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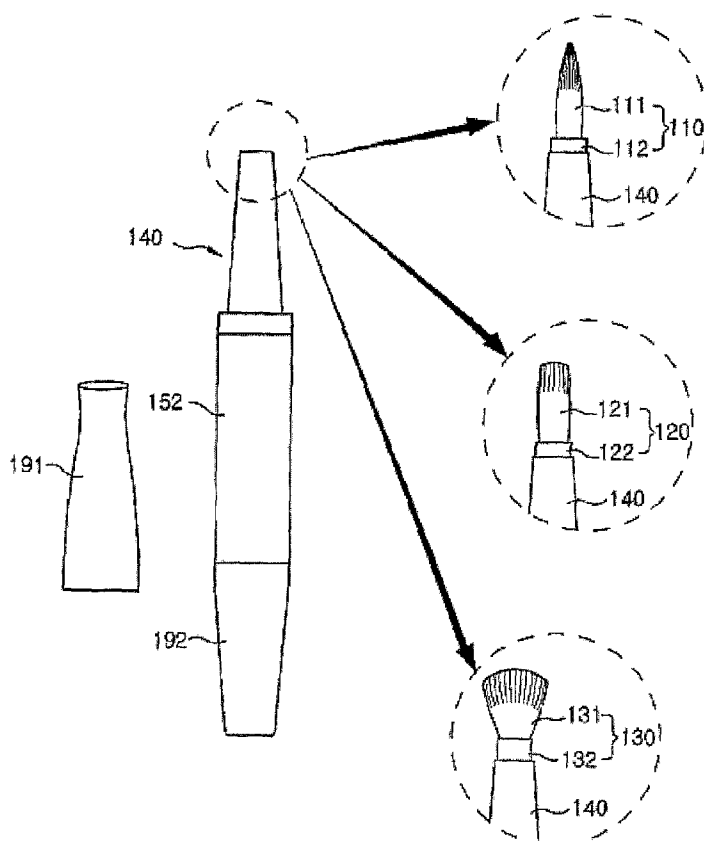
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(54) Title: RETRACTABLE BRUSH

Fig. 1

100



(57) Abstract: A retractable brush includes a plurality of stick brushes having sticks, on one ends of which first brushes are installed, a body in which the stick brushes are mounted such that the first brushes can be drawn out of the body, and a first actuator unit drawing one of the first brushes of the stick brushes into or out of the body. The retractable brush forms a plurality of brushes into a single assembly, thereby reducing the number of parts to promote convenience when stored or carried. Further, the retractable brush allows brushes having desired uses to be selectively drawn when used, thereby making it convenient to use various cosmetics.



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Invention Title

RETRACTABLE BRUSH

Technical Field

The present invention relates to a retractable
5 brush, in which a plurality of brushes is housed in a
single assembly, thereby being easily stored and carried
as well as making it convenient to use various cosmetics.

Background Art

10 In general, make-up is ornamentation for setting
off the beautiful parts of a human body and for
correcting or disguising shortcomings of the human body.
Women put on base make-up using skin, body care, essence,
etc. for the purpose of skin care almost every day, and
15 shade make-up using mascara, eyeshadow, lipstick, etc.
when going out.

This shade make-up requires auxiliary tools such as
a mirror, a brush, and so on. In the case of the brush,
a variety of brushes, for instance, a lip brush, a
20 blender brush, an eyeshadow brush, a mascara brush, a
cheek brush, etc. are used according to use.

Thus, women have various brushes suitable for
individual uses in order to put on make-up. In the case
in which women put on make-up and then go out, they
25 repeat a process of changing the make-up, particularly
the shade make-up. As such, women carry various brushes
suitable for the individual uses.

Disclosure**Technical Problem**

As mentioned above, the conventional make-up
5 brushes have individual uses according to their shapes,
structures and so on. Thus, it is necessary to possess
various brushes having different uses. For this reason,
the various brushes must be stored or carried when used
at home or carried in order to go out, which is very
10 inconvenient. Further, although the brushes are held in
a make-up case so as to be conveniently carried, the
neighboring brushes collide with each other, and thus are
stained with other cosmetics having different uses. As a
result, it is difficult to put clean make-up.

15 Accordingly, embodiments of the present invention
provide a retractable brush, in which brushes having
various uses are easily stored and carried, and in which
various cosmetics are conveniently used.

20 Technical Solution

According to an aspect of the present invention,
the retractable brush includes a plurality of stick
brushes having sticks, on one ends of which first brushes
are installed, a body in which the stick brushes are
25 mounted such that the first brushes can be drawn out of
the body, and a first actuator unit drawing one of the
first brushes of the stick brushes into or out of the

body.

Advantageous Effects

As set forth above, the retractable brush includes
5 a plurality of brushes forming a single assembly, thereby
reducing the number of parts to promote convenience when
stored or carried. Further, the retractable brush allows
brushes having desired uses to be selectively drawn when
used, thereby making it convenient to use various
10 cosmetics.

Description of Drawings

FIG. 1 is a perspective view illustrating the state
in which one of first brushes moves inwards or outwards
15 in a retractable brush according to a first embodiment of
the present invention;

FIG. 2 is a perspective view illustrating the state
in which a second brush moves inwards or outwards in a
retractable brush according to a first embodiment of the
20 present invention;

FIG. 3 is a sectional view illustrating a
retractable brush according to a first embodiment of the
present invention;

FIG. 4 is a view explaining the operation of a
25 first actuator unit in a retractable brush according to a
first embodiment of the present invention;

FIG. 5 is a disassembled perspective view

illustrating a retractable brush according to a second embodiment of the present invention;

FIG. 6 is a disassembled sectional view illustrating a retractable brush according to a second embodiment of the present invention;

FIG. 7 is an assembled sectional view illustrating a retractable brush according to a second embodiment of the present invention; and

FIG. 8 is a side elevation view illustrating a retractable brush according to a second embodiment of the present invention.

<Major Reference Numerals and Symbols of the Drawings>

110, 120, 130, 210:	stick brush	
111, 121, 131, 211:	first brush	
15 112, 122, 132, 212:	stick	
112a, 122a, 132a:	hook	140: body
150, 240:	first actuator unit	151: first guide unit
151a:	guide member	151b: guide protrusion
152:	handle	
20 153:	pressurization rotator	153a: pressurization ridge
153b:	guide rail	154: elastic member
154a:	stopper	160, 250: ferrule
161:	connecting ring	170, 260: second brush
180, 270:	second actuator unit	181: support member
25 182:	lead screw	183: screwing member
184:	second guide unit	184a: sliding protrusion
184b:	sliding groove	191, 192, 280, 290: cover

	220: first body	221: inner cover
	221a: guide rail	221b: through-hole
	221c: rotation support	221d: slit
	221e: coupling wedge	222: outer cover
5	222a: coupling hole	222b: opening
	230: second body	231: guide tube
	231a: hook	231b: catch
	232: cap	232a: open hole
	233: rotation coupler member	233a: fastening recess
10	233b: rotation coupling part	234: outer case
	241: first slider	241a: guide protrusion
	241b: mounting recess	241c: sliding coupler
	242: pressurization actuator	242a: pressurization step
	242b: pressurization ridge	242c: seat recess
15	243: elastic member	250: ferrule
	260: second brush	270: second actuator unit
	271: guide hole	271a: catch slot
	272: second slider	272a: guide pin
	273: rotator	273a: guide slot
20	280,290: cover	281,291: leaf spring

Best Mode

According to embodiments of the present invention, a plurality of stick brushes having first brushes are held in a body, and one of the first brushes is drawn out of the body by a first actuator unit, so that a retractable brush forms the brushes into a single

assembly, and thus is conveniently carried and used.

