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(54) **REPLACEABLE CONTAINER**

(57) The present invention provides a refillable container, including a shoulder sleeve, including a top wall and a side wall bent and extending downward from the edge of the top wall; a hose, used for holding liquid, wherein a liquid outlet end of the hose is detachably connected to the inner side of the top wall; an outer cylinder, detachably connected to the side wall and accommodating the hose therein; and a cylinder cover, detachably connected to the side wall of the shoulder sleeve and opposite to the outer cylinder. The packaging container of the present invention includes an outer package composed of the shoulder sleeve, the outer cylinder and the cylinder cover and an inner package composed of the hose, and the hose is detachably connected with the outer package. After the contents of the hose are used up, the hose can be replaced with a hose full of liquid, and the outer package can be reused, so that the packaging cost of products can be greatly reduced, and the produced waste can be reduced.

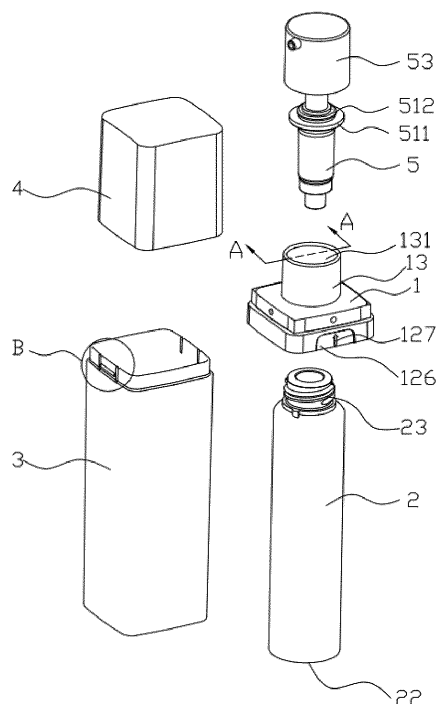


Fig. 2

## Description

### TECHNICAL FIELD

**[0001]** The present invention belongs to the technical field of packaging containers, and in particular relates to a refillable container.

### BACKGROUND

**[0002]** Ordinary containers on the current market, such as bottle containers of body lotion and hand sanitiser, are discarded due to the fact that when contents of the bottle containers are used up, the bottle containers are no longer useful. As a result, a large number of packaging waste of various materials, such as glass, rubber and some other high polymer materials that are hard to deal with, is produced.

**[0003]** Therefore, the prior art needs to be improved.

### SUMMARY

#### Technical Problem

**[0004]** The technical problem to be solved by the present invention is to provide a refillable container, which aims to solve the problem that the existing packaging bottle cannot be reused after the contents of the existing packaging bottle are used up, resulting in waste pollution.

#### Technical Solution

**[0005]** In order to solve the above technical problem, the present invention is realized as follows: the refillable container includes:

a shoulder sleeve, including a top wall and a side wall bent and extending downward from the edge of the top wall;  
a hose, used for holding liquid, wherein a liquid outlet end of the hose is detachably connected to the inner side of the top wall;  
an outer cylinder, detachably connected to the side wall and accommodating the hose therein; and  
a cylinder cover, detachably connected to the side wall of the shoulder sleeve and opposite to the outer cylinder.

**[0006]** Furthermore, the top wall is provided with a connecting piece penetrating into the shoulder sleeve from the top wall, the connecting piece is provided with a through hole with an axis being in an up-down direction, the side wall of the through hole is provided with an internal thread close to the liquid outlet end, and the liquid outlet end of the hose is provided with an external thread matched with the internal thread.

**[0007]** Furthermore, the hose includes a liquid outlet,

and the liquid outlet is arranged inside the hose and close to the liquid outlet end;

a sealing sheet, a sealing film or a detachable bottle cap is arranged at the liquid outlet, wherein the sealing sheet is provided with a cross-shaped breaking slot.

**[0008]** Furthermore, the refillable container also includes a pumping-out assembly fixed in the through hole and used for pumping out liquid in the hose from the liquid outlet.

