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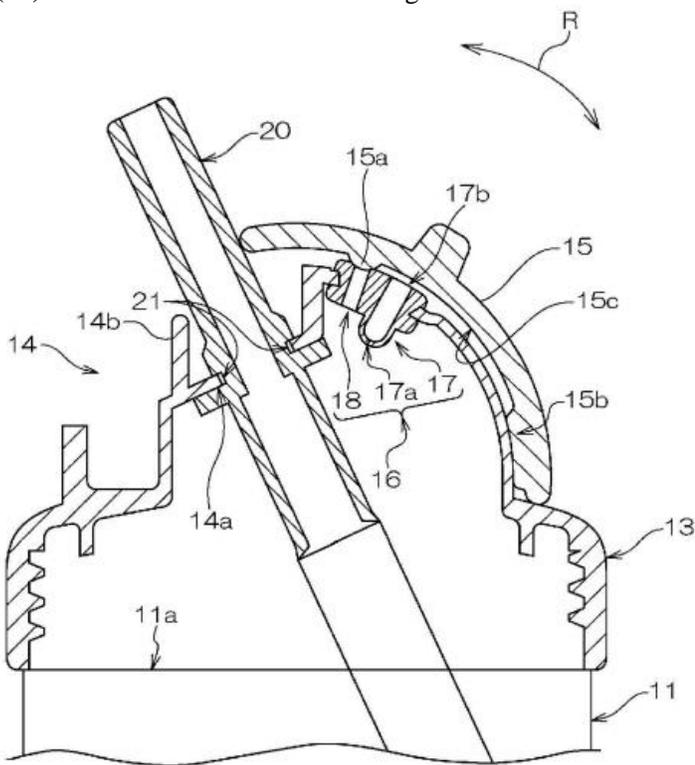
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(54) Title: BEVERAGE CONTAINER

(54) Title of the Invention: Beverage Container



(57) Abstract: [PROBLEMS] A beverage container from which a beverage does not leak even if a user tilts a container body and from which the user can easily drink the beverage even if the pressure in the container body is negative. [MEANS FOR SOLVING PROBLEMS] The beverage container (10) has the container body (11), a base member (12), and a cap body (15). The base member has first ventilation means (18) for regulating a pressure variation in the container body and also has second ventilation means (17) for introducing air from the outside when the pressure in the container body relative to the outside is negative and capable of preventing leakage of a liquid beverage in the container body. The cap body has ventilation open/close means (15a) capable of changing the first ventilation means to a ventilation state or a closed state. In both a portable state where the user can carry the beverage container and a drinking state where the user can use a drinking spout, the ventilation open/close means closes the first ventilation means, and in an operation state, the ventilation open/close means sets the first ventilation means to the ventilation state.

(57) Abstract: [Problem] To provide a beverage container from which a beverage does not leak even when a user tilts a container main body and from which the user can easily drink the beverage even when the inside of the container main body has a negative pressure or the like. [Solution Means] A beverage container 10,

[continued on next page]

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having a container main body 11, a base member 12, and a cap body 15, wherein the base member is provided with first ventilation means 18 for regulating a pressure variation in the container main body and second ventilation means 17 for introducing air from the outside when the pressure within the container main body becomes negative in relation to the outside and capable of preventing leakage of a liquid beverage contained in the container main body, the cap body has formed thereon ventilation open/close means 15a capable of changing the state of the first ventilation means to a ventilation state or a closed state, or the like, and the ventilation open/close means is configured to bring the first ventilation means into the closed state when in a portable state when the user can carry the beverage container and when in a drinking state in which the user can use a drinking spout, and to bring the first ventilation means into the ventilation state when in an operating state.

SPECIFICATION

BEVERAGE CONTAINER

TECHNICAL FIELD

[0001]

The present invention relates to a beverage container for containing a beverage such as milk.

BACKGROUND ART

[0002]

A beverage container having a straw at a drinking spout has been used as a conventional beverage container from which an infant, for example, can drink milk, tea such as barley tea, juice and other kinds of beverage. This type of beverage container has a cap so that it is portable, and another advantage thereof is that the infant can drink the beverage easily through the straw.

Such a beverage container is also so configured that the straw can be sealed so that the beverage within the container does not leak from the straw when a user carries it in a bag etc.

Moreover, when warm milk etc. is contained in this beverage container and the straw is sealed, positive pressure is generated within the container, and, as a result, the warm milk might squirt out of the straw when the infant actually opens the straw to drink the warm milk.

As described above, such a conventional beverage container has a ventilation hole formed therein to prevent warm milk etc. from squirting out of the straw.

[0003]

This ventilation hole is opened and therefore needs to be covered so that the beverage does not leak out when carrying the beverage container. Therefore, the beverage containers described in, for example, Patent Document 1 and Patent Document 2 are proposed.

Specifically, the beverage container **1** of Patent Document 1 has an air hole open/close valve **6**, while the beverage container **10** of Patent Document 2 has a lever **21** formed therein.

More specifically, when carrying these beverage containers, a user operates the air hole open/close valve **6** or the lever **21** to close a ventilation hole of the beverage container **1** etc. When drinking a beverage therein, the user operates the air hole open/close valve **6** etc. to open the ventilation hole so that warm milk etc. of the container is prevented from squirting out of the straw.

[0004]

However, the problem of the Patent Document 1 etc. is that the user has to operate the air hole open/close valve **6** by him/herself, which is a troublesome work. For this reason, other beverage containers are proposed by Patent Document 3 and Patent Document 4.

Specifically, there is described a mechanism for opening/closing a ventilation hole in synchronization with the opening/closing operation of a hood etc. that covers a straw and prevents a beverage from leaking out. More specifically, this beverage container is configured such that the

ventilation hole is closed by covering the straw with the hood and the ventilation hole is opened by opening the hood.

Furthermore, Patent Document 5 discloses a mechanism in which a ventilation hole thereof is closed with a straw bent by a hood when carrying this beverage container, but the straw is recovered and thereby the ventilation hole is opened when drinking a beverage contained in this beverage container.

[0005]

Patent Document 1: Japanese Patent Application Publication No. 2002-321741 (FIG. 1 etc.)

Patent Document 2: Japanese Patent Application No. 3434503 (FIG. 1 etc.)

Patent Document 3: Japanese Patent Application Publication No. 2004-42982 (FIG. 5 etc.)

Patent Document 4: Japanese Patent Application Publication No. 2004-345742

Patent Document 5: Japanese Patent Application Publication No. 2006-8187 (FIG. 1 etc.)

DISCLOSURE OF THE INVENTION

PROBLEM TO BE SOLVED BY THE INVENTION

[0006]

These portable beverage containers with straws fulfill the following demands. Specifically, Patent Document 1 to Patent Document 4 can fulfill the following demands.

In other words, (1) the straw and ventilation hole are sealed so that the beverage does not leak out when carrying the beverage container, (2) in the case of containing warm milk etc. as a beverage in the container, the ventilation hole is opened when a sealed state is changed to an opened state (when opening the container), so the milk etc. is prevented from squirting out of the straw, and (3) by bringing the ventilation hole into a closed state when drinking the beverage, the beverage does not leak out of the ventilation hole even when the beverage container is tilted or overturned.

However, the problem of Patent Document 1 to Patent Document 4 is that, although the beverage is prevented from leaking out when tilting the container to drink the beverage, the pressure within the container becomes negative as a user such as an infant drinks the beverage through the straw, making it gradually difficult for the user or infant to drink the beverage through the straw.

As to Patent Document 5, on the other hand, although the advantage thereof is that the pressure within the container does not become negative when the user drinks the beverage therefrom because the ventilation hole is opened when drinking, the problem is that the beverage leaks out of the ventilation hole when the container is tilted.

[0007]

Therefore, an object of the present invention is to provide a beverage container that is capable of preventing a beverage contained in a container main body from leaking out even when

a user tilts it to drink the beverage through a drinking spout part such as a straw, and preventing the container main body from generating negative pressure, to allow the user to drink the beverage easily.

MEANS FOR SOLVING THE PROBLEM

[0008]

According to an invention of claim 1, the above object can be achieved by a beverage container, which has: a container main body having a container opening part for pouring a liquid beverage therein; a base member which covers the container opening part and in which a drinking spout is disposed; and a cap body for openably/closably covering an upper part of the base member, wherein the base member has first ventilation means for regulating a pressure variation in the container main body, and second ventilation means for introducing air from outside when the pressure within the container main body enters a negative pressure state in relation to outside pressure, and preventing the liquid beverage contained in the container main body from leaking, the cap body has formed thereon ventilation open/close means capable of changing the state of the first ventilation means to a ventilation state or a closed state, the ventilation open/close means brings the first ventilation means into the closed state in the case of a portable state in which the cap body is disposed to cover the drinking spout so that a user can carry the beverage container and a drinking state in which the cap body is disposed to expose the drinking spout so that the user can use the drinking spout, and brings the first ventilation means into the ventilation state in the case of an operating state in which the cap body is disposed in an intermediate position between the portable state and the drinking state.

[0009]

According to the above configuration, the base member has the first ventilation means for regulating a pressure variation in the container main body, and the second ventilation means for introducing air from outside when the pressure within the container main body becomes negative in relation to outside pressure, and preventing the liquid beverage within the container main body from leaking. Moreover, according to the above configuration, the cap body has formed thereon the ventilation open/close means capable of changing the state of the first ventilation means to a ventilation state or a closed state, wherein the ventilation open/close means brings the first ventilation means into the closed state in the case of a portable state in which the cap body covers the drinking spout so that a user can carry the beverage container and a drinking state in which the cap body is disposed to expose the drinking spout so that the user can use the drinking spout, and brings the first ventilation means into the ventilation state in the case of an operating state in which the cap body is disposed in an intermediate position between the portable state and the drinking state.

Therefore, in the portable state the ventilation open/close means brings the first ventilation means of the beverage container into the closed state so that the liquid beverage contained in the container main body does not leak out of the first ventilation means. In addition, the liquid beverage is prevented from leaking out of the second ventilation means.

[0010]

The first ventilation means is in the ventilation state when the cap body is disposed in the operating state at the intermediate position between the portable state and the drinking state. For this reason, even when warm milk etc. is contained in the container main body and, therefore, the pressure within the container becomes positive pressure in relation to the outside pressure, this pressure is regulated to atmospheric pressure by means of the first ventilation means. Therefore, the warm milk etc. in the container main body can be prevented from squirting out of the drinking spout.

Because disposing the cap body in the drinking state brings the first ventilation means into the closed state, the liquid beverage inside the container does not leak out of the first ventilation means even when the user tilts the container main body to drink the liquid beverage therein through the drinking spout.

[0011]

Furthermore, the base member has the second ventilation means even when the cap body is in the drinking state and the first ventilation means in the closed state.

Therefore, even when the user drinks the liquid beverage of the container main body through the drinking spout and, as a result, the content is reduced and the pressure within the container main body becomes negative, external air is introduced from the second ventilation means into the container main body, thereby promptly eliminating the negative pressure state. Consequently, the pressure within the container main body becomes negative, allowing the user to drink the beverage through the drinking spout easily and therefore making the beverage container handy.

[0012]

As described above, the above configuration can provide a beverage container that is capable of (1) preventing the beverage contained in the container main body from leaking out when carrying the beverage container, (2) preventing a liquid beverage such as warm milk from squirting out of the drinking spout even when such beverage is contained, (3) preventing the liquid beverage contained in the container main body from leaking out even when the container main body is tilted at the time of drinking, and (4) allowing the user to drink the liquid beverage easily even when the pressure within the container main body becomes negative.

[0013]

According to invention of claim **2** is the beverage container, in the configuration of claim **1**, preferably, the ventilation open/close means brings the second ventilation means into the closed state when the cap body is disposed in the portable state.

[0014]

According to the above configuration, the ventilation open/close means brings the second ventilation means into the closed state when the cap body is disposed in the portable state. Therefore, because the liquid beverage contained in the container main body can be prevented from leaking out of the second ventilation means, the liquid beverage of the main container can be securely prevented from leaking when carrying the beverage container.

[0015]

According to an invention of claim **3**, in the configuration of claim **1** or claim **2**, preferably, the first ventilation means is a ventilation hole in the form of a through-hole, the second ventilation means is a ventilation valve in the form of a check valve for allowing air to flow only into the container main body, the ventilation hole and the ventilation valve are formed as an integrated ventilation member, and thus obtained ventilation member is disposed on the base member.

[0016]

According to the above configuration, the ventilation hole and the ventilation valve are formed as the integrated ventilation member, and this ventilation member is disposed on the base member. Therefore, not only is it possible to obtain a simple configuration by positioning the opened ventilation hole and the ventilation valve in a single member, but also it is possible to thereby reduce the number of parts to seal the ventilation holes securely. Consequently, for example, even when the ventilation member is formed independently, the ventilation member can be assembled easily and securely. As a result, it is possible to significantly reduce the problems associated with leakage of the liquid beverage from the base member that is caused by inadequate assembly of the ventilation hole and ventilation valve. Also, even when the ventilation hole and the ventilation valve are integrally molded with the base member, the liquid beverage leaks from a limited position, so the beverage container can be sealed securely.

When the ventilation hole and the ventilation valve need to be removed for cleaning etc, they can be detached as one unit, making the beverage container very handy for the user.

[0017]

According to an invention of claim **4**, in the configuration of any one of claim **1** to claim **3**, preferably, the ventilation open/close means has formed therein: a portable sealing part for bringing the first ventilation means and the second ventilation means into the closed state when the cap body is in the portable state; a drinking sealing part for bringing the first ventilation means into the closed state and the second ventilation means into the ventilation state when the cap body is in the drinking

state; and an air circulating part for bringing the first ventilation means into the ventilation state when the cap body is in the operating state.

[0018]

According to the above configuration, the ventilation open/close means has formed therein: a portable sealing part for bringing the first ventilation means and the second ventilation means into the closed state when the cap body is in the portable state; a drinking sealing part for bringing the first ventilation means into the closed state and the second ventilation means into the ventilation state when the cap body is in the drinking state; and an air circulating part for bringing the first ventilation means into the ventilation state when the cap body is in the operating state.

Therefore, operating the cap body can bring the first ventilation means and the second ventilation means into the closed sealed state when the cap body is in the portable state. Operating the cap body can also bring the first ventilation means into the closed state to prevent leakage of the liquid when the cap body is in the drinking state, and bring the second ventilation means into the ventilation state to appropriately allow external air to flow-in. Furthermore, operating the cap body can bring the first ventilation means into the ventilation state to release increased internal pressure when the cap body is in the operating state. As a result, because the configuration can be made simple, not only is it possible to reduce the production cost but also it is possible to provide a beverage container having excellent operability and capable of reliably exerting its function.

[0019]

According to an invention of claim **5**, in the configuration of any one of claim **1** to claim **4**, preferably, the cap body can house or expose the drinking spout disposed in the base member, by changing the position of the cap body relative to the base member.

[0020]

According to the above configuration, the cap body can house or expose the drinking spout disposed in the base member by changing the position of the cap body relative to the base member. As a result, not only is it possible to obtain a beverage container from which the beverage does not leak and the user can drink the beverage easily by simply moving the cap body, but also the drinking spout can be housed in the cap body or exposed by moving the cap body. Therefore, the beverage container handy for the user can be obtained.

[0021]

According to an invention of claim **6**, in the configuration of any one of claim **1** to claim **5**, preferably, the cap body has a hood member for housing or exposing the drinking spout, regulating means for regulating a movement of the hood member, and the ventilation open/close means is formed in the regulating means.

[0022]

According to the above configuration, the cap body has a hood member for housing or exposing the drinking spout, and regulating means for regulating a movement of the hood member, wherein the regulating means has the ventilation open/close means.

