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(72) Inventor: **LIM, Jun-Kuk**  
**Bucheon-si**  
**Gyeonggi-do 421-170 (KR)**

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(74) Representative: **Dossmann, Gérard**  
**Casalonga & Partners**  
**Bayerstrasse 71-73**  
**80335 München (DE)**

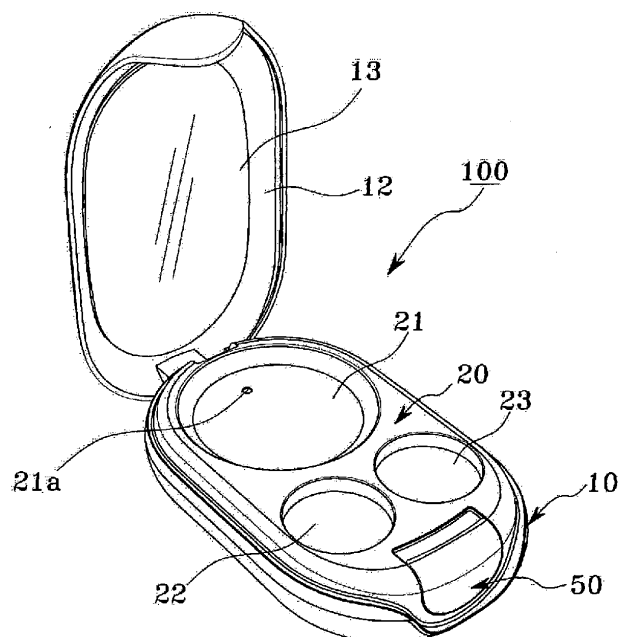
(71) Applicant: **Tolykorea Inc.**  
**Bucheon-si, Gyeonggi-do 421-741 (KR)**

(54) **COSMETIC CASE HAVING AN AIRLESS PUMP**

(57) The present invention relates to a cosmetic case including an airless pump. The present invention is an improved invention over patent no. 963155 filed by this inventor and issued earlier. According to the present invention, the cosmetic case consists of three storage case bodies to more safely and hygienically store the contents

of the case for a long period of time. Also, since a pump is operated in a reciprocating manner so as to pump the contents, pumping efficiency for the contents may be improved. Also, various cosmetics may be stored at the same time to enable a user to easily use the case and refill same with cosmetics.

[Fig. 2]



## Description

### [Technical Field]

**[0001]** The present invention relates to a cosmetic container including an airless pump, and more particularly, to a cosmetic container including an airless pump that improves Korean Patent No. 963155 of the applicant and in which contents can be safely and sanitarly stored for a long time by using a triple storage container, a pump performs a pumping operation through an operation of moving forward and rearward from a rear side to a front side to improve a pumping efficiency, various types of cosmetics are received at the same time to be conveniently used and be refilled.

### [Background Art]

**[0002]** The structures of cosmetic containers for storing cosmetics are different according to various states of the cosmetics such as liquid, powder, and gel, and tube type containers are mainly used to effectively store cosmetics in the state of gel or liquid.

**[0003]** The tube type cosmetic containers are formed of a flexible material such as aluminum, laminate, or a synthetic resin to safely and effectively protect contents direct rays or ultraviolet rays, discharging contents through an inlet hole by a force of compressing a surface thereof from the outside.

**[0004]** However, the tube type cosmetic container can be safely and effectively store contents due to material characteristics of a tube, but since the tube is formed of a soft material, the entire volume of the tube is reduced by a discharge amount of contents. Thus, an external appearance of the tube is deformed as the tube is used.

**[0005]** Since the external shape of the tube is gradually distorted as the tube is used, the original external shape cannot be maintained. Thus, the external shape of the tube is not desirable and a product value is significantly lowered. Further, preservation efficiency is damaged by the deformed external shape and the tube cannot be handled properly.

**[0006]** In addition, the conventional cosmetic container has a structure in which an opening is opened and closed with a cap to discharge contents by pressing a surface thereof, it has a structural problem in which external air cannot help but be always introduced and a problem in which it is difficult to accurately discharge a suitable amount of cosmetics during use thereof.

**[0007]** Accordingly, in recent years, structures in which a separate airless pump is mounted to an opening of a tube have been proposed to solve the above-described problem, and the applicant also proposed Korean Patent No. 963155.

**[0008]** In the patent of the applicant, a cosmetic container has a dual structure including an inner container having a flexible tube shape and an outer container formed of a synthetic resin, and a separate airless pump

that is vertically elevated is installed in openings thereof.

**[0009]** Thus, in the patent of the applicant, a determined outer shape of the cosmetic container is maintained by the outer container irrespective of an amount of used cosmetics so that the cosmetic container can be conveniently carried, preserved, and used. Further, a precise amount of cosmetics can be discharged by the airless pump and external air and foreign substances cannot be introduced. Furthermore, a precise amount of contents can be discharged from the cosmetic container during use thereof.

**[0010]** However, the patent of the applicant has the following drawbacks in spite of the various advantages.

**[0011]** First, although the patent has a dual structure in which a flexible tube type inner container is installed in a hard outer container, volatile cosmetics that is vulnerable to ultraviolet rays cannot be safely protected by the dual structure.

**[0012]** That is, although cosmetics can be protected from ultraviolet rays by a tube type inner container formed of aluminum, laminate, and a synthetic resin, some cosmetics cannot be completely protected only by the inner container.

**[0013]** Further, since the airless pump is installed on a front surface of the tube type inner container and an operation button that is operated by a push operation can be pushed vertically, an operation of the airless pump is very inconvenient and a pumping force is also lowered.

**[0014]** That is, since the operation button has a small size and only a portion of the operation button protrudes upward, it is not easy to push the operation button with a finger and the operation button should be pushed while the entire container is gripped by another hand.

**[0015]** Further, the cosmetics in the inner container are horizontally pumped while the operation button is vertically pushed, a discharge flow of the contents is not smooth and an accurate pumping operation may not be performed.

### [Disclosure]

### [Technical Problem]

**[0016]** The present invention has been made in an effort to solve the above-mentioned problems, and it is an object of the present invention to provide a cosmetic container including an airless pump that overcomes the structural problems of Korean Patent No. 963155 of the applicant.

**[0017]** That is, it is an object of the present invention to provide a cosmetic container including an airless pump that includes a triple container body, safely and sanitarly stores cosmetics by using an airless pump mounted to a front surface of the cosmetic container, allows a tube container to be replaced after the cosmetic container is completely used to refill the cosmetics.

**[0018]** Another object of the present invention is to provide a cosmetic container including an airless pump an

entire external appearance of which forms a flat, horizontal, and compact shape to improve an external appearance and a product value thereof and forms a plurality of reception spaces therein so that various types of cosmetics can be received and conveniently used.

**[0019]** In particular, the present invention provides a cosmetic container including an airless pump in which a pump is operated by pushing the airless pump from the rear side and the pump is moved forwards and rearwards in a horizontal direction coinciding with a direction in which the contents are extracted to improve an operation of the pump and an extraction of the contents.

#### [Technical Solution]

**[0020]** In order to achieve the objects, the present invention is achieved by providing an improved cosmetic container, and the cosmetic container of the present invention includes a tube container horizontally installed to safely store various cosmetics, a hard protection cap configured to protect the tube container and to dually protect the cosmetics again, and a compact case formed of a hard synthetic resin, the case having a plurality of reception chambers into which various types of cosmetics can be received at an upper portion thereof while being protected by a tube container and a protection cap, whereby cosmetics case can be effectively and safely stored for a long time due to the triple container body.

