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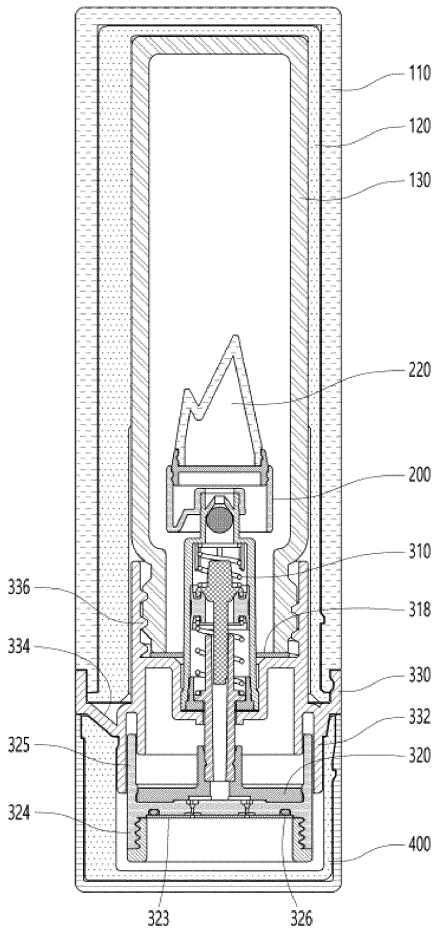
(54) STAMP TYPE FLUID DISCHARGE APPARATUS

(57) A stamp-type fluid discharge apparatus includes a container storing fluid, and a discharge unit coupled to the container and discharging the fluid stored in the container in a longitudinal direction of the container by a stamping operation in which the discharge unit is pressed after coming into contact with an object, wherein the discharge unit includes: a pumping part having a portion installed in the container to pump part of the fluid stored in the container by the stamping operation, and a discharge part connected to the pumping part and discharging a pumped fluid, and the discharge part includes a discharge hole formed in the length direction of the container, and a protruding wall protruding in a loop shape to surround the discharge hole and isolating the discharge hole and the object when coming into contact with the object.

【FIG. 2】



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Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present disclosure relates to a stamp-type fluid discharge apparatus and, more particularly, to a stamp-type fluid discharge apparatus capable of discharging a fluid including a fragrance and color to an object.

Related Art

[0002] In general, a cosmetic formed of fluid is discharged to an object using a spray method.

[0003] In the case of a spray-type cosmetic container capable of discharging such a cosmetic to an object, a container having a size that may be held in one hand so that most users may easily grip it may be used, and specifically, a discharge port is projected in one direction to press a spray button with a thumb or a forefinger.

[0004] The user points the discharge port in a direction toward an object the user wants and presses the spray button with a thumb or forefinger. Here, the discharge port is mainly located in a lateral direction of the button so that the discharge is not disturbed by the thumb and the forefinger.

[0005] However, in the case of discharging the cosmetic through such a spray-type cosmetic container, the cosmetic may be scattered in a direction that the user does not want or the cosmetic may be sprayed in a cluster to form droplets.

[0006] In order to solve the problem, techniques for avoiding scattering of a cosmetic and preventing the cosmetic from lumping in part when using the cosmetic have been introduced, and specifically, Japanese Patent Application No. 2016-001779 discloses "Perfume Container".

[0007] However, this type of cosmetic container has a problem of eliminating the advantages of the spray method by eliminating the spray method.

Summary of the Invention

[0008] An aspect of the present disclosure provides a stamp-type fluid discharge apparatus for transferring a fluid pattern to an object.

[0009] Another aspect of the present disclosure provides a stamp-type fluid discharge apparatus for preventing spreading of a fluid pattern transferred to an object.

[0010] Another aspect of the present disclosure provides a stamp-type fluid discharge apparatus for preventing non-uniform transfer of a fluid pattern to an object.

[0011] Another aspect of the present disclosure provides a stamp-type fluid discharge apparatus for preventing irregular discharge of a total amount of fluid.

[0012] Another aspect of the present disclosure provides a stamp-type fluid discharge apparatus that may be recycled.

[0013] Another aspect of the present disclosure provides a stamp-type fluid discharge apparatus capable of discharging a fluid in various directions.

[0014] Another aspect of the present disclosure provides a stamp-type fluid discharge apparatus capable of changing an appearance.

[0015] Another aspect of the present disclosure provides a stamp-type fluid discharge apparatus capable of preventing leakage of a stored fluid.

[0016] Another aspect of the present disclosure provides a stamp-type fluid discharge apparatus for reducing a possibility of damage due to external impact.

[0017] Another aspect of the present disclosure provides a stamp-type fluid discharge apparatus for preventing deterioration of a fluid in a container.

[0018] In an aspect, a stamp-type fluid discharge apparatus may include: a container storing fluid; and a discharge unit coupled to the container and discharging the fluid stored in the container in a longitudinal direction of the container by a stamping operation in which the discharge unit is pressed after coming into contact with an object, wherein the discharge unit includes: a pumping part having a portion installed in the container to pump part of the fluid stored in the container by the stamping operation; and a discharge part connected to the pumping part and discharging a pumped fluid, and the discharge part includes: a discharge hole formed in the length direction of the container; and a protruding wall protruding in a loop shape to surround the discharge hole and isolating the discharge hole and the object when coming into contact with the object.

[0019] The discharge hole may be formed in a tapered shape in which a hole width decreases toward the outside.

[0020] The discharge hole may be provided in plurality to form a predetermined pattern as a whole, and when the discharge unit is pressed in the longitudinal direction in a state where the protruding wall is supported by the object, the fluid in the container may be transferred to the object in a predetermined pattern through the discharge hole.

[0021] In addition, the discharge part may include: a transfer member connected to the pumping part to transfer the fluid pumped by the pumping part; a discharge body overlapping the transfer member and having at least one hole disposed to correspond to the predetermined pattern; and a discharge member overlapping the discharge body and having the discharge hole, wherein the hole has a tapered shape in which a hole width decreases in a direction toward the discharge hole to increase a flow velocity of the fluid passing therethrough.

[0022] A fluid distribution hole may be provided between the discharge member and the discharge body or between the discharge body and the transfer member to distribute the pumped fluid before the fluid is discharged to the discharge hole.

[0023] The fluid distribution hole may include: a first cavity provided between the discharge member and the discharge body and having a form in which the discharge hole is located therein when overlapped in the longitudinal direction; and a second cavity formed between the discharge body and the transfer member and having a form in which the hole is located therein when overlapped in the longitudinal direction.

[0024] The stamp-type fluid discharge apparatus may further include: a storage tank connected to the pumping part, disposed in the container, and having a communication hole so that a part of the fluid stored in the container is introduced and stored, wherein the pumping part may include an opening located in the container so that the fluid may be introduced, and the communication hole may be located closer to the discharge part than the opening so that the fluid stored in the storage tank is introduced to the pumping part through the opening.

[0025] The discharge part may further include a slide wall protruding in the opposite direction of the protruding wall, the discharge unit may further include a body part, in a state of being coupled with the pumping part, coupled to the container so that a portion of the pumping part is located in the container, the body part may guide movement and returning to an original state according to pressing of the discharge part, and the body part may include: a first guide covering an outer circumference of the slide wall; a second guide covering an inner circumference of the slide wall; and a recess connecting the first guide and the second guide and coming into contact with an end of the slide wall when the slide wall moves by a predetermined distance.

[0026] The protruding wall may include: a protruding ring protruding in a loop shape to surround the discharge hole in the discharge body; and a fastening ring detachably fastened to the protruding ring, wherein the fastening ring covers an upper end of the discharge member mounted in the discharge body to prevent separation when fastened to the protruding ring.

[0027] The pumping part may include: a pump body having a space in which the fluid is detained therein and having an opening opened to communicate with the container; a ball disposed in the opening and opening or closing the opening so that the fluid in the container flows to the pump body or is prevented; a pump plug having a tubular shape and protruding from an inner wall surface of the pump body; a first piston rod located to penetrate the pump body and connected with the discharge part so as to move in the longitudinal direction; a first spring coming into contact with the pump plug and the first piston rod to push out the first piston rod in the direction of the discharge part; a second piston rod located in the pump body and moved in the longitudinal direction to open or close a tube of the first piston rod and a flow path formed as the pump plug or the opening of the pump body alternately; and a second spring providing elasticity to push out the second piston rod in a direction opposite to the first piston rod, when coming into contact with the pump plug and the second piston rod, wherein the fluid flowing into the opening by passing through the ball is pumped to the discharge part through the first piston rod by passing through the pump body.

[0028] The stamp-type fluid discharge apparatus according to an embodiment may have a fluid discharge hole forming a pattern. Thus, the stamp-type fluid discharge apparatus according to an embodiment may discharge a fluid in a pattern corresponding to a pattern of the discharge hole.

[0029] In addition, the discharge hole of the stamp-type fluid discharge apparatus according to an embodiment has a tapered cross-section that gradually decreases outward, so that a flow velocity increases when the fluid is discharged, and has the protruding wall surrounding a target part of the object, so that the fluid may be prevented from scattering to outside of the target part. Accordingly, the stamp-type fluid discharge apparatus according to an embodiment may prevent spreading of the fluid pattern transferred to the object.

[0030] In addition, the stamp-type fluid discharge apparatus according to an embodiment may have a cavity structure that dually distributes the fluid before the fluid is discharged through the discharge hole. Accordingly, all discharge holes of the stamp-type fluid discharge apparatus according to an embodiment may discharge the fluid at a uniform flow velocity, thereby preventing a fluid pattern from being unevenly transferred to the target part of the object.

[0031] In addition, the stamp-type fluid discharge apparatus according to an embodiment may include a pumping part in which fluid is temporarily stored. Accordingly, the stamp-type fluid discharge apparatus according to an embodiment discharges a certain amount of fluid stored in the pumping part, thereby preventing a total amount of fluid from being discharged irregularly.

[0032] In addition, in the stamp-type fluid discharge apparatus according to an embodiment, a vial is replaceable. Accordingly, the stamp-type fluid discharge apparatus according to an embodiment may be recycled.

