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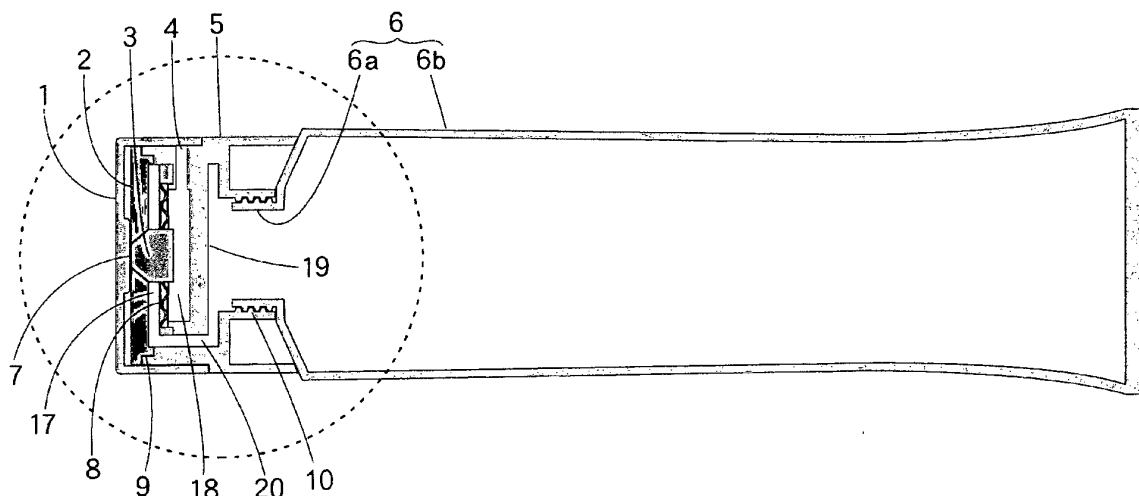
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(54) **FLUID STORAGE CONTAINER AND LID THEREOF**

(57) The disclosed fluid storage container comprises a container body (6) provided with an interior space for storing fluids and an opening (6b) for guiding the aforementioned fluid from the aforementioned interior space to the outside, and a lid which covers the above opening (6b) of said container (6) and is provided with a discharge opening (7) for the aforementioned fluid. The above dis-

charge opening (7) is configured so that the discharge opening (7) is normally in a closed state, sealed by a plug (3), but is set to an open state when extracting the fluid from the container. Thus, outside air and impurities are prevented from entering the container, which prevents the degradation of the contents of the container, and thereby drastically increases the lifespan of the contents.

Figure 1



Description

Field of the Invention

[0001] This invention involves a container for preserving liquid or gelatinous material inside. It especially relates to the structures of a lid portion equipped with a discharge mouth that guides fluid from the inside to the outside and relates to the container equipped with the lid part.

Background Art

[0002] The conventional structure of such a container fails to prevent air from flowing into the inside of the container, especially when the fluid content is discharged through the discharge mouth, causing the content to become oxidized, and cannot prevent the remnant of the content remaining around the discharge mouth from entering the inside of the container, resulting in degradation or deterioration of the content of the container.

As for the structure of a container to prevent an inflow of air, there are container structures listed in Patent Document 1 and Patent Document 2. In either model, an inflow of air intends to be checked by a valve which can be opened or closed depending on a pressure level of the inside of the container; the valve can open with increased pressure inside of the container, for instance, when a user manually put pressure on the container outer shell made of flexible material, and can close when he or she releases the pressure.

[0003] The container structure listed in Patent Document 1 comprises a tubular outer shell of a container that made of flexible material with a discharge mouth, an inside plug that shuts the discharge mouth with the central part protruding toward the outside, passages equipped with the inside plug that connects the inside of the container to the outside, and a nozzle portion and the surrounding part of the discharge mouth, made of elastic resin or rubber, and intimately contacted with the outside surface of the inside plug.

[0004] An addition of pressure to the container shell increases a level of the inside pressure of the container that results in the nozzle portion swelling as an effect of its elasticity, making space between the inside plug and the nozzle portion, causing the contained fluid to discharge.

A halt to giving pressure, owing to rebounding power produced by a deficit of pressure inside the container, helps the swelled nozzle portion recover to the original position getting intimately contacted with the surface of the inside plug. The structure referred to Patent Document 1 works as such.

[0005]

Patent Document 1: Japanese Patent 3492600th bulletin

Patent Document 2: Publication of Japanese Utility

Model Laid-Open Publication No.58-21, 399

Patent Document 3: Japanese Patent Laid-Open No. 2007-326,581 bulletin

5 Summary of the invention

Problems to be addressed by the invention

[0006] According to first embodiment of the invention listed in Patent Document 1, the elasticity of the nozzle portion material enables the discharge mouth to open and close. The characteristic of the invention depends only on the elasticity of the nozzle portion material. The elasticity alone is not sufficient to produce between the plug and the nozzle portion a space to help fluids be discharged from the container. The elasticity in turn prevents a nozzle portion from having sufficient intensity to secure airtightness. Airtightness could be incurred when an unintentional handling of the nozzle portion mistakenly triggers the nozzle part to deform or get disconnected. According to second embodiment of the invention listed in Patent Document 1, the nozzle portion of the container has the V-curve area, which in practice makes it impossible to automatically return to the original position after making the discharge mouth open.

[0007] In addition, with the invention listed in Patent Document 2, a lid portion is equipped with the neck portion of the container that closes the opening of the neck, comprising a cylinder with a discharge mouth in the center, and a plug equipped with a piston intimately contacted from inside of the cylinder. The plug and the piston remain raised up from below inside toward the discharge mouth. An addition of pressure to the container shell increases an internal pressure level of the container that results in the piston moving away from the mouth owing to the pressure inside of the container, triggering fluids to discharge with the plug detached from the discharge mouth. With the pressure inside of the container decreased, the cylinder returns to the original position, causing the plug to close the discharge mouth. The structure is complex and costly to produce, and there is a possibility that fluids may remain in a space between the cylinder and the piston, preventing a normal operation or causing irregularities.

[0008] Moreover, as the container listed either in Patent Document 1 or Patent Document 2 is structured to require pressure to be added on the outer shell of the container in order to make contained fluid to discharge through the discharge mouth, its utility value as a container for storing kinds of liqueur, soy sauce, or edible oil, is limited, because those kinds fluid are usually contained in a solid glass bottle, a plastic bottle, or a tin can, which require a tilt of a container in order to discharge the fluids out. The structure also may cause irregularities in case a content of the container includes granulated solid material, such as dressing, as some granules may remain in the area between the outside surface of the inside plug and the inside surface of the nozzle portion

resulting in obstructing an intimate contact, thus damaging airtightness.

[0009] Whereas, the container listed in Patent Document 3 is equipped with a beak nozzle functioning to check the reverse flow of fluid. The container shell keeps a degree of elasticity as it is made of laminated films. If a user were to put excessive pressure on the container shell, this may cause the liquid content to splash out from the discharge mouth, thus spotting the user's clothes or surroundings. Some remaining liquid can stay around the discharge mouth which may cause what looks in a general eye. A tumbled container may cause an undesired flow out of the content, resulting in loss of fluid and soiling the environment.

This invention is made for the purpose of solving these problems above of such conventional containers.

Ways to solve the problems above

[0010] An embodiment of this invention is characterized by the following: it is a container inside which forms an internal space for storing fluids, a container outer shell which has an opening guiding fluids from the internal space of the container inside to the outside, and a lid which covers the discharge opening of the container outer shell and has a function to shut the discharge mouth through which fluid material is discharged.

The lid portion comprises a space connecting to the neck of the container, a plug contacting with a discharge mouth from the inside for closing the discharge mouth of the container leading to the outside, and a disk-form spring sustaining the plug. The spring helps the plug move toward the inside with the inner pressure of the container increased, and helps the plug move toward the outside to close the discharge mouth with the inner pressure of the container decreased.

[0011] According to this embodiment, the discharge mouth is usually in a closed state with the plug under pressure from inside of the container, and when an addition of pressure on the container shell causes the plug to move toward inside thus opening the discharge mouth. A release of pressure helps the plug return to the original position resulting in closing the discharge mouth, which can prevent fluid contents from degenerating or deteriorating because it shuts out fresh air and checks a reverse flow of fluid contents. In need of cleaning the discharge mouth, it is easy to clean as the discharge mouth is in a closed position.

[0012] In this embodiment of this invention, the container can be equipped with a stopper in the lid portion for regulating movements of the plug. In an embodiment of this invention, the container can also be equipped with a manually operative lever in the lid portion, which makes either movement of the plug toward the inside or outside. In an embodiment of this invention, the discharge mouth can be configured cylinder-like or conical so that the discharge opening protrudes toward outside of the container.

[0013] To achieve the purposes above, in another embodiment of this invention, it is characterized by a con-

tainer inside which forms an internal space for storing fluids, a container outer shell which has a discharge mouth guiding fluids from the internal space of the container inside to the outside, and a lid which covers the opening of the container outer shell and has a function to shut the discharge mouth through which fluid material is discharged. The lid portion has a discharge hole. A thin film that forms a tubular but usually flattened with one end of the film connected to the discharge hole of the lid and the other end has the discharge mouth. The container is characterized by the discharge mouth guiding fluid from the inside to the outside.

[0014] According to this embodiment above, the discharge mouth, as put upright, is in a closed position as the tube remains flattened, and when a user tilts the container in order to discharge fluid content, the weight of fluid content forms pressure causing the discharge mouth to open and the content to be discharged. When the container is returned to the original upright state, losing weight pressure of the fluid content, the discharge mouth returns to its closed state with the tube again getting flattened. This closed state of the discharge mouth can prevent the fluid content from degrading or deteriorating due to an inflow of air and the halt of reversal flow of the fluid.

Even in case fluid content includes granulated substance, the tube, as made from a flexible thin film, can be flattened with granules remaining in the tube.

[0015] In need of cleaning the discharge mouth, it is easy to clean as the discharge mouth is in a closed position, it contributes to sanitation.

According to this embodiment, the container can be equipped with an inner bag that has an internal space for storing fluids inside of the container, forming space between the inner bag and the inside of the container outer shell, and the space can be linked to outside air.

According to this embodiment, the container can be equipped with an internal space for storing air, and the space can be linked to outside air.

[0016] In addition, according to this embodiment, the container can be equipped with an absorbing material for absorbing residuals of fluids remaining around the discharge mouth.

According to this embodiment, the container can be equipped with a pump mechanism in the lid portion or the container body that helps increase pressure inside of the container.

