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(54) **ANTI-THEFT BOTTLE CAP**

(57) An anti-theft bottle cap having a lower cap (1), an upper cap (2), and an anti-theft mechanism (3) provided therebetween; an opening (5) in communication with an interior of a container (6) is provided on the lower cap (1); the bottle cap also has a flip plate (21) which prevents prying of the anti-theft mechanism (3); the flip plate (21) is a grabbing part which is grabbed to facilitate opening of the upper cap when it is necessary to pour liquid oil out of the bottle. Since the flip plate (21) partially blocks the anti-theft mechanism, the anti-theft mechanism can be prevented from being pried undamaged, thereby achieving better anti-theft effect.

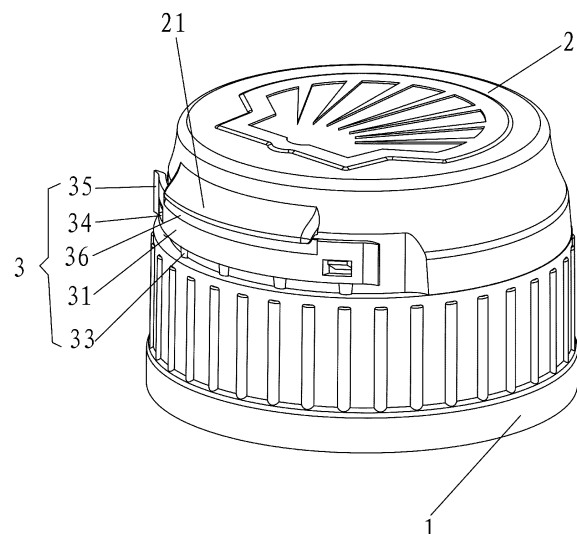


FIG.1

Description

BACKGROUND OF THE INVENTION

[0001] The present invention belongs to the technical field of bottle cap, and more specifically relates to an anti-theft bottle cap.

[0002] The use of a bottle cap with a flip top lid has an advantage of conveniently emptying the contents inside the bottle. This conventional kind of bottle cap comprises a lower cap connecting with a container and an upper cap attached on the lower cap. The upper cap and the lower cap are movably connected. An opening in communication with the interior of the container is provided on the lower cap. Some thieves may flip the upper cap on the lower cap and empty the contents inside the container or fill the container with other substances, and then close the upper cap against the lower cap. Since the outer appearance of the bottle cap cannot tell whether the upper cap has been opened or not, this kind of bottle cap is not safe to use.

[0003] In CN202389743U having a title of "safe bottle cap", a kind of safe bottle cap is disclosed comprising a lower cap and an upper cap which is connected to the lower cap and can be flipped with respect to the lower cap; the lower cap comprises a lower cap wall having an opening; the safe bottle cap also comprises a safety mechanism; the safety mechanism comprises a tear-able connector piece disposed on one of the lower cap and the upper cap, and an anti-return hook disposed on another one of the lower cap and the upper cap; the tear-able connector piece comprises a lock hole for locking the anti-return hook.

[0004] Although this kind of bottle cap is anti-theft to a certain extent, it may still be pried, for example by using a small rod which pries the tear-able connector piece at an upper part of a substrate of the tear-able connector piece; as forces increases gradually to elastically deform plastic material, the hook will eventually be separated from the lock hole, and so the upper cap can be opened undamaged. Furthermore, this kind of bottle cap has a complicated structure and is therefore quite hard to manufacture.

[0005] In view of the above, the inventor has invented this invention after thorough study of the problems mentioned above.

BRIEF SUMMARY OF THE INVENTION

[0006] An object of the present invention is to provide an anti-theft bottle cap having simpler structure and better anti-theft performance. The present invention can more effectively protect the contents inside the bottle.

[0007] The present invention has the following technical scheme:

[0008] An anti-theft bottle cap, comprising a lower cap and an upper cap; the upper cap is connected with a top part of the lower cap and is capable of being flipped

opened with respect to the lower cap; an anti-theft mechanism is provided between the upper cap and the lower cap; an opening in communication with an interior of a container is provided on the lower cap; the anti-theft bottle cap also comprises a flip plate which prevents prying of the anti-theft mechanism; the flip plate corresponds to the anti-theft mechanism and is mounted on the upper cap and extends to a position on the anti-theft mechanism.

[0009] Preferably, the anti-theft mechanism comprises a tear-able element on the lower cap and locking pieces provided on the upper cap; locking holes corresponding to the locking pieces are provided on the tear-able element.

[0010] Preferably, an inwardly recessed supporting platform is provided on the lower cap; the tear-able element comprises connecting rods and a tear strip; lower ends of the connecting rods are connected on the supporting platform; upper ends of the connecting rods are connected with the tear strip; the locking holes are provided on the tear strip.

[0011] Preferably, one end of the flip plate is connected with the upper cap, and another end of the flip plate is a free end inclined and extended downwardly; a locking slot is formed between the flip plate and an outer wall of the upper cap; An upper end of the tear-able element is housed within the locking slot.

[0012] Preferably, the outer wall of the upper cap is provided with a connecting plate; the locking pieces are provided on the connecting plate; outer boundaries of the locking pieces and the flip plate are radially within an outer diameter of the lower cap.

[0013] Preferably, an annular supporting wall extends upwardly from a top side of the lower cap; a positioning piece is provided on an outer wall of the annular supporting wall; a positioning trough cooperating with the positioning piece is provided on an inner wall of the upper cap.

[0014] Preferably, a first annular flange extending downwardly is provided inside the upper cap; an engagement slot is provided at an outer wall of the first annular flange; a sealing ring is provided in the engagement slot; an engagement block corresponding to the engagement slot is provided on an inner wall of the opening; sealed connection is achieved between the first annular flange and the opening via the engagement slot, the sealing ring and the engagement block.

[0015] Preferably, a flow guiding element upwardly extending from an output end of the opening is provided; a flow guiding opening in communication with the opening is formed at a side wall of the flow guiding element; a backflow trough is formed between an outer wall of the flow guiding element and an inner wall of the annular supporting wall; a height of the backflow trough at a position corresponding to the flow guiding opening is smaller than heights of other positions of the backflow trough.

[0016] Preferably, a flow guiding tongue is connected to an inner side wall of the opening; the flow guiding tongue is positioned corresponding to the flow guiding

opening; one end of the flow guiding tongue is connected to the inner wall of the opening through a joining part; another end of the flow guiding tongue extends away from the opening; a breathing through hole is provided on the joining part.

[0017] Preferably, anti-returning locks corresponding to a mouth part of the container are provided in an inner wall of the lower cap; an annular platform is provided horizontally extending around the inner wall of the lower cap; a second annular flange extends downwardly from the annular platform; the second annular flange, the annular platform and the inner wall of the lower cap form an annular housing slot; a sealing gasket matching with the mouth part of the container is provided inside the annular housing slot.

[0018] According to the present invention, a flip plate of an ordinary bottle cap is positioned corresponding to an anti-theft mechanism and extends onto the anti-theft mechanism. The flip plate is a grabbing part which is grabbed to facilitate opening of the upper cap when it is necessary to pour liquid oil out of the bottle. Since the flip plate partially blocks the anti-theft mechanism, it is very useful for position limiting of the anti-theft mechanism. In other words, the anti-theft mechanism can be prevented from being pried undamaged. If the anti-theft mechanism is forced to free from the limiting effect of the flip plate for opening the upper cap, the anti-theft mechanism will be damaged due to being overly deformed. As such, even when the upper cap is capped again on the lower cap, damage of the anti-theft mechanism can be easily discerned. Users will therefore be alerted of the prying of the bottle. Also, the present invention does not require another grabbing piece for opening the upper cap. Therefore, the present invention has an overall simpler structure and achieves better anti-theft effect.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019]

FIG. 1 is a schematic structural view of the present invention (upper cap closed).

FIG. 2 is a schematic structural view of the present invention (upper cap opened).

FIG. 3 is a schematic structural view of the present invention shown in another angle of view (upper cap opened).