**[0021]** Further, since the airless pump is installed at a front end of the tube container and the operation button is installed at a rear side of the case so that the pump is operated in a direction coinciding with a horizontal direction in which the contents are discharged, an operation of the pump can be improved and a discharge efficiency of the contents can be improved.

#### [Advantageous Effects]

**[0022]** The present invention can safely and effectively protect cosmetics received into a tube container from external rays or ultraviolet rays due to a container body having a triple structure of the tube container, the protection cap, and the case formed of different materials.

**[0023]** In particular, the tube container and the protection cap forms an integrally assembled single product so that they can be replaced. Thus, the cosmetics of the tube container can be refilled after being completely used.

**[0024]** Further, since the airless pump can be installed on a front surface of the tube container side by side and can be horizontally moved forwards and rearwards by the operation button, an installation structure can be improved. Furthermore, since a pumping operation can be performed in the same direction in which the contents are discharged, the pumping operation can be smoothly and flexibly performed. An addition, the contents can be discharged accurately and smoothly.

**[0025]** In addition, the present invention can interrupt

introduction of external air or foreign substance by the airless pump and the structure and prevent vaporization of the cosmetics from the interior, making it possible to safely store the cosmetics for a long time.

#### [Description of Drawings]

#### [0026]

FIG. 1 is a perspective view of a cosmetic container according to the present invention.

FIG. 2 is a perspective view of the cosmetic container according to the present invention with a cap thereof being opened.

FIG. 3 is a plan view of FIG. 2.

FIG. 4 is a detailed view of FIG. 3

FIG. 5 is a side view of FIG. 2.

FIG. 6 is an exploded view of FIG. 5.

FIG. 7 is a sectional view of FIG. 5.

FIG. 8 is a plan view showing a tube container in the cosmetic container according to the present invention.

FIG. 9 is a sectional view of FIG. 8.

FIG. 10 is an exploded perspective view showing an airless pump according to the present invention.

FIG. 11 is an exploded sectional view showing the airless pump according to the present invention.

FIGS. 12A to 12D are sectional views showing an operation of the airless pump according to the present invention.

Fig. 13 is an extended views showing an operation of valve according Fig. 12D.

FIG. 14 is a perspective view showing a nozzle part of the airless pump according to the present invention.

FIGS. 15A to 15B are views showing operation states of the nozzle part of FIG. 14.

#### [Best Mode]

#### [Mode for Invention]

**[0027]** Hereinafter, detailed contents for carrying out the present invention will be described in detail with ref-

erence to the accompanying drawings.

**[0028]** FIGS. 1 to 7 are views showing an entire configuration of the present invention. FIGS. 8 to 11 are views showing an internal configuration of the present invention in detail. FIGS. 12 to 15 are views showing an operation of the present invention. In the drawings, reference numeral 100 denotes a body of the present invention.

**[0029]** The body 100 of the cosmetic container mainly includes a case 10 opened and closed by a cap while maintaining an overall appearance, a reception body 20 coupled to the case 10 and having a plurality of reception chambers for receiving cosmetics at an upper surface thereof, a tube container 30 inserted into the case 10 to store cosmetics, the tube container 30 being protected by a separate protection cap 32, an airless pump 40 integrally coupled to a front surface of the tube container 30 to pump contents to the outside by a predetermined amount, and an operation button 50 installed on a rear surface of the case 10 to operate the airless pump 40 through a push operation.

**[0030]** In more detail, the case 10 is formed of a hard synthetic resin to have a horizontally flat shape and the separate reception body 20 is coupled to an interior of the case 10 to be opened and closed by the cap 12 shaft-coupled to the case 10. A separate mirror 13 is installed in the cap 13.

**[0031]** In particular, the case 10 is a container body that is not vertically erected but horizontally laid to exhibit a unique design. A compact container having various shapes including a circle, a tetrahedron, and a polygon may be formed according to various embodiments.

**[0032]** The separate reception body 20 coupled to the case 10 includes a plurality of cosmetic reception chambers 21, 22, and 23 on an upper surface thereof, and a nozzle hole 21a through which contents are pumped and discharged from the tube container is perforated in the main reception chamber 21 and a cosmetic tool 60 formed of a separate sponge material is installed in the main reception chamber 21.

**[0033]** In this case, different types of cosmetics are received in the remaining reception chambers 22 and 23 other than the main reception chamber 21 to achieve a convenience for use, and the remaining reception chambers 22 and 23 may have various shapes such as a circle and a tetrahedron.

**[0034]** The separate tube container 30 and the airless pump 40 are mounted to an interior space between the case 10 and the reception body 20 after being integrally assembled.

**[0035]** As shown in FIGS. 6 to 11, the tube container 30 and the airless pump 40 are integrally coupled to each other side by side to form a single product, and a front end of the tube container 30 and the airless pump 40 remains fixed by a stopper 14 integrally formed on a bottom surface of an interior of the case 10.

**[0036]** The tube container 30 is formed of a flexible material such as a laminator, aluminum, a synthetic resin, and rubber to easily store cosmetics mainly in the form

of liquid or cream, and an ejection hole 31 for discharging contents is formed of a hard synthetic material at one side thereof.

**[0037]** Thus, direct light that is an ultraviolet ray cannot penetrate the tube container 30 due to its material characteristics so that contents can be safely stored, and the tube container 30 can be easily compressed by an impact or a push operation due to its flexible tube so that contents can be discharged through the ejection hole.

**[0038]** The tube container 30 is also protected by the separate protection cap 32, and the protection cap 32 is formed of a hard synthetic resin to have a box shape. The tube container 30 is inserted into the protection cap 32 to be safely protected.

**[0039]** The separate airless pump 40 is integrally mounted to a front surface of the tube container 30.

**[0040]** The airless pump 40 provides a function of accurately discharging contents in the tube container 30 by a predetermined amount, and is integrally coupled to the tube container 30 and the protection cap 32 in a single form so that all of them can be replaced together.

**[0041]** All of them can be made to be replaced together so that a new tube container 30 can be replaced to refill contents after all the cosmetics in the tube container 30 are used.

**[0042]** As can be seen from the drawings, in the structure of the airless pump 40, an engaging tube 41 is interference-fitted with the ejection hole 31 of the tube container 30, an operation tube 42 is coupled to a front surface of the engaging tube 41 to proceed or retreat due to a resilient force of the spring 43, and an operation cylinder 44 inserted into the ejection hole 31 of the tube container 30 is engaged with a rear surface of the engaging tube 41.

**[0043]** The engaging tube 41 and the operation tube 42 have cylindrical shapes, and a spring 43 is resiliently installed therebetween. Guide grooves 42a are formed at upper and lower sides of the rear surface of the operation tube 42 to be opened and guide pins 41a inserted into the guide grooves 42a to be slid are formed at upper and lower portions of a front end of the engaging tube 41.

**[0044]** Thus, since the engaging tube 41 and the operation tube 42 are coupled as the guide pins 41a are coupled to the guide grooves 42a, they can move forwards and rearwards but cannot rotate.