According to this embodiment, the container can be equipped with the surface of the lid portion being coated with an oxygen-proof thin film that is made of plastic or metal in order to prevent oxygen from entering the inside of the container.

[0017] To achieve the purposes above, in another embodiment of this invention, the lid portion can comprise a space connecting to the neck of the container, a plug contacting with a discharge mouth from the inside for closing the discharge mouth of the container leading to the outside, and a disk-form spring sustaining the plug. The lid is characterized by the spring that helps the plug

move toward the inside with the inner pressure of the container increased, and helps the plug move toward the outside to close the mouth of the container with the inner pressure of the container decreased.

[0018] To achieve the purposes above, in another embodiment of this invention, the lid portion covers the opening of the container outer shell and shuts the discharge mouth through which fluid material is discharged. The lid portion has a discharge hole. A thin film that forms a tubular but usually flattened with one end of the film connected to the discharge hole of the lid and the other end connecting to the discharge mouth. The container is characterized by the discharge mouth guiding fluid from the inside to the outside. In the embodiment of the invention concerning the lid portion, it can be equipped with an inner bag for storing air,

Effects of the Invention

[0019] According to an embodiment of this invention, when the pressure of the container is lowered, the aforementioned plug body returns to its original shape and closely fits to the discharge port thus causing a closed state and preventing the new entry of outside air and the reverse flow of the liquid substance once discharged outside, and therefore, the deterioration of the substance inside of the container can be checked. When the discharge mouth and surroundings can safely and easily be put into cleaning operations as the discharge mouth is in a closed state, making it possible to keep it clean.

[0020] According to another embodiment of this invention, with the container put to a stand state, the pressure added by the content is quickly lowered and the aforementioned outlet portion returns to its original shape, and the relative inner surface is brought into close contact and the aforementioned discharge mouth closes, thus making it possible to prevent the new entry of outside air and the reverse flow of the liquid substance once discharged outside, and therefore, the deterioration of the substance in the container can be prevented. When the discharge mouth and its surroundings are cleaned after the content is taken out, the work can safely and easily be put into cleaning operations as the discharge mouth is in a closed state, making it possible to keep it clean.

Brief Description of the Figures

[0021]

[Figure 1] is a cross section of the liquid substance storage container concerning embodiment 1 of this invention.

[Figure 2] (1) is the head portion (circular dotted line part) taken from Figure 1 showing a state with the outer cap removed, (2) a plan view of inner lid 2, (3) a plan view of stopper body 3, and (4) a plan view of lid body 5.

[Figure 3] is a cross section to show an opened state

of discharge mouth 7.

[Figure 4] is a cross section of the liquid substance storage container concerning embodiment 3 of this invention.

[Figure 5] is a cross section of the liquid substance storage container concerning embodiment 2 of this invention.

[Figure 6] is a cross section to show a released state of plug 3 with the stopper of Figure 5 moving to a specified position.

[Figure 7] is a cross section to show the state of plug 3 moved and discharge mouth 7 opened when plug 3 is released.

[Figure 8] is a cross section of the liquid substance storage container concerning embodiment 5 of this invention.

[Figure 9] is a cross section of the liquid substance storage container concerning embodiment 6 of this invention.

[Figure 10] is a cross section of the liquid substance storage container concerning embodiment 6 of this invention.

[Figure 11] is a cross section of the liquid substance storage container concerning embodiment 6 of this invention.

[Figure 12] is a cross section of the liquid substance storage container concerning embodiment 9 of this invention.

[Figure 13] is a cross section of the liquid substance storage container concerning embodiment 4 of this invention.

[Figure 14] is a cross section of the liquid substance storage container concerning embodiment 4 of this invention.

[Figure 15] is a plan view of inner lid b2 of Figure 14 of the liquid substance storage container concerning embodiment 4 of this invention.

[Figure 16] is a view of discharge portion 25 of Figure 13 of the liquid substance storage container concerning embodiment 4 of this invention, (1) a plan view, (2) a cross section as seen from the side, (3) a cross section of discharge mouth 26 opened as seen from the side, and (4) a X-X view of (3).

[Figure 17] (1) is a view concerning embodiment 10 of this invention and (2) a view concerning Embodiment 11.

[Figure 18] is a view to explain Embodiment 15 of this invention.

[Figure 19] is a cross section of the liquid substance storage container concerning Embodiment 13 of this invention.

[Figure 20] is a cross section of the liquid substance storage container concerning Embodiment 14 of this invention

[Figure 21] is a cross section of the liquid substance storage container concerning Embodiment 15 of this invention.

Embodiments to implement the invention

[0022] The embodiments of this invention are explained below referring to figures.

(Embodiment 1)

[0023] Figure 1 is a cross section of a liquid substance storage container related to this embodiment. Figure 2 (1) is a circular dotted line part excerpt from Figure 1 showing a state with outer cap 1 removed. The view shows discharge mouth 7 in a closed state with plug 3 in close contact with the discharge mouth. (2) is a plan view of inner lid 2. (3) is a plan view of plug 3. (4) is a plan view of lid body 5. Figure 3 is a view showing an opened state of discharge mouth 7 of the liquid substance storage container.

[0024] The liquid storage container shown in Figure 1 is a tube-like container equipped with a tube-like container shell 6 and a lid portion. The container shell is equipped with flexible containing portion 6b and opening portion 6a. The containing portion 6b is formed into a bag having inner space closed to the inside. The inner space is filled with liquid or liquid substance such as gel.

The opening portion 6a is provided in an end portion of the containing portion 6b and is connected to the inner space formed by the containing portion.

[0025] To the opening portion 6a of the container 6, lid body 5 is installed in a way to close the opening portion 6a. For the connection 10 of the container 6 and lid body 5, matching screws are formed for joining.

For the aforementioned lid portion, lid body 5 is formed in a tube, and at one end portion in the direction to take out the content, inner lid 2 is installed and at the other end (side of the opening portion 6a, a bottom plate 20 is provided, thus forming space inside lid body 5.

[0026] Near the center of lid body 5, a circular or polygonal column form of plug 3 is provided, and for plug 3, the outside of wavy spring portion 8 radially spreading from a specified position at the outer periphery of plug 3 is fixed to the inner wall of lid body 5.

Inner lid 2 is provided with discharge mouth 7, and normally, the protruding portion of plug 3 is in close contact with it in the form to block the discharge mouth 7 from the inside.

[0027] The aforementioned protruding portion of plug 3 can be moved in a direction away from discharge mouth 7 owing to functions of wavy spring portion 8, thereby opening and closing discharge mouth 7.

The internal space of lid body 5 is separated into chamber A 17 and chamber B 18 by wavy spring portion 8 of plug 3. Chamber A 17 is connected to the containing portion 6b through outflow hole 19 and chamber B 18 is connected to the outside air through air port 4 of the lid.

[0028] If the containing portion 6b is pressurized to discharge liquid substance of the content, the content in the containing portion 6a moves to chamber A 17 through outflow hole 19 and by means of the pressure of the con-

tent filled in chamber A 17, wavy spring portion 8 is deformed and the portion in contact with discharge mouth 7 of plug 3 moves in a direction away from discharge mouth 7, thereby opening discharge mouth 7, and the content is discharged from the discharge mouth.

If the pressure is removed from the containing portion 6b, the containing portion inside and chamber A 17 are made negative by the force of the containing portion to return to the original form.

[0029] Plug 3 returns to its original form due to the elastic restoring force of the wavy spring portion 8. Since chamber B 18 is connected to the outside air through the lid's air hole 4, the air pressure in chamber B is always the same as that of the outside air, and so it does not prevent the deforming/moving of plug 3.

As shown by these figures, the content going outside through discharge mouth 7 does not reverse and the outside air does not flow into the discharge mouth.

When the discharge mouth and its surrounding are in need of cleaning, there is no concern about remaining content or contaminant entering through the discharge mouth 7 as the discharge mouth is tightly closed.

[0030] When in a closed state, the surface surrounding the discharge mouth of inner lid 2 and the surface at the end of plug 3 continuously form one surface, and since there is no irregularity or clearance on the surfaces, the structure helps the area kept from being contaminated, and the area can be kept clean as cleaning is easily done. If the content is water-soluble substance such as toothpaste, the container can be washed in water, and if the content is oily substance, the container can be washed with cleaning solution suitable for the content, and the cleaning solution or contaminant will not enter through discharge mouth 7.

[0031] If the surface of inner lid 2 and the end surface of plug 3 are formed to become one planar surface when the lid is in a closed state, it will be best suited for taking the content using a fingertip, a glass rod, a spoon, a chopsticks or a brush. It is also a good idea to form one concave surface in the surface of inner lid 2 and the end surface of plug 3 and check the color, odor, or volume by temporarily accumulating the content there. It is also good to mark graduations on the surface of inner lid 2 so that the volume can be easily measured when the content is to be discharged.

If the content is skin lotion or cream to be directly applied on the skin, various shapes can be formed to meet purposes by, for example, forming one convex surface in the surface of inner lid 2 and the end surface of plug 3 so that it can be easily applied directly to the skin.

(Embodiment 2)

[0032] With this embodiment, not only the wave form but also optimum shapes are formed by making wavy spring portion 8 in embodiment 1 by using flexible and elastic material. In such a case, it is also possible to install at a desired place the spring of desired shape such as

spiral or leaf to assist the force to direct plug 3 toward discharge mouth 7.

(Embodiment 3)

[0033] Figure 4 is a figure to explain embodiment 3. In addition to embodiment 1, embodiment 3 provides inner bag 14, the space 14b between the container 6 and inner bag 14, and air hole 12 of the container.

If the pressure of the container 6 is removed after the content is discharged, inner bag 14 remains deformed for the same volume as that of the content discharged, but the outer shape of the container 6 returns to its original shape by taking in the outside air into the space 14b through air hole 12 by its restoring force.

Since no outside air enters inner bag 14, the contact between the content and the outside air is prevented and the initial shape is maintained for the outer shape of the container 6.

[0034] When the content is taken out, pressure is applied by blocking air hole 12 with a finger. It is also possible to adopt a check-valve structure for air hole 12 in advance. With the container of this embodiment, the containing portion 6b restores its original shape even after the content is discharged, and the beauty of the container will not be lost until the content is used out. Since the containing portion 6b always maintains same shape, the operation is easy when the content is taken out by manually grasping the container 6.

