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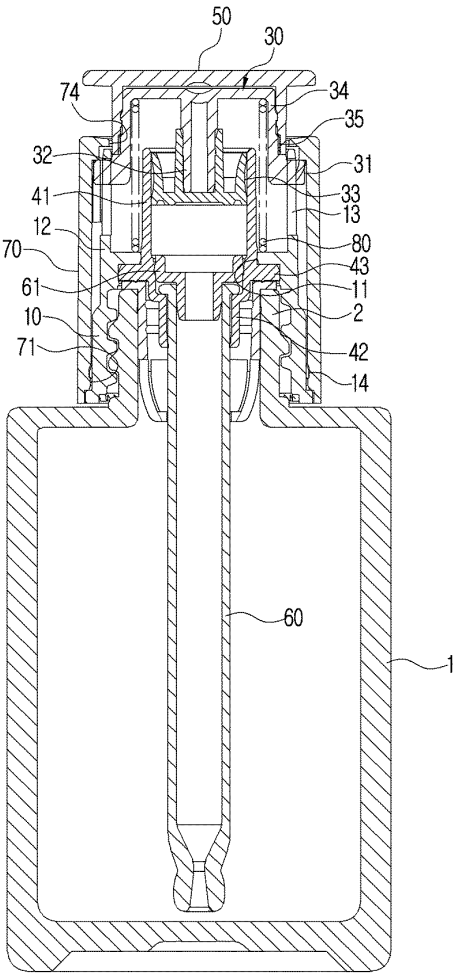
(54) **FIXED-QUANTITY PUMPING CAP STRUCTURE FOR DROPPER**

(57) A fixed-quantity pumping cap for a dropper is proposed. The fixed-quantity pumping cap for a dropper is separately configured to include: a mounting cap that is selectively separated from and mounted to a container body, and a pumping rotator for pumping a pumping member upward and downward while being rotated on an outer side of the mounting cap, wherein the mounting cap is provided to be safely separated from and mounted to the container body, and contents are able to be discharged by the pumping rotator, so that loss of contents caused by the separation of fixed-quantity pumping cap for a dropper from the container body when in portable use is fundamentally eliminated, and a pumping mechanism according to an intake and discharge of the contents is simplified, whereby cost may be remarkably lowered together with productivity improvement according to assembly production.

FIG. 5



EP 3 932 250 A1

Description

CROSS REFERENCE TO RELATED APPLICATION

[0001] The present application claims priority to Korean Patent Application No. 10-2020-0080325, filed June 30, 2020, the entire contents of which is incorporated herein for all purposes by this reference.

BACKGROUND OF THE INVENTION

(a) Field of the Invention

[0002] The present disclosure relates to a fixed-quantity pumping cap for a dropper and, more particularly, to a fixed-quantity pumping cap for a dropper that is separately configured to include: a mounting cap that is selectively separated from and mounted to a container body; and a pumping rotator for pumping a pumping member upward and downward, while being rotated on an outer side of the mounting cap, wherein the mounting cap is provided to be safely separated from and mounted to the container body, and contents are able to be discharged by the pumping rotator, so that loss of contents caused by the separation of fixed-quantity pumping cap for a dropper from the container body when in portable use is fundamentally eliminated, and a pumping mechanism according to an intake and discharge of the contents is simplified, whereby cost may be remarkably lowered together with productivity improvement according to assembly production.

(b) Description of the Related Art

[0003] In general, in the case of using cosmetic contents filled in containers, the cosmetic containers may be divided into two types: a type of a cosmetic container in which contents accommodated in a container body are discharged through an opening part after removing a lid from the container body; and a type of a cosmetic container in which contents are discharged through a content discharge pump mounted on an opening part of the container.

[0004] Among the cosmetic contents used for discharge as described above, high-functional cosmetics such as essences or eye creams, anti-aging and anti-wrinkle agents, etc. are usually expensive and used in small amounts, and thus it is necessary to discharge the contents in a fixed quantity. Accordingly, a dropper-type cosmetic container has been developed and distributed, in which contents are discharged by using a dropper method and the contents are allowed to be applied to the skin in a small fixed amount. A dropper is a mechanism of a distribution means which has a unique function to move contents by inhaling liquid contents with the force of vacuum and then discharging the contents back to a desired position, and the dropper is widely used as a means for distributing experimental liquids, medicines, etc. in various laboratories or medical institutions.

[0005] The dropper used as described above has an advantage in that the dropper enables a user to use a fixed quantity while minimizing loss of the contents.

[0006] As a conventional dropper-type cosmetic container to which a dropper is applied, there is a "DISPENSER FOR LIQUID CONTAINER" of the pre-registered Korean Patent No. 10-1215420.

[0007] As shown in FIG. 1, an embodiment of the pre-registered invention includes: a rotator 400 constituting a cap coupled to a container body 100; an inner cap 700; and a piston 630 that is simultaneously raised as an outer cap 800 is rotated and raised, wherein contents are suctioned in a fixed quantity via a dropper pipe 310, and then the contents suctioned into the dropper pipe 310 are discharged by an action of pressing a button part 600 by a user, when in use, whereby the user may use the contents by simply discharging a certain amount of the contents without any separate manipulation.

