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(54) **STICK-SHAPED PUMPING CONTAINER**

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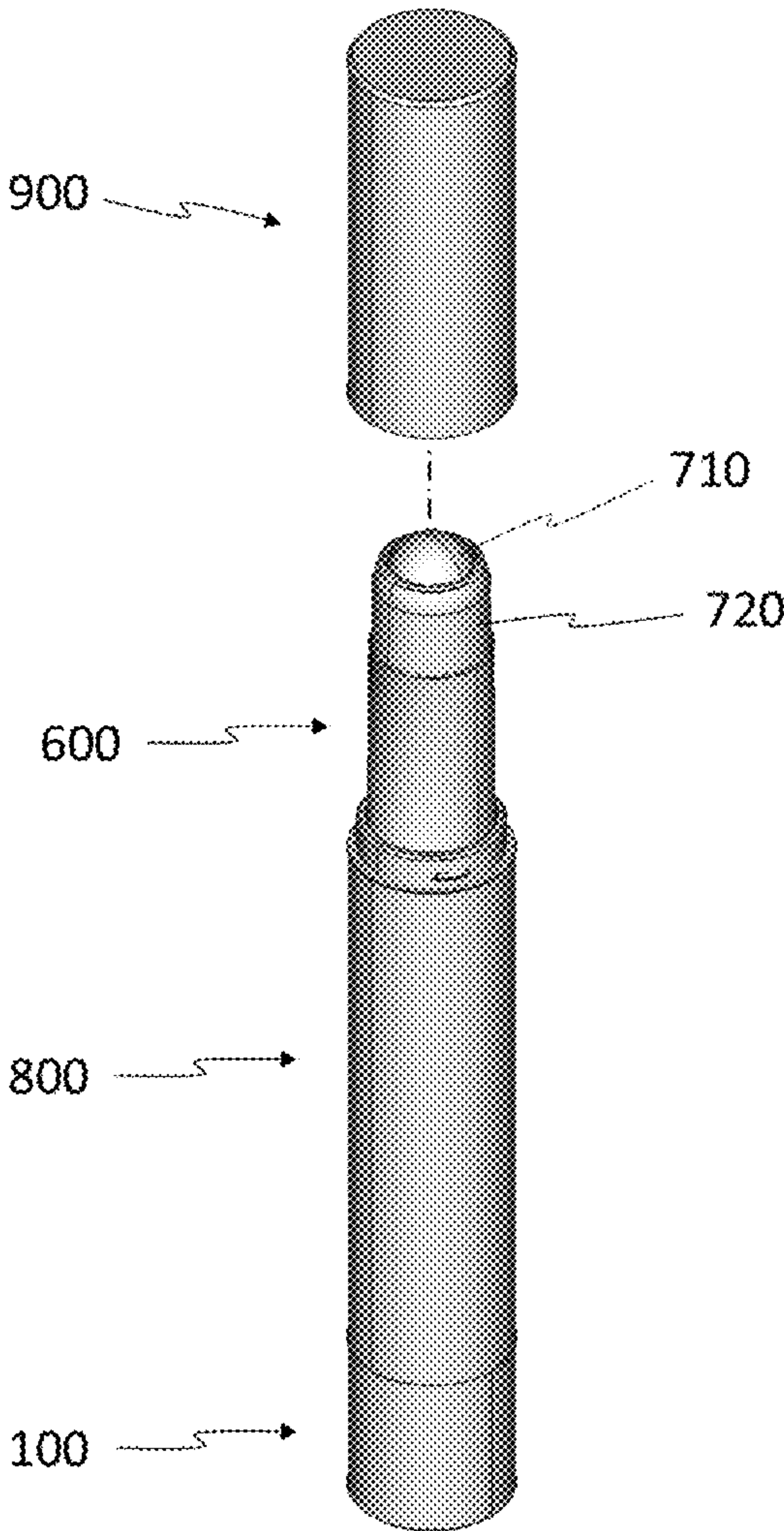
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(57) **ABSTRACT**

A stick-shaped pumping container that is convenient to use and allows fine adjustments of the pump while having an elongated form is described. The stick-shaped pumping container includes: an inner bottle having an open top; a pump assembly coupled to the open top of the inner bottle; a cam sleeve of which an end portion has a height that varies between a first height and a second height along the circumference of the cam sleeve; a handle that is coupled to a first component part of the pump assembly, is rotatable in relation to the cam sleeve, and is equipped with a first transfer part; and a lifter, which is coupled to a second component part of the pump assembly and is equipped with a second transfer part that interacts with the first transfer part and a lifter protrusion that maintains contact with the end portion of the cam sleeve.

