The composite compressible drink mix bag receives a drink mix therein. The composite compressible drink mix bag includes a water permeable, hollow compressible body defining a deformation axis, a first cap and a second cap. The compressible body has folding lines and is formed with two openings over each end thereof. The first and second caps are coupled to two ends of the compressible body and cover the openings respectively such that the compressible body is retractable along the deformation axis while maintains an overall shape. The two ends of the compressible body are retractable along the deformation axis to a storage state according to the volume of the drink mix before water is added or expandable to a relax state by the folding lines after water is added.
FIG. 11
COMPOSITE COMPRESSIBLE DRINK MIX
BAG

BACKGROUND OF THE INVENTION

1. Field of the Invention
The instant disclosure relates to a drink mix bag; in particular, to a composite compressible drink mix bag.

2. Description of Related Art
Three dimensional tea bags are widely used nowadays. The three dimensional tea bag has a plurality of faces, and the configuration may resemble a trigonal pyramid. Thus, the tea leaves can fully stretch inside the tea bag.

However, the three dimensional tea bag stands high before adding water, and therefore the packaging is not as easy as conventional flat tea bags. Also, the corners of the three dimensional tea bag are not effectively used when the water is added. Furthermore, after adding water, the tea leaves in the three dimensional tea bag immediately swell, resulting in inconvenience when retrieving the tea bag out of the container.

To address the above issues, the inventor strives via associated experience and research to present the instant disclosure, which can effectively improve the limitation described above.

BRIEF SUMMARY OF THE INVENTION

The instant disclosure provides a composite compressible drink mix bag. The configuration stability arises from a separable design, and therefore the bag allows easier storage and for drink mix thoroughly blending.

According to one exemplary embodiment of the instant disclosure, the composite compressible drink mix bag receives a drink mix therein. The drink mix is in a first state before water is added while in a second state after water is added. The composite compressible drink mix bag includes a water permeable, hollow compressible body defining a deformation axis. The cross-section of the compressible body is perpendicular to the deformation axis. The compressible body has folding lines and is formed with two openings over each end thereof. The composite compressible drink mix bag also includes a first cap and a second cap. The first and second caps are coupled to two ends of the compressible body and cover the openings respectively. The compressible body and the first and second caps collectively define a receiving space. When the drink mix is in the first state, the two ends of the compressible body are adjusted along the deformation axis according to the volume of the drink mix. When the drink mix is in the second state, the two ends of the compressible body are adjusted along the deformation axis to allow the drink mix for relaxing. When the compressible body is immersed in the water, the two ends that are coupled to the first and second caps maintain an overall shape of the compressible body.

In order to further understand the instant disclosure, the following embodiments are provided along with illustrations to facilitate the appreciation of the instant disclosure; however, the appended drawings are merely provided for reference and illustration, without any intention to be used for limiting the scope of the instant disclosure.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

FIG. 1 is a schematic diagram of a first embodiment of the instant disclosure;

FIG. 2 is an exploded schematic diagram of the first embodiment of the instant disclosure;

FIG. 3 is a schematic diagram illustrating a step S110 of the first embodiment of the instant disclosure;

FIG. 3A is a partially enlarged view of FIG. 3;

FIG. 3B is a partially enlarged view of FIG. 3 in another configuration;

FIG. 4 is a schematic diagram illustrating a step S120 of the first embodiment of the instant disclosure;

FIG. 5 is a schematic diagram illustrating a step S130 of the first embodiment of the instant disclosure;

FIG. 5A is a partially enlarged view of FIG. 5;

FIG. 5B is a partially enlarged view of FIG. 5 in another configuration;

FIG. 6 is a schematic diagram illustrating a step S140 of the first embodiment of the instant disclosure;

FIG. 7 is a schematic diagram illustrating a step S150 of the first embodiment of the instant disclosure;

FIG. 8 is a schematic diagram illustrating a step S160 of the first embodiment of the instant disclosure;

FIG. 9 is a schematic diagram (I) illustrating the usage of the first embodiment of the instant disclosure;

FIG. 10 is a schematic diagram (II) illustrating the usage of the first embodiment of the instant disclosure;

FIG. 11 is a schematic diagram showing a second embodiment of the instant disclosure;

FIG. 12 is a schematic diagram illustrating two ends of a compressible body being at relaxing state in accordance with a third embodiment;

FIG. 13 is a schematic diagram illustrating two ends of the compressible body being at a storage state and a first supporting body and a second supporting body being in contact in accordance with the third embodiment; and

FIG. 14 is a schematic diagram showing a fourth embodiment of the instant disclosure.