**[0009]** Furthermore, a flanging is arranged on the side wall of the through hole, and a first buckle is arranged on the flanging;

the pumping-out assembly includes a pump core with a flange in the middle and a pressing cover sleeving the top of the pump core, and the pump core is provided with a second buckle matched with the first buckle at the upper side of the flange; the pumping-out assembly passes through the through hole, the top surface of the flange abuts against the flanging, and the first buckle is matched with the second buckle to fix the pump core; after the external thread of the hose and the internal thread on the side wall of the through hole are in perfect fit, the bottom end of the pump core communicates with the interior of the hose.

**[0010]** Furthermore, the bottom of the hose is provided with a liquid inlet, and the size of the liquid inlet is adjustable.

**[0011]** Further, the side wall includes a first side wall bent and extending downward from the edge of the top wall, a second side wall extending outward along the edge of the first side wall, and a third side wall bent and extending downward along the edge of the second side wall;

the opening end of the outer cylinder is provided with a step, the end part of the third side wall abuts against the step, and the end part of the cylinder cover abuts against the second side wall.

**[0012]** Furthermore, the outer wall of the outer cylinder is provided with a protrusion, and the protrusion is located between the step and the opening of the outer cylinder; the inner side of the third side wall is provided with a groove matched with the protrusion.

**[0013]** Furthermore, the left and right sides of the protrusion are provided with notched slots, and the inner side of the third side wall is provided with positioning ribs matched with the notched slots.

**[0014]** Furthermore, the outer cylinder is provided with an air hole.

#### Beneficial Effect

**[0015]** Compared with the prior art, the present invention has the beneficial effects that: the packaging container of the present invention includes an outer package composed of the shoulder sleeve, the outer cylinder and

the cylinder cover and an inner package composed of the hose, and the hose is detachably connected with the outer package. After the contents of the hose are used up, the hose can be replaced with a hose full of liquid, and the outer package can be reused, so that the packaging cost of products can be greatly reduced, and the produced waste can be reduced.

## BRIEF DESCRIPTION OF THE DRAWINGS

### [0016]

Fig. 1 is a three-dimensional diagram of an embodiment of a refillable container of the present invention.

Fig. 2 is an exploded view of Fig. 1.

Fig. 3 is a sectional view of a shoulder sleeve along the line A-A in Fig. 2.

Fig. 4 is a sectional view of a hose along the line A-A in Fig. 2.

Fig. 5 is an exploded view of an embodiment of a pumping-out assembly of the present invention.

Fig. 6 is a sectional view of assembly of a pumping-out assembly and a shoulder sleeve.

Fig. 7 is an enlarged view of the portion B in Fig. 2.

Fig. 8 is a schematic diagram of a use process of a refillable container in the embodiment of the present invention.

## DETAILED DESCRIPTION

[0017] In order to make the objects, technical solutions and advantages of the present invention clearer, the present invention will be further described in detail in combination with the embodiment. It should be understood that the specific embodiments described herein are only used to explain the present invention and are not used to limit the present invention.

[0018] The present invention provides a refillable container, with the three-dimensional diagram shown in Fig. 1, and the exploded view shown in Fig. 2. The refillable container includes a shoulder sleeve 1, a hose 2 used for holding liquid, and an outer cylinder 3 and a cylinder cover 4 connected to the lower side and the upper side of the shoulder sleeve 1, respectively. The shoulder sleeve 1 includes a top wall 11 and a side wall 12 bent and extending downward from the edge of the top wall 11. The liquid outlet end of the hose 2 is detachably connected to the inner side of the top wall 11, and the outer cylinder 3 accommodates the hose 2 therein and is detachably connected to the side wall 12 from the lower side. The cylinder cover 4 is detachably buckled on the shoulder sleeve 1 from the upper side and is connected with the side wall 12 of the shoulder sleeve 1.

[0019] The packaging container of the present invention includes an outer package composed of the shoulder sleeve 1, the outer cylinder 3 and the cylinder cover 4 and an inner package composed of the hose 2, and the

hose 2 is detachably connected with the outer package. After the contents of the hose 2 are used up, the hose 2 can be replaced with a hose 2 full of liquid, and the outer package can be reused, so that the packaging cost of products can be greatly reduced, and the produced waste can be reduced.

