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(54) **TUBE VESSEL WITH WIDE NOZZLE**

(57) The present disclosure relates to a tube vessel with a wide nozzle, more particularly a tube vessel with a wide nozzle in which an outer cap is rotatably coupled to an inner cap, and in a process of the outer cap being screw-coupled to a tube neck, the inner cap descends as being pressurized by the outer cap; thereby, a wide

nozzle gets sealed through an opening/closing protrusion of the inner cap. Therefore, in a process of being screw-coupled or being released from a screw coupling, smoothly the wide nozzle performs opening/closing, such that it is possible to provide user convenience.

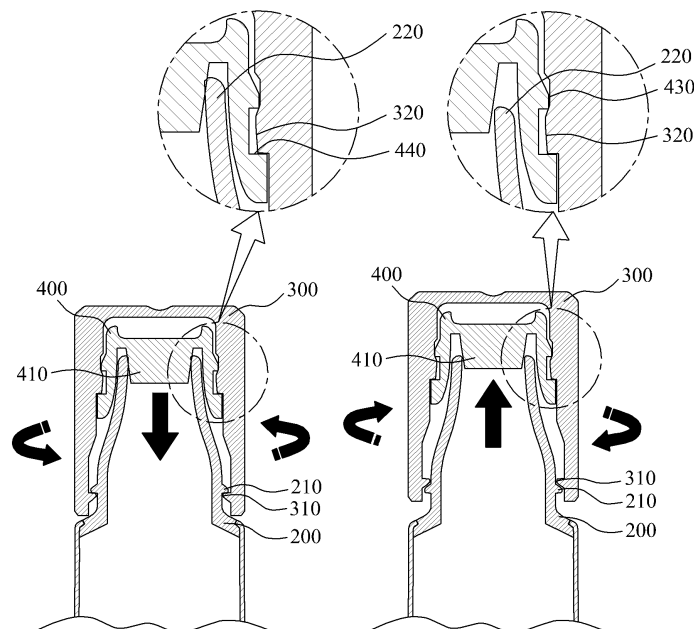


Fig. 5

Description

BACKGROUND

[0001] The present disclosure relates to a tube vessel with a wide nozzle, more particularly a tube vessel with a wide nozzle wherein an outer cap is coupled to an inner cap for rotating on the inner cap, and the inner cap descends as being pressurized by the outer cap in a process of the outer cap being screw-coupled to a tube neck, and thereby a wide nozzle gets sealed through an opening/closing protrusion of the inner cap, such that the wide nozzle can smoothly open/close the wide nozzle in a process of being screw-coupled or being released from a screw coupling, and thereby provides user convenience.

[0002] Generally, tube vessels include: a tube body where contents are stored; a tube neck which supports the tube body, coupled to the tube body, and forms a contents discharging hole; and an over cap which is detachably coupled to the tube neck and opens/closes the contents discharging hole.

[0003] A tube vessel as in the above has a structure wherein inner pressure of the tube body changes when a tube body is pressurized, such that contents can be discharged through the contents discharging hole. However, since a contents discharging hole is formed in a shape of a small circle without exception, it is not easy to apply contents onto a wide area at one, and thus in case of vessels for applying contents onto a wide area such as toothpaste, lip gloss, and eye cream, a user should discharge contents as moving the vessel, thereby resulting in a user inconvenience.

[0004] To resolve these problems, a registered utility model no. 20-0438506 (hereafter called as patent document 1, 'a cap of tube vessel capable of applying content wide' was disclosed.

[0005] The patent document 1 discloses a tube vessel, the tube vessel coupled with a tube vessel cap opening/closing a cover body thereof and discharging contents in a small amount for using, characterized in that a tube vessel cap (10) is composed of a cap body (20) and a cover body (30), wherein the cap body (20) and the cover body (30) are hinge-coupled; at an upper portion of the cap body (20) is protrusively formed a contents outlet (22) which has a wide width and a narrow length; on the contents outlet (22) is formed a contents discharging hole (24) having a zigzag shape; the proportion of the width and the length of the contents outlet (22) is 3:1 or 4:1 and a height should be 1 to 2 times of the length; at a side of the cap body (20) is formed a fastening groove (26); at a side of the cover body (30) is formed a fastening outlet (36) which is fastened to the fastening groove of the cover body (20); and at an inner center of the cover body (30) is formed a cutoff opening (32) which blocks content discharging by encasing and covering the content outlet (22) of the cap body (20).