[0008] In the above embodiment of the pre-registered invention, a spiral guide groove 410 of the rotator 400 positioned on a guide protrusion 220 formed on a wiper 200 that is mounted to an inlet 110 of the container body 100 is provided at a position for guidance, wherein the guide groove 410 has an opening part 411 formed at a lower part of the guide groove 410 to be coupled to the guide protrusion 220 of the wiper.

[0009] The inner cap 700 including a cylinder 720 in which the piston 630 reciprocates is assembled on an outer side of the rotator 400, and the outer cap 800 is assembled to an outer side of the inner cap 700, wherein the button part 600 is assembled on an upper part of the outer cap 800 so as to receive a repulsive force of a spring 500, and the piston 630 assembled to interlock with the button part 600 is assembled to be positioned in the cylinder 720 of the inner cap 700.

[0010] In the "DISPENSER FOR LIQUID CONTAINER" of the pre-registered invention, in which the embodiment is configured as described above, as a horizontal part 413 that forms a guide groove 410 of the rotator 400 interlocking with a cap when rotating in a separation direction of the inner cap 700 and the outer cap 800 constituting the cap is released from the guide protrusion 220 of the wiper 200 and at the same time an inclined part 412 is guided to the guide protrusion 220, the inner cap 700, the outer cap 800, and the rotator 400 constituting the cap move upward. At this time, the piston 630 assembled to interlock with the button part 600 moves upward from the cylinder 720 formed in the inner cap 700 by the repulsive force of the spring 500, whereby the contents are suctioned into the dropper pipe 310.

[0011] When the contents are suctioned into the dropper pipe 310, the button part 600 is pressed to discharge the contents in a state of releasing the dropper pipe 310 from the inlet 110 of the container body 100 and putting the outlet of the dropper pipe 310 to an area where the contents are to be used.

[0012] In the "DISPENSER FOR LIQUID CONTAIN-

ER" of the pre-registered invention, there is a disadvantage in that assembly productivity, particularly assembly man-hours, is unable to be improved because a structure of the pre-registered invention is complicated by separately configuring a rotator other than the inner cap and the outer cap constituting the cap, and also there is another disadvantage in that when in portable use rather than in use at a dressing table, the cap is easily separated from the container body and expensive contents are often lost because a means for fixing the cap to the container body has a structure in which a fastening state is maintained while the horizontal part of the guide groove is positioned on the guide protrusion of the wiper.

SUMMARY OF THE INVENTION

[0013] The present disclosure is described to solve the disadvantages of the pre-registered invention, and an objective of the present disclosure is to provide a fixed-quantity pumping cap structure for a dropper, wherein not only a piston constituting a pumping member is enabled to reciprocate in a cylinder of a cylinder member, and a guide protrusion of a piston movable member that enables the reciprocating movement of the piston is guided in a guide groove formed in an extension part of a mounting cap so that the piston is allowed to move upward and downward without rotation, but also the piston movable member is positioned so as to receive a repulsive force of a repulsive spring, and at the same time the guide protrusion of the piston movable member is positioned so as to be controlled on a pumping inclined surface formed as an inner surface of a pumping rotator so that contents may be suctioned into the cylinder and the contents suctioned into the cylinder may be discharged by operation of the discharge cap while the guide protrusion of the piston movable member is selectively positioned on an upper horizontal surface and a lower horizontal surface of the pumping inclined surface of the pumping rotator by a rotation of the pumping rotator mounted so as to be idly rotated in the mounting cap. Accordingly, it is possible to use stable suction and discharge of the contents by the fixed-quantity pumping cap for a dropper because the fixed-quantity pumping cap structure is improved so that the upward and downward movement of the pumping cap and the separation of the container body are operated individually, and even when in portable use, the pumping cap is easily separated from the container body because the pumping cap is securely locked to and unlocked from the container body via the mounting cap fastened by screwing to the opening part of the container body, thereby solving the problem of the pre-registered "DISPENSER FOR LIQUID CONTAINER" in which expensive contents are lost. Moreover, it is possible to significantly reduce an economic burden of consumers because productivity is improved in accordance with assembly productivity and because production cost is significantly reduced due to simplification of the number of parts constituting the pumping cap and simplification of the structure.

[0014] In the embodiment of the present disclosure for achieving the above objective, there is provided a fixed-quantity pumping cap structure for a dropper, the fixed-quantity pumping cap structure including: a mounting cap 10 in which a coupling screw thread is formed on an inner circumferential surface thereof so as to be fastened by screwing onto a screw thread formed on an opening part of a container body where contents are stored, a cylinder member fastening annular rim is formed to allow a cylinder member to pass through a center thereof and a fixing flange of the cylinder member to be undercut and assembled thereto at the same time, and a guide groove through which a guide protrusion of a pumping member installed to interlock with a discharge cap is guided is formed in four divided directions in an extension part extending upwardly starting from the cylinder member fastening annular rim; the cylinder member in which a cylinder is positioned through the cylinder member fastening annular rim of the mounting cap, the fixing flange that is undercut and assembled to the cylinder member fastening annular rim is formed, and a dropper tube assembly pipe is assembled by passing through the cylinder is formed to extend from a lower part of the fixing flange; a dropper tube being assembled through the dropper tube assembly pipe of the cylinder member to be positioned to allow suction of the contents accommodated in the container body, and at the same time being assembled by an assembly member positioned inside the cylinder; the pumping member in which the guide protrusion guided in the guide groove formed in the extension part of the mounting cap protrudes in each of the four directions, and a piston that is vacuum reciprocated in the cylinder is assembled to a pin rod formed in a center of a concave part; a pumping rotator allowed to cover an outer surface of the mounting cap so that a locking annular rim formed in a lower inside of the pumping rotator is engaged with a locking annular rim and assembled to be idly rotatable, having a pumping inclined surface that is divided into four parts formed on an upper inner circumferential surface thereof, the pumping rotator pressing the guide protrusion guided in the guide groove of the extension part of the mounting cap and allowing a pressed state to be released while receiving a repulsive force of a spring, and having an annular rim forming an inner diameter corresponding to an outer circumferential surface of the discharge cap formed at an upper part adjacent to the pumping inclined surface; and the discharge cap configured to be undercut and assembled to the pumping member, and having a concave-convex surface engaged with a concave-convex surface formed on the pumping member, the concave-convex surface being formed on an inner surface of the discharge cap so as to be assembled without idle rotation.