Now, exemplary embodiments of the present invention will be described in detail with reference to the accompanying drawings. In the detailed descriptions, known function
5 and construction unnecessarily obscuring the subject matter of the present invention will be avoided hereinafter.

Mode for Invention

10 FIG. 1 is a perspective view illustrating the state in which one of first brushes moves inwards or outwards in a retractable brush according to a first embodiment of the present invention. FIG. 2 is a perspective view illustrating the state in which a second brush moves
15 inwards or outwards in a retractable brush according to a first embodiment of the present invention. FIG. 3 is a sectional view illustrating a retractable brush according to a first embodiment of the present invention. As illustrated, the retractable brush according to a first
20 embodiment of the present invention includes stick brushes 110, 120 and 130 having respective first brushes 111, 121 and 131, a body 140 in which the stick brushes 110, 120 and 130 are held, and a first actuator unit 150 drawing one of the first brushes 111, 121 and 131 of the
25 stick brushes 110, 120 and 130 into or out of the body 140.

In this embodiment, the number of stick brushes

110, 120 and 130 is three. The stick brushes 110, 120 and 130 are installed by fixing the first brushes 111, 121 and 131 to respective sticks 112, 122 and 132.

The first brushes 111, 121 and 131 have different
5 uses in order to satisfy various purposes of a user. For example, among the first brushes 111, 121 and 131, one is used as a lip brush 111, another as a blender brush 121, and the third as an eyeshadow brush 131.

The body 140 holds the stick brushes 110, 120 and
10 130 such that the first brushes 111, 121 and 131 can be drawn out through an opening (not shown) on one side thereof.

The first actuator unit 150 draws one of the first brushes 111, 121 and 131 of the stick brushes 110, 120
15 and 130 into or out of the body 140.

The first actuator unit 150 keeps one of the first brushes 111, 121 and 131 either drawn out of the body 140 by selective pressurization of one of the stick brushes 110, 120 and 130 or drawn into the body 140 by releasing
20 the pressurization. According to this embodiment, the first actuator unit 150 includes a first guide unit 151 guiding the stick brushes 110, 120 and 130 in order to draw the stick brushes 110, 120 and 130 into and out of the body 140, a handle 152 rotatably installed in the
25 body 140, a pressurization rotator 153 installed so as to be rotated along with the handle 152 and pressurizing the stick brushes 110, 120 and 130, and elastic members 154

applying an elastic force such that the stick brushes 110, 120 and 130 return to their original positions.

The first guide unit 151 guides the stick brushes 110, 120 and 130 such that the stick brushes 110, 120 and 130 move inwards or outwards at predetermined positions in order to selectively draw the first brushes 111, 121 and 131 into or out of the body 140.

In this embodiment, the first guide unit 151 includes a guide member 151a that is fixed inside the body 140, is slidably coupled with the stick brushes 110, 120 and 130 passing therethrough, determines a drawn position of each of the stick brushes 110, 120 and 130, and maintains an interval between the stick brushes 110, 120 and 130, guide grooves (not shown) that are formed in inner circumferences of through-holes (not shown) of the guide member 151a through which the stick brushes 110, 120 and 130 pass, and guide protrusions 151b that are formed on the sticks 112, 122 and 132 in a longitudinal direction so as to be slidable in the guide grooves. In this manner, the stick brushes 110, 120 and 130 is configured so that the guide protrusions 151b are slidably coupled to the guide grooves. Thereby, the stick brushes 110, 120 and 130 are inhibited from being rotated relative to the guide member 151a although they pass through the guide member 151a, and thus moves inwards or outwards at predetermined positions.

The handle 152 is formed as a part of the body 140,

and is rotatably installed. As in this embodiment, preferably, the handle 152 is rotatably connected to one end of the body 140. At this time, one end of the handle 152 and one end of the body 140 are provided with a catch
5 groove and a catch nose along inner and outer circumferences thereof respectively so as to be rotatable when coupled with each other.

The pressurization rotator 153 is fixed inside the handle 152 so as to rotate along with the handle 152 by
10 force fitting, adhesion, or positive fitting so as to be located at lower ends of the stick 112, 122 and 132 of the stick brushes 110, 120 and 130, and includes a pressurization ridge 153a that protrudes so as to be displaced from a rotating center of the pressurization
15 rotator 153 and pressurizes a lower end of one of the sticks 112, 122 and 132. The pressurization rotator 153 is rotated together by rotation of the handle 152, so that the pressurization ridge 153a sequentially pressurizes the lower ends of the sticks 112, 122 and
20 132. As a result, the first brushes 111, 121 and 131 are sequentially drawn out of the body 140.

Meanwhile, the sticks 112, 122 and 132 are provided with hooks 112a, 122a and 132a at lower ends thereof which are bent at a predetermined angle such that the
25 stick brushes 110, 120 and 130 move inwards or outwards by means of the pressurization rotator 153. The pressurization rotator 153 is provided with a guide rail

153b, which is formed together with the pressurization ridge 153a along an edge of the upper surface of the pressurization rotator 153 and into which the hooks 112a, 122a and 132a of the sticks 112, 122 and 132 are inserted
5 and guided such that the hooks 112a, 122a and 132a of the sticks 112, 122 and 132 moves upwards or downwards when the pressurization rotator 153 is rotated.

Further, the stick brushes 110, 120 and 130 are preferably made of material having such tension as to
10 allow the sticks 112, 122 and 132 to be bowed to some extent such that the first brushes 111, 121 and 131 are drawn out of the body 140.

The elastic members 154 employ coil springs by way of example, are fitted around the respective the sticks
15 112, 122 and 132 so as to provide elastic force in a direction in which the first brushes 111, 121 and 131, which have moved outwards when the pressurization of the pressurization ridge 153a against the stick brushes 110, 120 and 130 is released, move inwards, and are supported
20 on both a lower surface of the guide member 151a of the first guide unit 151 and stoppers 154a formed on outer circumferences of the sticks 112, 122 and 132 at opposite ends thereof.

Meanwhile, according to an embodiment of the
25 present invention, the retractable brush 100 can be provided with another retractable brush on a side opposite the side where the first brushes 111, 121 and

131 move inwards or outwards. To this end, the retractable brush 100 further includes a ferrule 160 installed on the side opposite the side where the first brushes 111, 121 and 131 move inwards or outwards, a
5 second brush 170 installed inside the ferrule 160, and a second actuator unit 180 drawing the second brush 170 into or out of the ferrule 160.

The ferrule 160 is shaped of a tube, and is directly or indirectly connected to the body 140
10 according to the position of the handle 152. In this embodiment, the ferrule 160 is indirectly connected to the body 140 via the handle 152 in a line.

The second brush 170 is preferably configured of a single brush, for instance a bulky cheek brush, unlike
15 the first brushes 111, 121 and 131. The second brush 170 is housed inside the ferrule 160, and moves inwards or outwards by means of the second actuator unit 180.

The second actuator unit 180 draws the second brush 170 into or out of the ferrule 160. In this embodiment,
20 the second actuator unit 180 includes a support member 181 to which the second brush 180 is fixed, a lead screw 182 coupled to the support member 181, a screwing member 183 screwed onto the lead screw 182, and a second guide unit 184 guiding the support member 181.

25 The support member 181 is installed inside the ferrule 160, on one side of which the second brush 170 is fixed and which is installed by a connecting ring 161 so

as to be rotatable through the handle 152.

The lead screw 182 is installed on the other side of the support member 181 so as to protrude in a longitudinal direction, and has male threads on an outer
5 circumference thereof.

The screwing member 183 is screwed onto the lead screw 182, is separated from the ferrule 160 so as not to rotate together with the ferrule 160, is fixed inside the handle 152, and makes linear reciprocation when the lead
10 screw 182 is rotated.

