(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 3 593 670 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
15.01.2020 Bulletin 2020/03

(51) Int Cl.:
A45D 40/04 *(2006.01)* ***A45D 40/24*** *(2006.01)*

(21) Application number: **18206991.4**

(22) Date of filing: **19.11.2018**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
Designated Extension States:
BA ME
Designated Validation States:
KH MA MD TN

(30) Priority: **11.07.2018 KR 20180080503**

(71) Applicant: **Yonwoo Co., Ltd.**
Incheon 22824 (KR)

(72) Inventors:
- **Kim, Yu Seob**
  Seo-gu
  Incheon 22824 (KR)
- **Lim, Sung Taek**
  Seo-gu
  Incheon 22824 (KR)

(74) Representative: **Gulde & Partner**
Patent- und Rechtsanwaltskanzlei mbB
Wallstraße 58/59
10179 Berlin (DE)

(54) COSMETIC CONTAINER

(57) In an embodiment, a cosmetic container is disclosed. The cosmetic container may include a housing (300), on both end parts, a first opening (312) and a second opening (322), respectively; a controller (400) having at least a part exposed to an external atmosphere in one area of the housing and turning according to a user's operation; a first receiver (500) close to the first opening (312), provided in the housing and accommodating a first cosmetic product (S1); a second receiver (600) close to the second opening (322), provided in the housing and accommodating a second cosmetic product (S2); and a lifting rod (700) connecting the first receiver (500) and the second receiver (600) and moving the first receiver (500) and the second receiver (600) in a first direction towards the first opening (312) or in a second direction towards the second opening (322) in response to a turning direction of the controller.

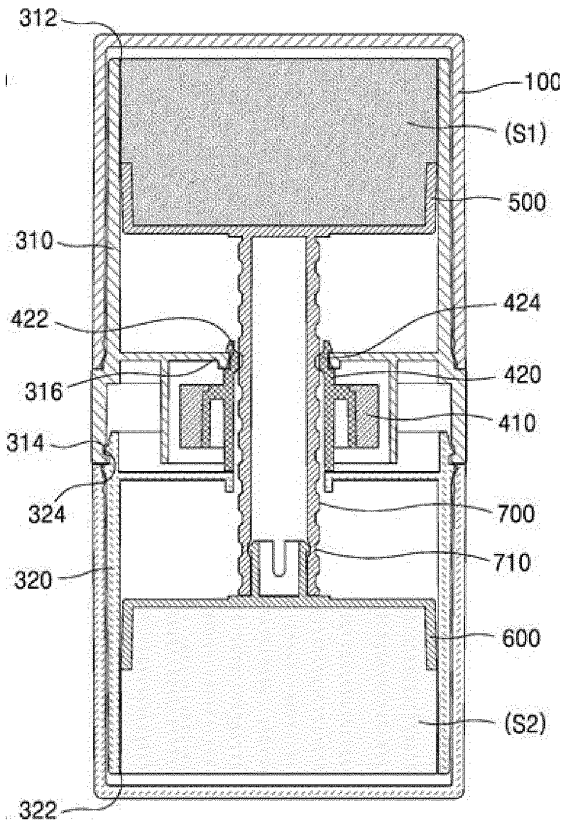

FIG. 2

EP 3 593 670 A1

Description

Background

[0001] Embodiments relate to a cosmetic container. The cosmetic container may selectively pull out a plurality of cosmetic products through rotation control by a controller.

Field of the Disclosure

[0002] Generally, a cosmetic container is structured such that a cosmetic product is pulled out and transmitted to a certain part of a body while holding various types of cosmetics. The structure of the cosmetic container may change based on the nature of the cosmetic being held by the cosmetic container.

[0003] For example, in the case of a solid type of a cosmetic product that can maintain a stick-like shape such as a lipstick, sun balm, etc., the cosmetic container has a dish that supports the stick-shaped cosmetic product and elevates the dish for the cosmetic product to be pulled out. Particularly, the conventional stick type cosmetic container includes an outer sleeve and an inner sleeve. If a user holds the outer sleeve and turns the inner sleeve which is exposed in the lower part, the stick type cosmetic product comes out as it rises. Or the conventional stick type cosmetic container has a screw that is exposed in the lower part and a dish that is screw coupled to a screw. If a user holds the container and turns the screw, the dish may be elevated, thus pushing out the stick type cosmetic product to an external atmosphere.

[0004] However, recently, even though various cosmetic products are made as solid type makeup products, since the conventional stick type cosmetic container includes only one cosmetic product inside, it is inconvenient to carry each cosmetic product in a separate container.

[0005] Therefore, a container for solving such problems is needed.

Detailed Description of Disclosure Problem

[0006] The present disclosure has been made to solve the above-mentioned problems. The present disclosure is related to a cosmetic container capable of selectively pulling out a plurality of cosmetic products through rotation control by a controller.

[0007] The problems are not limited to the ones described above. Any other problem that is not mentioned herein will be clearly understood by a person of ordinary skill in the art from the description provided below.

Technical Solution

[0008] In an embodiment, a cosmetic container is provided. The container may include a housing having a first opening on a first end and a second opening on a second end, respectively; a controller at an area of the housing, the housing having at least a part exposed to an external atmosphere and turning according to a user's operation; a first receiver close to the first opening, provided in the housing and accommodating a first cosmetic product; a second receiver close to the second opening, provided in the housing and accommodating a second cosmetic product; and a lifting rod connecting the first receiver and the second receiver and moving the first receiver and the second receiver, in response to a turning direction of the controller, in a first direction towards the first opening or a second direction towards the second opening.