[0015] The piston may have a constricted shape in a center of an outer circumferential surface thereof so as to facilitate reciprocating movement in the cylinder of the cylinder member and to enable maintaining of stable air-

tightness, and may have an assembly pipe formed by extending to an upper center of the piston so as to be assembled to the pin rod of the pumping member.

[0016] The pumping inclined surface of the pumping rotator may have an upper horizontal surface and a lower horizontal surface respectively formed at an upper end and a lower end of the pumping inclined surface so that a user may be able to perceive a point of time when rotation of the pumping rotator is completed, and a rotation control protrusion may be formed at a point adjacent to the lower horizontal surface.

[0017] In the fixed-quantity pumping cap structure for the dropper as described above, not only a piston 33 constituting a pumping member 30 is enabled to reciprocate in a cylinder 41 of a cylinder member 40, and a guide protrusion 31 of a piston movable member 34 that enables the reciprocating movement of the piston 33 is guided in a guide groove 13 formed in an extension part 12 of a mounting cap 10 so that the piston 33 is allowed to move up and down without rotation, but also the piston movable member 34 is positioned so as to receive the repulsive force of a repulsive spring 80, and at the same time the guide protrusion 31 of the piston movable member 34 is positioned so as to be controlled on a pumping inclined surface 72 formed as an inner surface of a pumping rotator 70 so that contents may be suctioned into the cylinder and the contents suctioned into the cylinder 41 may be discharged by operation of the discharge cap 50 while the guide protrusion 31 of the piston movable member 34 is selectively positioned on an upper horizontal surface 72a and a lower horizontal surface 72b of the pumping inclined surface 72 of the pumping rotator 70 by a rotation of the pumping rotator 70 mounted so as to be idly rotated in the mounting cap 10.

[0018] Firstly, it is possible to use stable suction and discharge of the contents by the fixed-quantity pumping cap for a dropper because the fixed-quantity pumping cap structure is improved so that the upward and downward movement of the pumping cap and the separation of the container body 1 are performed individually. Furthermore, even when in portable use, the pumping cap is easily separated from the container body 1 because the pumping cap is securely locked and unlocked the container body via the mounting cap 10 fastened by screwing to the opening part 2 of the container body 1, thereby solving the problem of the pre-registered "DISPENSER FOR LIQUID CONTAINER" in which expensive contents are lost.

[0019] Secondly, the embodiment of the present disclosure is very useful, in that an economic burden of consumers is significantly reduced because productivity is improved in accordance with assembly productivity and because production cost is significantly reduced due to simplification of the number of parts constituting the pumping cap and simplification of the structure.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020]

FIG. 1 is an exploded perspective view showing the configuration of a dispenser for a liquid container according to the related art.

FIG. 2 is an exploded perspective view showing the configuration of a fixed-quantity pumping cap for a dropper according to an embodiment of the present disclosure.

FIG. 3 is an exploded cross-sectional view showing the configuration of the fixed-quantity pumping cap for a dropper according to the embodiment of the present disclosure.

FIG. 4 is a sectional view showing the combined configuration of the fixed-quantity pumping cap for a dropper according to the embodiment of the present disclosure, the view showing the cap before inhaling contents.

FIG. 5 is a sectional view showing the combined configuration of the fixed-quantity pumping cap for a dropper according to the embodiment of the present disclosure, the view showing a state in which the contents are suctioned into the cap.

FIG. 6 is a sectional view showing a coupling structure of the fixed-quantity pumping cap for a dropper according to the embodiment of the present disclosure, the view showing the cap separated from a container body.

FIG. 7 is an exemplary view showing a main part of the fixed-quantity pumping cap for a dropper according to the embodiment of the present disclosure.

DETAILED DESCRIPTION OF THE INVENTION

[0021] Hereinafter, a preferred exemplary embodiment for achieving the above objective will be described in detail with reference to the accompanying drawings as follows.

[0022] A structure for a fixed-quantity pumping cap for a dropper for the present disclosure is configured to include: a container body 1 in which contents are stored; a dropper tube 60 through which the contents stored in the container body 1 are suctioned; a cylinder member 40 to which the dropper tube 60 is coupled; a mounting cap 10 which is separated from and mounted to the container body 1 and to which the cylinder member 40 is assembled; a pumping member 30 in which a piston 33 reciprocating in a cylinder 41 of the cylinder member 40 is pumped via a piston movable member 34; a pumping rotator 70 for pumping the pumping member 30; and a

discharge cap 50 assembled to the pumping member 30.