FIG. 4 is a schematic structural view of the present invention shown in still another angle of view (upper cap opened).

FIG. 5 is a sectional view showing the present invention fitted to a container.

FIG. 6 is an enlarged view of portion A shown in FIG. 5.

FIG. 7 is an enlarged view of portion B shown in FIG. 6.

FIG. 8 is a schematic structural view of the present invention fitted to a container.

FIG. 9 is an enlarged view of portion A shown in FIG. 8.

FIG. 10 is a partially sectioned view of the present invention shown in FIG. 8 at a position corresponding to the structure shown in FIG. 9.

FIG. 11 is an enlarged view of portion B shown in FIG. 10.

DETAILED DESCRIPTION OF THE INVENTION

[0020] The present invention is described further in detail below with reference to the drawings with a view to explaining the technical scheme of the present invention.

[0021] As shown in FIGs. 1-11, an anti-theft bottle cap comprises a lower cap 1 and an upper cap 2; the upper cap 2 is connected with a top part of the lower cap 1 and is capable of being flipped opened with respect to the lower cap 1; an anti-theft mechanism 3 is provided between the upper cap 2 and the lower cap 1; an opening 5 in communication with an interior of a container 6 is provided on the lower cap 1; the anti-theft bottle cap also comprises a flip plate 21 which prevents prying of the anti-theft mechanism 3; the flip plate 21 corresponds to the anti-theft mechanism 3 and is mounted on the upper cap 2 and extends to a position on the anti-theft mechanism 3. The present invention is preferably used on oil product container such as lubricant container. The upper cap 2 and the lower cap 1 are molded as a one whole piece using plastic material. The plastic material is preferably good at antibacterial and dust-proof properties, resistant to harsh weather, antioxidant, antistatic electricity and has good tenacity and strength, so that the bottle cap can be used in different environmental conditions.

[0022] A preferred embodiment of the anti-theft mechanism 3 comprises a tear-able element on the lower cap 1 and locking pieces 32 provided on the upper cap 2; locking holes 34 corresponding to the locking pieces 32 are provided on the tear-able element. Preferably, an inwardly recessed supporting platform 11 is provided on the lower cap 1; the tear-able element comprises connecting rods 33 and tear strip 31; lower ends of the connecting rods 33 are connected on the supporting platform 11; upper ends of the connecting rods 33 are connected with the tear strip 31; the locking holes 34 are provided on the tear strip 31. In a preferably embodiment, one end of the flip plate 21 is connected with the upper cap 2, and another end of the flip plate 21 is a free end inclined and extended downwardly. A locking slot 22 is formed between the flip plate 21 and an outer wall of the upper cap 2. An upper end of the tear strip 31 is provided with a position limiting slot 36; the upper end of the tear strip 31 is concealed within the locking slot 22, and the flip plate 21 abuts against the position limiting slot 36.

[0023] Preferably, the outer wall of the upper cap 2 is provided with a connecting plate 23; the locking pieces 32 are provided on the connecting plate 23; outer boundaries of the locking pieces 32 and the flip plate 21 are

radially within an outer diameter of the lower cap 1. Therefore, in an automatic assembling process of the bottle cap when a robotic arm grabs the bottle cap, the robotic arm will not easily touch the upper cap 2, the flip plate and the anti-theft mechanism 3 while grabbing the lower cap 1, thereby ensuring the anti-theft effect intended by the present invention.

[0024] Preferably, at least one of two ends of the tear strip 31 along a lengthwise direction of the tear strip 31 is provided with a head portion 35 for conveniently tearing off the tear-able element. In the embodiment, the head portion 35 extends outwardly to facilitate grabbing by a user. When the connecting rods 33 are torn off via the tear strip 31, remove the tear strip 31 and the connecting rods 33 and open the upper cap 1, liquid oil inside the container can be poured out.

[0025] In the present invention, an annular supporting wall 4 extends upwardly from a top side of the lower cap 1. Specifically, the supporting platform 11 is provided on the lower cap 1, wherein the supporting platform 11 extends laterally from the an outer wall of the lower cap 1 towards a center part of the lower cap 1, and the annular supporting wall 4 is provided on the supporting platform 11. In the present invention, a protruding positioning piece 41 is provided on one of an outer wall of the annular supporting wall 4 and an inner wall of the upper cap 2, and a positioning trough 42 cooperating with the positioning piece 41 is provided on another one of the outer wall of the annular supporting wall 4 and the inner wall of the upper cap 2. When the upper cap 2 caps on the lower cap 1, the positioning piece 41 locks against the positioning trough 42 so that the inner wall of the upper cap 2 and the outer wall of the annular supporting wall 4 mutually abut against each other. This kind of structure can at least achieve two beneficial effects; 1. Since the annular supporting wall 4 can position the upper cap 2, the outer wall of the upper cap will not easily deform and displace when the upper cap 2 is subject to compression force from its periphery towards its center, and the upper cap 2 will not disengage with the lower cap 1; 2. Due to the cooperation between the positioning piece 41 and the positioning trough 42, when the upper cap 2 caps on the lower cap 2, a click sound generated upon engagement can indicate whether the upper cap 2 is completely capped on the lower cap 1, thereby preventing the liquid oil from turning bad or being accidentally poured out from the container 6 due to the failure the cap the upper cap 2 completely on the lower cap 1.

[0026] In the present invention, a first annular flange 43 extending downwardly is provided inside the upper cap 1. A sealing mechanism is provided between an outer wall of the first annular flange 43 and an inner wall of the opening 5. The sealing mechanism comprises an engagement slot 44, an engagement block 46 and a sealing ring 45 disposed inside the engagement slot 44; one of the engagement slot 44 and the engagement block 46 is provided on the outer wall of the first annular flange 43, another one of the engagement slot 44 and the engage-

ment block 46 is provided on the inner wall of the opening 5. Sealing effect achieved by the cooperation between the engagement slot 44, the engagement block 46 and the sealing ring 45 prevents liquid oil from being poured out accidentally from the opening 5 and also blocks air from the external environment from entering into the container 6 causing the liquid oil to turn bad.

[0027] The present invention also comprises a flow guiding element surrounding an edge of the opening 5; a flow guiding opening 50 in communication with the opening 5 is formed at a side wall of the flow guiding element. Inner side of the side wall of the flow guiding element and the inner wall of the opening 5 form an out-flow passage. When the upper cap 2 is opened, the liquid inside the container 6 can be poured out through the out-flow passage. A backflow trough 52 is formed between an outer wall of the flow guiding element and an inner wall of the annular supporting wall 4. A height of the backflow trough 52 at a position corresponding to the flow guiding opening 50 is smaller than heights of other positions of the backflow trough 52.

[0028] Preferably, the flow guiding element comprises a first supporting side wall 56, a third supporting side wall 58, and a second supporting side wall 57 in between a first end of the first supporting side wall 56 and a first end of the third supporting side wall 58 for joining the first supporting side wall 56 and the third supporting side wall 58. The first supporting side wall 56, the second supporting side wall 57 and the third supporting side wall 58 are integrally molded as a one whole piece. The flow guiding opening 50 is positioned between a second end of the first supporting side wall 56 and a second end of the third supporting side wall 58; The backflow trough 52 at the position corresponding to the flow guiding opening 50 is configured as a flow guiding portion 53; the flow guiding portion 53 is inclined downwardly and extends into the opening 5 so as to guide liquid oil to flow from the flow guiding portion 53 back to the container. The backflow trough 52 at a position corresponding to the second supporting side wall 57 is configured as a receiving portion 54. The backflow trough 52 gradually decreases in height from the receiving portion 54 to the flow guiding portion 53. Due to this kind of structure, drips of liquid oil spilled out of a main outflow path when pouring out the liquid oil from the container may drip onto the receiving portion 54 of the backflow trough 52; when the upper cap 2 is again capped onto the lower cap 1 and the container stands on a level ground, the liquid oil will gradually flow back to the flow guiding portion 53 along the backflow trough 52 under gravitational force, and then flow back into the container from the flow guiding portion 53 through the opening 5. Due to the use of the first supporting side wall 56, the second supporting side wall 57 and the third supporting side wall 58, liquid oil is converged to the second supporting side wall 57 when it is poured out; due to such converged outflow path, the liquid oil can be poured out smoothly and will not easily spill out.