[0009] In an embodiment, the controller may include a control wheel having at least a part exposed to an external atmosphere to receive turn control by a user; and a driving part interlocking with the control wheel and turning to transmit a rotational force to the lifting rod.

[0010] In an embodiment, a through hole may be formed where the lifting rod is inserted into in the driving part, and at least one driving projection may be formed on an inner surface of the through hole. The driving projection may be coupled to a spiral-shaped guide groove along an outer circumferential surface of the lifting rod, the driving projection may undergo a rotational displacement in a different direction along the guide groove corresponding to a turning direction of the controller, and thus the lifting rod may move in the first direction or the second direction.

[0011] In an embodiment, at least one projection may be formed that is interlocked with the driving projection, moving the guide groove, and restricts turning of the controller in at least one area of the guide groove.

[0012] In an embodiment, the controller may be restricted in turning by the projection, but in a case when a rotational force that meets a predetermined level or more is applied to the controller, the driving projection may turn by breaking away from the projection.

[0013] In an embodiment, the projection may be provided in plurality, and at least a portion thereof may be provided in different positions in a longitudinal direction of the lifting rod.

[0014] In an embodiment, a concave groove where the projection is inserted may be formed which may be in a dent or sunk shape in one area of the driving projection.

[0015] In an embodiment, the lifting rod may be formed as one body with at least one of the first receiver or the second receiver.

[0016] In an embodiment, the housing may include a first housing where the first opening is formed and a second housing detachably coupled to an end part on an opposite side of the first opening and where the second opening is formed.

[0017] In an embodiment, in the housing, a through hole may be formed by having one area that is passed through. At the pass through hole, a support part to which the controller is rotatably coupled may be formed.

Effects of the disclosure

[0018] In an embodiment, through turn control with respect to a controller, a plurality of cosmetic products may be selectively retrieved and be used, which enhances product utilization and mobility.

[0019] In an embodiment, a projection of a lifting rod that restricts turning of the controller may perform the role of an indicator, indicating the positions of the first receiver and the second receiver, which enhances convenience in use.

Brief Description of the Drawings

[0020] Brief description on each drawing figure will be provided so that the drawing figures referenced in the detailed description may be more sufficiently understood.

FIG. 1 is a perspective view of a cosmetic container in an embodiment.

FIG. 2 is a cross-sectional view of a cosmetic container in an embodiment.

FIG. 3 is an exploded view of a first receiver, a second receiver, a lifting rod and a controller in an embodiment.

FIG. 4 illustrates a join relationship between a lifting rod and a controller of the cosmetic container in an embodiment.

FIG. 5 is an exemplary view showing an operation of the cosmetic container in an embodiment.

FIGS. 6A and 6B illustrate example of the cosmetic container in use in an embodiment.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0021] Hereinafter, example embodiments will be described with reference to the accompanying drawings; however, for reference numerals, with respect to the same elements, even though they may be displayed in different drawings, such elements use same reference numerals as much as possible. Also, in explaining the example embodiments, detailed description on known elements or functions will be omitted if it is determined that such description will interfere with understanding of the embodiments. In addition, the example embodiments may be embodied in different forms and should not be construed as limited to the embodiments set forth herein but may be modified and variously implemented by those skilled in the art.

[0022] In the drawing figures, dimensions may be exaggerated for clarity of illustration. It will be understood that when an element is referred to as being "between" two elements, it can be the only element between the two elements, or one or more intervening elements may also be present. It will be understood that when a part includes or has an element, it does not mean that other elements are excluded but that other elements may be further included. Also, in explaining elements, terms like "first", "second", "A", "B", "(a)", "(b)", etc. may be used. However, such terms are used to distinguish one from the others only and they do not affect the essence, nature, sequence, order, etc.

[0023] FIG. 1 is a perspective view of a cosmetic container in an embodiment. FIG. 2 is a cross-sectional view of a cosmetic container in an embodiment. FIG. 3 is an exploded view of a first receiver, a second receiver, a lifting rod and a controller in an embodiment. FIG. 4 illustrates a join relationship between a lifting rod and a controller of the cosmetic container in an embodiment (particularly, FIG. 4B illustrates a horizontal section of a-a' in FIG. 4A).

[0024] Referring to FIGS. 1 to 4, a cosmetic container may include a first cap part 100, a second cap part 200, a housing 300, a controller 400, a first receiver 500, a second receiver 600 and a lifting rod 700.

[0025] The first cap part 100 and the second cap part 200 may be detachably coupled to a first end part and a second end part that is provided on an opposite side in a longitudinal direction of the housing 300, covering a first opening 312 and a second opening 322 formed on both end parts of the housing 300. In order to couple the first cap part 100 to the second cap part 200, an engagement and/or an end step (not shown), etc., for example without limitation thereto, may be formed on inner surfaces of the first cap part 100 and the second cap part 200 or on outer surfaces of the first end part and the second end part of the housing 300. However, this is an example only, and other various structures may be used for mounting/dismounting purposes.