[0033] In addition, the stamp-type fluid discharge apparatus according to an embodiment may include a storage tank for detaining fluid so that fluid may be supplied to the pumping part in various directions. Accordingly, the stamp-type fluid discharge apparatus according to an embodiment may discharge fluid even when the object is located above or below the stamp-type fluid discharge apparatus.

[0034] In addition, the stamp-type fluid discharge apparatus according to an embodiment may include a separate replaceable inner container, a decor, a discharge member replaceably. Accordingly, the stamp-type fluid discharge apparatus according to an embodiment may easily change an appearance thereof.

[0035] In addition, the stamp-type fluid discharge apparatus according to an embodiment may include a plurality of sealing members at parts where replacement is performed. Accordingly, the stamp-type fluid discharge

apparatus according to an embodiment may prevent leakage of fluid.

[0036] In addition, the stamp-type fluid discharge apparatus according to an embodiment may include a vial and may include an inner container and an outer container that dually surrounds the vial. Accordingly, the stamp-type fluid discharge apparatus according to an embodiment may buffer an external impact applied to the vial.

[0037] In addition, the stamp-type fluid discharge apparatus according to an embodiment may separate the object and a discharge hole to prevent contact therebetween, and the pumping part of the stamp-type fluid discharge apparatus may block the container and a discharge part. Accordingly, the stamp-type fluid discharge apparatus according to an embodiment may prevent deterioration of fluid in the container.

Brief Description of the Drawings

[0038] The above and other objects and features of the present disclosure will become apparent from the following description of preferred embodiments given in conjunction with the accompanying drawings, in which:

FIG. 1 is a perspective view of a stamp-type fluid discharge apparatus according to an embodiment.

FIG. 2 is a cross-sectional view of a stamp-type fluid discharge apparatus according to an embodiment.

FIG. 3 is an exploded perspective view of a discharge unit of a stamp-type fluid discharge apparatus according to an embodiment.

FIG. 4 is an exploded perspective view of a discharge unit of a stamp-type fluid discharge apparatus according to an embodiment in another direction.

FIG. 5 is a cross-sectional view illustrating a state without a cap in the stamp-type fluid discharge apparatus according to an embodiment.

FIG. 6 is a cross-sectional view illustrating a state in which a stamp-type fluid discharge apparatus according to an embodiment is stamped.

FIG. 7 is a cross-sectional view of a state in which a stamp-type fluid discharge apparatus according to an embodiment is returned after stamping.

FIG. 8 is an enlarged cross-sectional perspective view of a discharge part of a stamp-type fluid discharge apparatus according to an embodiment.

Detailed Description of the Embodiments

[0039] Hereinafter, a stamp-type fluid discharge apparatus related to the present disclosure will be described in detail with reference to the accompanying drawings. The accompanying drawings of the present disclosure aim to facilitate understanding of the present disclosure and should not be construed as limited to the accompanying drawings. Also, the present disclosure is not limited to a specific disclosed form but includes all modifications, equivalents, and substitutions without departing from the scope and spirit of the present disclosure.

[0040] Singular forms "a", "an" and "the" in the present disclosure are intended to include the plural forms as well, unless the context clearly indicates otherwise.

[0041] When it is mentioned that a certain element is "connected to" or "electrically connected to" a second element, the first element may be directly connected or electrically connected to the second element, but it should be understood that a third element may intervene therebetween. On the other hand, when it is mentioned that a certain element is "directly connected to" or "directly electrically connected to" a second element, it should be understood that there is no third element therebetween.

[0042] Further, it will be further understood that the terms "comprises" or "have" used in the present disclosure specify the presence of stated features, numerals, steps, operations, components, parts mentioned in this specification, or a combination thereof, but do not preclude the presence or addition of one or more other features, numerals, steps, operations, components, parts, or a combination thereof.

[0043] In describing the elements of the present disclosure, terms such as first, second, A, B, (a), (b), etc., may be used. Such terms are used for merely discriminating the corresponding elements from other elements and the corresponding elements are not limited in their essence, sequence, or precedence by the terms. It will be understood that when an element or layer is referred to as being "on" or "connected to" another element or layer, it can be directly on or directly connected to the other element or layer, or intervening elements or layers may be present.

[0044] Components included in one embodiment and components including common functions will be described using the same name in other embodiments. Unless otherwise stated, a description in one embodiment may also be applied to other embodiments and a detailed description will be omitted in an overlapping range.

[0045] FIG. 1 is a perspective view of a stamp-type fluid discharge apparatus according to an embodiment, FIG. 2 is a cross-sectional view of a stamp-type fluid discharge apparatus according to an embodiment, and FIG. 3 is an exploded perspective view of a discharge unit 300 of a stamp-type fluid discharge apparatus according to an embodiment.

[0046] In addition, FIG. 4 is an exploded perspective view of a discharge unit of a stamp-type fluid discharge apparatus according to an embodiment in another direction, FIG. 5 is a cross-sectional view illustrating a state without a cap in the stamp-type fluid discharge apparatus according to an embodiment, and FIG. 6 is a cross-sectional view illustrating a state in which a stamp-type fluid discharge apparatus according to an embodiment is stamped.

[0047] FIG. 7 is a cross-sectional view of a state in which a stamp-type fluid discharge apparatus according

to an embodiment is returned after stamping, and FIG. 8 is an enlarged cross-sectional perspective view of a discharge part of a stamp-type fluid discharge apparatus according to an embodiment.

[0048] Referring to FIGS. 1 through 8, the stamp-type fluid discharge apparatus according to an embodiment may include a cap 400, a container 100, a storage tank 200, and a discharge unit 300.

[0049] The cap 400 may be detachably coupled to the discharge unit 300 or may be coupled to the container 100. Accordingly, the cap 400 may block the discharge unit 300 from the outside so that the discharge unit 300 is not exposed to the outside when a user keeps the stamp-type fluid discharge apparatus in storage. When the user uses the stamp-type fluid discharge apparatus, the cap 400 may be separated from the discharge unit 300 or the container 100 to expose the discharge unit 300.

[0050] The cap 400 may be formed in a cup shape to correspond to a protruding shape of the discharge unit 300.

[0051] Referring to FIG. 2, the container 100 may store a fluid, such as a liquid perfume, a liquid cosmetic, a liquid dye, a liquid disinfectant, and the like therein. Specifically, the container 100 may include an outer container 110, an inner container 120 and a vial 130, and the fluid may be stored in the vial 130. This vial 130 may be in a bottle shape as shown in FIG. 2.

[0052] As shown in FIG. 2, the vial 130 may have a spiral that may be combined with components of the discharge unit 300 or other container 100 at an inlet portion of the bottle.

[0053] In the detailed description and drawings of the present disclosure, the vial 130 is illustrated and described in the form of a bottle having a fixed shape, but is not limited thereto. For example, the vial may be in the form of a plastic pack that may be flexibly changed or in the form of a syringe cylinder with one side moving. When the vial is in the form of a flexible plastic pack, a rigid member may be provided in an open portion of the plastic pack and combined with the components of the discharge unit 300 or other container 100.

[0054] The inner container 120 may be in the form of a bottle having a diameter larger than that of the vial so as to surround the vial 130 or may be a thin printed material in the form of paper or a small elastic body.

[0055] The outer container 110 may be in the form of a bottle larger than diameters of the vial 130 and the inner container 120 to surround the inner container 120. Therefore, the inner container 120 may be located between the outer container 110 and the vial 130 and may isolate the outer container 110 and the vial 130 so that when an impact is applied to the stamp-type fluid discharge apparatus due to user's carelessness, the inner container 200 may serve to buffer transmission of the impact applied to the outer container 110, to the vial 130.

[0056] In addition, if the vial 130 is formed of a rigid material, an impact may be transmitted to an inlet portion of the bottle of the vial 130 due to the user's carelessness to damage the vial 130. However, since the inner container 120 prevents movement of the vial 130 in the outer container 110, thereby preventing the impact from concentrating on the inlet portion of the bottle of the vial 130.

[0057] The storage tank 200 may be located in an internal space of the container 100. Preferably, the storage tank 200 may be located inside the vial 130.

[0058] Referring back to FIG. 2, the storage tank 200 may include a repository 210, a decor 220, and a decor connection wall 230.

[0059] The repository 210 may have an internal space and the internal space may be detained in the vial 130. In addition, the repository 210 may be open on one side. For example, referring to FIGS. 3 and 4, the decor connection wall 230 may be connected to one open side of the repository 210 to form a space separated from the internal space of the vial 130.

[0060] Here, the decor connection wall 230 may be detachably screwed to the repository 210.

[0061] The decor 220 may be located on a side of the decor connection wall 230 opposing the repository 210. The decor 220 may be observed from the outside of the container 100 when the container 100 is formed of a transparent material, thereby providing an aesthetic effect. That is, the decor 220 may have a shape that provides an aesthetic effect or a structure such as a logo.

[0062] The decor 220 may be connected to the repository 210 by the decor connection wall 230.

[0063] Referring back to FIG. 3, the repository 210 may have a communication hole 2122 open on one side thereof to allow fluid in the vial 130 to flow into the space within the repository 210. The communication hole 2122 may be preferably formed in a direction of the bottle inlet of the vial 130 when the repository 210 is located in the internal space of the vial 130.

[0064] When the bottle inlet of the vial 130 is placed in a direction in which gravity acts, the fluid inside the vial 130 may descend in the direction of the bottle inlet of the vial 130, so that the repository 210 may be entirely or partly submerged in the fluid in the vial 130, and when the bottle inlet of the vial 130 rotates in a direction opposite to the direction in which gravity acts, the fluid that has moved to the bottle inlet portion of the vial 130 may be directed in a direction opposing the bottle inlet of the vial 130. Here, the fluid may move and flow into the communication hole 2122, and accordingly, when the bottle inlet of the vial 130 is located in the direction opposite to the direction in which gravity acts, the fluid may remain detained inside the repository 210.

[0065] As the communication hole 2122 is open in the direction of the bottle inlet of the vial 130, a large amount of fluid may be stored in the repository 210 even when the vial 130 moves, such as rolls.