[0035] Figure 5, Figure 6 and Figure 7 are drawings to explain embodiment 4. The basic structure is same as that of each embodiment described above, but stopper 11 is added in addition to the structure of each embodiment described above. Figure 5 shows the state of plug 3 fixed in close contact with discharge mouth 7 in a normal state (when closed). Figure 6 shows a state of the fixing of plug 3 released by moving stopper 11. Figure 7 shows discharge mouth 7 opened after the pressure is applied to the containing portion 6b when plug 3 is released in fixing and discharge mouth 7 of plug 3 is moved in the direction of the central portion in contact with the discharge port of plug 3 in a direction away from the discharge mouth 7 due to the pressure of the content.

[0036] In the state of Figure 6, discharge mouth 7 is blocked in close contact by the elastic restoring force to work toward the discharge mouth 7 of plug 3 in a normal state, but in the state of Figure 5, plug 3 is fixed by stopper 11, thus ensuring a closed state. It is effective when a user wants to completely close the container when in need of carrying it outside or when the content is not used for a long period of time.

[0037] When it is difficult to move plug 3 to the position for close contact with discharge mouth 7 by only the elastic restoring force of plug 3 when the content has high viscosity, the moving can be assisted by moving stopper 11 to its original position. This makes it possible to store liquid substance of high viscosity. These figures show the stopper of slide type, but the stopper shape and

mechanism can be of any shape so long as the motion of plug 3 is assisted or control with fingertips. For example, the stopper in Figures 5 and 6 assists the moving of plug 3 only in the direction for close contact with the discharge mouth 7, but it is possible to assist reciprocating moving. In such a case, however, it should be noted that the content will reverse if the discharge mouth 7 is opened when the pressure in the container is lower than the pressure outside the container.

[0038] Figure 8 is a drawing to explain embodiment 5. With embodiment 5, the outer shape of the discharge mouth of inner lid 2, which was flat in the case of each embodiment described above (Figures 1 to 7), is formed extruding tubular or drill-like toward the takeout direction of the content from the side of lid body 5.

The shape is convenient when the content is directly transferred to a desired place from discharge mouth 7. At the end portion of the discharge mouth 7, it is possible to separately attach an auxiliary device for delicate working, for example, attaching a decorative shape such as waveform on the content surface when the content is discharged.

(Embodiment 6)

[0039] The basic structure is same as that of each embodiment described above but a difference is that lid body 5 is provided with a pump mechanism. Figures 9, 10 and 11 are drawings to show the composition of embodiment 6. In the example shown in Figure 9, a pump mechanism is installed between inner lid 2 and the bottom plate 20. The pump mechanism is equipped with chamber A 17, chamber B 18, pressure portions (the pump elastic portion 21), the pushbutton 22 and check valve 16. The aforementioned check valve 16 is installed in outflow hole 19 and the pressure portion is provided on the side surface of lid 5. The pressure portion 21 consists of the pump elastic portion of wavy spring type extruding from the side of lid body 5 which can repeatedly deflect/deform and the pushbutton 22, thicker than the pump elastic portion 21, provided at the end portion of the pump elastic portion 21.

[0040] Check valve 16 is normally closed, and when the pushbutton 22 is pressed with a finger, the pressure in chamber A 17 of the lid increases and by the pressure, the portion in contact with discharge mouth 7 of plug 3 moved in the direction to leave from discharge mouth 7, and discharge mouth 7 is opened, thus pushing out the content.

If the pushbutton 22 is released, the pushbutton 22 is returned to its original position by the elastic restoring force of the pump elastic portion, chamber A 17 becomes negative in pressure, plug 3 returns to its original shape, the discharge mouth 17 closes, check valve 16 opens, and the content in the container 6 is moved into chamber A 17.

[0041] In the above explanation, the installation of a pressure portion on the side surface of lid body 5 is illus-

trated, but instead of the installation of a pressure portion, it is also possible to form the entire side wall of lid body 5 with elastic body. In such a case, the pump action described above is demonstrated by pushing or releasing the lid itself.

As shown in Figure 10, it is also possible to include balloon portion 15 consisting of elastic body to connect to chamber A 17 against lid 5. In this case, the balloon portion 15 is crushed to discharge the content from discharge mouth 7, and by releasing the pressure to the balloon portion 15, the content is moved into chamber A 17 from the container 6.

[0042] As described above, with this embodiment, it is not necessary to deform the container 6 by applying pressure to the container. For this reason, in the case of the container provided with inner bag 14 of embodiment 2, the container may not be flexible. For example, the container 6 can be made with hard glass or metal. It is also possible to set the discharge amount each time the balloon portion 15 is crushed and discharge the content while easily measuring the discharge amount by the number of crushing times of the balloon portion 15. It is convenient for seasoning or pharmaceutical to be taken out by measuring the discharge amount when in use. It is also possible to install the balloon portion 15 with an air check valve 23 in the air hole 12 of the container, as shown in Figure 11. It is possible to control the discharge amount of the content by controlling the air amount to flow into the space 14b between the container and inner bag by means of the balloon portion 15.

(Embodiment 7)

[0043] Figure 12 is a drawing to show the composition of embodiment 7. As shown in Figure 12, a thin film of plastic or metal with high oxygen barrier property is attached, or a thin film is formed by plating, evaporating or applying.

As for the material of the container 6, conventionally a material of multilayered construction with high oxygen barrier property is used to prevent oxygen permeability, but for the lid portion, the opening of the container is closed by attaching aluminum seal to it, thus preventing oxygen permeability before unsealing. For this reason, if the material of the lid portion is polyethylene with low oxygen barrier property, the oxygen preventive function is low even in the state where the lid closed after the aluminum seal is unsealed and removed.

[0044] In embodiment 7, the oxygen permeability can be prevented by means of the thin film with high oxygen barrier property of inner lid 2 and lid body 5, the oxygen preventive function can be strengthened even when the lid portion is formed with a material such as polyethylene or polypropylene conventionally and normally used which relatively easily allows the oxygen to pass.

(Embodiment 8)

[0045] Embodiment 8 is explained below while referring to drawings. For the same composition as that of each embodiment described above, the same symbols are used for explaining.

Figure 13 is a cross section near the opening portion 6a of the lid portion and the container 6 of the liquid substance storage container concerning embodiment 1. Figure 14 is a view showing a state of discharge mouth 26 with outer cap 1 shown in Figure 13 removed. Figure 15 is a plan view of inner lid 2 in Figure 14. Figure 16 is a drawing of discharge portion 25, and 1 is a plan view, 2 a cross section as seen from the side of discharge portion 25, 3 a cross section as seen from the side when the discharge mouth 26 is opened, and 4 the X-X view of 3.

[0046] The liquid substance storage container of embodiment 8 is a bottle-like container equipped with a lid portion (outer cap 1, inner lid 2, lid body 5), the container shell 6 (the opening portion 6a), containing portion 6b, the discharge portion 25, and inner bag 14. Inside inner bag 14, a closed inner bag space 14a is formed and in the inner bag space 14a, liquid or liquid substance such as gel is filled. The opening portion 6a is provided at one end portion in the content discharge direction of the containing portion and the other end portion is connected to the inner bag space A 14a formed by inner bag 14. The opening portion 6a of embodiment 8 is cylindrical and external thread is formed on the outside diameter.

[0047] The aforementioned lid portion is installed in the form of blocking the opening portion 6a against the container 6 and has inner lid 2 in the form of partitioning the outside in the direction opposite to the opening portion 6a, and inner lid 2 is equipped with discharge mouth 7 and the air inflow port 13. The discharge mouth 7 is connected to the inner bag space 14a of inner bag 14 via the opening portion 6a, and the inner bag space 14a between the inner bag and container outer wall, clearance between the inner bag space 14a and the outer wall of the containing portion 2b, is connected to outside air via the air inflow port 13. For the connection 10 of lid body 5, an external thread is formed on the inside diameter and joined to the opening portion 6a.

[0048] The discharge portion 25 is formed cylindrical with a flexible thin sheet, and one end portion of it is connected to discharge mouth 7 and has discharge mouth 26 at the other end portion. The inside of the discharge portion 25 is connected to the space A 14a in the inner bag via discharge mouth 7 and the opening portion 6a. When the container stands, the relative surface on the cylindrical side of the thin sheet of the discharge portion 25 is in close contact and discharge mouth 26 is closed.

[0049] If outer cap 1 is removed and the container 6 is inclined in the content discharge direction to take out the liquid substance of the content, the discharge portion 25 is radially spread from the center depending on the pressure of the moving content, and discharge mouth 26 is

opened and the content is extracted. Outside air of the same volume as the content taken out flows into the space A 14a through the air inflow port 13. If the container 6 is returned to the standing position, the pressure in the discharge portion 25 is lost and the discharge portion 25 is returned to its original shape, and the relative inside of the discharge portion 25 is brought into close contact and discharge mouth 26 is blocked.

[0050] As described above, discharge mouth 26 is opened or closed interlocking with the movement of the content as the container 6 is inclined, allowing only the extraction of the content, thus demonstrating the checking functions to prevent outside air and contaminant from entering through discharge mouth 26.

Even when the content is liquid substance including granular solids, the discharge portion 4, formed with flexible thin sheet which can be flexibly deformed, can block in close contact with the granular solids intact. In this case, the discharge portion 25 from discharge mouth 7 to discharge mouth 26 may be made longer to strengthen the closing performance.

The liquid substance contained in the space A 14a of inner bag 14 is isolated from the air contained in the space B 14b by means of inner bag 14.

(Embodiment 9)

[0051] Inside outer cap 1, an absorber (cushion) 28 formed with flexible material having high liquid absorbing property is installed, and when the outer cap 1 is closed, the sealing power of discharge mouth 25 and discharge mouth 7 is reinforced by the push pressure of the absorber 28, and additionally the sealing power of discharge mouth 26 and discharge mouth 7 may be increased by restricting the movement of the air in the space B 14b (space between the inner bag and the container outer wall) and the content in the space A 14a (space in the inner bag 14) by blocking the air inflow port 13.

It is also possible to install the absorber 28 in a removable way so that it can be removed as required and installed again after cleaning. This makes it easy to always keep clean the surrounding of discharge mouth 26.

(Embodiment 10)

[0052] Figure 17 (1) is a drawing to explain embodiment 10. Figure 17 (1) shows a pen-tip type as seen from the top of discharge mouth 26. If the container 6 is slightly inclined when a small amount of the content is extracted, the discharge mouth 26 is slightly opened like a clearance and a small amount of the content is extracted through the end portion of the pen type along the pen type edge of discharge mouth 26. If the inclination of the container 6 is increased, the discharge mouth is opened in O form (O type) and maximum amount is extracted. If the content is a liquid substance with high viscosity or low fluidity, however, it may be difficult to make fine control of the extracted amount or obtain the effect of the pen-tip type.