1000



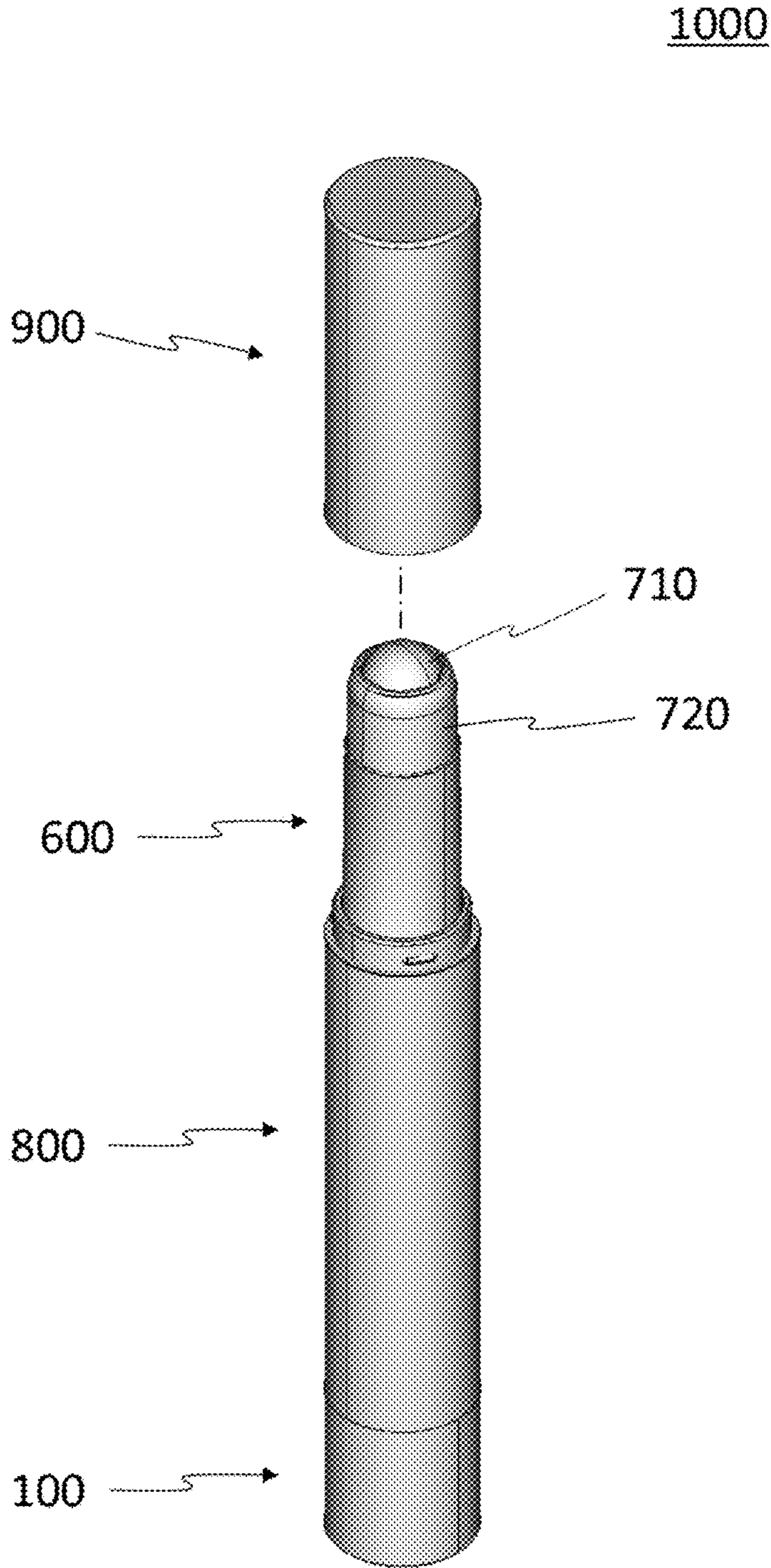


FIG. 1

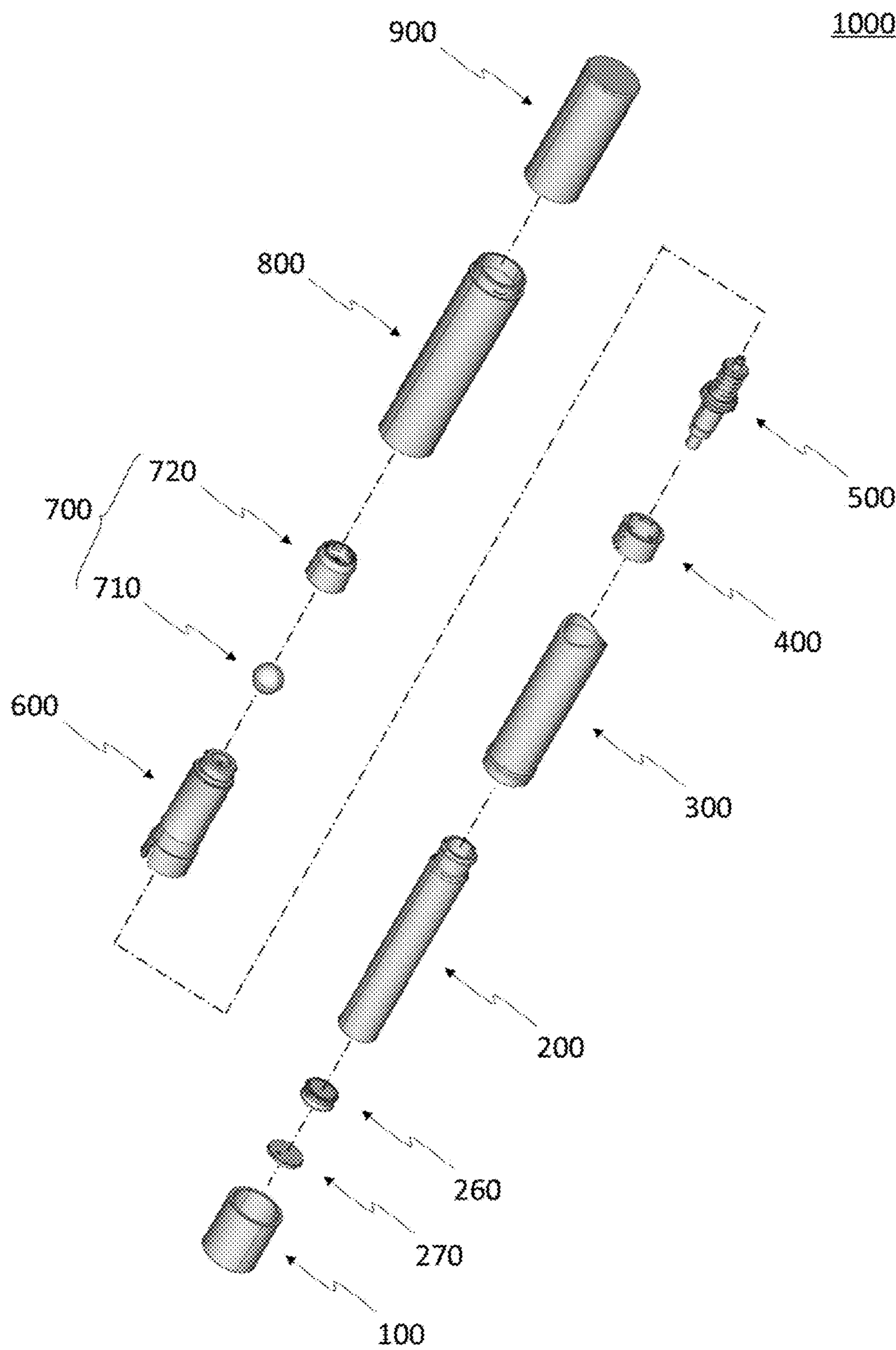


FIG. 2

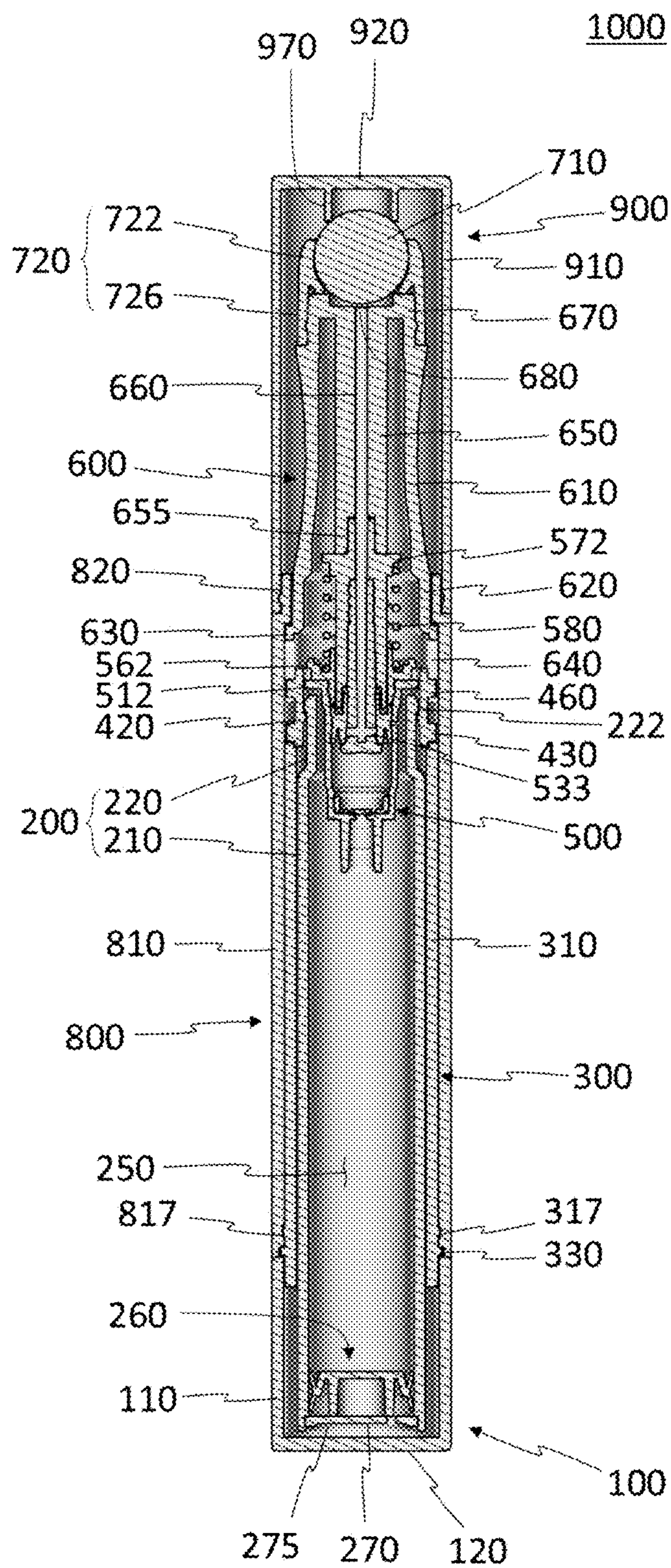


FIG. 3

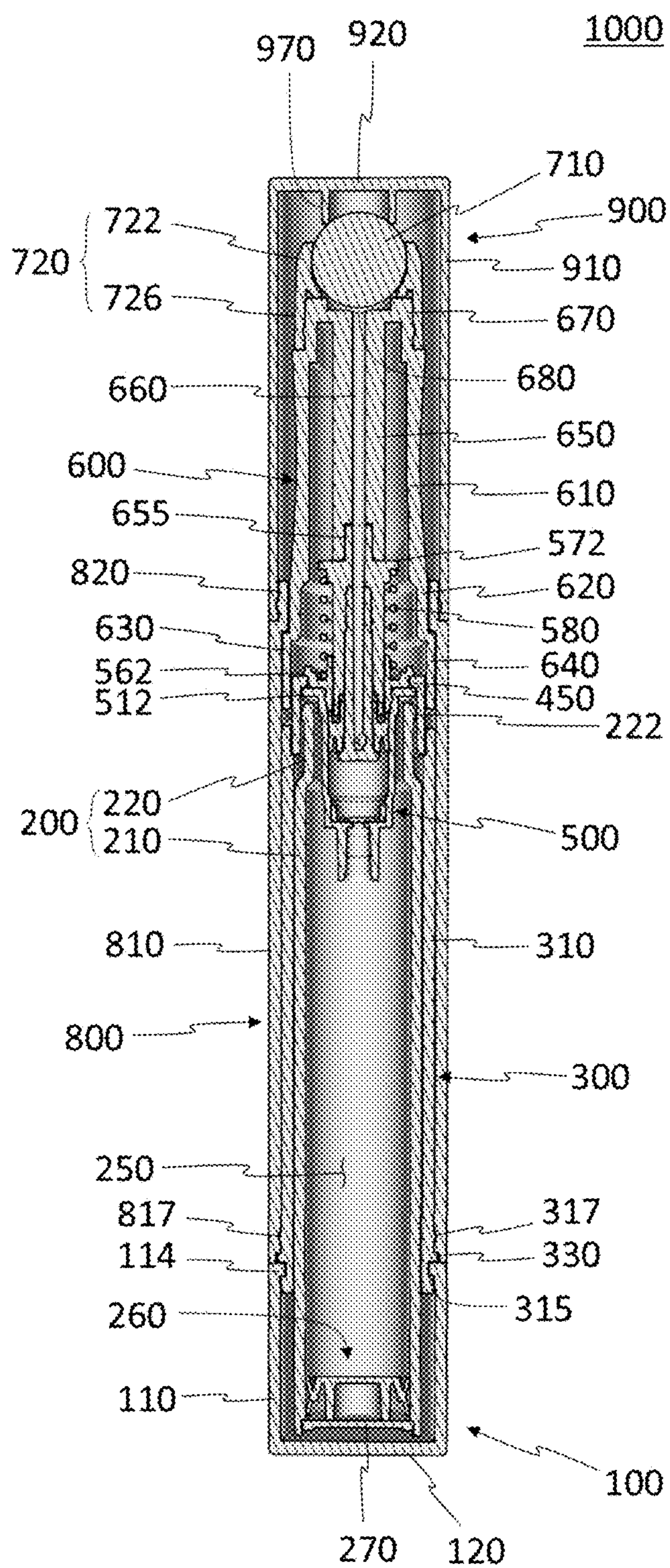


FIG. 4

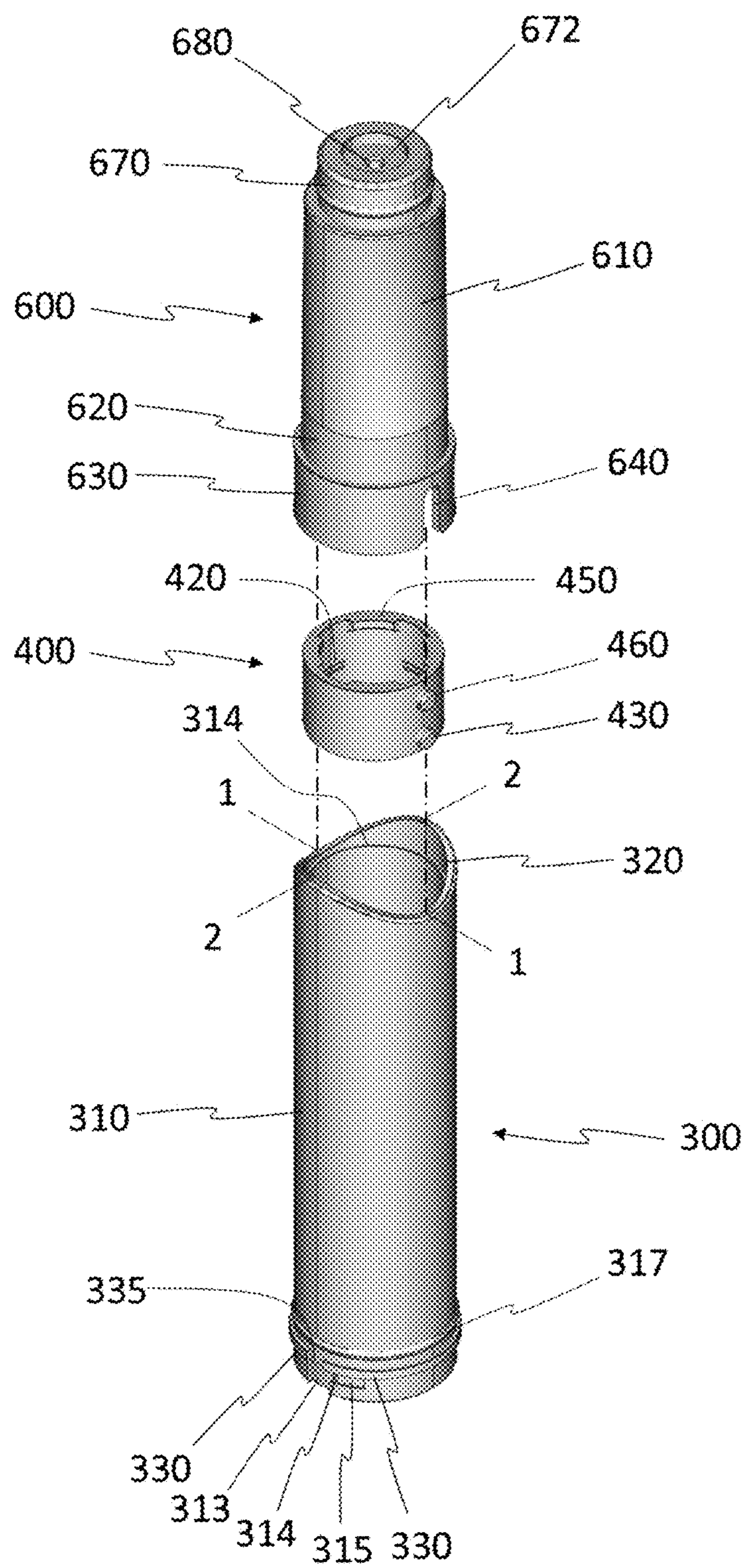


FIG. 5

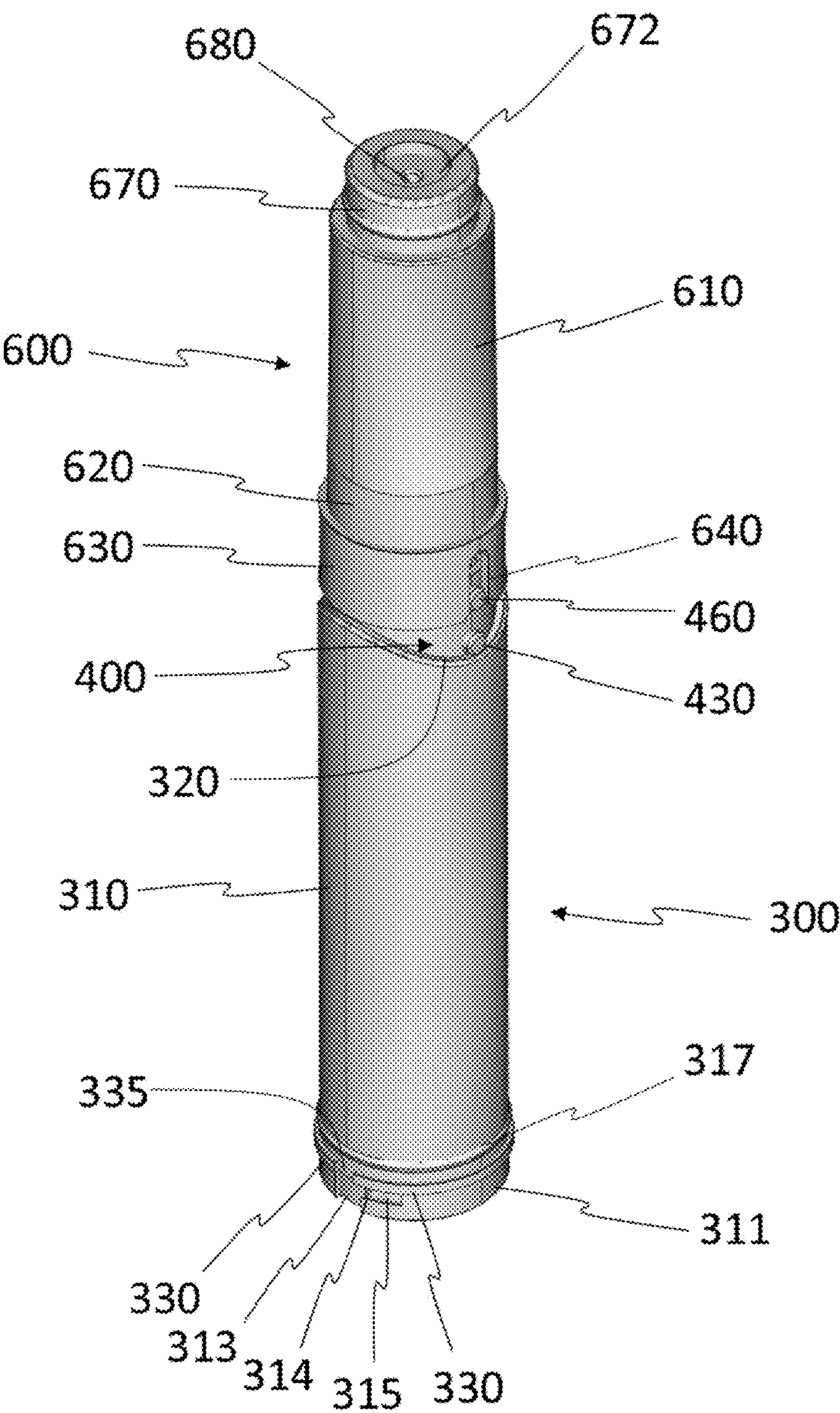


FIG. 6

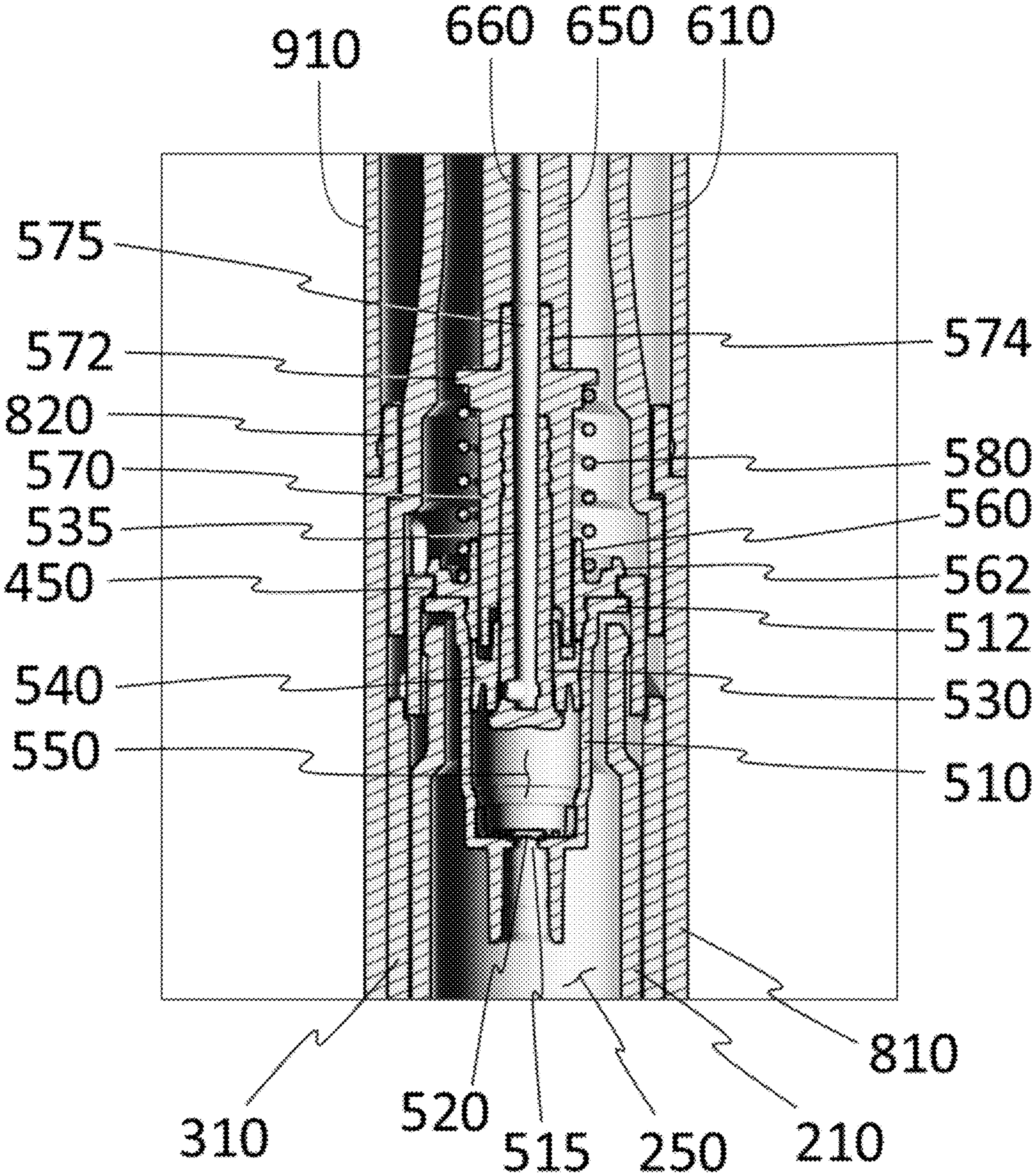


FIG. 7