[0023] The mounting cap 10 has a coupling screw thread formed on an inner circumferential surface thereof so as to be fastened by screwing onto a screw thread formed on an opening part 2 of the container body 1 where the contents are stored.

[0024] A cylinder member fastening annular rim 11 having a center thereof through which the cylinder member 40 passes is formed to allow a fixing flange 43 of the cylinder member 40 that is undercut to be assembled thereto.

[0025] In an extension part 12 formed to extend upwardly starting from the cylinder member fastening annular rim 11, a guide groove 13 through which a guide protrusion 31 of the pumping member 30 installed so as to interlock with the discharge cap 50 is guided is formed by being divided into four directions.

[0026] In the cylinder member 40, the cylinder 41 is positioned through the cylinder member fastening annular rim 11 of the mounting cap 10, the fixing flange 43 that is undercut and fixed to the cylinder member fastening annular rim 11 is formed, and a dropper tube assembly pipe 42 assembled by passing through the cylinder 41 is formed to extend at a lower part of the fixing flange 43.

[0027] The dropper pipe 60 is assembled through the dropper tube assembly pipe 42 of the cylinder member 40, so as to be positioned to allow suction of the contents accommodated in the container body 1 and is assembled by the assembly member 61 positioned inside the cylinder 41 at the same time.

[0028] In the pumping member 30, the guide protrusion 31 guided in the guide groove 13 formed in the extension part 12 of the mounting cap 10 is formed to protrude in each of four directions, and a piston 33 that is reciprocated in vacuum in the cylinder 41 is assembled to a pin rod 32 formed in a center of a concave part of the pumping member 30.

[0029] The pumping rotator 70 is allowed to cover an outer surface of the mounting cap 10, whereby a locking annular rim 71 formed at a lower inner side of the pumping rotator 70 is engaged with a locking annular rim 14, thereby being assembled to be idly rotatable.

[0030] A pumping inclined surface 72 that presses the guide protrusion 31 guided from the guide groove 13 of the extension part 12 of the mounting cap 10 and allows the pressed state to be released, while receiving the repulsive force of the spring 80, is formed by being divided into four parts on an upper inner circumferential surface of the pumping rotator 70.

[0031] An annular rim 74 having an inner diameter thereof corresponding to an outer circumferential surface of the discharge cap 50 is formed at an upper part adjacent to the pumping inclined surface 72.

[0032] The discharge cap 50 is configured to be undercut and assembled to the pumping member 30, wherein a concave-convex surface 51 formed on an inner surface of the pumping cap 50 is configured to be engaged with a concave-convex surface 35 formed on the pumping member 30, so as to enable assembly without idle rotation.

[0033] The piston 33 has a constricted shape in a center of an outer circumferential surface thereof so as to be able to maintain stable airtightness while facilitating reciprocating movement in the cylinder 41 of the cylinder member 40, and has an assembly pipe 33a formed to extend to an upper center of the piston 33 to be able to be assembled to the pin rod 32 of the pumping member 30.

[0034] In the pumping inclined surface 72 of the pumping rotator 70, an upper horizontal surface 72a and a lower horizontal surface 72b are respectively formed at an upper end and a lower end of the pumping inclined surface 72 so that a user may perceive a point of time when rotation of the pumping rotator 70 is completed, and a rotation control protrusion 73 is formed at a point adjacent to the lower horizontal surface 72b. In the fixed-quantity pumping cap for a dropper that is configured with the above-described configuration of the present disclosure, an assembly member 61 is assembled to an upper part of the dropper tube 60 and is directed downward from an upper part of the cylinder member 40, so that the dropper tube 60 is assembled by passing through the dropper assembly tube 42 of the cylinder member 40, whereby the assembly member 61 is undercut and assembled to an upper part of the dropper assembly tube 42 of the cylinder member 40.

[0035] The cylinder member 40 to which the dropper tube 60 is assembled is assembled to the mounting cap 10, wherein when assembling, the cylinder member 40 is pushed up. At this time, the cylinder 41 is passed through the cylinder member fastening annular rim 11 of the mounting cap 10, and the fixing flange 43 of the cylinder member 40 is undercut and assembled to the cylinder member fastening annular rim 11.

[0036] When the assembly of the cylinder member 40 to the mounting cap 10 is completed, the spring 80 for adding the repulsive force to the piston movable member 34 of the pumping member 30 is positioned between inside the extension part 12 of the mounting cap 10 and outside the cylinder 41 of the cylinder member 40 positioned on the extension part 12.

[0037] Afterwards, via an assembly pipe 33a, the piston 33 is assembled to the pin rod 32 of the piston movable member 34 constituting the pumping member 30 so as to be positioned in the extension part 12 of the mounting cap 10, and the piston 33 is positioned so as to be pumped in the cylinder 41 of the cylinder member 40.

[0038] At this time, the guide protrusion 31 of the piston movable member 34 is positioned so as to be guided in the guide groove 13 formed in four directions in the extension part 12 of the mounting cap 10.

[0039] The pumping member 30 assembled as described above is subjected to the repulsive force of the spring 80.