(Embodiment 11)

[0053] Figure 17 (2) is a drawing to explain embodiment 11. Figure 17 (2) shows that discharge mouth 26 is closed by fusing before it is opened and the end is manually torn and opened from the broken line portion Y when opening. This makes it possible to secure the airtightness before opening and also show the opened or closed state. To obtain an accurate shape of the discharge mouth, the tear portion may be provided with a flaw or thin portion to induce the tearing.

(Embodiment 12)

[0054] It is also possible to form the surface of the portion to support the discharge portion 25 of lid body 5 in such a way that the height gradually increases in the direction of discharge mouth 26 from the side of discharge mouth 7 when container 6 is in a stand position so that the content in the discharge portion 25 induces liquid drawing under its own weight when the container 6 is returned to a stand position.

(Embodiment 13)

[0055] Figure 19 is a drawing to explain embodiment 13. The basic composition is same as that of each embodiment described above, the only difference being that the air inflow port 13 is provided with the air inflow port lid 29 to be manually opened or closed. This makes it possible to extract the content only when the air inflow port lid 29 is pushed and opened with a finger so that the content will not flow out even when it is mistakenly turned over when the finger is released.

(Embodiment 14)

[0056] The basic composition is same as that of each embodiment described above, only difference being that lid body 1 is provided with a mechanism to control the discharge amount of the content by adjusting the inflow amount of outside air. In an example shown in [Figure 20], the air inflow port 13 of lid body 5 is linked with the balloon portion 15 as a simple pump mechanism to allow the entry of air of a fixed amount each action.

This makes it possible to take out the content of almost same volume as the inflow air while easily measuring, by crushing the balloon portion 15 optional times. Since the pump mechanism forces the movement of outside air, the container can be used even for content with high viscosity and low fluidity.

(Embodiment 15)

[0057] Figure 18 is a cross section of the liquid substance storage container related to claim 7, a drawing to explain embodiment 15. In this embodiment 15, the role of the space to contain the liquid substance of the content

and the inflow air is reversed from that of embodiment 8. The liquid substance is contained in the space B 14b between inner bag 14 and the outer wall of the containing portion 6b, and the inflow outside air is contained in the space A 14a in the inner bag.

[0058] The aforementioned lid portion is installed in the form of blocking the opening portion 6a against the container 6 and has inner lid 2 in the form of partitioning the outside in the direction opposite to the opening portion 6a, and inner lid 2 is equipped with discharge mouth 7 and the air inflow port 13. Discharge mouth 7 is connected to the space B 14b via the opening portion 6a, and the space A 14a is connected to outside air via the air inflow port 13. For the connection 10 of lid body 5, an internal thread is formed on the inside diameter and it is joined with the opening portion 6a.

[0059] When the container 6 is standing, the relative surface of the cylindrical inside of the thin sheet of the discharge portion 25 is in close contact and discharge mouth 26 is closed. If outer cap 1 is removed and the container 6 is inclined in the direction of pouring the content to discharge the liquid substance of the content, the discharge portion 25 is radially spread from the center under the pressure of the weight of the moving content and the content is extracted. The outside air of the same volume as that of the content taken out flows into the space A 14a in the inner bag 14 through the air inflow port 13 and is contained. If the container 6 is returned to the standing position, the pressure in the discharge portion 25 is lost, the discharge portion returns to its original shape, the relative inner surface of discharge portion 25 is brought into close contact, and discharge mouth 26 is closed.

[0060] As described above, discharge mouth 26 opens or closes interlocking with the movement of the content as the container inclines, allowing only the extraction of the content, thus demonstrating the check function to prevent the entry of outside air and contaminant through discharge mouth 26. Even when the content is liquid substance including granular solids, the discharge portion 4 can close in close contact with the granular solids intact because it is formed with a flexible thin sheet that can flexibly deform. In this case, the discharge portion 25 from discharge mouth 7 to discharge mouth 26 may be made longer.

The liquid substance contained in the space B 14b is isolated from the air contained in the space A 14a by means of the inner bag 14.

[0061] Comparing embodiment 15 and embodiment 8, their advantages are explained below. The advantage of embodiment 15 is that the aforementioned lid portion and the inner bag 14 can be shared if the shape of the connection 10 is common even when the shape of the containing portion 6b is somewhat different, by forming the capacity of the inner bag 14 larger than the volume of the content. It is, therefore, possible for a consumer to attach to an optional container, after opening, the aforementioned lid portion and the inner bag 14 having the

connection 11 suitable for the shape of the opening of the container. It is also possible for a seller of wine, for example, to propose a combination of the aforementioned lid portion and the inner bag 14 for existing wine of a conventional container and for the consumer to attach it to the container when opening. Figure 21 is an image drawing of the aforementioned lid portion and the inner bag 14. In this case, the inner bag may be folded or wadded.

[0062] If the capacity of the container 6 is large, the size of the inner bag also becomes large, but in such a case, it is possible to install inside the inner bag 14 a small tube of desired length formed with soft porous material so that the inner bag 14 is smoothly enlarged by inflowing air. Embodiment 15 is suitable when it is desired to reduce the initial investment per product type for multiple products of the content in small quantities.

[0063] On the other hand, embodiment 8 is suitable for large production and advantageous in terms of quality control of the container and cost (unit price). If the container is to be disposed of after the product is consumed, it is not necessary to clean the interior of the container 6 once the inner bag 14 is removed, and it is, therefore, advantageous in recycling.

In this specification, the shape of the container 6 is explained using a tube and bottle as an example, but containers of a box type or of a bag type may also be used.

[0064] In this specification, the fitting method is shown as the method of attaching outer cap 1 to lid body 5, but this is an example, and hinge type, screw-in type, etc. may also be adopted.

In this specification, the screw-in type is used for the connection 10 of lid body 5 and the container 6, but fitting type or fixing connection by thermal fusing may also be adopted.

As the material of the lid portion, various materials such as synthetic resin, metal, and carbon fiber are selectively used in consideration of the characteristic of the liquid substance to be stored and the use form. It is also possible to make the content difficult to stick or remain on the outside of discharge mouth 7 or discharge mouth 26 by attaching or applying in advance a substance repellent to the content to be stored.

[0065] The scope of the invention is not limited to the embodiments illustrated but includes all embodiments that can achieve the effects equivalent to the purposes of this invention. Furthermore, the scope of the invention is not limited to the combinations of characteristics of the invention described by Claim 1 but includes various desired combinations of particular characteristics of all the characteristics disclosed.

[Possibility of Industrial Utilization]

[0066] This invention can be effectively and properly utilized as liquid containers to internally store fluid substances including liquid and gel.

Claims

1. A container for storing fluid material, having the following characteristics:

a container inside which forms an internal space for storing fluids, a container outer shell which has an opening guiding fluids from the internal space of the container inside to the outside, and a lid which covers the discharge opening of the container outer shell and shuts the opening through which fluid material is discharged, the lid part comprises a space connecting to the neck of the container, a plug contacting with an exit mouth from the inside for closing the exit mouth of the container leading to the outside, and a disk-form spring supporting the plug, the spring helps the plug move toward the inside with the inner pressure of the container increasing, and helps the plug move toward the outside to close the mouth of the container with the inner pressure of the container decreasing.
2. Container according to claim 1, is **characterized by** a stopper equipped in the lid part for regulating movements of the plug.
3. Container according to claim 1 and claim 2, **characterized by** a manually operative lever equipped in the lid part, which makes either movement of the plug toward the inside or outside.
4. Container according to claim 1 and either of claim 2 or claim 3, **characterized by** the mouth of the container, which is configured cylinder-like or conic so that the discharge opening protrudes toward outside of the container.
5. A container inside which forms an internal space for storing fluids, a container outer shell which has an opening mouth guiding fluids from the internal space of the container inside to the outside, and a lid which covers the opening of the container outer shell and has a function to shut the exit mouth through which fluid material is discharged, the lid part has the aforementioned discharge opening, a thin film that forms a cylinder-form but usually flattened with one end of the film connected to the neck of the container and the other end has the exit mouth, **characterized by** the exit mouth guiding fluid from the inside to the outside.
6. Container according to one of claims 1 to 5, **characterized by** an inner bag equipped which has an internal space for storing fluids inside of the container, forming space between the inner bag and the inside of the container outer shell, and space is linked to outside air.
7. Container according to one of claims 1 to 5, **characterized by** an inner bag equipped having an internal space for storing air inside and connecting the internal space to.
8. Container according to one of claims 1 to 7, **characterized by** an absorbing material equipped to absorb residuals of fluids remaining around the exit mouth.
9. Container according to one of claims 1 to 8, **characterized by** a pump mechanism equipped to the lid part or the container body that helps increase pressure inside of the container inside.
10. Container according to one of claims 1 to 9, **characterized by** the surface of the lid part which is coated with an oxygen-proof thin film that is made of plastic or metal in order to prevent oxygen from entering the inside of the container.
11. A lid for the aforementioned container, the lid part comprises a space connecting to the neck of the container, a plug contacting with an exit mouth from the inside for closing the exit mouth of the container leading to the outside, and a disk-form spring supporting the plug, **characterized by** the spring that helps the plug move toward the inside with the inner pressure of the container increasing, and helps the plug move toward the outside to close the mouth of the container with the inner pressure of the container decreasing.
12. Lid covering the opening of a container outer shell and shutting the exit mouth through which fluid material is discharged, the lid part has the aforementioned neck, a thin film that forms a cylinder-form but usually flattened with one end of the film connected to the neck of the container and the other end connecting to the exit mouth, **characterized by** a container having an exit mouth guiding fluid from the inside to the outside.
13. Lid according to claim 11 or claim 12, **characterized by** a bag for storing air inside which is equipped to the lid.