The second guide unit 184 allows the support member 181 to be rotated together with the ferrule 160 and to be guided so as to move from the ferrule 160 in a longitudinal direction. In this embodiment, the second
15 guide unit 184 includes at least one sliding protrusion 184a formed on an inner surface of the ferrule 160 in a longitudinal direction, and at least one sliding groove 184b formed in an outer circumference of the support member 181 so as to be engaged with the sliding
20 protrusion 184a.

Meanwhile, the body 140 and the ferrule 160 are detachably coupled with respective upper and lower covers 191 and 192 so as to isolate the first and second brushes 111, 121 and 131, and 170 from the outside although the
25 first and second brushes 111, 121 and 131, and 170 are drawn in the body 140 and the ferrule 160.

The operation of the retractable brush 100 having

this configuration according to a first embodiment of the present invention will be described below.

As illustrated in FIG. 4, when the pressurization rotator 153 is rotated relative to the body 140 in the direction of an arrow R by rotating the handle 152 relative to the body 140 or by rotating the body 140 relative to the handle 152, the pressurization ridge 153a of the pressurization rotator 153 pressurizes a lower end of one of the stick brushes 110, 120 and 130, and then the lower end of one of the stick brushes 110, 120 and 130, particularly one of the hooks 112a, 122a and 132a of the sticks 112, 122 and 132 of the stick brushes 110, 120 and 130, rides the pressurization ridge 153a to move upwards ("A" direction) or downwards ("B" direction) in the state in which the stick brushes 110, 120 and 130 are guided by the first guide unit 151 according to the rotating direction of the pressurization rotator 153. Thus, the pressurization ridge 153a sequentially pressurizes the lower ends of the stick brushes 110, 120 and 130 by the rotation of the pressurization rotator 153, and then the first brushes 111, 121 and 131 corresponding to the pressurized stick brushes 110, 120 and 130 are drawn out of the body 140. When the pressurization of the pressurization ridge 153a is released from the lower ends of the stick brushes 110, 120 and 130, the stick brushes 110, 120 and 130 are returned downwards by the elastic members 154, so that

the first brushes 111, 121 and 131 are drawn into the body 140.

Meanwhile, when the stick brushes 110, 120 and 130 move upwards or downwards by means of the pressurization of the pressurization ridge 153a or elastic force of the
5 elastic members 154, the hooks 112a, 122a and 132a of the sticks 112, 122 and 132 of the stick brushes 110, 120 and 130 move in the "A" direction or in the "B" direction along the guide rail 153b of the pressurization rotator
10 153. Thereby, the stick brushes 110, 120 and 130 stably move upwards or downwards.

Thus, the first brushes 111, 121 and 131 having desired uses, for instance the lip brush 111, blender brush 121 and eyeshadow brush 131, are selectively drawn
15 according to the use when used by a user.

Further, when the ferrule 160 is rotated in order to use the second brush 170, i.e. the cheek brush, installed on the side opposite a side on which the first brushes 111, 121 and 131 are installed, the support
20 member 181 guided by the second guide unit 184 is rotated along with the ferrule 160, and thus linearly moves while the lead screw 182 is rotated relative to the screwing member 183. Thereby, the support member 181 draws the second brush 170 out of the ferrule 160. The second
25 brush 170, use of which is completed, is drawn into the ferrule 160 by reverse rotation of the ferrule 160. At this time, instead of the rotation of the ferrule 160,

when the handle 152 is rotated relative to the ferrule 160, the screwing member 183 is rotated to allow the second brush 170 to move inwards or outwards.

FIG. 5 is a disassembled perspective view illustrating a retractable brush according to a second embodiment of the present invention. FIG. 6 is a disassembled sectional view illustrating a retractable brush according to a second embodiment of the present invention. FIG. 7 is an assembled sectional view illustrating a retractable brush according to a second embodiment of the present invention. FIG. 8 is a side elevation view illustrating a retractable brush according to a second embodiment of the present invention. As illustrated, the retractable brush 200 according to a second embodiment of the present invention includes a plurality of stick brushes 210 equipped with first brushes 211 having different uses, bodies 220 and 230 in which the stick brushes 210 are held, and a first actuator unit 240 drawing one of the first brushes 211 of the stick brushes 210 into or out of the bodies 220 and 230.

Meanwhile, the stick brushes 210 of the second embodiment are similar to the stick brushes 110, 120 and 130 of the retractable brush 100 of the first embodiment, and so a detailed description thereof will be omitted. In this embodiment, the case in which two stick brushes 210 have different uses will be described by way of

example.

The bodies 220 and 230 include the first body 220 having an opening 222b through which one of the first brushes 211 are drawn, and the second body 230 rotatably
5 installed on the first body 220.

The first actuator unit 240 draws one of the first brushes 211 into or out of the first body 220 through the opening 222b of the first body 220 according to an amount or angle of rotation of the second body 230.

10 The first actuator unit 240 includes a plurality of first sliders 241, which is installed in parallel inside the first body 220 so as to be movable in a longitudinal direction and on which the stick brushes 210 are mounted, a pressurization actuator 242, which is provided to the
15 first sliders 241 in the first body 220 and selectively pressurizes one of the first sliders 241 to draw the first brushes 211 into or out of the first body 220 by relative rotation of the first body 220 and the second body 230, i.e. by rotating the second body 230 relative
20 to the first body 220 or by rotating the first body 220 relative to the second body 230, and elastic members 243 applying an elastic force such that the first sliders 241 are returned in a direction where the first brushes 211 are drawn into the first body 220.

25 Each of the first sliders 241 includes a guide protrusion 241a slidably inserted into a guide rail 221a formed inside the first body 220 so as to be movable

inside the first body 220 in a longitudinal direction, and a mounting recess 241b into which one end of a stick of each stick brush 210 is mounted.

The first sliders 241 are preferably shaped of a cylinder when coupled to each other. In detail, each of the first sliders 241 has a shape that radially divides a cylinder, and includes a sliding coupler 241c made up of at least one groove and protrusion at contact faces thereof in order to be slidably engaged with each other. In this embodiment, the first sliders 241 are numbered two and each have a semicircular cross section. Alternatively, the first sliders 241 are divided into the number corresponding to the number of stick brushes 210, and each have a fan-shaped cross section when divided into three.

The pressurization actuator 242 includes a pressurization step 242a formed on an outer circumference of each of the first sliders 241 toward the second body 230 in a "V" shape, and a pressurization ridge 242b protruding in a "Λ" or reverse "V" shape so as to support the pressurization step 242a inside the second body 230. The pressurization step 242a is formed on each of the first sliders 241 so as to be located on the locus of movement of the pressurization ridge 242b rotating along with the second body 230.

The pressurization ridge 242b moves along the pressurization step 242a when the first and second bodies

220 and 230 are relatively rotated. Thereby, according to a position where the pressurization ridge 242b is in contact with the pressurization step 242a, each of the first sliders 241 reciprocates in the first body 220 in a longitudinal direction. As a result, one of the first brushes 211 of the stick brushes 210 mounted on the first sliders 241 moves inwards or outwards through the opening 222b of the first body 220.

The pressurization actuator 242 is provided with a seat recess 242c such that one of ends of the pressurization step 242a and the pressurization ridge 242b which are opposite to each other is placed on the other end in order to prevent the first body 220 from being easily rotated relative to the second body 230 when one of the first brushes 211 protrudes from the opening 222b. In this embodiment, the seat recess 242c is formed on the pressurization ridge 242b.

The elastic members 243 has a number corresponding to the number of first sliders 241, employ coil springs by way of example, and are supported on the first sliders 241 and the first body 220 at opposite ends thereof so as to provide elastic force in a direction in which the first brushes 211 are retracted into the opening 222b.