[0020] Specifically, the present invention provides an embodiment of detachable connection of a hose 2, as shown in Fig. 3. A connecting piece 13 is arranged on the top wall 11 of the shoulder sleeve 1, the connecting piece 13 penetrates into the shoulder sleeve 1 from the top wall 11, the connecting piece 13 is provided with a through hole 131 with the axis being in the up-down direction, the side wall of the through hole 131 is provided with an internal thread 132 close to the liquid outlet end of the hose, and the liquid outlet end of the hose 2 is provided with an external thread 23 matched with the internal thread 132. In this embodiment, the shape of the connecting piece 13 being cylindrical is taken as an example, and can also be square, oval or other unconventional shapes in practical application, and the present invention does not make limitation thereto.

[0021] Specifically, the structure of an embodiment of a hose 2 is shown in Fig. 4 which is a sectional view of a liquid outlet end. The hose 2 includes a liquid outlet 21 which is arranged inside the hose 2 and close to the liquid outlet end; a sealing sheet 24 is arranged at the liquid outlet 21, and the sealing sheet is provided with a cross-shaped breaking slot, as shown in Fig. 5.

[0022] Preferably, a pumping-out assembly 5 can also be arranged to pump out the liquid in the hose 2 from the liquid outlet 21, as shown in Fig. 5, the pumping-out assembly 5 is fixed in the through hole 131, and the assembly diagram is shown in Fig. 6. In order to observe the structure conveniently, the pumping-out assembly 5 is shown upside down in Fig. 5. Specifically, the pumping-out assembly 5 includes a pump core 51 and a pressing cover 53, the middle part of the pump core 51 is provided with a flange 511, and the upper side of the flange 511 is provided with a second buckle 512. The pressing cover 53 sleeves the top of the pump core 51 and is provided with a liquid outlet hole 531. A flanging 133 is arranged on the side wall of the through hole 131, and a first buckle 134 is arranged on the flanging 133. During assembly, the pumping-out assembly 5 passes through the through hole 131, the top surface of the flange 511 abuts against the flanging 133, the second buckle 512 is matched with the first buckle 134 to fix the pump core, and the whole pumping-out assembly 5 is fixed in the through hole 131 of the connecting piece 13 of the shoulder sleeve 1. In the figure, the first buckle and the second buckle are mutually matched concave-convex structures. In this embodiment, after the external thread 23 of the hose 2 and the internal thread 132 on the inner wall of the through hole 131 are in perfect fit, the bottom end of the pump core 51 breaks through the cross-shaped breaking slot of the sealing sheet 24 and communicates with the interior of the hose 2. After the pressing cover 53 is repeatedly

pressed, the liquid may flow out from the liquid outlet hole 531. Of course, the sealing sheet 24 here may also be replaced by a sealing film, and the bottom end of the pump core 51 can achieve the same effect by only puncturing the sealing film. A detachable bottle cap may also be adopted for replacing the sealing sheet 24, and during use, the bottle cap is removed, and then the hose 2 is assembled on the shoulder sleeve 1. In addition, in this embodiment, the assembly position of the flange 511 may be set at the tail end of the upper side of the internal thread 132. After the hose 2 is completely assembled, the top surface of the liquid outlet end of the hose 2 abuts against the bottom surface of the flange 511, so that the fixation of the pump core 51 is firmer.

**[0023]** The present invention further provides an embodiment of the shoulder sleeve 1, the outer cylinder 3 and the cylinder cover 4 which are detachable. Specifically, as shown in Fig. 2 and Fig. 3, the side wall 12 of the shoulder sleeve 1 includes a first side wall 121 bent and extending downward from the edge of the top wall 11, a second side wall 122 extending outward along the edge of the first side wall 121, and a third side wall 123 bent and extending downward along the edge of the second side wall 122; a step 31 is arranged at the opening end of the outer cylinder 3, as shown in Fig. 7, when the outer cylinder 3 is covered with the shoulder sleeve 1, the end part of the third side wall 123 of the shoulder sleeve 1 abuts against the step 31, and when the cylinder cover 4 covers the shoulder sleeve 1, the end part of the cylinder cover 4 abuts against the second side wall of the shoulder sleeve 1.

