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(54) Title: DEVICE FOR APPLYING A HAIRCARE PRODUCT TO LOCKS

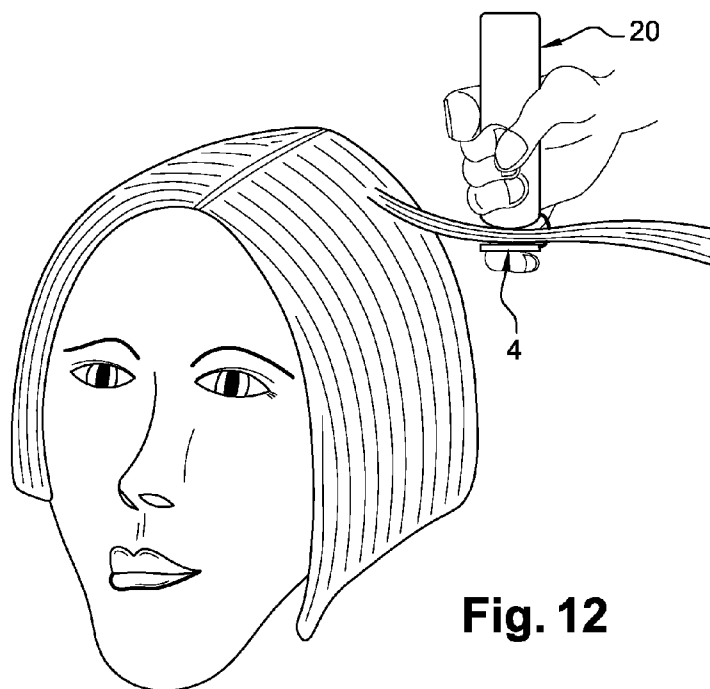


Fig. 12

(57) Abstract: The subject of the invention is a device (1) for applying a haircare product to locks, having an applicator means (2) in a container (20) and a holding member (4) that is able to engage with the applicator means (2) in order, when the device (1) is moved longitudinally in relation to a lock, to hold said lock in contact with the applicator means (2), said applicator means (2) comprising an applicator end piece (30) mounted on the container (20) and comprising an outlet orifice (31) equipped with an opening/closing element (32) which, in a first position, closes off said outlet orifice and which, in a second position, at least partly releases said outlet orifice.

DEVICE FOR APPLYING A HAIRCARE PRODUCT TO LOCKS

The subject of the invention is a device for applying a cosmetic haircare product. The device according to the invention is very particularly suitable for applying a dye to locks or for applying a product for perfuming the hair, in particular an alcohol-free perfume.

The expression "cosmetic product" is understood to mean a product as defined in Council Directive 93/35/EEC of 14 June 1993.

Highlighting/lowlighting is a treatment in which only certain parts of the hair are impregnated with dye in order to obtain, once the treatment is completed, a non-homogeneous dye effect, enhancing such and such a movement of the hair with shades which are lighter or darker than the natural or overall shade of the hair.

There are several kinds of dyes for the hair: temporary dyes, semi-permanent dyes, and permanent dyes called oxidation dyes.

These dyes may be in the form of creams, mousses or more or less viscous liquids. The dyes in the form of a liquid or gel may in particular be applied, possibly after mixing, using flexible-walled bottles or a means that produces a mousse, such as an aerosol. By contrast, the products of mixtures produced from more viscous or pasty compositions, such as creams, are used from bowls after a dye and an oxidant have been mixed in said bowl.

The haircare products targeted by the invention are likewise care products, makeup products or hair shaping products.

Also known are application devices based either on a comb, a brush or a combination of the two. Such devices are described, for example, in documents FR2769806 and US-A-4 691 720.

Such devices generally suffer from the same drawbacks, linked to the fact in particular that they are used by carrying out the application to the hair from its outer side, that is to say on the top. The product is deposited essentially on the surface of the lock and less so on the inside, the applicator then being moved in relation to the lock, from the root to the tip. However, during this movement, experience shows that the user tends to lift the applicator and to cause it to leave a path following the curvature of the skull. As a result, some of the hairs never come into contact with the applicator. These hairs will thus not be dyed, in the case of a dye, or not be treated, in the case of a care product. The result obtained is thus far from satisfactory.

Use can also be made of a "highlighting cap" that fits closely over the hair. The locks to be treated and in particular to be dyed are pulled out of the cap through orifices that are distributed regularly over the surface of the cap, using a hook-type device. The dye is then applied to the locks pulled out in this way, in the same way as is used for "full head" dyeing. The product is generally applied by means of a brush.