Meanwhile, the first body 220 includes an inner cover 221, in an inner surface of which a plurality of guide rails 221a is formed in a longitudinal direction such that the first sliders 241 are coupled to the inside

thereof so as to be slidable in a longitudinal direction, and an outer cover 222 fixed to the outside of the inner cover 221.

The inner cover 221 is provided with a plurality of
5 through-holes 221b, through which the stick brushes 210 pass and on which the elastic members 243 into which the stick brushes 210 are fitted are supported, and a plurality of annular rotating supports 221a along a circumference of a lower end thereof so as to allow the
10 second body 230 to be rotatably coupled.

The outer cover 222 is provided with coupling holes 222a on radially opposite sides of a lower end thereof which are coupled with coupling wedges 221e after going through slits 221d formed on radially opposite sides of
15 the inner cover 221, and the opening 222b at an upper end thereof which is opposite the coupling holes 222a.

Meanwhile, the retractable brush 200 according to a second embodiment of the present invention further includes a ferrule 250 installed on the second body 230
20 on a side opposite the first body 220, a second brush 260 installed inside the ferrule 250, and a second actuator unit 270 drawing the second brush 260 into or out of the ferrule 250.

The ferrule 250 and the second brush 260 of the
25 second embodiment are similar to the ferrule 160 and the second brush 170 of the retractable brush 100 of the first embodiment, and so a detailed description thereof

will be omitted.

The second actuator unit 270 includes guide holes 271 formed on radially opposite sides of a guide tube 231, which protrudes from the second body 230 in one direction, in a longitudinal direction, a second slider 272 installed inside the guide tube 231, and a rotator 272 rotatably mounted on the guide tube 231 and reciprocating the second slider 272 when rotated.

Each guide hole 271 includes catch slots 271a extending from opposite ends thereof in circumferentially alternating directions such that guide pins 272a formed on radially opposite sides of the second slider 272 are caught.

The second slider 272 is installed inside the guide tube 231 so as to be slidable in a longitudinal direction, includes the guide pins 272a protruding through the guide holes 271. The second brush 260 is fixed on one side of the second slider 272.

The rotator 273 is provided with a pair of guide slots 273a, which guides the guide pins 272a, in an inner surface thereof in a sine curve shape in a longitudinal direction such that the second slider 272 reciprocates along the guide tube 231 while rotating in forward or backward direction relative to the guide tube 231. The ferrule 250 is fixedly mounted outside the rotator 273.

Meanwhile, the second body 230 includes the guide tube 231, a cap 232 on which the guide tube 231 is

mounted, a rotation coupler member 233 hooked onto the guide tube 231, and an outer case 234 mounted on the cap 232.

The guide tube 231 is provided with a plurality of
5 hooks 231a at one end thereof, and a protruding catch 231b at the other end thereof so as to inhibit separation of the rotator 273.

The cap 232 allows the guide tube 231 to be mounted therein, and is provided with an open hole 232a at one
10 end thereof such that the hooks 231a of the guide tube 231 protrude.

The rotation coupler member 233 is provided with fastening recesses 233a at positions corresponding to the hooks 231a. The fastening recesses 233a of the rotation
15 coupler member 233 are hooked with the hooks 231a of the guide tube 231 with the cap 232 in between. The rotation coupler member 233 is provided with a rotation coupling part 233b protruding along an outer circumference thereof in a ring shape. The rotation coupling part 233b of the
20 rotation coupler member 233 is coupled to rotation supports 221c of the inner cover 221 of the first body 220, and thus is rotatably coupled to the first body 220. The pressurization ridge 242b of the pressurization actuator 242 is formed on one side of the rotation
25 coupler member 233.

The outer case 234 is fitted around the cap 232, thereby enclosing the rotation coupler member 233 to be

aligned with the first body 220 in a line.

Meanwhile, the first body 220 and the ferrule 250 are detachably coupled with respective covers 280 and 290 on the outsides thereof in which leaf springs 281 and 291 are mounted. The covers 280 and 290 do not easily separated from the first body 220 and the ferrule 250 by restoring force of the leaf springs 281 and 291.

The operation of the retractable brush 200 having this configuration according to a second embodiment of the present invention will be described below.

In order to use the brushes 211 and 260, the covers 280 and 290 are separated from the first body 220 and the ferrule 250, and then the first body 220 and the second body 230 are rotated relative to each other, namely the second body 230 is rotated relative to the first body 220, or the first body 220 is rotated relative to the second body 230. Thereby, the pressurization steps 242a of the first sliders 241 move along the pressurization ridge 242b, and then when the end of the pressurization step 242a of one of the first sliders 241 is located at the end of the pressurization ridge 242b, the corresponding first slider 241 is pushed toward the opening 222b of the first body 220 along with one of the stick brushes 210, so that the first brush 211 of the corresponding stick brush 210 is drawn out of the opening 222b.

At this time, the end of the pressurization step

242a is placed in the seat recess 242c. Thereby, although force is applied to the stick brush 210, the stick brush 210 is not drawn into the first body 220 as long as the first body 220 and the second body 230 are not rotated relative to each other. Further, when the first body 220 and the second body 230 are rotated relative to each other, resistance occurs between the first body 220 and the second body 230 to some extent, so that the first brush 211 can be easily recognized to be drawn to the maximum extent.

In this manner, desired one of the first sliders 241 is pushed by the pressurization actuator 242 according to an amount or angle of relative rotation between the first body 220 and the second body 230, so that the desired first brush 211 can be drawn. In contrast, the first slider 241, on which the stick brush 210 which the user does not want to draw is mounted, is accurately returned to the side opposite the opening 222b of the first body 220 by the elastic force of the corresponding elastic member 243.

When the user wants to rotate the first or second body 220 or 230, she/he has to grasp and turn the outer cover 222 of the first body 220 or the outer case 234 of the second body 230.

When the user wants to draw the second brush 260 out of the ferrule 250, she/he rotates the second body 230 and the ferrule 250 relative to each other. Then,

the rotator 273, to which the ferrule 250 is fixed, is rotated, and thus the guide pins 272a of the second slider 272 move along the guide slots 273a. Thereby, the second slider 272 linearly moves by means of the guide
5 holes 271, so that the second brush 260 is drawn out of the ferrule 250.

At this time, the guide pins 272a continue to move along the guide holes 271, and then are placed in the inner catch slots 271a. Thereby, the second brush 260 is
10 not drawn into the ferrule 250 without rotation of the ferrule 250 although external force is directly applied to the second brush 260.

When the use of the second brush 260 is completed, the ferrule 250 is rotated along with the rotator 273 in
15 a reverse direction. Thereby, the second slider 272 is drawn into the ferrules 250 along with the second brush 260. When the second slider 272 continues to move along the guide holes 271, and is placed in the outer catch slots 271a opposite the inner catch slots 271a, the
20 second brush 260 is prevented from being easily drawn out of the ferrule 250 as long as the ferrule 250 is not rotated.

According to the exemplary embodiments as described above, the retractable brush forms a plurality of brushes
25 into a single assembly, so that it reduces the number of parts to promote convenience when stored or carried. Further, the retractable brush allows brushes having

desired uses to be selectively drawn when used, so that it makes it convenient to use various cosmetics.

Although the present invention has been described in connection with exemplary embodiments of the present invention, it will be apparent to those skilled in the art that various modifications and changes may be made thereto with ease. Therefore, it should be understood that these modifications and changes belong to the scope and spirit defined in the attached claims of the invention.

CLAIMS**Claim 1**

A retractable brush comprising:

a plurality of stick brushes having sticks, on one
5 ends of which first brushes are installed;

a body in which the stick brushes are mounted such
that the first brushes can be drawn out of the body; and

a first actuator unit drawing one of the first
brushes of the stick brushes into or out of the body.