[0006] The patent document 1 has a structure wherein

the proportion of the width length and the height length is 3:1 to 4:1, such that it is possible to discharge contents thinly and wide and then spread them easily. However, this structure can only be applicable to the tube vessel cap (10) which is composed of a cap body (20) and a cover body (30) and in which the cover body (30) is hinge-coupled to the cap body (20); therefore, there arises a problem that it is not applicable to the tube vessel cap wherein an over cap is attached/detached with screw-coupling.

SUMMARY OF THE INVENTION

[0007] The present invention is devised to solve the said problems above, and its goal is to provide a tube vessel with a wide nozzle wherein an outer cap is coupled to an inner cap for rotating on the inner cap, and the inner cap descends as being pressurized by the outer cap in a process of the outer cap being screw-coupled to a tube neck, and thereby a wide nozzle gets sealed through an opening/closing protrusion of the inner cap, such that the wide nozzle can smoothly open/close the wide nozzle in a process of being screw-coupled or being released from a screw coupling, and thereby provides user convenience.

[0008] To solve the above problems, a tube vessel with a wide nozzle according to the present invention comprises: a tube body where contents are stored; a tube neck which is coupled to an upper portion of the tube body and support the tube body, forming a first screw thread at an outer circumferential surface and provided with a wide nozzle formed with the width length longer than the height length; an outer cap which forms a second screw thread at an inner circumferential surface so as to be detachably coupled in screw-coupling to the tube neck; and an inner cap which is coupled to an inner side of the outer cap and is provided with an opening/closing protrusion at an inner upper side thereof so as to open/close the wide nozzle,

[0009] characterized in that the outer cap is coupled rotatably to the inner cap, and the inner cap is pressurized and descanted by a descent of the outer cap in a process of screw-coupling the outer cap to the tube neck, such that the wide nozzle is closed through the opening/closing protrusion of the inner cap.

[0010] Furthermore, it is characterized in that a rotation guide groove is formed at an outer circumferential surface of the inner cap for guiding an independent rotation of the outer cap, and a coupling protrusion coupled to the rotation guide groove is formed at an inner circumferential surface of the outer cap.

[0011] Furthermore, it is characterized in that a protrusion is formed at an upper portion of the rotation guide groove of the inner cap for preventing the coupling part of the outer cap from moving in an upward direction and being separated from the rotation guide groove in a state of being coupled to the rotation guide groove.

[0012] Furthermore, it is characterized in that a secur-

ing protrusion pressurized by the coupling protrusion is formed at a lower portion of the rotation guide protrusion of the inner cap such that the inner cap can descend together in a process that the outer cap descends by a screw-coupling of the outer cap and the tube neck.

[0013] Furthermore, it is characterized in that, when a screw-coupling of the outer cap and the tube neck is released, an opening/closing protrusion of the inner cap is separated from the wide nozzle and thereby the wide nozzle opens such that the inner cap can descend in a process that the outer cap ascends according to the release of screw-coupling.

[0014] As mentioned above, the present disclosure is configured wherein an outer cap is rotatably coupled to an inner cap, and in a process of the outer cap being screw-coupled to a tube neck, the inner cap descends as being pressurized by the outer cap; thereby, a wide nozzle gets sealed through an opening/closing protrusion of the inner cap. Therefore, in a process of being screw-coupled or being released from a screw coupling, smoothly the wide nozzle performs opening/closing, such that it is possible to provide user convenience.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015]

Fig.1 is an exploded perspective view illustrating a configuration of a tube vessel with a wide nozzle according to an exemplary embodiment of the present invention.

Fig.2 an assembled perspective view illustrating a configuration of the tube vessel with a wide nozzle according to an exemplary embodiment of the present invention.

Fig.3 is an assembled cross-sectional view illustrating a configuration of the tube vessel with a wide nozzle according to an exemplary embodiment of the present invention.

Figs.4 to 6 are explanatory drawings illustrating the operational state of the tube vessel with a wide nozzle according to an exemplary embodiment of the present invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0016] Hereinafter, exemplary embodiments of the present invention will be described in detail with reference to the accompanying drawings. The same reference numerals provided in the drawings indicate the same members.

[0017] Fig.1 is an exploded perspective view illustrating a configuration of a tube vessel with a wide nozzle according to an exemplary embodiment of the present invention. Fig.2 an assembled perspective view illustrating a configuration of the tube vessel with a wide nozzle according to an exemplary embodiment of the present

invention. Fig.3 is an assembled cross-sectional view illustrating a configuration of the tube vessel with a wide nozzle according to an exemplary embodiment of the present invention.

