A transporting bag structure is provided, which includes: a bag body, including an opening and an accommodating space; and a channel pipe, connected the accommodating space and an outside space. A first end of the channel pipe is exposed out of the bag body. A second end of the channel pipe is located inside the accommodating space. A gas and a fluid flow into the accommodating space to form a gas layer and a fluid layer. The channel pipe penetrates the gas layer and enables the second end to be immersed in the fluid layer. The channel pipe is closed by being pressed in a segmented manner due to pressure differentials of the layers, so that the gas of the gas layer is not able to flow back out of the accommodating space via the channel pipe, and the fluid of the fluid layer is unable to flow back.
TRANSPORTING BAG STRUCTURE

CROSS-REFERENCES TO RELATED APPLICATIONS


BACKGROUND OF THE INVENTION

[0002] 1. Technical Field

[0003] The present invention relates to a transporting bag structure, and more particularly to a transporting bag structure capable of transporting living organisms.

[0004] 2. Related Art

[0005] Currently, numerous appliances for transporting goods are commercially available, but not all the appliances may be used to transport living organisms. For example, currently, live fish are generally transported by using containers such as rigid plastic trays or buckets. However, during transportation, in the event of a long route or an uneven road, water in a rigid plastic tray or a bucket easily overflows due to fierce shaking under the influence of the uneven road.

[0006] Furthermore, when a transportation route is too long and especially when the journey lasts more than two or three days, the fish in the container usually die from lack of oxygen. Therefore, if a conventional accommodating object such as a rigid plastic tray or a bucket is used as the container for transporting live fish, the fish are very likely to die during the transportation, resulting in financial loss. When the live fish reach the transportation destination, containers such as a rigid plastic tray or the bucket for containing the live fish and the water are not easily recycled, and occupy space. Consequently, the transportation manner even involves the concept of environmental protection.

[0007] In addition, also water is directly filled in a water bag and a rope is tied at the opening of the water bag to prevent water from overflowing from the opening. However, after the water bag is transported to the destination, the tied rope still needs to be untied to fetch the transported, live fish, which is time-consuming and troublesome.

SUMMARY

[0008] Accordingly, the present invention provides a transporting bag structure, which includes: a bag body, including an opening and an accommodating space; and a channel pipe, located at the opening and connecting the accommodating space and an outside space. The channel pipe includes a first end and a second end. The first end is exposed out of the bag body and located at the outside space. The second end is located inside the accommodating space. A gas and a fluid flow into the accommodating space via the channel pipe to form a gas layer and a fluid layer. The channel pipe penetrates the gas layer and has the second end immersed in the fluid layer. The channel pipe is closed being pressed in a segmented manner because of different pressures on the layers, so that the gas of the gas layer is not able to flow back out of the accommodating space via the channel pipe, and the fluid of the fluid layer is also not able to flow back. The channel pipe is closed due to the pressure generated in the gas layer, so that the gas of the gas layer is not able to flow back out of the accommodating space via the channel pipe.

[0009] Furthermore, the bag body of the present invention is formed by binding a first plastic membrane through heat-sealing. A heat-resisting material is coated on a part at the heat-sealed binding of the bag body, and the part is not bound during the heat-sealing to form the opening. In addition, the channel pipe is formed by binding corresponding sides of two stacked second plastic membranes through the heat-sealing. The channel pipe is bound to the opening through the heat-sealing, and an inside surface of the channel pipe is coated with a heat-resisting material in advance, so that during the heat-sealing, the opening and the channel pipe are bound through the heat-sealing, and the inside surface of the channel pipe is not bound, connecting the accommodating space and the outside space. The accommodating space contains more than two fluids and gases with different densities. The gas having a smaller density is not capable of penetrating the fluid having a larger density, so the channel pipe is pressed by the different fluid pressure and gas pressure respectively in the bag body to form inlet and channel lock, so that a liquid in the bag body is not able to flow back. The different pressures are formed between the fluid and gas, so the second plastic membranes are tightly attached to form gas lock.