[0040] In a state where the cylinder member 40 and

the pumping member 30 are assembled to the mounting cap 10 in sequence, the pumping rotator 70 is assembled to an outer side of the mounting cap 10.

[0041] In the pumping rotator 70, the locking annular rim 71 formed on the lower inner side of the pumping rotator 70 is engaged with the locking annular rim 14 of the mounting cap 10, thereby being assembled in a state of being rotatable on the outer side of the mounting cap 10.

[0042] In addition, the guide protrusion 31 of the piston movable member 34 is selectively pressed against the pumping inclined surface 72 formed at an upper inner surface of the pumping rotator 70 assembled as above, or is released from the pressed state.

[0043] The piston movable member 34 of the pumping member 30 is positioned to protrude to the annular rim 74 of an upper part of the pumping rotator 70 assembled as described above, and the discharge cap 50 is assembled to the piston movable member 34, wherein the concave-convex surface 51 formed at a lower inner surface of the discharge cap 50 is engaged with the concave-convex surface 35 of the piston movable member 34, thereby enabling stable assembly without rotation.

[0044] When using the contents accommodated in the container body 1 by utilizing the fixed-quantity pumping cap for a dropper assembled as described above in the present disclosure, the pumping rotator 70 is rotated in a direction of screw loosening so that the guide protrusion 31 of the piston movable member 34 positioned on a lower horizontal surface 72b of the pumping inclined surface 72 of the pumping rotator 70 may be released from the lower horizontal surface 72b.

[0045] When the pumping rotator 70 rotates in the direction of screw loosening, the guide protrusion 31 of the piston movable member 34 moves upward along the pumping inclined surface 72 while being released from the lower horizontal surface 72b.

[0046] The principle that the guide protrusion 31 of the piston movable member 34 is able to move upward along the pumping inclined surface 72 of the pumping rotator 70 is made applicable by the repulsive force of the spring 80.

[0047] As described above, when the piston movable member 34 is pumped upward, the piston 33 assembled to the pin rod 32 via the assembly pipe 33a is pumped in the cylinder 41 of the cylinder member 40, and by vacuum pressure generated at this time, the contents of the container body 1 transferred along the dropper tube 60 inside the cylinder 41 is introduced into the cylinder 41.

[0048] A state in which the contents are introduced into the cylinder 41 is as shown in FIG. 5. In the above-described state, when the pumping rotator 70 is rotated by applying a more force, the rotational force is transmitted to the mounting cap 10 mounted on the opening part 2 of the container body 1, and thus the fixed-quantity cap of the dropper is separated from the container body 1. (See FIG. 6)

[0049] When the contents are introduced into the cylinder 41 of the cylinder member 40, the discharge cap 50 assembled to the pumping movable member 34 enters into a state of being spaced apart from the annular rim 74 of the pumping rotator 70, thereby being in a state where the pumping and discharging of the contents introduced into the cylinder 41 maybe usable.

[0050] When pressing the discharge cap 50 at a time when the contents are to be discharged and used, the piston 33 assembled to the piston movable member 34 is pressed down while the guide protrusion 31 of the piston movable member 34 moves straight down along the guide groove 13 of the extension part 12 of the mounting cap 10, so that the contents of the cylinder 41 are pumped out, whereby the contents are applied on a required area for use through the dropper tube 60.

[0051] FIG. 7 is a view showing a state in which the guide protrusion 31 of the piston movable member 34 of the pumping member 30 is positioned on the upper horizontal surface 72a of the pumping inclined surface 72 of the pumping rotator 70. FIG. 7 not only shows a state in which the contents are suctioned into the cylinder 41 of the cylinder member 40, but also shows in detail a state in which the guide protrusion 31 of the piston movable member 34 is positioned to be able to be pressed down vertically in the guide groove 13 of the extension part 12 of the mounting cap 10 by push operation of the discharge cap 50, regardless of the operation of the pumping rotator 70.

[0052] As described above, when the discharge of the contents are completed, the mounting cap 10 is mounted on the opening part 2 of the container body 1 and stored therein, and when rotation is stopped by completion of the mounting of the mounting cap 10 to the container body 1, the rotational force is transmitted to the pumping rotator 70 assembled to be rotated in the mounting cap 10 and rotated in a direction of screw locking. At this time, the guide protrusion 31 of the piston movable member 34 of the pumping member 30 positioned on the upper horizontal surface 72a of the pumping inclined surface 72 moves downward while being pressed against the pumping inclined surface 72 after being released from the upper horizontal surface 72a.

[0053] As the piston movable member 34 is moved downward, the piston 33 assembled to interlock with the piston movable member 34 is positioned below the cylinder 41.

[0054] At the same time as the guide protrusion 31 of the piston movable member 34 pressed against the pumping inclined surface 72 reaches the lower horizontal surface 72b, the rotation of the pumping rotator 70 is stopped by the rotation control protrusion 73, thereby reaching a state as shown in FIG. 4.

[0055] As described above, since a state in which the mounting cap 10 is securely locked with the container body 10 is maintained, and at the same time the discharge cap 50 is in close contact with the annular rim 74 of the upper part of pumping rotator 70, it is possible to eliminate the disadvantages of the conventional fixed-

quantity cap for a dropper, in which the contents are lost due to undesirable operation by a user when in portable use.