5 [0018] Referring to Figs.1 to 3, a tube vessel with a wide nozzle according to an exemplary embodiment of the present invention includes a tube body 100, a tube neck 200, an outer cap 300, and an inner cap 400.

10 [0019] The tube body 100, storing contents, is made of soft tube material such that it can be deformed by user's pressurization, and contents can be discharged by inner pressure therein.

[0020] The tube neck 200 is coupled to an upper portion of the tube body 100 and supports the tube body 100, forming a first screw thread 210 at an outer circumferential surface such that the outer cap 300 can be screw-coupled.

15 [0021] At the tube neck 200 is provided a wide nozzle 220 for discharging contents stored in the tube body 100, wherein the wide nozzle 220, in the present invention, is characterized to be formed with the width length longer than the height length, and thereby it is possible to discharge contents thinly and widely through the wide nozzle 220.

20 [0022] Conventionally, toothpaste, lip gloss, eye cream and etc. are supposed to be applied onto a wide area. By providing a wide nozzle 220 as the above, it is possible to discharge contents at a time and easily apply onto a wide region.

25 [0023] It is possible that a size of the wide nozzle 220 can be determined within a range of the width length by forming longer than the height length according to the area of the region for the contents to be applied or the amount of contents discharged at a time.

30 [0024] The outer cap 300, detachably coupled in screw-coupling to the tube neck 300, is provided with a second screw thread 310 at an inner circumferential surface for screw-coupling to the first screw thread 210 of the tube neck 200.

35 [0025] The present invention is characterized in that at an inner side of the outer cap is provided a coupling protrusion 320 which is disposed at an upper portion of the second screw thread 310 and coupled to a rotation guide groove 420 of the inner cap 400, wherein the outer cap is configured to be able to rotate on the inner cap through an undercut coupling of the coupling protrusion 320 and the rotation guide groove 420. As the outer cap 300 descends in a process of screw-coupling the outer cap 300 to the tube neck 200, the coupling protrusion 320 of the outer cap 300 pressurizes a securing protrusion 440 of the inner cap 400 and then the inner cap 400 descends together along, such that a wide nozzle 220 gets closed through an opening/closing protrusion 410 of the inner cap 400.

40 [0026] Furthermore, when the outer cap 300 is released from a screw-coupling with the tube neck 200, the coupling protrusion 320 pressurizes a lower end of a protrusion 430 of the inner cap 400 in a process of the outer

cap ascending by the release of screw-coupling, and thus the inner cap 400 ascends together along, such that the opening/closing protrusion 410 of the inner cap 400 becomes separated from the wide nozzle 220, thereby leading the wide nozzle 220 to be opened.

[0027] The inner cap 400, coupled at an inner side of the outer cap 300, is provided with an opening/closing protrusion 410 at an upper inner side thereof for opening/closing the wide nozzle 220 by attachment/detachment of the outer cap 300, wherein the opening/closing protrusion 410 can have a shape and a size which corresponds to the wide nozzle 220. However, it is preferred to have a structure of gradually getting wider towards the upper portion for making it easy for the opening/closing protrusion 410 to be inserted into the wide nozzle 220.

[0028] The present invention is characterized in that a rotation guide groove 420 is formed at an outer circumferential surface of the inner cap 400 for guiding an independent rotation of the outer cap 300. A coupling protrusion 320 of the outer cap 300 is coupled to the rotation guide groove 420, and thereby the outer cap 300 rotates on the inner cap 400. A protrusion 430 is formed at an upper portion of the rotation guide groove 420 such that the coupling protrusion 320 of the outer cap 300 moves upwards in a state of being coupled to the rotation guide groove 420 and prevents the coupling protrusion 320 from being separated from the rotation guide groove 420.

[0029] The protrusion 430 releases screw-coupling of the outer cap 300 and the tube neck 200 and is pressurized by a screw-coupling when the outer cap 300 ascends, and ascends along with the inner cap.

[0030] Meanwhile, a securing protrusion which is pressurized by the coupling protrusion 320 is formed at a lower portion of the rotation guide groove 420 of the inner cap 400 such that the inner cap 400 can descend together along in a process of the outer cap 300 descending by a screw-coupling of the outer cap 300 and the tube neck 200.

[0031] Hereafter, referring Figs. 4 to 6, an operational procedure of a tube vessel with a wide nozzle according to an exemplary embodiment of the present invention will be explained.