**[0024]** Furthermore, a protrusion 32 may be arranged on the outer wall of the outer cylinder 3, and the protrusion 32 is located between the step 31 and the opening of the outer cylinder 3; meanwhile, a groove 124 matched with the protrusion 32 is formed in the inner side of the third side wall 123 of the shoulder sleeve 1. In order to facilitate disassembly, notched slots 33 may be arranged at the left and right sides of the protrusion 32, so that when the protrusion 32 and the groove 124 are in snap fit or disassembled, the cylinder wall at the protrusion 32 deforms. In addition, positioning ribs 125 matched with the notched slots 33 may also be arranged on the inner side of the third side wall 123 of the shoulder sleeve 1, as shown in Fig. 3, and can play the role of identifying the direction for positioning. A hand position for disassembly 126 may also be arranged at the outer side of the third side wall 123 of the shoulder sleeve, and at the same time, an arrow 127 is set for indicating the disassembly direction. The outer cylinder may also be provided with an air hole, in this way, in the process that as the contents are pumped out, the volume of the hose is continuously reduced, the outside air may enter the outer cylinder so as to prevent negative pressure from being produced in the outer cylinder for causing the contents be inconvenient to pump out.

**[0025]** The operation process of the refillable container in the embodiment of the present invention is shown in

Fig. 8. Liquid is filled from a liquid inlet. Preferably, the size of the liquid inlet is adjustable. After the filling is completed, the liquid inlet is closed up and sealed, and then the outer cylinder is assembled. During use, the cylinder cover is removed, the pressing cover is pressed, the pump core sucks out the contents, the hose shrinks and deforms automatically, and then air enters the outer cylinder from the air inlet of the outer cylinder, so as to prevent negative pressure from being produced in the outer cylinder. During the whole use process, air does not enter the hose to contaminate the contents, which ensures the quality and shelf life of the product. After the contents are used up, the outer cylinder is disassembled, and then the hose is unscrewed from the shoulder sleeve for replacement, so that the operation is convenient and practical.

**[0026]** The above description is only preferred embodiments of the present invention and is not intended to limit the present invention. Any modification, equivalent substitution and improvement made within the spirit and principle of the present invention shall be included in the protection scope of the present invention.

## Claims

1. A refillable container, **characterized by** comprising:

- a shoulder sleeve, comprising a top wall and a side wall bent and extending downward from the edge of the top wall;
- a hose, used for holding liquid, wherein a liquid outlet end of the hose is detachably connected to the inner side of the top wall;
- an outer cylinder, detachably connected to the side wall and accommodating the hose therein;
- and
- a cylinder cover, detachably connected to the side wall of the shoulder sleeve and opposite to the outer cylinder.

2. The refillable container according to claim 1, **characterized in that** the top wall is provided with a connecting piece penetrating into the shoulder sleeve from the top wall, the connecting piece is provided with a through hole with an axis being in an up-down direction, the side wall of the through hole is provided with an internal thread close to the liquid outlet end, and the liquid outlet end of the hose is provided with an external thread matched with the internal thread.

3. The refillable container according to claim 2, **characterized in that** the hose comprises a liquid outlet, and the liquid outlet is arranged inside the hose and close to the liquid outlet end;

a sealing sheet, a sealing film or a detachable bottle cap is arranged at the liquid outlet, wherein the sealing sheet is provided with a cross-shaped breaking

slot.

4. The refillable container according to claim 3, **characterized by** also comprising a pumping-out assembly fixed in the through hole and used for pumping out liquid in the hose from the liquid outlet. 5
  
5. The refillable container according to claim 4, **characterized in that** a flanging is arranged on the side wall of the through hole, and a first buckle is arranged on the flanging; 10
 

the pumping-out assembly comprises a pump core with a flange in the middle and a pressing cover sleeving the top of the pump core, and the pump core is provided with a second buckle matched with the first buckle at the upper side of the flange; 15

the pumping-out assembly passes through the through hole, the top surface of the flange abuts against the flanging, and the first buckle is matched with the second buckle to fix the pump core; 20

after the external thread of the hose and the internal thread on the side wall of the through hole are in perfect fit, the bottom end of the pump core communicates with the interior of the hose. 25
  
6. The refillable container according to claim 3, **characterized in that** the bottom of the hose is provided with a liquid inlet, and the size of the liquid inlet is adjustable. 30
  