DETAILED DESCRIPTION OF THE INVENTION

The aforementioned illustrations and following detailed descriptions are exemplary for the purpose of further explaining the scope of the instant disclosure. Other objectives and advantages related to the instant disclosure will be illustrated in the subsequent descriptions and appended drawings.

First Embodiment

Please refer to FIG. 1. The instant disclosure provides a composite compressible drink mix bag 100 for receiving drink mix 200 therein (as shown in FIG. 9). The drink mix 200 is in a first state before water is added while in a second state after water is added.

It is worth mentioning that FIG. 1 is a schematic side view and therefore the drink mix cannot be seen from the outside. However, in practical, the composite compressible may be completely transparent or semi-transparent such that the drink mix 200 inside the bag can be seen from outside.

Furthermore, in the instant embodiment, tea leaves are used as an example of a type of the drink mix 200, and the instant disclosure is not limited thereto. For example, the drink mix 200 may be medicine (e.g. medicinal mushroom), coffee powder (especially to the non instant coffee), herbal tea, scented tea, or the like.
Still further, the composite compressible drink mix bag 100 includes a water permeable compressible body 1, a first cap 2 and a second cap 3.

The compressible body 1, the first cap 2 and the second cap 3 are made of paper. However, in practical, they can be made of other materials. For example, the compressible body 1, the first cap 2 and the second cap 3 may be made of cloth, nylon, plastic, or aluminum foil.

The compressible body 1, the first cap 2 and the second cap 3 are separable components and assembly together to form the composite compressible drink mix bag 100. The compressible body 1, the first cap 2 and the second cap 3 are introduced firstly by FIG. 2.

The compressible body 1 is configured to a hollow cylinder and defines a deformation axis C which goes along the longitudinally central axis of the compressible body 1, and the instant disclosure is not limited thereto. The cross-section of the compressible body 1, perpendicular to the deformation axis C, is annular, and the compressible body 1 is formed with a plurality of folding lines 11 which are symmetrical along the deformation axis C. The compressible body 1 is open at two ends, forming openings 12, 12'.

More specifically, the folding lines 11 have a plurality of valley folds 111 and a plurality of mountain folds 112 in alternative arrangement. In other words, each mountain fold 112 is positioned between two valley folds 111. The compressible body 1 can be adjusted along the deformation axis C according to the folding lines 11. The compressible body 1 can be compressed to a storage configuration (as shown in FIG. 6) or relaxing to a swelling configuration (as shown in FIG. 10).

The first cap 2 has a first cap body 21 and a first ring 22. The first cap body 21 is shaped to substantially round.

The first cap body 21 is less prone to deformation compared to the compressible body 1. Specifically, the rigidity of the first cap body 21 may arise from the greater thickness (or density, hardness) than the compressible body 1.

The first ring 22 is substantially shaped to an arch, and the two ends of the arch are connected to the first cap body 21. The keystone position of the arch (i.e., the point of the arch that is furthest from the first cap body 2) projects onto the central region of the first cap body 21.

The second cap 3 has a second cap body 31 and a second ring 32. The second cap body 31 is shaped to round and the surface area is larger than the opening 12' of the compressible body 1.

The second cap body 31 is less prone to deformation compared to the compressible body 1. Specifically, the rigidity of the second cap body 31 may arise from the greater thickness (or density, hardness) than the compressible body 1.

The second ring 32 is substantially shaped to an arch, and the two ends of the arch are connected to the second cap body 31. The keystone position of the arch (i.e., the point of the arch that is furthest from the second cap body 3) projects onto the central region of the second cap body 31.

The method of manufacturing the composite compressible drink mix bag 100 is described in FIG. 3 to FIG. 8. FIGS. 3 to 8 are the cross sectional view of the compressible body 1.

Step S110: as shown in FIGS. 3 and 3A, the first cap body 2 is connected to one end of the compressible body 1. More specifically, the first cap body 21 of the first cap 2 covers the opening 12 of the compressible body 1, and the first ring 22 is exposed to the outside.

The first cap 2 and the compressible body 1 may be attached to each other by edible adhesive 4, ultrasonic welding or the like, and the instant disclosure is not limited thereto.

