[0005] In order to solve such an inconvenience, Japanese Patent No. 3137850 proposes a structure of a non-return valve comprising a valve chamber with an intake port and a discharge port, a valve body reciprocating in the chamber and a valve seat contacting with an outer peripheral face of the valve body, wherein a cylindrical portion is formed in an upper part of the valve chamber and when the valve body is moved in the cylindrical portion downward, the valve body forms a blocking plug to divide a liquid in the valve chamber into an upper liquid and a lower liquid and a part of the upper liquid is sucked into the valve chamber by the movement of the valve body.

[0006] In the conventional non-return valve, however, a part of the upper liquid contacted with ambient air flows into the lower liquid during the movement of the valve body, so that there is still room for improvement in a point whether the quality of the content in the container can be maintained stably until the content is consumed completely.

SUMMARY OF THE INVENTION

TASK TO BE SOLVED BY THE INVENTION

[0007] ~~It is, therefore, an object~~ Embodiments of the present invention seek to ~~propose~~ provide a squeezable container that may be capable of avoiding liquid dripping or the like associated with the retention of the content while preventing flow-in of the content contacted with ambient air in the container to maintain the quality of the content in the container.

SOLUTION FOR TASK

[0008] ~~In order to solve the above task,~~ According to an aspect of the present invention, there is provided a squeezable container ~~in accordance with the present invention comprises~~ comprising an outer container part having a mouth/neck portion and forming an appearance of the container, and an inner container part disposed inside of the outer container part and pouring a content filled therein through a pouring plug mounted on the mouth/neck portion by squeezing a trunk portion of the outer container part for volume reduction wherein ambient air is introduced into a space between the outer container part and the inner container part through an opening hole formed in the outer container part in a recovering process of the trunk portion of the outer container part associated with the squeezing, and the container is characterized in that a partition wall blocking

communication of the mouth/neck portion to a pouring hole is disposed between the mouth/neck portion of the inner container part and the pouring hole of the pouring plug, and a gate passing the content is disposed in the partition wall, and a valve body is disposed on the gate to open the gate by pushing through squeezing of the trunk portion of the outer container part to pass the content, and a reservoir for sucking back having an opening port passing through the partition wall and sucking and reserving the content retaining between the pouring hole and the partition wall in the recovering process of the trunk portion of the outer container part associated with the squeezing is disposed in the partition wall, and the reservoir comprises a main reservoir body forming a reserving space for the retained content in its inside and a movable body capable of moving toward approaching and separating directions with respect to the opening port in a housing space of the main reservoir body and sucking the retained content from the opening port into the housing space through movement toward separation from the opening port.

[0009] In the squeezable container according to embodiments of the present invention, it is especially preferable as a concrete means for the solution of task that the container comprises an outer container part having a cylindrical mouth/neck portion and forming an appearance of the container, an inner container part disposed inside the outer container part and pouring a content filled therein through a pouring plug mounted on the mouth/neck portion by squeezing a trunk portion of the outer container part for volume reduction, and an ambient air introducing valve introducing ambient air between the outer container part and the inner container part in the recovering process of the trunk portion of the outer container part associated with the squeezing through an ambient air introducing hole formed in the pouring plug and an opening hole formed in the mouth/neck portion of the outer container part.

[0010] Also, in the squeezable container according to embodiments of the present invention, it is especially preferable as a concrete means for the solution of task that the ambient air introducing valve comprises a cantilever support elastic tongue piece integrally connected at its base portion to the valve body on the gate and separating from an inner wall valve seat of the pouring plug in the recovering

process of the trunk portion of the outer container part to open the air introducing hole, or that the ambient air introducing valve comprises a movable body, which blocks the ambient air introducing hole by matching with the ambient air introducing hole through tilting or reversing posture of the container or positive pressure generated between the outer container part and the inner container part while opens the ambient air introducing hole by separating from the ambient air introducing hole through negative pressure between the outer container part and the inner container part generated by normal posture of the container or recovering deformation of the outer container part, and at least two locking claws suspended downward along the edge portion of the ambient air introducing hole at the inner wall of the pouring plug to movably sandwich the movable body and introducing ambient air through a gap formed therebetween.