[0032] Firstly, as illustrated in Fig. 4, after securing the outer cap 300 to the tube neck 200 in a state of placing the outer cap 300 at an upper portion of the tube neck 200, as illustrated in Fig. 5, the outer cap 300 independently rotates while the inner cap 400 is being fixed when rotating the outer cap 300 to one side direction, such that a first screw thread 210 of the tube neck 200 and a second screw thread 310 of the outer cap 300 get to be screw-coupled and then the outer cap 300 descends. At this time, the coupling protrusion 320 of the outer cap pressurizes a securing protrusion 440 of the inner cap 400, and thereby the inner cap 400 descends together long. Due to this, a wide nozzle 220 gets closed through an opening/closing protrusion 410 of the inner cap 400.

[0033] Meanwhile, when the outer cap 300 and the tube neck are released from screw-coupling, the coupling

protrusion 320 pressurizes a lower end of the protrusion 430 of the inner cap 400 while the outer cap 300 is ascending according to being released from the screw-coupling, and thereby the inner cap 400 ascends together along. Therefore, the opening/closing protrusion 410 of the inner cap 400 gets separated from the wide nozzle 220, such that the wide nozzle 220 gets opened.

[0034] When the wide nozzle 220 is open as in the above, a user can pressurize the tube body 100 as illustrated in Fig. 6, and discharge contents thinly and widely through the wide nozzle 220, thereby easily applying contents onto skin.

[0035] The present invention having a structure of a wide nozzle which has a longer width length than a height length is configured to have a wide nozzle 220 sealed by the same usability as screw-coupling an over cap to a conventional tube vessel, such that a user does not need to recognize a direction of an opening/closing protrusion 410 for sealing the wide nozzle 220, thereby providing user convenience.

[0036] As described above, optimal embodiments have been disclosed in the drawings and the specification. Although specific terms have been used herein, these are only intended to describe the present invention and are not intended to limit the meanings of the terms or to restrict the scope of the present invention as disclosed in the accompanying claims. Accordingly, those skilled in the art will appreciate that various modifications and other equivalent embodiments are possible from the above embodiments. Therefore, the scope of the present invention should be defined by the technical spirit of the accompanying claims.

Claims

1. A tube vessel with a wide nozzle comprising:

a tube body (100) wherein contents are held;
a tube neck (200) coupled to an upper portion of the tube body (100) and supporting the tube body, further comprising a first screw thread (210) at an outer circumferential surface and a wide nozzle (220) formed with a width length longer than a height length;
an outer cap (300) further comprising a second screw thread (310) for being detachably coupled to the tube neck (200) in screw-coupling;
an inner cap (400) coupled to an inner side of the outer cap (300), further comprising an opening/closing protrusion (410) at an upper inner side thereof for opening/closing the wide nozzle (220) by attaching/detaching of the outer cap (300),

characterized in that the outer cap (400) is rotatably coupled on the inner cap 400, and the wide nozzle (220) is closed through an opening/closing protrusion

sion (410) while the inner cap is pressurized by a descent of the outer cap (300) and descends downwards in a process of screw-coupling the outer cap (300) to the tube neck (200).

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2. The tube vessel with a wide nozzle of claim 1, wherein a rotation guide groove (420) is provided at an outer circumferential surface of the inner cap (400) for guiding an independent rotation of the outer cap, and a coupling protrusion (320) coupled to the rotation guide groove (420) is provided at an inner circumferential surface of the outer cap (300). 10