It is worth noting that in the instant embodiment, the compressible body 1 is connected to the first cap body 21 while the compressible body 1 is bent toward its interior. In practical, the compressible body 1 can be bent toward the exterior and connected to the first cap body 21 (as shown in FIG. 3B), and the instant disclosure is not limited thereto.

Step S120: as shown in FIG. 4, the drink mix 200 is added from the opening 12' from the other end of the compressible body 1. Preferably the amount of drink mix 200 should not exceed the volume of the compressible body 1 when water is added (i.e., the second state).

Step S130: as shown in FIG. 5, the second cap body 3 is connected to the other end of the compressible body 1. More specifically, the second cap body 31 of the second cap 3 covers the opening 12' of the compressible body 1, and the second ring 32 is exposed to the outside.

The second cap 3 and the compressible body 1 may be attached to each other by edible adhesive 4, ultrasonic welding or the like, and the instant disclosure is not limited thereto.

It is worth noting that in the instant embodiment, the compressible body 1 is connected to the second cap body 31 while the compressible body 1 is bent toward its interior. In practical, the compressible body 1 can be bent toward the exterior and connected to the second cap body 31 (as shown in FIG. 5B), and the instant disclosure is not limited thereto.

Step S140: as shown in FIG. 6, according to the volume of the drink mix 200 in the first state, the compressible body 1 retracts along the deformation axis C to the above-mentioned storage configuration.

That is to say the drink mix 200 contacts the second cap 3. The first cap 2, the compressible body 1 and the second cap 3 collectively define a receiving space substantially equivalent to the volume of the drink mix 200 in the first state. Furthermore, the content of the drink mix 200 remains intact without being crushed. Thus, the drink mix 200 is stored in a compact space yet the content keeps its integrity.

Step S150: as shown in FIG. 7, one end of a string 5 (e.g. a cotton string) is connected to the second ring 32 of the second cap 3, and the other thereof is connected to a tag 6.

The string 5 may be tied to the second ring 32, attached thereto by edible adhesive 4, ultrasonic welding or other suitable ways, and the instant disclosure is not limited thereto.

In addition, in the manufacturing process of the composite compressible drink mix bag 100, Step S160 may be performed depending on user requirement. Namely, as shown in FIG. 8, the first ring 22 and the second ring 32 respectively flatten against the first cap body 21 and the second cap body 31, and the composite compressible drink mix bag 100 is sealed by a sealing material 7.

In this regard, the sealing material 7 prevents the drink mix 200 from making contact with foreign particles or the atmosphere and therefore minimizes the drink mix 200 being damp or damaged before consumption.

FIGS. 7, 9 and 10 introduce the usage of the composite compressible drink mix bag 100. FIGS. 9 and 10 are cross-sectional view of the compressible body 1.

It should be noted that if step S160 is conducted to produce the composite compressible drink mix bag 100, the sealing material 7 has to be removed before brewing.
The composite compressible drink mix bag 100 is disposed in a container (e.g. a tea cup) for brewing. Meanwhile, two ends of the compressible body 1 are at the relaxing state. In the instant embodiment, two examples are described, and the instant disclosure is not limited thereto.

EXAMPLE 1

As shown in FIGS. 7, 9 and 10, before water is added, hold the first ring 22 and the second ring 32 and stretch the compressible body 1 along the deformation axis C according to the folding lines 11. Then the compressible body 1 vertically plunges into a container 300 with water therein, and the tag 6 is hung outside the container 300 from the string 5.

The compressible body 1 allows water for entering the interior thereof for brewing the drink mix 200 in a fully relaxed state. The deformation axis C is substantially parallel to the vertical direction.

Subsequently, the drink mix 200 (e.g. tea leaves) swells when brewing and abuts the first and second caps 2, 3. Thus, the compressible body 1 stretches along the deformation axis C to be in a relax state. The drink mix 200 in the second state is fully relaxed and has sufficient space to expand.

EXAMPLE 2

As shown in FIGS. 7 and 10, the composite compressible drink mix bag 100 plumbs into the container 300 with water therein, and the tag 6 is hung outside the container 300 from the string 5. The two ends of the compressible body 1 relax from the storage state to the relax state along the deformation axis C because the drink mix 200 swells upon soaking and abuts the first and second caps 2, 3. As a result, the drink mix 200 in the second state has sufficient room for relaxing.