**[0045]** The engaging tube 41 is interference-fitted with an outside of the ejection hole 31 of the tube container 30 to maintain a sealed state, and the operation cylinder 44 installed at a rear side thereof is interference-fitted with an inside of the ejection hole 31 of the tube container 30 to maintain a sealing state with the tube container 30.

**[0046]** The operation cylinder 44 has a cylindrical shape and an outlet through which contents in the tube container 30 are discharged is formed at an end thereof. A compression chamber 44a communicated with the outlet is formed in the operation cylinder 44, and a separate valve 45 is engaged with the outlet to be opened and closed as the contents are discharged.

**[0047]** The valve 45 is a check valve configured to open and close the outlet of the operation cylinder 44 in the compression chamber 44a, and allows discharge of contents and prevents the contents from being introduced reversely.

**[0048]** A cylindrical piston 42b is integrally formed with an interior of the operation pipe 42, and the piston 42b has a cylindrical tube shape extending rearwards by a predetermined length and a separate piston support 46 is engaged with the interior of the piston 42b rearwards.

**[0049]** The piston support 46 also has a cylindrical shape, and one end thereof has a saw tooth-shaped wing 46a to be coupled to an inner surface of the operation cylinder 44 such that the compression chamber 44a in the operation cylinder 44 is formed and the operation cylinder 44 can be smoothly supported so that the operation cylinder 44 may be slid and the contents may smoothly flow.

**[0050]** Ribs 46b for smooth flow of contents alternately protrude from a surface of the piston support 46 and an exit hole 46c for circulating contents from the outside to the inside to discharge the contents to the outside is formed at a predetermined location of the body to be communicated with the interior of the body.

**[0051]** A piston valve 47 is installed in the operation cylinder 44 to interrupt and open a space between the operation cylinder 44 and the piston support 46, and is preferably formed of a very flexible material such as rubber, urethane, and a synthetic resin to secure a sealed state.

**[0052]** Meanwhile, a separate nozzle 48 as shown in FIGS. 14 and 15 is coupled to a front end of the operation tube 42.

**[0053]** The nozzle 48 has a vertically bent shape and is stably supported by the stopper 14 in the case 10 without being moved, so that an end thereof is coupled to the nozzle hole 21a perforated in the reception chamber 21 of the reception body 20 to be communicated with the nozzle hole 21a.

**[0054]** That is, the nozzle 48 is formed of a flexible material such as rubber or a synthetic resin and a cutting line 48a having a "+" shape is formed at an end of the nozzle 48. The end of the cutting line 48a close the nozzle hole 21a in a standby state in which the reception chamber 21 is firmly coupled to a bottom surface of the nozzle hole 21a so that the contents are not discharged, and is widened to the outside to smoothly discharge the contents through the nozzle hole 21a when the contents are pumped to be discharged.

**[0055]** An operation button 50 is coupled to ends of the case 10 and the reception body 20. The operation button 50 has a vertically bent shape and is coupled to a portion of the case 10 and a portion of the reception body 20 to be exposed to the outside so that the protection cap 32 of the tube container 30 may be moved by a push operation.

**[0056]** That is, the operation button 50 is coupled between the case 10 and the reception body 20 in an op-

eration range A including a horizontal direction of the case and a vertical direction of the reception body 20 so that a push operation is allowed in any of the horizontal direction and the vertical direction in the operation range A. Accordingly, a smooth pumping operation can be achieved even if a force is applied to any of the horizontal direction and the vertical direction in the operation range A.

**[0057]** Thus, the cosmetic container 100 of the present invention may effectively store cream mainly in the form of gel in the tube container 30, and may be suitably used as a compact cosmetic container having a flat shape that is not vertical but horizontal as a whole.

**[0058]** That is, the tube container 30 for storing cosmetics is received and preserved in the case 10 by the separate protection cap 32. Accordingly, since cosmetics are triply protected by the tube container 30, the protection cap 32, and the case 10, the cosmetics can be protected from external rays or ultraviolet rays very effectively and safely and can be carried and used very conveniently due to its flat and compact structure.

**[0059]** The reception body 20 installed in the case 10 has a plurality of reception chambers 21, 22, and 23 such that the reception chambers 22 and 23 other than the main reception chamber 21 may receive cosmetics other than the cosmetics in the tube container 10 so that various types of cosmetics are selectively used.

**[0060]** As shown in FIG. 12, when the cosmetics in the tube container are to be used in this state, the operation button 50 is pushed while the cap 12 is opened. Then, the hard protection cap 32 that protects the tube container 30 is moved forward by the push force, and the airless pump 40 performs a pumping operation as the entire protection cap 32 is moved forward.

**[0061]** The pumping operation of the airless pump 40 is performed by moving the protection cap 32 forwards. The operation tube 42 is moved forwards as the engaging tube 41 compresses the spring 43 while the operation tube 42 is fixed to the stopper 14 of the case 10, and the operation cylinder 44 and the piston valve 47 are moved forwards at the same time.

**[0062]** Thus, cosmetics filled in the compression chamber 44a of the operation cylinder 44 are compressed and are fed through spaces between the saw tooth-shaped wings 46a of the piston support 46 and between the ribs 46b generated by the piston valve 47 that has been moved forward. Then, the cosmetics are fed through the exit hole 46c of the piston support 46 and then are discharged into the reception chamber 21 of the reception body 20 via the nozzle 48.

**[0063]** Then, as can be seen in FIG. 15, the cosmetics discharged through the nozzle 48 are discharged into the reception chamber 21 through the nozzle hole 21a while widening the "+"-shaped cutting line 48a, and the cosmetics discharged into the reception chamber 21 are applied by using the cosmetic tool 60.

**[0064]** The cosmetic tool 60 is formed of a general material such as sponge, and a user can put on a makeup

by applying the cosmetics discharged into the reception chamber 21 through the nozzle hole 21a.

[0065] If the operation button 50 that has been pushed reversely is released, the airless pump 40 and the tube container 30 that have been moved forwards by a returning force of the compressed spring 43 as shown in FIG. 12D are operated in a reverse sequence to be moved rearwards to the original location.

[0066] Then, as the engaging tube 41 of the airless pump 40 is moved rearwards by a resilient force of the spring 43, the operation cylinder 44 and the piston valve 47 are also moved rearwards to the original location. Accordingly, the piston valve 47 closes a space between the piston support 46 and the inner wall of the operation cylinder 44 that has been opened.

[0067] Thus, a strong vacuum pressure is applied to the compression chamber 44a, and the cosmetics in the tube container 30 are introduced into the compression chamber 44a to wait for the following operation while the valve 45 installed in an inlet at an end of the operation cylinder 44 is opened by a vacuum pressure.

[0068] As the operation is repeated, the cosmetics in the tube container 30 are discharged into the reception chamber 21 of the reception body 20 to be used conveniently, and after the cosmetics in the tube container 30 are completely used, the reception body 20 is separated from the case 10 so that the tube container 30 is replaced by a new tube container 30 to refill cosmetics.

[0069] This is achieved by coupling the airless pump 40 and the protection cap 32 to the tube container 30 to be assembled and disassembled, and the entire structure in which the airless pump 40 and the protection cap 32 are coupled to the tube container 30 can be replaced.

[0070] Meanwhile, the cosmetic container of the present invention is a cosmetic container in which cosmetics are dedicatedly stored in the tube container 30, but various medicines and detergents as well as cosmetics may be stored in the tube container 30.