[0026] Furthermore, though not shown, in an embodiment, a sealing member may be formed on inner surfaces of the first cap part 100 and the second cap part 200. The sealing member, for example without limitation thereto, may be formed along inner circumferential surfaces of the first cap part 100 and the second cap part 200 and may be sealed to outer surfaces of the housing 300 of the first cap part 100 and the second cap part 200. The sealing member may include rubber, silicon, polyuretan, etc. but may not be limited thereto. Through the sealing member, a join force of the first cap part 100 and the second cap part 200 may be further increased, and foreign substances from an external atmosphere may be effectively prevented from being introduced into an inner side of the housing 300

[0027] The housing 300 may accommodate cosmetic products S1 and S2 and other components (i.e., a controller 400, first and second receivers 500 and 600, and a lifting rod 700). A first opening 312 and a second opening 322 may be formed on a first end part and a second end part, respectively, of the housing 300 in order to selectively pull out the cosmetic products S1 and S2 to the external atmosphere according to operations of the controller 400 and the lifting rod 700.

[0028] The housing 300 may include a first housing 310 and a second housing 320. A first opening 312 and

a second opening 322 may be formed at the first housing 310 and the second housing 320, respectively, and the first and second openings 312 and 322 may be structured to be detachably joined with each other. For such join relationship, a join projection, join grooves 314 and 324, etc. may be formed on an end part on an opposite side of the first opening 312 of the first housing 310 and on an end part on an opposite side of the second opening 322, respectively. However, this is only exemplary in nature, and thus various structures used for detachably mounting/dismounting may be used.

[0029] A first support part 316 and/or a second support part (reference numerals not shown) may be formed on inner sides of the first housing 310 and the second housing 320, respectively, to support the controller 400. For example but without limitation thereto, through holes (reference numeral not shown) may be formed in the first support part 316 and the second support part at central areas. One end part of the controller 400 may be rotatably coupled to the through hole of the first support part 316. An end part on an opposite side of the controller 400 may be supported at a peripheral area of the through hole of the second support part.

[0030] Meanwhile, though not shown, in an embodiment, a display device for indicating to users the direction of the first and second openings 312 and 322, arrangement of the cosmetic products S1 and S2, etc. may be formed in at least one of the first cap part 100, the second cap part 200 or the housing 300.

[0031] A controller 400 may have at least a part exposed to the external atmosphere in one area of the housing 300 to turn horizontally according to a user's operation. A rotational force of the controller 400 may be transmitted to the lifting rod 700 to move the first and second receivers 500 and 600 along a longitudinal direction as closely adhered to an inner surface of the housing 300.

[0032] The controller 400 may include a control wheel 410 and a driving part 420.

[0033] The control wheel 410 may have at least a part exposed to the external atmosphere to receive rotation control by a user. A plurality of friction projections (reference numeral not shown) may be provided on an outer circumferential surface of the control wheel 410 to make rotation control of a user easier.

[0034] The driving part 420 may be coupled to an inner side of the controller 400. An end part may be rotatably coupled to a through hole of the first support part 316 of the housing 300. A ring-shaped dent groove 422 may be formed at one end part of the driving part 420 for coupling to the first support part 316.

[0035] The driving part 420 may be interlocked with the controller 400 and turn, thereby transmitting a rotational force of the controller 400 to the lifting rod 700. A through hole (reference numeral not shown) where the lifting rod 700 is inserted may be formed at a central part of the driving part 420. At least one driving projection 424 may be formed on an inner surface of the through hole, protruding towards an inner side. As the driving projection 424 moves along a guide groove 710 of the lifting rod 700 inserted on an inner side of the through hole, the lifting rod 700 may be moved in a first direction or a second direction opposite to the first direction. Meanwhile, at one area of the driving projection 424, a concave groove 426 may be formed in a dent or sunk shape such that the hook projection 720 formed at the lifting rod 700 can be inserted.

[0036] The first receiver 500 and the second receiver 600 may be provided inside the housing 300 to be close to the first opening 312 and the second opening 322, respectively. The first receiver 500 and the second receiver 600 may be formed in the shape of a dish corresponding to an inside shape of the housing 300. As a result, cosmetic products S1 and S2 that have different ingredients may be accommodated on each side. For example but without limitation thereto, the first receiver 500 may accommodate the first cosmetic product S1 on a side of the first opening 312, and the second receiver 600 may accommodate the second cosmetic product S2 on a side of the second opening 322.

[0037] Here, the first and second cosmetic products S1 and S2 may include solid or semi-solid type of cosmetic products. For example without limitation thereto, it may be stick sun cream, sun balm, etc., but it is not limited thereto, and it may include solid or semi-solid type of various cosmetic products. In addition, according to an embodiment, a solid type or semi-solid type of medicine or medicinal supplies such as anti-inflammatory analgesic drug may be accommodated instead of the cosmetic products S1 and S2.

[0038] The lifting rod 700 may interconnect the first receiver 500 and the second receiver 600. For example but without limitation thereto, one end part of the lifting rod 700 may be coupled to the first receiver 500, and the other end part of the lifting rod 700 may be coupled to the second receiver 600 via the first support part 316 and the second support part. In an embodiment, the lifting rod 700 may be formed as one body with at least one of the first receiver 500 or the second receiver 600. For example but without limitation thereto, by injection molding, the lifting rod 700 may be formed as one body with the first receiver 500, and one end part of the lifting rod 700 may be detachably coupled to a coupling part 610 formed at the second receiver 600.

[0039] The lifting rod 700 may receive a rotational force from a controller 400, and, along with the first receiver 500 and the second receiver 600 connected therewith, move in a first direction towards the first opening 312 or in a second direction towards the second opening 322. For example but without limitation thereto, a guide groove 710 in a spiral shape may be formed at the lifting rod 700 along an outer circumferential surface to receive a rotational force of the controller 400. As described above, a driving projection 424 of the controller 400 may be coupled to the guide groove 710, and corresponding to the turning direction of the controller 400, may go through rotational displacement in a different direction along the

guide groove 710. As a result, the lifting rod 700 may move in the first direction or in the second direction.