The composite compressible drink mix bag 100 may expand according to the dimension of the container 300 and therefore fit into the container 300 even with a lid covering thereon. However, the conventional triangular pyramid tea bag emerges one corner if put in a smaller container, and the lid cannot fully seal the container.

In addition, tea leaves are used as an example in the abovementioned drink mix 200. However, if the tea leaves are substituted by coffee powder (referring to non-instant coffee), which does not expand but float in the water (not shown), the first and second rings 22, 32 can be pulled firstly to adjust the compressible body 1 to the relax state.

The benefit of the composite compressible drink mix bag 100, especially the first and second caps 2, 3 coupled to the compressible body 1, is further elaborated herein.

Specifically, the first and second cap 2, 3 are relatively rigid (because of greater thickness, density, or hardness) so as to allow the compressible body 1 for maintaining its original shape after immersed in the water. Namely, the compressible body 1 is not distorted when carrying the weight of drink mix 200 in the second state. Therefore, the drink mix 200 has sufficient room for relaxing when brewing.

Furthermore, the rigidity of the first and second caps 2, 3 stabilizes the compressible body 1 in the water. Hence, the compressible body 1 does not drift aimlessly or emerges out of water surface if the plumbing angle and water flow cause bias gravity centre. Also, the compressible body 1 is not distorted when the drink mix 200 weighs heavier in the second state. Thus the compressible body 1 can still be easily removed from the container.

Moreover, when the two ends of the compressible body 1 are adjusted to the storage state, the first and second caps 2, 3 can protect the drink mix 200 from being crashed.

Additionally, if the compressible body 1, first and second caps 2, 3 are integrally formed, the integral structure may lead to the following disadvantages. The integrally formed bag is prone to drift aimlessly in the water because of the bias gravity centre resulting from plumbing angle and water flow. The bag is likely to emerge from the water surface and the drink mix cannot be sufficiently soaked. Even if the integrally formed bag completely immerses under the water, the drink mix gains weight in the second state and the bag may be dragged and distorted when lifted. In the manufacturing process, transportation or brewing, the drink mix is likely to be crushed by external force. The filling of drink mix to the integrally formed bag can also be an obstacle in practical.

Accordingly, the compressible body 1, first and second caps 2, 3 should adapt the separable configuration to overcome the abovementioned problems. The evidence suggests that the separable configuration is more beneficial than the integrally formed structure.

Second Embodiment

Please refer to FIG. 11 showing the second embodiment of the instant disclosure. FIG. 11 is a schematic side view and the drink mix 200 inside the bag cannot be seen. However, in practical, the composite compressible drink mix bag 100 may be transparent or semi-transparent such that the drink mix 200 can be seen from the outside.

The instant embodiment is similar to the first embodiment and the identical technical features are not repeated herein. The difference between the first and second embodiment arises from the folding lines 11. Specifically, in the instant embodiment, the folding lines 11 only has the valley folds 111 and the compressible body 1 has a curved contour between any two immediately adjacent valley folds 111.

Third Embodiment

Please refer to FIG. 12 in conjunction with FIG. 13, showing the third embodiment of the instant disclosure. FIGS. 12 and 13 are the cross-sectional view of the compressible body 1.

The instant embodiment is similar to the first embodiment and the identical technical features are not repeated herein. The difference between the first and third embodiment arises from supporting bodies. In the instant embodiment, the first cap 2 and the second cap 3 respectively have a first supporting body 23 and a second supporting body 33. Specifically, the first supporting body 23 is connected to the boundary where the first cap body 21 meets the compressible body 1, and the first supporting body 23 is substantially perpendicular to the first cap body 21. Likewise, the second supporting body 33 is connected to the boundary where the second cap body 31 meets the compressible body 1, and the second supporting body 33 is substantially perpendicular to the second cap body 31.

The first and second supporting bodies 23, 33 correspond to each other. That is to say, when the two ends of the compressible body 1 are in the storage state, the first and
second supporting bodies 23, 33 contact each other so as to prevent the drink mix 200 in the compressible body 1 from being crashed by the first and second caps 2, 3.

[0077] Furthermore, according to the height of the first and second supporting bodies 23, 33, the two ends of the compressible body 1 can be separated by a predetermined distance. In other words, the volume of the composite compressible drink mix bag 100 can be assigned for accommodating a certain amount of drink mix 200. Thus the manufacturing process favors automatic production line.