[0071] In particular, according to the present invention, since the airless pump installed in the case may be operated horizontally while the case has a flat and compact structure, the cosmetic container may have various shapes including a tetrahedron or a polygon, including a flat circle and an ellipse and an operation of the cosmetics container can be significantly enhanced.

## Claims

### 1. A cosmetic container comprising:

a case (10) having a horizontally flat shape and configured to be opened and closed by a cap;  
a reception body (20) coupled to the case (10) and having at least one reception chamber for receiving cosmetics discharged from a tube container in the case;  
a tube container (30) inserted into the case (10)

to store cosmetics, the tube container (30) being protected by a separate protection cap (32);  
an airless pump (40) integrally coupled to a front surface of the tube container (30) to discharge cosmetics in the tube container into the reception chamber of the reception body by a predetermined amount through the nozzle (48); and  
an operation button (50) installed at sides of the case (10) and the reception body (20) to operate the airless pump (40) through a push operation.

2. The cosmetic container of claim 1, wherein the reception body (20) comprises a plurality of reception chambers on an upper surface thereof so that different types of cosmetics are received in the reception chambers.

3. The cosmetic container of claim 1, wherein the airless pump (40) comprises:

an engaging tube (41) interference-fitted with an ejection hole (31) of the tube container (30) and having guide pins (41a) at upper and lower portions of a front end thereof;

an operation tube (42) resiliently installed by a spring (43), having guide grooves (42a) coupled to guide pins at upper and lower portions thereof, and having a piston (42b) at a rear side thereof;  
an operation cylinder (44) inserted into the ejection hole (31) of the tube container (30) at a rear side of the engaging tube (41), having a compression chamber (44a) therein, and having a valve (45) at an inlet hole thereof;

a piston support (46) coupled to an interior of the piston (42b) of the operation tube (42), having a saw tooth-shaped wing (46a) at one end thereof inserted into the operation cylinder 44 and having a plurality of ribs (46b) alternately protruding from the body, and having an exit hole (46c) communicated with an interior thereof at a predetermined location of a surface thereof; and

a piston valve (47) configured to compress a compression chamber according to a forward or rearward movement, the piston valve (47) being coupled between the piston support (46) and the operation cylinder (44).

4. The cosmetic container of claim 1, wherein the nozzle (48) coupled to a front end of the operation tube (42) is formed of a restoring material to be bent vertically and be communicated with the nozzle hole (21a) of the reception chamber (21) and has a "+"-shaped cutting line (48a) at an end thereof so that the nozzle hole is closed in a standby state and is opened as the nozzle (8) is widened when the cosmetics are discharged.

5. The cosmetic container of claim 1, wherein the operation button (50) is engaged with a coupling portion of the case (10) and the reception body (20) to be pushed in a horizontal and vertical operation range (A).

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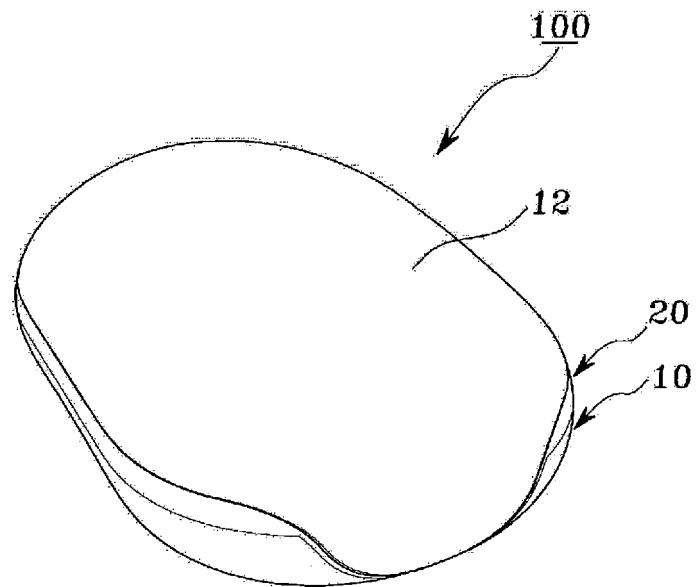
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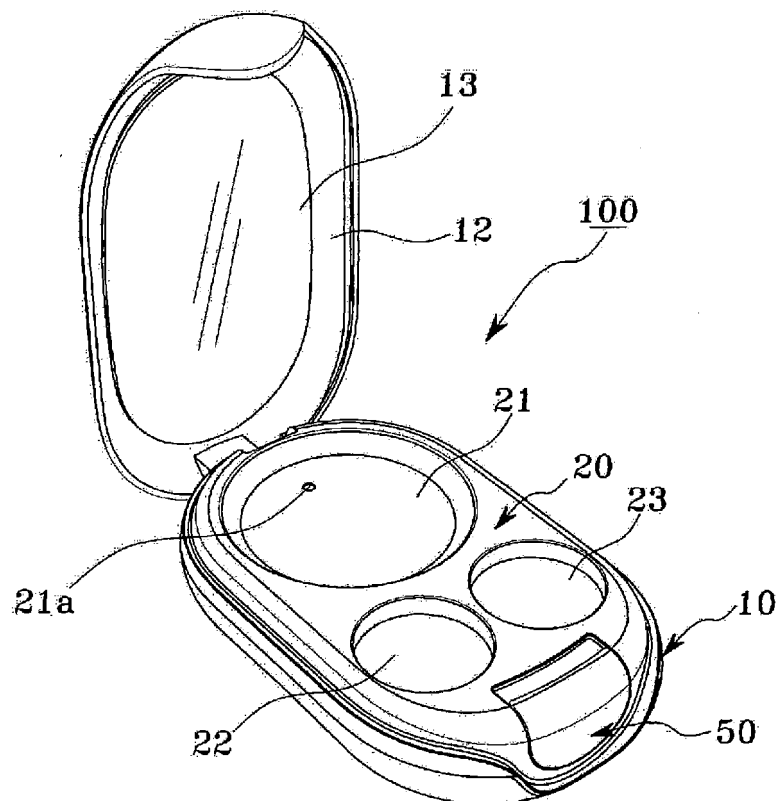
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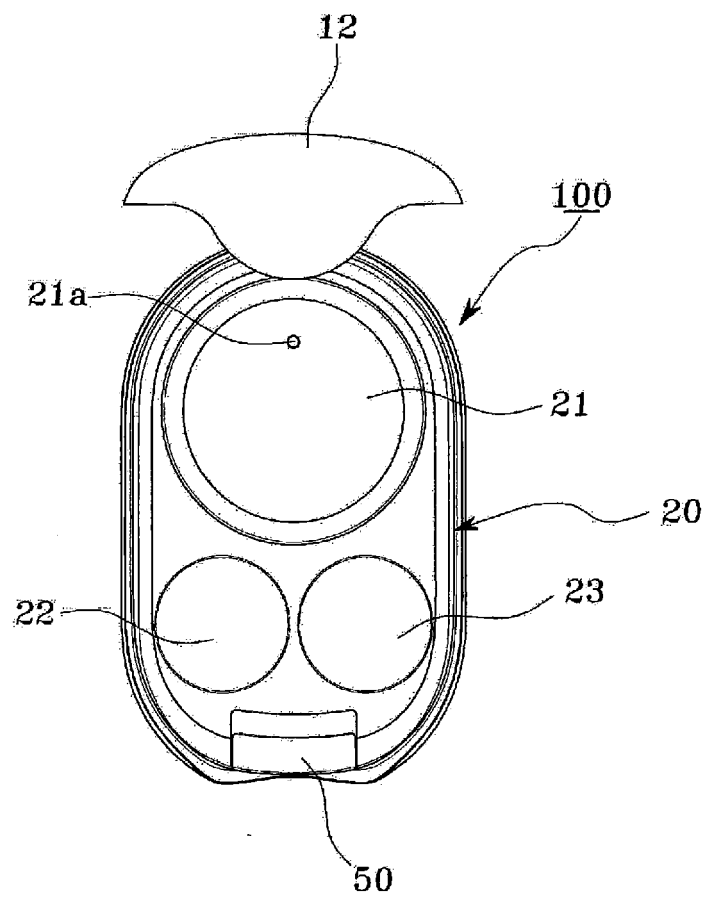
[Fig. 1]