[0040] At least one hook projection 720 for restricting moving of the driving projection 424 and/or turning of the controller 400 may be formed protruding toward outside in at least one area of the guide groove 710. For example but without limitation thereto, the driving projection 424 which moves the guide groove 710 may be engaged with the hook projection 720 formed at a predetermined location, and thus the turning of the controller 400 is restricted; however, if a rotational force that meets a predetermined level or more is applied to the controller 400, the driving projection 424 may break away from the hook projection 720 and the controller 400 may turn.

[0041] The cosmetic container in an embodiment may let a user know of the positions of the first receiver 500 and the second receiver 600 in the housing 300 via the hook projection 720. For example but without limitation thereto, while the driving projection 424 moves along the guide groove 710 corresponding to turning of the controller 400, if the concave groove 426 and the hook projection 720 are engaged, a resistance of a predetermined level may be transmitted with respect to rotation control by a user with respect to the controller 400. Through the resistance, a user may know that the first and second receivers 500 and 600 reached certain positions. In an embodiment, the hook projection 720 may be formed at a predetermined position of the lifting rod 700 capable of positioning the first and second receivers 500 and 600 at locations distanced the same from the first and second openings 312 and 322, respectively, on both sides of the housing 300.

[0042] In an embodiment, the hook projection 720 may be provided in plurality, and at least a portion thereof may be provided in a longitudinal direction of the lifting rod 700 in different locations respectively. Accordingly, a user may recognize various locations of the first and second receivers 500 and 600 via the hook projections 720 formed at different positions.

[0043] FIG. 5 illustrates an exemplary action of the cosmetic container in an embodiment.

[0044] Referring to FIG. 5, a cosmetic container may expose (or project) different cosmetic products S1 and S2 to an external atmosphere via a first opening 312 and a second opening 322 corresponding to a turning direction of a controller 400.

[0045] At first (i.e., prior to rotation control with respect to the controller 400), the first and second cosmetic products S1 and S2 may not all be exposed to the external atmosphere, and the driving projection 424 of the controller 400 may maintain a state in which the driving projection 424 is engaged with the hook projection 720 of the lifting rod 700.

[0046] As shown in FIG. 5A, if a user applies a rotational force that meets a predetermined level or more (that is, a rotational force capable of causing the driving projection 424 to break away from the hook projection 720) and turns the controller 400 in one direction, the first receiver 500, the second receiver 600, and the lifting rod 700 may move in a first direction (the upper side in FIG. 5) towards the first opening 312, and the first cosmetic product S1 may be exposed to the external atmosphere of the first opening 312.

[0047] As shown in FIG. 5B, if a user turns a controller 400 in an opposite direction, a first receiver 500, a second receiver 600 and a lifting rod 700 may move in a second direction (the lower side in FIG. 5) towards a second opening 322. Here, as described above, the user recognizes that the first receiver 500 and the second receiver 600 returned to the original positions if the user is transmitted a resistance against rotation control of the controller 400 by the hook projection 720. Furthermore, if the user further turns the controller 400 in the opposite direction, the first receiver 500, the second receiver 600 and the lifting rod 700 may move further in the second direction, and a second cosmetic product S2 may be exposed to the external atmosphere of the second opening 322.

[0048] FIGS. 6A and 6B illustrate examples of the cosmetic container in use in an embodiment.

[0049] Referring to FIG. 6A, when a user tries to use the first cosmetic product S1, the user causes the first cosmetic S1 to be dispatched to an upper side, and thereafter, the user may separate the first cap part 100. Then, the user may apply the first cosmetic product S1 to a target region by pulling out the first cosmetic product S1 to an upper side via the first opening 312 by turning the control wheel 410 in one direction. Once the user is finished with using the first cosmetic product S1, the user may turn the control wheel 410 in the opposite direction, the user may cause the first cosmetic product S1 to be accommodated in the housing 300, and thereafter, the first cap part 100 may be joined with the housing 300 again.

[0050] Referring to FIG. 6B, if a user tries to use the second cosmetic product S2, the user may cause the second cosmetic product S2 to be dispatched to an upper side by reversing the top and bottom of the cosmetic container. The second cap part 200 may then be separated. Thereafter, the user may pull out the second cosmetic product S2 to an upper side via the second opening 322 by turning the control wheel 410 in one direction. Here, since the top and bottom of the cosmetic container are reversed, from a user's perspective, if the control wheel 410 is turned in the same direction as the turning direction for taking out the first cosmetic product S1, the second cosmetic product S2 may be pulled out to the external atmosphere. Once the user is finished with using the second cosmetic product S2, the user may turn the control wheel 410 in the opposite direction, the user may cause the second cosmetic product S2 to be accommodated inside the housing 300, and the second cap part 200 may be joined with the housing 300 again.

[0051] Example embodiments have been disclosed herein, and although specific terms are employed, they are used and are to be interpreted in a generic and de-

scriptive sense only and not for purpose of limitation. In some instances, as would be apparent to one of ordinary skill in the art as of the filing of the present application, features, characteristics, and/or elements described in connection with a particular embodiment may be used singly or in combination with features, characteristics, and/or elements described in connection with other embodiments unless otherwise specifically indicated. Accordingly, it will be understood by those of skill in the art that various changes in form and details may be made without departing from the spirit and scope of the present disclosure as set forth in the following claims.

