, a silicone, latex, a material having improved slip, butyl, EPDM, a nitrile, a thermoplastic elastomer, a polyester elastomer, a polyamide elastomer, a polyethylene elastomer or a vinyl elastomer, a polyolefin such as PE or PP, PVC, EVA, PS, SEBS, SIS, PET, POM, PU, SAM, PA or PMMA. It is also possible to use a ceramic, for example based on alumina, a resin, for example of the urea-formaldehyde type, and possibly a material containing graphite as filler. It is possible in particular to use the materials known under the trade names Teflon[®], Hytrel[®], Cariflex[®], Alixine[®], Santoprene[®], Pebax[®] and Pollobas[®], this list not being limiting.

In order to use the device 1, the user unscrews the closure cap 5 and withdraws the application member 8 from the container 3.

5 After the application member 8 has passed through the wiping member 6, a certain amount of product P remains in the spaces 14 free of spikes that are created between the groups of spikes 15, 16, thereby creating reservoirs of product P along the entire length of the core 10 and on all sides, such that the eyelashes and/or eyebrows can be supplied satisfactorily with product P. In addition, the eyelashes and/or eyebrows are separated satisfactorily, thus avoiding formation of clumps, by virtue of the axial offset present between the longitudinal rows 17, 19, 20 of spikes 18.

10 Of course, the invention is not limited to the exemplary embodiment which has just been described.

At least one of core 10 and spike 18 may be flocked or undergo any heat treatment or mechanical treatment.

15 The expression “*comprising a*” should be understood as being synonymous with “*comprising at least one*”, and “*between*” is understood as including the limits, unless specified to the contrary.

CLAIMS

1. Applicator (2) for applying a cosmetic, makeup or care product (P) to the eyelashes and/or eyebrows, having an application member (8) comprising:

- 5
- a core (10) that extends along a longitudinal axis (X), and
 - spikes (18) that are carried by the core (10) and are arranged in groups of spikes (15, 16) within longitudinal rows (17, 19),

in which applicator the groups of spikes (15, 16) are preferably uniformly spaced along the longitudinal rows (17, 19) and each comprise at least two spikes (18),

10 at least one longitudinal row (17) of spikes (18) being axially offset with respect to the consecutive longitudinal row (19), in such a way that at least one group of spikes (15) of the offset row (17) occupies the same axial position as a space (14) free of spikes between two groups of spikes (15, 16) of the consecutive row (19).

2. Applicator according to Claim 1, in which each group of spikes (15, 16) of
15 at least one row (17) occupies the same axial position as the space (14) free of spikes between two groups of spikes (15, 16) of the consecutive row (19), better still each group of spikes of the core (10) occupies the same axial position as a space (14) free of spikes between two groups of spikes (15, 16) of the consecutive rows.

3. Applicator according to Claim 1 or 2, in which the spikes (18) of the same
20 rank in every other longitudinal row occupy the same axial position along the longitudinal axis (X) of the core (10).

4. Applicator according to any one of Claims 1 to 3, in which the spacing (S_g) between the consecutive groups of spikes (15, 16) is constant within at least one longitudinal row (17, 19), better still within each longitudinal row.

25 5. Applicator according to any one of the preceding claims, in which, within a longitudinal row (17, 19), the spacing (S_g) between two consecutive groups of spikes (15, 16) is between 0.3 mm and 2.5 mm, better still between 0.45 mm and 1.5 mm.

6. Applicator according to any one of the preceding claims, in which the axial
30 offset (D_a) between one longitudinal row (17) of spikes (18) and the consecutive longitudinal row (19) is greater than or equal to the length (L_g) of a group of spikes (15) of said consecutive row (19).

7. Applicator according to any one of the preceding claims, in which the spacing (S_p) between the spikes (18) of a group (15, 16) is the same for each group, being in particular between 0.05 mm and 2.5 mm, better still between 0.4 mm and 1.3 mm.

8. Applicator according to any one of the preceding claims, in which all the groups of spikes (15, 16) comprise the same number of spikes (18).

9. Applicator according to any one of the preceding claims, in which, within at least one group (15, 16), the spikes (18) are of the same height, better still within each group.

10. Applicator according to any one of the preceding claims, in which the spikes (18) of at least one group (15, 16) are of the same shape, better still all the spikes (18) of a longitudinal row (17, 19) are of the same shape, even better still all the spikes (18) of the application member (8), this shape preferably being semi-conical, with a plane face, all the plane faces preferably being oriented circumferentially in the same direction.

11. Applicator according to any one of the preceding claims, in which at least one longitudinal row (17) comprises an isolated spike (18) at the proximal end (11) of the core (10), better still every other longitudinal row.

12. Applicator according to any one of the preceding claims, in which the longitudinal rows (17, 19) are rectilinear, preferably with between twelve and twenty rows.