3. The tube vessel with a wide nozzle of claim 2, wherein a protrusion (430) is provided at an upper portion of the rotation guide groove (410) of the inner cap (400) such that the coupling protrusion (320) of the outer cap (300) moves upwards in a state of being coupled to the rotation guide groove (420) and is prevented from being separated from the rotation guide groove (420). 15
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4. The tube vessel with a wide nozzle of claim 2, wherein a securing protrusion (440) pressurized by the coupling protrusion (320) is provided at a lower portion of the rotation guide groove (420) of the inner cap (400) such that the inner cap (400) can descend together along while the outer cap (300) is descending by a screw-coupling of the outer cap (300) and the tube neck (200). 25
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5. The tube vessel with a wide nozzle of claim 3, wherein the coupling protrusion (320) pressurizes a lower end of the protrusion (430), when the outer cap (300) and the tube neck (200) are released from the screw-coupling, in a process of the outer cap (300) ascending according to being released from the screw-coupling, and thereby the inner cap (400) ascends together along, such that the opening/closing protrusion (410) of the inner cap (400) is separated from the wide nozzle (220) and opens the wide nozzle (220). 35
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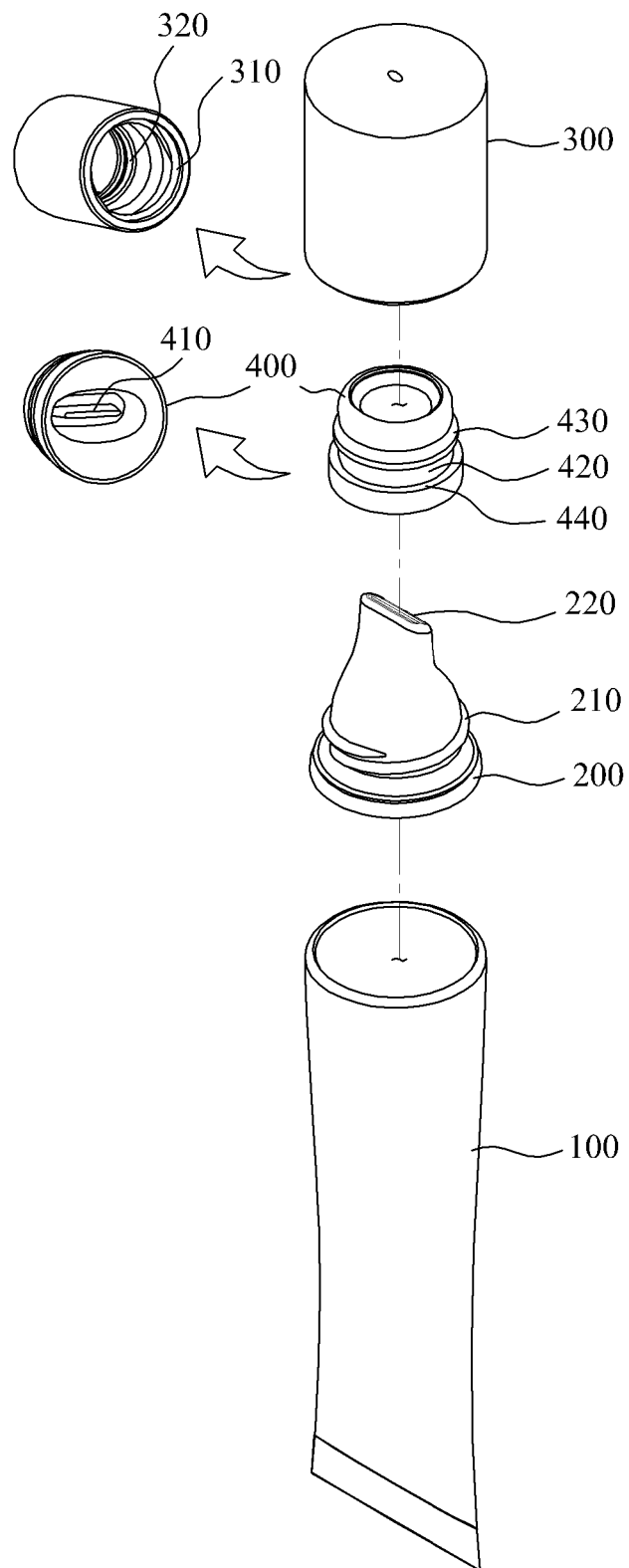