[0066] A partition wall 212 configuring a surface of the repository 210 formed near the communication hole 2122, that is, in the direction in which the communication hole 2122 is located, may be formed to be inclined in a

direction of a side wall of the repository 210. This will be described in detail together with the discharge unit 300 below.

[0067] The discharge unit 300 may be coupled to the container 100 and may discharge the fluid stored in the container 100 by a stamping operation which is pressed when coming into contact with an object such as a body or clothing.

[0068] Specifically, the discharge unit 300 may include a passage through which a fluid flows and a pumping part 310 for generating a flow in the passage, and one side of the discharge unit 300 may be coupled to the container 100. Accordingly, the fluid in the container 100 may be discharged toward the object through the discharge unit 300. Here, the discharge unit 300 may discharge the fluid to be sprayed in a longitudinal direction of the container 100.

[0069] Referring back to FIG. 2, the discharge unit 300 may include the pumping part 310, a discharge part 320, and a body part 330.

[0070] The pumping part 310 may be partially installed in the container 100, preferably, in the vial 130 or may be disposed in a structure in communication with the container 100 so that the fluid in the container 100 may reach.

[0071] The discharge part 320 may be connected to the pumping part 310, and the pumping part 310 may pump the fluid in a direction of the discharge part 320. In addition, the body part 330 may be movably or detachably fixed to connect all the pumping part 310, the discharge part 320, and the container 100.

[0072] Referring to FIGS. 5 to 7, the pumping part 310 may include a pump body 316, a protruding ring 318, a pump plug 317, a ball 311, a first piston rod 315, a second piston rod. 313, a first spring 314, and a second spring 312.

[0073] The pump body 316 may be formed in a container shape, preferably, in a cylindrical shape, and may have a space in which fluid is detained therein. Preferably, some or all of the components of the pumping part 310 may be located in an internal space of the pump body 316 and fluid may be detained in the space other than the components of the pumping part 310. The fluid may be a fluid transferred from the container 100 through the storage tank 200 described above. The pump body 316 may be open to communicate with the storage tank 200 so that the fluid passing through the storage tank 200 flows into the internal space of the pump body 316, or, if the storage tank 200 is omitted, the pump body 316 may have an opening 3102 provided to communicate with the container 100, i.e., the vial, so that the fluid in the container 100 may flow into the internal space of the pump body 316. Preferably, the opening may be provided in a direction opposite to the discharge part based on the pump body 316.

[0074] The pump plug 317 may be provided in the internal space of the pump body 316 and may have a tubular shape. The pump plug 317 may be fixedly disposed on an inner surface near a center portion of the pump body 316 in the longitudinal direction. For example, the pump plug 317 may be an independent member attached to an inner side of the pump body 316 or may be a member formed integrally with the pump body 316 protruding inward from the pump body 316.

[0075] The pump plug 317 may have a tubular or annular shape formed to reduce a width of the pump body 316 at one point in the longitudinal direction.

[0076] The first spring 314 may be disposed on one side of the pump plug 317 and the second spring 312 may be disposed on the other side. Specifically, the pump plug 317 may have a tubular or annular shape in which a passage is formed in the middle and may have a diameter smaller than that of the pump body 316. The first spring 314 and the second spring 312 may be coil springs, and one end (a portion where the coil springs gather in a circular shape) may be located at a width portion of the pump plug 317.

[0077] For example, both surfaces of the pump plug 317 may have recesses as shown in FIG. 5, and one ends of the first spring 314 and the second spring 312 provided as coil springs may be fitted into the recesses formed on both surfaces of the pump plug 317, respectively. The first spring 314 may be located in the direction of the discharge part 320 with respect to the pump plug 317, and the second spring 312 may be located in a direction opposite to the discharge part 320 with respect to the pump plug 317.

[0078] The second piston rod 313 may be located inside the pump body 316. As shown in FIG. 6, the second piston rod 313 may include a lead-in element 3134 protruding in the direction of the discharge part 320 and a first projection 3132 protruding in a direction of an inner circumference of the pump body 316 at a circumferential portion of the lead-in element 3134.

[0079] The second spring 312 may be disposed between the first projection 3132 and the pump plug 317.

[0080] The second spring 312 may be compressed according to the stamping operation, and here, the second piston rod 313 may move toward the discharge part 320 so that an interval between the first projection 3132 and the pump plug 317 may be reduced. Accordingly, the opening 3102 of the pump body 316 may be opened or closed according to movement of the first projection 3132.

[0081] The lead-in element 3134 of the second piston rod 313 may be formed such that a width of a cross-section thereof decreases in a direction toward the discharge part 320, and accordingly, the lead-in element may pass through a hole of the pump plug 317 according to movement of the second piston rod 313, and after the lead-in element 3134 has passed by a certain amount, the cross-sectional width of the lead-in element 3134 and the circumference of the hole of the pump plug 317 may correspond to each other, so that the hole of the pump plug 317 may be closed.

[0082] Referring back to FIG. 5, the first piston rod 315 is located so that a part thereof penetrates the pump body

316, and an end of a portion protruding outward from the pump body 316 through the pump body 316 may be connected to the discharge part 320. Accordingly, the first piston rod 315 may move in the longitudinal direction by the stamping operation together with the discharge part 320.

[0083] Specifically, the first piston rod 315 is formed in a tubular shape and may include a second projection 3152 protruding from a portion of the outer circumferential surface of the tube of the first piston rod 315 in a direction toward the inner circumferential surface of the pump body 316. The first spring 314 may be disposed between the pump plug 317 and the second projection 3152, and the second projection 3152 may move in the direction of the pump plug 317 according to the stamping operation.

[0084] A conduit of the first piston rod 315 may be preferably formed to become narrower in the direction of the discharge part 320, and more preferably may be formed to correspond to the lead-in element 3134 of the second piston rod 313.

[0085] When the lead-in element 3134 is moved in the direction of the discharge part 320 by the stamping operation, the lead-in element 3134 of the second piston rod 313 may be inserted into the tube of the first piston rod 315 to close the tube of the first piston rod 315.

[0086] Referring to FIGS. 5 through 7 illustrating the stamping operation, the first spring 314 and the second spring 132 may generate elastic force in different directions, and specifically, the first spring 314 and the second spring 314 may provide elastic force in directions opposite to each other based on the pump plug 317. Specifically, the first spring 314 may provide elasticity that pushes the first piston rod 315 in the direction of the discharge part 320 and the second spring may provide elasticity that pushes the second piston rod 313 in a direction opposite to the first piston rod 315, i.e., toward the end in the direction opposite to the end adjacent to the inlet of the vial 130.

[0087] Due to the elasticity of the first spring 314 and the second spring 132, the first piston rod 315 and the second piston rod 313 may flow during the stamping operation. The second piston rod 313 may close the opening 3102 formed during the stamping operation, and when the stamping operation is finished, the second piston rod 313 may open the opening 3102 to allow the fluid to flow into the pump body 316 so that a negative pressure formed in the pump body 316 by an amount of the fluid pumped to the discharge part 320 along the tube of the first piston rod 316 is corrected.

[0088] Such an operation may be repeated, and accordingly, the stamp-type fluid discharge apparatus may discharge as much fluid as the fluid flowing into the pump body 316 to the object at a time, thereby preventing an excessive supply of fluid.

[0089] The ball 311 may be disposed in the opening 3102. Preferably, the opening 3102 may be a tubular hole protruding from one side of the pump body 316, and the ball 311 may be disposed in the tubular shape of the opening 3102. In the opening 3102, a hole in the pump body 316 may be formed smaller than a hole in the direction of the container 100, and the ball 311 disposed in the opening 3102 may be formed larger than the hole in the direction of the container 100. Accordingly, the ball 311 may be prevented from passing through the opening 3102 in the direction of the container 100.

[0090] In the description or drawings of the present disclosure, the ball 311 is illustrated and described as a spherical structure, but is not limited thereto. For example, the ball 311 may be a stopper or a valve allowed to move in only one direction.

[0091] The ball 311 may open or close the opening 3102 so that the fluid in the container flows into or prevented against the pump body 316 according to the stamping operation.

[0092] Continuing the description of the storage tank 200 described above, referring to FIG. 7, the communication hole 2122 of the storage tank 200 may be formed closer to the discharge part 320 than the opening 3106 of the pump body 316. When the stamp-type fluid discharge apparatus is placed in an upward direction (opposite to the direction in which gravity acts), a part of the fluid stored in the repository 210 of the storage tank 200 may selectively move again to the vial 130, and in this case, since fluid less than a fixed amount may flow into the pump body 316, the opening 3102 should be sufficiently submerged by the repository 210 to receive a sufficient fluid.

[0093] Therefore, the communication hole 2122 should be disposed higher than the opening 3106 (when the discharge part is placed upward), and the fluid having a capacity as much as a difference in head may flow into the pump body 316 through the opening 3106. That is, it is preferable that the capacity as much as the difference in head (height difference between the opening and the communication hole) is larger than the capacity that may flow into the pump body 316 at a time.

[0094] Similarly, the partition wall 212 described above may be formed to be inclined to reduce a space in the repository 210 occupied by the fluid when the stamp-type fluid discharge apparatus is inclined to face upward. Specifically, since the partition wall 212 is formed to be inclined, when the stamp-type fluid discharge apparatus is inclined, the space on one side of the repository 210 may be reduced to increase an overall head of the fluid, and thus, the fluid may be easily supplied to the pump body 316.

[0095] Through such a structure of the storage tank 200, the user may use the stamp-type fluid discharge apparatus in various directions, and the stamp-type fluid discharge apparatus may discharge a fixed amount of fluid regardless of direction.

[0096] The protruding ring 318 will be described together with the body part 330 below.

[0097] Referring to FIGS. 5 through 7, the fluid stored in the container 100 may be pumped by the structure of

the pumping part 310 so as to be delivered to the discharge part 320.

[0098] The discharge part 320 may be connected to the pumping part 310 to discharge the pumped fluid toward the object. The discharge part 320 may include a transfer member 321, a discharge body 322, a discharge member 323, a protruding wall 324, a slide wall 325, and a sealing 326.