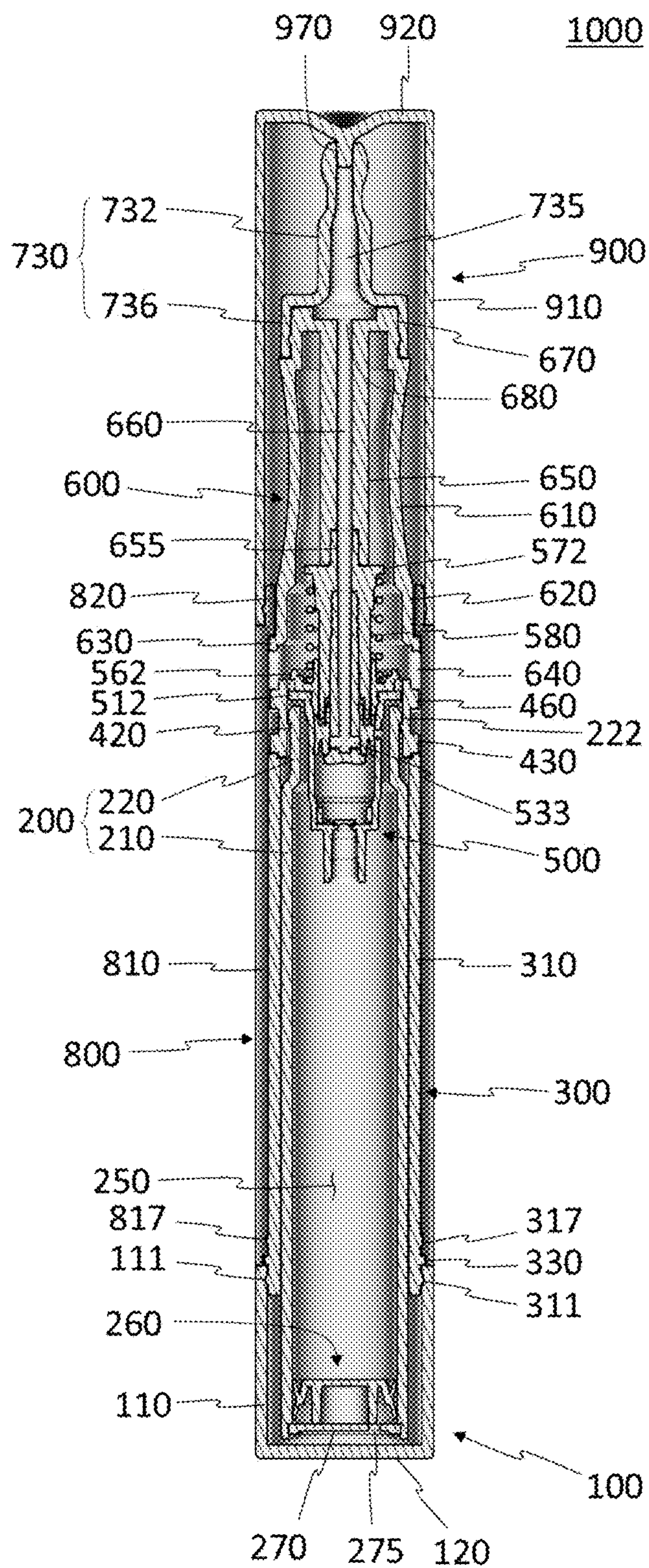


FIG. 8

FIG. 9

STICK-SHAPED PUMPING CONTAINER**CROSS-REFERENCE TO RELATED APPLICATIONS**

[0001] This application claims the benefit of Korean Patent Application No. 10-2024-0183348, filed with the Korean Intellectual Property Office on Dec. 11, 2024, the disclosure of which is incorporated herein by reference in its entirety.