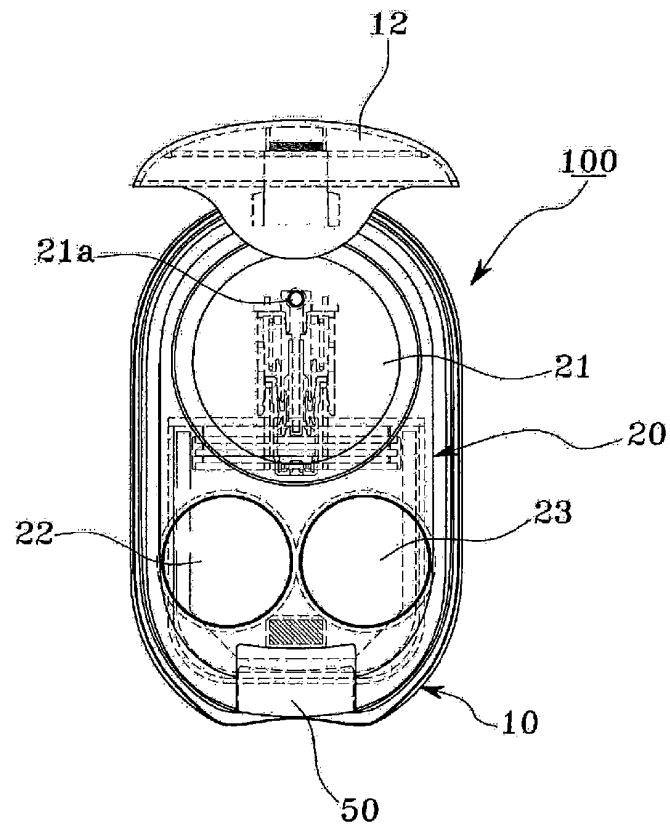
[Fig. 2]



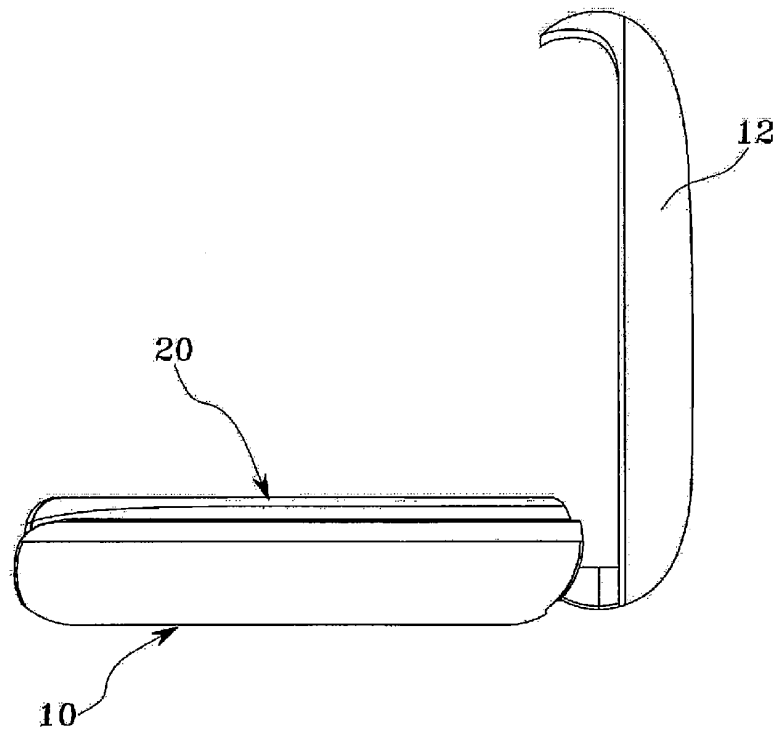
[Fig. 3]



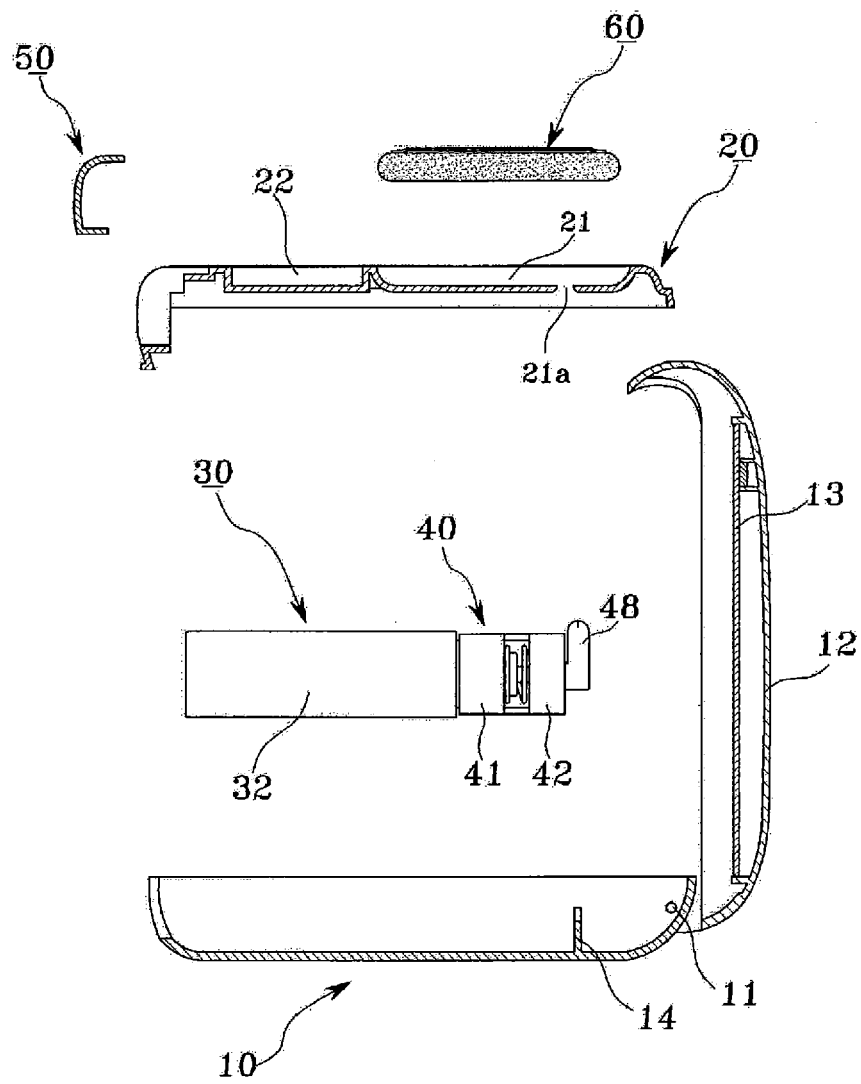
[Fig. 4]