[0099] Specifically, the transfer member 321 may communicate with the tube of the first piston rod 315. Preferably, the transfer member 321 may include a conduit 3212, and the conduit 3212 may be in communication with the tube of the first piston rod 315. For example, an inner diameter of the conduit 3212 may be equal to an outer diameter of the end of the first piston rod 315 (the end in the direction opposite to the pump body), and the end of the first piston rod 315 may be fitted into the conduit 3212. Referring to FIG. 8, a protrusion may be provided in the inner diameter of the conduit 3212 and a recess may be provided in the outer diameter of the first piston rod 315. The protrusion of the conduit 3212 and the recess of the first piston rod 315 may be engaged with each other so as to be fixed and may be separated from each other as necessary.

[0100] Preferably, the transfer member 321 may include a large plate-shaped member in addition to the conduit 3212, and a first pattern recess 3214 may be formed on the plate. The first pattern recess 3214 will be described in more detail together with a second pattern recess 3224 and a third pattern recess 3226 below.

[0101] The first pattern recess 3214 formed in the transfer member 321 communicates with the conduit 3212, and the fluid transferred to the conduit 3212 through the pumping part 310 may be widely distributed in the first pattern recess 3214.

[0102] The discharge body 322 may be disposed to overlap the transfer member 321, and specifically, may have a plate shape that adheres to the plate shape of the transfer member 321. The transfer member 321 may be located relatively in the direction of the container 100, and the discharge body 322 may be located relatively farther from the container 100 than the transfer member 321. That is, the discharge body 322 may overlap the container 100, the transfer member 321, and the discharge body 322 in this order in the plan view.

[0103] The discharge body 322 may have at least one hole 3222, and the hole 3222 may be formed in a direction parallel to the longitudinal direction of the container 100 as shown in FIG. 8. When a plurality of holes 3222 is provided, each of the holes 3222 may be preferably formed in a parallel direction.

[0104] The discharge body 322 may include not only the hole 3222 but also a second pattern recess 3224 formed to be concave on a surface in a direction of adhering with the transfer member 321, and may include a third pattern recess 3226 formed to be concave on a surface in a direction opposite thereto.

[0105] The discharge member 323 may be disposed to overlap the discharge body 322, and specifically, may have a plate shape that adheres to the plate shape of the discharge body 322. The discharge body 322 is located relatively in the direction of the transfer member 321, and the discharge member 323 may be located relatively farther from the transfer member 321 than the discharge body 322. That is, the discharge member 323 may overlap the transfer member 321, the discharge body 322, and the discharge member 323 in this order in the plan view.

[0106] The discharge member 323 may include at least one discharge hole 3232, and this discharge hole 3232 is preferably formed in a direction parallel to the longitudinal direction of the container 100 as shown in FIG. 8. When a plurality of discharge holes 3232 are provided, each of the discharge holes 3232 may be preferably formed in a parallel direction.

[0107] Referring again to FIG. 8, the discharge hole 3232 may be formed in a tapered shape in which a width thereof gradually becomes narrower toward the outside. Specifically, the discharge hole 3232 may be formed such that a hole in an outward direction is smaller than a hole in the direction of the discharge member 323, and accordingly, a flow velocity of the fluid supplied to the discharge hole 3232 may increase, while the fluid is passing through the discharge hole 3232.

[0108] Therefore, the fluid may be discharged more clearly.

[0109] Similarly, referring back to FIG. 8, the hole 3222 may also be formed in a tapered shape in which a width thereof gradually becomes narrower from the side of the transfer member 321 side to the side of the discharge member 323.

[0110] The discharge hole 3232 may be configured as one hole or may be configured as a plurality of holes. When the discharge hole 3232 is configured as one hole, the component such as the first pattern recess 3214, the second pattern recess 3224, and the third pattern recess 3226, which are provided to distribute the fluid, may be omitted. Also, when a plurality of discharge holes 3232 are provided, at least one of the first pattern recess 3214, the second pattern recess 3224, and the third pattern recess 3226 may be omitted.

[0111] When a plurality of discharge holes 3232 are provided, the plurality of discharge holes 3232 may be arranged in a predetermined pattern according to an intention of a manufacturer. For example, such a pattern may be a figure having a straight line or curved line, a logo, text, etc.

[0112] The plurality of discharge holes 3232 may be in the form of a fine point, a point having a shape or may be in the form of a line.

[0113] When the pumping part 310 is pressed in the longitudinal direction according to the stamping operation, the fluid in the pumping part 310 may pass through the discharge hole 3232 and be transferred to the object in the predetermined pattern. Similarly, in the case of the hole 3222, a plurality of holes may be provided and dis-

posed in a pattern corresponding to a predetermined pattern formed as the discharge hole 3322, and the fluid pumped to the pumping part 310 may be allowed in the direction of the discharge hole 3232.

[0114] Here, the discharge hole 3232 and the hole 3222 may be aligned in the longitudinal direction or may be disposed to stagger on a pattern. When the discharge hole 3232 and the hole 3222 are aligned in the longitudinal direction, the fluid may be accelerated, while passing through the hole 3222, and may be accelerated again, while passing through the discharge hole 3232. In addition, when the discharge hole 3232 and the hole 3222 are arranged to stagger, the fluid passing through the hole 3222 may collide with a rear surface of the discharge member 323 in a space formed by the third pattern recess 3226, and thereafter, the fluid may be discharged to the object through the discharge hole 3232.

[0115] Specifically, a fluid distribution hole may be formed between the discharge member 323 and the discharge body 322 or between the discharge body 322 and the transfer member 321. Preferably, the fluid distribution hole may be formed between the discharge member 323 and the discharge body 322 and between the discharge body 322 and the transfer member 321. The fluid distribution hole may form a space in which the fluid is spread so that the fluid pumped from the pumping part 310 may be uniformly distributed and provided to each of the plurality of discharge holes 3232.

[0116] The fluid dispersion hole includes a first cavity and a second cavity. The first cavity may be formed between the discharge member 323 and the discharge body 322, and the second cavity may be formed between the discharge body 322 and the transfer member 321. The first cavity may be formed by the first pattern recess 3214 concavely formed on one surface of the transfer member 321 and the second pattern recess 3224 concavely formed on one surface of the discharge body 322 as the transfer member 321 and the discharge body 322 adhere to each other, and the second cavity may be formed by the third pattern recess 3226 concavely formed on the other surface of the discharge body 322 as the discharge body 322 and the discharge member 323 adhere to each other.

[0117] That is, the first pattern recess 3214 may be formed on one surface of the transfer member 321 and the second pattern recess 3224 and the third pattern recess 3226 may be formed on both surfaces of the discharge body 322.

[0118] Preferably, the first cavity may be formed such that the discharge hole 3232 of the discharge member 323 is located in the third pattern hole 3226 of the discharge body 322 when the discharge member 323 and the discharge body 322 overlap in the longitudinal direction of the container 100. That is, for example, when the plurality of discharge holes 3232 are arranged linearly, the first cavity may have a width larger than a width of the discharge hole 3232 and may be formed so that a linear shape of the discharge hole 3232 comes within a linear shape of the first cavity in a perspective plan view. Accordingly, the third pattern recess 3226 may also have a width larger than that of the discharge hole 3232.

[0119] Similarly, the second cavity may be formed such that the hole 3222 of the discharge body 322 is located in the second pattern recess 3224 of the discharge body 322 or the first pattern recess 3214 of the transfer member 321 when the discharge body 322 and the transfer member 321 overlap in the longitudinal direction of the container 100. That is, for example, when the first cavity is disposed linearly, the second cavity may have a width larger than the width of the first cavity and may be formed so that a linear shape of the first cavity comes within a linear shape of the second cavity in a perspective plan view. Accordingly, the first pattern recess 3214 or the second pattern recess 3224 may also have a width larger than that of the third pattern recess 3226.

[0120] The second pattern recess 3224 or the third pattern recess 3226 may be omitted according to a design.

[0121] Referring to FIGS. 1 to 3, the protruding wall 324 may have a loop shape to surround a side (corner boundary portion of plate, direction facing the discharge body) of an outer surface of the discharge member 323 having the discharge hole 3232 and protrude in the longitudinal direction of the container 100. Specifically, the protruding wall 324 may protrude in a direction in which the fluid is discharged through the discharge hole 3232 in the longitudinal direction of the container 100. Accordingly, when the stamp-type fluid discharge apparatus is stamped, the protruding wall 324 may come into contact with the object, and as the protruding wall 324 comes into contact with the object, the discharge member 323, that is, the discharge hole 3232, and the object may be separated.

[0122] Accordingly, contamination of the fluid detained in the discharge hole 3232 may be prevented.

[0123] The protruding wall 324 may preferably be configured integrally with the discharge body 322 and protrude from the discharge body 322, and more preferably, the protruding wall 324 may include a protruding ring 3242 protruding from the discharge body 322 and having a loop shape to surround a surface of the discharge member 323 in a thickness direction and a fastening ring 3244 detachably fastened to the protruding ring 3242.

[0124] For example, the fastening ring 3244 may have a thread on an outer surface thereof, and the protruding ring 3242 may have a thread on an inner surface thereof, so that the fastening ring 3244 and the protruding ring 3242 may be screwed together. In addition, the fastening ring 3244 may have a recess or protrusion on the outer surface, and the protruding ring 3242 may have a protrusion or recess corresponding to the recess or protrusion of the fastening ring 3244 on the inner surface, so that the fastening ring 3244 and the protruding ring 3242 may be fixed by fastening the recess and the protrusion.

[0125] The fastening ring 3244 may preferably cover the protruding ring 3242. When the protruding ring 3242 is contaminated, it may be separated from the fastening

ring 3244 for replacement according to a user selection. In addition, the fastening ring 3244 may have various aesthetic structures or figures, so that the fastening ring 3244 may be replaced with a fastening ring having a desired shape or figure according to a user selection.

[0126] Referring back to FIGS. 1 through 3, the fastening ring 3244 may cover an upper end of the discharge member 323 seated on the discharge body 322 when fastened to the protruding ring 3242 to prevent separation.