Therefore, the ventilation open/close means can be operated without performing an operation for exposing the drinking spout. In other words, only the ventilation open/close means can be operated without moving the hood member, so that the hood member can be prevented from being accidentally opened.

[0023]

According to an invention of claim 7, in the configuration of claim 1 or claim 2, preferably, the first ventilation means is a ventilation hole in the form of a through-hole, and the second ventilation means introduces the air from the outside when the negative pressure within the container main body increases to a negative pressure state resulting from a drinking action of the user.

[0024]

According to the above configuration, because the second ventilation means introduces air from the outside when the negative pressure within the container main body increases to the negative pressure state generated as a result of a drinking action of the user, the liquid beverage contained in the container main body can be prevented from leaking from the drinking spout, even when the user accidentally overturns the container main body when the cap body is disposed in the drinking state to expose the drinking spout.

Specifically, in a situation where the liquid beverage leaks from the drinking spout by overturning the container main body in the drinking state, the pressure within the container main body becomes slightly negative. When the second ventilation means introduces air from the outside in such a state, the liquid beverage of the container main body leaks from the drinking spout.

In this regard, because the second ventilation means of the above configuration does not introduce air from the outside when the pressure is slightly negative, the liquid beverage of the container main body does not leak from the drinking spout even when the user accidentally overturns the container main body.

On the other hand, when the user drinks the beverage container from the container main body by placing the drinking spout in the mouth and suctioning it, the negative pressure within the container main body generated by this drinking action becomes higher than the negative pressure generated when the container main body is overturned as described above. In such a state, as a result, the second ventilation means introduces air from the outside.

Therefore, when the user drinks the liquid beverage contained in the container main body, the negative pressure state of the container main body is eliminated by the second ventilation means, whereby the user can drink the liquid beverage smoothly.

[0025]

According to an invention of claim **8**, in the configuration of claim **7**, preferably, the second ventilation means has a ventilation opening part for introducing the air from the outside, and a ventilation closing part capable of bringing the ventilation opening part into a closed state. When the negative pressure within the container main body increases to the negative pressure state as a result of the drinking action of the user, the ventilation closing part releases the closed state of the ventilation opening part to introduce the air from the outside.

[0026]

According to the above configuration, the second ventilation means has a ventilation opening part for introducing the air from the outside, and a ventilation closing part capable of bringing the ventilation opening part into the closed state. When the negative pressure within the container main body increases to the negative pressure state as a result of the drinking action of the user, the ventilation closing part releases the closed state of the ventilation opening part and consequently the second ventilation means introduces the air from the outside.

Therefore, even when the user overturns the container main body and, as a result, the pressure within the container main body enters the negative pressure state, the ventilation closing part brings the ventilation opening part into the closed state so that the liquid beverage contained in the container main body does not leak from the drinking spout.

On the other hand, when the pressure within the container main body increases to the negative pressure state as a result of the drinking action of the user, the ventilation closing part releases the closed state of the ventilation opening part to introduce the air into the container, thereby releasing the negative pressure state within the container.

Therefore, because the negative pressure state within the container main body is released by the second ventilation means, the user can drink the liquid beverage smoothly.

[0027]

According to an invention of claim **9**, in the configuration of any one of claims **1** to **8**, preferably, the drinking spout has formed thereon an open/close valve capable of preventing leakage of the liquid beverage contained in the container main body and of flowing the liquid beverage out by means of deformation of the drinking spout.

[0028]

According to the above configuration, the drinking spout has formed thereon an open/close valve capable of preventing leakage of the liquid beverage contained in the container main body and of flowing the liquid beverage out by deforming the drinking spout.

Therefore, even when the user accidentally overturns the container main body, the liquid beverage within the container main body is blocked by the open/close valve so that it does not leak out.

On the other hand, when the user places the drinking spout in the mouth and deforms the drinking spout, the open/close valve enters an opened state, and consequently the liquid beverage contained in the container main body flows out and is supplied into the mouth of the user without being blocked.

[0029]

According to an invention of claim **10**, in the configuration of claim **9**, preferably, the open/close valve is a shielding part for blocking the liquid beverage contained in the drinking spout and a cutout part that is formed in the shielding part in a deformable manner.

[0030]

According to the above configuration, the open/close valve is a shielding part for blocking the liquid beverage within the drinking spout and a cutout part that is formed in the shielding part in a deformable manner.

Therefore, even when the user overturns the container main body, the liquid beverage within the container main body is blocked by the shielding part so it does not leak out.

On the other hand, when the user places the drinking spout in the mouth and deforms the drinking spout, the cutout part is deformed and opened and the liquid beverage contained in the container main body flows out and is supplied into the mouth of the user without being blocked.

EFFECT OF THE INVENTION

[0031]

An advantage of the present invention is to provide a beverage container that is capable of preventing a beverage contained in a container main body from leaking out even when a user tilts it to drink the beverage through a drinking spout part such as a straw, and preventing the container main body from generating negative pressure, to allow the user to drink the beverage easily.

BEST MODE FOR CARRYING OUT THE INVENTION

[0032]

Preferred embodiments of the present invention are described hereinafter in detail with reference to the attached drawings.

Because the following embodiments are preferred concrete examples of the present invention, a variety of technically preferable restrictions are imposed on these embodiments, but

the scope of the present invention is not limited to these embodiments unless otherwise specifically noted as such in the following description.

[0033]

(First Embodiment)

(The Entire Configuration Etc. of a Beverage Container **10**)

FIG. 1 is a schematic diagram of the beverage container **10** according to a first embodiment of the present invention and shows a drinking state. As shown in FIG. 1, the beverage container **10** has a clear container main body **11** for containing a liquid beverage, such as warm milk.

A base member **12** is disposed in the upper part of the container main body **11**, and a straw **20**, a drinking spout, is disposed in the base member **12**. As shown in FIG. 1, the base member **12** has a base bottom part **13** that is disposed such as to cover the container main body **11**, and a base upright part **14** that is formed such as to protrude above from the base bottom part **13**.

The base member **12** also has a hood **15** which is a cap body for covering the upper part of the base upright part **14** openably.

As shown in FIG. 1, two handles **19 a**, **19 b** are disposed on each side of the base member **12** along the container main body **11**.

[0034]

FIG. 2 is a schematic end view of the beverage container **10** of FIG. 1. As shown in FIG. 2, the upper part of the container main body **11** has formed thereon a container opening **11 a**, which is a container opening part opened widely for pouring the abovementioned warm milk and cleaning the container main body **11**.

Also, as shown in FIG. 2, the base bottom part **13** is disposed such as to cover the container opening **11 a** and is made detachable with respect to the container opening **11 a** by providing a screw part to be screwed on an inner surface.

Moreover, as shown in FIG. 2, the base upright part **14** has formed thereon a straw hole **14 a**, which is a through-hole for disposing the straw **20** communicated with a container straw of a different material disposed therebelow. Because this straw hole **14 a** is formed in accordance with the outer shape of the straw **20**, the straw **20** closes the straw hole **14 a** by disposing the straw **20** on the straw hole **14 a**, so that the milk contained in the container main body **11** does not leak out.

Specifically, a ring-like fitting concave part **21** is formed on the straw **20** as shown in FIG. 2, so that when the straw **20** is inserted thereto from the container main body **11** side the ring-like fitting concave part **21** is fitted to the straw hole **14 a**, whereby the straw **20** is fixed.

[0035]

Because the lower side of the straw **20** is disposed in the container main body **11** as shown in FIG. 1 and FIG. 2, a user can drink the milk contained in the container main body **11** by holding an upper end of the straw **20** in the mouth and suctioning it.

Furthermore, a ventilation member **16** made of an elastic body such as silicone or elastomer is disposed in the base upright part **14**, as shown in FIG. 2. FIG. 3(*a*) is a schematic perspective diagram in which the ventilation member **16** of FIG. 2 is viewed from the container main body **11** side shown in FIG. 2, FIG. 3(*b*) a schematic plan view in which the ventilation member **16** in FIG. 3(*a*) is viewed from the upper side of FIG. 2, and FIG. 3(*c*) a schematic cross-sectional diagram of the ventilation member **16** of FIG. 3(*b*).

As shown in FIG. 3(*c*), the ventilation member **16** has a ventilation hole **18**, which is a through-hole, and a ventilation valve **17**. The ventilation valve **17** has a slit **17 a** shown in FIG. 2, FIG. 3(*a*) and FIG. 3(*c*), and its entirety forms a check valve. Specifically, because the slit **17 a**, made of a flexible material, is formed on a leading end of a hollow part that projects in one direction, the valve is opened only when air flows in the direction of the arrow Y shown in FIG. 3(*c*) and the valve is closed when the air or liquid flows in the opposite direction.

In other words, when applying this configuration in FIG. 2, the air (gaseous matter) flows from the outside the beverage container **10** into the beverage container **10**.

[0036]

As described above, the ventilation hole **18** and the ventilation valve **17** are integrally formed in the ventilation member **16**, and this ventilation member **16** is mounted in the base upright part **14** as shown in FIG. 2.

Note in the present embodiment that the ventilation member **16** is formed separately from the base member **12**, but the base member **16** may be integrally molded with the base member **12**. In this case, the ventilation member **16** can be integrally molded by means of two-color molding or insert molding.

[0037]

Incidentally, the beverage container **10** of the present embodiment is configured as a portable beverage container **10** such that, because it has the straw **20**, the milk does not leak from a leading end of the straw **20**.

FIG. 4 and FIG. 5 are schematic end views each showing a state in which the hood **15** shown in FIG. 2 is moved, FIG. 4 showing an operating state and FIG. 5 a portable state.

As shown in FIG. 2, FIG. 4 and FIG. 5, the hood **15** can move around an axis point **15 e** (see FIG. 1) along the base upright part **14** in the direction of the arrow R shown in FIG. 2 etc. In the base upright part **14**, as shown in FIG. 1 and FIG. 2, a straw sealing convex part **14 b** is formed such as to project toward the straw **20**. Therefore, as shown in FIG. 4 and FIG. 5, when the

hood **15** moves, the straw **20** is held between an inner surface of the hood **15** and the straw sealing convex part **14 b** so that the opening is closed.

In this manner, the milk contained in the container main body **11** can be prevented from leaking from the leading end of the straw **20** when carrying the beverage container **10**.

[0038]

Also, as shown in FIG. 5, when the hood **15** enters the portable state where the opening is closed, the straw **20** is completely housed in the space formed by the base upright part **14** and hood **15**.

As described above, in the present embodiment the hood **15** can house the straw **20** inside the abovementioned space or expose the straw **20** by changing the position of the base upright part **14** relative to the hood **15**.

[0039]

Incidentally, the ventilation hole **18** is formed as described above on the base upright part **14** as shown in FIG. 2. The function of the ventilation hole **18** is now described.

For example, the user such as a mother uses the hood **15** to bring the straw **20** into the closed state in order to carry or stir the beverage container **10** containing the warm milk. Without the ventilation hole **18**, the pressure within the container main body **11** increases and becomes positive pressure in relation to the outside pressure.

When the hood **15** is moved to the drinking state shown in FIG. 2 and the straw **20** is extracted in order for the user to drink the milk, the warm milk might squirt out of the leading end of the straw **20** due to the high pressure within the container main body **11**.

For this reason, in the present embodiment the ventilation hole **18** is formed in order to reduce the positive pressure of the container main body **11** to the atmospheric pressure in conjunction with the movement of the hood **15** or straw **20**, whereby the milk is prevented from squirting out of the straw **20**.

Therefore, the ventilation hole **18** is an example of the first ventilation means for regulating a pressure variation in the container main body **11**.

[0040]

On the other hand, as the ventilation hole **18** is a through-hole as described above, when the ventilation hole **18** is constantly opened, tilting the beverage container **10** causes leakage of the milk of the container main body **11** from the ventilation hole **18**. Also, the milk might leak out of the ventilation hole **18** when the user assisting an infant etc. in drinking the milk largely tilts or overturns the beverage container **10** to drink the milk through the straw **20**.

For this reason, the present embodiment adopts the following configurations. Specifically, as shown in FIG. 2 etc, on the inside of the hood **15**, there are formed a convex drinking sealing

convex part **15 a** provided adjacent to the straw **20** and a convex portable sealing convex part **15 b** provided apart from the straw **20**. These convex parts come into abutment against the elastic ventilation member **16** so that the ventilation hole **18** and/or ventilation valve **17** of the ventilation member **16** can be sealed. Moreover, an air circulating part **15 c** that is not in abutment against the ventilation hole **18** is formed between the sealing convex parts **15 a**, **15 b**.

[0041]

Hereinafter, the functions of the drinking sealing convex part **15 a**, the air circulating part **15 c** and the portable sealing convex part **15 b** in relation to the ventilation hole **18** are described specifically.

First of all, in the portable state of the beverage container **10** in which the hood **15** is disposed to cover the straw **20** as shown in FIG. 5, the beverage container **10** is often tilted or inverted, as it bounces in, for example, a bag or the like. For this reason, the opening of the straw **20** is in the closed state as described above, and the ventilation hole **18** is also brought into the closed state by the portable sealing convex part **15 b**. Therefore, the milk contained in the container main body **11** can be prevented from leaking from the ventilation hole **18** during the portable state.

Next, the user attempting to open the hood **15** starts moving the hood **15** to bring it into the drinking state shown in FIG. 2, and then obtains the operating state shown in FIG. 4. Because the hood **15** maintains the opening of the straw **20** closed in this operating state, the milk does not leak from the straw **20** even when the pressure within the container main body **11** is positive.

In this operating state, however, the portable sealing convex part **15 b** separates from the ventilation hole **18** to open the ventilation hole **18**, as shown in FIG. 4. The ventilation hole **18** is then disposed to face the space in the air circulating part **15 c**.

In this manner, the air can be discharged through this ventilation hole **18** and the air circulating part **15 c** so that the pressure can be regulated, even when the pressure within the container main body **11** becomes positive due to the warm milk inside the container main body **11**. As a result, the pressure within the container main body **11** can be reduced to the atmospheric pressure.

[0042]

When the user continues to move the hood **15** to bring it into the opened drinking state, the state in which the hood **15** bends the straw **20** to close the opening of the straw **20** as shown in FIG. 4 becomes the state in which the straw **20** is released and recovered as shown in FIG. 2, that is, the state in which the opening of the straw **20** enters a release state.

[0043]

Furthermore, in the drinking state shown in FIG. 2 (the state in which the user can drink the milk within the container main body **11** through the straw **20**), the drinking sealing convex part **15 a** of the hood **15** comes into abutment against the ventilation hole **18** to bring the ventilation hole **18** into the closed state, so that the liquid does not leak from both the ventilation hole **18** and the straw **20** when the user tilts or overturns the beverage container, because the opening of the container main body **11** is confined to the straw **20**.

[0044]

As described above, in the present embodiment the hood **15** has formed therein the drinking sealing convex part **15 a**, portable sealing convex part **15 b** and air circulating part **15 c** (an example of the ventilation open/close means) that are capable of changing the state of the ventilation hole **18** to the ventilation state or the closed state. The drinking sealing convex part **15 a**, portable sealing convex part **15 b** and air circulating part **15 c** bring the ventilation hole **18** into the closed state by bringing the drinking sealing convex part **15 a** and portable sealing convex part **15 b** into abutment against the ventilation hole **18** during the portable state (the state shown in FIG. 5 in which the hood **15** is disposed to cover the base upright part **14** and the straw **20** so that the user can carry the beverage container **10**) and the drinking state (the state shown in FIG. 2 in which the hood **15** is disposed to expose the base upright part **14** and the straw **20** so that the user can use the straw **20**).