[0011] Further, in the squeezable container according to embodiments of the present invention, it is especially preferable as a concrete means for the solution of task that the reservoir is comprised of a main reservoir body held at a suspended state in the lower part of the partition wall to form a housing space for the retained content at the inside thereof, and a slider capable of moving toward approaching and separating directions to the opening port in the housing space of the main reservoir body and sucking the retained content through the opening port into the housing space through the movement in the separating direction from the opening port, or that the reservoir is comprised of a pathway having a cylindrical body arranged to an adjacent site of the partition wall forming the gate and a spherical valve body capable of moving from exit side to entry side of the cylindrical body, and sucking and reserving the content retained in the space between the pouring hole and the partition wall in the recovering process of the trunk portion of the outer container part after finishing the squeezing, or that three-point valve is used as the valve body on the gate.

EFFECT OF THE INVENTION

[0012] According to the squeezeable container in embodiments of the present invention ~~having the above construction~~, the partition wall blocking the communication of the mouth/neck portion to the pouring hole is disposed between the mouth/neck portion of the inner container part and the pouring hole of the pouring plug, and

the valve body capable of opening the gate formed in the partition wall by pushing associated with the squeezing of the trunk portion of the outer container part to pass the content is disposed in the partition wall, and the reservoir for sucking back having an opening port passing through the partition wall and sucking and reserving the content retaining between the pouring hole and the partition wall in the recovering process of the trunk portion of the outer container part associated with the squeezing is disposed in the partition wall, so that the retained content is sucked into the reservoir by the movement of the movable body after the stop of the squeezing operation, whereby liquid dripping due to discharge of the content from the pouring port can be avoided. Also, the retained content is not flown into the container through the gate, so that the content in the container can be maintained at a high quality till the end of consumption.

[0013] Also, according to the squeezeable container in embodiments of the present invention, the squeezable container is constructed with the outer container part having the cylindrical mouth/neck portion and forming the appearance of the container, the inner container part arranged inside the outer container part and pouring the content filled therein through the pouring plug mounted on the mouth/neck portion by the volume reduction through the squeezing of the trunk portion of the outer container part, and the ambient air introducing valve for introducing ambient air between the outer container part and the inner container part in the recovering process of the trunk portion of the outer container part associated with the squeezing through the ambient air introducing hole formed in the pouring plug and the opening hole formed in the mouth/neck portion of the outer container part, so that the outer container part can rapidly recover to the initial form even in the crushing through squeezing.

[0014] Also, according to the squeezable container in embodiments of the present invention, the ambient air introducing valve comprises a cantilever support elastic tongue piece integrally connected at its base portion to the valve body on the gate and separating from an inner wall valve seat of the pouring plug in the recovering process of the trunk portion of the outer container part to open the ambient air introducing hole, so that the number of components parts can be reduced and the

efficient assembling can be attained.

[0015] Also, according to the squeezable container in embodiments of the present invention, the ambient air introducing valve comprises a movable body, which blocks the ambient air introducing hole by matching with the ambient air introducing hole through tilting or reversing posture of the container or positive pressure generated between the outer container part and the inner container part while opens the ambient air introducing hole by separating from the ambient air introducing hole through negative pressure between the outer container part and the inner container part generated by normal posture of the container or recovering deformation of the outer container part, and at least two locking claws suspended downward along the edge portion of the ambient air introducing hole at the inner wall of the pouring plug to movably sandwich the movable body and introducing ambient air through a gap formed therebetween, so that the opening and closing of the ambient air introducing valve can be made more surely.

[0016] Further, according to the squeezable container in embodiments of the present invention, the reservoir is constructed with a main reservoir body held at a suspended state in the lower part of the partition wall to form a housing space for the retained content at the inside thereof, and a slider capable of moving toward approaching and separating directions to the opening port in the housing space of the main reservoir body and sucking the retained content through the opening port into the housing space through the movement in the separating direction from the opening port, so that the retained content can be sucked into the housing space by a simple construction.

[0017] Moreover, according to the squeezable container in embodiments of the present invention, the reservoir is constructed with a penetration pathway having a cylindrical body arranged to an adjacent site of the partition wall forming the gate and a spherical valve body capable of moving from exit side to entry side of the cylindrical body, and sucking and reserving the retained content in the space between the pouring hole and the partition wall in the recovering process of the trunk portion of the outer container part after finishing the squeezing, so that the retained content can be sucked into the housing space by a simple construction.

[0018] Further, according to the squeezable container in embodiments of the present invention,