BACKGROUND**1. Technical Field**

[0002] The invention relates to a container that dispenses a content by the operation of a pump, more particularly to a stick-shaped pumping container that is convenient to use and allows fine adjustments of the pump while having an elongated form.

2. Description of the Related Art

[0003] A pump in a cosmetic container, etc., is coupled to the top opening of a container that holds a content having a fluid form, such as a liquid or gel, and serves to dispense the content to the exterior. When the user pushes down on a button to dispense the content, the content that was drawn in to the interior of the pump is pressurized, as a result of which the content is moved up along the discharge channel and is dispensed to the exterior through a nozzle. When the user releases the pressure on the button, the discharge channel is mechanically closed by the upward movement of the nozzle, and the pressure within the pump is lowered, so that the content may be drawn in from the storage part to compensate for the lowered pressure. In many cases, the nozzle itself functions as the button.

[0004] A pump having the structure described above can be very useful in cases where the content is to be dispensed in a fixed amount corresponding to the volume of the interior of the pump assembly. However, it can be difficult to dispense the content in an amount that is smaller than the amount held in the space of the pump's interior, firstly because the user does not how much the nozzle should be pressed to dispense the desired amount, and secondly because, even if the user were to identify the extent to which the nozzle should be pressed by trial and error, it is not easy to press the nozzle by exactly the identified extent every time.

[0005] In the context of cosmetic containers, a container implemented in a small thickness has been developed, which is known as a stick-shaped or a pencil-shaped container. A stick-shaped cosmetic container has an elongated form along its lengthwise direction but small dimensions along the width and thickness directions, so as to be readily held in the user's hand. A stick-shaped cosmetic container can hold a cosmetic liquid and, after dispensing the cosmetic, can itself be used as a tool for applying the cosmetic.

[0006] If a stick-shaped cosmetic container were to employ a pump structure to dispense the content, this would greatly increase the utility and convenience of the stick-shaped cosmetic container. However, due to the small width of the stick-shaped cosmetic container, it is difficult to position the button that is pressed for operating the pump. That is, if the button is also formed with a small width in the same manner as the width of the stick-shaped cosmetic container, then the user would have to press a pointy button

having a small area. This would provide an uncomfortable feel on the part of the user, and also would make it even more difficult to apply a fine manipulation on the button to finely adjust the dispensing amount.

[0007] A stick-shaped product is typically carried around on the user's person, and is therefore manufactured in a relatively small size. The small size of the stick-shaped product limits the amount of the content available for use and requires higher levels of precision in the manufacture of the stick container. If a pump structure were to be applied to a stick-shaped cosmetic container, the addition of a complicated structure for pump operation would require a higher manufacturing cost compared to a regular container. Fabricating a stick-shaped pumping container in a reusable form, so that the container having an elaborate structure and manufactured with a high cost may be reused even after the content is depleted, would greatly reduce a waste of resources.

SUMMARY OF THE INVENTION

[0008] An aspect of the invention, which was conceived to resolve the problems described above, is to provide a stick-shaped pumping container that can be manipulated in a convenient manner while having an elongated form.

[0009] Another aspect of the invention is to provide a stick-shaped pumping container that allows fine adjustments in operating the pump.

[0010] Yet another aspect of the invention is to provide a stick-shaped pumping container in which refills can be made to the container having a pumping structure, so as to prevent unnecessary waste and environmental pollution.

[0011] Other objectives of the present invention will be more clearly understood from the embodiments set forth below.

[0012] One aspect of the invention provides a stick-shaped pumping container that includes: an inner bottle, on an inner side of which a holding space is formed that holds a content and is open at the top; a pump assembly, which is coupled to the open top of the inner bottle and has a first component part and a second component part that are coupled to each other so as to be movable in relation to each other; a cam sleeve, which is shaped as a hollow cylinder and configured to hold the inner bottle in its interior space, with an end portion of the cam sleeve having a height that varies between a first height and a second height along the circumference of the cam sleeve; a handle, which is coupled to the first component part, is arranged to be rotatable in relation to the cam sleeve, and is equipped with a first transfer part; and a lifter, which is coupled to the second component part, is shaped as a hollow cylinder, and is equipped with a second transfer part that interacts with the first transfer part and a lifter protrusion that is configured to maintain contact with the end portion of the cam sleeve. Here, one of the first transfer part and the second transfer part is implemented as a limiting slit and the other is implemented as a transfer protrusion, where the limiting slit extends along a longitudinal direction, and the transfer protrusion is inserted into the limiting slit so as to be movable along the longitudinal direction. A movement of the lifter protrusion from the first height to the second height resulting from a rotation of the handle relative to the cam sleeve causes the second component part of the pump assembly to move in relation to the first component such that the pump assembly dispenses the content to the exterior.

[0013] A stick-shaped pumping container according to an embodiment of the invention can include one or more of the following features. For example, the pump assembly can further include an elastic member that is arranged between the first component part and the second component part, where the elastic member can apply an elastic force along the longitudinal direction for pulling or pushing the second component part in relation to the first component part.

[0014] The stick-shaped pumping container can further include an outer bottle that is secured to the cam sleeve, surrounds the lifter, and rotatably supports the handle.

[0015] The cam sleeve can be open at the bottom, and the inner bottle can be inserted through the open bottom of the cam sleeve to be replaceably mounted to the lifter and the pump assembly.

[0016] A dispensing channel can be formed in the handle, where the dispensing channel can extend along the longitudinal direction and can open into a dispensing hole located at the top, and the dispensing channel can be in communication with a pump channel, through which the pump assembly dispenses the content.

[0017] The handle can include a ball type applicator tip, which can have a spherical shape and can be rotatably arranged in a position adjacent to the dispensing hole. An upper end portion of the handle can have a narrow diameter at a position adjacent to the dispensing hole so as to form a pipette type applicator tip. The handle can include a cushion type applicator tip, which can be made from a soft material and can be coupled at a position adjacent to the dispensing hole.

[0018] An embodiment of the present invention having the features above can provide various advantageous effects including the following. However, an embodiment of the present invention may not necessarily exhibit all of the effects below.

[0019] An embodiment of the invention provides a stick-shaped pumping container with which the pump can be manipulated by twisting the handle. This provides the advantages that the pump can be mounted without sacrificing convenience, even as the pumping container has an elongated form overall and maintains a stick form. As the user can manipulate the pump by twisting the handle, the user is able to adjust the amount dispensed from the pump, for example by referencing measurement markings, etc., provided on the handle, and is also able to dispense the same amount every time.

[0020] Also, a stick-shaped pumping container according to an embodiment of the invention can completely seal off the holding space and can thus prevent the content from contacting air, thereby greatly reducing the possibility of the content becoming oxidized, spoiled, or contaminated. The stick-shaped pumping container allows the mounting of a new refill unit after the content is depleted, thereby reducing wasted resources and environmental pollution as well.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021] FIG. 1 is a perspective view illustrating a stick-shaped pumping container according to an embodiment of the invention.

[0022] FIG. 2 is an exploded perspective view of the stick-shaped pumping container illustrated in FIG. 1

[0023] FIG. 3 and FIG. 4 are cross-sectional views of the stick-shaped pumping container illustrated in FIG. 1

[0024] FIG. 5 is an exploded perspective view of the cam sleeve, lifter, and handle in a stick-shaped pumping container according to an embodiment of the invention.

[0025] FIG. 6 is a perspective view showing the cam sleeve, lifter, and handle of FIG. 5 in a coupled state.

[0026] FIG. 7 is a cross-sectional view of the pump assembly in a stick-shaped pumping container according to an embodiment of the invention.

[0027] FIG. 8 is a cross-sectional view of a stick-shaped pumping container according to another embodiment of the invention.

[0028] FIG. 9 is a cross-sectional view of a stick-shaped pumping container according to yet another embodiment of the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0029] As the invention allows for various changes and numerous embodiments, particular embodiments will be illustrated in the drawings and described in detail in the written description. However, this is not intended to limit the present invention to particular modes of practice, and it is to be appreciated that all changes, equivalents, and substitutes that do not depart from the spirit and technical scope of the present invention are encompassed by the present invention. In the description of the present invention, certain detailed explanations of the related art are omitted if it is deemed that they may unnecessarily obscure the essence of the invention.

[0030] The terms used in the present specification are merely used to describe particular embodiments and are not intended to limit the present invention. An expression used in the singular encompasses the expression of the plural, unless it has a clearly different meaning in the context. In the present specification, it is to be understood that terms such as “including” or “having,” etc., are intended to indicate the existence of the features, numbers, steps, actions, components, parts, or combinations thereof disclosed in the specification and are not intended to preclude the possibility that one or more other features, numbers, steps, actions, components, parts, or combinations thereof may exist or may be added.

[0031] While such terms as “first” and “second,” etc., can be used to describe various components, such components are not to be limited by the above terms. The above terms are used only to distinguish one component from another.

[0032] Certain embodiments of the present invention will be described below in more detail with reference to the accompanying drawings. Those components that are the same or are in correspondence are rendered the same reference numeral, and redundant descriptions are omitted.

[0033] For convenience, the specification uses terms such as “inner”, “outer”, “upper”, and “lower”. In the descriptions below, an “inner” side refers to a side closer to the interior of the stick-shaped pumping container 1000 within a horizontal plane, whereas an “outer” side refers to a side further away from the interior of the stick-shaped pumping container 1000 within the horizontal plane. An “upper” side refers to the side where the opening is formed to the space holding the content within the inner bottle 200 of the stick-shaped pumping container 1000, and a “lower” side refers to the side opposite the upper side. A “longitudinal” direction refers to the up-down direction. Of course, when a stick-shaped pumping container 1000 according to an embodiment of the invention is actually in use, the directions

mentioned in the specification may not coincide with the actual directions of the parts described.

[0034] FIG. 1 and FIG. 2 are a perspective view and an exploded perspective view, respectively, of a stick-shaped pumping container 1000 according to an embodiment of the invention, while FIG. 3 and FIG. 4 are cross-sectional views of the stick-shaped pumping container 1000. FIG. 5 and FIG. 6 illustrate the cam sleeve 300, lifter 400, and handle 600 of the stick-shaped pumping container 1000, and FIG. 7 illustrates the pump assembly 500.