5 After treatment is complete, the highlighting cap is removed and the dyed hairs return to their natural position.

The highlighting cap technique is particularly time-consuming, and also has three major drawbacks. Specifically, once the cap has been fitted, the hair is squashed down and the locks pulled out through the
10 orifices are so at random, and this may lead to a result, in particular in terms of lock distribution, which is somewhat different from the desired result. Moreover, the size of the locks pulled out is proportional to the diameter of the orifices in the cap. Since this diameter is generally small (typically around 1 mm to 2 mm), this results in a poor juxtaposition of the locks. Finally, on account of the thickness of the cap and the thickness of the locks, on account of the fact that the hair pulled out is not necessarily the hair
15 which grows from the scalp opposite the orifice through which it is pulled out, it may prove that the dye applied by this technique does not extend as far as the root of the hair, thereby detracting from the homogeneity of the result on the hair.

Another type of applicator for locks is described in the document EP 1 275 320. It is a "spoon"
20 applicator. This device for applying a haircare product to locks comprises a first part having an open cavity that is able to contain said product, the product being applied to the lock by bringing said lock into contact with the product inside the cavity and by moving said device in relation to said lock, the device also comprising a second part having a retaining member, the two parts being able to move in relation to one another, said retaining member being able to keep said lock of hair in contact with the
25 product inside the cavity while said device is moved in relation to said lock, the retaining member comprising a porous element.

However, this applicator is difficult to use in order to easily obtain highlights on long or medium-length hair.

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Another type of applicator is described in US 7 401 612. This device has an applicator means for the hair treatment product, said means being connected by a connecting element to a holding member that is able to engage with the applicator means. In order to hold the lock, the holding member can be placed opposite the applicator means, the lock being located between these two elements. In order to coat the
35 lock, the applicator means and the holding member are moved simultaneously along the lock, sliding from the roots to the tips. The connecting means forms a guide for the simultaneous movement of the two elements.

This applicator is again difficult to use without spillage of haircare product. Moreover, the treatment is

not homogeneous over all of the locks.

In the case of self-application of the product by a user, it appears that the prior art devices are difficult to handle in order to produce highlights on the rear of the head. This is because these devices are difficult
5 to position reliably when they are intended for application to hair outside the direct field of vision.

In addition, it is difficult to spread the product over the entire length of the lock using a brush because a very pasty product has to be applied.

10 Finally, the known applicators are expensive to produce insofar as they result from the assembly of a plurality of mechanical parts that are frequently complex.

Yet another problem of the invention is to obtain an applicator which does not leak, whatever its position, without force being applied.

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The object of the invention is to remedy the problems cited above by proposing a device for the self-application of a haircare product to locks.

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- In order to solve this problem, the invention provides a device for applying a haircare product to locks, having: an applicator means that is able to hold a quantity of said haircare product in a container,

- a holding member that is able to engage with the applicator means in order, when the device is moved longitudinally in relation to a lock, to hold said lock in contact with the applicator means in order for said product to be distributed on the lock,

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said applicator means comprising an applicator end piece mounted on the container and comprising an outlet orifice equipped with an opening/closing element which, in a first position, closes off said outlet orifice and which, in a second position, at least partly releases said outlet orifice, the movement from the first position to the second position taking place in response to a force exerted on the opening/closing element by the lock being inserted between the holding member and this

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opening/closing element.

The following features constitute advantageous features of the present invention:

Preferably, the holding member can be selected to be able to move with respect to the applicator means.

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- Preferably, the holding member and the applicator means can be selected to be connected by a connecting means and to form a single piece.

- Preferably, the holding member and the applicator means can be selected to form two separate pieces.
- 5 - Preferably, the container which has an annular narrowing to help it to be grasped between two fingers can be selected.
- Preferably, the applicator end piece which has a surface that is able to store and release the product can be selected.
- 10 - Preferably, the area of the holding member can be selected to be greater than or equal to the area of the applicator end piece.
- Preferably, the holding member which has combing means can be selected.
- 15 - Preferably, the movement from the first position to the second can be chosen to take place in response to a force exerted axially on the opening/closing element.
- Preferably, the applicator means and the holding member can be selected to be symmetrical to one another in relation to an axis bisecting the connecting means.

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The invention will be understood better from reading the following description and with reference to the accompanying figures. The latter are only presented by way of non-limiting indication of the invention.

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In the figures:

Figure 1 shows an exploded perspective view of a device according to the invention for applying a haircare product to locks,

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Figure 2 shows an exploded perspective view of another device according to the invention for applying a haircare product to locks,

Figure 3 shows an exploded perspective view of the top part of the applicator,

Figure 4 shows a top view of the applicator in the released position (second position),

Figure 5 shows a top view of the applicator in the closed-off position (first position),

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Figure 6 shows a perspective view of an opening/closing element in the released position (second position),

Figure 7 shows a perspective view of an opening/closing element in the closed-off position (first position),

Figure 8 shows a front view of the skirt of the applicator,

Figure 9 shows a top view of the skirt of the applicator,

Figure 10 shows a perspective view of a device according to the invention in one piece before use,

Figure 11 shows a perspective view of a device according to the invention in two pieces before use,

Figure 12 shows a perspective view of a device according to the invention in one piece during use.