In addition, in the operating state (the state shown in FIG. 4 in which the hood **15** is disposed in the intermediate position between the portable state and the drinking state), the air circulating part **15 c** is disposed without bringing the drinking sealing convex part **15 a** and portable sealing convex part **15 b** into abutment against the ventilation hole **18**, whereby the ventilation hole **18** is brought into the ventilation state.

[0045]

Because the ventilation valve **17** shown in FIG. 2, as described above, has the slit **17 a** and is configured to introduce the air from the outside as shown by the arrow Y in FIG. 3(c) when the pressure within the container main body **11** becomes negative, the milk contained in the container main body **11** can be prevented from leaking through the ventilation valve **17**. The ventilation valve **17** is an example of the second ventilation means.

As shown in FIG. 5, in portable state in which the hood **15** is the shut-off and sealed, the portable sealing convex part **15 b** comes into abutment against an opening surface **17 b** on the opposite side of the slit **17 a** of the ventilation valve **17**, whereby the ventilation hole **18** is brought into the sealed state. On the other hand, in the state in which the user starts opening the hood **15** to drink the milk (FIG. 4) and the state in which the hood **15** is completely opened shown in FIG. 2, the air circulating part **15 c** is disposed on the opening surface **17 b** and the opening surface **17 b** is

released, to allow the external air to flow in accordance with the pressure variation in the container main body **11**.

[0046]

The present embodiment can achieve the following operational effects due to the above-described configurations.

Specifically, because the ventilation hole **18** of the beverage container **10** is brought into the closed state by the portable sealing convex part **15 b** in the portable state shown in FIG. 5, the milk housed in the container main body **11** does not leak from the ventilation hole **18**. The milk also does not leak from the ventilation valve **17** serving as a check valve.

[0047]

Particularly, in the present embodiment, when the hood **15** is disposed in the portable state shown in FIG. 5, the portable sealing convex part **15 b** comes into abutment against the ventilation hole **18** and ventilation valve **17** to obtain the closed state in which the straw **20** is covered.

As a check valve, the ventilation valve **17** is normally structured to prevent leakage of the milk. However, it is considered that a strong force acts on a direction in which the milk leaks out with respect to the ventilation valve **17** and thereby the milk accidentally leaks out. It is considered that the beverage container **10** might be disposed the other way around especially in the portable state. In the present embodiment, therefore, the portable sealing convex part **15 b** closes the ventilation valve **17** to securely prevent leakage of the milk.

[0048]

Moreover, in the present embodiment, the ventilation hole **18** is in the ventilation state when the hood **15** is disposed in the operating state, which is the intermediate position between the portable state and the drinking state (the position shown in FIG. 4). For this reason, even when the pressure within the container main body **11** becomes positive pressure in relation to the outside pressure due to the warm milk etc. housed in the container main body **11**, the pressure is regulated to the atmospheric pressure via the ventilation hole **18** so that the warm milk etc. in the container main body **11** can be prevented from squirting out of the straw **20**.

Moreover, because the ventilation hole **18** enters the closed state by disposing the hood **15** to the drinking state shown in FIG. 2, the milk contained in the container main body **11** does not leak out from the ventilation hole **18** or the straw **20** even when the user largely tilts the container main body **11** to drink the milk through the straw **20** or overturns the beverage container **11**.

[0049]

Furthermore, the ventilation valve **17** is formed on the base upright part **14** even when the hood **15** is in the drinking state and the ventilation hole **18** in the closed state. At this moment, the

ventilation valve **17** is not closed by the drinking sealing convex part **15 a** as shown in FIG. 2, but is disposed to face the air circulating part **15 c** so that the ventilation state is obtained.

Therefore, even when the user drinks the milk contained in the container main body **11** through the straw **20** and, as a result, the content is reduced and the pressure within the container main body **11** becomes negative, the slit **17 a** of the ventilation valve **17** is opened and the external air is introduced into the container main body **11**, thereby promptly eliminating the negative pressure state.

Consequently, the pressure within the container main body **11** becomes negative, allowing the user to drink the milk through the straw **20** easily and therefore making the beverage container **10** handy.

In addition, because the ventilation valve **17** functions as a check valve, the milk does not leak even when the container main body **11** is tilted to the extent that the drinking state is obtained.
[0050]

The present embodiment described above provides the excellent beverage container **10** that is capable of (1) preventing the milk contained in the container main body **11** from leaking out when carrying the beverage container **10**, (2) preventing the warm milk etc. from squirting out of the straw **20** even when the milk is contained in the container main body **11**, (3) preventing the milk contained in the container main body **11** from leaking out even when the container main body **11** is tilted at the time of drinking, and (4) allowing the user to drink the milk easily even when the pressure within the container main body **11** becomes negative.
[0051]

As shown in FIG. 3, the ventilation hole **18** and ventilation valve **17** of the beverage container **10** of the present embodiment are integrally formed in the ventilation member **16** and mounted in the base upright part **14**.

Therefore, since the ventilation hole **18** serving as an opening and the ventilation valve **17** can be disposed in a single part, a simple configuration can be achieved and the number of parts can be reduced.

Consequently, the ventilation member **16** can be assembled easily and securely. As a result, it is possible to significantly reduce the problems associated with leakage of the milk from the base upright part **14** that is caused by inadequate assembly of the ventilation hole **18** and ventilation valve **17**.

Note that, because the diameter of the ventilation valve **17** is larger than that of the ventilation hole **18** as shown in FIG. 3(*b*), it is possible to prevent the ventilation valve **17** and the ventilation hole **18** from being mounted the other way around by the user.

Moreover, even when the user needs to remove the ventilation hole **18** and the ventilation valve **17** for cleaning etc, they can be detached as one unit, making the beverage container **10** very handy for the user.

[0052]

Note that the portable sealing convex part **15 b** shown in FIG. 2 and the like is an example of the portable sealing part for bringing the ventilation hole **18** and the ventilation valve **17** into the closed state when the hood **15** is in the portable state shown in FIG. 5, while the drinking sealing convex part **15 a** is an example of the drinking sealing part for bringing the ventilation hole **18** into the closed state and the ventilation valve **17** into the ventilation state when the hood **15** is in the drinking state shown in FIG. 2.

The air circulating part **15 c** is an example of the air circulating part for bringing the ventilation hole **18** and the ventilation valve **17** into the ventilation state when the hood **15** is in the operating state shown in FIG. 4.

[0053]

The drinking sealing convex part **15 a**, portable sealing convex part **15 b** and air circulating part **15 c** are successively formed in the hood **15**, as described above. Therefore, the ventilation hole **18** and/or the ventilation valve **17** can be brought into the closed state or the ventilation state according to need as described above, by moving the hood **15** in the direction of the arrow R shown in FIG. 2.

In this manner, the portable sealing convex part **15 b** can cover both the ventilation hole **18** and ventilation valve **17** by opening the closing the ventilation hole **18** and ventilation valve **17** by means of the drinking sealing convex part **15 a** or the portable sealing convex part **15 b** in accordance with the usage state and, at this moment, by forming the portable sealing convex part **15 b** wider than the drinking sealing convex part **15 a**. Moreover, the drinking sealing convex part **15 a** is configured to close the ventilation hole **18**.

As a result, because the configuration can be made simple, not only is it possible to reduce the production cost but also it is possible to provide a beverage container **10** having excellent operability and capable of reliably exerting the abovementioned function.

[0054]

Moreover, in the present embodiment, as shown in FIG. 5 and others, the straw **20** can be housed between the hood **15** and the base member **12** or exposed by moving the hood **15**. Therefore, not only is it possible for the user to expose the straw **20** by moving the hood **15**, but also moving the hood **15** prevents leakage of the milk and allows the user to drink the milk easily, which makes the beverage container **10** handy.

[0055]

(Second Embodiment)

FIG. 6 is a schematic perspective diagram showing a beverage container **30** according to a second embodiment of the present invention. The beverage container **30** according to this embodiment has the same configurations as the beverage container **10** of the first embodiment described above. Therefore, the descriptions of the same configurations etc. are omitted and only the differences between these beverage containers are described hereinafter.

As shown in FIG. 6, the beverage container **30** has a container main body **31** for containing a beverage, such as milk, and a base member **32** is disposed to cover an opening provided in the upper part of the container main body **31**. The straw **20** through which the user can drink the milk contained in the container main body **31** is disposed in the base member **32**.

A hood **35**, for example, which is a hood member that houses or exposes the straw **20** as described hereinafter, is disposed in the base member **32**.

The base member **32** also has disposed therein a slider **33**, which is, for example, regulating means for regulating a movement of the hood **35**. This slider **33** is configured to move on the base member **32** along a surface of the base member **32**.

In addition, two handles **39 a**, **39 b** are disposed on each side of the base member **32** so as to project along the container main body **31**.

[0056]

FIG. 7, FIG. 8 and FIG. 9 are schematic end views each showing an operational state etc. of the slider **33** shown in FIG. 6 and the hood **35** and straw **20**. Hereinafter, FIG. 9 is used to explain the configurations etc. of the base member **32**, the slider **33** and the hood **35**.

First, as shown in FIG. 9, the base member **32** has formed thereon a straw hole **32 a** to which the straw **20** is fitted. Therefore, the straw hole **32 a** is sealed by mounting the straw **20** into the straw hole **32 a** so that the milk contained in the container main body **31** does not leak from the straw hole **32 a**.

Next, a ventilation member **36** is disposed in the base member **32** as shown in FIG. 9. The ventilation member **36** has formed therein a ventilation hole **38** (same as the ventilation hole **18** of the first embodiment) and a ventilation valve **37** (same as the ventilation valve **37** of the first embodiment), as with the first embodiment described above.

Moreover, as shown in FIG. 9, a drinking sealing convex part **33 a** (same as the drinking sealing convex part **15 a** of the first embodiment), a portable sealing convex part **33 b** (same as the portable sealing convex part **15 b** of the first embodiment), and an air circulating part **33 c** (same as the air circulating part **15 c** of the first embodiment) are successively formed on the inside of the slider **33** (the base member **32** side).

[0057]

Specifically, the drinking sealing convex part **33 a**, the portable sealing convex part **33 b** and the air circulating part **33 c** of the slider **33** serving as the means for regulating the movement of the hood **35** are the examples of the ventilation open/close means.

[0058]

The operations etc. of the slider **33**, the base member **32**, the hood **35** and the straw **20** that are configured as above are described with reference to FIG. 7 to FIG. 9.

In the configuration of the portable beverage container **30** according to the present embodiment, warm milk or the like is contained in the container main body **11**. FIG. 7 is a schematic end view showing a portable state (same as the portable state described in the first embodiment).

As shown in FIG. 7, the straw **20** is covered by the hood **35** and bent by a straw sealing convex part **35 a** formed in a projecting manner on the hood **35**. Because the opening of the straw **20** is in the closed state, the milk contained in the container main body **31** does not leak from the leading end of the straw **20** even when the beverage container **30** is tilted in the portable state.

Moreover, the hood **35** has a base end abutting part **35 d** at its based end side, and this base end abutting part **35 d** is brought into abutment against a based end side hood stopper **33 d** provided in the slider **33**. Furthermore, the hood **35** has a leading end abutting part **35 e** at its leading end side, and this leading end abutting part **35 e** is brought into abutment against a base end side hood stopper **33 e** of the slider **33**. In this manner, the based end abutting part **35 d** and the leading end abutting part **35 e** of the hood **35** are brought into abutment against the base end side hood stopper **33 d** and the leading end side hood stopper **33 e** of the slider **33**, respectively, whereby the rotation of the hood **35** is regulated. Because the hood **35** is pressed against the base member **32**, the hood **35** is prevented from being opened accidentally in the portable state (in the direction of the arrow **R1** in FIG. 7), so that the milk does not leak from the leading end of the straw **20**.

In addition, in the portable state the portable sealing convex part **33 b** of the slider **33** comes into abutment to cover both the ventilation hole **38** and the ventilation valve **37** and brings them into the closed state. Accordingly, even when the beverage container **30** is accidentally disposed the other around in a bag or the like in the portable state, the milk contained in the container main body **31** does not leak out, as with the first embodiment.

[0059]

FIG. 8 corresponds to the operating state of the first embodiment. Specifically, when the slider **33** moves to the left in the direction of the arrow **X** shown in FIG. 8, the hood stopper **33 d** separates from the hood **35**, the portable sealing convex part **33 b** also moves to the

left in the drawing, and the ventilation state where nothing abuts against the ventilation hole **38** and the ventilation valve **37** is obtained.

At this moment, because the opening of the straw **20** is in the closed state due to the closed hood **35**, the warm milk disposed in the container main body **31** makes the pressure within the container main body **31** positive in relation to the outside pressure. However, because the ventilation hole **38** is in the ventilation state, the pressure within the container main body **31** is regulated to be discharged and reduced to the atmospheric pressure.

[0060]

FIG. 9 corresponds to the drinking state of the first embodiment. Specifically, when the hood **35** is rotated in the direction of the arrow **R1** to open it after the slider **33** is further moved to the left and disposed to the position for opening the hood **35**, the straw **20** is recovered so that the user can drink the milk through the straw **20**. At this moment, when the pressure within the container main body **31** remains positive, the milk might squirt out of the leading end of the straw **20**. In the present embodiment, however, as with the first embodiment, the milk is prevented from squirting out of the straw **20** because the ventilation hole **38** functions reduce the pressure from the positive pressure to the atmospheric pressure.

[0061]

In the drinking state, the drinking sealing convex part **33 a** of the slider **33** brings the ventilation hole **38** into the closed state, as shown in FIG. 9. Therefore, similarly to the first embodiment, even when the user places the straw **20** in the mouth to drink the milk by largely tilting the beverage container **30** or even when the user overturns the beverage container **30**, the milk contained in the container main body **31** does not leak from the ventilation hole **38** or the straw **20**.

Moreover, as with the first embodiment, the drinking state is the ventilation state where nothing comes into abutment against an opening surface **37 b** of the ventilation valve **38** (see FIG. 9). Therefore, air is introduced from the ventilation valve **38** even when the user drinks the milk through the straw **20** and consequently negative pressure is generated in the container main body **31** due to the reduced content. As a result, the pressure within the container main body **31** promptly returns to the atmospheric pressure so that the user can drink the milk easily.

[0062]

In the present embodiment described above, unlike the first embodiment, the ventilation hole **38** and the ventilation valve **37** can be brought into the closed state or the ventilation state by not the movement of the hood **35** itself but the movement of the slider **33** serving as the regulating means for regulating the movement of the hood **35**. Therefore, the ventilation hole **38** and the like opened and closed without moving the hood **35**.

Moreover, as shown in FIG. 9, a slider side concave/convex part **33 f** is formed on the surface of the slider **33**, and a hood side concave/convex part **35 b** is formed on the hood **35** abutting against the slider side concave/convex part **33 f**, whereby the movement of the slider **33** is regulated by the hood **35** in the drinking state.

Therefore, when the hood **35** is opened the hood side concave/convex part **35 b** comes into abutment against the slider side concave/convex part **33 f**, whereby the position of the slider **33** in relation to the base member **32** can be determined accurately. Particularly, the ventilation hole **38** can be prevented from accidentally being brought into the ventilation state when the slider **33** moves in the direction of closing the hood **35** (right direction in FIG. 9) at the time of drinking.

[0063]

(Third Embodiment)

FIG. 10 is a schematic perspective diagram showing a beverage container **40** according to the third embodiment of the present invention. Because the beverage container **40** according to this embodiment has the same configuration as the beverage container **10** of the first embodiment described above, the descriptions of the same configurations etc. are omitted and only the differences between these beverage containers are described hereinafter.

The beverage container **40** has a container main body **41** for containing a beverage such as milk, and a base member **42** is disposed to cover an opening provided in the upper part of the container main body **41**.