[0035] A stick-shaped pumping container 1000 according to an embodiment of the invention may hold a fluid, such as a liquid or gel, etc., as its content within an inner bottle 200 and may dispense the content at an applicator located at the top by using a pump assembly 500. Referring to FIGS. 1 to 7, a stick-shaped pumping container 1000 according to an embodiment of the invention can include a lower cap 100, an inner bottle 200, a cam sleeve 300, a lifter 400, a pump assembly 500, a handle 600, an applicator tip 700, an outer bottle 800, and an overcap 900.

[0036] The lower cap 100 can be detachably coupled to a lower end of the cam sleeve 300 and/or outer bottle 800 to close the open bottom of the cam sleeve 300 and outer bottle 800. The lower cap 100 can include a sidewall 110 and a bottom portion 120, where one or more coupling indentations and/or coupling protrusions can be formed on the sidewall 110 for the coupling with the cam sleeve 300 and/or outer bottle 800. In the example illustrated in FIGS. 1 to 6, coupling protrusions 114 are formed on the sidewall 110, and the lower cap 100 is coupled to the cam sleeve 300, as the coupling protrusions 114 are fully inserted into locking grooves, which are shaped as an inverted “L”, formed in the body 310 of the cam sleeve 300. In the examples illustrated in FIG. 8 and FIG. 9, a coupling groove 111 is formed in the sidewall 110 in an annular shape, and the lower cap 100 is coupled to the cam sleeve 300, as a coupling protrusion 311 having an annular shape is inserted into the coupling groove 111.

[0037] The detachable structure of the lower cap 100 with respect to the cam sleeve 300 and/or outer bottle 800 makes it possible to replace the inner bottle 200, which is positioned on the inner side of the cam sleeve 300. In certain embodiments that do not allow a replacement of the inner bottle 200, the lower cap 100 can be integrated with at least one of the cam sleeve 300 and the outer bottle 800 and implemented as a single member.

[0038] The inner bottle 200 is the part that stores the fluid corresponding to the content provided by the stick-shaped pumping container 1000. The inner bottle 200 can be shaped as a hollow tube so as to form a holding space 250 on the inside, where the holding space 250 can hold the content (not shown).

[0039] The inner bottle 200 can include a holding part 210 and a mounting part 220. The holding part 210 can extend along the longitudinal direction, and the major portion of the holding space 250 can be formed on the inner side of the holding part 210. In cases where a stick-shaped pumping container 1000 according to an embodiment of the invention is manufactured as a structure that allows the replacement of the inner bottle 200 and thus includes a lower cap 100, the holding part 210 of the inner bottle 200 can be formed in a length that allows a lower portion of the holding part 210 to be exposed beyond the lower ends of the cam sleeve 300 and outer bottle 800 when the lower cap 100 is separated, so that

the user may easily grip the lower portion of the inner bottle 200 when separating the inner bottle 200 is required.

[0040] The mounting part 220 can define the opening portion of the holding space 250 and can correspond to the part that is mounted to the lifter 400 and the pump assembly 500. In the example illustrated in the drawings, the mounting part 220 has a smaller outer diameter compared to that of the holding part 210 in order that the holding part 210 may contact the inner perimeter of the body 310 of the cam sleeve 300 and the mounting part 220 may contact the inner perimeter of the lifter 400.

[0041] A coupling protrusions 222 can be provided on the outer perimeter of the mounting part 220. The coupling protrusion 222 can be formed in a position from which it may engage the coupling protrusions 420 of the lifter 400. When the inner bottle 200 is being assembled or replaced, the inner bottle 200 can be pushed upward while on the inner side of the cam sleeve 300. Then, a lower portion of the pump assembly 500 can be inserted into the inner side of the mounting part 220, the upper end of the mounting part 220 can touch the flange 512 of the pump housing 510, and the coupling protrusion 222 can move above the coupling protrusions 420 of the lifter 400 and be caught on the coupling protrusions 420, so that the inner bottle 200 may be secured to the lifter 400 and the pump assembly 500.

[0042] Referring to FIGS. 2 to 4, in an embodiment of the invention, the holding part 210 of the inner bottle 200 can be formed to have an open bottom, and the inner bottle 200 can further include a bottle piston 260 and a bottle base 270 for closing the open bottom of the holding part 210.

[0043] The bottle piston 260 can be positioned below the content (not shown) held in the holding space 250 and can be arranged to be in tight contact with the inner perimeter of the holding part 210 while within the holding space 250. While the bottle piston 260 may not be separately coupled to the holding part 210, the bottle piston 260 can be configured to remain undetached by the pressure difference between the inside and the outside of the inner bottle 200. As the user uses the stick-shaped pumping container 1000 multiple times and the amount of content remaining in the holding space 250 is decreased, the bottle piston 260 can be moved upward within the holding space 250 by the pressure difference between the inside and outside of the inner bottle 200, and as a result, the content may always be available around the inlet 515 of the pump assembly 500.

[0044] The bottle piston 260 can block outside air from infiltrating the holding space 250 and thus can prevent the content within the holding space 250 from being oxidized or spoiled due to contact with air.

[0045] The bottle base 270 can be coupled to the holding part 210 below the bottle piston 260. A vent hole 275 can be formed in the bottle base 270, so that outside air may be provided to the space under the bottle piston 260. That is, as the content within the holding space 250 is consumed, the pressure within the holding space 250 may be decreased. Since there is decreased pressure above the bottle piston 260 but normal pressure below the bottle piston 260 due to the air provided through the vent hole 275, the bottle piston 260 can be moved upward. The air that has entered the space below the bottle piston 260 may be blocked by the bottle piston 260 from entering the holding space 250.

[0046] Although the bottle piston 260 would not become detached from the holding part 210 if left untouched even if the bottle base 270 were omitted, the bottle base 270 can

serve to protect the bottle piston **260** from being unintentionally moved by an external force. This can be especially useful in cases where the inner bottle **200** is provided as an independent refill product.

[0047] The inner bottle **200** can be provided as an independent refill product. For example, with the holding space **250** of the inner bottle **200** filled to maximum with the content, the bottle piston **260** can be positioned in the holding part **210** as low as possible so as to contact the bottle base **270**, and a removable cover film can be attached to the open top at the mounting part **220**. When the fluid content provided in the original inner bottle **200** is completely depleted in a stick-shaped pumping container **1000** according to an embodiment of the invention, the user can remove the lower cap **100**, pull and separate the inner bottle **200** in which the content has been depleted, purchase a new refill product that includes the inner bottle **200** described above, remove the cover film, and mount the new inner bottle **200** onto the original lifter **400** and pump assembly **500**.

[0048] The cam sleeve **300** may support the lifter **400** and may convert the rotational movement applied on the lifter **400** into a translational movement along the longitudinal direction. The body **310** of the cam sleeve **300** can generally be shaped as a hollow cylinder and can hold the inner bottle **200** in its interior space.

[0049] In the example illustrated in FIGS. **1** to **6**, locking grooves having the shape of an inverted “L” are formed in a lower portion of the cam sleeve **300** for coupling with the lower cap **100**. Referring to FIG. **5** and FIG. **6**, a locking groove can include a longitudinal portion **313** and a transverse portion **315**. The longitudinal portion **313** can extend to the lower end of the cam sleeve **300** and be open towards the bottom, while the transverse portion **315** can start from the upper end of the longitudinal portion **313** and extend along the outer perimeter of the cam sleeve **300**.

[0050] When the lower cap **100** is to be coupled to such a structure, the user can first push the lower cap **100** upward such that the coupling protrusions **114** are inserted into the longitudinal portions **313** of the locking grooves. When the lower cap **100** is moved upward to the end, the coupling protrusions **114** may arrive at positions adjacent to the transverse portions **315**. Then, the user can twist the lower cap **100**, so that the coupling protrusions **114** may move along the transverse portions **315** of the locking grooves. Detent protrusions **314** can be provided in the transverse portions **315** of the locking grooves, and the user can therefore twist the lower cap **100** by applying a force sufficient for the coupling protrusions **114** to pass over the detent protrusions **314**. When the coupling protrusions **114** are positioned within the transverse portions **315** of the locking grooves shaped as an inverted “L”, the detent protrusions **314** can restrain the lower cap **100** from rotating in the opposite direction, and the lower cap **100** can be secured in place.

[0051] Of course, various structures can be used in the cam sleeve **300** for coupling the lower cap **100**. In the examples illustrated in FIG. **8** and FIG. **9**, a coupling protrusion **311** having an annular shape is formed on a lower portion of the cam sleeve **300** for the coupling with the lower cap **100**, where the lower cap **100** can be coupled to the cam sleeve **300** as the coupling protrusion **311** is inserted into a coupling groove **111** having an annular shape formed in the sidewall **110** of the lower cap **100**. Obviously, the positions

of the coupling protrusion and the coupling groove can be interchanged in the cam sleeve **300** and the lower cap **100**.

[0052] One or more coupling indentations and/or coupling protrusions, for the coupling with the outer bottle **800**, and one or more alignment indentations and/or alignment protrusions, for aligning the parts and preventing rotation, can be formed on the body **310** of the cam sleeve **300**. In the example illustrated in the drawings, a coupling protrusion **317** is formed on the outer perimeter of the body **310**, and the cam sleeve **300** may be coupled to the outer bottle **800** as the coupling protrusion **317** is inserted into a coupling groove **817** formed in the inner perimeter of the outer wall **810** of the outer bottle **800**.

[0053] In the example illustrated in the drawings, alignment protrusions **330** are also formed on the outer perimeter of the body **310**. As illustrated in FIG. **6** and FIG. **7**, a gap can be formed between the end portions of the alignment protrusions **330** to form a sort of alignment indentation **335**, and alignment protrusions **830** (see FIG. **9**) formed on the inner perimeter of the outer wall **810** of the outer bottle **800** can be inserted into such alignment indentations **335** to prevent the cam sleeve **300** from rotating relative to the outer bottle **800**. The alignment protrusions **830** formed on the inner perimeter of the outer wall **810** can also correspond to unrecessed portions in-between the end portions of grooves.

[0054] Referring to FIG. **5** and FIG. **6**, an end portion **320** of the cam sleeve **300** can be configured such that its height changes with respect to the longitudinal direction. That is, the height of the end portion **320** of the cam sleeve **300** can be configured to vary within a range between a first height **1** and a second height **2**. Although the drawings illustrate an example in which the end portion **320** is formed as a gradual curve similar to a sort of sinusoidal wave, the end portion **320** can be implemented in any of a variety of shapes as long as there is a change in height between the first height **1** and the second height **2**. For example, in certain embodiments, the end portion **320** of the cam sleeve **300** can form a sawtooth shape. Also, although the drawings illustrate an example in which the end portion **320** of the cam sleeve **300** includes two points corresponding to the first height **1** and two points corresponding to the second height **2** so that a 360-degree movement would pass the first height **1** and the second height **2** twice each, the frequency of the first height **1** and second height **2** can be set in various ways.