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In the entire description, the expression "comprising a" should be considered as being synonymous with "comprising at least one", unless specified to the contrary.

10 The device shown in Figures 1 and 2 has an applicator means 2 containing a haircare product P and a holding member 4. The applicator member 2 is known per se and described in particular in US 5,961,665.

15 The applicator device 2 comprises a container 20 in the form of a small flexible or rigid bottle. Alternatively, a bottle made of thermoplastic material, for example PET, may be used. The bottle has a capacity of, for example, 6 ml. The bottle comprises a side wall in the form of a cylinder of revolution, one end of which is closed by an end wall 23. The second end is formed by a portion having a narrowed diameter, which ends at a free edge 24a defining an opening 25.

20 An applicator end piece 30 is provided to be fitted onto the bottle and to be snap-fastened or screwed onto the opening 25 in the bottle. The end piece is in the form of an approximately cylindrical shell having a constant circular diameter over a large part of its length. It could have any other form, for example a frustoconical form, becoming progressively smaller until it defines a circular portion. The end piece 30 has, for example, a diameter of around 15 mm. Axial ribs may be provided on the inside wall of
25 the shell. They may have a radial indentation which, in the fitted position of the shell, are housed in the opening 25 in the bottle, thereby allowing the shell to be snap-fastened to the bottle. Alternatively, it is possible to provided for the inside wall of the shell to be provided with a thread provided to engage with a thread provided on the neck of the bottle.

30 As can be seen in Figures 3 to 9, the end piece comprises a cylindrical skirt 34, which provides sealing between the opening 25 in the bottle and the outlet orifice 31. The skirt extends approximately axially from the cylindrical or frustoconical portion of the shell, around the seat 33, as far as a free edge 340 that forms a sealing lip. In the fitted position of the applicator end piece 30, the lip 340 comes into sealing abutment against the upper edge 24a. Thus, the sealing skirt does not overlap the bottle laterally
35 such that the presence of the skirt does not affect the lateral space requirement of the shell. A radial protrusion 341 is provided on the inside wall of the skirt 34 for the abutment of the opening/closing

element 32. This is a continuous circular bead. It is quite clear that a discontinuous bead formed for example of portions that are angularly spaced apart can be used for the abutment of the closure element.

5 The end piece is advantageously obtained by moulding a single piece of a preferably thermoplastic material, in particular polyethylene, polypropylene, polyethylene terephthalate, polyvinyl chloride, polyamide.

10 The opening/closing element 32 comprises a spring 321 which is formed by helical coils, the lower part of which is held in the material of the mounting ring 323. The lower edge 323a of the mounting ring 323 is in abutment against the radial protrusion 341 of the skirt 34. The upper part of the spring is held in the material of a hollow shaped body which ends with a frustoconical region 320 that is provided to come into abutment against the seat 33, thereby forming a valve. The frustoconical region is extended by a stud 322 having a circular cross section, the end 322a of which can be slightly rounded in order not to damage the surface to be treated, with which it comes into direct contact. The diameter of
15 the stud is less than the diameter of the dispensing orifice in order that the stud can slide easily through the orifice 31, allowing product for dispensing to pass through. In the rest position, the stud 322 protrudes out of the orifice such that its end 322a can be placed in direct contact with a surface to be treated or in indirect contact via a membrane 37.

20 The opening/closing element 32 is likewise obtained by moulding a single piece of a preferably thermoplastic material, in particular polyethylene, polypropylene, polyethylene terephthalate, polyvinyl chloride, polyamide.

25 In the fitted position of the opening/closing element, the lower edge 323a of the mounting ring is in abutment against the radial protrusion and the spring 321 is slightly compressed, in order to keep the frustoconical region 320 in sealed abutment against the seat 33 so as to prevent any leakage of product through the orifice 31. When the stud is brought into contact with a surface to be treated, a force is exerted on the stud, said force being transmitted to the spring so as to compress it. The stud is thus inserted into the orifice 31 and the frustoconical portion disengages from the seat 33, as is shown in
30 Figures 3 to 7.

The membrane 37 can be porous or non-porous, be supported on the end piece 30, have for example at least one orifice for dispensing product passing through it, and be covered externally at least partially with a flocked surface, the membrane defining, with the end piece 30, an internal space that
35 can contain product to be dispensed.

The membrane may be flexible and/or mounted on the end piece 30 such that it can be deformed and/or moved in relation to the support and/or to the reservoir, leading to a reduction in volume of the internal space of at least 0.1 ml.