Claims

1. A fixed-quantity pumping cap structure for a dropper, the fixed-quantity pumping cap structure comprising: a mounting cap (10) in which a coupling screw thread is formed on an inner circumferential surface thereof so as to be fastened by screwing onto a screw thread formed on an opening part (2) of a container body (1) where contents are stored, a cylinder member fastening annular rim (11) is formed to allow a cylinder member (40) to pass through a center thereof and a fixing flange (43) of the cylinder member (40) to be undercut and assembled thereto at the same time, and a guide groove (13) through which a guide protrusion (31) of a pumping member (30) installed to interlock with a discharge cap (50) is guided is formed in four divided directions in an extension part (12) extending upwardly starting from the cylinder member fastening annular rim (11); the cylinder member (40) in which a cylinder (41) is positioned through the cylinder member fastening annular rim (11) of the mounting cap (10), the fixing flange (43) that is undercut and assembled to the cylinder member fastening annular rim (11) is formed, and a dropper tube assembly pipe (42) is assembled by passing through the cylinder (41) is formed to extend from a lower part of the fixing flange (43); a dropper tube (60) being assembled through the dropper tube assembly pipe (42) of the cylinder member (40) to be positioned to allow suction of the contents accommodated in the container body (1), and at the same time being assembled by an assembly member (61) positioned inside the cylinder; the pumping member (30) in which the guide protrusion guided in the guide groove (13) formed in the extension part (12) of the mounting cap (10) protrudes in each of the four directions, and a piston (33) that is vacuum reciprocated in the cylinder (41) is assembled to a pin rod (32) formed in a center of a concave part; a pumping rotator (70) allowed to cover an outer surface of the mounting cap (10) so that a locking annular rim (71) formed in a lower inside of the pumping rotator (70) is engaged with a locking annular rim (14) and assembled to be idly rotatable, having a pumping inclined surface (72) that is divided into four parts formed on an upper inner circumferential surface thereof, the pumping rotator (70) pressing the guide protrusion (31) guided in the guide groove (13) of the extension part (12) of the mounting cap (10) and allowing a pressed state to be released while receiving a repulsive force of a spring, and having an annular rim (74) forming an inner diameter corresponding to an outer circumferential surface of the discharge cap (50) formed at an upper part adjacent to the pumping inclined surface (72); and the discharge cap (50) configured to be undercut and assembled to the pumping member (30), and having a concave-convex surface (51) engaged with a concave-convex surface (35) formed on the pumping member (30), the concave-convex surface (51) being formed on an inner surface of the discharge cap (50) so as to be assembled without idle rotation.

2. The fixed-quantity pumping cap structure of claim 1, wherein the piston (33) has a constricted shape in a center of an outer circumferential surface thereof so as to facilitate reciprocating movement in the cylinder (41) of the cylinder member (40) and to enable maintaining of stable airtightness, and has an assembly pipe (33a) formed by extending to an upper center of the piston (33) so as to be assembled to the pin rod (32) of the pumping member (30).

3. The fixed-quantity pumping cap structure of claim 1, wherein the pumping inclined surface (72) of the pumping rotator (70) has an upper horizontal surface (72a) and a lower horizontal surface (72b) respectively formed at an upper end and a lower end of the pumping inclined surface (72) so that a user is able to perceive a point of time when rotation of the pumping rotator (70) is completed, and a rotation control protrusion (73) is formed at a point adjacent to the lower horizontal surface (72b).