[0127] For example, a circumference of the discharge member 323 may be the same as the protruding ring 3242, and an inner diameter of the fastening ring 3244 may be smaller than that of the discharge member 323. Accordingly, as the fastening ring 3244 is coupled with the protruding ring 3242, the discharge member 323 may be fixed so as not to be moved. Conversely, as the fastening ring 3244 is disengaged from the protruding ring 3242, the discharge member 323 may be separated from the discharge body 322 and replaced.

[0128] Alternatively, the fastening ring 3244 and the discharge member 323 may be bonded or may be integrally formed, and the discharge member 323 may also be replaced according to replacement of the fastening ring 3244.

[0129] Preferably, the discharge member 323 may be a metal plate.

[0130] Additionally, a sealing 326 may be disposed on the discharge body 322. Preferably, the sealing 326 may have an annular shape surrounding all of the plurality of discharge holes 3232 formed in the discharge member 323 from an outer side of the discharge holes 3232 at a time to thereby prevent a leakage of the fluid to a gap formed between the discharge member 323 and the discharge body 322.

[0131] The slide wall 325 may protrude from the discharge body 322 in a direction opposite to the protruding wall 324.

[0132] Referring back to FIGS. 1 through 3, the body part 330 may selectively include a first fixing member 332, a second fixing member 334, and a third fixing member 336.

[0133] The first fixing member 332 may selectively fix the discharge part 320 and the cap 400, the second fixing member 334 may selectively fix the cap 400, the inner container 120, and the outer container 110, and the third fixing member 336 may selectively fix the pumping part 310 and the vial 130.

[0134] The first fixing member 332 may include a first guide 3322, a second guide 3324, and a recess 3326.

[0135] The first guide 3322 may be formed to surround an outer circumference of the slide wall 325, the second guide 3324 may be formed to surround an inner circumference of the slide wall 325, and the recess 3326 may be formed to connect the first guide 3322 and the second guide 3324.

[0136] The recess 3326 may have a depth set so that the slide wall 325 may move only by a predetermined distance. That is, a distance between an end of the slide wall 325 before stamping and an end of the recess 3326 in a depth direction may be a distance over which the discharge part 320 moves in translation. That is, when the discharge part 320 is moved, the end of the slide wall 325 contacts the end of the recess 3326 in the depth direction, and thus, the depth of the recess 3326 may limit the distance of the translational movement of the discharge part 320.

[0137] In addition, the first fixing member 332 may cover both the outer circumference and the inner circumference of the slide wall 325 to guide the slide wall 325. That is, the first fixing member 332 may guide movement of the discharge part including the discharge body 322 fixed to the slide wall 325.

[0138] A recess or a protrusion may be formed outside the first fixing member 332, and a corresponding protrusion or recess may be formed inside the cup-shaped cap 400, so that the cap 400 and the first fixing member 332 may be detachable.

[0139] The second fixing member 334 may preferably be formed integrally with the first fixing member 332, and the second fixing member 334 may protrude from the first fixing member 332 in the direction of the container 100.

[0140] The first fixing member 332 may have a recess, projection, or thread formed on the inner circumferential surface thereof, and similarly, the inner container 120 and the outer container 110 may have the recess, projection, or thread of the first fixing member 332, so that the first fixing member 332 and the outer container 110 or the inner container 120 may be fixedly coupled. Similarly, the first fixing member 332 may be fixedly coupled to the vial 130.

[0141] The third fixing member 336 may be integrally formed with the second fixing member 334 and the third fixing member 332 and may have a thread, recess or projection to fix the vial 130. In addition, the third fixing member 336 may also be coupled to the pumping part 310 through adhesion or threading.

[0142] Specifically, the third fixing member 336 and the vial 130 may be detachably screwed, and the protruding ring 318 of the pumping part 310 may be disposed on the bottle inlet side of the vial 130. The protruding ring 318 may be formed of a material having elasticity protruding from the outer circumferential surface of the pump body 316, and as the vial 130 and the third fixing member 336 are coupled, the protruding ring 318 may be fixed in position in a state of being pressed at the bottle inlet of the vial 130.

[0143] Since the protruding ring 318 has elasticity, the protruding ring 318 may contact to seal the bottle inlet of the vial 130, so that leakage of the fluid inside the vial 130 in the direction of the inner container 120 or the outer container 110 may be prevented.

[0144] Hereinafter, an operating state of the stamp-type fluid discharge apparatus according to an embodiment will be described with reference to FIGS. 5 through

8.

[0145] FIG. 5 shows a state in which the container 100 of the stamp-type fluid discharge apparatus according to an embodiment is placed upward, and FIG. 6 shows a state in which the discharge part 320 of the stamp-type fluid discharge apparatus according to an embodiment is pressed.

[0146] In addition, FIG. 7 shows a state in which pressure acting on the discharge part 320 of the stamp-type fluid discharge apparatus according to an embodiment is released, and FIG. 8 shows a path in which a fluid is discharged while a stamp-type fluid discharge apparatus according to an embodiment is pressed.

[0147] Comparing FIGS. 5 and 6, when the protruding wall 324 is pressed, the discharge part 320 may be moved in the direction of the container 100 and the pumping part 310. Here, referring to FIG. 8, the fluid in the pumping part 310 may be discharged through the pump body 316, the tube of the first piston rod 315, the conduit 3212 of the transfer member 321, the first cavity, and the hole 3222 of the discharge body 322, the second cavity, and the discharge hole 3232 of the discharge member 323.

[0148] Specifically, in the pumping part 310, the first piston rod 315 may move in the direction of the container 100 together with the discharge part 320, and accordingly, the lead-in element 3134 of the second piston rod 313 may close the conduit of the first piston rod 315 to push out the fluid in the conduit in the direction toward the discharge part 320.

[0149] Thereafter, referring to FIG. 7, the first piston rod 315 and the discharge part 320 may be restored in the direction of the object by the spring, and a negative pressure may be formed in the internal space of the pump body 316 by the amount of the discharged fluid. Accordingly, the fluid in the vial 130 or the repository 210 may flow into the internal space of the pump body 316 through the opening 3102. In this case, the fluid may push the ball 311 in the direction of the discharge part 320, and similarly, push the second piston rod 313 in the direction of the discharge part 320.

[0150] Accordingly, the stamp-type fluid discharge apparatus according to an embodiment may discharge the fluid in a pattern corresponding to the pattern of the discharge hole 3232, prevent spreading of the fluid pattern transferred to the object, and discharge the fluid at a uniform flow velocity to thereby prevent the fluid pattern from being unevenly transferred to the part of the object.

[0151] In addition, the stamp-type fluid discharge apparatus according to an embodiment may discharge a fixed amount of fluid stored in the pumping part 310 to prevent irregular discharge of a total amount of fluid, may be recycled, and may discharge the fluid even when the object is located above or below the stamp-type fluid discharge apparatus.

[0152] In addition, the stamp-type fluid discharge apparatus according to an embodiment may easily change an appearance, prevent leakage of the fluid, and buffer an external impact added to the vial 130.

[0153] In addition, the stamp-type fluid discharge apparatus according to an embodiment may prevent the fluid in the container 100 from deteriorating.

[0154] The stamp-type fluid discharge apparatus described above is not limited to the configuration and method of the embodiments described above, and the embodiments may be configured by selectively combining all or some of the embodiments so that various modifications may be made.

[0155] Although the present disclosure has been described in terms of specific items such as detailed elements as well as the limited embodiments and the drawings, they are only provided to help more general understanding of the invention, and the present disclosure is not limited to the above embodiments. It will be appreciated by those skilled in the art to which the present disclosure pertains that various modifications and changes may be made from the above description. For example, adequate results may be achieved even if the described techniques are performed in a different order, and/or even if components in the described architecture and device are combined in a different manner and/or replaced or supplemented by other components or their equivalent. Therefore, the spirit of the present disclosure shall not be limited to the above-described embodiments, and the entire scope of the appended claims and their equivalents will fall within the scope and spirit of the invention.

Claims

1. A stamp-type fluid discharge apparatus comprising:

a container storing fluid; and

a discharge unit coupled to the container and discharging the fluid stored in the container in a longitudinal direction of the container by a stamping operation in which the discharge unit is pressed after coming into contact with an object,

wherein the discharge unit comprises:

a pumping part having a portion installed in the container to pump part of the fluid stored in the container by the stamping operation; and

a discharge part connected to the pumping part and discharging a pumped fluid,

wherein the discharge part comprises:

a discharge hole formed in the length direction of the container; and

a protruding wall protruding in a loop shape to surround the discharge hole and isolating the discharge hole and the object when coming into contact with the object.

2. The stamp-type fluid discharge apparatus of claim 1, wherein
the discharge hole is formed in a tapered shape in which a hole width decreases toward the outside.

3. The stamp-type fluid discharge apparatus of claim 1, wherein
the discharge hole is provided in plurality to form a predetermined pattern as a whole, and
when the discharge unit is pressed in the longitudinal direction in a state where the protruding wall is supported by the object, the fluid in the container is transferred to the object in a predetermined pattern through the discharge hole.

4. The stamp-type fluid discharge apparatus of claim 3, wherein
the discharge part comprises:

a transfer member connected to the pumping part to transfer the fluid pumped by the pumping part;
a discharge body overlapping the transfer member and having at least one hole disposed to correspond to the predetermined pattern; and
a discharge member overlapping the discharge body and having the discharge hole,
wherein the hole has a tapered shape in which a hole width decreases in a direction toward the discharge hole to increase a flow velocity of the fluid passing therethrough.

5. The stamp-type fluid discharge apparatus of claim 4, wherein
a fluid distribution hole is provided between the discharge member and the discharge body or between the discharge body and the transfer member to distribute the pumped fluid before the fluid is discharged to the discharge hole.

6. The stamp-type fluid discharge apparatus of claim 5, wherein
the fluid distribution hole comprises:

a first cavity provided between the discharge member and the discharge body and having a form in which the discharge hole is located therein when overlapped in the longitudinal direction; and
a second cavity formed between the discharge body and the transfer member and having a form in which the hole is located therein when overlapped in the longitudinal direction.