[0029] Preferably, a lower end of the second support-

ing side wall 57 is fixed on the lower cap 1; an upper end of the second supporting side wall 57 is a free end; a flow directing portion 571 is disposed on the free end; the flow directing portion 571 inclines and extends upwardly. The use of this structure can prevent liquid oil from dripping out of the main outflow path and hanging on a side wall of the flow guiding element after pouring out the liquid oil from the container.

[0030] The present invention also comprises a flow guiding tongue 51 disposed inside the outflow passage; the flow guiding tongue 51 is connected inside of the outflow passage through joining part 59; a breathing through hole 55 is provided on the joining part 59.

[0031] Preferably, positional references in the description are made based on an upright position of the container placed on a level ground after the bottle cap is installed on the container. A lower end surface of the joining part 59 is provided with a flow diverting portion 70 that extends downwardly; an upper end surface of the flow diverting portion 70 joins with the lower end surface of the joining part 59; a lower end surface of the flow diverting portion is a free end 73; a first vertical wall 71 and a second vertical wall 72 are provided between the free end 73 and the upper end surface of the flow diverting portion 70. Compared with the second vertical wall 72, the first vertical wall 71 is closer to a center of the lower cap 1. The second vertical wall 72, the lower end surface of the joining part 59 and an inner side surface of the lower cap 1 form a flow limiting trough 74. The breathing through hole 55 runs from the upper end surface of the flow diverting portion 70 and through the first vertical wall 71. By virtue of this structure, liquid pouring out from the container is guided by the flow diverting portion 70 and the flow limiting trough 74 so as to prevent the liquid from blocking the breathing through hole when the liquid is being poured out, thereby facilitating smooth pouring process of the liquid.

[0032] Preferably, an end of the joining part 59 is positioned corresponding to the flow guiding opening 50 and is mounted at an inner wall of the opening 5; another end of the joining part 59 extends laterally. The flow guiding tongue 51 is positioned between the second end of the first supporting side wall 56 and the second end of the third supporting side wall 58; one end of the flow guiding tongue 51 is fixed onto the joining part 59; another end of the flow guiding tongue 51 inclines and extends upwardly towards a central axis of the opening 5, and is provided with a blocking portion 511. By virtue of this structure, the liquid oil is poured out from the container, the liquid oil will not touch the flow guiding tongue 51 when there is only a small amount of liquid oil being poured out. Due to the small amount of liquid oil being poured out, spilling of oil will not easily occur. When there is a large amount of liquid oil being poured out, the liquid oil touches the flow guiding tongue 51 and being guided by the flow guiding tongue 51 and the blocking portion 511, and the user will also become aware that the amount of liquid oil to be poured out should be carefully controlled.

Because of the breathing through hole 55 enabling air communication inside and outside the container 6, negative pressure will not be easily formed inside the container 6, thereby facilitating smooth pouring process of the liquid.

[0033] The inner wall of the lower cap 1 is provided with a threaded portion 17; outer threads (not shown in the figures) cooperating with the threaded portion 17 are provided at a bottle mouth 61 of the container 6. An anti-rotation mechanism is provided between the lower cap 1 and the bottle mouth 61. The anti-rotation mechanism comprises anti-returning locks 12 provided in the inner wall of the lower cap 1 and anti-returning blocks 63 cooperating with the anti-returning locks 12; the anti-returning blocks 63 are provided on an outer wall of the bottle mouth 61; the anti-returning locks 12 are provided between the threaded portion 17 and the lower end surface of the lower cap 1.

[0034] The anti-rotation mechanism also comprises a blocking trough 14 and a position limiting block 62; the blocking trough 14 is provided at the lower end of the lower cap 1; the position limiting block 62 is positioned on the bottle mouth 61 corresponding to the blocking trough 14. Preferably, the blocking trough 14 runs through from an outer wall of the lower cap 1 out through an inner wall of the lower cap 1, and extends from a lower end surface of the lower cap 1 up to an upper end surface of the lower cap 1. The position limiting block 62 extends out from an outer wall of the bottle mouth 61 and inserts into the blocking trough 14.

[0035] Preferably, the inner wall of the lower cap 1 is also provided with a positioning block 13; a blocking teeth 64 is provided at the bottle mouth 61 corresponding to the positioning block 13; the positioning block 13 is disposed between the threaded portion 17 and the lower end surface of the lower cap 1.

[0036] According to the present invention, a first positioning effect is achieved by the cooperation between the positioning block 13 and the blocking teeth 64, and a second positioning effect is achieved by cooperation between the blocking trough 14 and the position limiting block 62. Due to these double positioning effects, the bottle cap of the present invention can be positioned stably, thereby achieving anti-rotation effect and at the same time ensuring between anti-theft effect.

[0037] An annular platform 15 is provided horizontally extending around the inner wall of the lower cap 1. A second annular flange 16 extends downwardly from the annular platform 15. The second annular flange 16, the annular platform 15 and the inner wall of the lower cap 1 form an annular housing slot. A sealing gasket 18 matching with a mouth part of the container 6 is provided inside the annular housing slot. The sealing gasket 18 achieves sealed connection between the lower cap 1 and the bottle mouth of the container 6 to avoid inlet of air into the container from gaps between the lower cap 1 and the mouth part of the container 6, thereby ensuring the quality of the liquid oil inside the container.

Claims

1. An anti-theft bottle cap, comprising a lower cap and an upper cap; the upper cap is connected with a top part of the lower cap and is capable of being flipped opened with respect to the lower cap; an anti-theft mechanism is provided between the upper cap and the lower cap; an opening in communication with an interior of a container is provided on the lower cap; wherein the anti-theft bottle cap also comprises a flip plate which prevents prying of the anti-theft mechanism; the flip plate corresponds to the anti-theft mechanism and is mounted on the upper cap and extends to a position on the anti-theft mechanism. 5
2. The anti-theft bottle cap according to claim 1, wherein the anti-theft mechanism comprises a tear-able element on the lower cap and locking pieces provided on the upper cap; locking holes corresponding to the locking pieces are provided on the tear-able element. 10
3. The anti-theft bottle cap according to claim 2, wherein an inwardly recessed supporting platform is provided on the lower cap; the tear-able element comprises connecting rods and a tear strip; lower ends of the connecting rods are connected on the supporting platform; upper ends of the connecting rods are connected with the tear strip; the locking holes are provided on the tear strip. 15
4. The anti-theft bottle cap according to claim 2, wherein one end of the flip plate is connected with the upper cap, and another end of the flip plate is a free end inclined and extended downwardly; a locking slot is formed between the flip plate and an outer wall of the upper cap; An upper end of the tear-able element is housed within the locking slot. 20
5. The anti-theft bottle cap according to claim 2, wherein the outer wall of the upper cap is provided with a connecting plate; the locking pieces are provided on the connecting plate; outer boundaries of the locking pieces and the flip plate are radially within an outer diameter of the lower cap. 25
6. The anti-theft bottle cap according to claim 1, wherein an annular supporting wall extends upwardly from a top side of the lower cap; a positioning piece is provided on an outer wall of the annular supporting wall; a positioning trough cooperating with the positioning piece is provided on an inner wall of the upper cap. 30
7. The anti-theft bottle cap according to claim 6, wherein a first annular flange extending downwardly is provided inside the upper cap; an engagement slot is provided at an outer wall of the first annular flange; 35
8. The anti-theft bottle cap according to claim 6, wherein a flow guiding element upwardly extending from an output end of the opening is provided; a flow guiding opening in communication with the opening is formed at a side wall of the flow guiding element; a backflow trough is formed between an outer wall of the flow guiding element and an inner wall of the annular supporting wall; a height of the backflow trough at a position corresponding to the flow guiding opening is smaller than heights of other positions of the backflow trough. 40
9. The anti-theft bottle cap according to claim 8, wherein a flow guiding tongue is connected to an inner side wall of the opening; the flow guiding tongue is positioned corresponding to the flow guiding opening; one end of the flow guiding tongue is connected to the inner wall of the opening through a joining part; another end of the flow guiding tongue extends away from the opening; a breathing through hole is provided on the joining part. 45
10. The anti-theft bottle cap according to claim 1, wherein anti-returning locks corresponding to a mouth part of the container are provided in an inner wall of the lower cap; an annular platform is provided horizontally extending around the inner wall of the lower cap; a second annular flange extends downwardly from the annular platform; the second annular flange, the annular platform and the inner wall of the lower cap form an annular housing slot; a sealing gasket matching with the mouth part of the container is provided inside the annular housing slot. 50