[0055] A ledge **314** can be formed at a position close to the end portion **320** of the cam sleeve **300**. The ledge **314** can be formed at a position from which the ledge **314** can support a lower portion of the lifter **400** when the lifter **400** is at its lowest possible position. In the example illustrated in FIG. **5** and FIG. **6**, the ledge **314** is formed on the inner perimeter of the body **310**, since the lifter **400** is positioned on the inner side of the cam sleeve **300**. However, in another embodiment of the invention, it is possible to have the lifter **400** positioned on the outer side of the cam sleeve **300**, in which case the ledge **314** can be formed on the outer perimeter of the cam sleeve **300**. A more detailed description on the operation of the cam sleeve **300** and lifter **400** is provided later on.

[0056] The lifter **400** interacts with the handle **600** and the cam sleeve **300** to convert the rotational force applied on the handle **600** into a translational movement as well as to manipulate the pump assembly **500** by using this longitudinal movement. That is, the handle **600** may be coupled to a first component part of the pump assembly **500** (the valve

570 in the example shown in the drawings), and the lifter 400 may be coupled to a second component part of the pump assembly 500 (the pump housing 510 and pump cover 560 in the example shown in the drawings), so that a movement of the lifter 400 along the longitudinal direction can cause a movement of the second component part relative to the first component part for operating the pump assembly 500.

[0057] As illustrated in FIG. 5, the lifter 400 can generally be shaped as a hollow cylinder. The lifter 400 can be provided with coupling protrusions 420, lifter protrusions 430, manipulator protrusions 450, and transfer protrusions 460.

[0058] The coupling protrusions 420 may be used for coupling the lifter 400 with the inner bottle 200. When the inner bottle 200 reaches a designated position, the coupling protrusions 420 of the lifter 400 can support the coupling protrusion 222 of the inner bottle 200 from below to secure the inner bottle 200. In an embodiment of the invention, multiple coupling protrusions 420 can be formed at positions separated from one another with gaps in-between as in FIG. 5, instead of a single coupling protrusion 420 formed continuously along the entire inner perimeter of the lifter 400. This may allow the user to release the engagement between the coupling protrusions 222, 420 without having to apply an excessive force when pulling down the inner bottle 200, for example to replace the inner bottle 200.

[0059] The lifter protrusions 430 may maintain contact with the end portion 320 of the cam sleeve 300 so that the lifter 400 may have a height corresponding to the height of the end portion 320 of the cam sleeve 300. In the example illustrated in FIG. 5 and FIG. 6, the lifter protrusions 430 protrude outward from the outer perimeter of the lifter 400, since the lifter 400 is positioned on the inner side of the cam sleeve 300. However, in another embodiment of the invention, it is possible to have the lifter 400 positioned on the outer side of the cam sleeve 300, in which case the lifter protrusions 430 can protrude inward from the inner perimeter of the lifter 400.

[0060] The manipulator protrusions 450 may be used for coupling the lifter 400 with the pump assembly 500 and, in particular, may be coupled to a second component part of the pump assembly 500 that is able to move in relation to the first component part, to which the handle 600 is coupled. In the example illustrated in FIG. 4, the manipulator protrusions 450 may be fitted and secured between the flange 512 of the pump housing 510 and the flange 562 of the pump cover 560.

[0061] The lifter 400 may interact with the handle 600. For this purpose, the handle 600 can be provided with a first transfer part, and the lifter 400 can be provided with a second transfer part. One of the first transfer part and second transfer part can be implemented as a limiting slit that extends along the longitudinal direction, while the other can include a transfer protrusion. That is, although the drawings illustrate an example in which limiting slits 640 are formed in the handle 600 as a first transfer part and transfer protrusions 460 are formed on the lifter 400 as a second transfer part, another embodiment of the invention can have the transfer protrusions formed on the handle 600 and the limiting slits 640 formed in the lifter 400. The transfer protrusion 460 may be inserted into the limiting slit 640 and may be movable along the longitudinal direction. A more detailed description on the operation of the cam sleeve 300 and lifter 400 is provided later on.

[0062] The pump assembly 500, which includes component parts that are movable in relation to each other, may alter the path of the fluid depending on the arrangement of such component parts to suction the fluid through an inlet 515 and dispense the fluid through a pump channel 575.

[0063] FIG. 7 is a magnified view showing a portion of the stick-shaped pumping container 1000 around the pump assembly 500. Referring to FIG. 7, the pump assembly 500 can include a pump housing 510, a valve disk 520, a guide 530, a pump piston 540, a pump cover 560, a valve 570, and an elastic member 580.

[0064] The pump housing 510 can form a pump space 550 in its interior. The pump housing 510 can be formed in a size with which the pump space 550 can have a volume that yields a suitable amount of content when the stick-shaped pumping container 1000 according to an embodiment of the invention is manipulated by the user. An inlet 515 that communicates with the holding space 250 of the inner bottle 200 can be formed in a lower portion of the pump housing 510, so that when the pump assembly 500 is operated, the content stored in the holding space 250 may be drawn into the pump space 550 through the inlet 515.

[0065] A flange 512 can be formed on an upper portion of the pump housing 510. As described above, the flange 512 of the pump housing 510, together with the flange 562 of the pump cover 560, can secure the manipulator protrusions 450. As a result, when the lifter 400 is moved along the longitudinal direction, the pump housing 510 can move together along with the lifter 400.

[0066] The valve disk 520 can serve as a sort of check valve that permits the content to flow in one direction only and can be mounted on a lower portion of the pump housing 510. The valve disk 520, which can be placed adjacent to the inlet 515 of the pump housing 510, may block the inlet 515 ordinarily but may move upward to open the inlet 515 if the pressure in the pump space 550 is decreased. Thus, the valve disk 520 may permit the content to flow only from below the inlet 515 to above and may prevent flow from above the inlet 515 to below.

[0067] The guide 530 may be coupled to the valve 570 and may be configured to be movable in relation to the pump housing 510. In the example illustrated in the drawings, the valve 570 and the guide 530 are stationary, whereas the pump housing 510 moves up and down along with the lifter 400.

[0068] The guide 530 can include a stem part, on the inside of which is formed a pump channel 535 that extends along a longitudinal direction, and a head part, which may be formed on the lower end of the stem part. The stem part can have an elongated form and can be shaped as a hollow cylinder having the pump channel 535 formed on the inside, where one or more pump inflow holes 533 (see FIG. 3) formed in the stem part can communicate the inside pump channel 535 with the outside of the guide 530. The head part can be located within the pump space 550 of the pump housing 510 and can have an outer diameter that is greater than the inner diameter of the pump piston 540 so as to form a curb under the pump piston 540.

[0069] The pump piston 540 can have a through-hole formed in the center to form a generally annular shape and can be mounted such that the stem part of the guide 530 passes through the through-hole in the center of the pump piston 540. The pump piston 540 can be configured such that the outer perimeter of the pump piston 540 tightly contacts

the inner perimeter of the pump housing **510** and the inner perimeter of the pump piston **540** tightly contacts the stem part of the guide **530**. When there is no force applied on the pump assembly **500**, the pump piston **540** can be arranged in a position that closes the pump inflow holes **533** formed in the guide **530**.

[0070] The pump cover **560** can be coupled to an upper portion of the pump housing **510** and can support the valve **570** in a manner that keeps the interior of the pump space **550** in a sealed state. A flange **562** can be formed on a lower portion of the pump cover **560**. The flange **562** of the pump cover **560** can secure the manipulator protrusion **450** together with the flange **512** of the pump housing **510** and can also support the lower end of the elastic member **580**.

[0071] The valve **570** can be inserted through the through-hole in the center of the pump cover **560** and can be coupled with the guide **530** such that the guide **530** is inserted into the interior space of the valve **570**. A pump channel **575** can be formed in the center of the valve **570**, and when the valve **570** is coupled with the guide **530**, the pump channel **575** of the valve **570** and the pump channel **535** of the guide **530** can be connected to each other.

[0072] A flange **572** can be formed on an upper portion of the valve **570**. The flange **572** of the valve **570** can support the upper end of the elastic member **580**. A coupling part **574** for coupling with the handle **600** can also be formed on an upper portion of the valve **570**. The handle **600** can be coupled to a first component part of the pump assembly **500** in an embodiment of the invention, and in the example illustrated in the drawings, the valve **570** may correspond to the first component part to which the handle **600** is coupled.

[0073] The elastic member **580** may be placed between the first component part and second component part of the pump assembly **500** to apply an elastic force. More specifically, the elastic member **580** can apply an elastic force along the longitudinal direction for pulling or pushing the second component part in relation to the first component part. When the user manipulates a stick-shaped pumping container **1000** according to an embodiment of the invention and applies an external force, the first component part and second component part of the pump assembly **500** may be moved relative to each other to dispense the content in the pump space **550**. When the external force from the user's manipulation is removed, the elastic member **580** may use the elastic force to return the first component part and second component part to their original positions, at which time the content of the holding space **250** may replenish the pump space **550**.

[0074] In the example illustrated in the drawings, the elastic member **580** is implemented in the form of a coil spring and is coupled between the flange **562** of the pump cover **560** and the flange **572** of the valve **570** to apply an elastic force that pushes the pump cover **560** down away from the valve **570**. Of course, in other embodiments of the invention, the elastic member **580** can be formed in any of a variety structures besides a coil spring, the direction in which the elastic member **580** applies the elastic force can be different, and the components of the pump assembly **500** parts moved by the elastic member **580** can be different.

[0075] The following provides a brief description on how the pump assembly **500** illustrated in the drawings may operate. For convenience, the descriptions below will refer to relative movements of the components with respect to the pump space **550**. That is, although the descriptions below may refer to the valve **570** moving downward, in an actual

implementation, the valve **570** may be in a stationary state, and the pump housing **510** forming the pump space **550** may move upward.

[0076] When a force is applied due to user manipulation, the valve **570** and the guide **530** may move down into the pump space **550**, but the pump piston **540** may not move down immediately because of the friction provided by its tight contact with the pump housing **510**. Since the pump piston **540** does not move down but the guide **530** does, the pump inflow holes **533** of the guide **530** can be opened. After the guide **530** has moved down a particular distance, the lower end of the valve **570** may press the pump piston **540** and thus cause the pump piston **540** to move down as well, but at this time, the pump inflow holes **533** of the guide **530** can be kept in an open state. As the guide **530** and the pump piston **540** move down, the volume of the pump space **550** may be decreased, and the content that had been drawn into the pump space **550** can be suctioned into the open pump inflow holes **533** due to the increase in pressure. The content that enters the pump inflow holes **533** can be discharged through the pump channel **535**, **575** and supplied to the dispensing hole **680**.

[0077] When the valve **570** and the guide **530** are moved upward out of the pump space **550** by an external force or by the elastic member **580**, the pump piston **540** may not move up immediately because of the friction provided by its tight contact with the pump housing **510**. Since the pump piston **540** does not move up but the guide **530** does, the pump inflow holes **533** of the guide **530** can be closed again. After the guide **530** has moved up a particular distance, the head part of the guide **530** may press the pump piston **540** and thus cause the pump piston **540** to move up as well, but at this time, the pump inflow holes **533** of the guide **530** can be kept in a closed state. As the guide **530** and the pump piston **540** move up, the volume of the pump space **550** may be increased, and the content within the holding space **250** can be suctioned into the pump space **550** due to the decrease in pressure.