FIG. 1

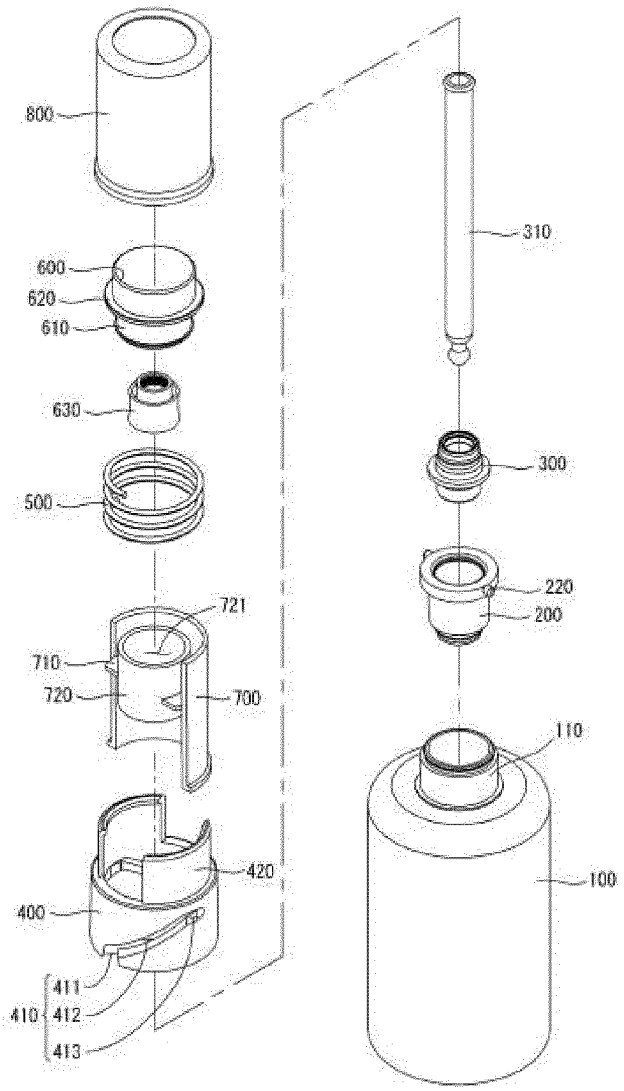

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FIG. 2

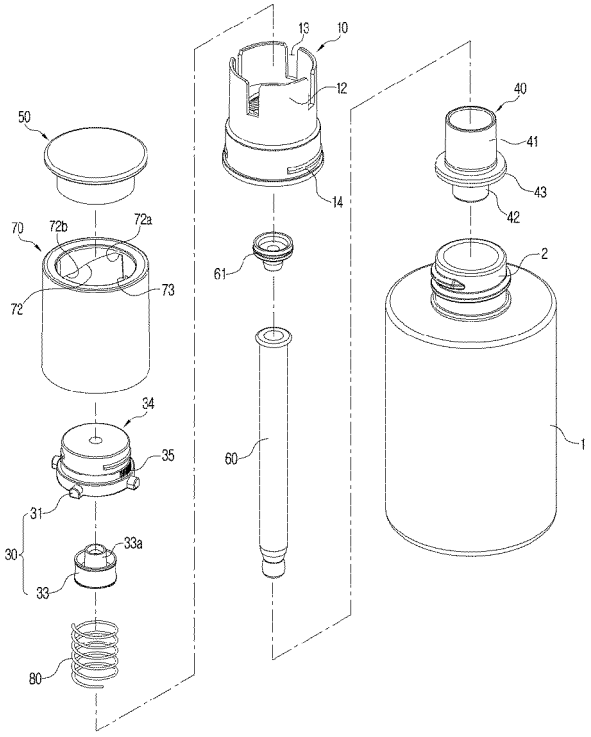
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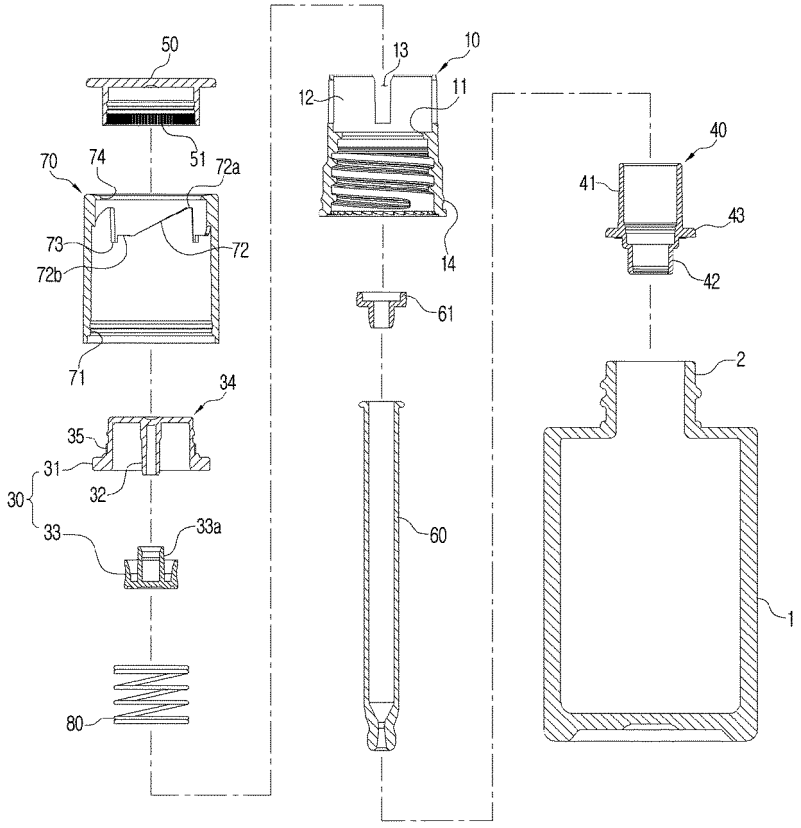
FIG. 3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33a
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FIG. 4

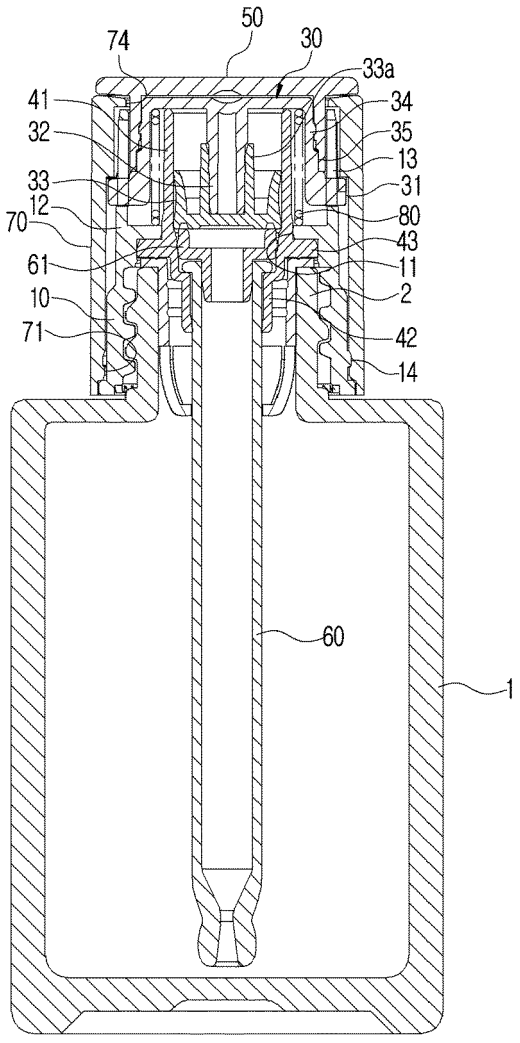
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FIG. 5