As is shown in Figures 10 and 11, in order to use the device, the user takes hold of the bottle, turns it over and applies the end piece to the lock. It thus suffices for him to prolong his hand movement in order to depress the stud 322 and disengage the frustoconical region 320 from the seat 33 in order at least partly to clear the orifice 31 (Figure 3). To this end, he places his thumb in contact with the holding member 4. The product emerges through the orifice under the force of gravity. Since the orifice has a small diameter, the product flows onto the lock in a very localized manner, thereby making it possible to apply the product in a highly precise manner. Next, he moves the device, clamping the lock. As soon as the user moves the dispenser away from the lock or no longer exerts any pressure with his thumb and the force exerted on the stud stops, the spring returns to its rest position and the frustoconical portion comes back into abutment against the seat. The product thus stops flowing and air is drawn into the bottle before the valve is closed.

According to a particular embodiment, the holding member 4 comprises a circular cover 41 having a diameter greater than that of the membrane 37. It also comprises a connecting strip 50 made of flexible material, which is chosen so as to elastically lengthen by the distance necessary for positioning the lock. This strip 50 may be made of elastomer, in particular thermoplastic elastomer, such as a polyethylene elastomer. The strip 50 may be moulded in one piece with the cover 41 or be connected to the cover 41 by adhesive bonding or welding.

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The connecting means 50 may consist in particular of film hinges or hinges of the pinned hinge type, or having an element supported by one of said first or second parts, said element being mounted in rotation inside a recess formed in the other of said end wall or said cover 41.

25 The cover 41 may have a shape selected from the following list: circular, non-circular, in particular elongate, oval, elliptical, polygonal, in particular square, rectangular, kidney-shaped, crenellated, star-shaped, or having one or more grooves.

The cover 41 and the membrane 50 may be made of different materials. At least one may be made of a thermoplastic material, in particular one of the materials selected from the group consisting of: PE, PP, POM, PA, PET, PBT.

35 The cover 41 may have at least one of the following applicator elements: bundle of bristles, felt, flocked lining, foam or else other applicator elements such as spikes or teeth. These applicator elements are disposed on the surface of the cover 41, coming into contact with the lock.

These applicator elements can be disposed in the form of one or more lines or be distributed in a periodic pattern. The applicator element may be for example a comb or a brush.

The applicator elements may in particular be fixed by adhesive bonding, stapling, or overmoulding onto the part 41. The applicator elements may also have a flocked tip.

5 The holding member 4 may have a gripping member for gripping the device with a predefined orientation. The gripping member may have at least one region for receiving a finger, in particular a flattened portion or a hole, which extends generally approximately parallel to an axis having a greater dimension than a cross section of the flexible part.

10 According to an alternative which is not shown, the geometric articulation axis is defined by a single film hinge, while the elastic return is ensured by two lateral connecting strips disposed on either side of the film hinge. The choice of such and such a configuration depends largely on the cross section of the container.

15 When the connecting member 4 does not comprise a connecting means 50, the cover 41 can be welded, moulded or adhesively bonded to a ring or to a fingerstall, into which at least one finger can be inserted. In this case, the ring or the fingerstall threads onto the thumb of one hand of the user and the applicator means 2 is clamped between the other fingers of the same hand. The lock to be coated is disposed next to the membrane 37 of the applicator means 2. The thumb is folded back in order to pinch the lock between the membrane 37 and the cover 41. Manual pressure is exerted along the axis of the container 20 and at right angles to the membrane 37. The user moves his hand away from the head, maintaining this pressure. He releases said pressure in order to stop the dyeing of the lock.

20 The applicator means 2 may have a foam end piece that can be replaced by an end piece of the roll-on type (the roll-on may be a sphere, a cylinder or else have an ovoid shape of the rugby ball type).

With the device according to the invention, the hand (for the hairdresser or a person) may be positioned in the manner most appropriate for the choice of the user, with or without the annular narrowing for helping grasp the applicator means 2.

25 With the aid of this device, all types of products can be applied to the hair, in particular washing products, conditioning products, products for temporary shaping, products for durable shaping and in particular perming or straightening products, bleaching products, dyes, products for perfuming hair, in particular alcohol-free perfumes.

30 Preferably, this device will be used to apply direct dyes or oxidation dyes, and more preferably direct dyes.

The direct dyes that can be used in the present invention contain one or more direct colourants that are soluble in the dyeing medium or one or more pigments that are insoluble in the composition.

A variant of the invention is the use of the device according to the invention for applying a direct dye comprising one or more coloured insoluble pearlescent agents.