[0078] The handle **600** may be coupled to an upper portion of the outer bottle **800** and may be exposed to the exterior when the overcap **900** is separated. The handle **600** may correspond to the part directly held and manipulated by a user wishing to the stick-shaped pumping container **1000**. The handle **600** can include a grip part **610**, a securing part **620**, an engagement part **630**, a stem part **650**, and a coupling part **670**.

[0079] The grip part **610** may form the exterior surface of the handle **600** and may be the part that is exposed to the exterior to be directly gripped by the user when the overcap **900** is separated. For the convenience of the user, portions of the grip part **610** can be curved inward in a concave manner. In a stick-shaped pumping container **1000** according to an embodiment of the invention, certain portions (for instance, the front and rear sides) of the grip part **610** can be curved concavely, while certain other portions (for instance, the left and right sides) can be formed relatively less concavely. To represent such a shape, the degree to which the grip part **610** is inwardly curved is depicted differently in each of FIGS. **3** to **5**. As certain portions are formed less concavely than other portions, the user can apply a rotational force more easily on the grip part **610** when rotating the handle **600**.

[0080] In certain embodiments of the invention, a multiple number of grooves (not shown) extending along the longitudinal direction can be formed in the surface of the grip part

610. Such grooves (not shown) can allow the user to grip the grip part **610** more easily but can also double as measurement markings that enable the user to visually check how much the handle **600** is rotated. In such cases, marking can also be provided on an upper portion of the outer bottle **800** as well for comparison.

[0081] The securing part **620** can be formed on a lower portion of the grip part **610** and can serve to support and align the handle **600**. The securing part **620** can have a cylindrical shape and can be positioned on an inner side of the neck portion **820** of the outer bottle **800**. The outer perimeter of the securing part **620** can tightly contact the inner perimeter of the neck portion **820** over a particular distance, so that the handle **600** may maintain an aligned state with respect to the cam sleeve **300**, lifter **400**, etc. Since the handle **600** is a part that is rotated relative to the outer bottle **800**, it can be advantageous for the outer perimeter of the securing part **620** to have a low surface roughness, in order that there may not be excessive friction between the securing part **620** and the neck portion **820**.

[0082] The engagement part **630** may correspond to the part by which the handle **600** interacts with the lifter **400**. The engagement part **630** can be formed at a lower portion of the securing part **620**, as is the case in the drawings, or at another suitable position. The handle **600** can be provided with a first transfer part that interacts with a second transfer part provided on the lifter **400**, and the first transfer part can be formed on the engagement part **630**. As described above, one of the first transfer part and the second transfer part can include a limiting slit that extends along the longitudinal direction, while the other can include a transfer protrusion. In the embodiment shown in the drawings, limiting slits **640** are formed in the engagement part **630**, and transfer protrusions **460** formed on the lifter **400** are inserted into these limiting slits **640**. In another embodiment not illustrated, the transfer protrusions can be formed on the engagement part **630**, and their corresponding limiting slits can be formed in the lifter **400**. Of course, in such cases, the shapes and arrangement of the lifter **400** and handle **600** may differ.

[0083] The stem part **650** can be positioned at an inner side of the handle **600** and can define a dispensing channel **660** therein, with the dispensing channel **660** extending along the longitudinal direction. When the handle **600** is coupled to the pump assembly **500**, the dispensing channel **660** of the handle **600** can be connected with the pump channel **575** of the pump assembly **500**. An insertion cavity **655** can be formed in the lower end of the stem part **650** for coupling with the coupling part **574** of the valve **570**. While the drawings illustrate a structure in which the stem part **650** is formed on the inner side separated by a gap from the grip part **610**, it is also possible to form the stem part **650** and the grip part **610** as an integrated body with no particular distinction between the two. In such cases, the portion of the grip part **610** around the dispensing channel **660** can be regarded as the stem part **650**.

[0084] The coupling part **670** can be provided at an upper portion of the handle **600** and can be used for mounting the applicator tip **700**. In embodiments that do not use a separate applicator tip **700**, the coupling part **670** may be omitted, and the upper portion of the handle **600** may itself serve as the applicator tip.

[0085] In order that the outer surface of the applicator tip **700** may continue smoothly into the outer surface of the grip part **610** after the applicator tip **700** is coupled, the coupling

part **670** can have a decreased outer diameter compared to that of the grip part **610**. One or more coupling indentations and/or coupling protrusions can be formed on the outer perimeter of the coupling part **670** for the coupling with the applicator tip **700**.

[0086] The stem part **650** can extend up to the coupling part **670** such that the dispensing channel **660** opens into the dispensing hole **680** at the top of the coupling part **670**. As in the example illustrated in FIGS. 1 to 6, in cases where the applicator tip **700** includes an applicator ball **710**, a holding indentation **672** for holding a portion of the applicator ball **710** can be formed in an upper portion of the coupling part **670**.

[0087] The applicator tip **700** can be a part of the handle **600** and can be positioned at the top of the handle **600** to be used in spreading the content dispensed from the dispensing hole **680** over a target area. Although the drawings illustrate an example in which the applicator tip **700** is fabricated independently of the rest of the handle **600** and coupled to the coupling part **670** of the handle **600**, it is possible to implement the applicator tip **700** in an integrated form with the rest of the handle **600** as a single integrated member. A more detailed description of the applicator tip **700** is provided later on with reference to FIG. 8 and FIG. 9.

[0088] The outer bottle **800** can be arranged on an outer side of the cam sleeve **300** and the lifter **400** and can form a portion of the exterior of the stick-shaped pumping container **1000**. The outer bottle **800** can be secured to the cam sleeve **300** to cover the lifter **400** while rotatably supporting the handle **600**. That is, the outer bottle **800** can support the handle **600** such that the handle **600** is not able to move along the longitudinal direction but is able to rotate about a rotational axis that extends along the longitudinal direction.

[0089] The outer bottle **800** can mainly include an outer wall **810** and a neck portion **820**. The outer wall **810** can house the inner bottle **200** and the cam sleeve **300** within. One or more coupling indentations and/or coupling protrusions can be formed on the inner perimeter of the outer wall **810** for the coupling between the outer bottle **800** and the cam sleeve **300**. In the example illustrated in the drawings, a coupling groove **817** is formed in the inner perimeter of the lower end of the outer wall **810**, and the cam sleeve **300** is coupled to the outer bottle **800** as the coupling protrusion **317** of the cam sleeve **300** is inserted into the coupling groove **817**. Alignment protrusions **830** can also be formed on the inner perimeter of the outer wall **810** of the outer bottle **800**, where the alignment protrusions can be inserted into alignment indentations **335** formed in the cam sleeve **300** to prevent the cam sleeve **300** from rotating relative to the outer bottle **800**. In the example illustrated in the drawings, the alignment protrusions **830** on the inner perimeter of the outer wall **810** are formed in an unrecessed shape in-between the end portions of recessed grooves.

[0090] The neck portion **820** can be formed in a cylindrical shape at an upper portion of the outer wall **810** and can have a reduced outer diameter compared to that of the outer wall **810**. One or more coupling indentations and/or coupling protrusions can be formed on the outer perimeter of the neck portion **820** for coupling with the overcap **900**. The neck portion **820** can also have a reduced inner diameter compared to that of the outer wall **810**, so that a curb may be formed at a lower portion of the neck portion **820** on the inner side of the outer bottle **800**. As the ledge formed on the engagement part **630** of the handle **600** becomes caught on

the curb formed at the lower portion of the neck portion **820**, the outer bottle **800** can prevent the handle **600** from becoming detached in an upward direction.

[0091] The overcap **900** can be coupled to the outer bottle **800** to house the handle **600** therein. The overcap **900** can isolate the handle **600** from the outside to prevent the applicator tip **700** from being contaminated by outside substances and prevent the content remaining on the applicator tip **700** from contaminating surrounding objects.

[0092] The overcap **900** can include an outer wall **910** and a cover part **920**. The outer wall **910** can have its lower end rest on the curb formed under the neck portion **820** of the outer bottle **800**, and one or more coupling protrusions and/or coupling indentations can be formed on the inner perimeter of the outer wall **910** in correspondence to the coupling indentations and/or coupling protrusions formed on the neck portion **820**.

[0093] A sealing protrusion **970** can be formed on the cover part **920** of the overcap **900**, where the sealing protrusion **970** can protrude downward from the bottom surface of the cover part **920** to directly or indirectly block either the dispensing hole **680** formed in the handle **600** or the dispensing hole of the applicator tip **700**, which can be regarded as an extension of the dispensing hole **680**.

[0094] The following provides a description of the various forms in which the applicator tip **700** can be implemented.

[0095] In the structure illustrated in FIGS. 1 to 6, the applicator tip **700** is configured as a ball type applicator tip and includes an applicator ball **710** and a ball cover **720**. The applicator ball **710** can be a spherically shaped ball and can be arranged in a rotatable manner at a position adjacent to the dispensing hole **680**. The ball cover **720** can serve to secure the applicator ball **710** at its designated position and, to this end, can include a mount **722** and a coupling part **726**.

[0096] The mount **722** can be implemented in a form surrounding the applicator ball **710** with a curvature corresponding to the curvature of the applicator ball **710**. The mount **722** can secure the applicator ball **710** at its designated position such that an upper portion of the applicator ball **710** is exposed to the exterior and can rotatably support the applicator ball **710** at the corresponding position. The coupling part **726** of the ball cover **720** can be coupled to the coupling part **670** of the handle **600**, and, for this purpose, one or more alignment indentations and/or alignment protrusions can be formed on the inner perimeter of the coupling part **726**.

[0097] With the structure illustrated in FIGS. 1 to 6, the user can manipulate the stick-shaped pumping container **1000** to dispense the content, at which the dispensed content may be applied on the surface of the applicator ball **710** at the dispensing hole **680**. The user can then roll the applicator ball **710** such that the content applied on the surface of the applicator ball **710** may be spread onto the target area.

[0098] With the structure illustrated in FIGS. 1 to 4, coupling the overcap **900** onto the outer bottle **800** can cause the sealing protrusion **970** of the overcap **900** to press down on the applicator ball **710**, as shown in FIG. 3 and FIG. 4. The downwardly pressed applicator ball **710** can block the dispensing hole **680**, in order to prevent any unintended leakage of the content through the dispensing hole **680** as well as to prevent any entry of air into the holding space **250**.

[0099] FIG. 8 and FIG. 9 illustrate other forms in which the applicator tip **700** can be implemented in a stick-shaped pumping container **1000** according to certain embodiments of the invention.

[0100] In the structure illustrated in FIG. 8, the applicator tip **700** is configured as a pipette type applicator tip **730** and thus includes a pipette part **732** and a coupling part **736**.

[0101] The pipette part **732** can have a narrow outer diameter and can form a dispensing channel **735** on the inside. The pipette part **732** can have a thin but rounded end portion, where the dispensing channel **735** can be configured to open toward this end portion. The coupling part **736** of the pipette type applicator tip **730** can be coupled to the coupling part **670** of the handle **600**, and, for this purpose, one or more alignment indentations and/or alignment protrusions can be formed on the inner perimeter of the coupling part **736**.