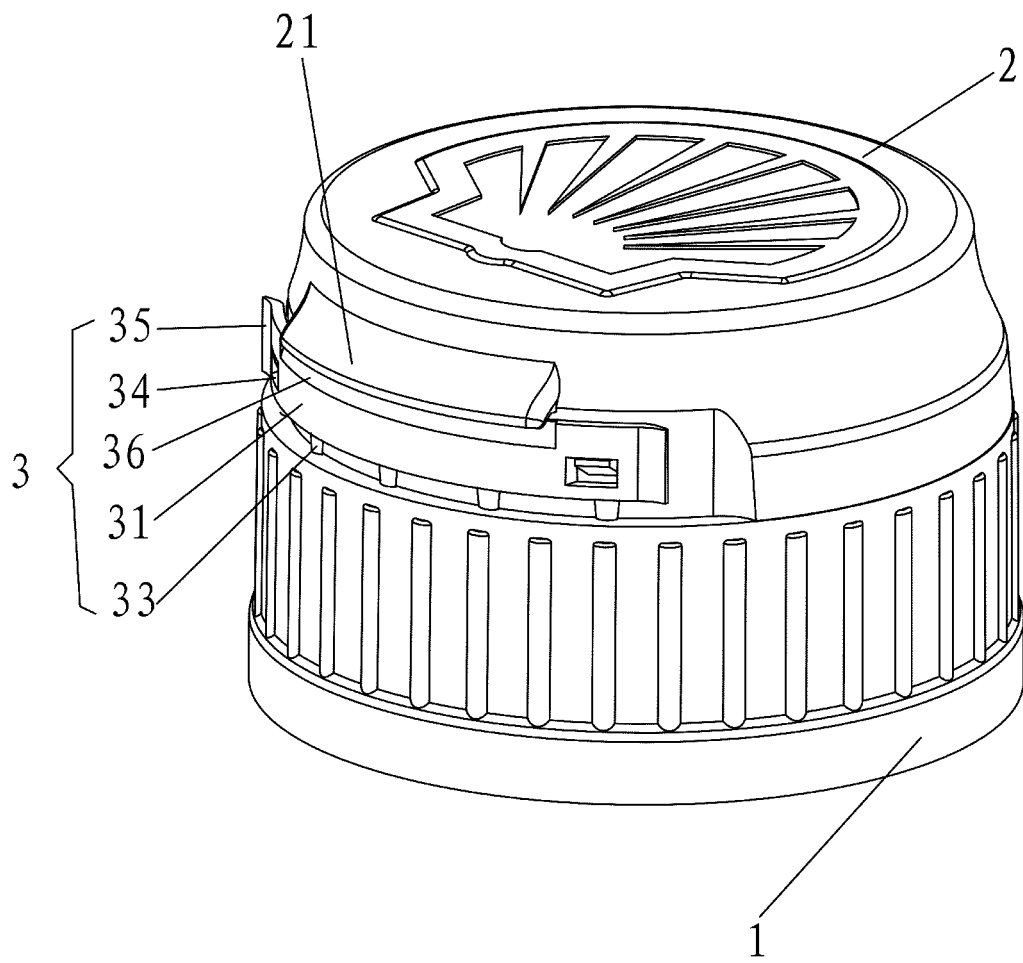


FIG.1

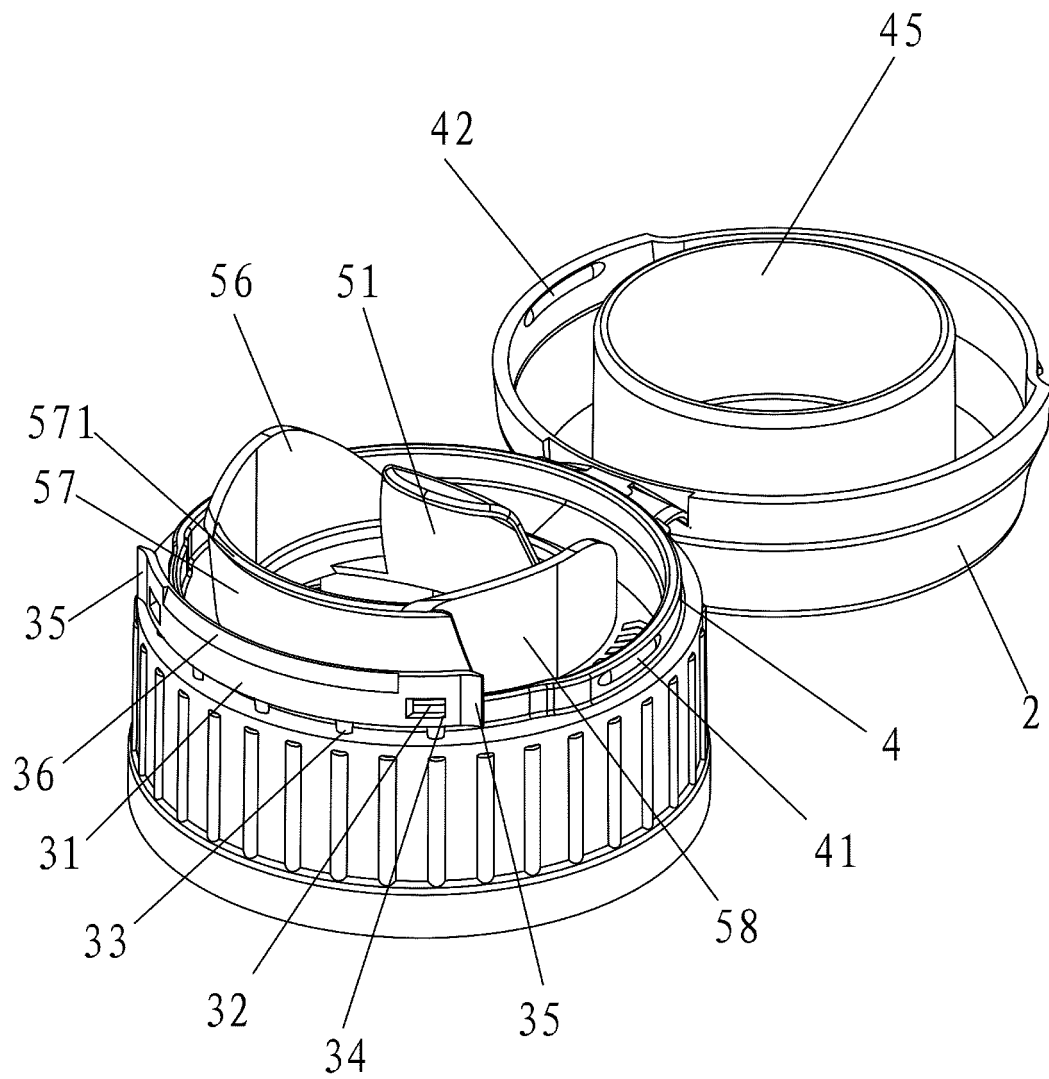


FIG.2

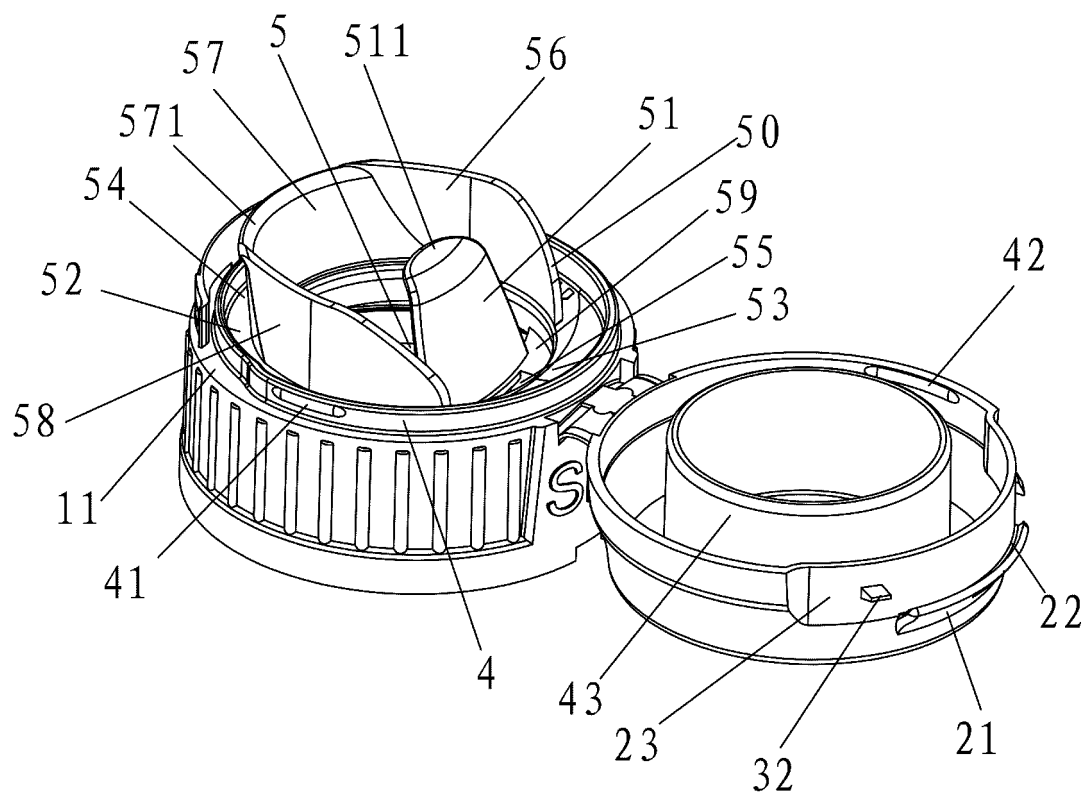


FIG.3

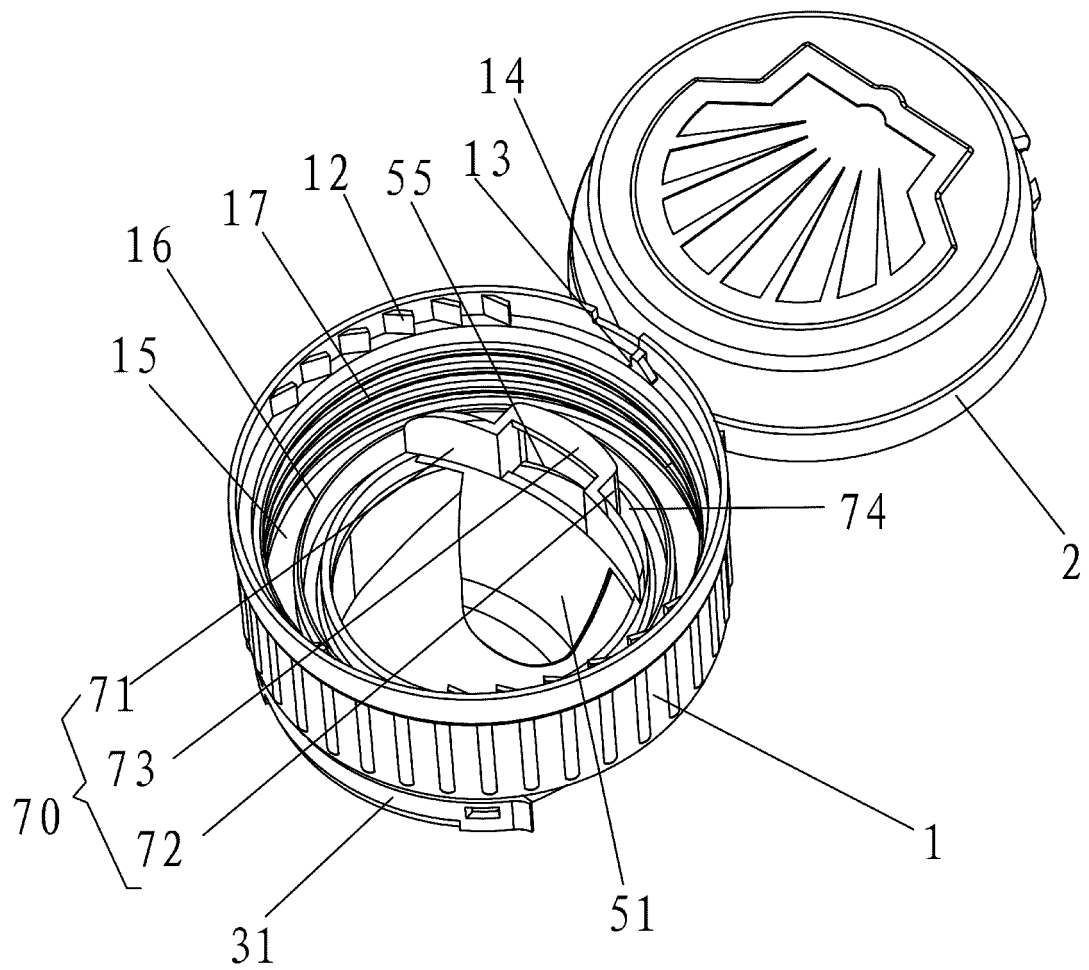


FIG.4

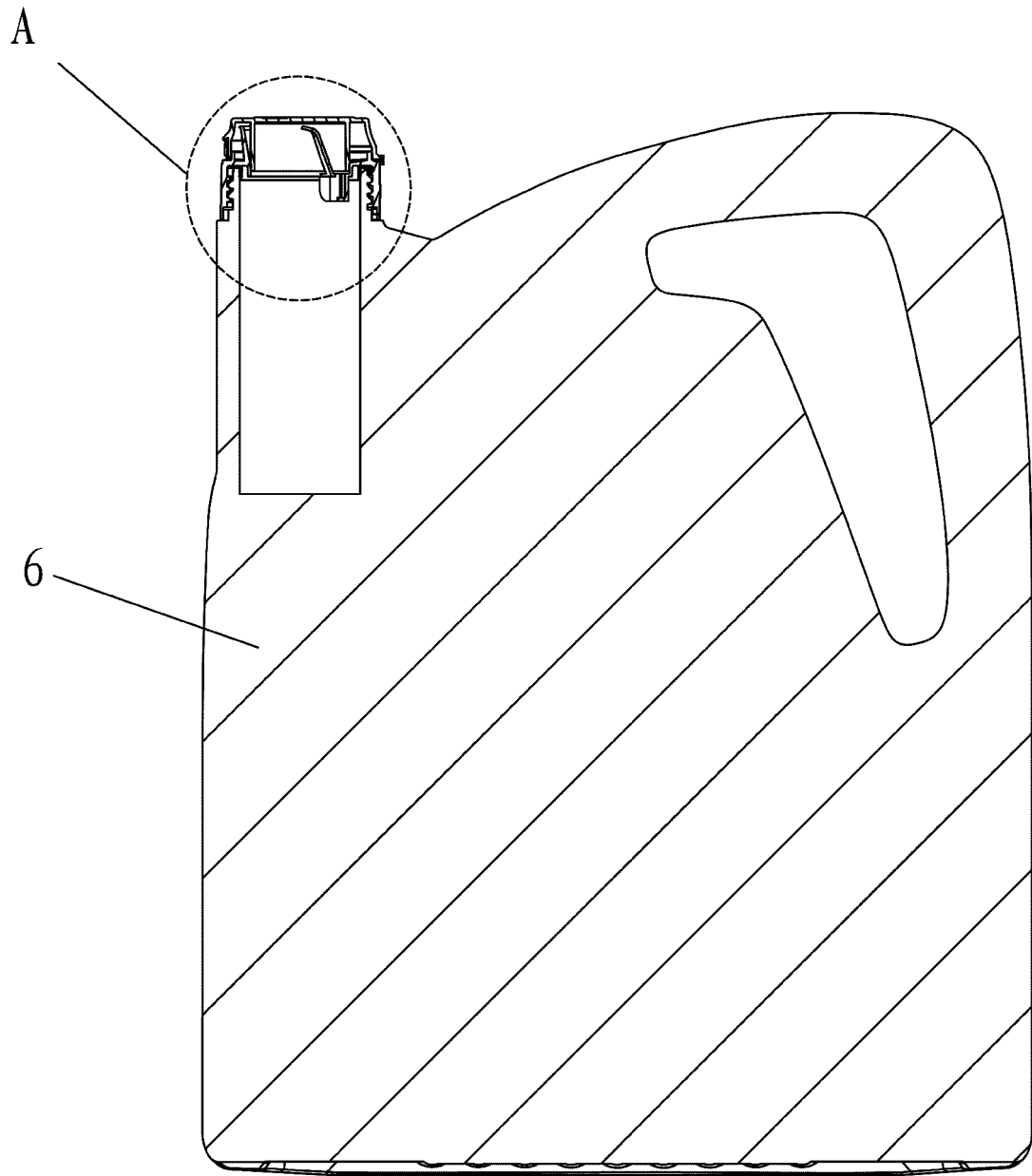


FIG.5

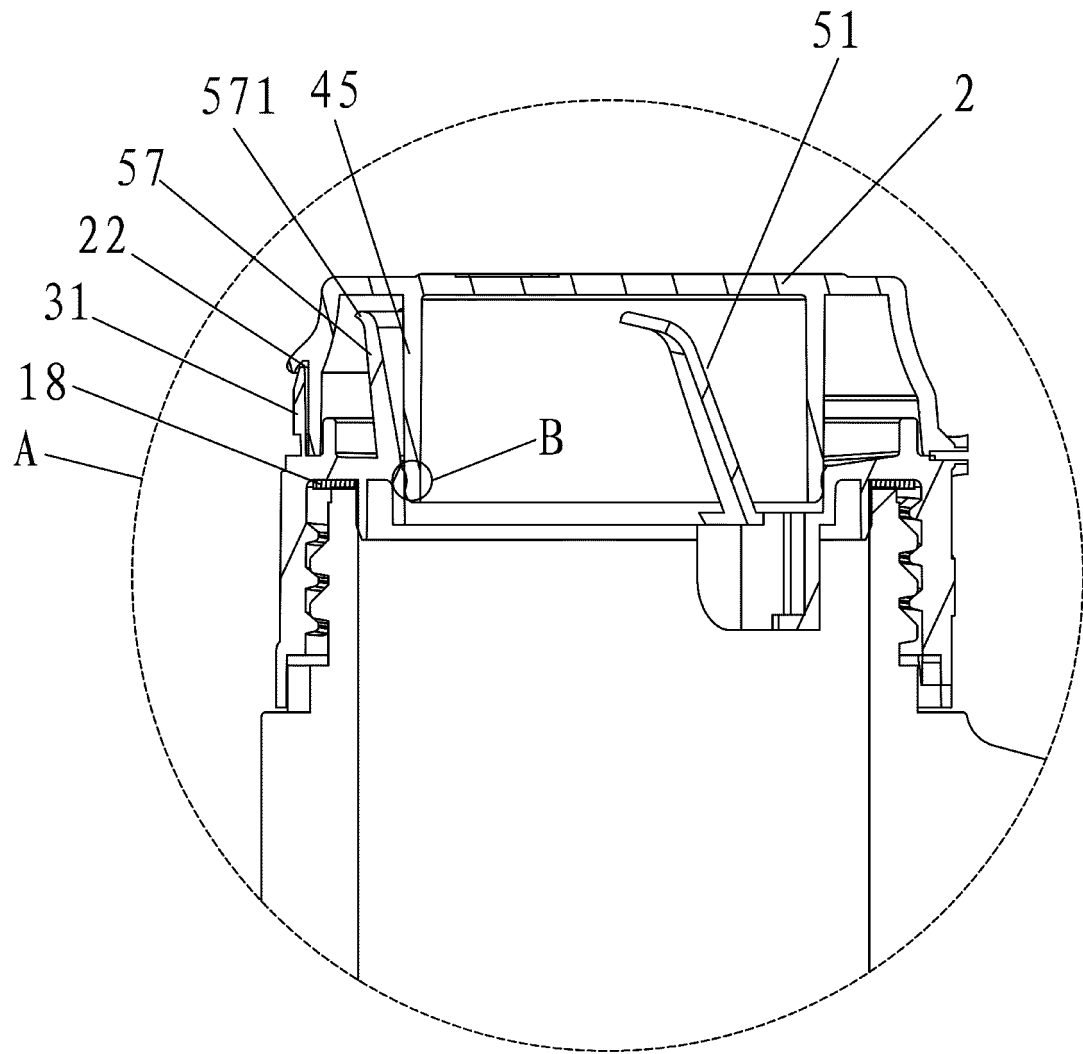


FIG.6

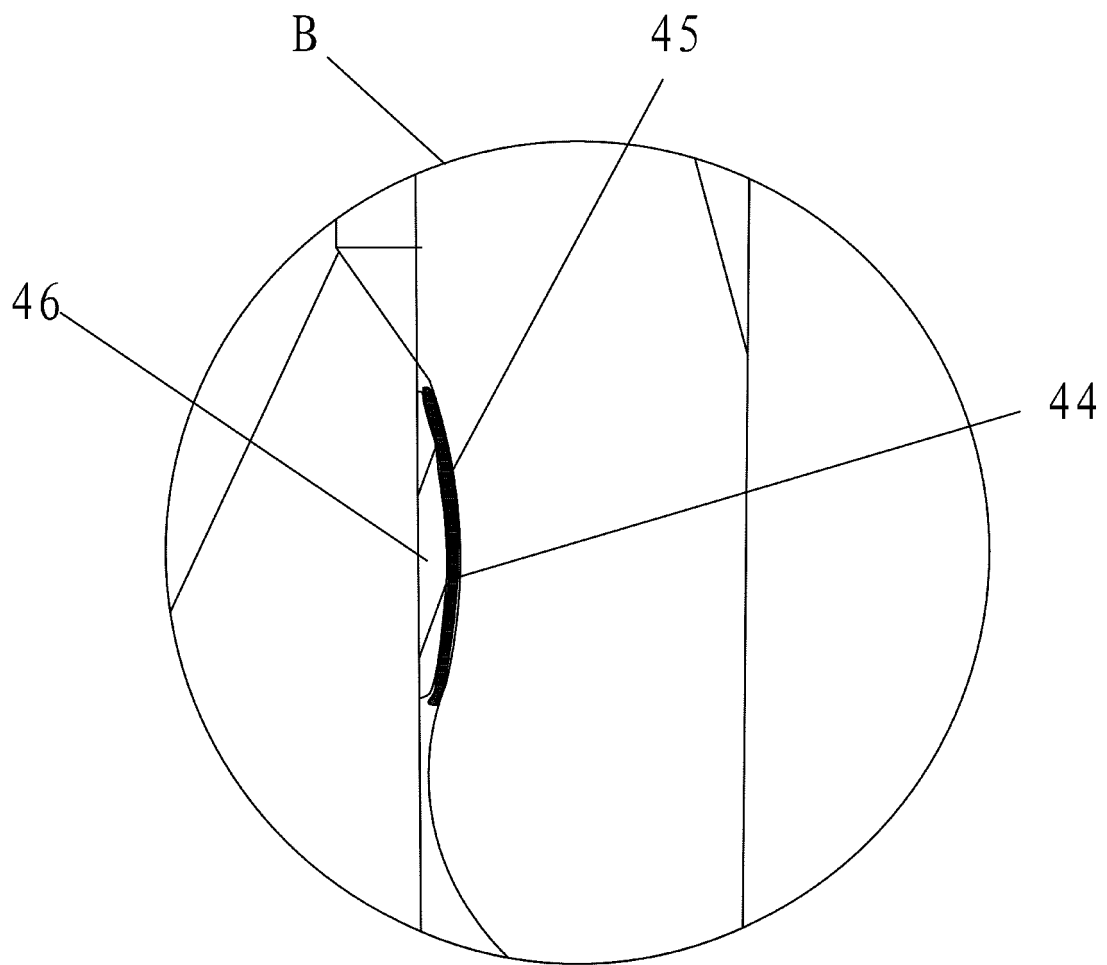


FIG.7

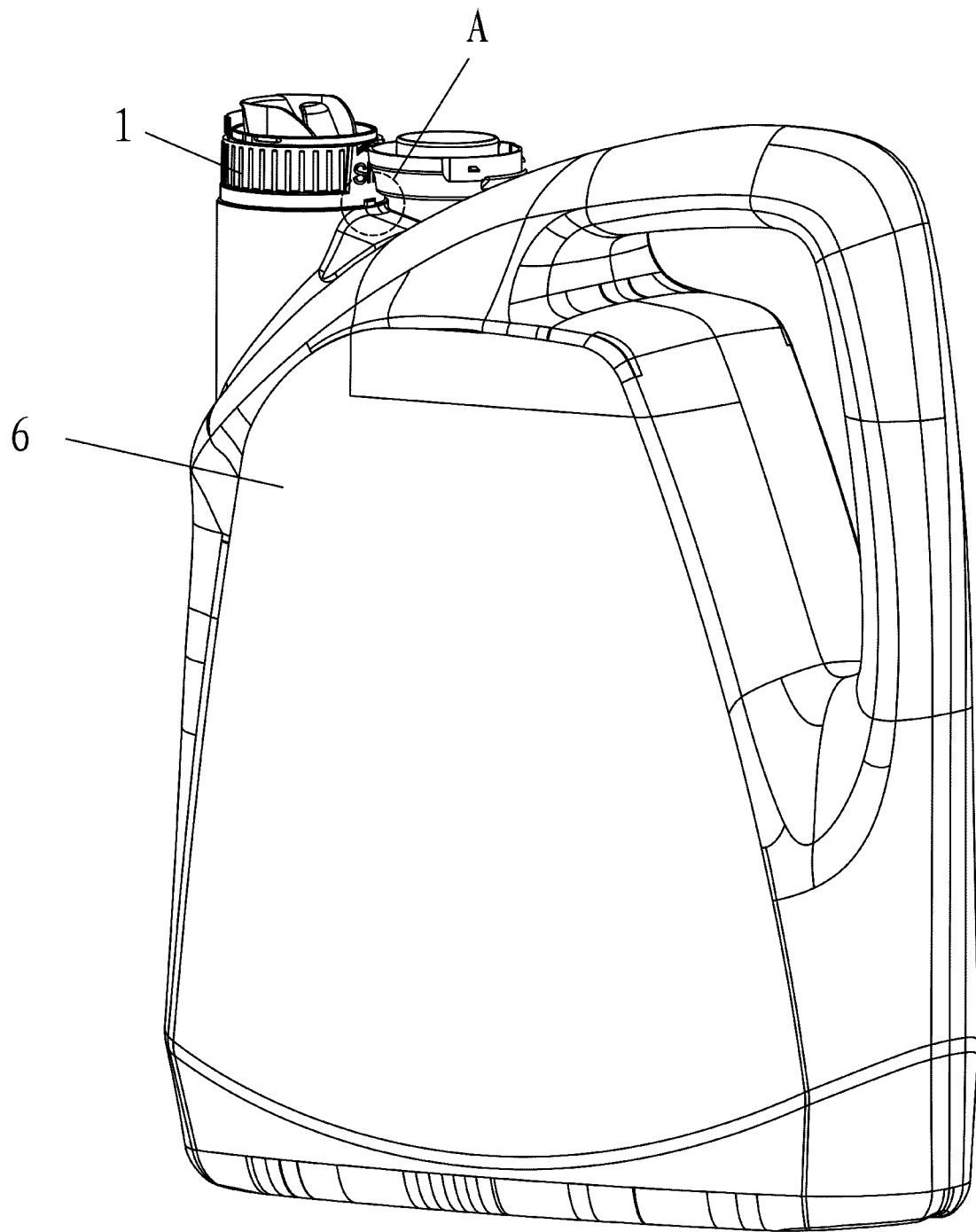


FIG.8

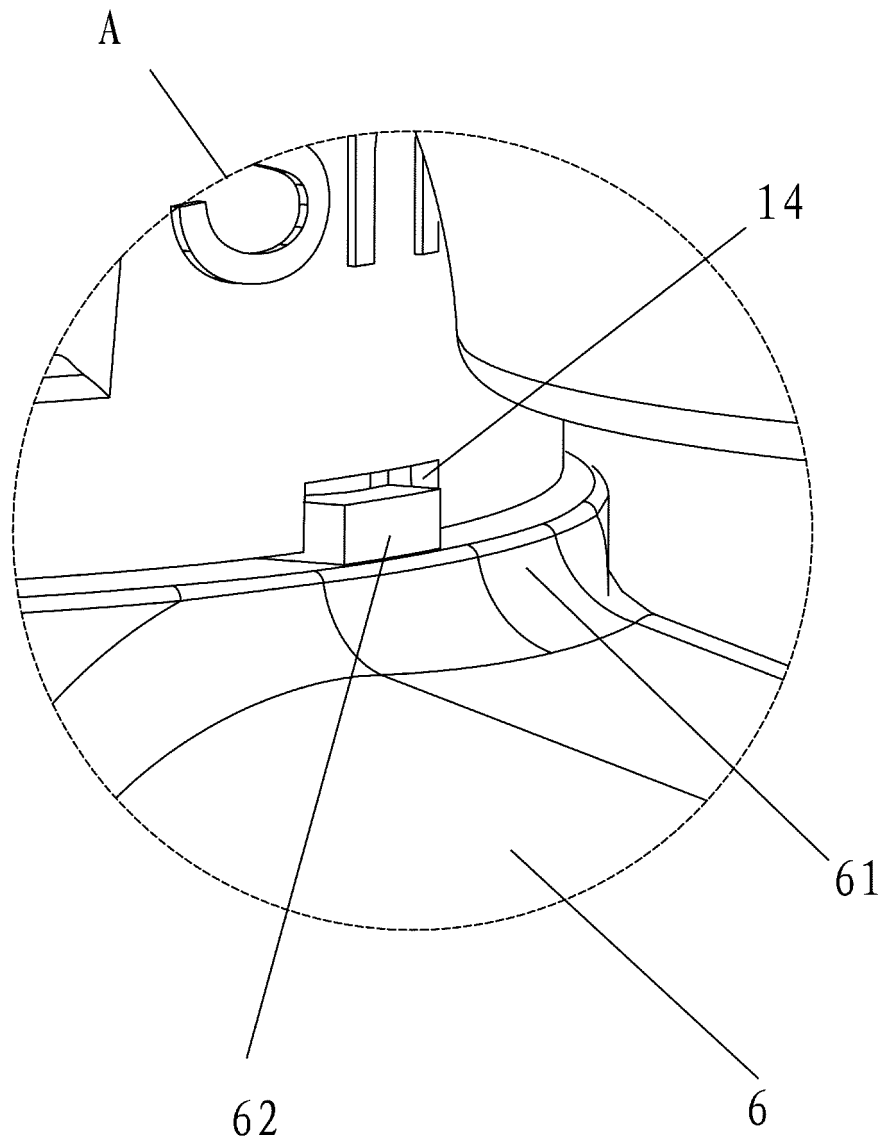