[0010] Accordingly, the present invention, the second plastic membranes are heat-sealed to form the channel pipe and the bag body, and the fluid and the gas flow into the bag body from the outside via the channel pipe. When the channel pipe is immersed in the fluid in the bag, the gas rises because of the small density to form a gas pressure space, so an upper segment of the channel pipe is pressed by the gas, so that the second plastic membranes are tightly attached to each other to form lock. Furthermore, a lower segment of the channel pipe is immersed in the fluid in the bag, and the second plastic membranes are pressed by the fluid pressure, so that the second plastic membranes are tightly attached to each other to form lock. As a result, the gas in the bag is not able to flow back via a channel outlet immersed in the liquid. Furthermore, although the liquid in the bag contacts the channel outlet, the channel lock generated by the gas pressure of the upper segment is not capable of being opened because of high specific gravity of the liquid, so the liquid is not able to flow back, and furthermore, water and oxygen exchange occurs due to shaking during transportation to keep oxygen in the liquid, so the problem of lack of oxygen or water loss in the conventional process of transportation can be solved.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] The present invention will become more fully understood from the detailed description given herein below for illustration only, and thus are not limitative of the present invention, wherein:

[0012] FIG. 1 is an integral outside view of a transporting bag structure according to the present invention;

[0013] FIG. 2 is a structural outside view of the bag body according to the present invention;

[0014] FIG. 3 is a structural outside view of the channel pipe according to the present invention;

[0015] FIG. 4 is a combination diagram of the bag body and the channel pipe according to the present invention;

[0016] FIG. 5 is a use diagram of filling a gas and a fluid in the bag body according to the present invention; and
DETAILED DESCRIPTION

FIG. 1 is an integral outside view of a transporting bag structure according to the present invention, which includes a bag body 10 and a channel pipe 20.

FIG. 2 is a structural outside view of the bag body according to the present invention. Please refer to FIG. 2, the bag body 10 may preferably be a sealed bag body formed of first plastic membranes 11. The bag body 10 having an accommodating space 12 is formed by first folding the first plastic membranes 11 so that the first plastic membranes 11 are folded with each other, and then binding side peripheries of the first plastic membranes 11 folded with each other through heat-sealed binding. With this as a foundation, a heat-resisting material (not shown), is coated at the heat-sealed binding of the side peripheries of the first plastic membranes 11. During the heat-sealing, the side peripheries of the first plastic membranes 11 are heat-sealed to form a gas tight state, and a part coated with the heat-resisting material is not bound, so an opening 13 is formed here. The bag body 10 is preferably a cubic shape, but the present invention is not limited thereto.

FIG. 3 is a structural outside view of the channel pipe according to the present invention. Please refer to FIG. 3, the channel pipe 20 is formed by binding two stacked second plastic membranes 21 through the heat-sealing. Preferably, a connected gas channel is formed by binding two corresponding sides 21 a of the second plastic membranes 21 through the heat-sealing and other areas are not bound to each other.

FIG. 4 is a combination diagram of the bag body and the channel pipe according to the present invention. Please refer to FIG. 4, in which the channel pipe 20 is bound to the opening 13 (as shown in FIG. 2). A preferred binding manner is heat-sealed binding, but the present invention is not limited thereto. On this basis, an inside surface of the channel pipe 20 may be coated with the heat-resisting material 22 in advance, so when the bag body 10 and the channel pipe 20 are being bound through the heat-sealing, since the inside surface of the channel pipe 20 is coated with the heat-resisting material 22, the inside surface of the channel pipe 20 is not bound during the heat-sealing, and the channel pipe 20 stays in a connected state.

Furthermore, the channel pipe 20 further includes a first end 23 and a second end 24. When the channel pipe 20 is bound to the bag body 10 through the heat-sealing, the first end 23 is exposed out of the bag body 10 and located at an outside space. The second end 24 is located inside the accommodating space 12 of the bag body 10. Through the disposition of the channel pipe 20, the accommodating space 12 and the outside space can be connected.

FIG. 5 is a use diagram of filling a gas and a fluid in the bag body according to the present invention. Please refer to FIG. 5, which shows a user may input the fluid, for example, water or other liquids, and the gas, for example, oxygen, into the accommodating space 12 through the connection of the channel pipe 20 to form a gas layer 30 and a fluid layer 40. On this basis, when the fluid is filled in the accommodating space 12, the second end 24 of the channel pipe 20 is located inside the accommodating space 12, penetrates the gas layer 30, and is immersed in the fluid layer 40. Furthermore, the bag body 10 further has an outlet portion 14 located at one side of the bag body 10 and used for discharging the fluid in the accommodating space 12. The first plastic membranes 11 may preferably be melted in advance in preparation for the outlet portion 14 so that the outlet portion 14 is a generally conduit-like structure and the outlet portion 14 then becomes gas tight through heat-sealing.

Furthermore, the second end 24 of the channel pipe 20 of the present invention further has a weight element 25, and a preferred disposition position is a tail end of the second end 24 of the channel pipe 20. Through disposition of the weight element 25, the second end 24 of the channel pipe 20 is more easily immersed in the fluid layer 40. The weight element 25 may preferably be a number of multi-sheet bodies or other metal sheets, but the present invention is not limited thereto.