7. The stamp-type fluid discharge apparatus of claim 1, further comprising:

a storage tank connected to the pumping part, disposed in the container, and having a communication hole so that a part of the fluid stored in the container is introduced and stored,
wherein the pumping part includes an opening located in the container so that the fluid is introduced, and the communication hole is located closer to the discharge part than the opening so that the fluid stored in the storage tank is introduced to the pumping part through the opening.

8. The stamp-type fluid discharge apparatus of claim 1, wherein
the discharge part further comprises a slide wall protruding in the opposite direction of the protruding wall, the discharge unit further comprises a body part, in a state of being coupled with the pumping part, coupled to the container so that a portion of the pumping part is located in the container, the body part guides movement and returning to an original state according to pressing of the discharge part, and the body part comprises a first guide covering an outer circumference of the slide wall, a second guide covering an inner circumference of the slide wall, and a recess connecting the first guide and the second guide and coming into contact with an end of the slide wall when the slide wall moves by a predetermined distance.

9. The stamp-type fluid discharge apparatus of claim 4, wherein
the protruding wall comprises:

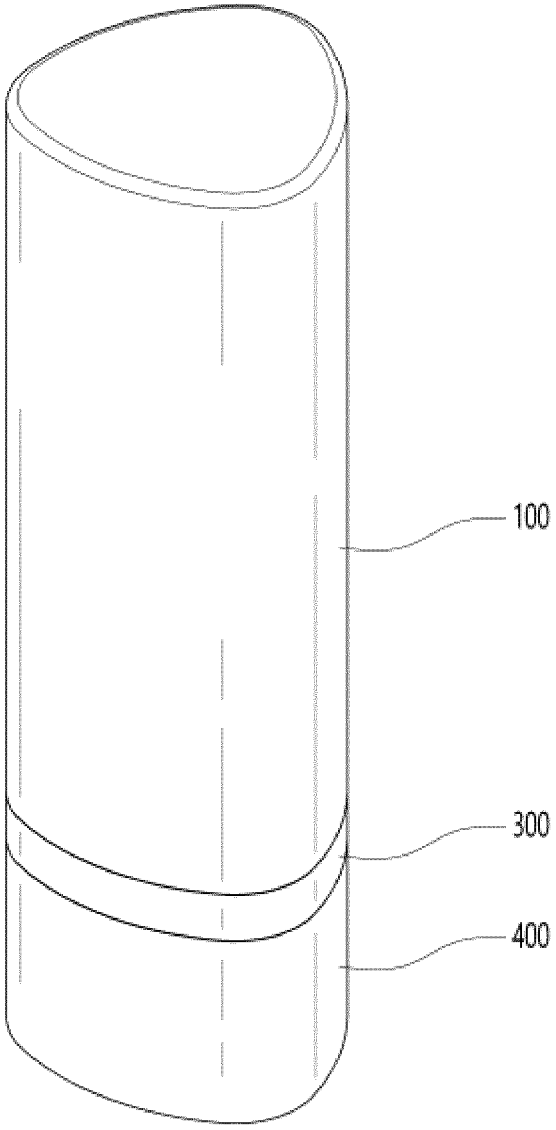
a protruding ring protruding in a loop shape to surround the discharge hole in the discharge body; and
a fastening ring detachably fastened to the protruding ring,
wherein the fastening ring covers an upper end of the discharge member mounted in the discharge body to prevent separation when fastened to the protruding ring.

10. The stamp-type fluid discharge apparatus of claim 1, wherein
the pumping part comprises:

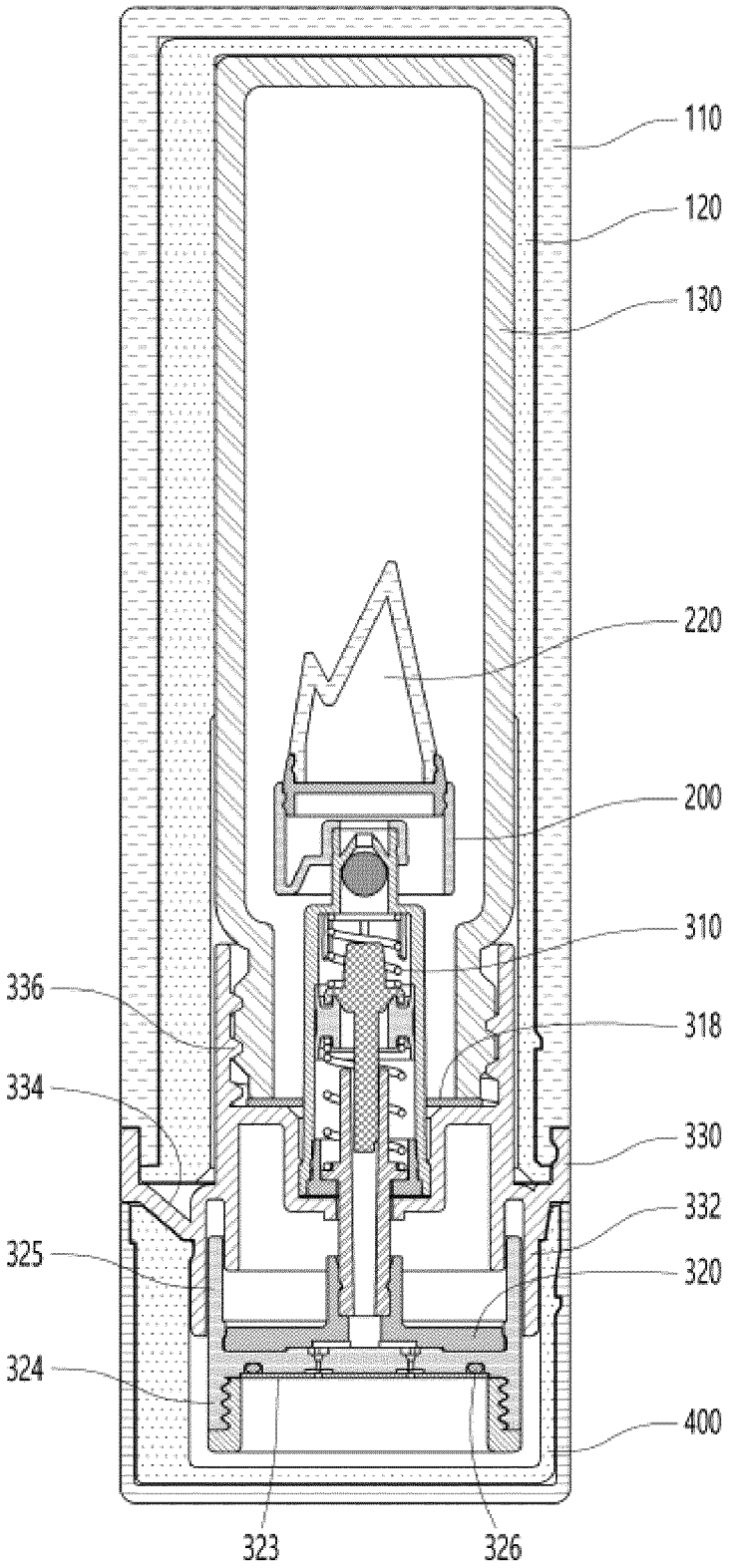
a pump body having a space detaining the fluid therein and having an opening opened to communicate with the container;
a ball disposed in the opening and opening or closing the opening so that the fluid in the container flows to the pump body or is prevented;
a pump plug having a tubular shape and protruding from an inner wall surface of the pump body;
a first piston rod located to penetrate the pump body and connected with the discharge part so as to move in the longitudinal direction;

a first spring coming into contact with the pump plug and the first piston rod to push out the first piston rod in the direction of the discharge part;
a second piston rod located in the pump body and moved in the longitudinal direction to open or close a pipe of the first piston rod and a flow path formed as the pump plug or the opening of the pump body alternately; and
a second spring providing elasticity to push out the second piston rod in a direction opposite to the first piston rod, when coming into contact with the pump plug and the second piston rod,
wherein the fluid flowing into the opening by passing through the ball is pumped to the discharge part through the first piston rod by passing through the pump body.