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CLAIMS

1. Device (1) for applying a haircare product to locks, having:
 - 5 i) an applicator means (2) that is able to hold a quantity of said haircare product (P) in a container (20),
 - ii) a holding member (4) that is able to engage with the applicator means (2) in order, when the device (1) is moved longitudinally in relation to a lock, to hold said lock in contact with the applicator means (2) in order for it to be coated with said product (P), characterized in that:
 - 10 said applicator means (2) comprises an applicator end piece (30) mounted on the container (20) and comprising an outlet orifice (31) equipped with an opening/closing element (32) which, in a first position, closes off said outlet orifice and which, in a second position, at least partly releases said outlet orifice, the movement from the first position to the second position taking place in response to a force exerted on the opening/closing element (32) by the lock being inserted between the holding
15 member and this opening/closing element (32).
2. Device according to Claim 1, characterized in that the holding member (4) is able to move with respect to the applicator means (2).
- 20 3. Device according to either of the preceding claims, characterized in that the holding member (4) and the applicator means (2) are connected by a connecting means (50) and form a single piece.
4. Device according to Claim 1 or 2, characterized in that the holding member (4) and the
25 applicator means (2) form two separate pieces.
5. Device according to any one of the preceding claims, characterized in that the container has an annular narrowing to help it to be grasped between two fingers.
- 30 6. Device according to any one of the preceding claims, characterized in that the applicator end piece (30) has a surface (37) that is able to store and release the product (P).
7. Device according to any one of the preceding claims, characterized in that the area of the holding member (4) is greater than or equal to the area of the applicator end piece.
- 35 8. Device according to any one of the preceding claims, characterized in that the holding member (4) has combing means.
9. Device according to any one of the preceding claims, characterized in that the movement
40 from the first position to the second takes place in response to a force exerted axially on the opening/closing element (32).

10. Device according to Claim 3, characterized in that the applicator means (2) and the holding member (4) are symmetrical to one another in relation to an axis bisecting the connecting means (50).

5

11. Use of the device according to any one of the preceding claims for applying to the hair washing products, conditioning products, products for temporary shaping, products for durable shaping and in particular perming or straightening products, bleaching products, dyes, products for perfuming hair, in particular alcohol-free perfumes.

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12. Use according to Claim 11 for applying direct dyes to the hair.