[0102] Although FIG. 8 illustrates an example in which the pipette type applicator tip **730** is fabricated independently of the rest of the handle **600** and coupled to the coupling part **670** of the handle **600**, it is possible to implement the pipette type applicator tip **730** in an integrated form with the rest of the handle **600** as a single integrated member.

[0103] With the structure illustrated in FIG. 8, the user can manipulate the stick-shaped pumping container **1000** to dispense the content, at which the content may be dispensed at the end portion of the pipette type applicator tip **730**. The user can then use the thin but rounded end portion to meticulously apply the content onto the target area.

[0104] With the structure illustrated in FIG. 8, coupling the overcap **900** onto the outer bottle **800** can cause the sealing protrusion **970** of the overcap **900** to be inserted into the dispensing channel **735** at the top end of the pipette part **732**. The sealing protrusion **970** can thus directly or indirectly block the dispensing hole **680**, in order to prevent any unintended leakage of the content through the dispensing hole **680** as well as to prevent any entry of air into the holding space **250**.

[0105] In the structure illustrated in FIG. 9, the applicator tip **700** is configured as a cushion type applicator tip **740** and thus includes a core part **742**, a cushion part **744**, and a coupling part **746**.

[0106] The core part **742** can have a narrow outer diameter and can form a dispensing channel **745** on the inside. The core part **742** can be formed with a size and material with which to provide an appropriate strength for supporting the cushion part **744**, which may be formed from a soft material. In certain embodiments of the invention, the core part **742** of the cushion type applicator tip **740** can be configured to have a form similar to that of the pipette part **732** of the pipette type applicator tip **730** illustrated in FIG. 8, so that the user may select whether to mount the cushion part **744** onto the core part **742** for use or use the core part **742** without the cushion part **744** in a manner similar to that of the pipette type applicator tip **730**.

[0107] The cushion part **744** can be made from a soft material and can be used to provide a soft tactile feel when the user spreads the content onto a target area with the stick-shaped pumping container **1000**. The cushion part **744** can be implemented from a material having a porous structure such as a sponge, etc., or can be implemented from a material such as silicone, etc., which can provide a soft tactile feel by itself.

[0108] The coupling part 746 of the cushion type applicator tip 740 can be coupled to the coupling part 670 of the handle 600, and, for this purpose, one or more alignment indentations and/or alignment protrusions can be formed on the inner perimeter of the coupling part 746.

[0109] With the structure illustrated in FIG. 9, coupling the overcap 900 onto the outer bottle 800 can cause the sealing protrusion 970 of the overcap 900 to be inserted into the dispensing channel 745 at the top end of the core part 742. The sealing protrusion 970 can thus directly or indirectly block the dispensing hole 680, in order to prevent any unintended leakage of the content through the dispensing hole 680 as well as to prevent any entry of air into the holding space 250.

[0110] The following provides a more detailed description, with reference again to FIGS. 1 to 7, on the method of operating a stick-shaped pumping container 1000 according to an embodiment of the invention.

[0111] The user can first separate the overcap 900 to expose the handle 600. Before the user has manipulated the handle 600, the first component part and the second component part in the pump assembly 500 may be present at their initial positions due to the elastic force of the elastic member 580. Since the handle 600 is coupled to the first component part and the lifter 400 is coupled to the second component part, the handle 600 and the lifter 400 may also be at their respective initial positions. When the lifter 400 is at its initial position and therefore at the lowest possible position, the lower end of the lifter 400 can be supported on the ledge 314 of the cam sleeve 300. This can distribute the load applied on the lifter protrusions 430 and hence can increase the durability of the lifter 400.

[0112] Using the structure illustrated in FIGS. 1 to 7 as an example, the elastic member 580 may push the pump cover 560, i.e., the second component part, as much downward as possible from the valve 570, i.e., the first component part, by applying a pushing force between the flange 562 of the pump cover 560 and the flange 572 of the valve 570. Since the lifter 400 is coupled with the pump cover 560 and pump housing 510, the lifter 400 may also be moved down as much as possible, and as a result, the lifter 400 may be rotated such that the lifter protrusion 430 is at the first height. This is because, in order for the lifter 400 to be positioned as low as possible while the lifter protrusions 430 are caught on the end portion 320 of the cam sleeve 300, the lifter protrusions 430 must be at positions corresponding to the first height on the end portion 320 of the cam sleeve 300.

[0113] A user intending to use the stick-shaped pumping container 1000 can hold the outer bottle 800 in one hand, grip the grip part 610 of the handle 600 with the other hand, and rotate the handle 600 in an arbitrary direction. Of course, in certain embodiments of the invention, the handle 600 can be made to rotate in only one direction, such as by forming the end portion 320 of the cam sleeve 300 in a sawtooth shape, etc.

[0114] When the handle 600 is rotated, the lifter 400 may be rotated together, due to the engagement between the first transfer part and the second transfer part. The first transfer part and the second transfer part do not permit relative rotation of the lifter 400 with respect to the handle 600, thus causing the lifter 400 to rotate together with the handle 600, but do permit relative movement of the lifter 400 along the longitudinal direction, so that the lifter 400 may move along

the longitudinal direction even if the handle 600 cannot move along the longitudinal direction.

[0115] Since the lifter 400 is arranged such that the lifter protrusions 430 are caught on the end portion 320 of the cam sleeve 300, a rotation of the lifter 400 can cause the lifter protrusions 430 to move along the end portion 320 of the cam sleeve 300. As the lifter protrusions 430 move from the first height 1 to the second height 2, the entire lifter 400 may be moved upward. Forming the end portion 320 of the cam sleeve 300 in a sinusoidal shape, as in the example illustrated in FIG. 5 and FIG. 6, can provide a comfortable feel for the user, since there is no drastic change in force required in twisting the handle 600.

[0116] Since the lifter 400 is coupled to the second component part of the pump assembly 500 (the pump housing 510 and pump cover 560), the pump housing 510 and the pump cover 560 may move up together when the lifter 400 moves up, and since the handle 600 is coupled to the first component part of the pump assembly 500 (the valve 570), the valve 570 may maintain a stationary state together with the handle 600 with respect to the longitudinal direction. As the lifter 400 is thus moved up against the elastic force of the elastic member 580 due to the end portion 320 of the cam sleeve 300, the second component part of the pump assembly 500 may be moved in relation to the first component part. Because of this operation of the pump assembly 500, the content of a fluid form stored in the pump space 550 can pass through the pump channel 535, 575 and dispensing channel 660 to be discharged through the dispensing hole 680.

[0117] When the user rotates the handle 600, the user may not necessarily move the lifter 400 from a position corresponding to the first height 1 to a position corresponding to a second height 2, and the user may move the lifter 400 only slightly as necessary. This would cause the pump assembly 500 to dispense only a slight amount of content in accordance with the user's manipulation. Also, after some content has been dispensed, the user may choose to continue rotating the handle 600 to additionally dispense a greater amount of content. After the content has been dispensed in the desired amount, the user may spread the content over the target area by using the applicator tip 700 positioned at the end of the handle 600. When the external force on the handle 600 is removed, the elastic member 580 of the pump assembly 500 can return the first component part and second component part to their initial positions.

[0118] As set forth above, an embodiment of the invention provides a stick-shaped pumping container 1000 with which the user can manipulate the pump assembly 500 by twisting the handle 600. This provides the advantage that the pump assembly 500 can be mounted without sacrificing convenience even while the pumping container 1000 maintains a stick-like form with a generally elongated shape. Since the user can manipulate the pump assembly 500 by a method of twisting the handle 600, the user is able to adjust the dispensing amount of the pump with relatively high precision, for example by referencing measurement markings such as grooves (not shown) formed in the grip part 610 of the handle 600, etc., and is also able to dispense the same amount every time.

[0119] Also, a stick-shaped pumping container 1000 according to an embodiment of the invention can completely seal the holding space 250, in order to protect the content within the holding space 250 from contact with air and hence greatly reduce the possibility of the content becoming oxi-

dized, spoiled, or contaminated. After the content is depleted, it is possible to replace just the inner bottle **200** with a new one, so as to reduce wasted resources and environmental pollution.

[0120] While the foregoing provides a description with reference to an embodiment of the present invention, it should be appreciated that a person having ordinary skill in the relevant field of art would be able to make various modifications and alterations to the present invention without departing from the spirit and scope of the present invention set forth in the scope of claims below.

What is claimed is:

1. A stick-shaped pumping container comprising:

- an inner bottle forming a holding space on an inner side thereof so as to hold a content within the holding space, the inner bottle having the holding space open at a top;
 - a pump assembly coupled to the open top of the inner bottle and having a first component part and a second component part, the first component part and the second component part coupled to each other so as to be movable in relation to each other;
 - a cam sleeve shaped as a hollow cylinder and configured to hold the inner bottle in an interior space thereof, an end portion of the cam sleeve having a height varying between a first height and a second height along a circumference of the cam sleeve;
 - a handle coupled to the first component part and arranged to be rotatable in relation to the cam sleeve, the handle equipped with a first transfer part; and
 - a lifter coupled to the second component part and shaped as a hollow cylinder, the lifter equipped with a second transfer part and a lifter protrusion, the second transfer part configured to interact with the first transfer part, the lifter protrusion configured to maintain contact with the end portion of the cam sleeve,
- wherein one of the first transfer part and the second transfer part is implemented as a limiting slit and an other of the first transfer part and the second transfer part is implemented as a transfer protrusion, the limiting slit extending along a longitudinal direction, the transfer protrusion configured to be inserted into the limiting slit so as to be movable along the longitudinal direction, and wherein

a movement of the lifter protrusion from the first height to the second height resulting from a rotation of the handle relative to the cam sleeve causes the second component part of the pump assembly to move in relation to the first component such that the pump assembly dispenses the content to an exterior.

2. The stick-shaped pumping container of claim 1, wherein the pump assembly further comprises an elastic member arranged between the first component part and the second component part, the elastic member configured to apply an elastic force along the longitudinal direction for pulling or pushing the second component part in relation to the first component part.

3. The stick-shaped pumping container of claim 1, further comprising:

an outer bottle secured to the cam sleeve, the outer bottle surrounding the lifter and rotatably supporting the handle.

4. The stick-shaped pumping container of claim 1, wherein the cam sleeve is open at a bottom, and the inner bottle is inserted through the open bottom of the cam sleeve to be replaceably mounted to the lifter and the pump assembly.

5. The stick-shaped pumping container of claim 1, wherein a dispensing channel is formed in the handle, the dispensing channel extending along the longitudinal direction and opening into a dispensing hole located at a top, the dispensing channel arranged to be in communication with a pump channel through which the pump assembly dispenses the content.

6. The stick-shaped pumping container of claim 5, wherein the handle comprises a ball type applicator tip, the ball type applicator tip having a spherical shape and rotatably arranged in a position adjacent to the dispensing hole.

7. The stick-shaped pumping container of claim 5, wherein an upper end portion of the handle has a narrow diameter at a position adjacent to the dispensing hole so as to form a pipette type applicator tip.

8. The stick-shaped pumping container of claim 5, wherein the handle comprises a cushion type applicator tip, the cushion type applicator tip made from a soft material and coupled at a position adjacent to the dispensing hole.

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