Two handles **49 a**, **49 b** are disposed on each side of the base member **42** along the container main body **41**.

Also, a drinking spout **50** and a straw **50 a** are disposed in the base member **42**. A hood **45** is disposed in the base member **42** to cover the drinking spout **50**, wherein an inner surface of the hood **45** covers and closes a leading end of the straw **50**. This hood **45** has two arms **45 a**, **45 b**, and these arms **45 a**, **45 b** are connected to a rotation axis **51**.

Specifically, rotation of the rotation axis **51** shown in FIG. 10 allows the arms **45 a**, **45 b** and the hood **45** to rotate in the direction of the arrow R2 shown in FIG. 10.

In other words, in order to bring the beverage container **40** into the portable state (same as the portable state described in the first embodiment), the hood **45** is closed as shown in FIG. 10, to cover the drinking spout **50**. On the other hand, in order to bring the beverage container **40** into the drinking state (same as the drinking state described in the first embodiment), the hood **45** needs to be opened widely along the direction of the arrow R2 to expose the drinking spout **50**.

In addition, a moving state in which the hood **45** is disposed in the intermediate position between the portable state and the drinking state corresponds to the operating state (same as the operating state described in the first embodiment).

[0064]

FIG. 11(*a*) is a schematic end view taken along the line A-A' of FIG. 10. As shown in FIG. 11(*a*), a ventilation member **46** same as the one described in the first embodiment is disposed in the base member **42** immediately below the rotation axis **51**. In the ventilation member **46**, a ventilation hole **48** corresponding to the ventilation hole **18** of the first embodiment and a ventilation valve **47** corresponding to the ventilation valve **17** of the first embodiment are integrally formed.

Specifically, while the ventilation valve **17** and the ventilation hole **18** of the ventilation member **46** are disposed in the vertical direction such as to approach/separate from the straw **20** in the other embodiments, in the present embodiment the ventilation valve **47** and the ventilation hole **48** are disposed so as to be equally spaced from the straw **50** in the horizontal direction.

[0065]

FIG. 11(*b*) is a schematic end view taken along the line B-B' of FIG. 11(*a*). As shown in FIG. 11(*b*), a ventilation hole ventilation concave part **51 a** for bringing the ventilation hole **48** into the ventilation state is formed on the rotation axis **51**. Therefore, when a part of the rotation axis **51** other than the ventilation hole ventilation concave part **51 a** comes into abutment against the ventilation hole **48**, the ventilation hole **48** is brought into the closed state.

Specifically, the ventilation hole ventilation concave part **51 a** corresponds to the air circulating part **15 c** of the first embodiment, while the part of the rotation axis **51** other than the ventilation hole ventilation concave part **51 a** corresponds to the portable sealing convex part **15 b** and the drinking sealing convex part **15 a** of the first embodiment.

[0066]

FIG. 11(*c*) is a schematic end view taken along the line C-C' of FIG. 11(*a*). As shown in FIG. 11(*c*), a ventilation valve ventilation concave part **51 b** for bringing the ventilation valve **47** into the ventilation state is formed on the rotation axis **51**. Therefore, when a part of the rotation axis **51** other than the ventilation valve ventilation concave part **51 b** comes into abutment against the ventilation valve **47**, the ventilation valve **47** is brought into the closed state.

Specifically, the ventilation valve ventilation concave part **51 b** corresponds to the air circulating part **15 c** of the first embodiment, while the part of the rotation axis **51** other than the ventilation valve ventilation concave part **51 b** corresponds to the portable sealing convex part **15 b** of the first embodiment.

Note that, as shown in FIG. 10, the ventilation hole ventilation concave part **51 a** and the ventilation valve ventilation concave part **51 b** are connected to each other via the rotation axis **51** and have the concave parts of different lengths in the length around the rotation axis **51**.
[0067]

FIG. 11(*d*) is a schematic end view showing the relationship between the rotation axis **51** and the ventilation member **46**, the relationship being obtained when the hood **45** shown in FIG. 10 is disposed in the abovementioned operating state. FIG. 11(*e*) is a schematic end view taken along the line B-B' of FIG. 11(*d*). FIG. 11(*f*) is a schematic end view taken along the line C-C' of FIG. 11(*d*).

FIG. 11(*g*) is a schematic end view showing the relationship between the rotation axis **51** and the ventilation member **46**, the relationship being obtained when the hood **45** shown in FIG. 10 is disposed in the drinking state described above. FIG. 11(*h*) is a schematic end view taken along the line B-B' of FIG. 11(*g*). FIG. 11(*i*) is a schematic end view taken along the line C-C' of FIG. 11(*g*).

The operations of the beverage container **40** in the portable state in which the hood **45** is closed, the operating state in which the hood **45** is about to be opened, and the drinking state in which the user opens the hood **45** to drink the milk through the drinking spout are now described with reference to FIG. 11(*a*) to FIG. 11(*i*).

[0068]

First, in the portable state in which the hood **45** is closed as shown in FIG. 10 and the user can carry the beverage container **40**, the rotation axis **51** and the ventilation member **46** are in the states shown in FIG. 11(*a*) to FIG. 11(*c*). Specifically, the ventilation hole **48** and ventilation valve **47** of the ventilation member **46** are in the closed state where they come into abutment against the rotation axis **51**, whereby the milk contained in the container main body **41** does not leak from the ventilation hole **48** even when the user tilts the beverage container **40**. Moreover, at this moment, the leading end of the straw **50** is also in the sealed state where it is closed by the hood **45**.

Next, in the operating state where the operator attempts to open the hood **45**, the ventilation hole **48** is in the ventilation state, as shown in FIG. 11(*d*) to FIG. 11(*f*). Specifically, the ventilation hole ventilation concave part **51 a** is disposed on the ventilation hole **48** as shown in FIG. 11(*e*) and is communicated to the outside via the ventilation valve ventilation concave part **51 b**. Therefore, even when the warm milk contained in the container main body **41** makes the pressure within the container main body **41** positive in relation to the outside pressure, the pressure is reduced to the atmospheric pressure by the ventilation hole **48**. As a result, the milk contained in the container main body **41** can be prevented from squirting out from the drinking spout **50**.

[0069]

Next, in the drinking state where the hood **45** is opened, as shown in FIG. 11(*g*) to FIG. 11(*i*), the ventilation hole **48** is in the closed state where it comes into abutment against the rotation axis **51**, while the ventilation valve **47** is in the ventilation state. Therefore, the milk contained in the container main body **41** does not leak from the ventilation hole **48** even when the user places the drinking spout **50** in the mouth and tilts the beverage container **40** to drink the milk.

Moreover, even when the user drinks the milk through the drinking spout **50** and, consequently, negative pressure is generated in the container main body **41** due to the reduced content, the ventilation valve **47** of the present embodiment can introduce air from the outside so that the generation of negative pressure can be prevented.

Therefore, the beverage container **40** from which the user can drink the milk easily can be achieved.

[0070]

(Fourth Embodiment)

FIG. 12 is a schematic perspective diagram showing a beverage container **100** according to a fourth embodiment of the present invention. Because the beverage container **100** according to this embodiment has the same configuration as the beverage container **10** of the first embodiment described above, the descriptions of the same configurations etc. are omitted and only the differences between these beverage containers are described hereinafter.

[0071]

Although the ventilation hole **18** and the ventilation valve **17** are integrally formed in the ventilation member **16** in the first embodiment, in the present embodiment the ventilation hole **18** and the ventilation valve **17** are formed separately, unlike the first embodiment, and also the structure of the ventilation valve of the present embodiment is different from that of the first embodiment. The ventilation valve of the present embodiment is referred to as a ventilation valve **117** hereinafter. The ventilation valve **117** is an example of the second ventilation means.

As shown in FIG. 12, the ventilation valve **117** has, for example, a ventilation opening **117 b**, which is a ventilation opening part for introducing air from the outside, and, for example, a closing member **117 c**, which is a ventilation closing part capable of changing the state of the ventilation opening **117 b** to the ventilation state or the closed state.

[0072]

FIG. 14 is a schematic perspective diagram showing the entire configuration of the ventilation valve **117** shown in FIG. 12. FIG. 15 is a schematic cross-sectional diagram showing an operational state of the ventilation valve **117**. Specifically, FIG. 15(*a*) is a schematic cross-sectional diagram showing a state in which the closing member **117 c** closes the ventilation

opening **117 b**, and FIG. 15(*b*) a schematic cross-sectional diagram showing a state in which the closing member **117 c** allows the air to pass through the ventilation opening **117 b**. As shown in FIG. 15(*a*) and FIG. 15(*b*), the closing member **117 c** is structured such as to change the state of the ventilation opening **117 b** to the closed state or the ventilation state by moving in the direction of the arrow Y shown in the diagram.

Specifically, as shown in FIG. 15, the closing member **117 c** has a closing convex part **117 a** with a convex cross-sectional shape. This sealing convex part **117 a** moves back and forth with respect to one end of the ventilation opening **117 b** to change the state of the ventilation opening **117 b** to the closed state or the ventilation state.

This movement (back and forth) of the closing member **117 c** in the direction of the arrow Y changes on the basis of the negative pressure within the container main body **11** shown in FIG. 12. The detail of this movement is described hereinafter.

[0073]

Specifically, as shown in FIG. 12, in the drinking state in which the straw **20** projects from the beverage container **100** to allow the user to drink the liquid beverage contained in the container main body **11**, the closing convex part **117 a** of the closing member **117 c** of the ventilation valve **117** enters a state in which the ventilation opening **117 b** is closed, that is, a state shown in FIG. 15(*a*).

For this reason, even when the user accidentally overturns the beverage container **100** and, as a result the milk contained in the container main body **11** as the liquid beverage flows toward the outside through the straw **20**, air does not flow from the outside into the container main body **11**. As a result, the negative pressure is not eliminated, preventing the milk from leaking from the straw **20**.

[0074]

However, when the negative pressure is not eliminated (canceled) as described above, the user cannot drink the milk easily when the user attempts to drink the milk through the straw **20**.

Therefore, in the present embodiment, when the user places the straw **20** shown in FIG. 12 in the mouth and suctions it, the closing member **117 c** of the ventilation valve **117** starts moving as a result of the increased negative pressure, and changes the state shown in FIG. 15(*a*) to the state shown in FIG. 15(*b*).

FIG. 13 shows the state of FIG. 15(*b*). Specifically, FIG. 13 is a schematic explanatory diagram showing the ventilation state of the ventilation valve **117**.

[0075]

As shown in FIG. 13, when the closing member **117 c** moves toward the inside of the container main body **11** as a result of the increased negative pressure described above, the closing

convex part **117 a** closing the ventilation opening **117 b** separates from the end part of the ventilation opening **117 b**, which brings the ventilation opening **117 b** into the ventilation state, whereby the air flows in from the outside.

As a result, the negative pressure within the container main body **11** is eliminated, and the user can smoothly drink the milk contained in the container main body **11**.

As described above, in the present embodiment, even when the user accidentally overturns the beverage container **11** in the drinking state in which the hood **15** of the beverage container **100** is opened to expose the straw **20**, the milk does not leak from the straw **20**.

Moreover, when the negative pressure within the container main body **11** is increased as a result of the suction operation performed by the user to drink the milk through the straw **20** (an example of the state of the negative pressure which is increased as a result of the drinking action), the ventilation valve **117** starts to operate for the first time to change the closed state to the ventilation state, so that the user can smoothly suction the straw **20** when drinking the milk.

[0076]

(Fifth Embodiment)

FIG. 16 is a schematic perspective diagram showing a beverage container **300** according to a fifth embodiment of the present invention. Because the beverage container **300** according to this embodiment has the same configuration as the beverage container **10** of the first embodiment described above, the descriptions of the same configurations etc. are omitted and only the differences between these beverage containers are described hereinafter.

[0077]

In the present embodiment, unlike the embodiments described above, an open/close valve **211** is formed on the inside of a straw **210**, as shown in FIG. 16. In this open/close valve **211**, as shown in the diagram, not only a shielding part **211 a** for blocking the milk contained in the container main body **11** is formed, but also, for example, a slit **211 b** is formed as a cutout part in the shape of a cross.

This open/close valve **211** deforms when the user deforms the straw **210** with a hand or mouth or when the user suctions the straw **210**. At this moment, the slit **211 b** is opened. In other words, the open/close valve **211** is configured in a deformable manner.

FIG. 17 is a schematic explanatory diagram showing a state in which the slit **211 b** is opened. As shown in FIG. 17, the milk contained in the container main body **11** flows from the straw **210** to the outside by opening the slit **211 b**.

[0078]

This embodiment achieves the following operations due to the above configurations. Specifically, even when the user accidentally overturns the beverage container **300** in the drinking

state shown in FIG. 16 and, consequently, the milk flows out through the straw **210**, the milk is blocked by the open/close valve **211** and thus prevented from leaking out.

However, when the user places the straw **210** in the mouth and drinks the milk, the straw **210** is deformed by the force of the mouth, or the slit **211 b** is opened as the user suctions the straw **210**. Accordingly, the user can drink the milk smoothly.

More specifically, the open/close valve **211** can prevent leakage of the milk contained in the container main body **11** and allow the milk to flow out by means of the deformation of the straw **210**.

[0079]

Note in the present embodiment that the shape of the slit **211 b** is not limited to the shape of a cross, and therefore it may be in the shape of a straight line. FIG. 18 is a schematic explanatory diagram showing a modification of the fifth embodiment.

As shown in FIG. 18, in this modification an open/close valve **221** is formed on the inside of a straw **220**, and a slit **221 b** of the open/close valve **221** is formed in the shape of a straight line in the vertical direction in the drawing.

Therefore, when the user places the straw **220** in the mouth to drink the milk and then flattens the straw **220** in the directions of the arrows U and D shown in the drawing (directions toward the inside of the straw **220**), the straw **220** deforms to spread in the directions of W1 and W2 shown in the drawing (directions toward the outside of the straw **220**) (the section shown by the dashed-lines).

At this moment, the slit **221 b** also opens in the directions of the arrows W1 and W2 as shown by the dashed lines in the drawing, whereby the milk can flow out.

[0080]

The present invention is not limited to the above embodiments. For example, instead of configuring the regulating means with the slider **33**, the movement regulating means may be operated by a lever that rotates around the axis along the surface of the base member **13**, or may be configured as a button that approaches/separates from the base member **13**, to regulate the movement of the hood **35**. Furthermore, instead of forming the ventilation open/close means with a hood, a concave part or a convex part provided directly on the movement regulating means, a movable member that moves in conjunction with the movement of the hood or the movement regulating means may be disposed between the hood or the movement regulating means and the ventilation member to open/close the ventilation hole and the ventilation valve. Moreover, the ventilation valve may not be a U-shaped or V-shaped valve but may be a check valve that is made of a movable member moving in accordance with pressure variation. In addition, although the handles are disposed on each side of the base member in each of the embodiments, a so-called one-

handled cup having a handle on one side only or a beverage container with no handle may be configured. Any combination of the above embodiments may be possible.