Claims

1. A cosmetic container comprising:

   a housing having a first opening on a first end and a second opening on a second end, respectively;
   a controller located in the housing, wherein a portion of the controller is exposed outside, and wherein the controller is rotated in response to an input of a user;
   a first receiver located in the housing adjacent to the first opening and accommodating a first cosmetic product;
   a second receiver located in the housing adjacent to the second opening and accommodating a second cosmetic product; and
   a lifting rod connecting the first receiver and the second receiver and moving the first receiver and the second receiver in a first direction towards the first opening or a second direction towards the second opening, in response to a turning direction of the controller.

2. The cosmetic container of claim 1, wherein the controller comprises:

   a control wheel, at least a portion of the control wheel exposed outside of the housing and receiving a rotation control by the user, and
   a driving part transmitting a rotational force of the control wheel to the lifting rod by rotating along with the control wheel.

3. The cosmetic container of claim 2, wherein the driving part has a through-hole where the lifting rod is inserted therein and at least one driving projection is defined on an inner surface of the through-hole,
   wherein the at least one driving projection is coupled with a guide groove having a spiral shape defined along an outer circumferential surface of the lifting rod, and
   wherein the lifting rod rotatably moves in a different direction along the guide groove in reply to a rotation direction of the controller and moves in the first direction or the second direction accordingly.

4. The cosmetic container of claim 3, wherein at least one hook projection is defined in the guide groove, and wherein the at least one restriction projection is engaged with the at least one driving projection and restricts a rotation of the controller.

5. The cosmetic container of claim 4, wherein if the rotational force of the control wheel is equal to or greater than a predetermined value, the at least one driving projection breaks away from the at least on hook projection, and the controller rotates.

6. The cosmetic container of claim 4, wherein a number of the at least one hook projection is plural, and at least a portion of the at least one hook projection is positioned in a different location in a longitudinal direction of the lifting rod.

7. The cosmetic container of claim 4, wherein a concave groove is defined in the at least one driving protrusion to receive the at least one hook projection.

8. The cosmetic container of claim 3, wherein the lifting rod is integrated with at least one of the first receiver or the second receiver as one body.

9. The cosmetic container of claim 3, wherein the housing comprises:

   a first housing where the first opening is defined; and
   a second housing detachably attached to the second end which is located at opposite side from the first end.

10. The cosmetic container of claim 3, wherein the housing has a hollow hole structure, and a support part is extended from an inner surface of the hollow hole structure, the controller being rotatably coupled to the support part.