Figure 1

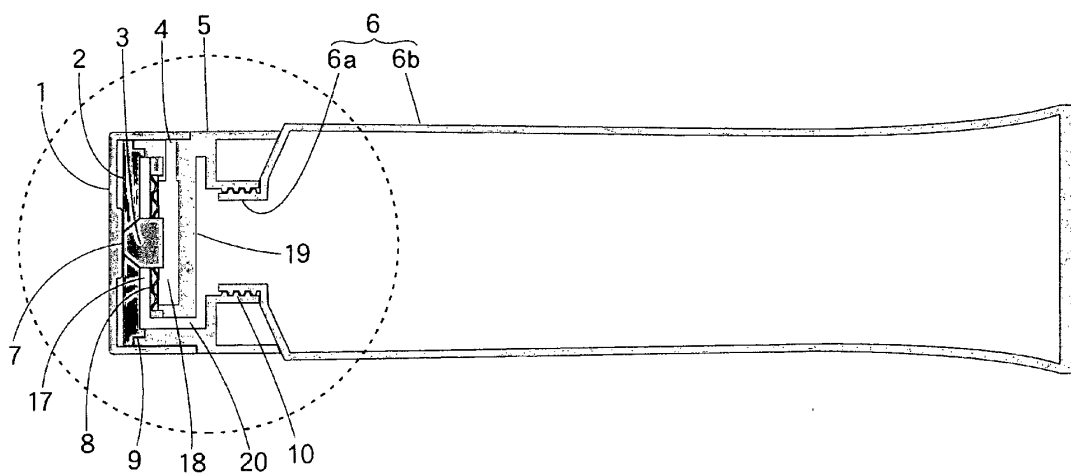


Figure 2 (1)

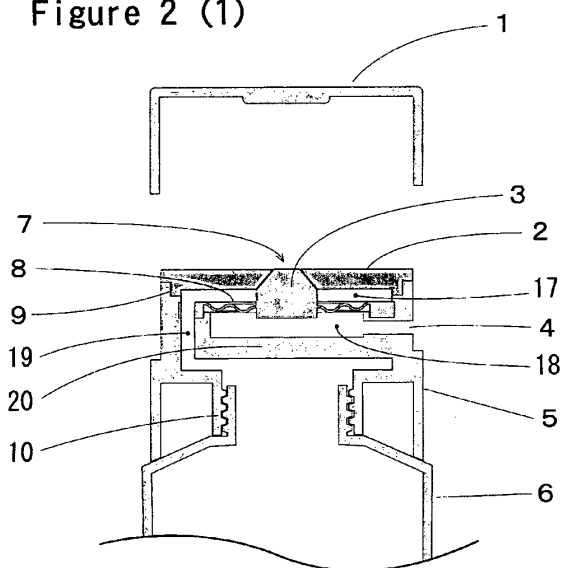


Figure 2 (3)

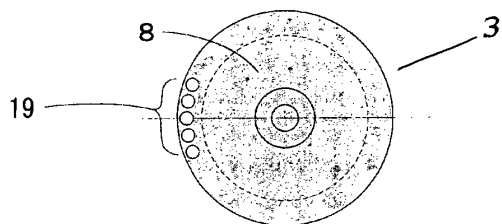


Figure 2 (2)

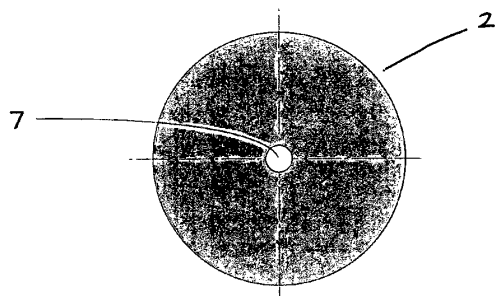


Figure 2 (4)