BRIEF DESCRIPTION OF THE DRAWINGS

[0081]

FIG. 1 is a schematic diagram showing a beverage container according to a first embodiment of the present invention;

FIG. 2 is a schematic end view of the beverage container of FIG. 1;

FIG. 3(*a*) is a schematic perspective diagram showing a ventilation member of FIG. 2;

FIG. 3(*b*) is a schematic plan view in which the ventilation member of FIG. 3(*a*) is viewed from above;

FIG. 3(*c*) is a schematic cross-sectional diagram of the ventilation member of FIG. 3(*b*);

FIG. 4 is a schematic end view showing a state in which a hood of FIG. 2 is moved;

FIG. 5 is another schematic end view showing a state in which the hood of FIG. 2 is moved;

FIG. 6 is a schematic perspective diagram showing a beverage container according to a second embodiment of the present invention;

FIG. 7 is a schematic end view showing an operational state etc. of a slider, hood, straw etc. of FIG. 6;

FIG. 8 is another schematic end view showing the operational state etc. of the slider, hood, straw etc. of FIG. 6;

FIG. 9 is another schematic end view showing the operational state etc. of the slider, hood, straw etc. of FIG. 6;

FIG. 10 is a schematic perspective diagram showing a beverage container according to a third embodiment of the present invention;

FIG. 11(*a*) is a schematic end view taken along the line A-A' of FIG. 10;

FIG. 11(*b*) is a schematic end view taken along the line B-B' of FIG. 11(*a*);

FIG. 11(*c*) is a schematic end view taken along the line C-C' of FIG. 11(*a*);

FIG. 11(*d*) is a schematic end view showing the relationship between a rotation axis and a ventilation member, the relationship being obtained when the hood shown in FIG. 10 is disposed in the abovementioned operating state;

FIG. 11(*e*) is a schematic end view taken along the line B-B' of FIG. 11(*d*);

FIG. 11(*f*) is a schematic end view taken along the line C-C' of FIG. 11(*d*);

FIG. 11(*g*) is a schematic end view showing the relationship between the rotation axis and the ventilation member, the relationship being obtained when the hood shown in FIG. 10 is disposed in a drinking state;

FIG. 11(*h*) is a schematic end view taken along the line B-B' of FIG. 11(*g*);

FIG. 11(*i*) is a schematic end view taken along the line C-C' of FIG. 11(*g*);

FIG. 12 is a schematic perspective diagram showing a beverage container according to a fourth embodiment of the present invention;

FIG. 13 is a schematic explanatory diagram showing a ventilation state of a ventilation valve;

FIG. 14 is a schematic perspective diagram showing the entire configuration of the ventilation valve;

FIG. 15(*a*) is a schematic cross-sectional diagram showing a state in which a closing member closes a ventilation opening part;

FIG. 15(*b*) is a schematic cross-sectional diagram showing a state in which the closing member allows air to pass through the ventilation opening part;

FIG. 16 is a schematic perspective diagram showing a beverage container according to a fifth embodiment of the present invention;

FIG. 17 is a schematic explanatory diagram showing a state in which a slit is opened; and

FIG. 18 is a schematic explanatory diagram showing a modification of the fifth embodiment.

DESCRIPTION OF REFERENCE NUMERALS

[0082]

- 10** Beverage container
- 11** Container main body
- 12** Base member
- 15** Hood
- 15 a** Drinking sealing convex part
- 15 b** Portable sealing convex part
- 15 c** Air circulating part
- 20, 210, 220** Straw
- 17, 117** Ventilation valve
- 117 b** Ventilation opening
- 117 c** Closing member
- 117 a** Closing convex part
- 211** Open/close valve
- 211 a** Shielding part
- 211 b** Slit

SCOPE OF CLAIMS

[1] A beverage container, comprising:

a container main body having a container opening part for pouring a liquid beverage therein;

a base member which covers the container opening part and in which a drinking spout is disposed; and

a cap body configured to openably/closably cover an upper part of the base member, wherein

the base member has:

a first ventilation means configured to regulate a pressure variation in the container main body and a second ventilation means configured to introduce air from outside when pressure within the container main body enters a negative pressure state in relation to outside pressure, and configured to prevent the liquid beverage contained in the container main body from leaking, the first ventilation means and the second ventilation means together forming a unit separate from the drinking spout and providing a separate path for introducing air and regulating pressure variation in the container main body; wherein

the cap body has formed thereon a ventilation open/close means configured to change a state of the first ventilation means to at least one of a ventilation state and a closed state,

the ventilation open/close means is configured to sealably close the first ventilation means when the cap body is in a portable state in which the cap body is disposed to cover the drinking spout so that a user can carry the beverage container and when the cap body is in a drinking state in which the cap body is disposed to expose the drinking spout so that the user can use the drinking spout, and the ventilation open/close means is configured to bring the first ventilation means into the ventilation state when the cap body is in an operating state in which the cap body is disposed in an intermediate position between the portable state and the drinking state.

[2] The beverage container according to claim 1, wherein the ventilation open/close means is configured to bring the second ventilation means into the closed state when the cap body is disposed in the portable state.

[3] The beverage container according to claim 1 or claim 2, wherein

the first ventilation means is a ventilation hole in the form of a through-hole,

the second ventilation means is a ventilation valve in the form of a check valve for allowing air to flow only into the container main body, and

the ventilation hole and the ventilation valve are formed as an integrated ventilation member, and the ventilation member is disposed on the base member.

[4] The beverage container according to any of claim 1 to claim 3, wherein the ventilation open/close means has formed therein:

a portable sealing part for bringing the first ventilation means and the second ventilation means into the closed state when the cap body is in the portable state;

a drinking sealing part for bringing the first ventilation means into the closed state and the second ventilation means into the ventilation state when the cap body is in the drinking state; and

an air circulating part for bringing the first ventilation means into the ventilation state when the cap body is in the operating state.

[5] The beverage container according to any of claim 1 to claim 4, wherein the cap body is configured to be able to house or expose the drinking spout disposed in the base member, by changing a position of the cap body relative to the base member.

[6] The beverage container according to any of claim 1 to claim 5, wherein

the cap body has a hood member configured to be able to house or expose the drinking spout, and

a regulating means configured to regulate movement of the hood member, and
the ventilation open/close means is formed in the regulating means.

[7] The beverage container according to claim 1 or claim 2, wherein

the first ventilation means is a ventilation hole in the form of a through-hole, and

the second ventilation means is configured to introduce air from the outside when the pressure within the container main body increases to the negative pressure state resulting from a drinking action of the user.

[8] The beverage container according to claim 7, wherein the second ventilation means has:

a ventilation opening part for introducing air from the outside; and

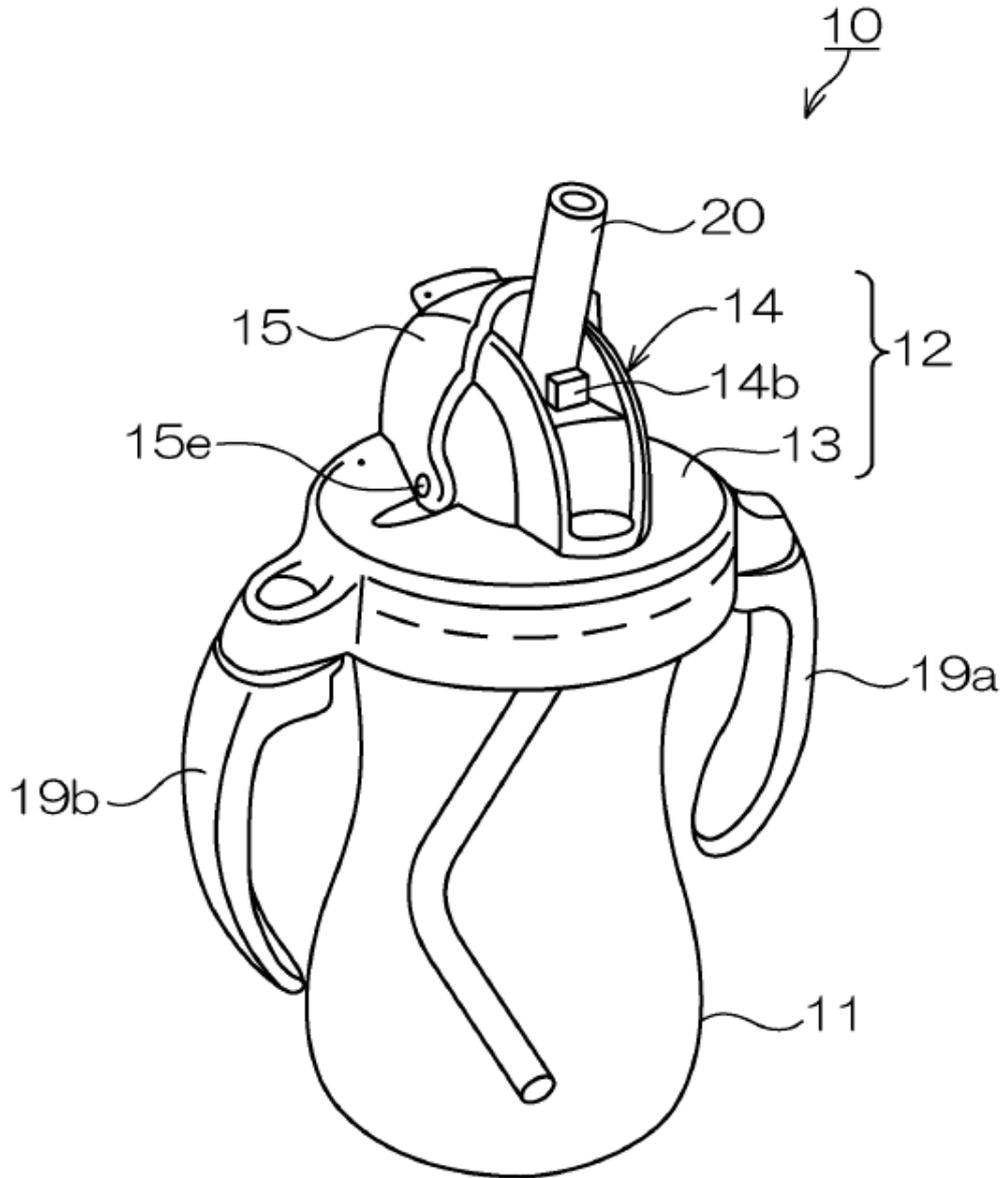
a ventilation closing part capable of bringing the ventilation opening part into a closed state,

and wherein when the negative pressure within the container main body increases to a negative pressure state resulting from the drinking action of the user, the ventilation closing part releases the closed state of the ventilation opening part to introduce air from the outside.

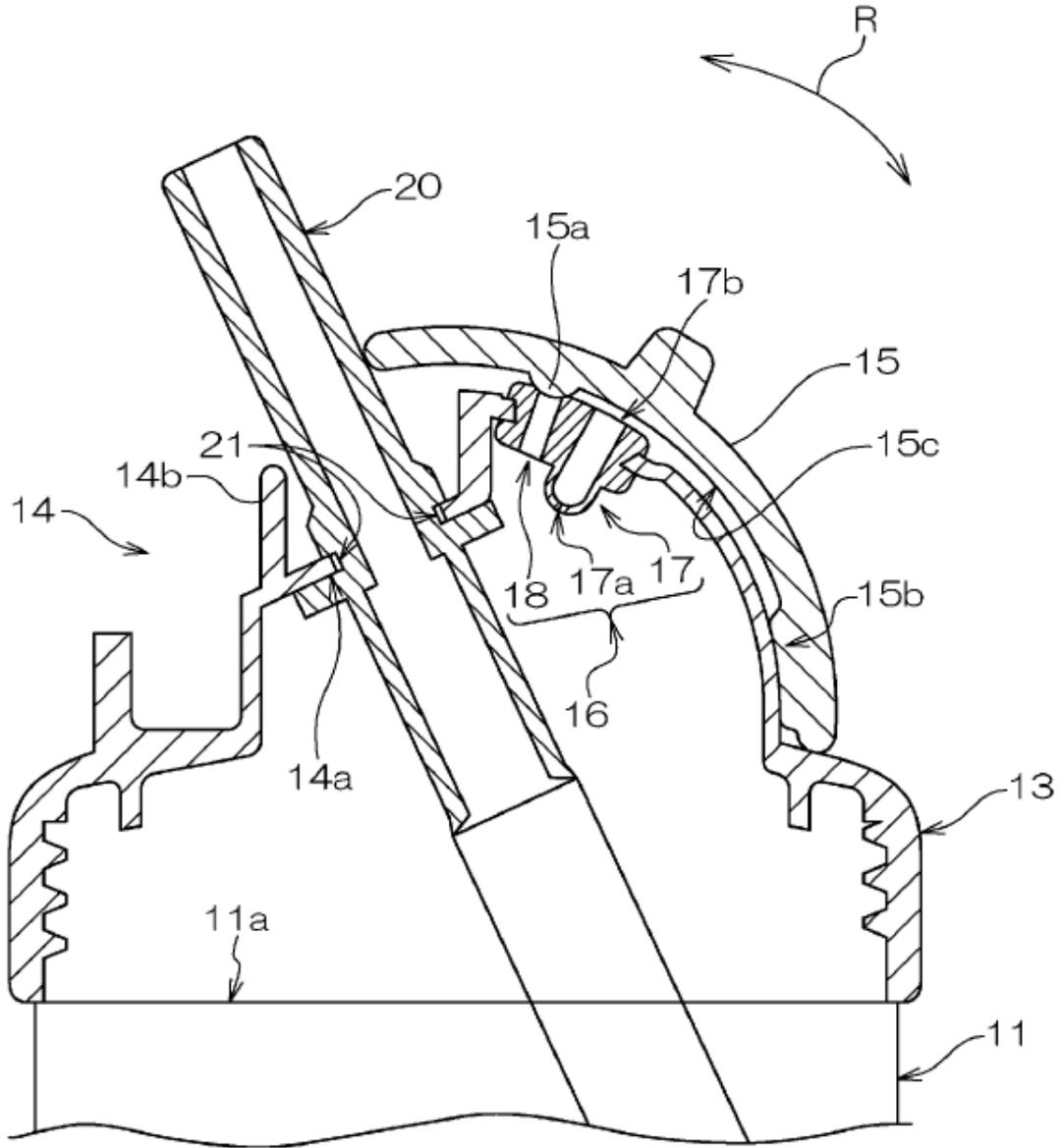
[9] The beverage container according to any of claim 1 to claim 8, wherein the drinking spout has formed thereon an open/close valve capable of preventing leakage of the liquid beverage contained in the container main body and of flowing the liquid beverage out by means of deformation of the drinking spout.

[10] The beverage container according to claim 9, wherein the open/close valve is a shielding part for blocking the liquid beverage contained in the drinking spout and a cutout part that is formed in the shielding part in a deformable manner.