10

Claim 2

The retractable brush according to claim 1, wherein
the first actuator unit includes:

a first guide unit guiding the stick brushes in
15 order to draw the stick brushes into and out of the body;

a handle rotatably installed in the body;

a pressurization rotator installed so as to be
rotated along with the handle, and causing a
pressurization ridge protruding so as to be displaced
20 from a rotating center thereof to sequentially pressurize
the stick brushes by means of rotation of the handle such
that the first brushes are drawn out of the body; and

elastic members applying an elastic force to the
stick brushes in a direction in which the drawn one of
25 the first brushes moves inwards when the pressurization
of the pressurization ridge against the stick brushes is
released.

Claim 3

The retractable brush according to claim 1 or 2,
wherein the stick brushes include a lip brush, a blender
5 brush, and an eyeshadow brush, which are used as the
first brushes.

Claim 4

The retractable brush according to claim 1, further
10 comprising:

a ferrule installed on the body on a side opposite
a side where the first brushes move inwards or outwards;

a second brush installed inside the ferrule; and

a second actuator unit drawing the second brush
15 into or out of the ferrule.

Claim 5

The retractable brush according to claim 4, wherein
the second brush includes a cheek brush.

20

Claim 6

The retractable brush according to claim 4, wherein
the second actuator unit includes:

a support member having the second brush fixed on
25 one side thereof, and installed inside the ferrule;

a lead screw installed on the other side of the
support member;

a screwing member screwed onto the lead screw, and spaced apart from the ferrule; and

a second guide unit causing the support member to be rotated along with the ferrule, and guiding the support member to move from the ferrule in a longitudinal direction.

Claim 7

The retractable brush according to claim 1,
10 wherein:

the body includes a first body having an opening through which the first brushes move inwards or outwards, and a second body rotatably installed on the first body; and

15 the first actuator unit draws one of the first brushes into or out of the first body through the opening according to an amount of rotation of the second body.

Claim 8

20 The retractable brush according to claim 7, wherein the first actuator unit includes:

a plurality of first sliders installed in parallel inside the first body so as to be movable in a longitudinal direction, and having the stick brushes
25 mounted thereon;

a pressurization actuator provided to the first sliders in the first body and selectively pressurizes one

of the first sliders to draw one of the first brushes into or out of the first body by relative rotation of the first body and the second body; and

elastic members applying an elastic force such that
5 the first sliders are returned in a direction where the first brushes are drawn into the first body.

Claim 9

The retractable brush according to claim 8, wherein
10 the first body includes:

an inner cover having a plurality of through-holes, to which the first sliders are slidably coupled in a longitudinal direction, through which the stick brushes pass, and on which the elastic members into which the
15 stick brushes are fitted are supported, and rotably coupled with the second body at an end thereof; and

an outer cover fixed outside the inner cover, and having the opening.

20 **Claim 10**

The retractable brush according to claim 8 or 9, wherein the first sliders have a shape that radially divides a cylinder, and are slidably engaged with each other

25

Claim 11

The retractable brush according to claim 8, wherein

the pressurization actuator includes:

a pressurization step formed on an outer circumference of each of the first sliders in a "V" shape; and

5 a pressurization ridge protruding in a reverse "V" shape so as to support the pressurization step inside the second body, and moving along the pressurization step to linearly move the first sliders when the first and second bodies are rotated relative to each other.

10

Claim 12

The retractable brush according to claim 11, wherein the pressurization actuator includes a seat recess such that one of ends of the pressurization step
15 and the pressurization ridge which are opposite to each other is placed on the other end.

Claim 13

The retractable brush according to claim 7, further
20 comprising:

a ferrule installed on the second body on a side opposite the first body;

a second brush installed inside the ferrule; and

a second actuator unit drawing the second brush
25 into or out of the ferrule.

Claim 14

The retractable brush according to claim 13, wherein the second actuator unit includes:

guide holes formed on radially opposite sides of a guide tube, which protrudes from the second body, in a longitudinal direction;

a second slider installed inside the guide tube, including guide pins on radially opposite sides thereof which protrude through the guide holes, and having the second brush fixed thereto; and

a rotator rotatably mounted on the guide tube, including guide slots guiding the guide pins in an inner surface thereof such that the second slider reciprocates along the guide tube while rotating in forward or backward direction relative to the guide tube, and having the ferrule mounted outside.

Claim 15

The retractable brush according to claim 14, wherein each of the guide holes includes catch slots extending from opposite ends thereof in circumferentially alternating directions such that guide pins are caught in the catch slots.

Claim 16

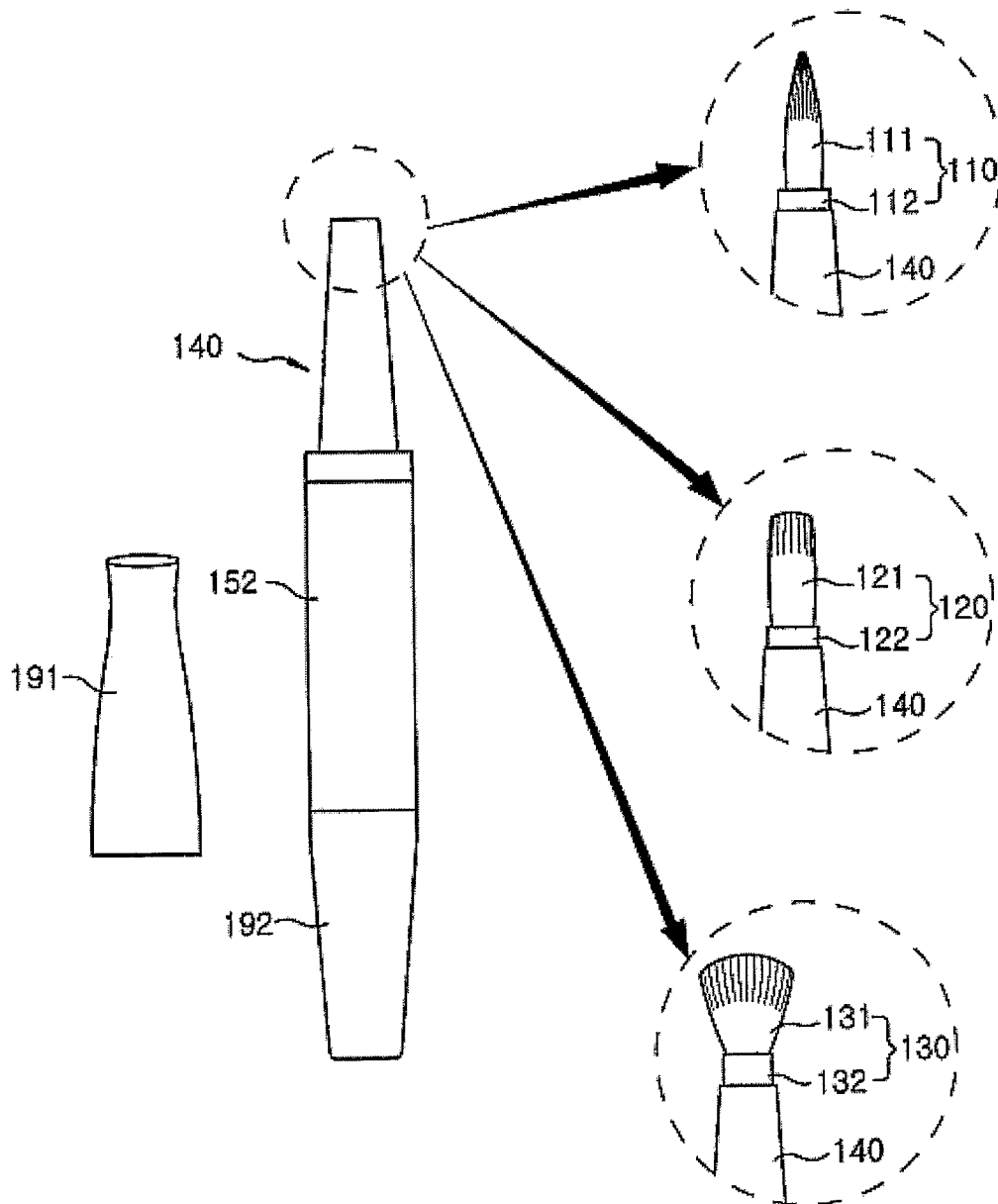
The retractable brush according to claim 14, wherein the second body includes a plurality of hooks at one end of the guide tube, a cap on which the guide tube

is mounted such that the hooks protrude, a rotation coupler member coupled to the hooks through fastening recesses and rotatably coupled to the first body, and an outer case mounted on the cap so as to be aligned with
5 the first body in a line.