13. Use according to Claim 12, the direct dye comprising one or more coloured insoluble pearlescent agents.

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Fig. 1

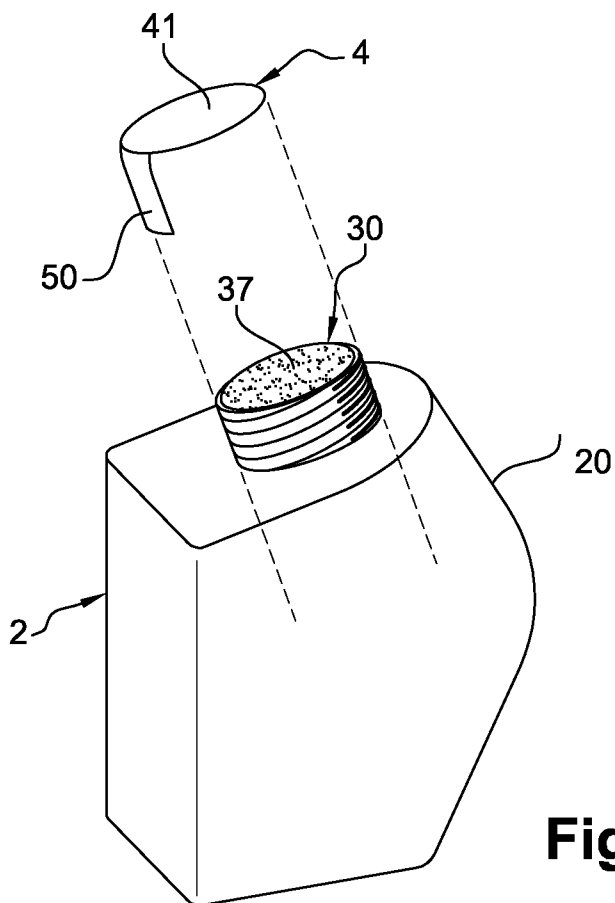
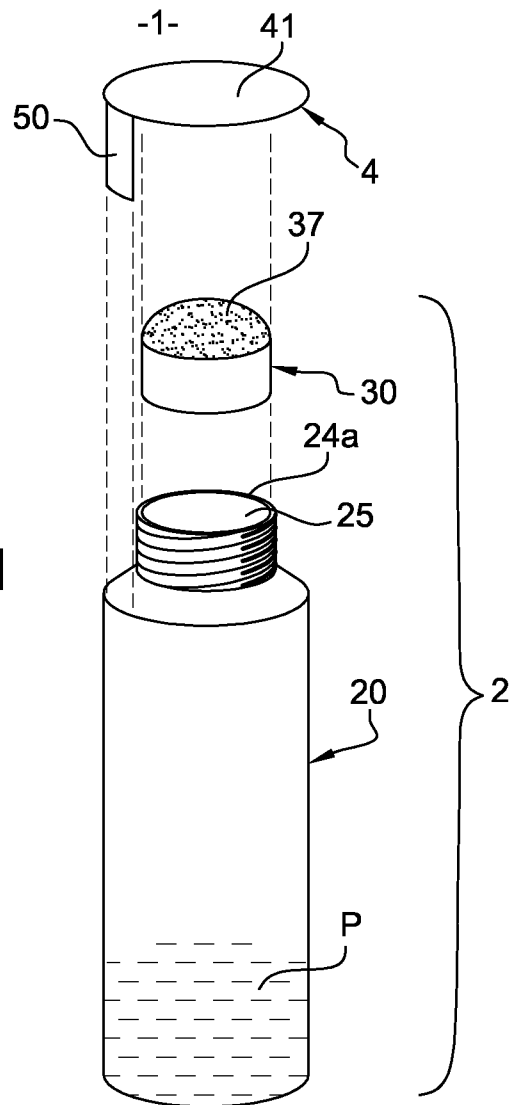
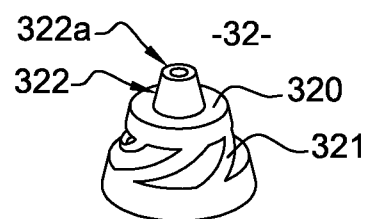
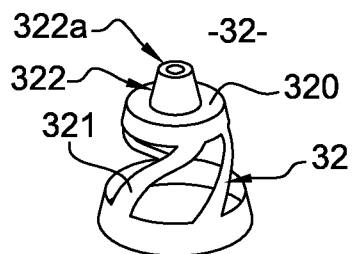
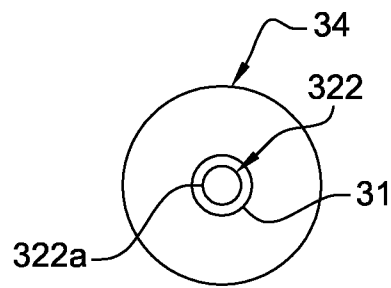
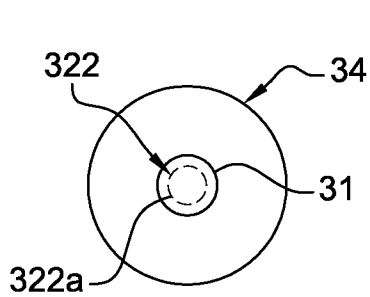
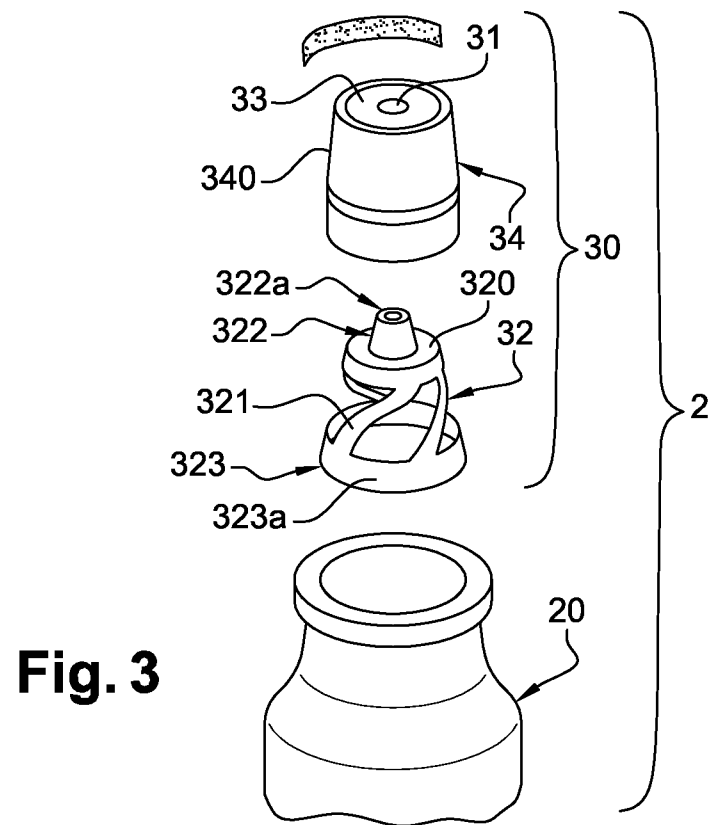