7. The refillable container according to claim 1, **characterized in that** the side wall comprises a first side wall bent and extending downward from the edge of the top wall, a second side wall extending outward along the edge of the first side wall, and a third side wall bent and extending downward along the edge of the second side wall; 35
 

the opening end of the outer cylinder is provided with a step, the end part of the third side wall abuts against the step, and the end part of the cylinder cover abuts against the second side wall. 40
  
8. The refillable container according to claim 7, **characterized in that** the outer wall of the outer cylinder is provided with a protrusion, and the protrusion is located between the step and the opening of the outer cylinder; 45
 

the inner side of the third side wall is provided with a groove matched with the protrusion. 50
  
9. The refillable container according to claim 8, **characterized in that** the left and right sides of the protrusion are provided with notched slots, and the inner side of the third side wall is provided with positioning ribs matched with the notched slots. 55

10. The refillable container according to claim 1, **characterized in that** the outer cylinder is provided with an air hole.

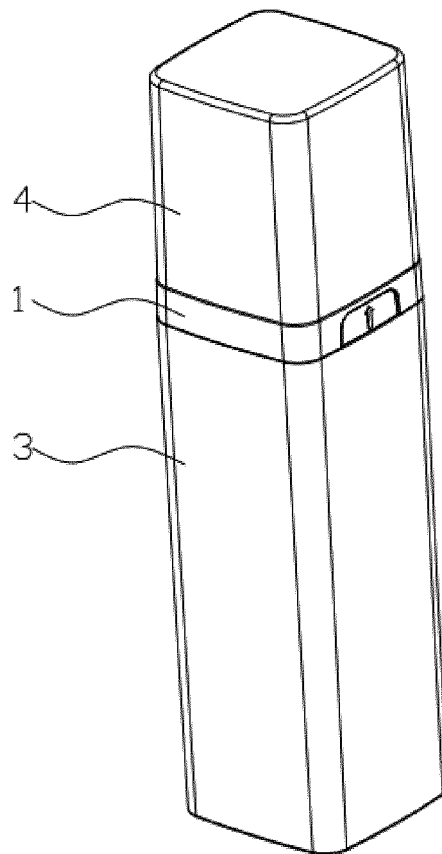


Fig. 1