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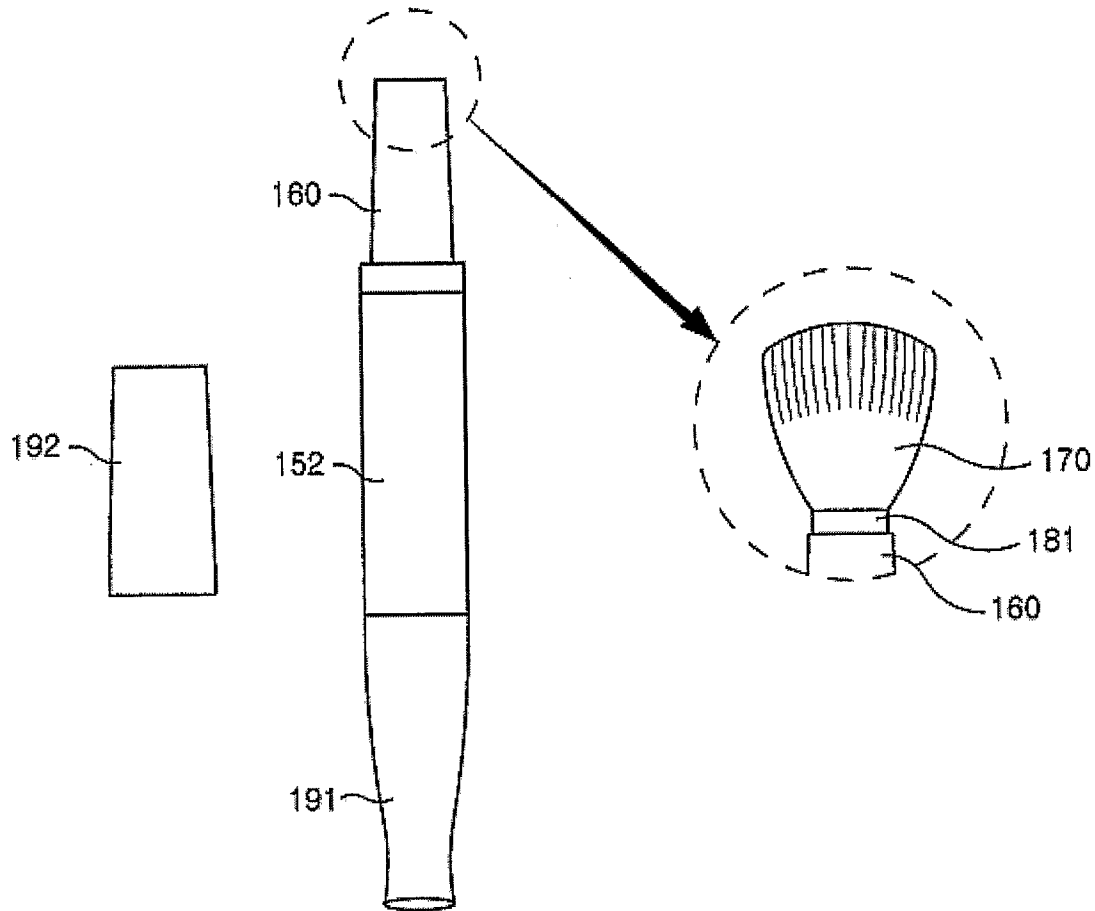
Fig. 1

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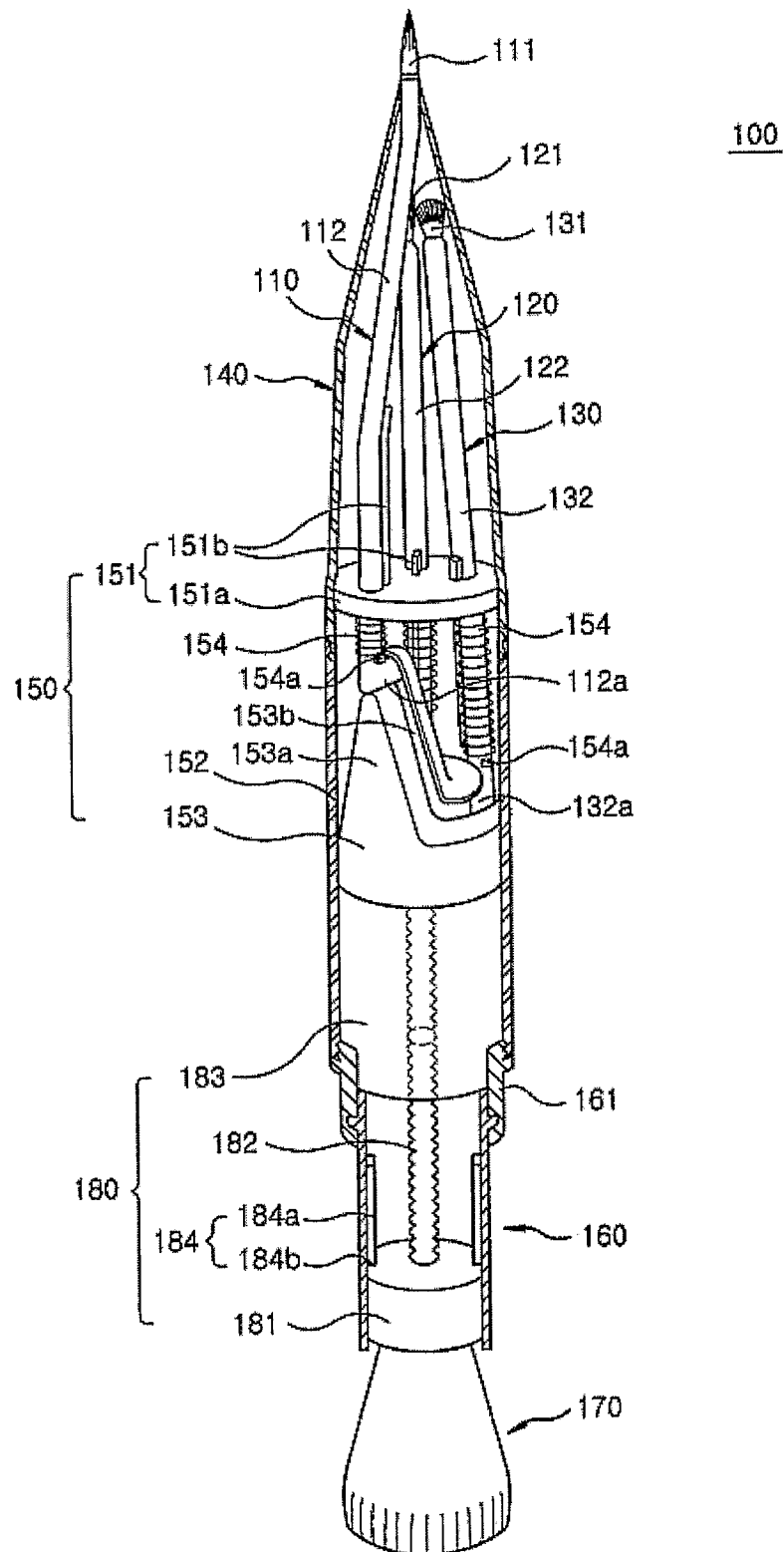
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Fig. 2