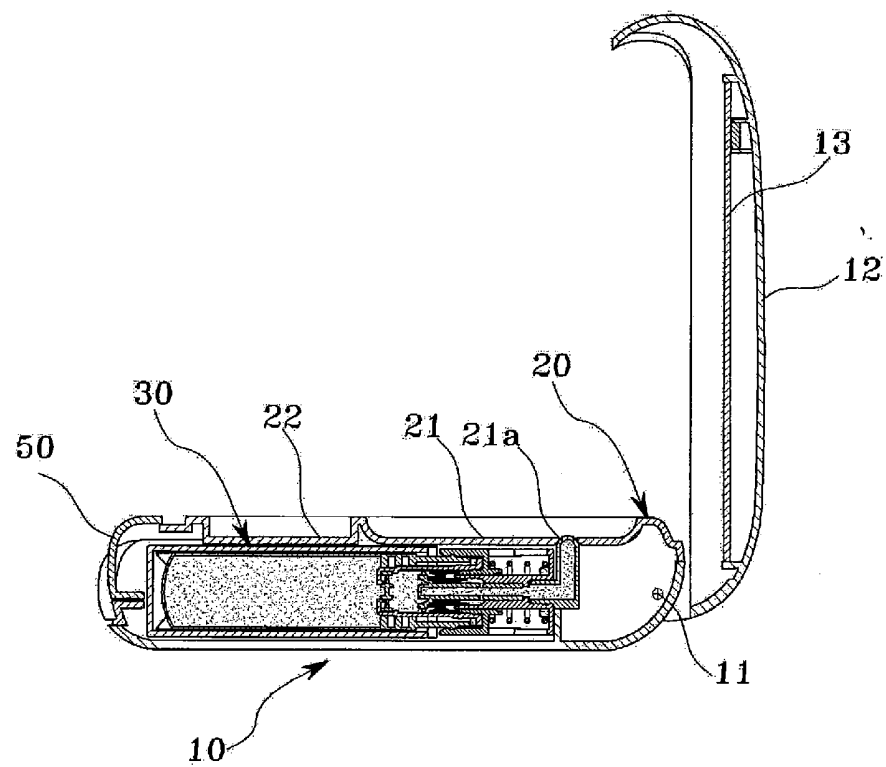
[Fig. 5]



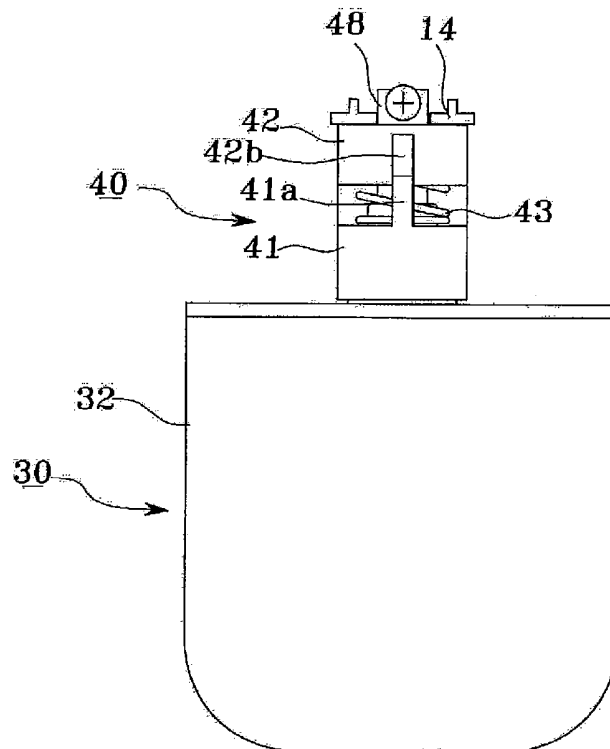
[Fig. 6]



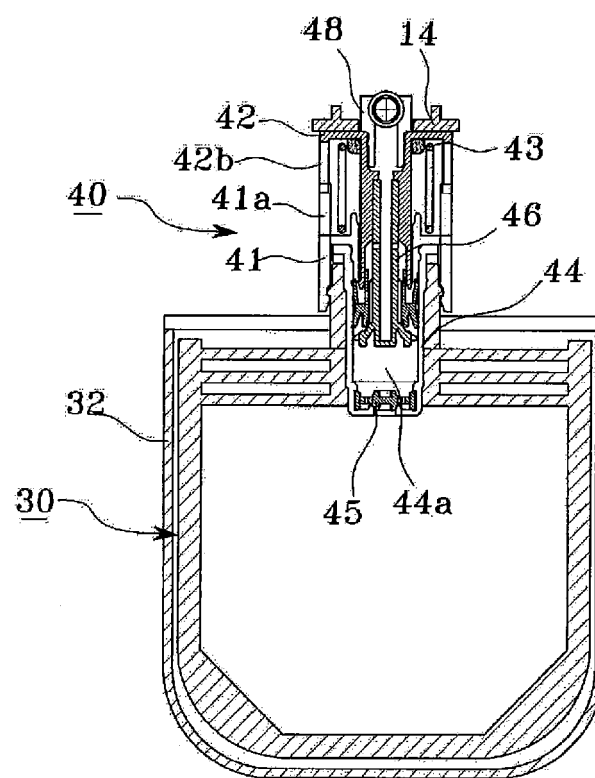
[Fig. 7]



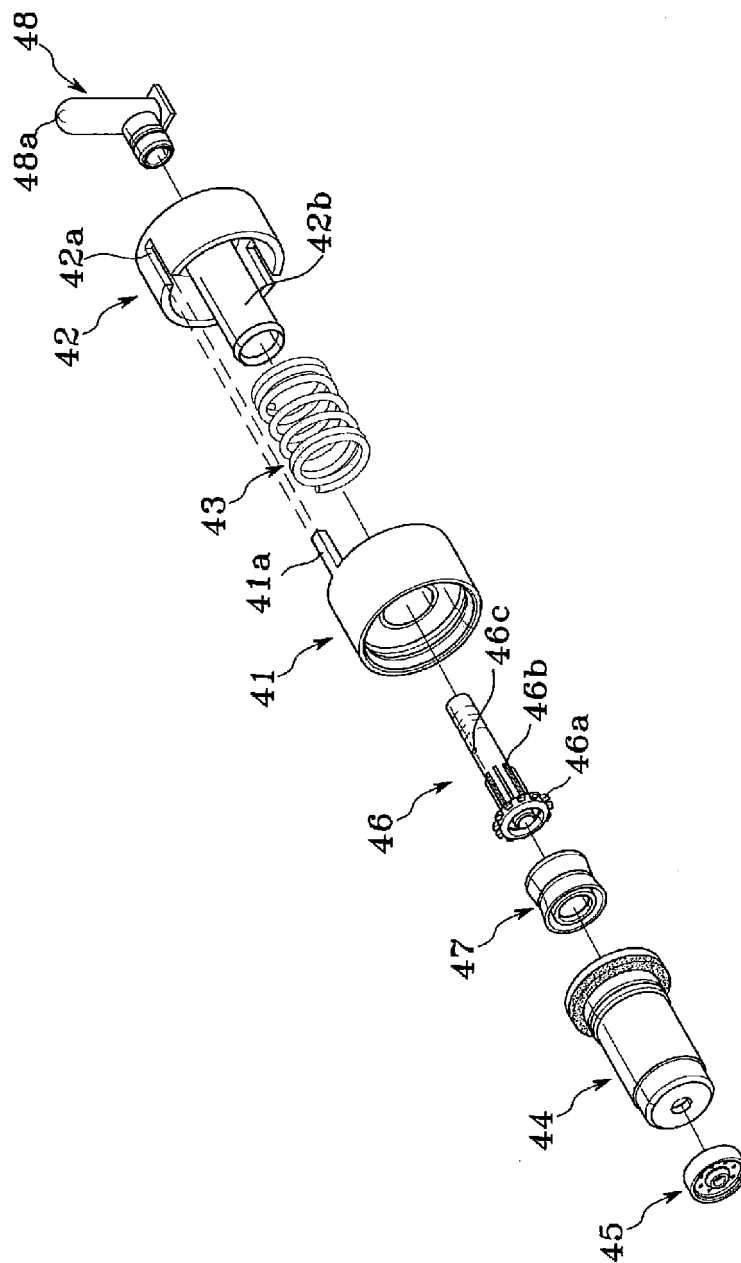
[Fig. 8]