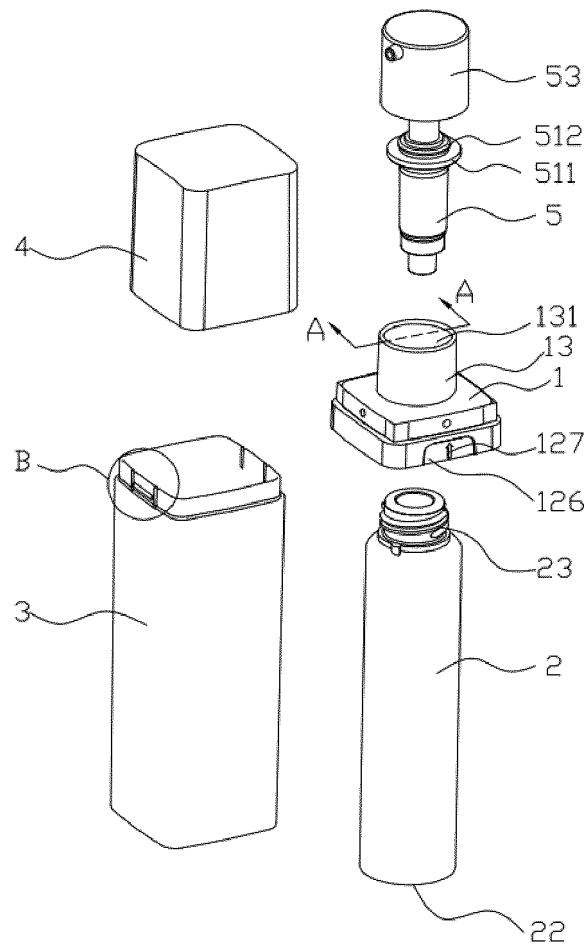


Fig. 2

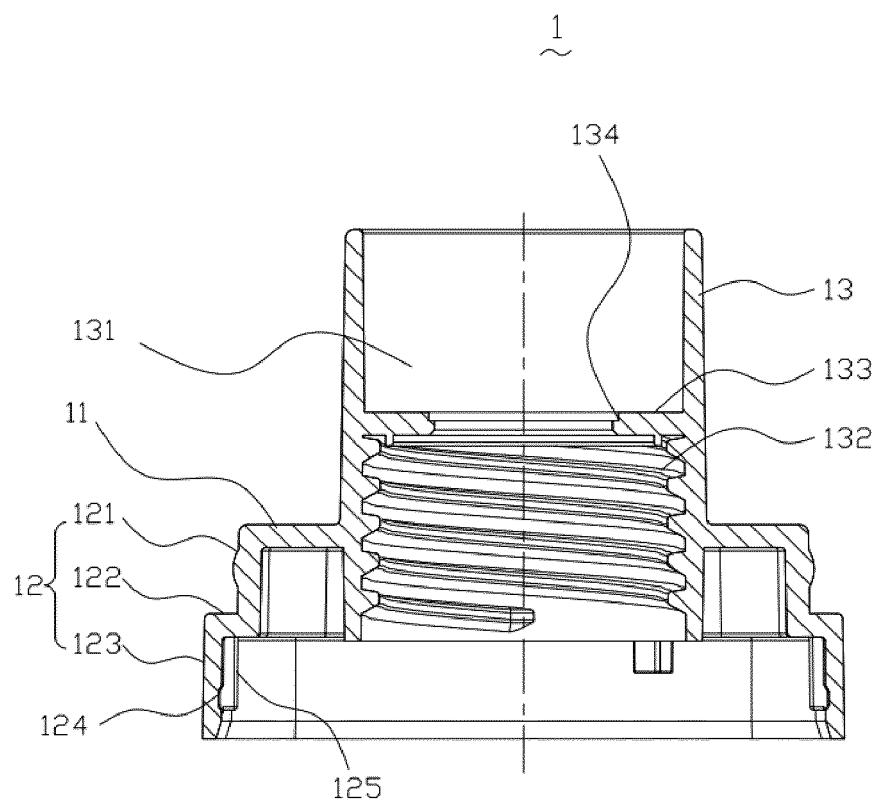


Fig. 3



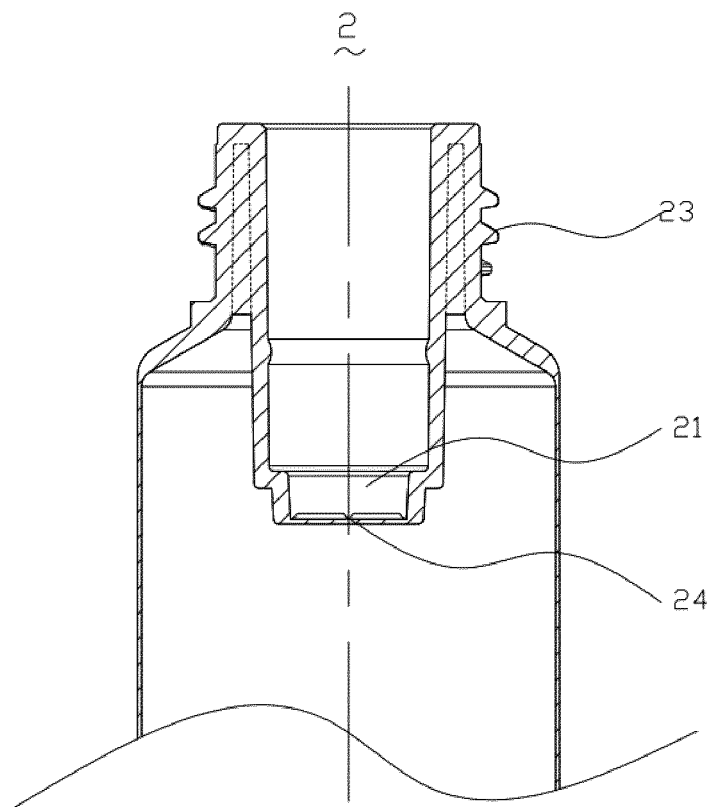


Fig. 4

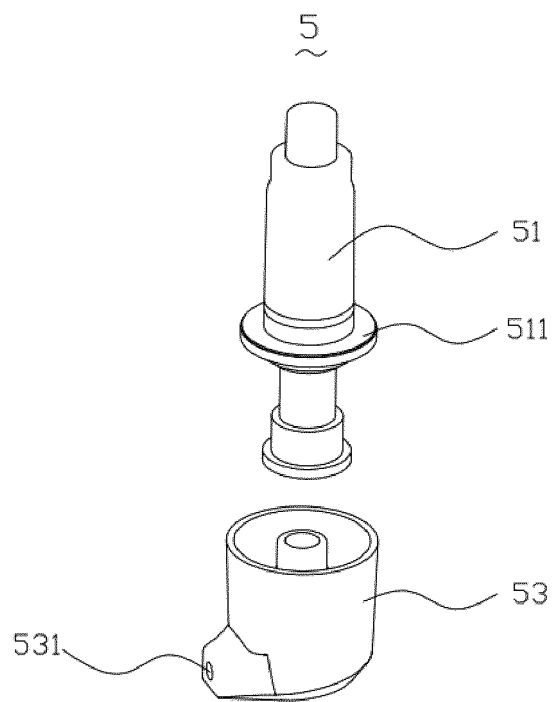


Fig. 5

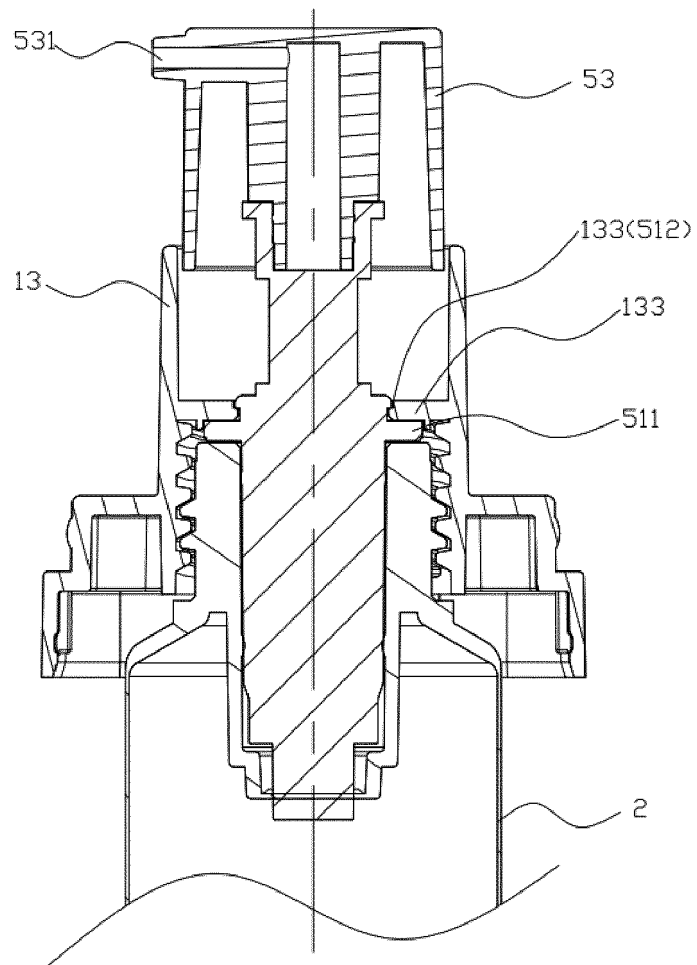


Fig. 6

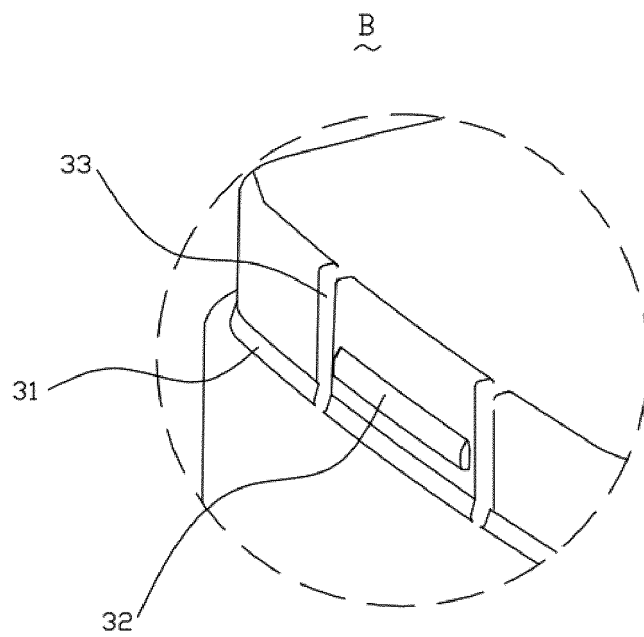


Fig. 7

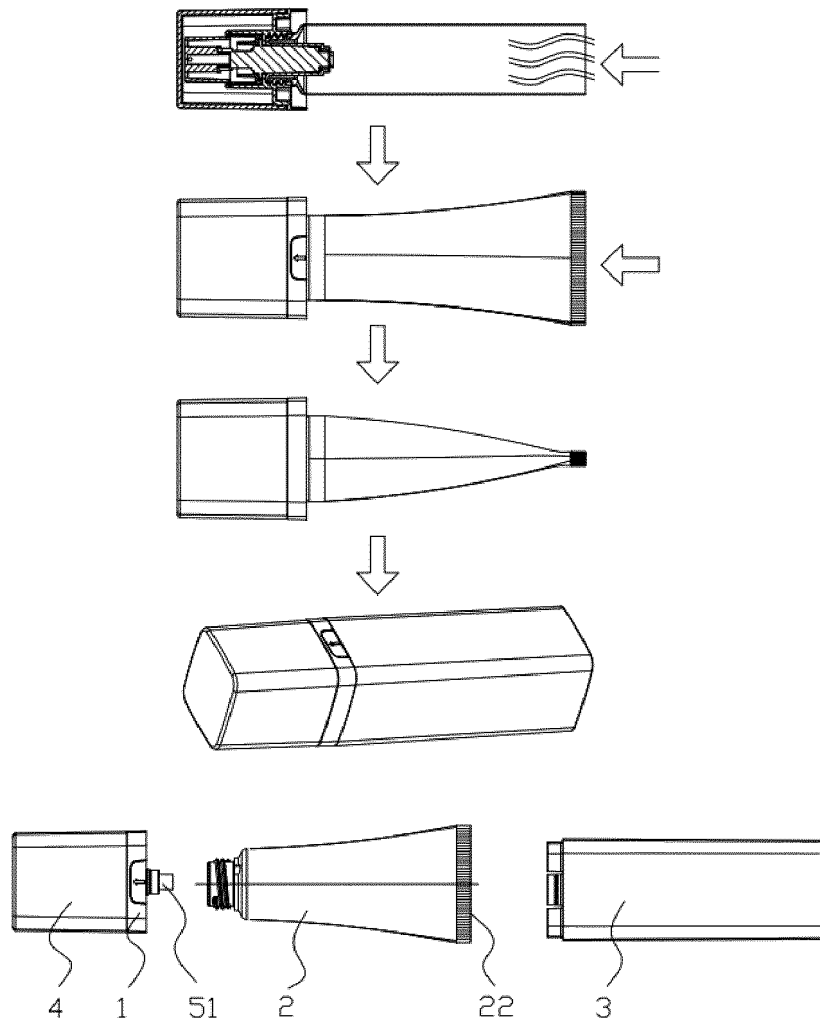


Fig. 8

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2020/087758

**A. CLASSIFICATION OF SUBJECT MATTER**

B65D 47/34(2006.01)i; B05B 11/00(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

B65D, B05B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CNABS, CNKI, DWPI, SIPOABS: 外筒, 包装, 容器, 瓶, 替换, 循环, 更换, 重复, 泵, 内, 外, container?, bottle?, inside, outside, inner, pump, reus+, recycle

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☒ Further documents are listed in the continuation of Box C.
 ☒ See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
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Date of the actual completion of the international search

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Date of mailing of the international search report

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Name and mailing address of the ISA/CN

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International application No.

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