[FIG. 1]

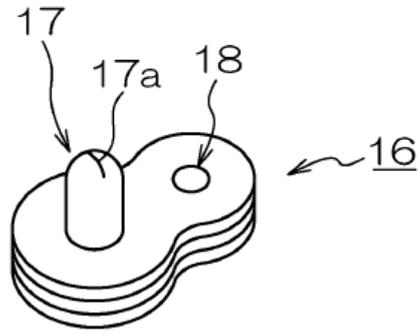


[FIG. 2]

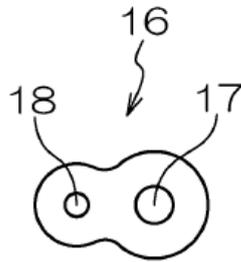


[FIG. 3]

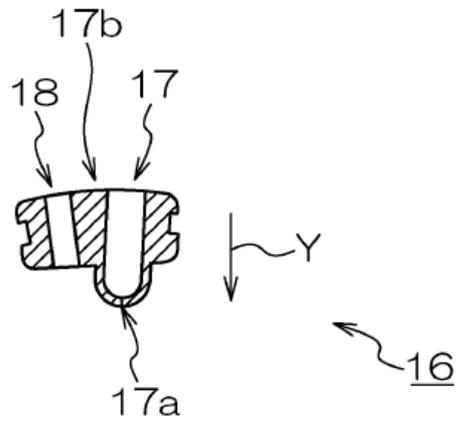
(a)



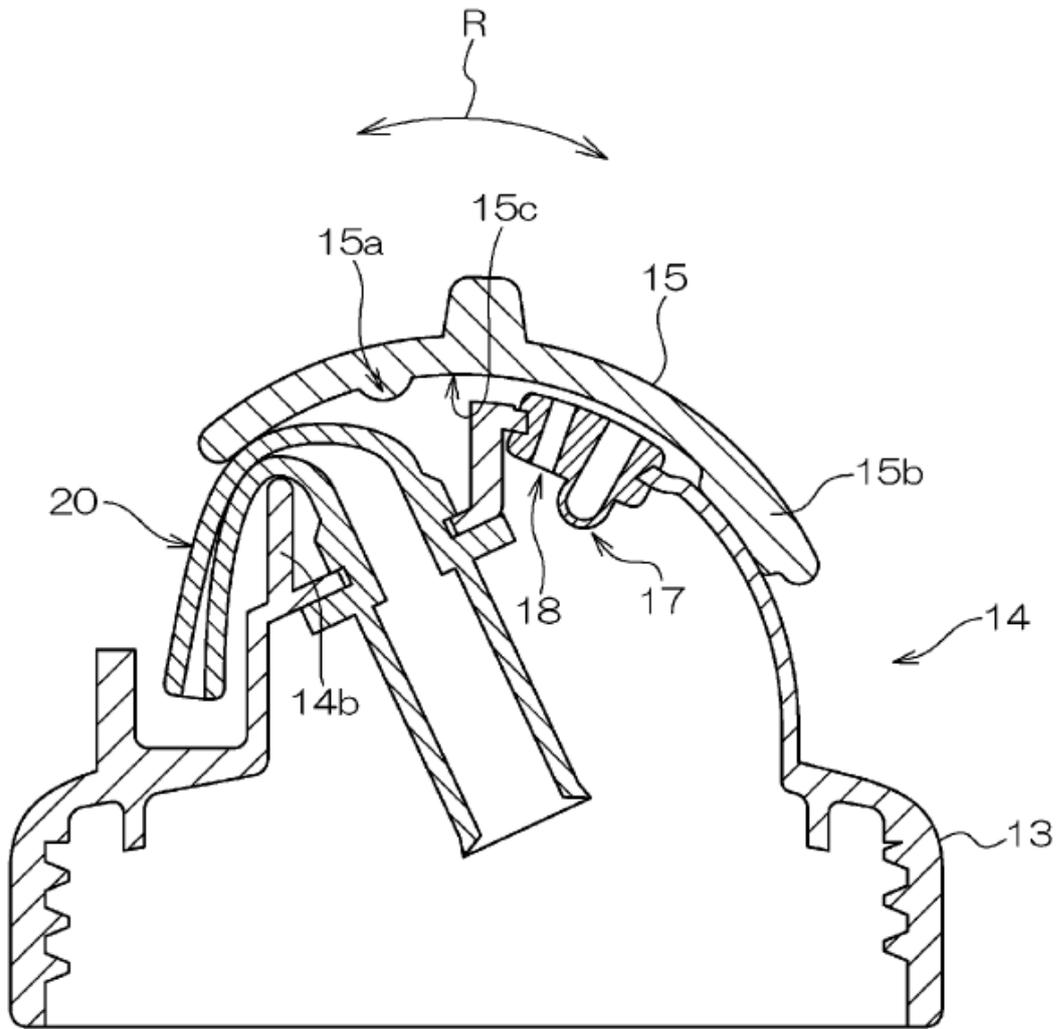
(b)



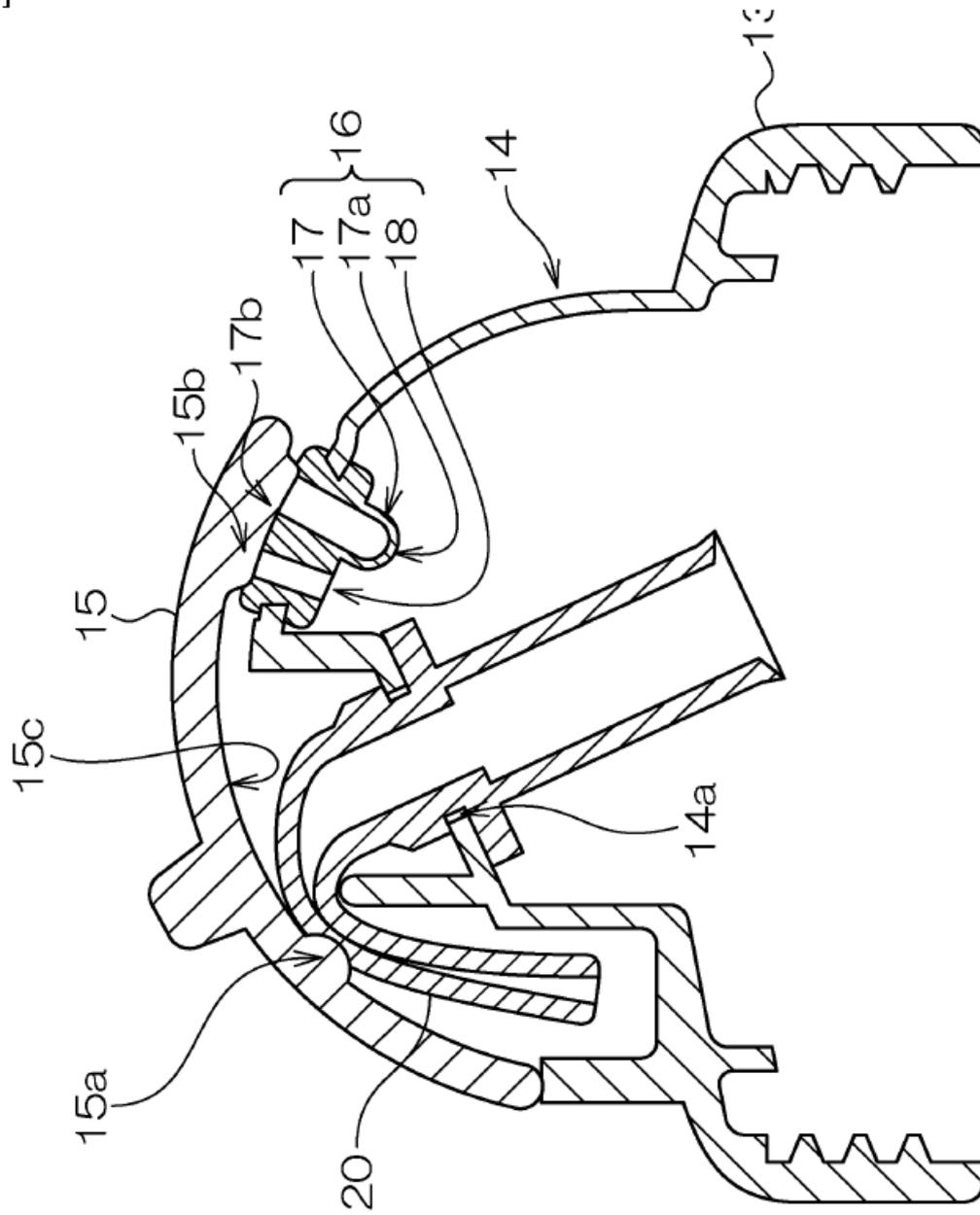
(c)



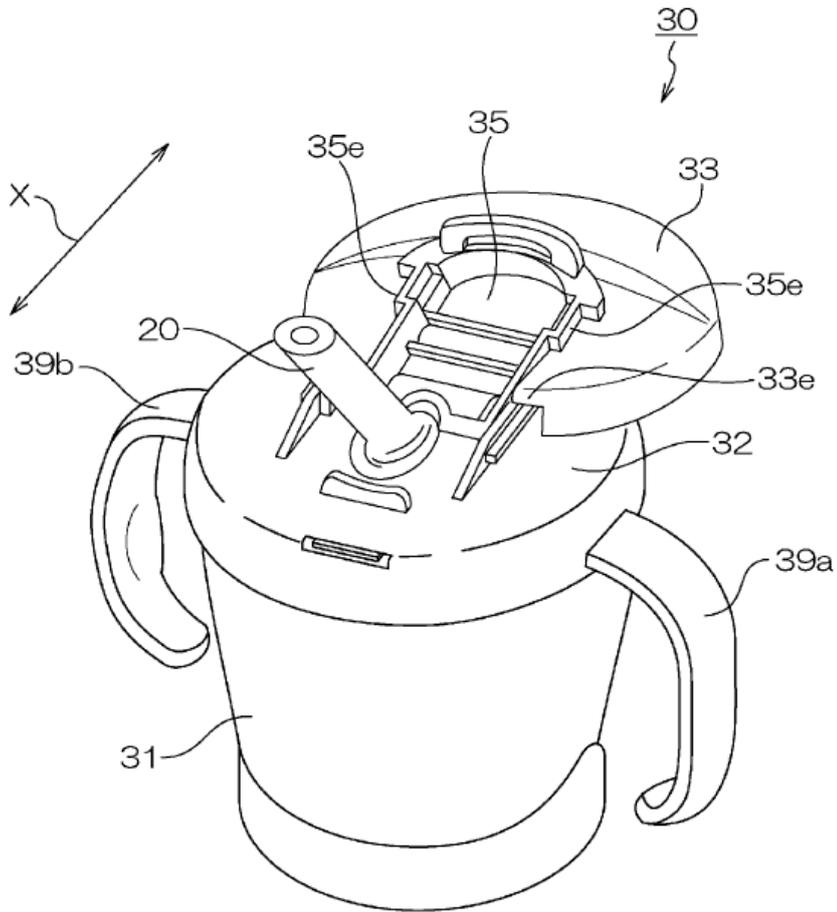
[FIG. 4]



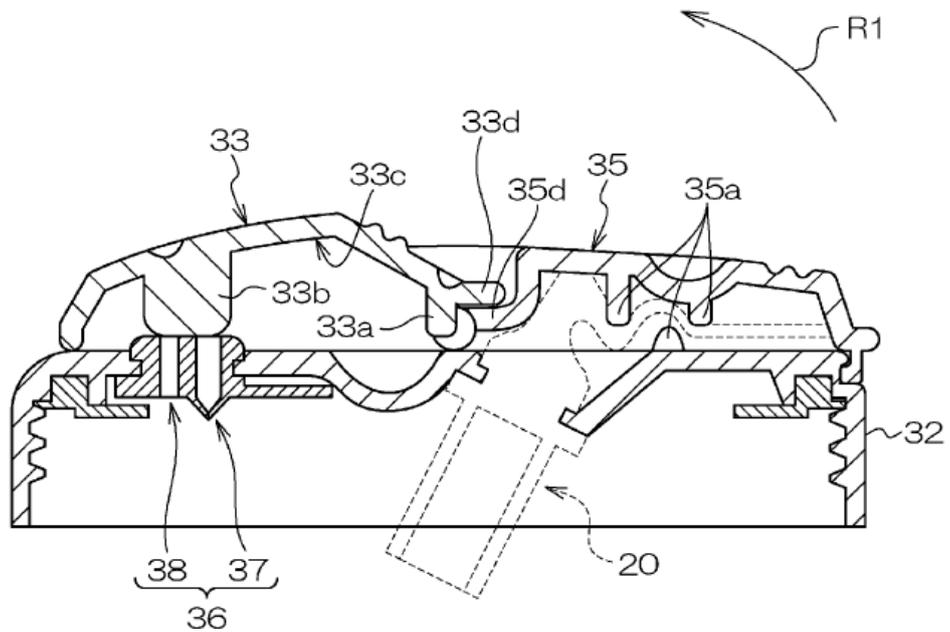
[FIG. 5]



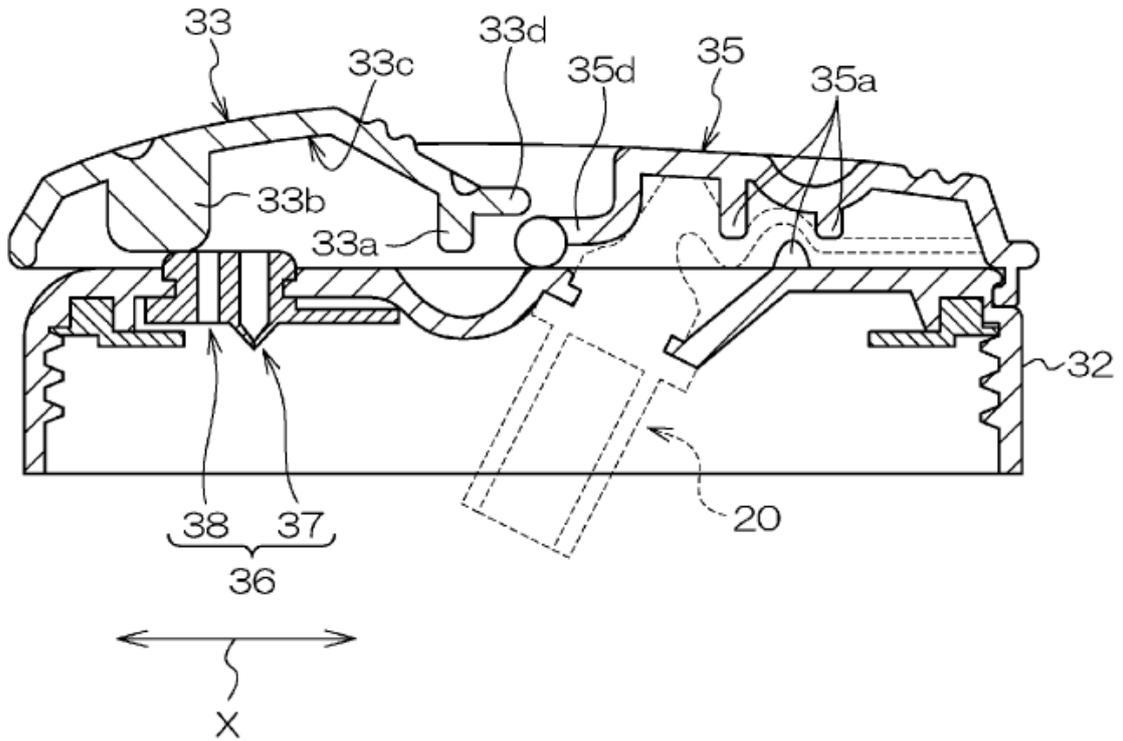
[FIG. 6]