【FIG. 1】



【FIG. 2】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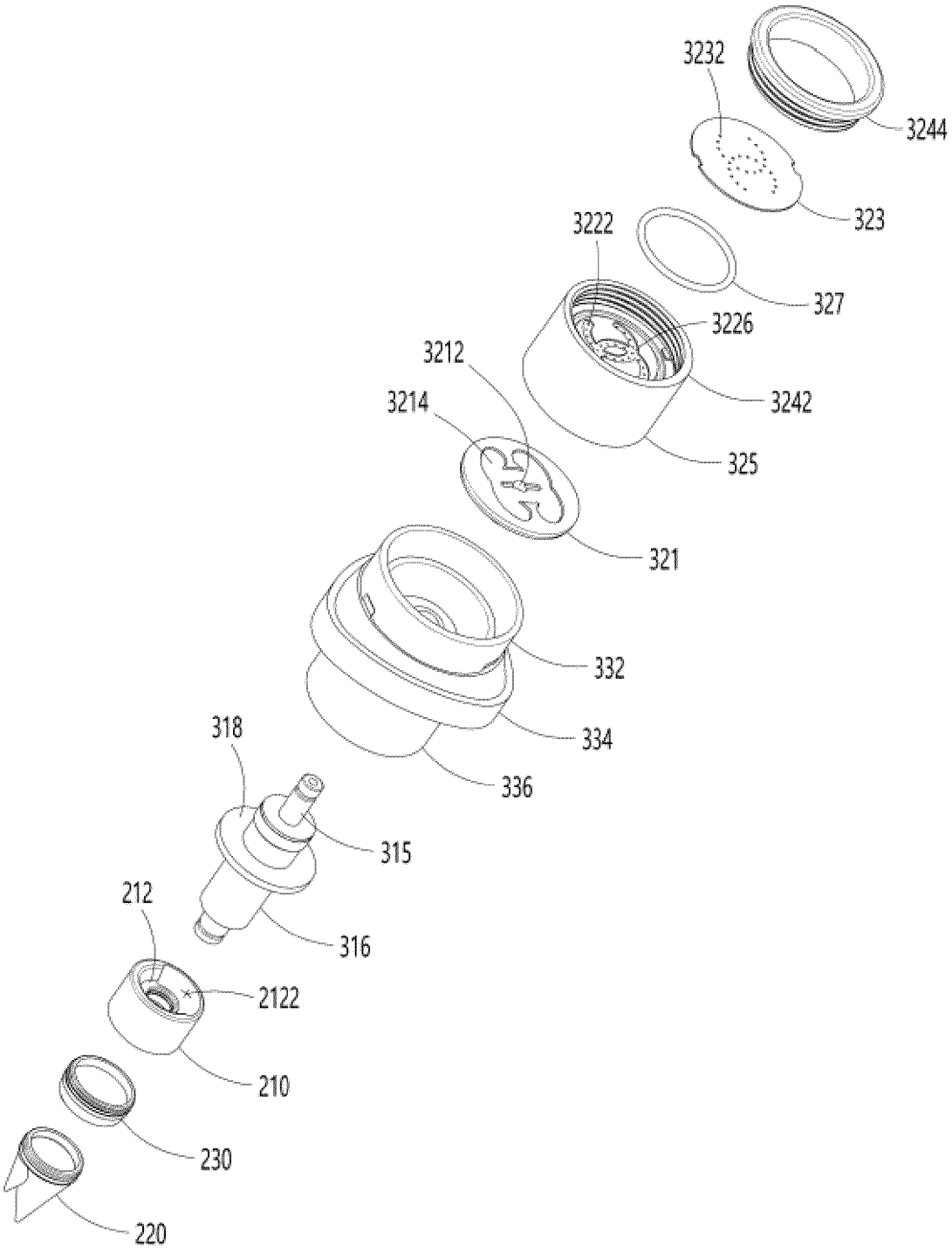
【FIG. 3】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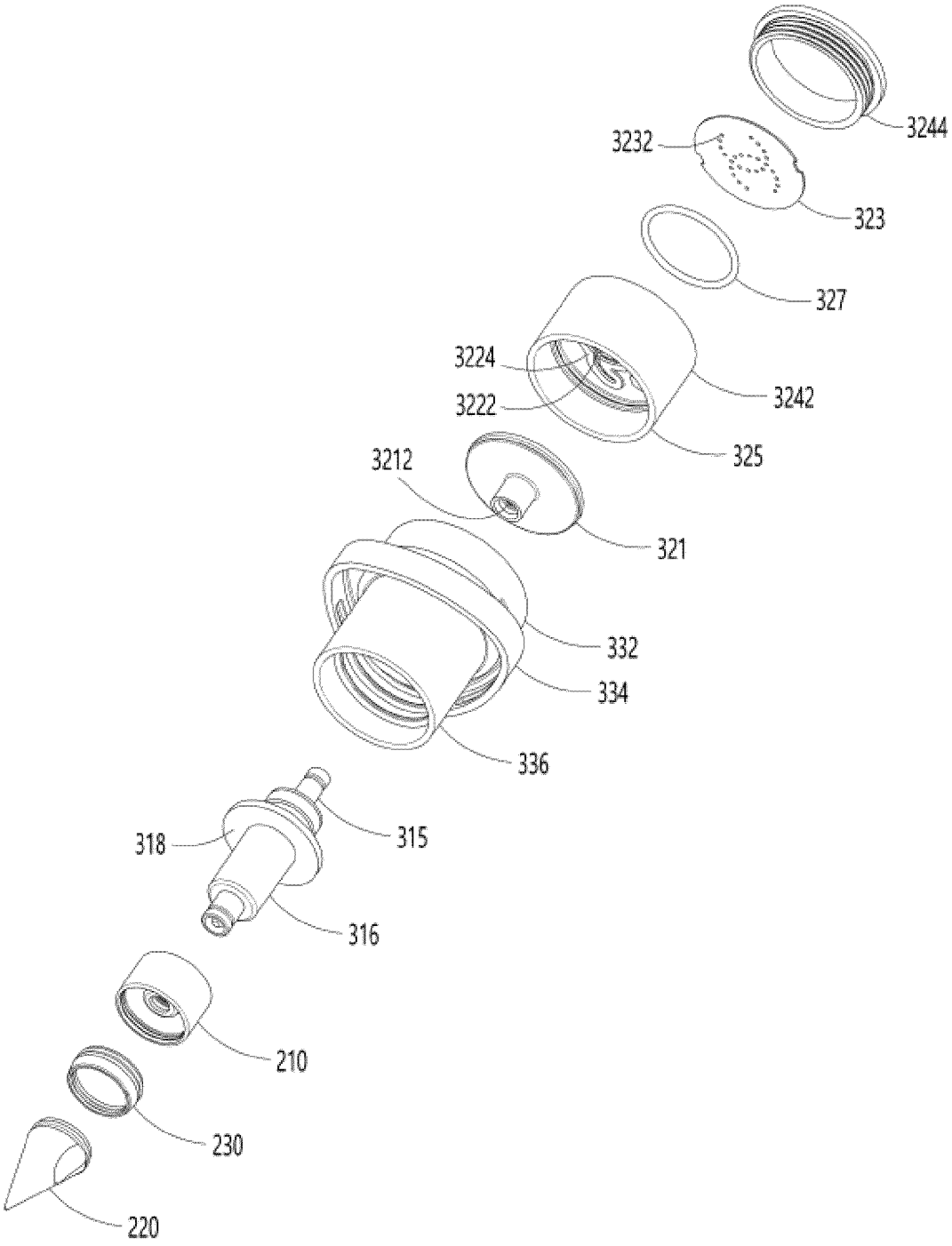
【FIG. 4】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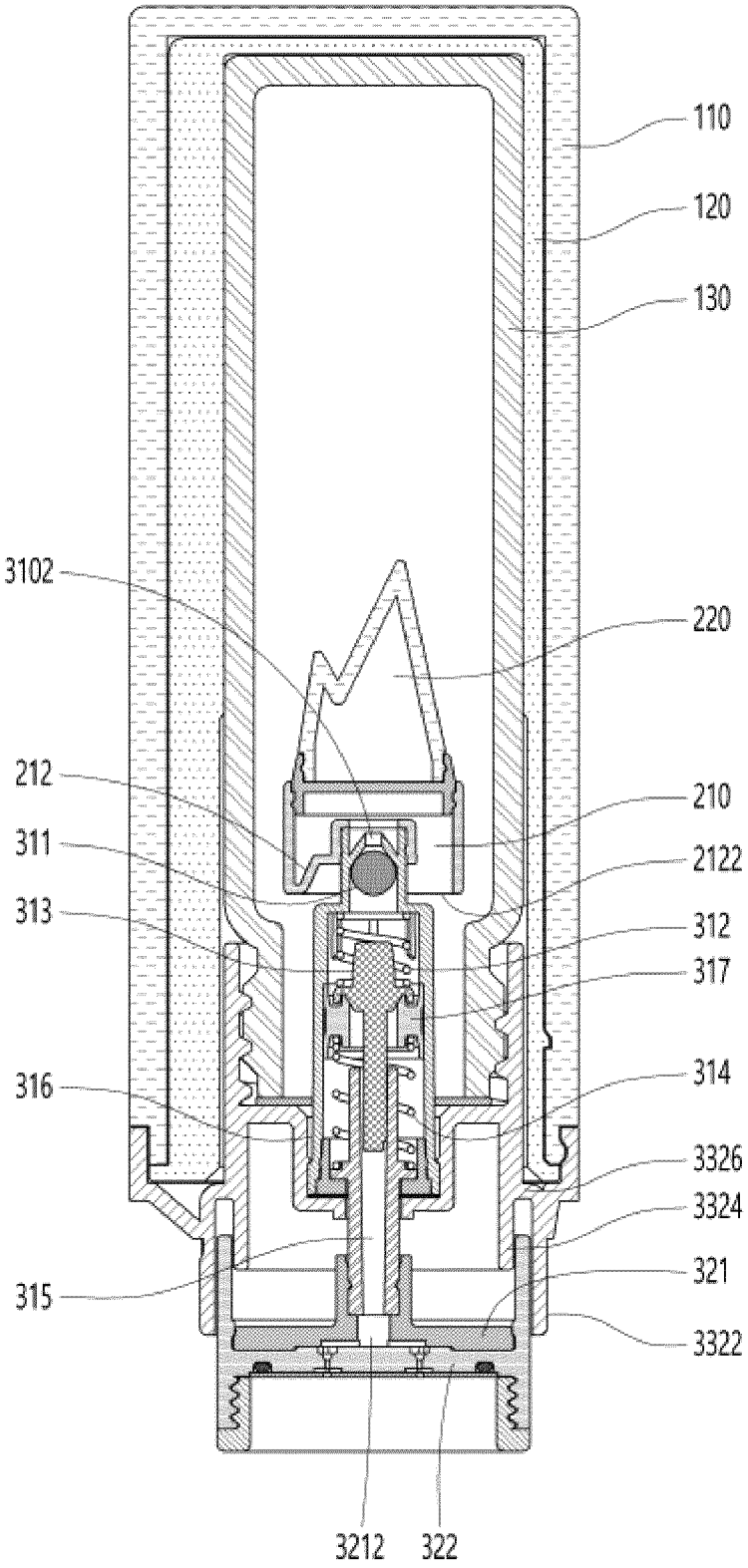
【FIG. 5】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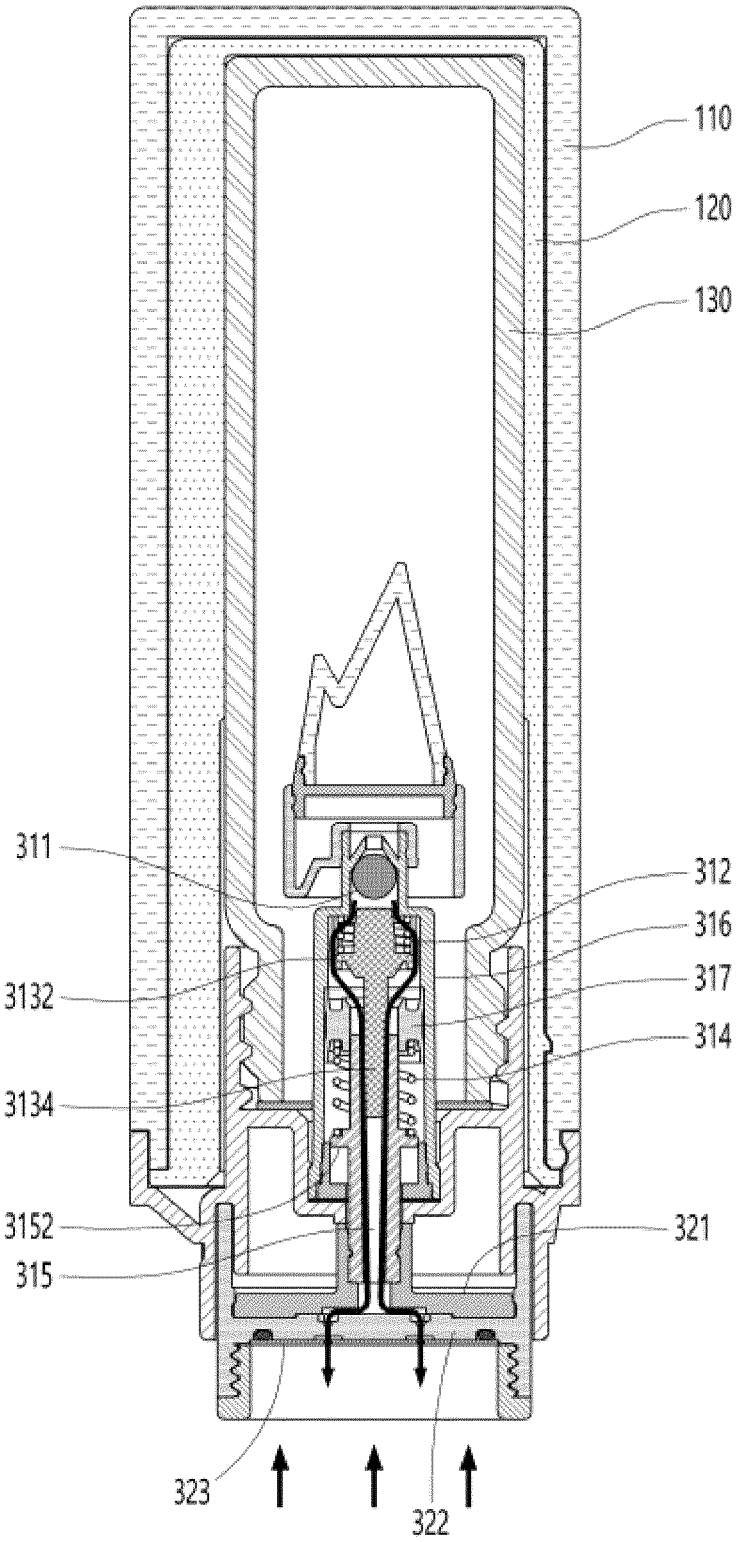
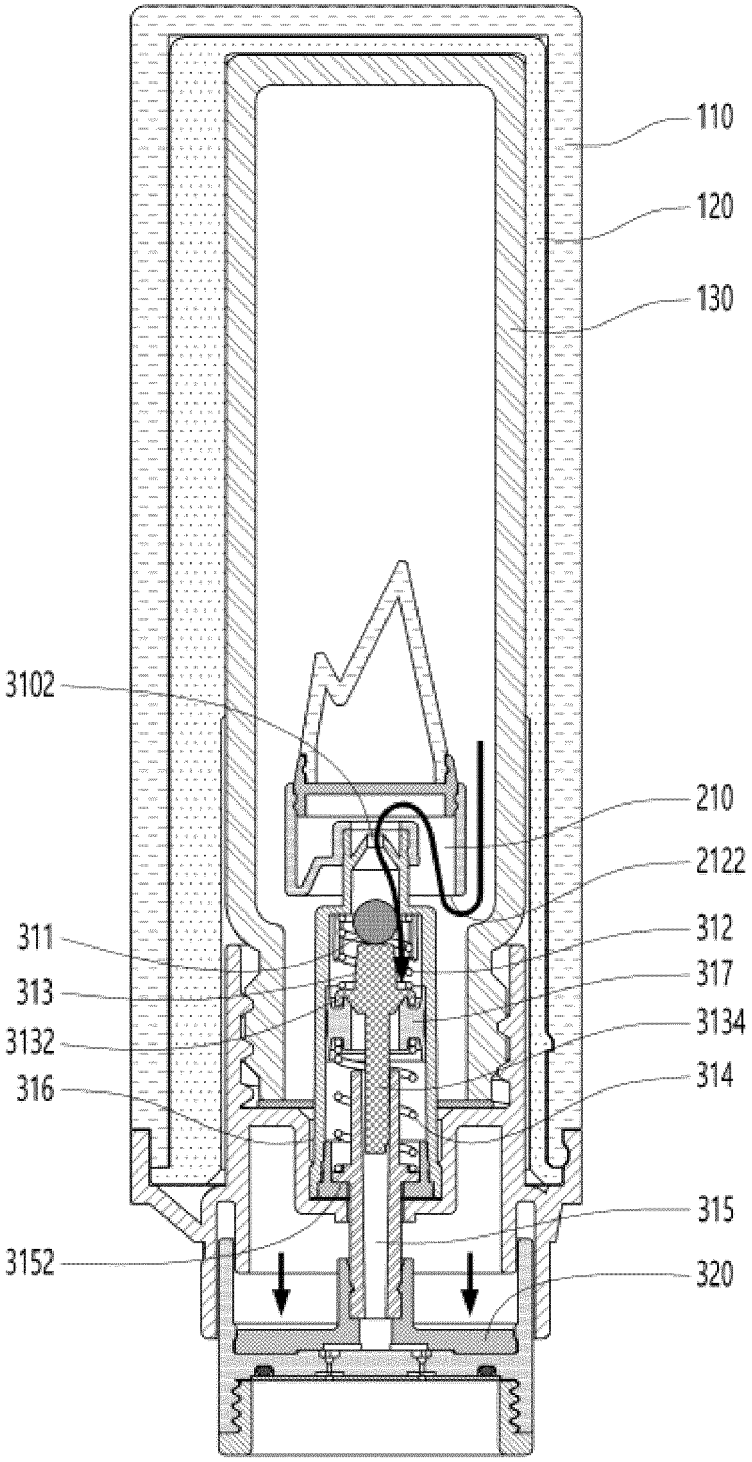
[FIG. 6]