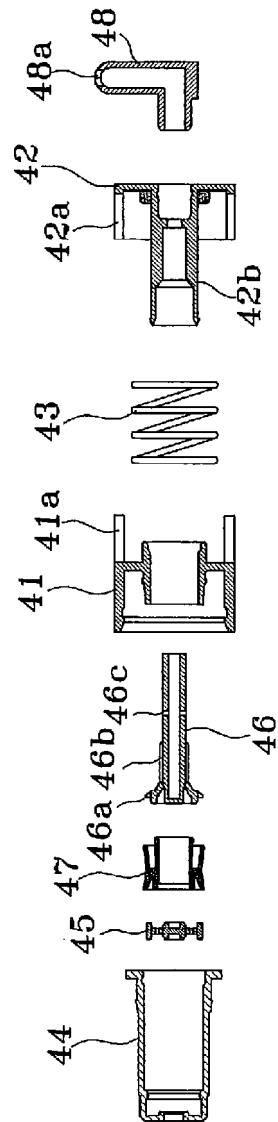
[Fig. 9]



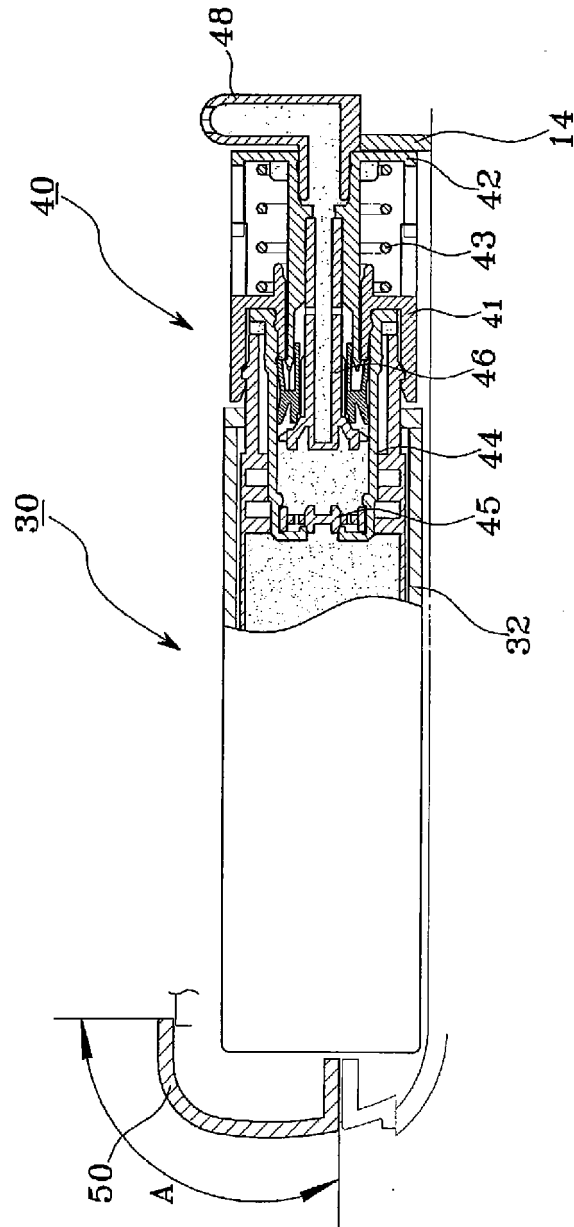
[Fig. 10]



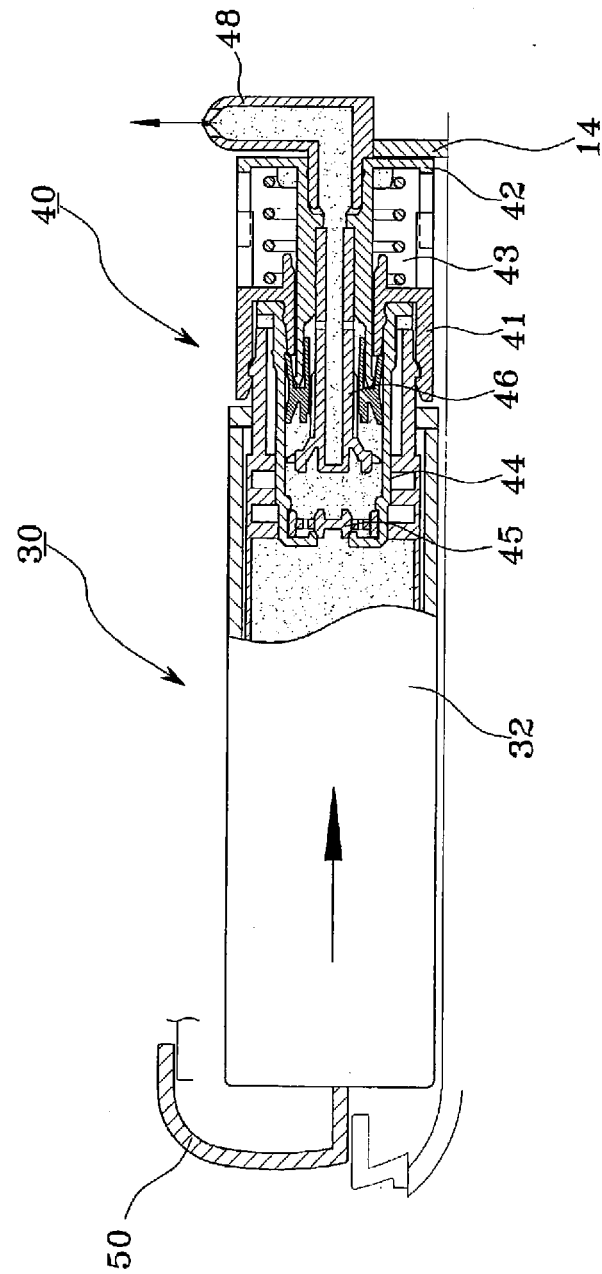
[Fig. 11]