[0078] Additionally, the first and second supporting bodies 23, 33 may be shaped annularly or into a plurality of columns, and the instant disclosure is not limited thereto.

Fourth Embodiment

[0079] Please refer to FIG. 14, showing the fourth embodiment of the instant disclosure. FIG. 14 is a schematic side view and the drink mix 200 inside the bag cannot be seen. However, in practical, the composite compressible drink mix bag 100 may be transparent or semi-transparent such that the drink mix 200 can be seen from the outside.

[0080] The instant embodiment is similar in the first embodiment and the identical technical features are not repeated herein. The difference between the first and fourth embodiment arises from the outline of the compressible body 1. Specifically, in the instant embodiment, the compressible body 1, first and second caps 2, 3 are configured to sphere to increase the aesthetic.

[0081] Likewise, in another embodiment (not shown), the compressible body 1, first and second caps 2, 3 may be round, semi-circle, cone or any other geometrical configuration.

[0082] In short, the separable compressible body, first and second caps of the composite compressible drink mix bag allows the two ends being flexible for stretching or retracting along the deformation axis whereas the overall shape is maintained. Furthermore, the rigidity of the first and second caps prevents the compressible body from distortion when the drink mix is in the second state which is heavier. The drink mix in the compressible body is therefore protected by the first and second caps to avoid crashing. Moreover, the first and second caps may respectively have the first and second supporting bodies. The first and second supporting bodies contacts each other when the compressible body is in the storage state such that the drink mix is protected from crashed by the external force.

[0083] The description illustrated supra set forth simply the preferred embodiments of the instant disclosure; however, the characteristics of the instant disclosure are by no means restricted thereto. All changes, alternations, or modifications conveniently considered by those skilled in the art are deemed to be encompassed within the scope of the instant disclosure delineated by the following claims.

What is claimed is:

1. A composite compressible drink mix bag for receiving a drink mix therein, the drink mix being in a first state before adding water while in a second state after adding water, comprising:
   a water permeable, hollow compressible body defining a deformation axis, a cross-section of the compressible body being perpendicular to the deformation axis, the compressible body having folding lines and formed with two openings over each end thereof;
   a first cap; and
   a second cap, the first and second caps coupled to two ends of the compressible body and covering the openings respectively, the compressible body and the first and second caps collectively defining a receiving space;
   wherein the drink mix is in the first state, the two ends of the compressible body are adjusted along the deformation axis according to the volume of the drink mix, when the drink mix is in the second state, the two ends of the compressible body are adjusted along the deformation axis to allow the drink mix for relaxing, and when the compressible body is immersed in the water, the two ends that are coupled to the first and second caps maintain an overall shape of the compressible body.

2. The composite compressible drink mix bag according to claim 1, wherein the first cap includes a first cap body and a first ring, one end of the compressible body is coupled to one face of the first cap body while the first ring is connected to the other face of the first cap body, the second cap includes a second cap body and a second ring, and the other end of the compressible is coupled to one face of the first cap body while the second ring is connected to the other face of the second cap body.

3. The composite compressible drink mix bag according to claim 2, wherein the two ends of the compressible body respectively bend toward the hollow interior and are coupled to the first and second cap bodies.

4. The composite compressible drink mix bag according to claim 2, wherein the two ends of the compressible body respectively bend toward the exterior and are coupled to the first and second cap bodies.

5. The composite compressible drink mix bag according to claim 2, wherein the first cap further includes a first supporting portion, the first supporting portion is arranged at the boundary in which the first cap body and the compressible body meet, the second cap further includes a second supporting portion, and the second supporting portion is arranged at the boundary in which the first cap body and the compressible body meet.

6. The composite compressible drink mix bag according to claim 5, wherein the first and the second supporting portions are aligned, and when the compressible body is compressed, the first and the second supporting portions are in contact.

7. The composite compressible drink mix bag according to claim 6, wherein the first supporting portion is substantially perpendicular to the first cap body, and the second supporting body is substantially perpendicular to the second cap body.

8. The composite compressible drink mix bag according to claim 1 further comprising an edible waterproof adhesive, the first and the second caps attached to the two ends respectively via the edible waterproof adhesive.

9. The composite compressible drink mix bag according to claim 1 further comprising a string and a tap, the string connecting the second cap and the tag.

10. The composite compressible drink mix bag according to claim 1, wherein the deformation axis is substantially parallel to a vertical line.