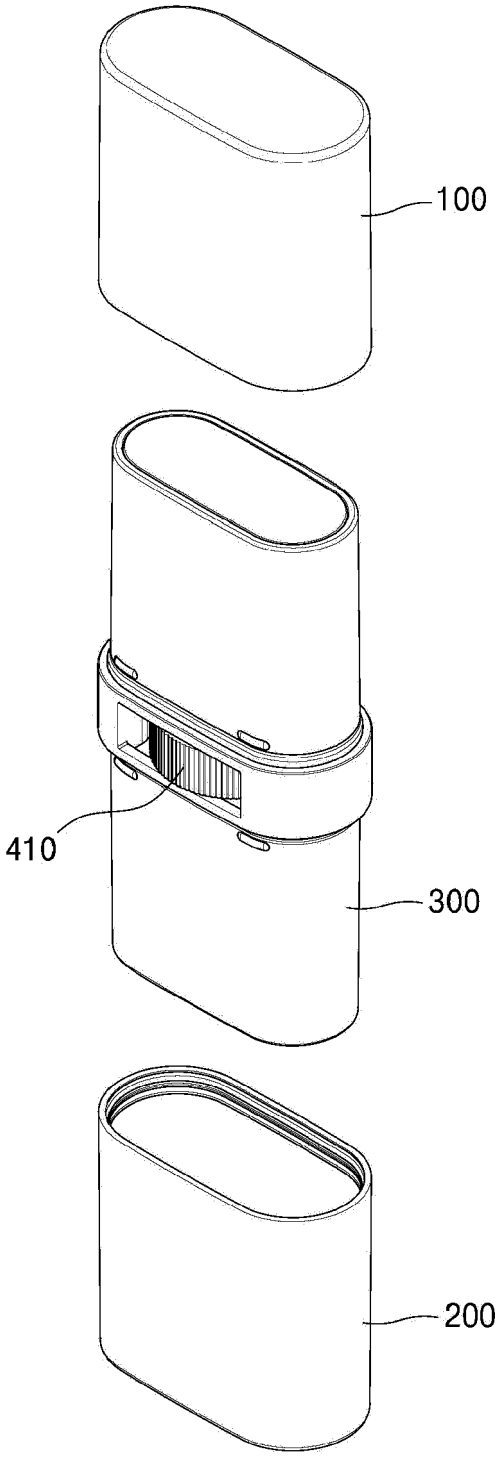

FIG. 1

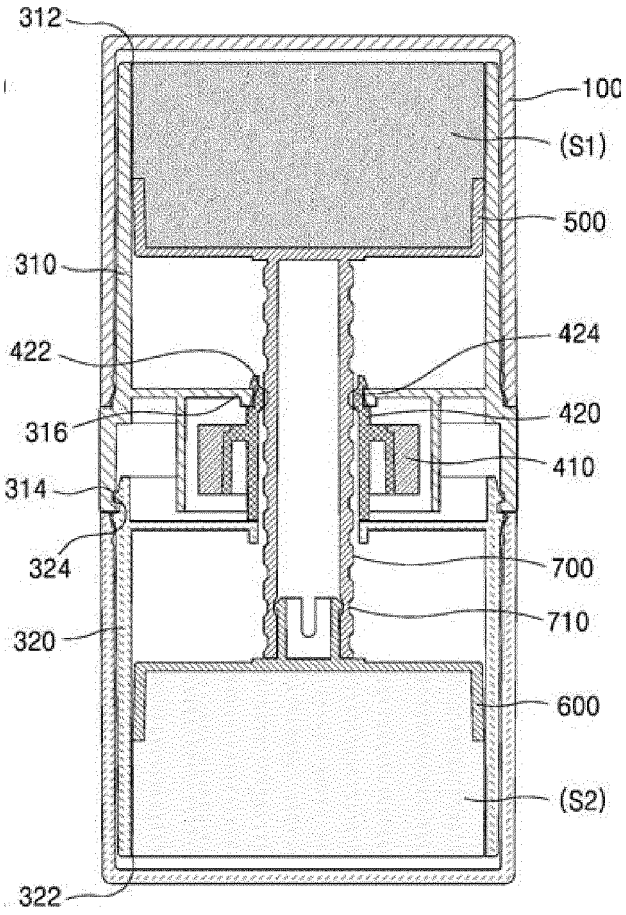
312
100
(S1)
500
310
424
422
420
316
410
314
324
700
710
320
600
(S2)
322