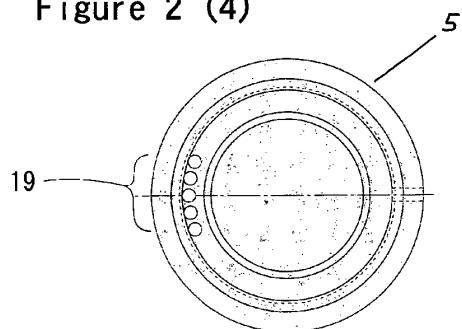


Figure 3

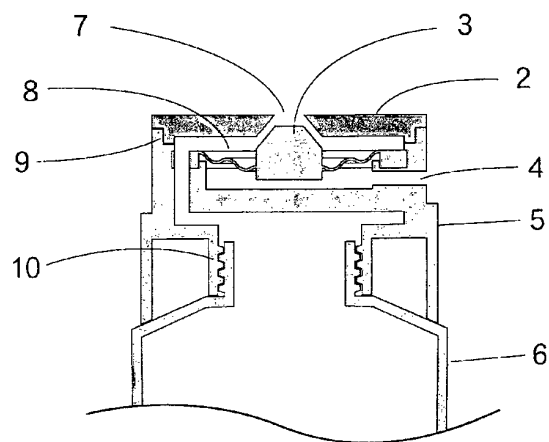


Figure 4

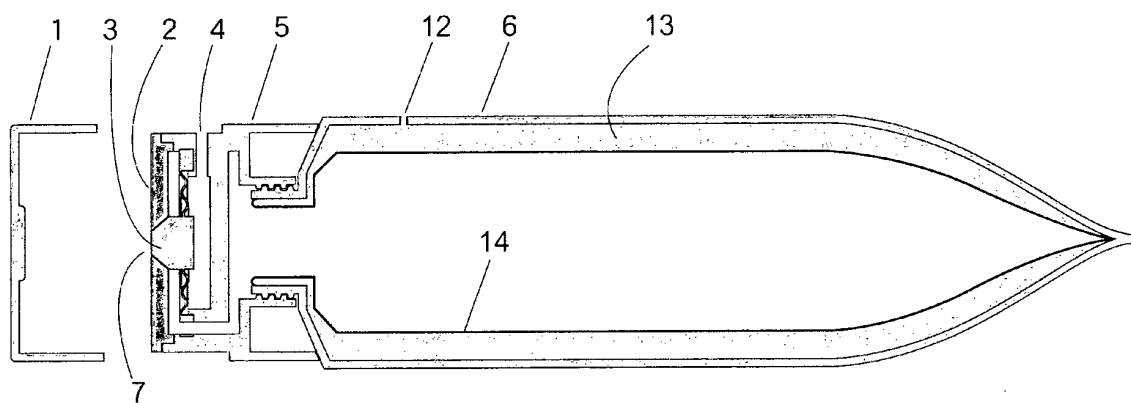


Figure 5

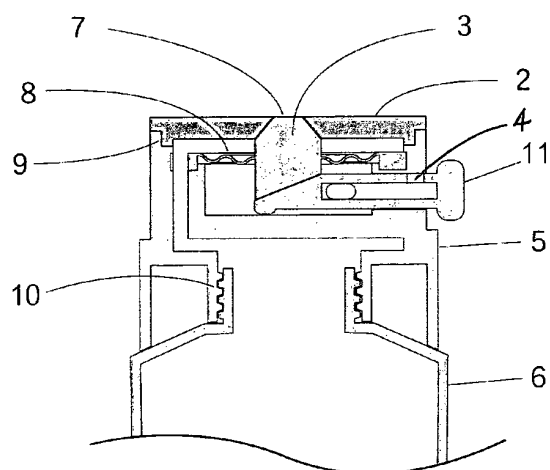


Figure 6

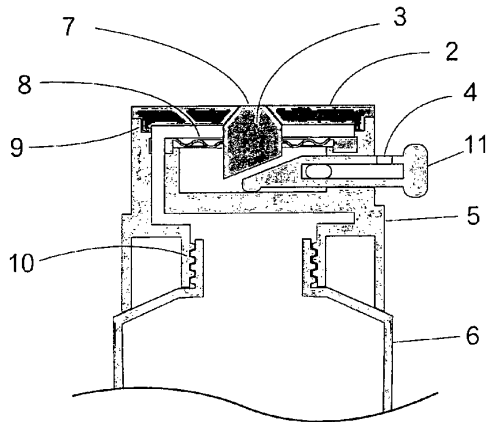


Figure 7

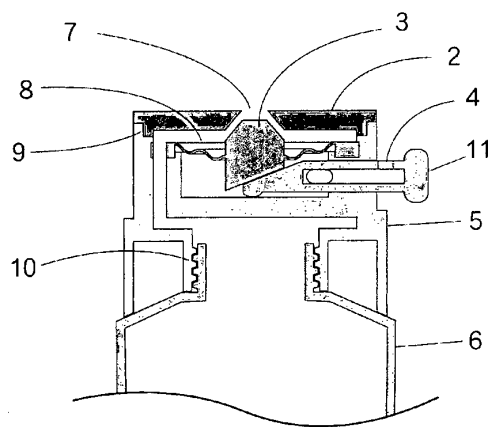


Figure 8

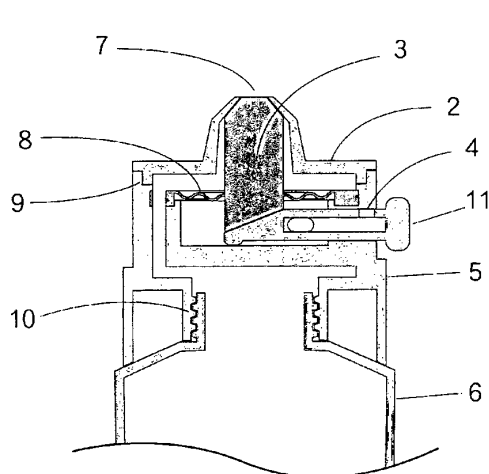


Figure 9

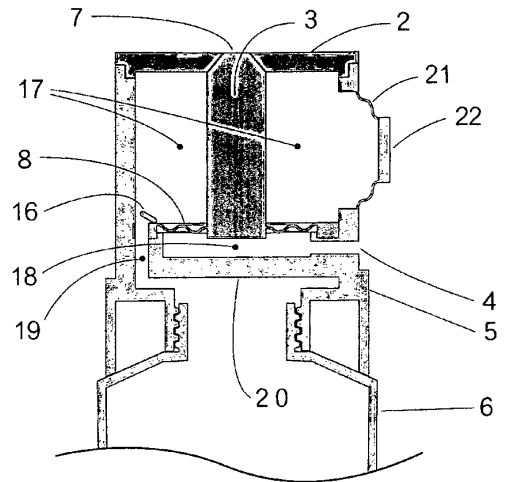


Figure 10

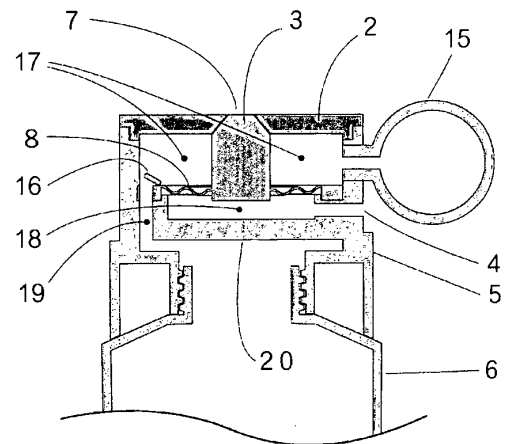


Figure 11

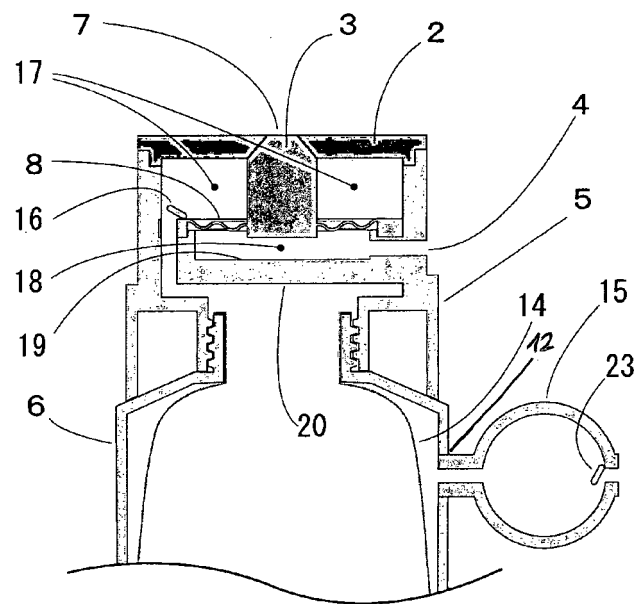


Figure 12

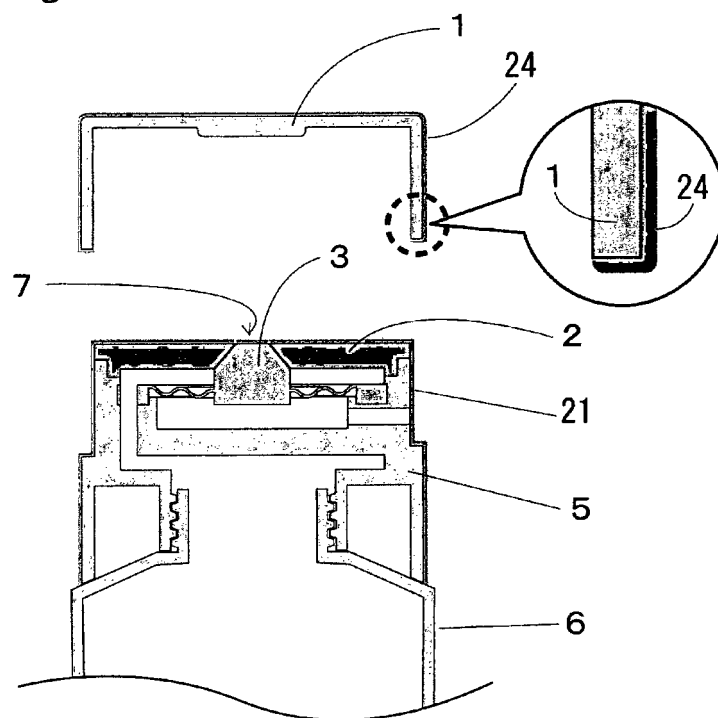


Figure 13

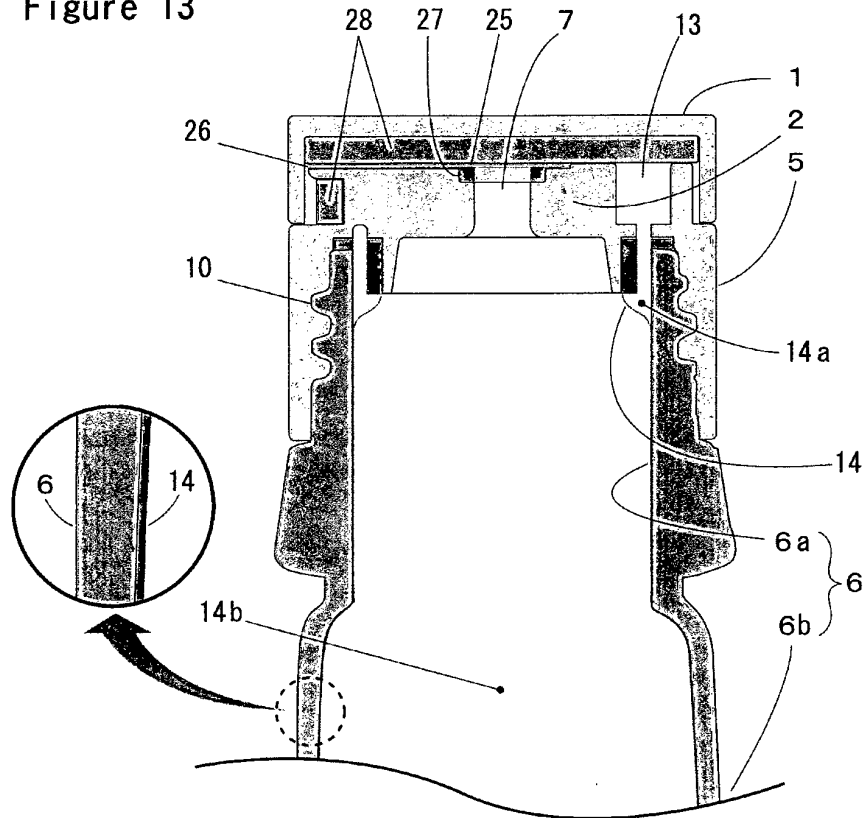


Figure 14

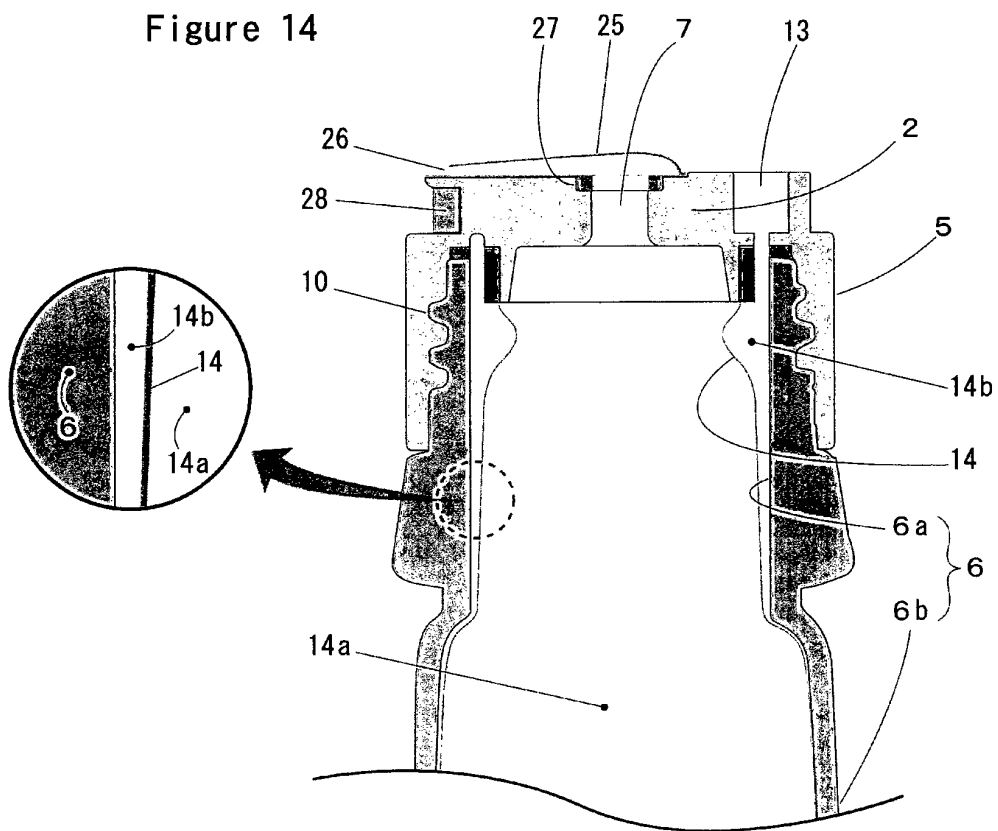


Figure 15

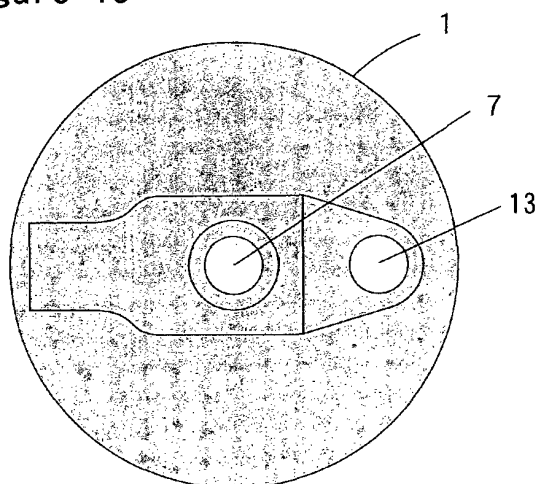


Figure 16 (1)

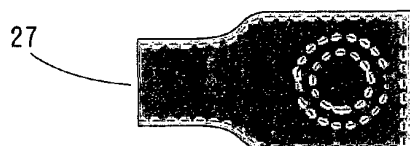


Figure 16 (2)

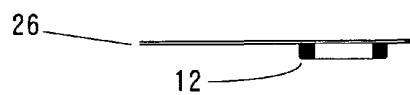


Figure 16 (3)

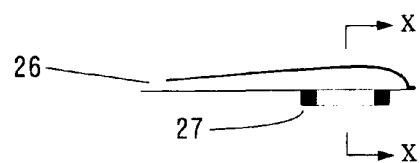


Figure 16 (4)



Figure 17 (1)

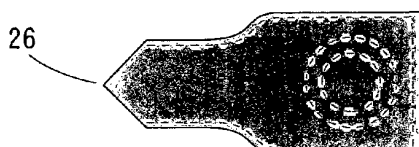


Figure 17 (2)