Fig. 2

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3 / 4

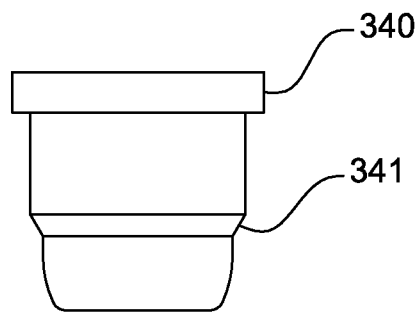


Fig. 8

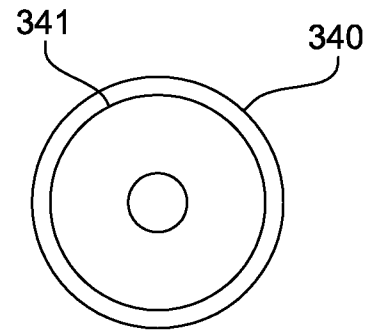


Fig. 9

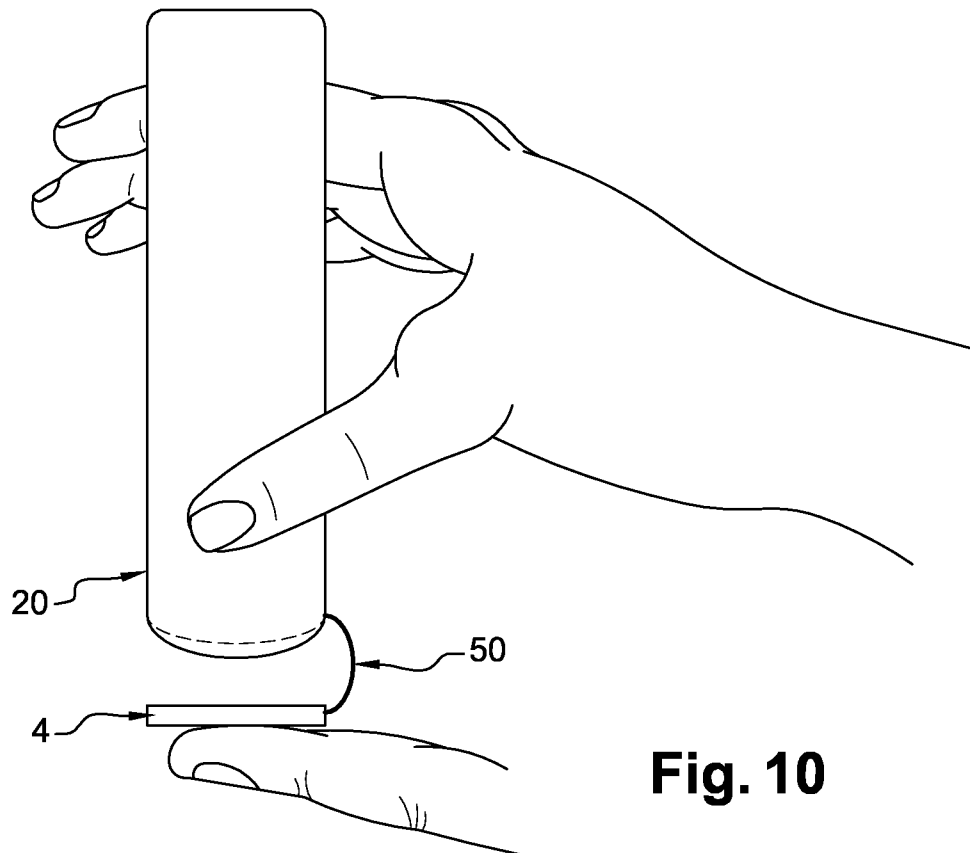


Fig. 10

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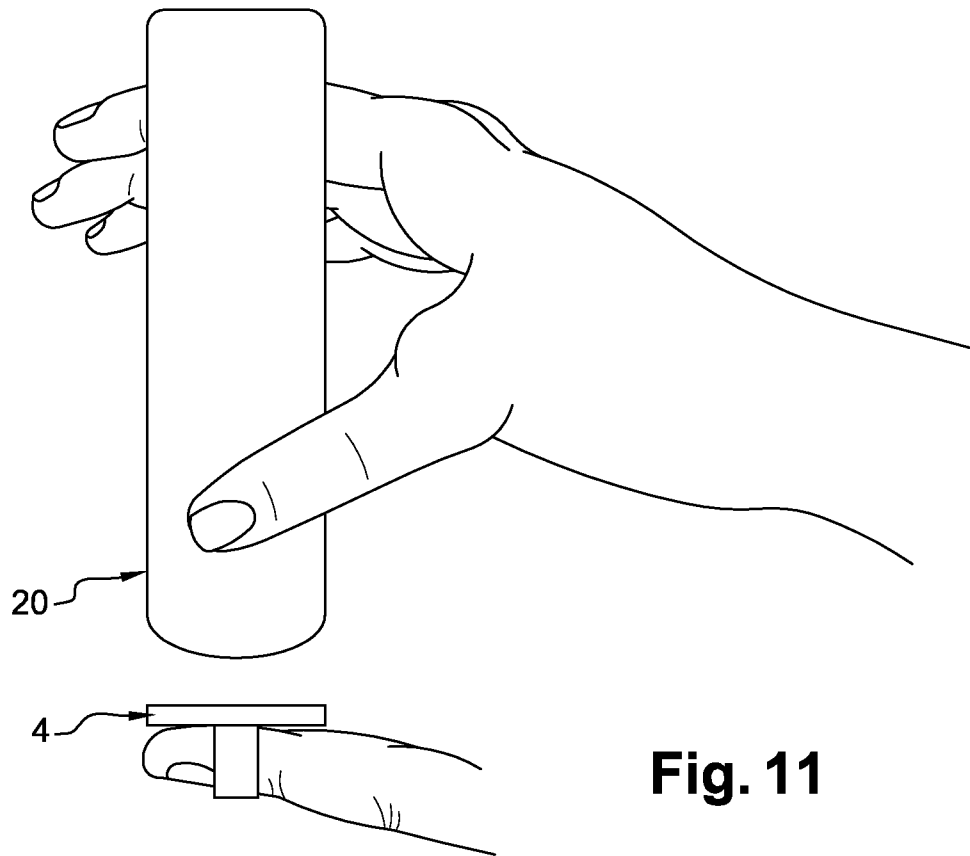


Fig. 11

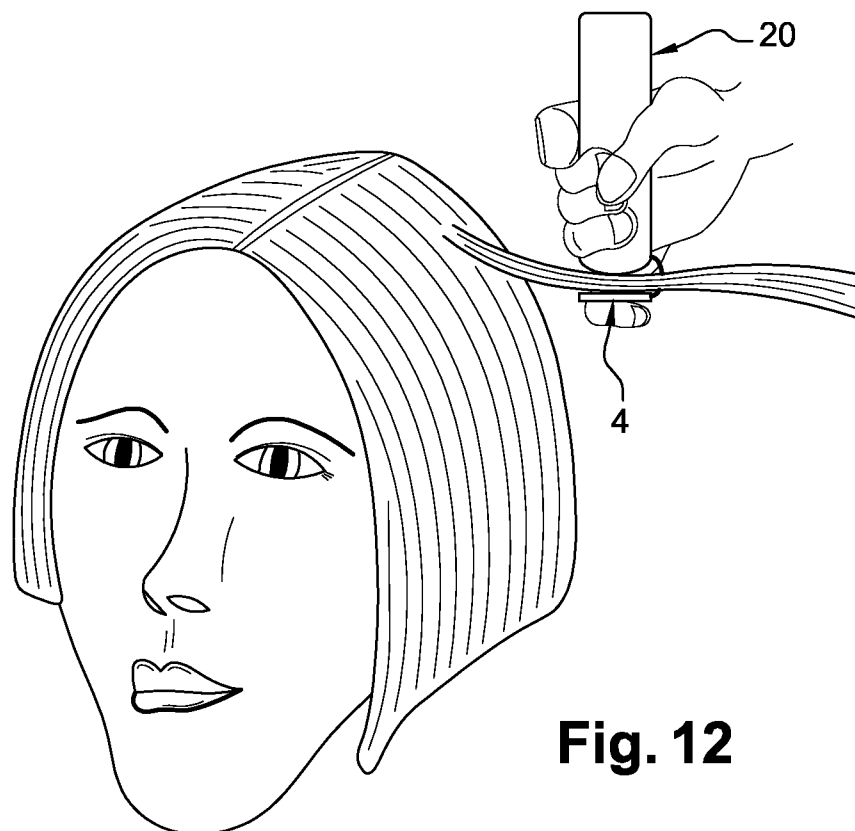


Fig. 12

INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2012/061531

A. CLASSIFICATION OF SUBJECT MATTER
INV. A45D19/00
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)
A45D

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)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 2 272 392 A1 (HENKEL AG & CO KGAA [DE]; GEKA GMBH [DE]) 12 January 2011 (2011-01-12) paragraph [0005] paragraph [0037] - paragraph [0052]; claim 1; figures 1, 3, 14 -----	1-13
A	US 2007/044249 A1 (LISOWSKI DONNA J [US] ET AL) 1 March 2007 (2007-03-01) paragraph [0031] - paragraph [0034]; figures 3,-5 -----	1-13
A	WO 2010/071777 A1 (ROBINSON MARIE V [US]) 24 June 2010 (2010-06-24) page 6, line 3 - page 8, line 18; figures 1-3 ----- -/-	1-13



Further documents are listed in the continuation of Box C.



See patent family annex.

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Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International application No
PCT/EP2012/061531

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