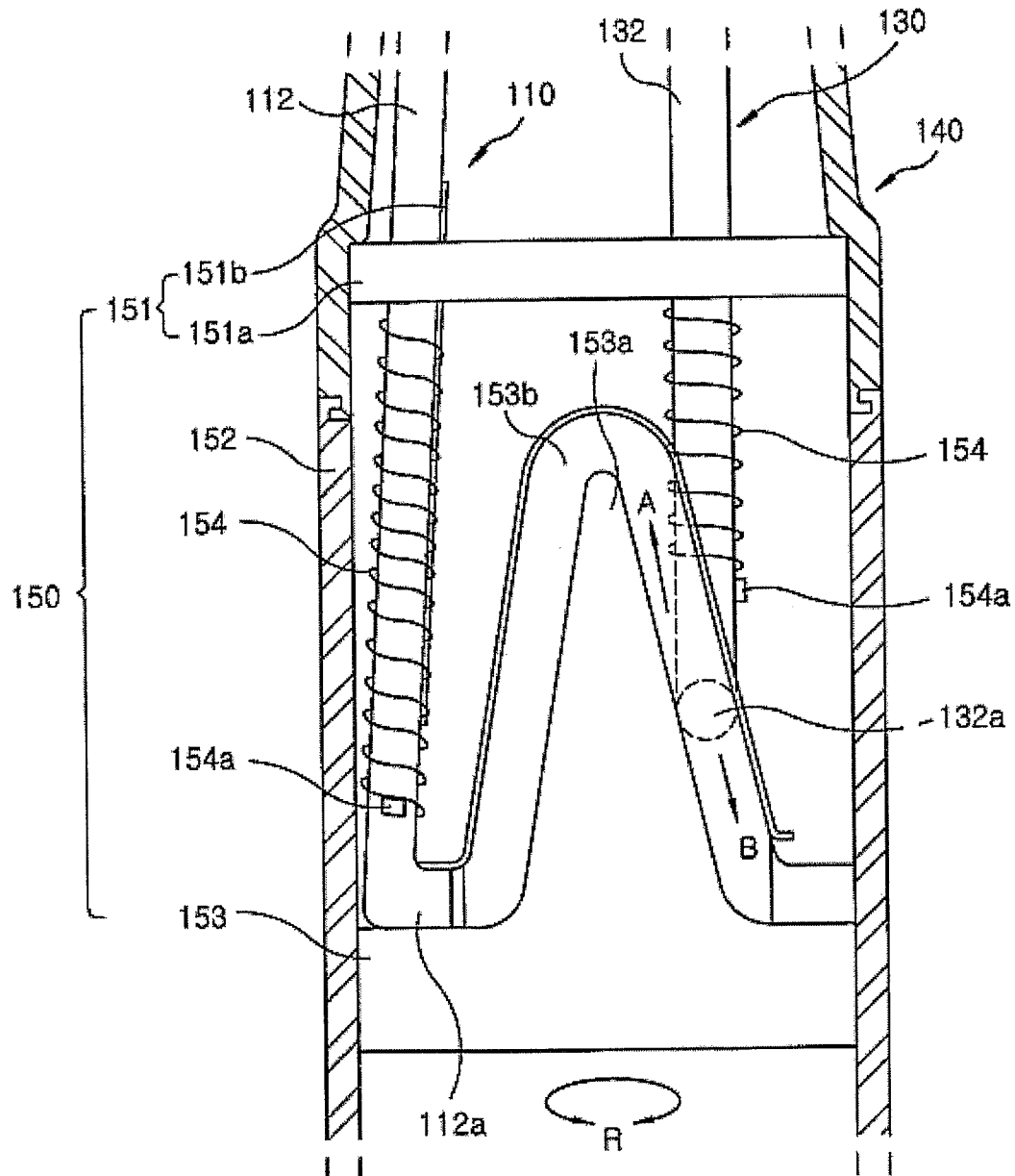
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Fig. 3



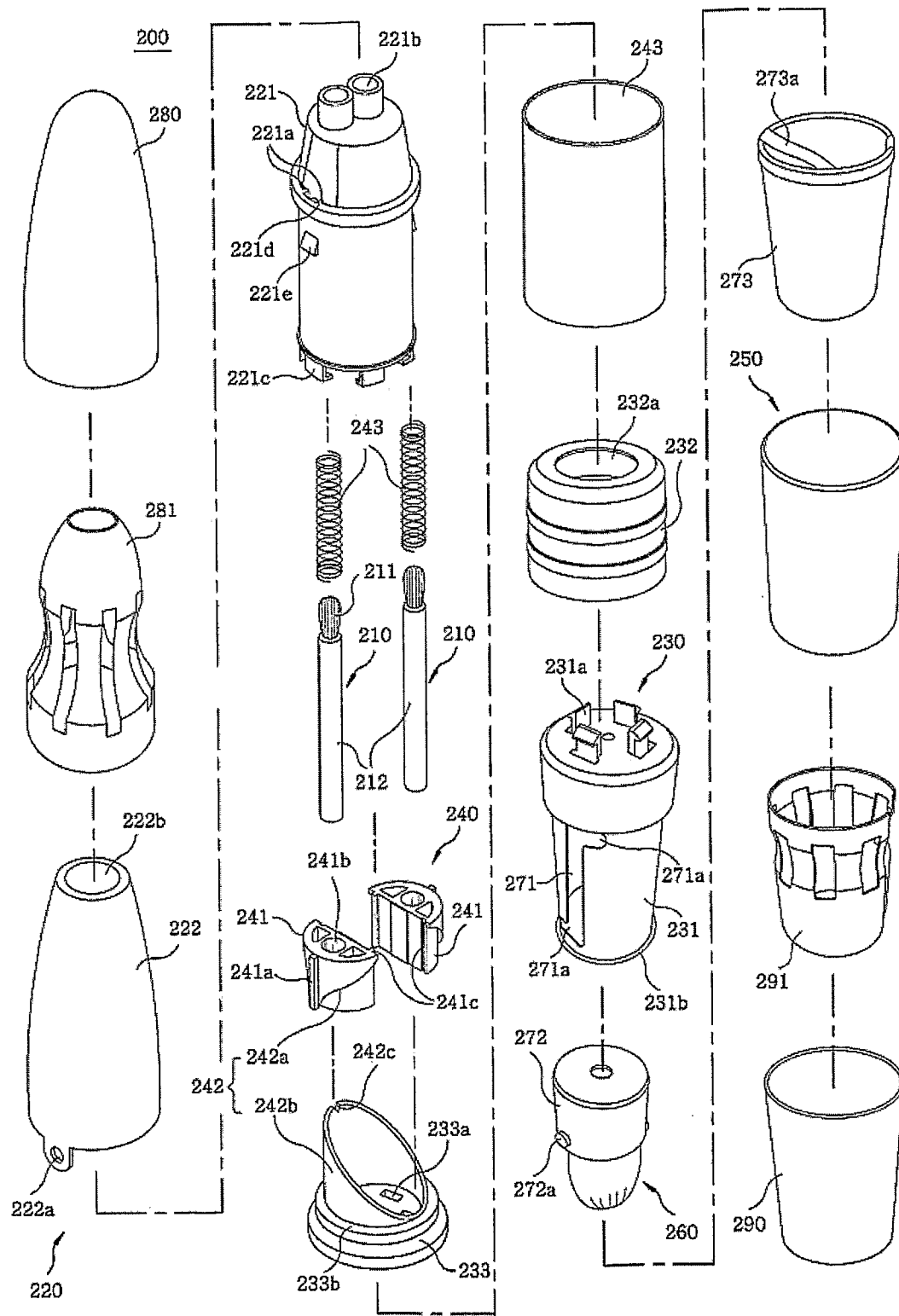
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Fig. 4