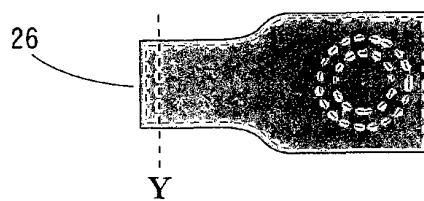


Figure 18

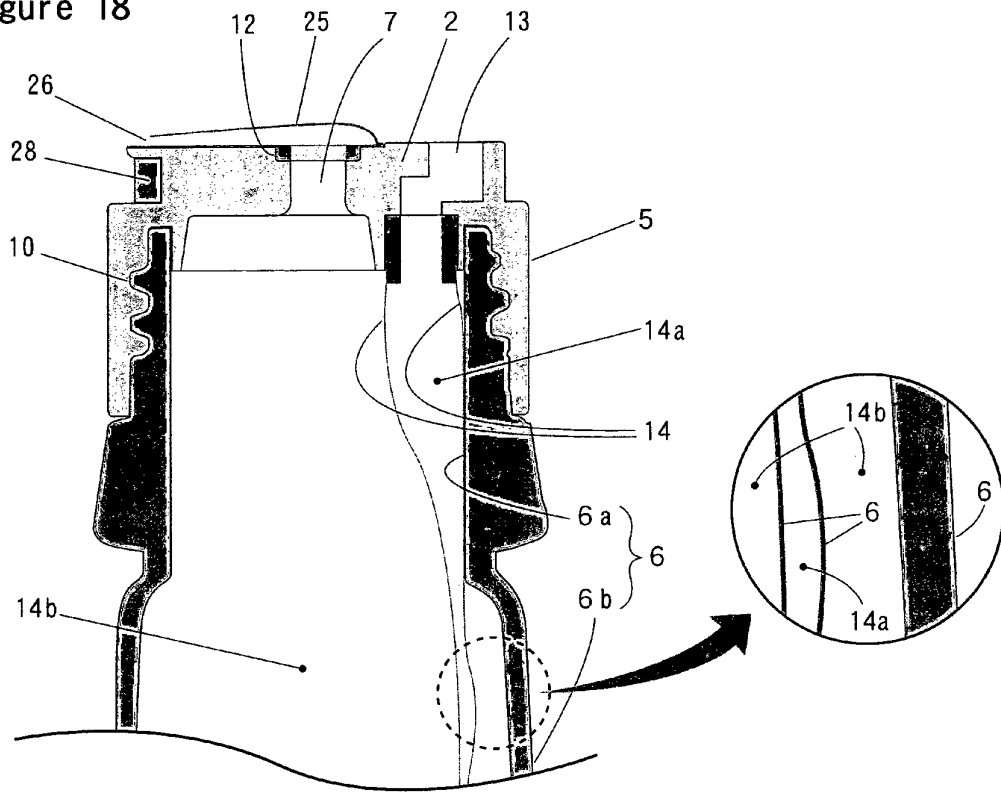


Figure 19

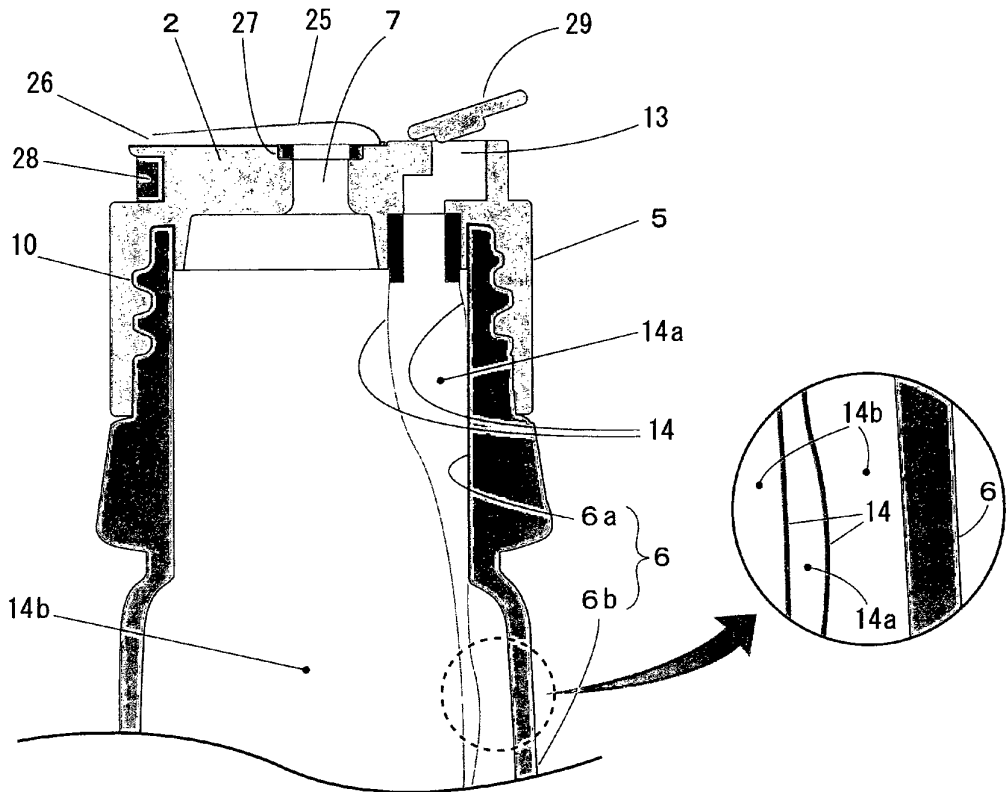


Figure 20

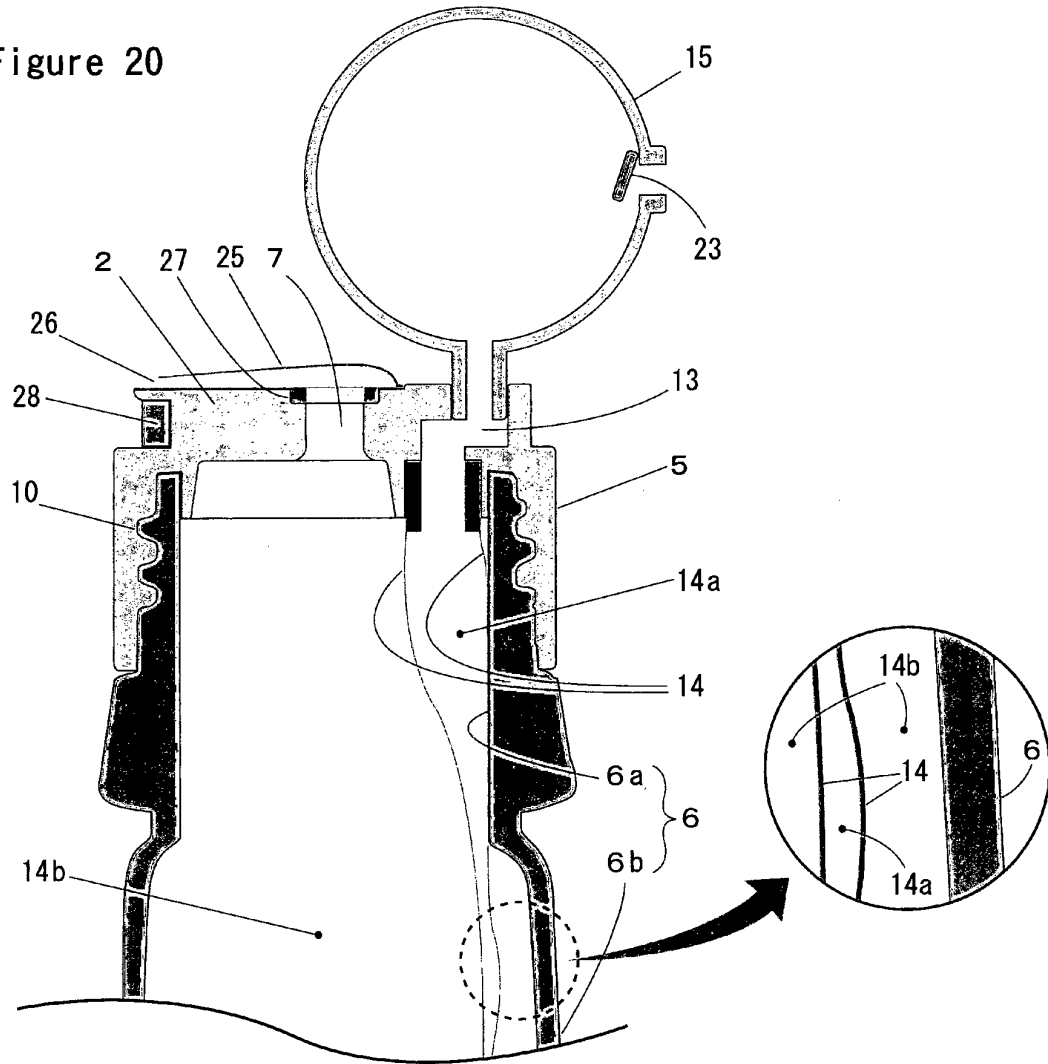
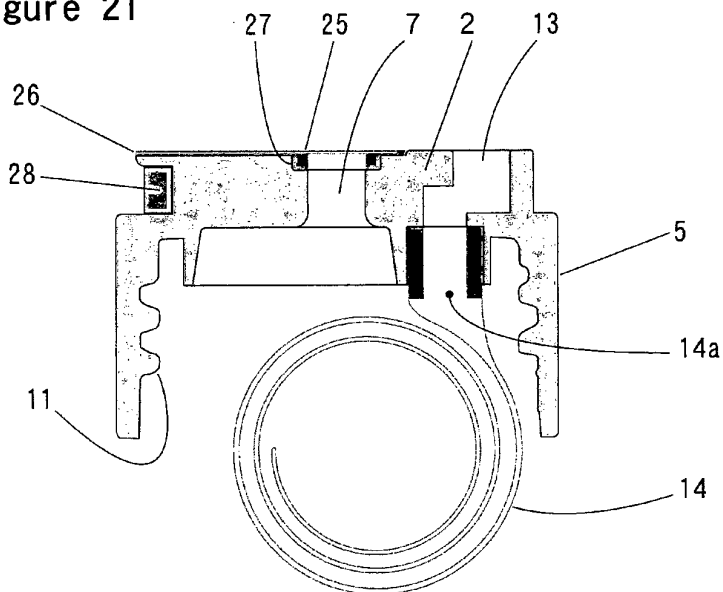


Figure 21



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2011/000827

A. CLASSIFICATION OF SUBJECT MATTER

B65D47/20 (2006.01) i, B65D35/50 (2006.01) i

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

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B65D47/20, B65D35/50

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

Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2011

Kokai Jitsuyo Shinan Koho 1971-2011 Toroku Jitsuyo Shinan Koho 1994-2011

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	JP 58-21399 Y2 (Yoshida Kogyo Co., Ltd.), 06 May 1983 (06.05.1983), entire text; fig. 2, 3 (Family: none)	1, 11 2-4, 6-10, 13
X Y	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 104834/1972 (Laid-open No. 62213/1974) (Shiseido Co., Ltd.), 31 May 1974 (31.05.1974), fig. 1 to 2 (Family: none)	1, 11 2-4, 6-10, 13