Fig. 1

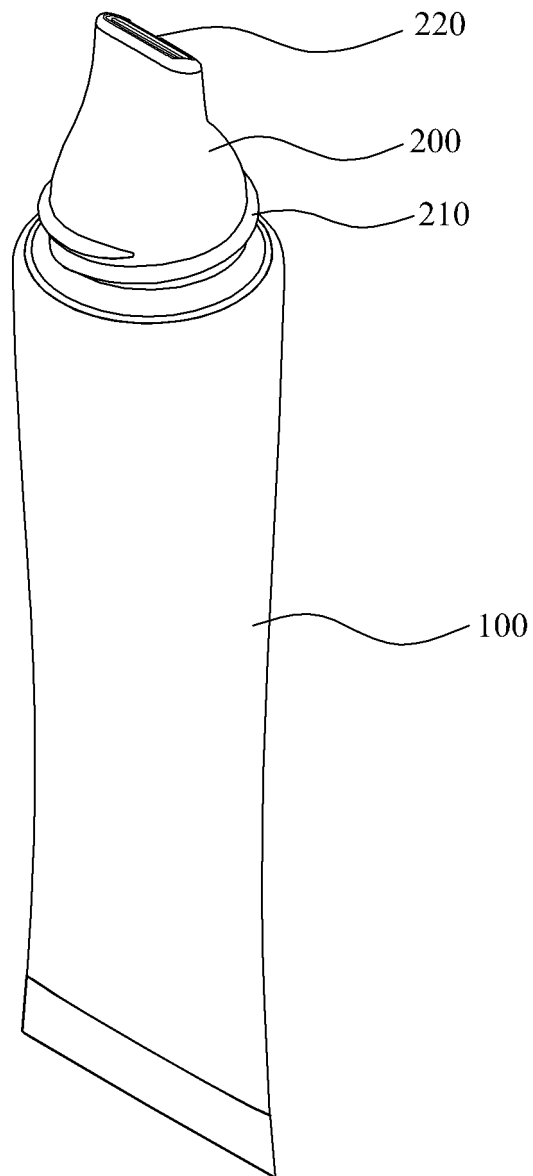


Fig. 2

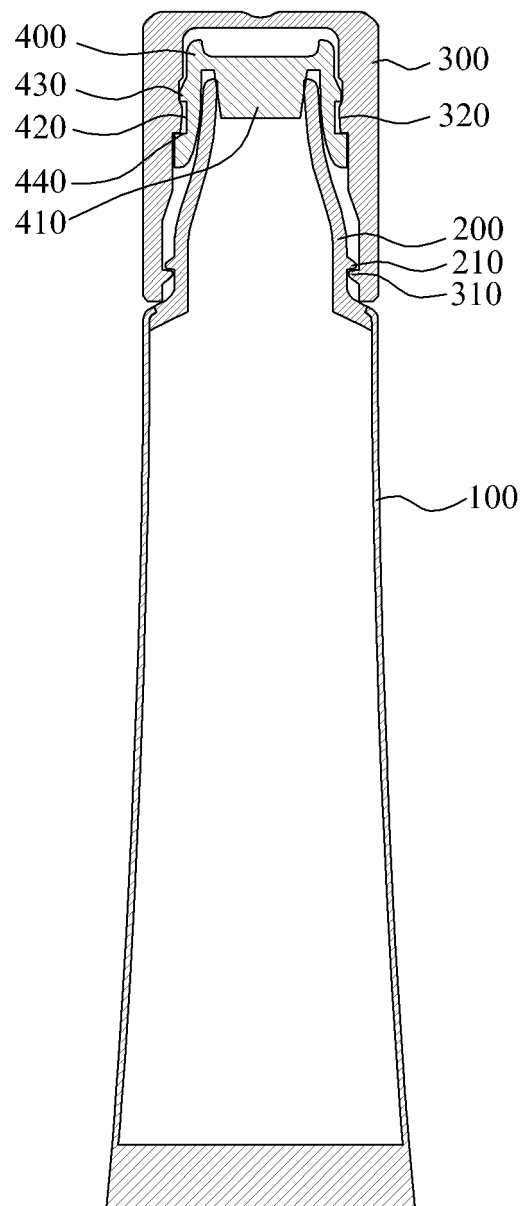


Fig. 3

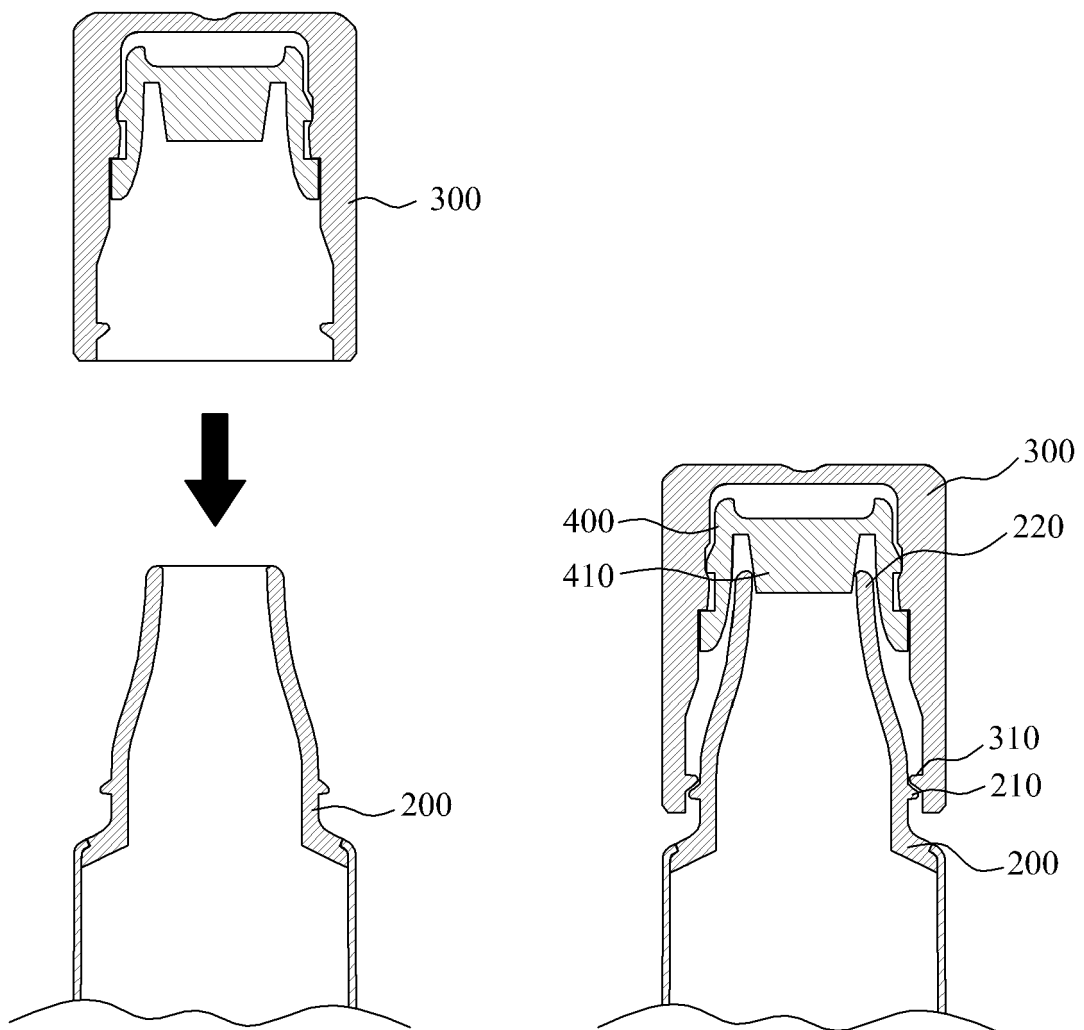


Fig. 4

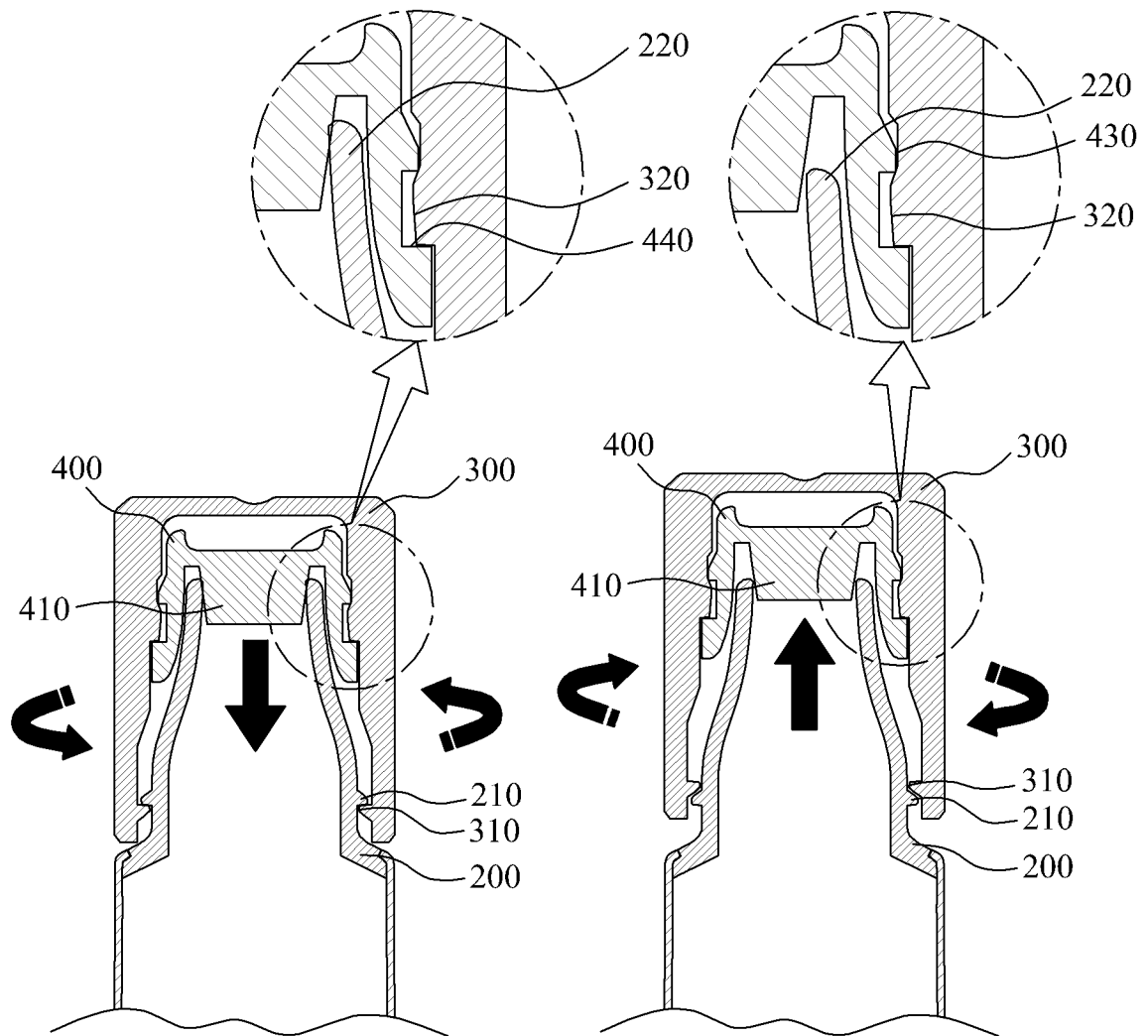


Fig. 5