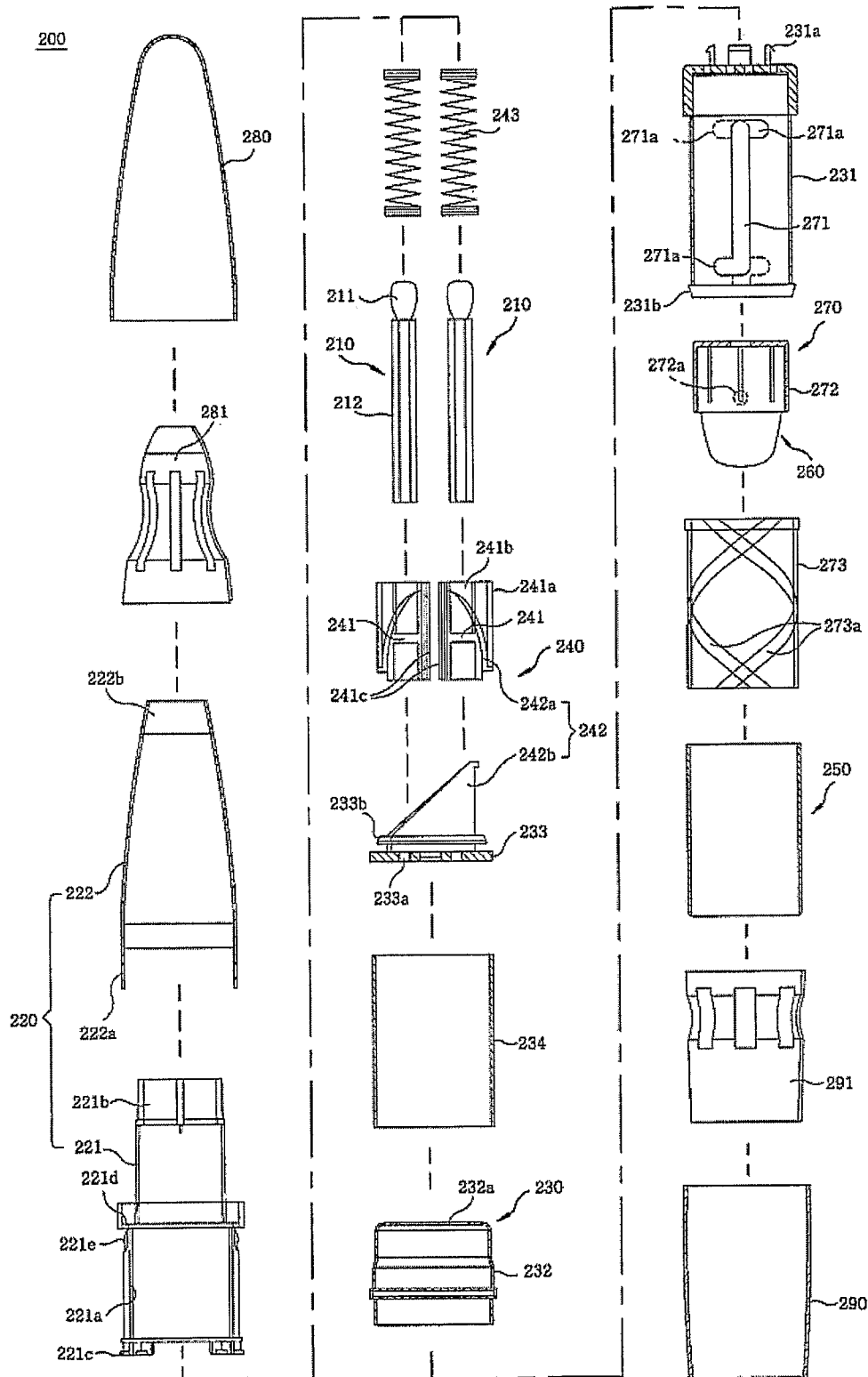
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Fig. 5



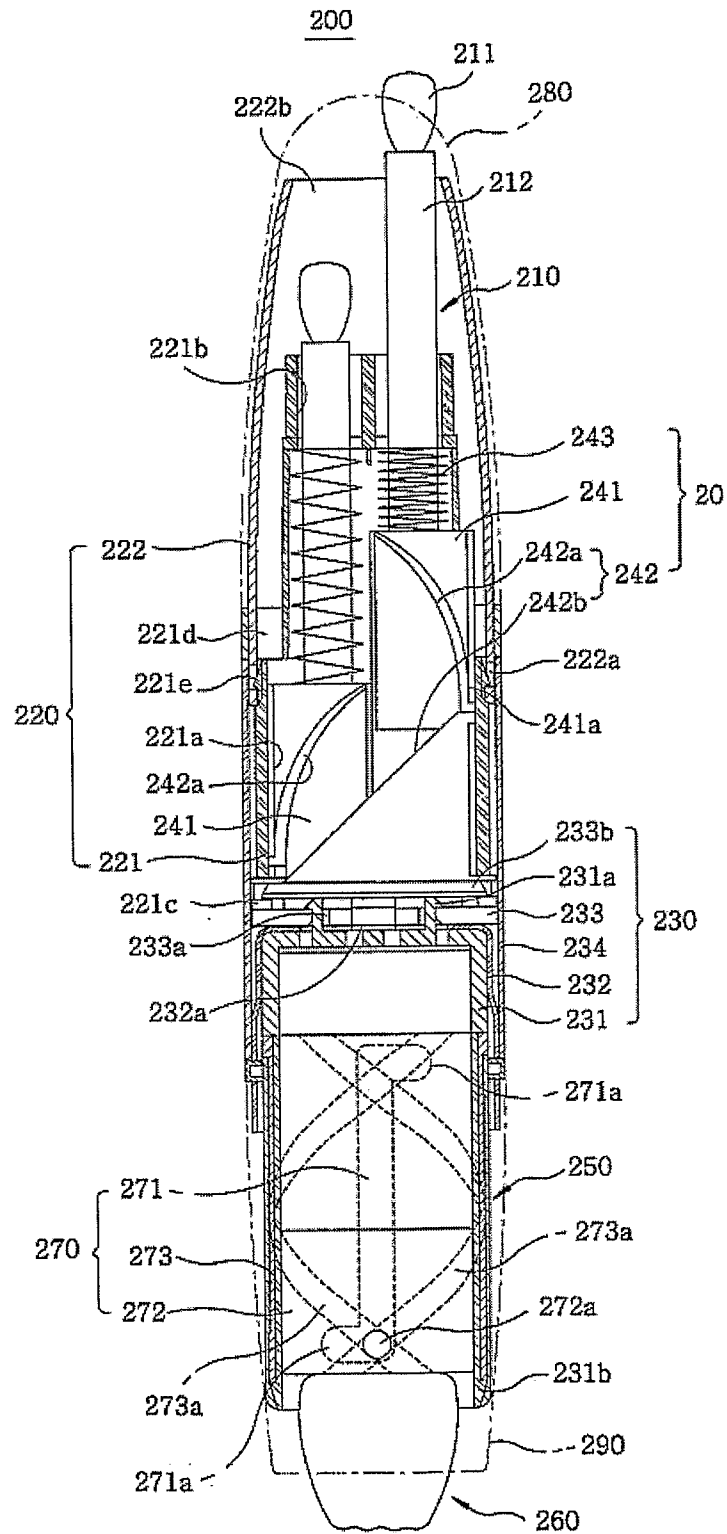
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Fig. 6



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Fig. 7



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Fig. 8