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

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
19 May, 2011 (19.05.11)Date of mailing of the international search report
31 May, 2011 (31.05.11)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2011/000827

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 2004/011345 A1 (Otsuka Pharmaceutical Co., Ltd.), 05 February 2004 (05.02.2004), page 15, line 14 to page 16, line 8; fig. 3 to 5 & US 2006/0043116 A1 & EP 1541487 A1 & CA 2493365 A & BR 313111 A & HK 1083210 A & KR 10-2005-0029245 A & CN 1671601 A & AR 45969 A	2-4, 6-10, 13
Y	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 118911/1980 (Laid-open No. 44051/1982) (Tsutomu WADA), 10 March 1982 (10.03.1982), specification, page 2, line 15 to page 3, line 16; fig. 3 to 5 (Family: none)	2-4, 6-10, 13
Y	JP 6-16568 Y2 (Zojirushi Corp.), 02 May 1994 (02.05.1994), page 3, column 6, line 46 to page 4, column 7, line 13; fig. 2, 3, 8, 9 (Family: none)	3-4, 6-10, 13
Y	WO 2010/016478 A1 (Shuntaro ABE), 11 February 2010 (11.02.2010), paragraphs [0048], [0066]; claims 10, 14; fig. 14 to 16, 24 to 25 (Family: none)	4, 6-10, 13
Y	JP 55-71280 A (Containaire Inc.), 29 May 1980 (29.05.1980), page 6, lower left column, line 14 to page 7, upper left column, line 2; fig. 1, 3, 4 & US 4420100 A & EP 11394 A1 & DE 2964302 D & CA 1104532 A	7-8, 10, 13
Y	WO 2005/023665 A1 (Otsuka Pharmaceutical Co., Ltd.), 17 March 2005 (17.03.2005), page 13, line 22 to page 14, line 1; fig. 2, 4, 6, 8 & US 2007/0093765 A1 & EP 1661818 A1 & CA 2537117 A & KR 10-2007-0019939 A & CN 1845856 A & SG 145781 A & BRA PI0414025 & AR 45933 A	8, 10
Y	JP 2005-132418 A (Toppan Printing Co., Ltd.), 26 May 2005 (26.05.2005), claims; fig. 1 (Family: none)	10

Form PCT/ISA/210 (continuation of second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2011/000827

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CH 311443 A (Rudolf VALTL), 13 August 1952 (13.08.1952), fig. 1 (Family: none)	1, 4
A	JP 2009-12785 A (Yoshino Kogyosho Co., Ltd.), 22 January 2009 (22.01.2009), fig. 1, 5, symbol C (Family: none)	3

Form PCT/ISA/210 (continuation of second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2011/000827

Box No. II	Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)
This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons: 1. ☐ Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely: 2. ☐ Claims Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically: 3. ☐ Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).	
Box No. III	Observations where unity of invention is lacking (Continuation of item 3 of first sheet)
This International Searching Authority found multiple inventions in this international application, as follows: Document 1 (JP 58-21399 Y2 (Yoshida Kogyo Co., Ltd.), 6 May 1983 (06.05.1983)) discloses a fluid substance reserving container comprising: a container body having a containing section for forming an internal space to contain a fluid substance, and an opening communicating with the inside space of the containing section; and a cover mounted integrally or removably in said opening of said container body, for closing said opening, and having a discharge opening for said fluid substance, wherein said cover includes a containing chamber capable of containing said fluid substance to come from said container body and leading to said discharge opening, (continued to extra sheet) 1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims. 2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees. 3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.: 4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: Claims 1-4, 6-11 and 13. Remark on Protest ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee. ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation. ☐ No protest accompanied the payment of additional search fees.	

Form PCT/ISA/210 (continuation of first sheet (2)) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2011/000827

Continuation of Box No.III of continuation of first sheet(2)

a stopper element for coming into close contact with said discharge opening from the inner side thereby to close said discharge opening, and an elastic member for supporting said stopper element, wherein said elastic member supports said stopper element so that said stopper element may move in a direction to leave said discharge opening as the pressure in said containing chamber rises, and so that said stopper element may move in a direction to close said discharge opening as the pressure in said chamber falls. The invention of claims 1 and 11 is not admitted to involve any novelty to and any special technical feature over the invention disclosed in document 1.

Hence, it is admitted that the following seven inventions (groups) are contained.

Here, the inventions of claims 1, 4 and 11 having no special technical feature are sorted into invention 1.

(Invention 1) Invention of claims 1, 4 and 11 and the invention of claims 2-3 and 6-10 and having the following special technical features

A fluid substance reserving container "comprising: a container body having a containing section for forming an internal space to contain a fluid substance, and an opening communicating with the inside space of the containing section; and a cover mounted integrally or removably in said opening of said container body, for closing said opening, and having a discharge opening for said fluid substance, wherein said cover includes a containing chamber capable of containing said fluid substance to come from said container body and leading to said discharge opening, a stopper element for coming into close contact with said discharge opening from the inner side thereby to close said discharge opening, and an elastic member for supporting said stopper element, wherein said elastic member supports said stopper element so that said stopper element may move in a direction to leave said discharge opening as the pressure in said containing chamber rises, and so that said stopper element may move in a direction to close said discharge opening as the pressure in said chamber falls, and wherein a stopper is provided for regulating the movement of said stopper element in said leaving direction at the closing time of said discharge opening".

(Invention 2) Invention of claims 3 and 6-10 and having the following special technical features

A fluid substance reserving container "comprising: a container body having a containing section for forming an internal space to contain a fluid substance, and an opening communicating with the inside space of the containing section; and a cover mounted integrally or removably in said opening of said container body, for closing said opening, and having a discharge opening for said fluid substance, wherein said cover includes a containing chamber capable of containing said fluid substance to come from said container body and leading to said discharge opening, a stopper element for coming into close contact with said discharge opening from the inner side thereby to close said discharge opening, and an elastic member for supporting said stopper element, wherein said elastic member supports said stopper element so that said stopper element may move in a direction to leave said discharge opening as the pressure in said containing chamber rises, and so that said stopper element may move in a direction to close said discharge opening as the pressure in said chamber falls, and wherein said cover includes a lever capable of manually operating the actions of the stopper element which moves in a direction (continued to next extra sheet)

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to close said discharge opening, when said stopper element moves in a direction to leave said discharge opening so that the pressure in said chamber drops".

(Invention 3) Invention of claims 5-10 and 13 and having the following special technical features

A fluid substance reserving container "comprising: a container body having a containing section for forming an internal space to contain a fluid substance, and an opening communicating with the inside space of the containing section; and a cover mounted integrally or removably in said opening of said container body, for closing said opening, and having a discharge opening for said fluid substance, wherein said cover includes a containing chamber capable of containing said fluid substance to come from said container body and leading to said discharge opening, a stopper element for coming into close contact with said discharge opening from the inner side thereby to close said discharge opening, and an elastic member for supporting said stopper element, wherein said elastic member supports said stopper element so that said stopper element may move in a direction to leave said discharge opening as the pressure in said containing chamber rises, and so that said stopper element may move in a direction to close said discharge opening as the pressure in said chamber falls, wherein an inner bag having an internal space for containing the liquid substance therein is arranged on the inner side of said containing section, wherein a space is formed between said inner bag and the outer wall of said container body housing section, and wherein said space is vented to the atmosphere".

(Invention 4) Invention of claims 5 and 8-10 and having the following special technical features

A fluid substance reserving container "comprising: a container body having a containing section for forming an internal space to contain a fluid substance, and an opening communicating with the inside space of the containing section; and a cover mounted integrally or removably in said opening of said container body, for closing said opening, and having a discharge opening for said fluid substance, wherein said cover includes a containing chamber capable of containing said fluid substance to come from said container body and leading to said discharge opening, a stopper element for coming into close contact with said discharge opening from the inner side thereby to close said discharge opening, and an elastic member for supporting said stopper element, wherein said elastic member supports said stopper element so that said stopper element may move in a direction to leave said discharge opening as the pressure in said containing chamber rises, and so that said stopper element may move in a direction to close said discharge opening as the pressure in said chamber falls, and wherein an absorber is provided for removing the fluid substance, if this fluid substance is left to stick to the edge of a pouring port after said pouring port was closed". (continued to next extra sheet)

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(Invention 5) Invention of claims 5 and 9-10 and having the following special technical features

A fluid substance reserving container "comprising: a container body having a containing section for forming an internal space to contain a fluid substance, and an opening communicating with the inside space of the containing section; and a cover mounted integrally or removably in said opening of said container body, for closing said opening, and having a discharge opening for said fluid substance, wherein said cover includes a containing chamber capable of containing said fluid substance to come from said container body and leading to said discharge opening, a stopper element for coming into close contact with said discharge opening from the inner side thereby to close said discharge opening, and an elastic member for supporting said stopper element, wherein said elastic member supports said stopper element so that said stopper element may move in a direction to leave said discharge opening as the pressure in said containing chamber rises, and so that said stopper element may move in a direction to close said discharge opening as the pressure in said chamber falls, further comprising a pump mechanism capable of boosting the pressure in the container with respect to said cover or said container body".

(Invention 6) Invention of claims 5 and 10 and having the following special technical features

A fluid substance reserving container "comprising: a container body having a containing section for forming an internal space to contain a fluid substance, and an opening communicating with the inside space of the containing section; and a cover mounted integrally or removably in said opening of said container body, for closing said opening, and having a discharge opening for said fluid substance, wherein said cover includes a containing chamber capable of containing said fluid substance to come from said container body and leading to said discharge opening, a stopper element for coming into close contact with said discharge opening from the inner side thereby to close said discharge opening, and an elastic member for supporting said stopper element, wherein said elastic member supports said stopper element so that said stopper element may move in a direction to leave said discharge opening as the pressure in said containing chamber rises, and so that said stopper element may move in a direction to close said discharge opening as the pressure in said chamber falls, and wherein a thin film made of plastics or a metal having a high oxygen barrier property is adhered to the surface of said cover, so that an oxygen permeation is prevented to enhance an oxidization preventing effect".

(Invention 7) Invention of claims 5 and 12

REFERENCES CITED IN THE DESCRIPTION

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