FIG. 2

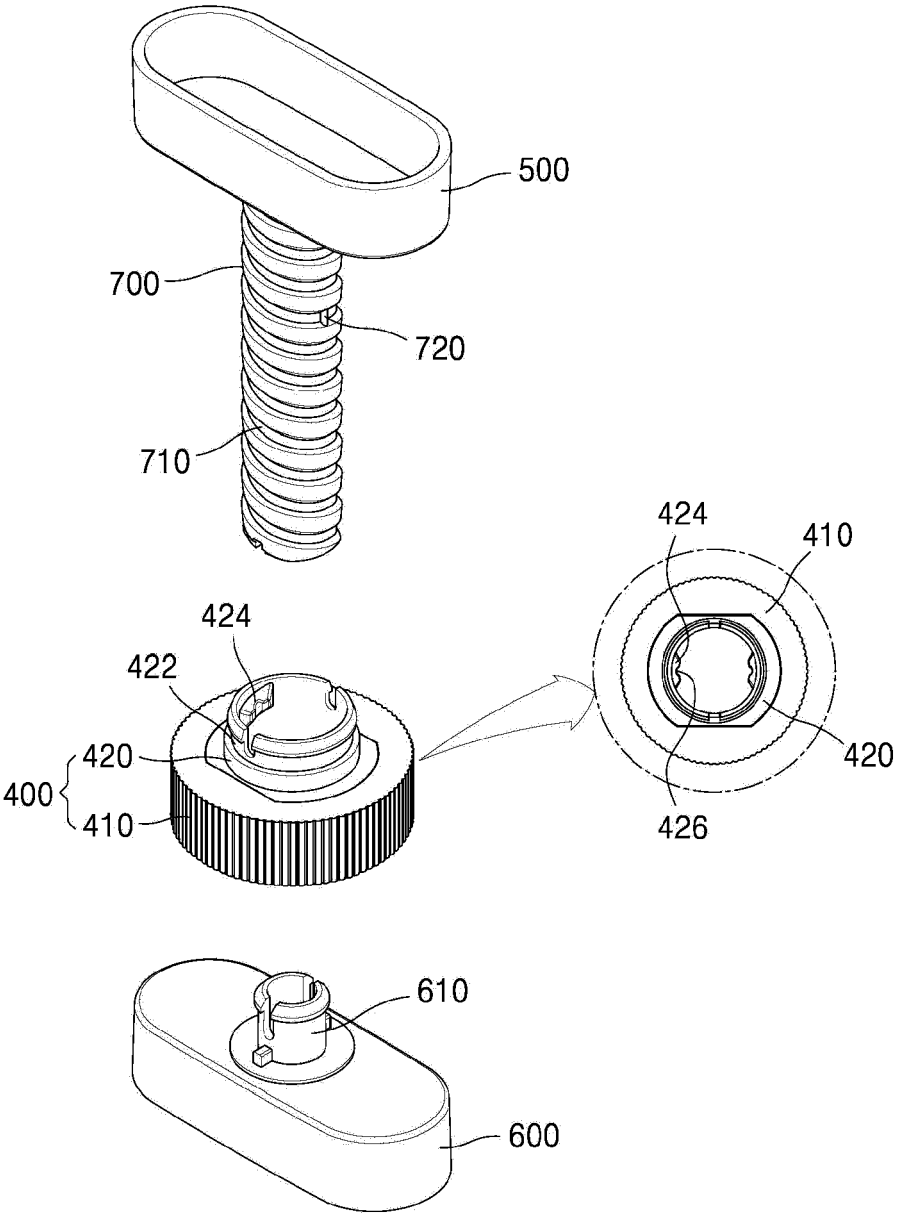

FIG. 3

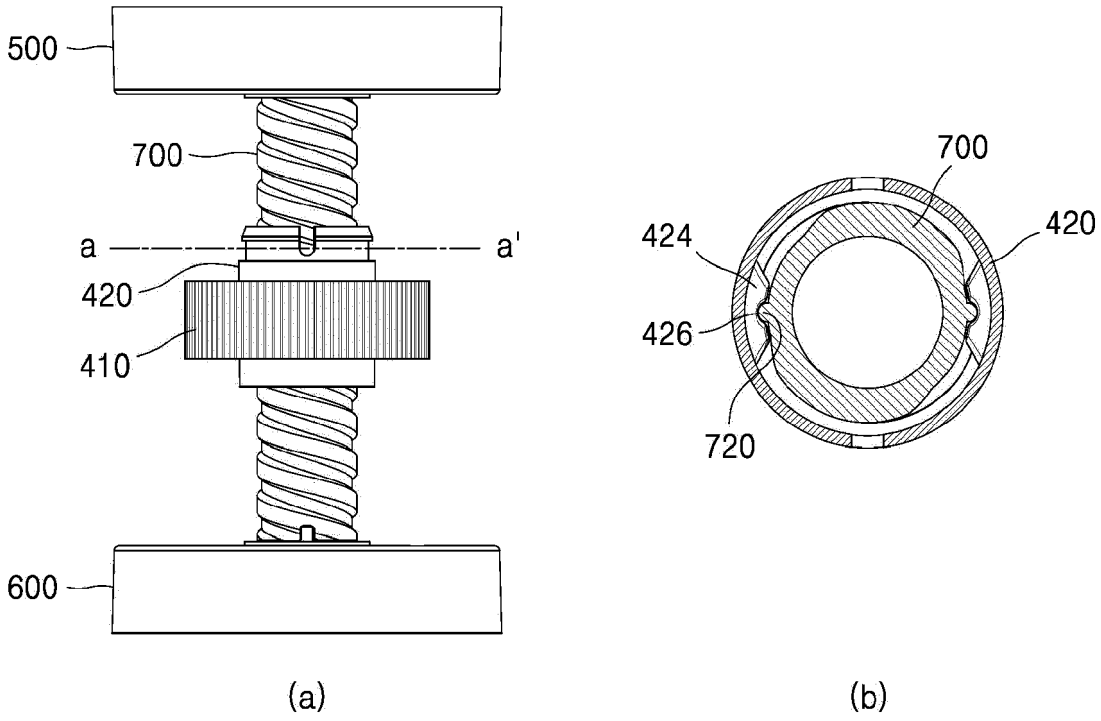

FIG. 4

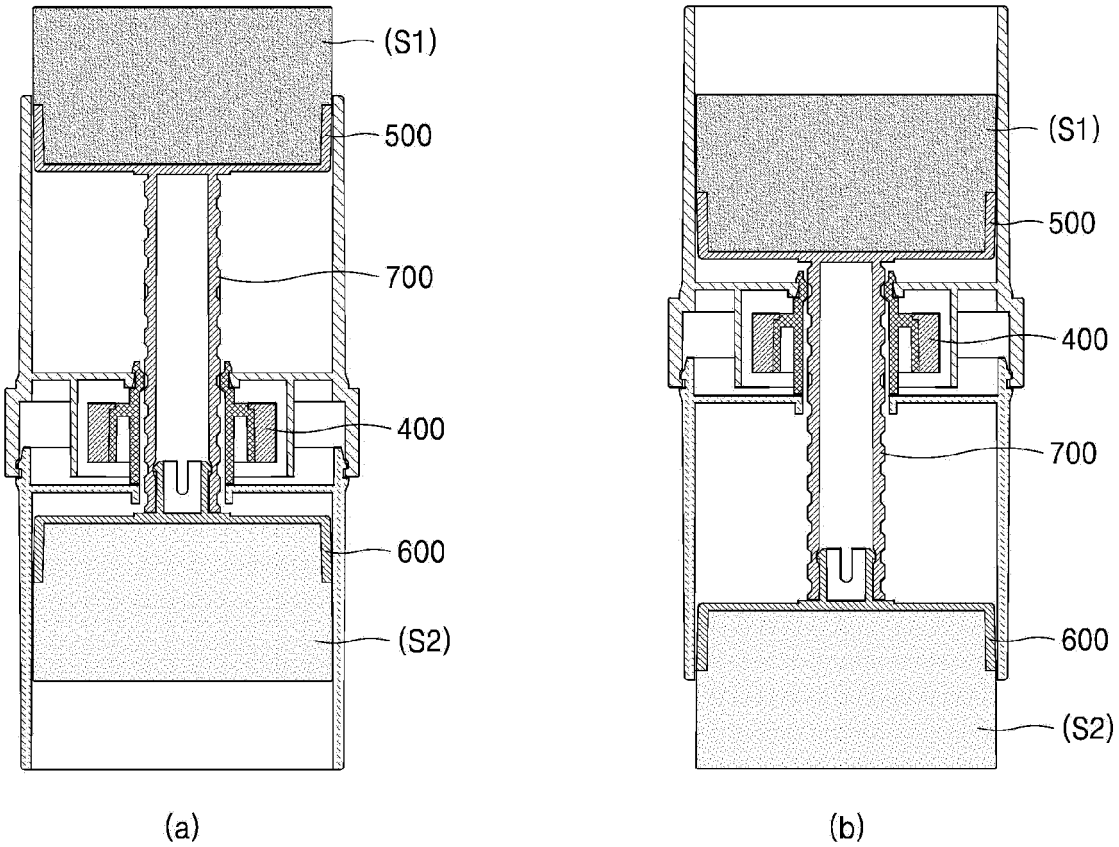

FIG. 5

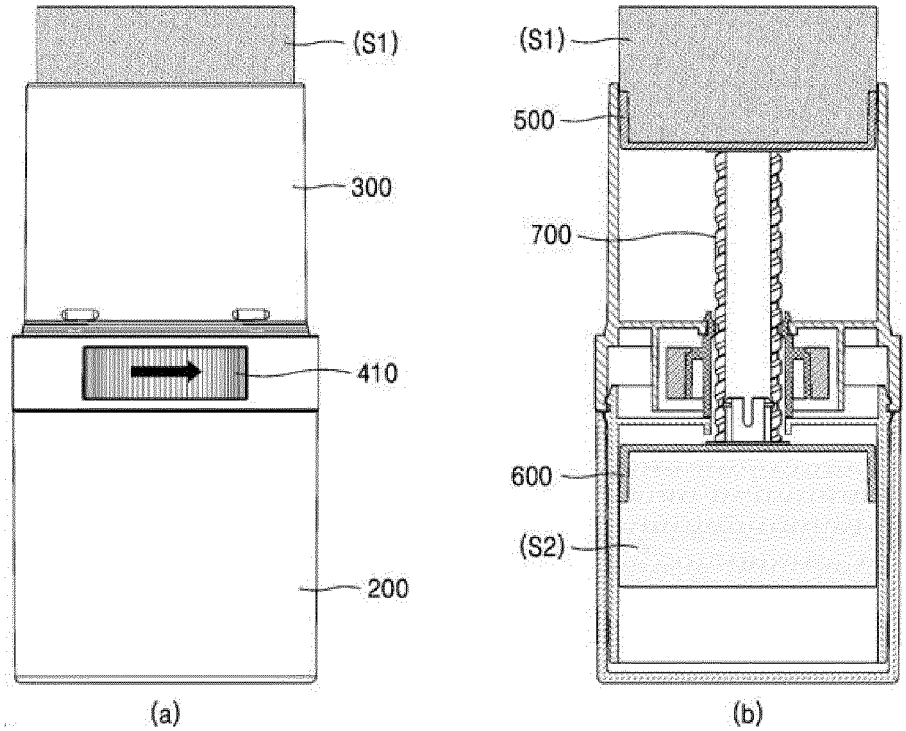
(S1)
300
410
200
(a)
(S1)
500
700
600
(S2)
(b)

FIG. 6a

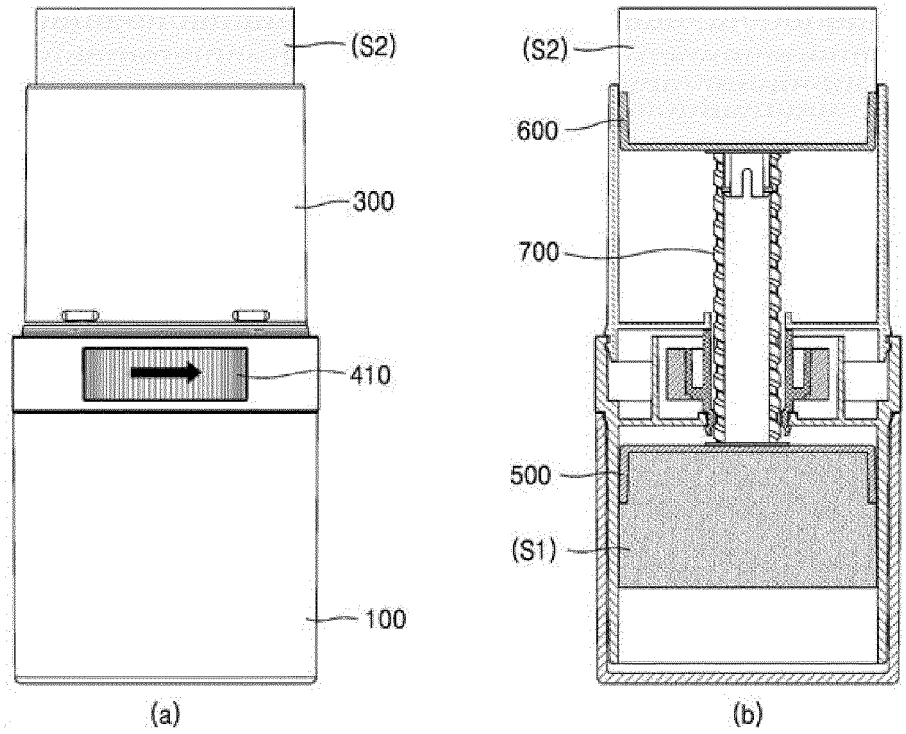
(S2)
300
410
100
(a)
(S2)
600
700
500
(S1)
(b)

FIG. 6b

Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 18 20 6991

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	JP H09 276042 A (ARAKAWA TOMIO) 28 October 1997 (1997-10-28)	1-3,8-10	INV. A45D40/04
Y	* figure 3 *	4-7,9	A45D40/24

Y	JP 3 685462 B2 (ROHTO PHARMA; YOSHINO KOGYOSHO CO LTD) 17 August 2005 (2005-08-17) * figures 3,4 *	4-7	

Y	US 2015/055997 A1 (HOLLOWAY THOMAS F [US]) 26 February 2015 (2015-02-26) * abstract; figures 1-14 *	9	

TECHNICAL FIELDS SEARCHED (IPC)

A45D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	13 May 2019	Longo dit Operti, T

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 18 20 6991

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

13-05-2019

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP H09276042 A	28-10-1997	NONE	
JP 3685462 B2	17-08-2005	JP 3685462 B2	17-08-2005
		JP H08332114 A	17-12-1996
US 2015055997 A1	26-02-2015	US 2015055997 A1	26-02-2015
		WO 2015027207 A1	26-02-2015

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82