FIG. 6 is an outside view according to a second embodiment of the present invention. Please refer to FIG. 6, in which in addition to a cubic structure as described above, a transporting bag structure of the present invention may have other shapes. As shown in FIG. 6, a side opposite to the side connected to a channel pipe 20 has a sealed flat space, and the other two sides are sealed to form a generally oval stereoscopic structure. However, a shape of a bag body 10 is only an example, and the present invention is not limited thereto.

When a user uses the transporting bag structure of the present invention, water and living organisms, for example, fish, to be transported are injected into an accommodating space 12 of the bag body 10 through the channel pipe 20. When a water level reaches a certain point, that is, a tail end of a second end 24 of the channel pipe 20 is immersed in a fluid layer 40, a gas, for example, oxygen, is then injected into the accommodating space 12 of the bag body 10 via the channel pipe 20. At this time, the tail end of the second end 24 of the channel pipe 20 is extruded under a fluid pressure of the fluid layer 40, so two second plastic membranes 21 are tightly attached to each other to form gas lock, so that a fluid of the fluid layer 40 cannot flow back out of the accommodating space 12 via the channel pipe 20. On this basis, the gas also cannot permeate the fluid to flow back out of the accommodating space 12 from the channel pipe 20. After use, an outlet portion 14 may be cut, so that the fluid flows out via the outlet portion 14.

According to the present invention, the channel pipe is bound to the bag body through the heat-sealing, the fluid and the gas may flow into the bag body via the channel pipe, and the channel pipe is formed of the two second plastic membranes. Therefore, when the channel pipe is immersed in the fluid, the pressure of the fluid presses the second plastic membranes, so that the second plastic membranes are tightly attached to each other to form gas lock. The gas layer on the fluid also tightly presses the channel pipe in the layer, so that the segment of the channel pipe is closed to form gas lock. The problem of lack of oxygen or water loss in the prior art is thus solved. After the fish are transported to the destination, the sealed bag body may be cut to fetch the fish, and the sealed bag body becomes two membranes, which do not occupy space and can also be recycled in order to meet environmental protection aims, and the transportation cost can also be reduced effectively at the same time.

While the present invention has been described by the way of example and in terms of the preferred embodiments, it is to be understood that the invention need not to be limited to the disclosed embodiments. On the contrary, it is intended to cover various modifications and similar arrangements included within the spirit and scope of the appended
claims, the scope of which should be accorded the broadest interpretation so as to encompass all such modifications and similar structures.

What is claimed is:

1. A transporting bag structure, comprising:
   a bag body, comprising an opening and an accommodating space; and
   a channel pipe, located at the opening and connecting the accommodating space and an outside space, wherein the channel pipe comprises a first end and a second end, the first end is exposed out of the bag body and located at the outside space, the second end is located inside the accommodating space, a gas and a fluid flow into the accommodating space via the channel pipe to form a gas layer and a fluid layer, and the channel pipe penetrates the gas layer and enables the second end to be immersed in the fluid layer, so that the gas of the gas layer is not able to flow back out of the accommodating space via the channel, and the fluid of the fluid layer is not able to flow back out of the gas layer.

2. The transporting bag structure according to claim 1, wherein the bag body is formed with various bag shapes by binding at least one first plastic membrane through heat-sealing.

3. The transporting bag structure according to claim 2, wherein a heat-resisting material is coated on a part at the heat-sealed binding of the bag body, and the part is not bound during the heat-sealing to form the opening.

4. The transporting bag structure according to claim 1, wherein the channel pipe is formed of an upper second plastic membrane layer and a lower second plastic membrane layer.

5. The transporting bag structure according to claim 4, wherein the channel pipe enables the second plastic membranes to be tightly attached to each other to form a segmented channel lock as the gas and the fluid stored in the bag body is incapable of exchange due to different densities and specific gravities and different internal pressures are generated in two spaces having different densities and specific gravities.

6. The transporting bag structure according to claim 1, wherein the channel pipe is bound to the opening through heat-sealing, and an inside surface of the channel pipe is coated with a heat-resisting material in advance, so that during the heat-sealing, the opening and the channel pipe are bound through the heat-sealing, and the inside surface of the channel is not bound and connects the accommodating space and the outside space.

7. The transporting bag structure according to claim 1, wherein the second end of the channel pipe further comprises a weight element, used to enable the second end of the channel pipe to be immersed in the fluid layer.

8. The transporting bag structure according to claim 1, wherein the bag body further comprises an outlet portion, used to discharge the fluid.

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