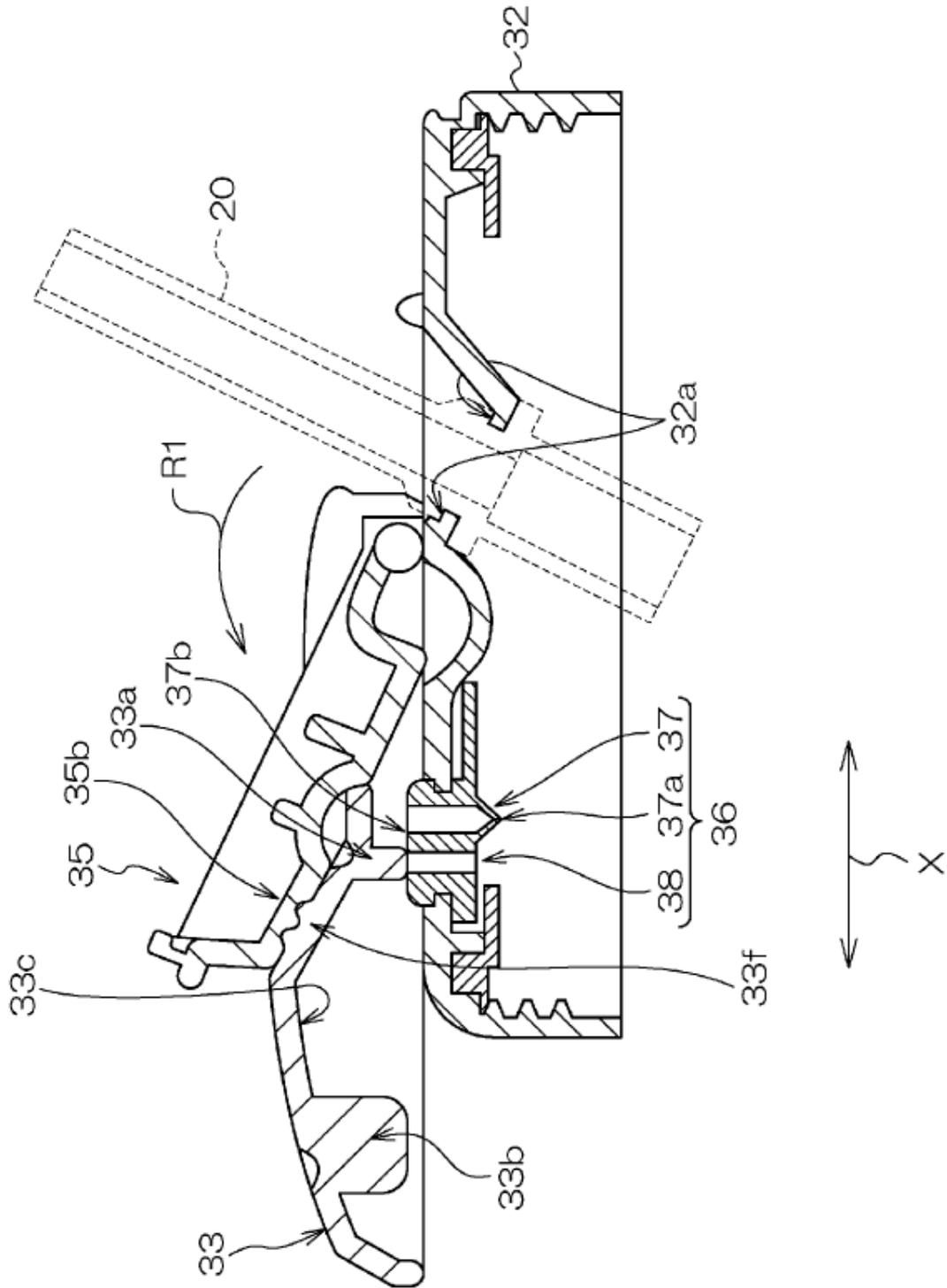
[FIG. 7]



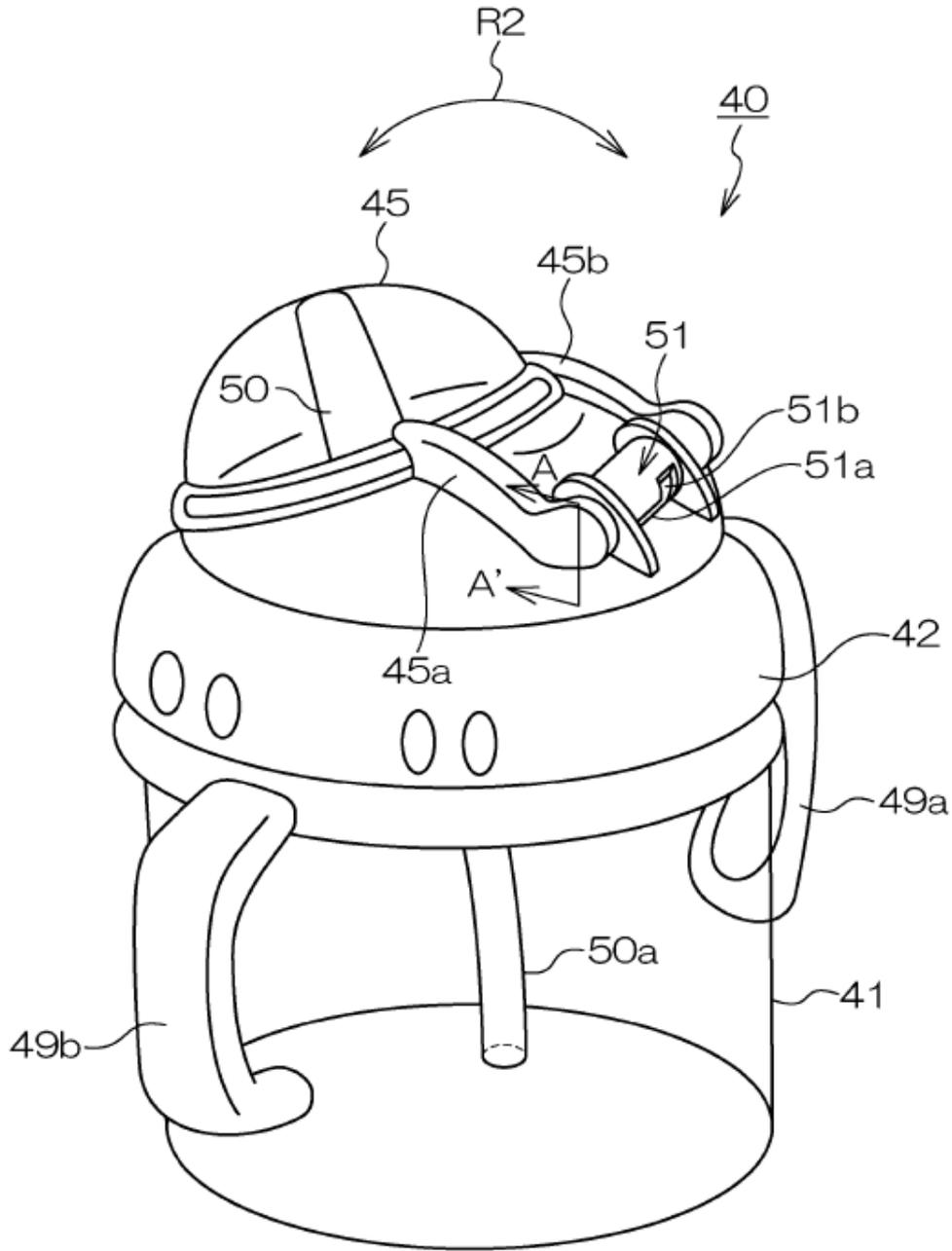
[FIG. 8]



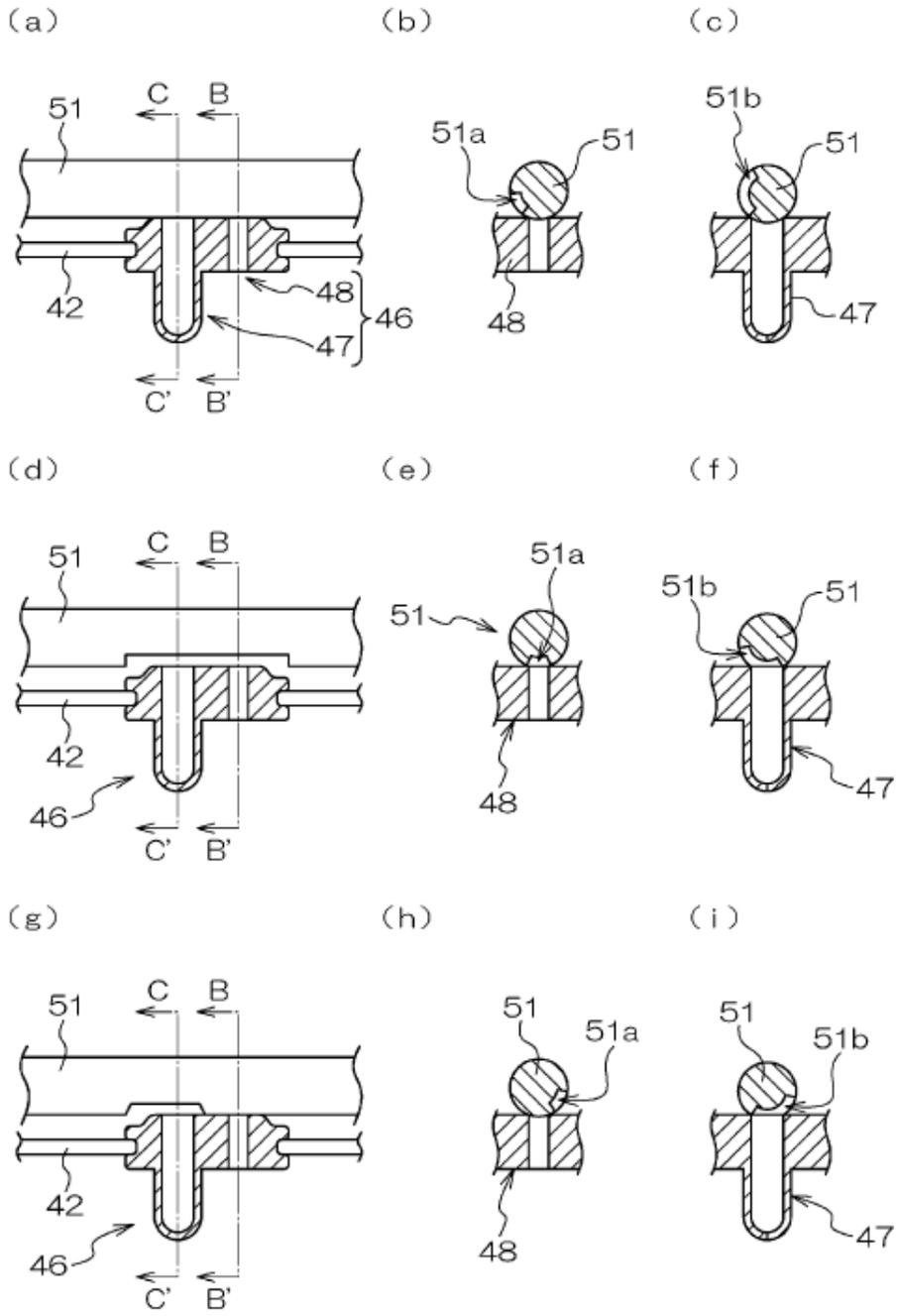
[FIG. 9]



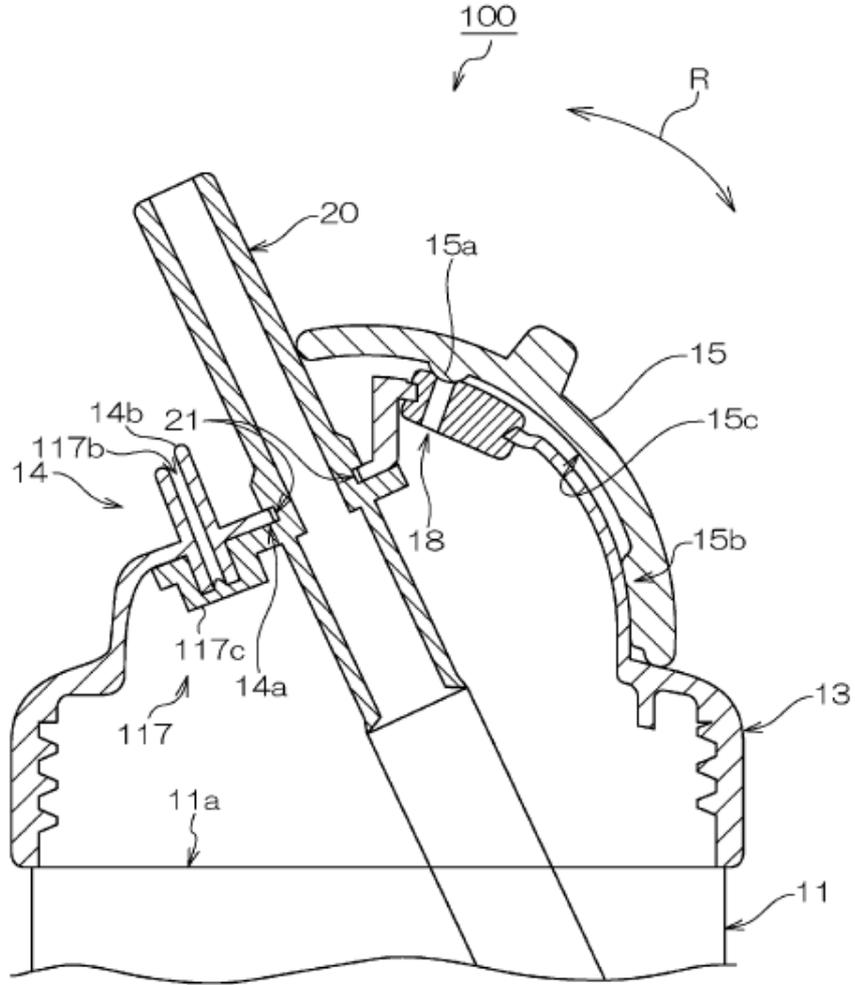
[FIG. 10]



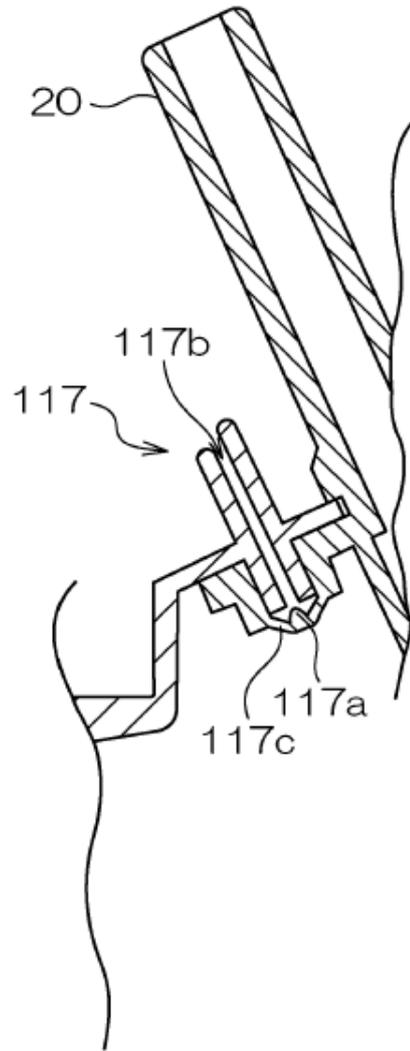
[FIG. 11]



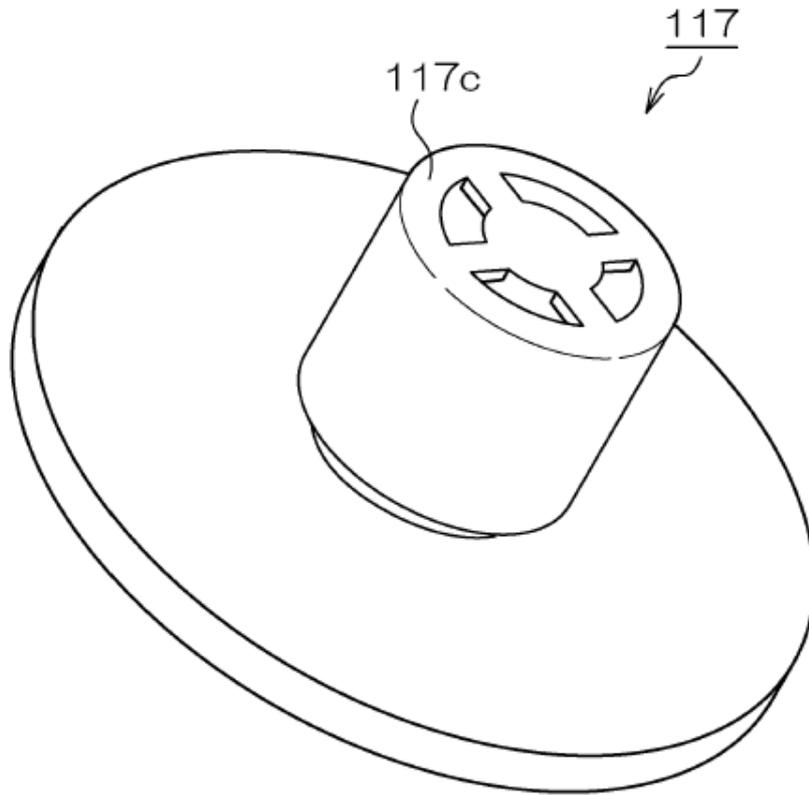
[FIG. 12]