【FIG. 7】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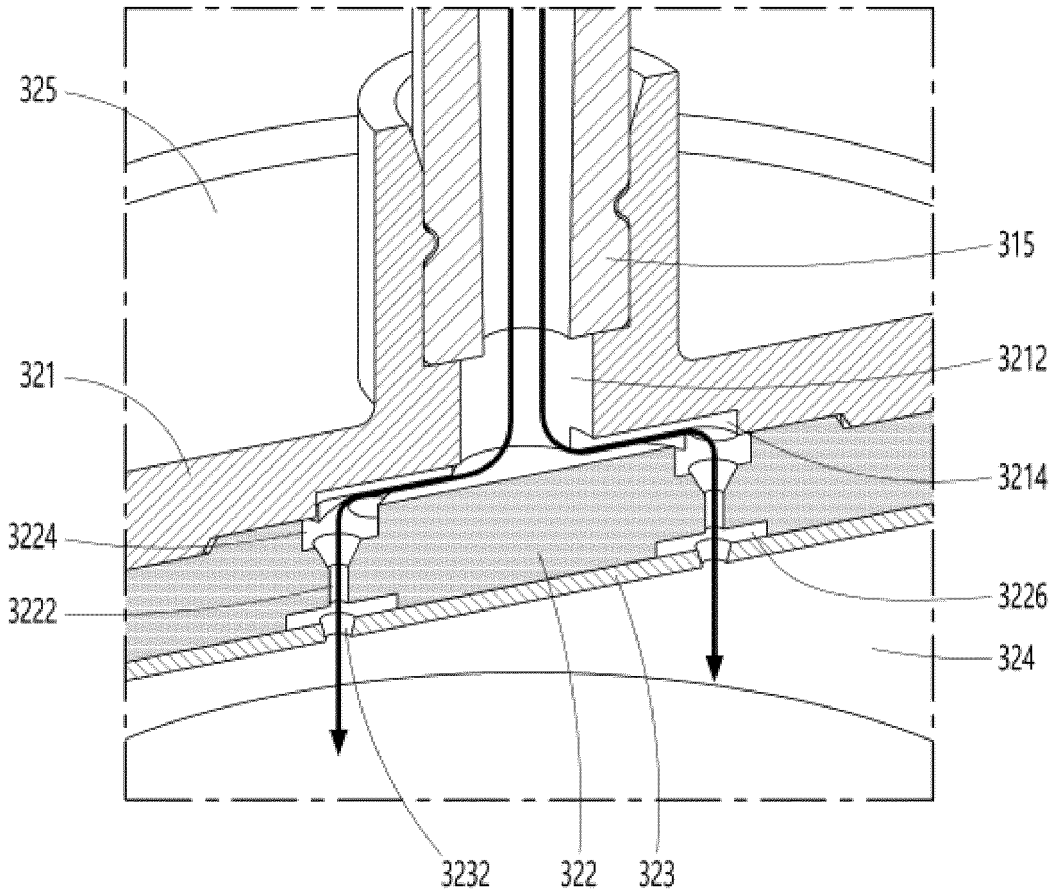
【FIG. 8】



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EUROPEAN SEARCH REPORT

Application Number
EP 20 21 4233

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Y	US 9 585 459 B2 (YONWOO CO LTD [KR]) 7 March 2017 (2017-03-07) * figures 1, 2 *	7	

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B05B
B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	4 June 2021	Bork, Andrea

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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P : intermediate document

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

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 20 21 4233

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04-06-2021

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