FIG.9

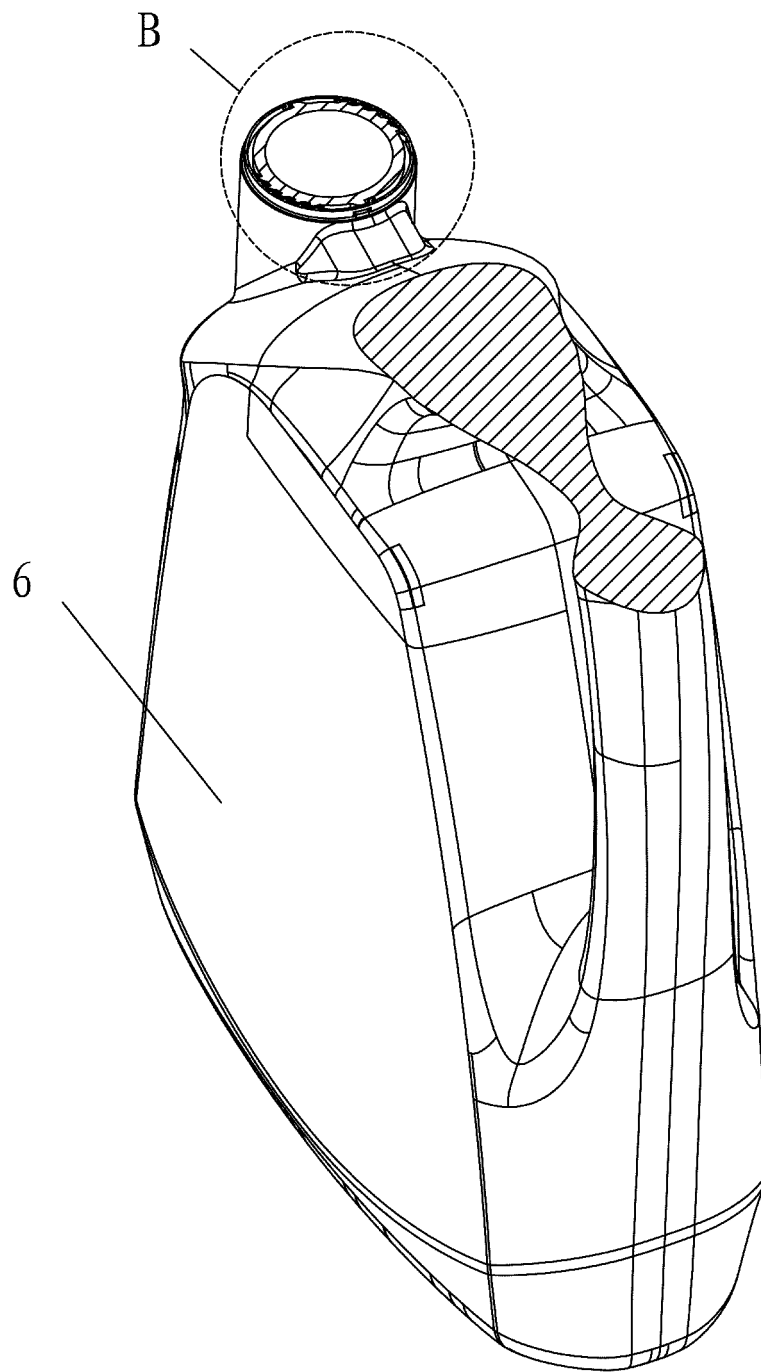


FIG.10

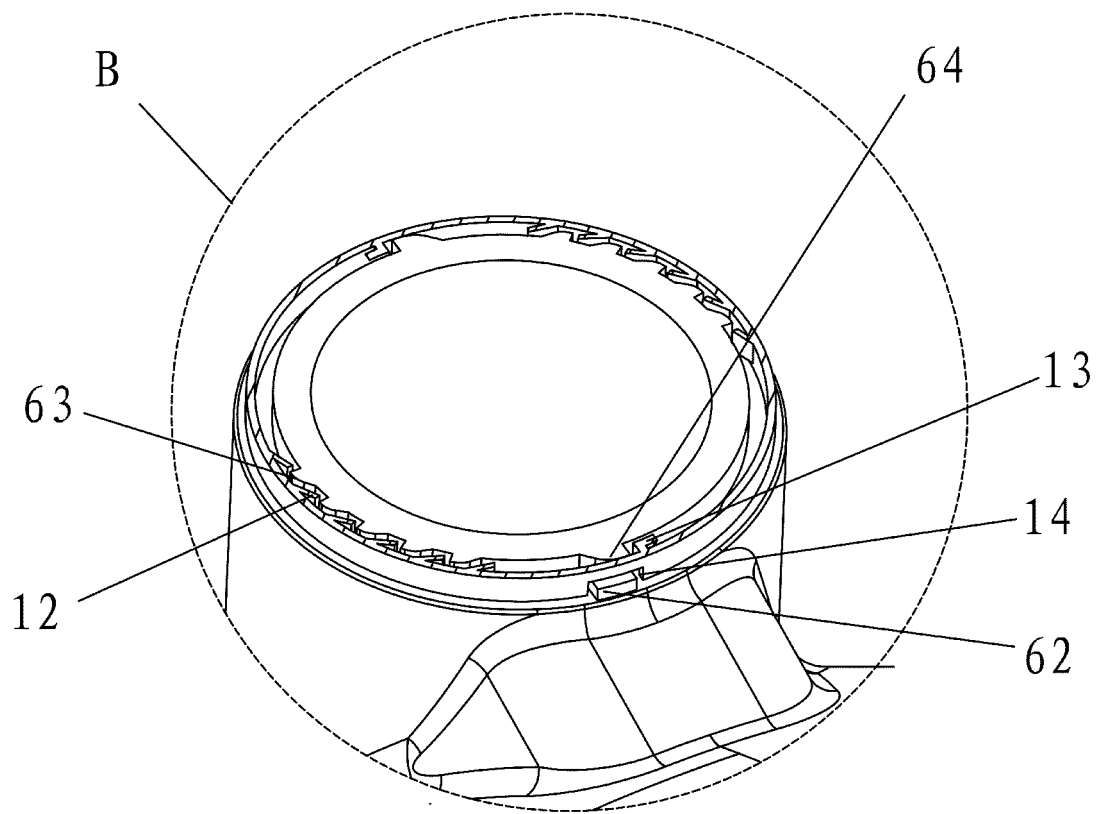


FIG.11

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2015/089848

A. CLASSIFICATION OF SUBJECT MATTER

B65D 55/02 (2006.01) i; B65D 47/08 (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

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; SIPOABS; VEN: antitheft, anti-counterfeiting, BOTTLE, CONTAINER, VESSEL, CAP, COVER, ANTI, THEFT, COUNTERFEIT, FORGE, PREVENT, LIMIT, RESTRICT, PROTECT, SHEET, PIECE, RIP, TEAR

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
E	CN 204896201 U (QUANZHOU HUASHUO INDUSTRY CO., LTD. et al.), 23 December 2015 (23.12.2015), claims 1-10	1-10
E	CN 204896205 U (QUANZHOU HUASHUO INDUSTRY CO., LTD. et al.), 23 December 2015 (23.12.2015), claims 1-6	1-6
A	US 2011108509 A1 (FONTANA, R.E.), 12 May 2011 (12.05.2011), figures 1-4 and relevant description	1-10
A	CN 101337604 A (LI, Zhibin), 07 January 2009 (07.01.2009), the whole document	1-10
A	EP 2765090 A1 (GUALA CLOSURES SPA), 13 August 2014 (13.08.2014), the whole document	1-10

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

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Name and mailing address of the ISA/CN: State Intellectual Property Office of the P. R. China No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088, China Facsimile No.: (86-10) 62019451	Authorized officer LI, Weiwei Telephone No.: (86-10) 62085325

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Information on patent family members

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REFERENCES CITED IN THE DESCRIPTION

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