13. Applicator according to any one of the preceding claims, in which the spikes (18) each extend from the core (10) along an elongation axis (W) perpendicular to the surface of the core (10) at the point at which the spikes (18) are attached to the core (10).

14. Applicator according to any one of the preceding claims, in which, within a longitudinal row (17, 19, 20), the height of the spikes (18) decreases in the direction of the distal end (12) of the core (10), in particular along at least half the length of the application member (8).

15. Applicator according to any one of the preceding claims, in which the number of spikes (18) per longitudinal row (17, 19) is between 10 and 48.

16. Applicator according to any one of the preceding claims, in which the core (10) has a circular cross section.

17. Applicator according to any one of the preceding claims, in which the spikes (18) are moulded together with and in particular from the same material as the core (10).

18. Device (1) for packaging and applying a product (P) to the eyelashes and/or eyebrows, having an applicator (2) according to any one of the preceding claims and a container (3) containing the product (P) to be applied.

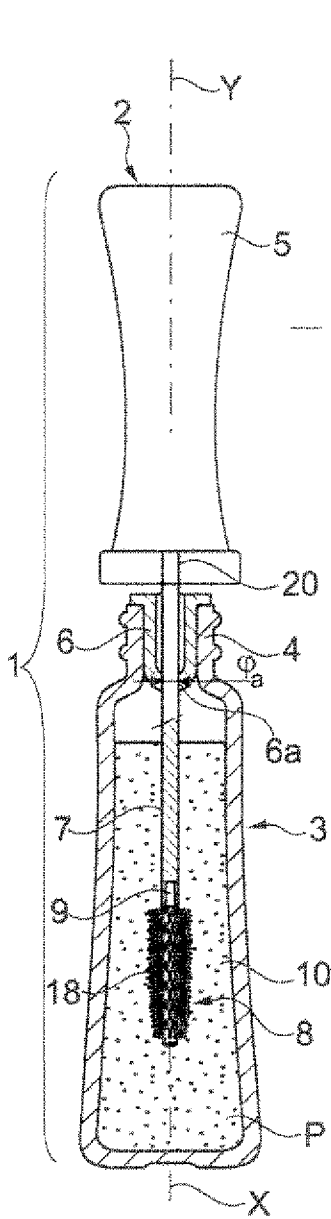


Fig. 1

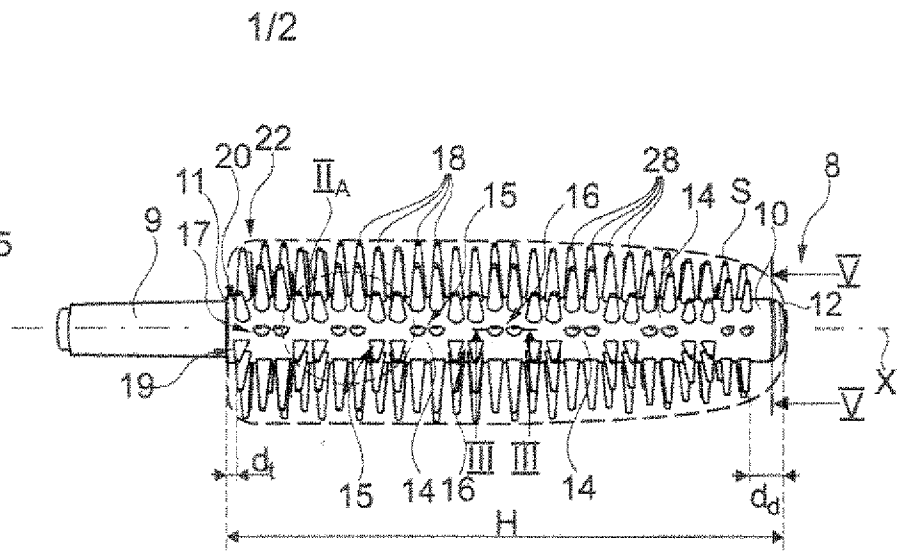


Fig. 2

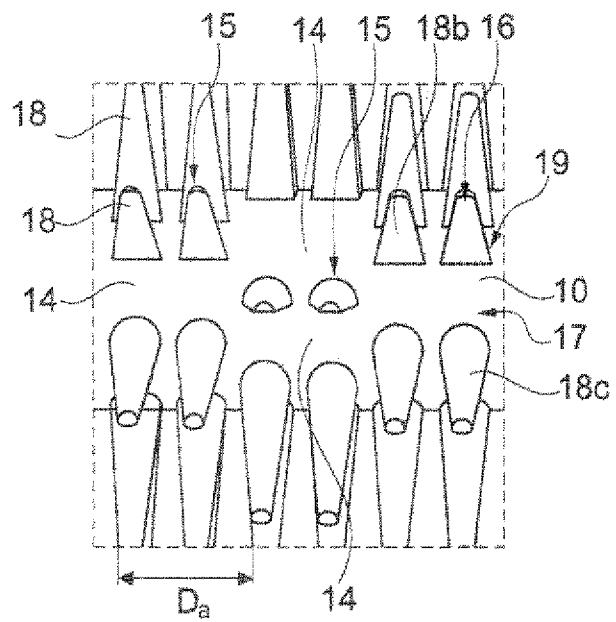


Fig. 2A

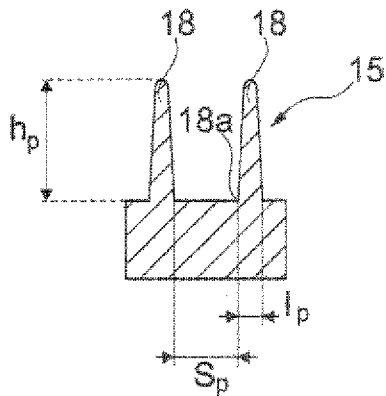