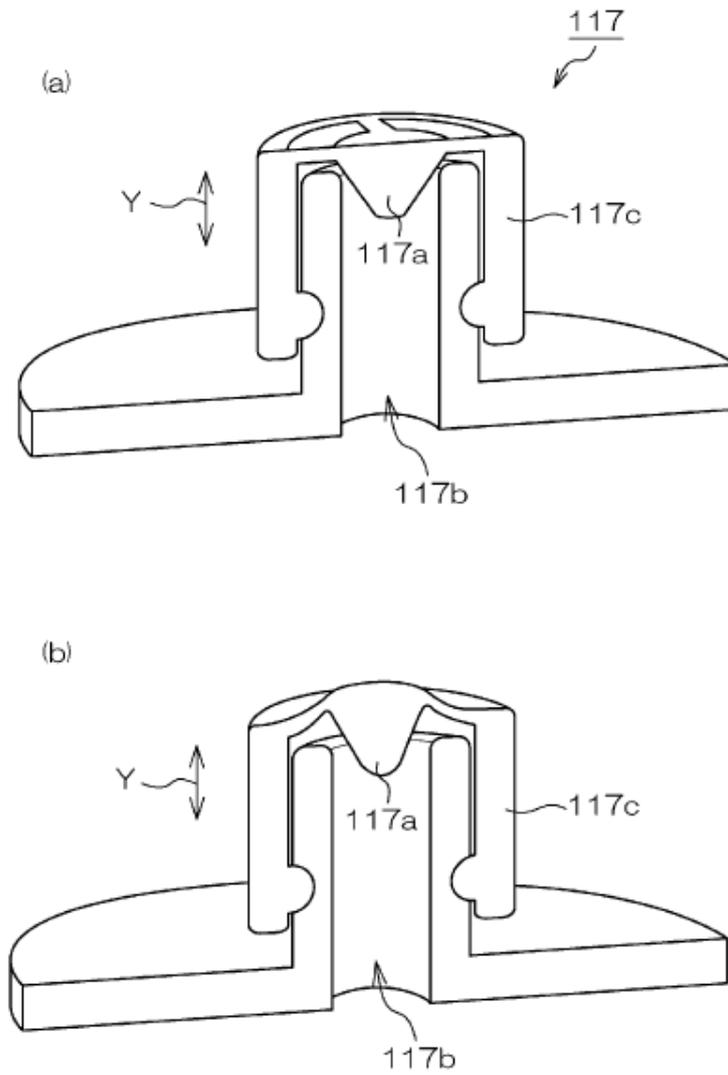
[FIG. 13]



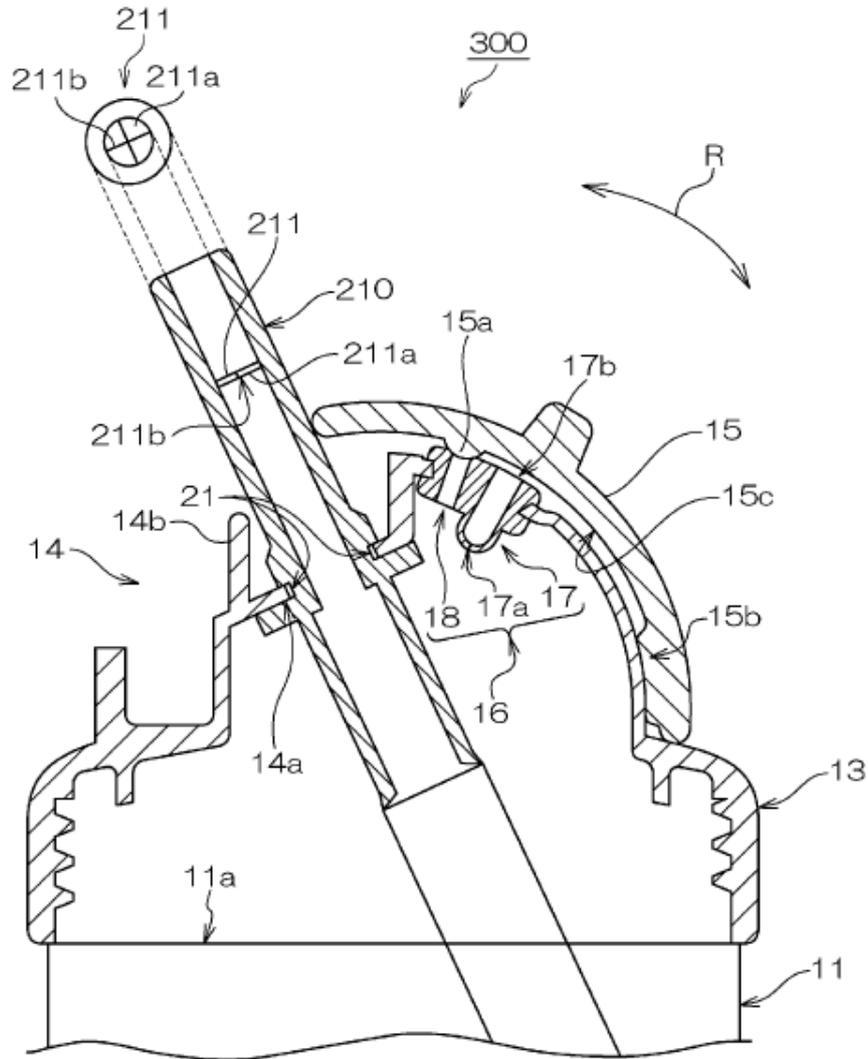
[FIG. 14]



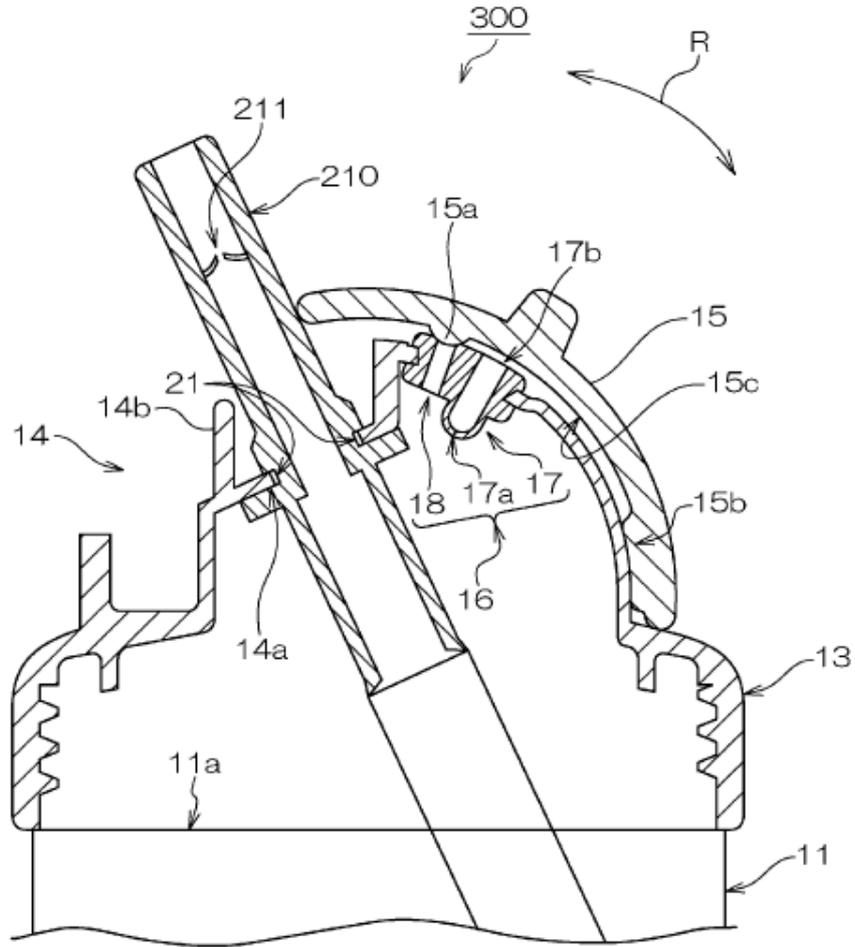
[FIG. 15]



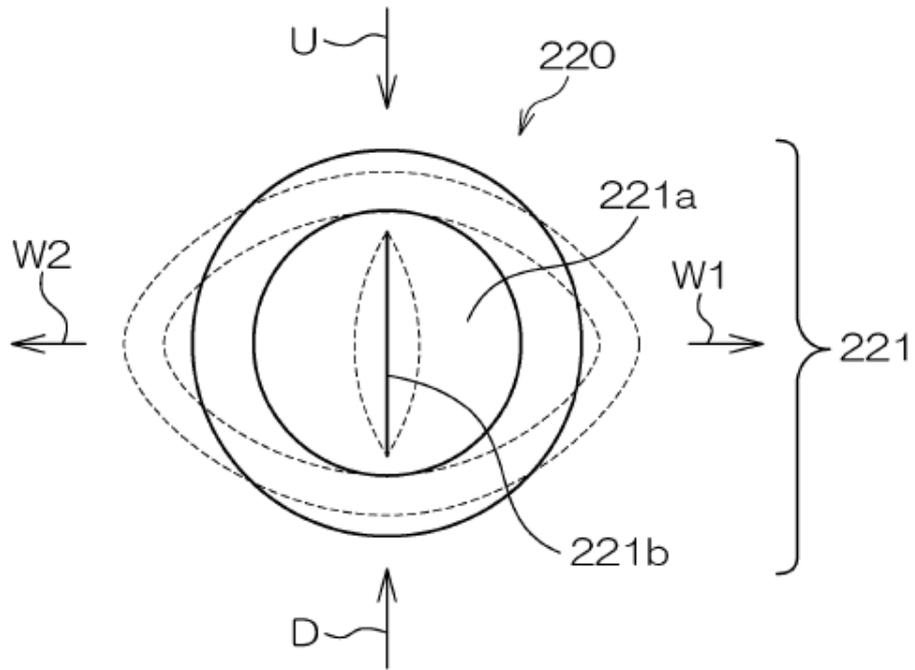
[FIG. 16]



[FIG. 17]



[FIG. 18]



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2007/000674

A. CLASSIFICATION OF SUBJECT MATTER B65D47/06(2006.01)i, B65D51/16(2006.01)i, B65D51/24(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) B65D47/00, B65D51/00, A47G19/22		
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 1996-2007 Kokai Jitsuyo Shinan Koho 1971-2007 Toroku Jitsuyo Shinan Koho 1994-2007		
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.
Y	JP 2001-039458 A (Pigeon Corp.), 13 February, 2001 (13.02.01), Claim 6; Par. Nos. [0025] to [0029], [0048] to [0054]; Figs. 1 to 2, 13 to 15 (Family: none)	1, 5-10
Y	JP 2003-231545 A (Kiyota Engineering Co., Ltd.), 19 August, 2003 (19.08.03), Claim 1; Par. Nos. [0019] to [0038]; Figs. 1, 4 to 5, 7 & EP 1334916 A1 & US 2003/0168462 A1	1, 5-10
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> 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	"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	
"E" earlier application or patent but published on or after the international filing date	"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	
"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)	"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	
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	
"P" document published prior to the international filing date but later than the priority date claimed		
Date of the actual completion of the international search 08 August, 2007 (08.08.07)	Date of mailing of the international search report 21 August, 2007 (21.08.07)	
Name and mailing address of the ISA/ Japanese Patent Office	Authorized officer	
Facsimile No.	Telephone No.	

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2007/000674

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2002-321741 A (Combi Corp.), 05 November, 2002 (05.11.02), Par. Nos. [0025] to [0030]; Figs. 7 to 10 & CN 1382411 A & EP 1252842 A2 & KR 20020083137 A & TW 236886 B & US 2002/0158069 A1 & US 2005/0133505 A1	1-10
A	JP 2004-042982 A (Richell Corp.), 12 February, 2004 (12.02.04), Claims 1 to 2; Par. Nos. [0099] to [0115]; Figs. 4 to 10 (Family: none)	1-10
P,A	JP 2006-335464 A (Pigeon Corp.), 14 December, 2006 (14.12.06), Par. Nos. [0028] to [0034]; Figs. 6 to 8 (Family: none)	1-10
E,A	JP 2007-176537 A (Richell Corp.), 12 July, 2007 (12.07.07), Par. No. [0032]; Figs. 1, 5 (Family: none)	1-10

Form PCT/ISA/210 (continuation of second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2007/000674

A. CLASSIFICATION OF SUBJECT MATTER B65D47/06(2006.01)i, B65D51/16(2006.01)i, B65D51/24(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) B65D47/00, B65D51/00, A47G19/22		
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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
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Y	JP 2001-039458 A (Pigeon Corp.), 13 February, 2001 (13.02.01), Claim 6; Par. Nos. [0025] to [0029], [0048] to [0054]; Figs. 1 to 2, 13 to 15 (Family: none)	1, 5-10
Y	JP 2003-231545 A (Kiyota Engineering Co., Ltd.), 19 August, 2003 (19.08.03), Claim 1; Par. Nos. [0019] to [0038]; Figs. 1, 4 to 5, 7 & EP 1334916 A1 & US 2003/0168462 A1	1, 5-10
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> 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 "I" 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 08 August, 2007 (08.08.07)		Date of mailing of the international search report 21 August, 2007 (21.08.07)
Name and mailing address of the ISA/ Japanese Patent Office (ISA/JP) 3-4-3 Kasumigaseki Chiyoda-ku Tokyo-to 100-8915		JPO Patent Examiner (Authorized officer) 3N 3503 Yoshitaka Kusunaga Telephone No. 03-3581-1101 Ext. 3361

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2007/000674

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP 2002-321741 A (Combi Corp.), 05 November, 2002 (05.11.02), Par. Nos. [0025] to [0030]; Figs. 7 to 10 & CN 1382411 A & EP 1252842 A2 & KR 20020083137 A & TW 236886 B & US 2002/0158069 A1 & US 2005/0133505 A1	1-10
A	JP 2004-042982 A (Richell Corp.), 12 February, 2004 (12.02.04), Claims 1 to 2; Par. Nos. [0099] to [0115]; Figs. 4 to 10 (Family: none)	1-10
P,A	JP 2006-335464 A (Pigeon Corp.), 14 December, 2006 (14.12.06), Par. Nos. [0028] to [0034]; Figs. 6 to 8 (Family: none)	1-10
E,A	JP 2007-176537 A (Richell Corp.), 12 July, 2007 (12.07.07), Par. No. [0032]; Figs. 1, 5 (Family: none)	1-10

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DECLARATION OF TRANSLATOR

I, Eric Vance, hereby declare as follows:

1. I personally performed the attached translation from Japanese into English of the patent that is entitled “飲料容器” in Japanese and “Beverage Container” in English (also attached).

2. The attached translation is, to the best of my knowledge, a true, full and accurate translation of the attached Japanese document.

3. I am competent to perform this translation, because I have a baccalaureate degree in Japanese and five years of experience as a professional translator.

4. I declare under the penalty of perjury under the laws of the United States that the foregoing is true and correct; and further declare that I am aware that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 1001 of Title 18 of the United States Code.

Dated: April 17, 2022

A handwritten signature in black ink, appearing to read "Eric Vance", written over a horizontal line.

Eric Vance