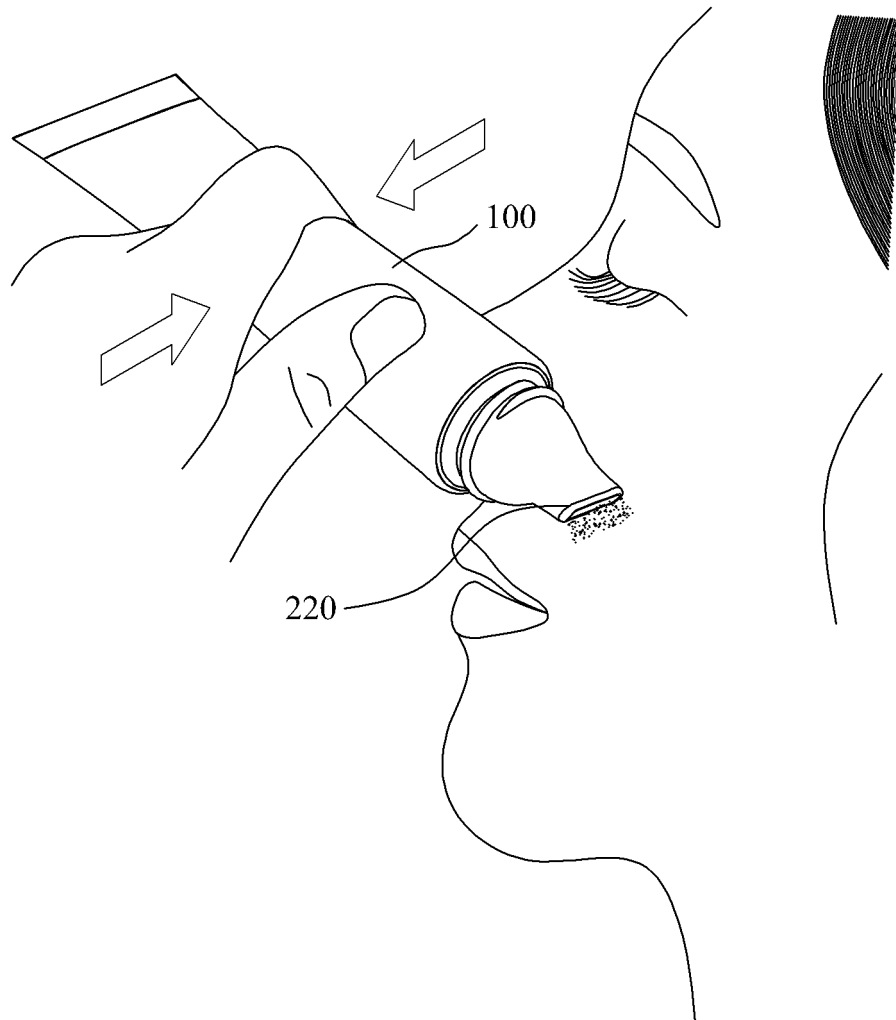


Fig. 6



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Application Number
EP 17 18 1656

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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 22 June 2018	Examiner van Overbeek, Kajsa
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
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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