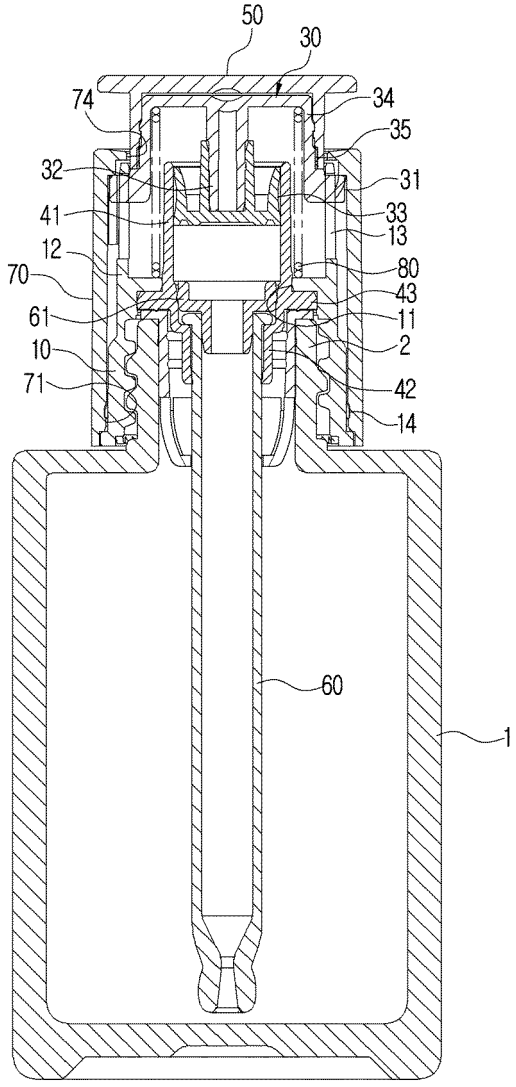
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FIG. 6

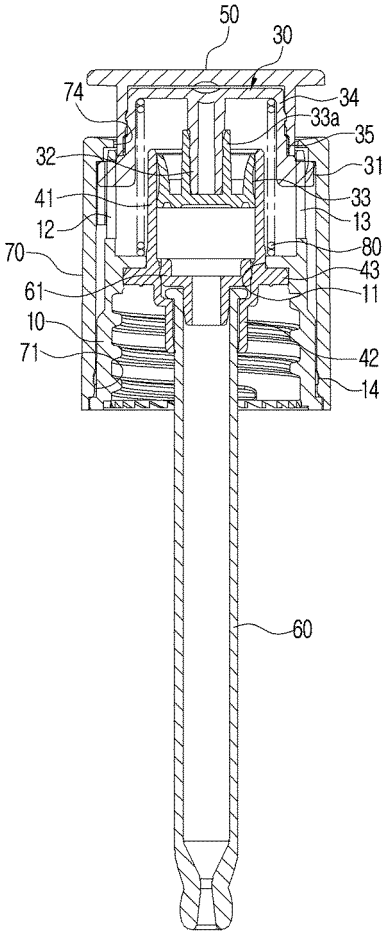
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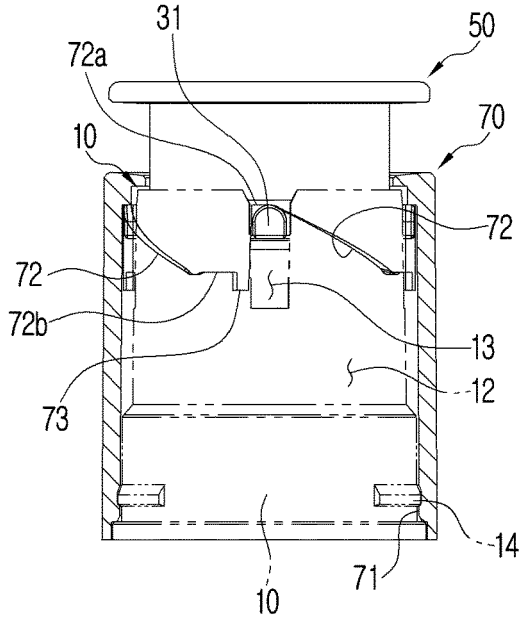
FIG. 7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EUROPEAN SEARCH REPORT

Application Number
EP 20 21 5345

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	KR 2012 0002205 U (-) 26 March 2012 (2012-03-26) * the whole document *	1-3	INV. A45D34/04 B01L3/02
A	KR 2012 0014653 A (YONWOO CO LTD [KR]) 20 February 2012 (2012-02-20) * the whole document *	1-3	
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TECHNICAL FIELDS SEARCHED (IPC)

A45D
B01L

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	27 May 2021	Dinescu, Daniela

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