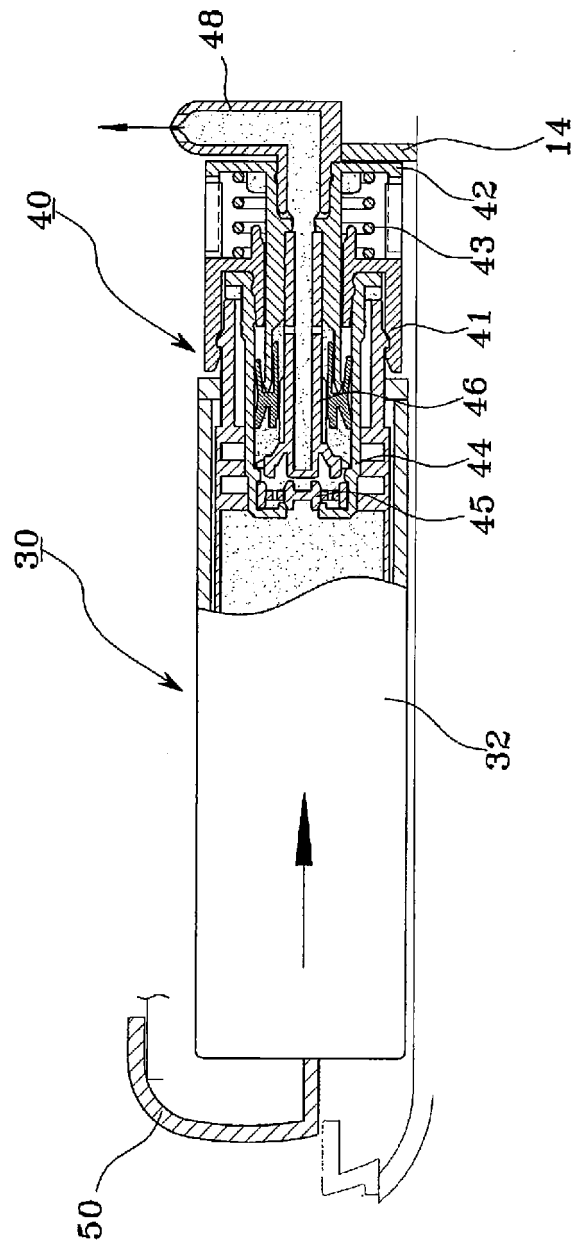
[Fig. 12a]



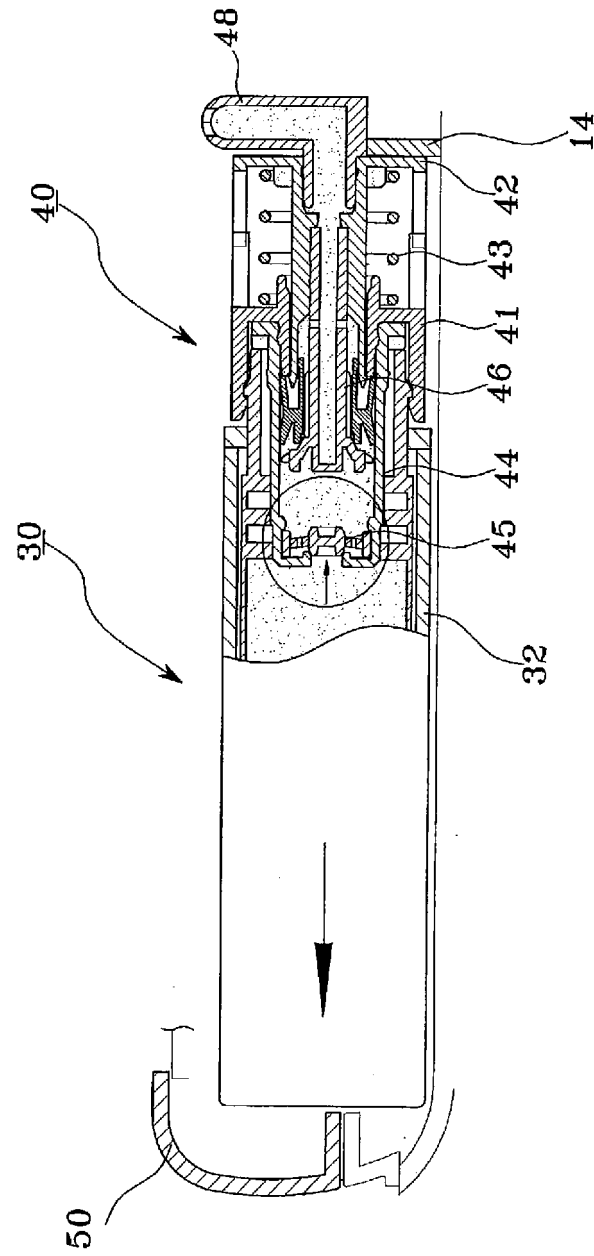
[Fig. 12b]



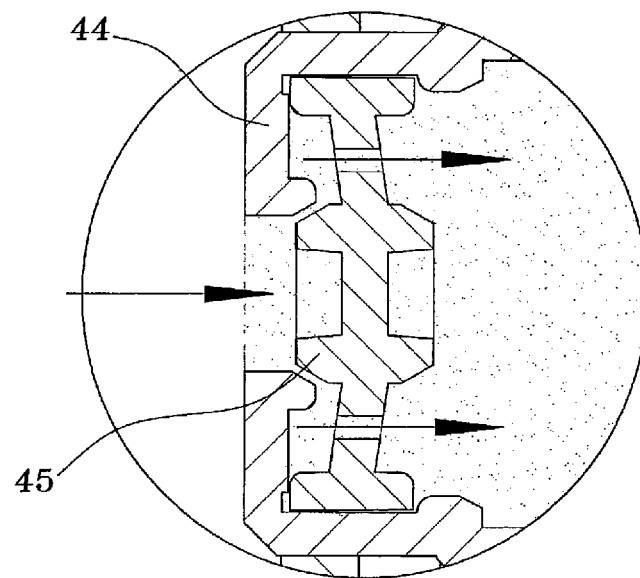
[Fig. 12c]



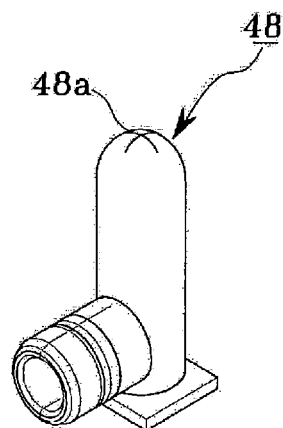
[Fig. 12d]



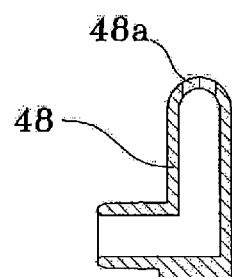
[Fig. 13]



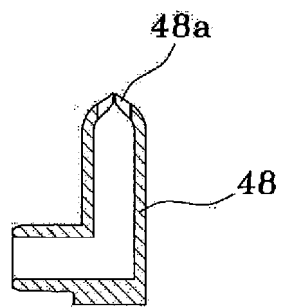
[Fig. 14]



[Fig. 15a]



[Fig. 15b]



**REFERENCES CITED IN THE DESCRIPTION**

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**Patent documents cited in the description**

- KR 963155 [0001] [0007] [0016]