Fig. 3

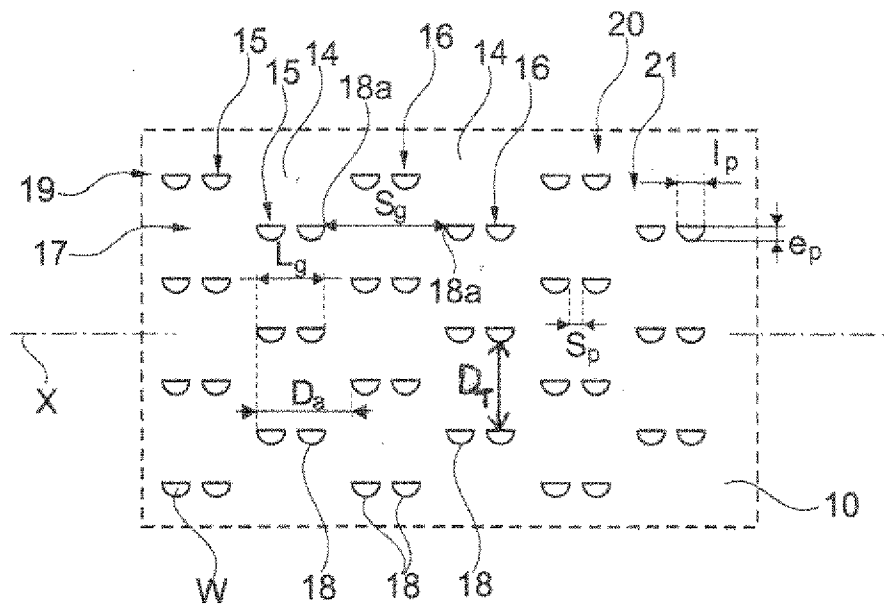


Fig. 4

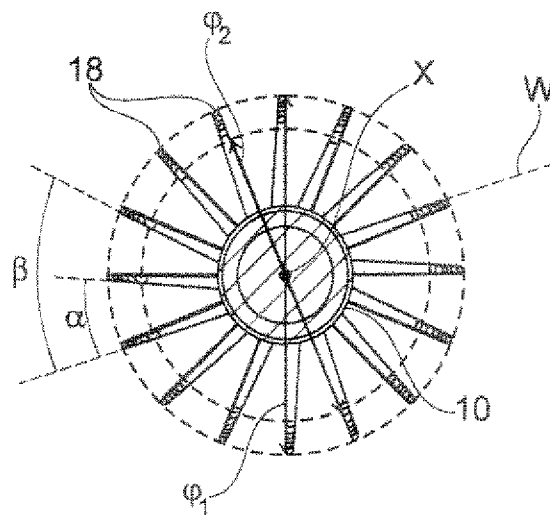


Fig. 5

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2015/081143

A. CLASSIFICATION OF SUBJECT MATTER
INV. A46B9/02 A46D1/00
ADD.
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
Minimum documentation searched (classification system followed by classification symbols)
A46B A46D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US D 708 855 S1 (RUTIGLIANO ANNE [FR] ET AL) 15 July 2014 (2014-07-15) figures 1-4	1-18
X	FR 3 004 906 A1 (OREAL [FR]) 31 October 2014 (2014-10-31) figures 2, 11-14 page 8 - page 13	1-7, 12-18
X	KR 2010 0073557 A (RND GROUP KOREA INC [KR]) 1 July 2010 (2010-07-01) figures 4a-d, paragraph [0029] - paragraph [0044]	1-9,12, 13,15-18
A	FR 2 954 060 A1 (OREAL [FR]) 24 June 2011 (2011-06-24) figures 4, 20 page 1 - page 7	1-18

Further documents are listed in the continuation of Box C.

See patent family annex.

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- "&" document member of the same patent family

Date of the actual completion of the international search

23 February 2016

Date of mailing of the international search report

03/03/2016

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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			FR 2954060 A1 24-06-2011
			US 2013036565 A1 14-02-2013
			WO 2011077318 A2 30-06-2011
