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(54) **Flexible permeable container with tag**

Flexibler und permeabler Behälter mit einem Anhänger

Réceptient flexible et permeable avec une étiquette

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Description

Field of The Invention

[0001] The present invention relates to a flexible permeable container. More particularly, the present invention is concerned with a flexible permeable container having a foldable part, which is used to enclose tea leaves such as those of green tea, black tea and oolong tea, powder of table luxuries such as that of coffee beans, soup stock materials such as dried small sardines and powdery shavings of dried bonito and other materials to be extracted.

Discussion of Related Art

[0002] Flexible permeable containers permitting extraction from the above materials to be extracted (hereinafter often referred to simply as "contents") include, for example, a widely used tea bag which comprises a square flat bag body capable of accommodating contents therein and means for vertically lifting the same. Flexible permeable containers ensuring enhanced extraction efficiency as compared with that of the tea bag are described in Japanese Patent Application Laid-open Specification Nos. 99975/1989 and 98870/1991.

[0003] Figs. 21 and 22 show a flexible permeable container 100 described in Japanese Patent Application Laid-open Specification No. 99975/1989, which comprises a bag body 110 flatly formed by sealing the peripheries of two square cut packing materials and a hanging line 120 secured to the bag body 110. The hanging line 120 winds around the bag body 110 so that one end 130 of the hanging line 120 is secured to the center of a surface of the bag body 110 and that the other end extends on the opposite surface. A tag 140 of, for example, a piece of paper is attached to the other end of the hanging line 120, and this tag 140 is lightly bonded to the opposite surface of the bag body 110.

[0004] At use, referring to Fig. 22, the tag 140 is peeled from the bag body 110. The bag body 110 is horizontally hung by means of the hanging line 120, and hot water is poured on the bag body 110. The poured hot water performs extraction from the contents of the bag body 110 and drops into a below placed vessel 150. At that time, a lower surface of the bag body 110 droops, so that the degree of contact of the contents with hot water is increased to thereby enable excellent extraction from the contents.

[0005] Figs. 23 to 25 show a flexible permeable container 200 described in Japanese Patent Application Laid-open Specification No. 98870/1991. This flexible permeable container 200 comprises a tetrahedrally formed bag body 210 and a hanging line 220 secured to the bag body 210. The hanging line 220 has its one end fixed to one vertex of the bag body 210 or a substantially central zone of a surface of the bag body 210. Numeral 230 denotes a tag attached to the other end of

the hanging line 220.

[0006] In particular, Fig. 23 shows the form in which the flexible permeable container 200 is accommodated in an external pack (not shown). The tetrahedral bag body 210 is suitably folded up, and the hanging line 220 is wound around the folded bag body 210. The tag 230 is lightly bonded to an external surface of the bag body 210. Thus, the folded form of the bag body 210 is maintained by the hanging line 220 to thereby enable incorporation into the external pack.

[0007] At the time of extraction, referring to Figs. 24 and 25, the tag 230 is held by hand and the bag body 210 is hung by means of the hanging line 220 and immersed in hot water of the vessel 150. In Fig. 24, one end of the hanging line 220 is fixed to one vertex of the bag body 210 and a triangular surface is positioned on the bottom side. On the other hand, in Fig. 32, one end of the hanging line 220 is fixed to one surface of the bag body 210 and one vertex is positioned on the bottom side. In both of these instances, the bag body 210 is tetrahedral, so that the internal space of the bag body 210 is large to thereby increase the degree of contact of the contents with hot water. Thus, desirable extraction can be performed.

[0008] U.S. Patent No. 4,826,695 discloses a beverage infusion device wherein coffee particles, etc. are enclosed together with a carbon dioxide source. When the infusion device is immersed in water, the carbon dioxide source releases carbon dioxide. The carbon dioxide bubbles up through the coffee particles, agitating the coffee particles, so that the efficiency of coffee extraction is maximized. The container is provided with a plurality of circumferential pleats.

[0009] In the conventional flexible permeable container 100 shown in Figs. 21 and 22, the bag body 110 is flat, so that the accommodation of the flexible permeable container 100 in the external pack can be conducted smoothly. However, the bag body 110 is defined by the two surfaces disposed on the top and the bottom with the result that the internal space of the bag body 110 is small. Therefore, not only is the amount of contents charged in the bag body 110 restricted but also the space allowing the contents to move in the bag body 110 is not satisfactory to thereby cause the contact of the contents with hot water to be unsatisfactory at the time of extraction. Therefore, this flexible permeable container 100 has a drawback in that the extraction cannot be satisfactory.

[0010] The conventional flexible permeable container 200 shown in Figs. 23 to 25 includes the bag body 210 which has a tetrahedral large space, so that the contents can be charged in the bag body 210 in a satisfactory amount. However, this flexible permeable container 200 is bulky in the state of being folded up to thereby tend to engage with the external pack. Thus, the flexible permeable container 200 has a drawback in that the accommodation in the external pack is difficult. Further, in the state of being folded up, the flexible permeable con-

tainer 200 has an irregular morphology such that it is simply rolled by the hanging line 220, as shown in Fig. 23. Therefore, the appearance is poor, and the flexible permeable container 220 having been taken out from the external pack has an unpleasant looking to thereby deteriorate its marketability.

[0011] Moreover, in both the conventional flexible permeable containers 100, 200, the hanging lines 120, 220 wind around the respective external surfaces of bag bodies 110, 210, so that the lengths of the hanging lines 120, 220 correspond to the respective external dimensions of bag bodies 110, 210 and consequently cannot be satisfactorily large. Therefore, at the time of extraction, such an inconvenience is encountered that the hanging lines 120, 220 are likely to fall in the vessel 150. Accordingly, it would be thought of to ensure satisfactory length of the hanging line by winding the hanging line around the bag body doubly or trebly. However, not only does this deteriorate the appearance as a flexible permeable container but also, at the accommodation in the external pack, the hanging line is likely to engage with the external pack. Furthermore, winding doubly or trebly is difficult in the production line producing the flexible permeable container. Therefore, winding doubly or trebly is not practical.

Summary of The Invention

[0012] The present invention has been made with a view toward resolving the above problems of the prior art.

[0013] Therefore, it is an object of the present invention to provide a flexible permeable container in which a satisfactory amount of contents can be charged, which ensures high efficiency in extraction from the contents and is not bulky so that the accommodation thereof in an external pack can be conducted smoothly and which realizes an enhanced appearance.

[0014] This object is achieved, according to the invention, with a container comprising the features of claim 1.

[0015] The foregoing and other objects, features and advantages of the present invention will become apparent from the following detailed description and appended claims taken in connection with the accompanying drawings.

Brief Description of The Drawings

[0016] In the drawings:

Fig. 1 is a perspective view of a flexible permeable container according to the first embodiment of the present invention which is in folded form;
Fig. 2 is a perspective view of a flexible permeable container according to the first embodiment of the present invention which is being unfolded;
Fig. 3 is a sectional view of a flexible permeable container according to the first embodiment of the

present invention which is in folded form;

Fig. 4 is a perspective view of a flexible permeable container according to the first embodiment of the present invention which is being subjected to extraction;

Fig. 5 is a plan showing the move of contents in the first embodiment of the present invention;

Fig. 6 is a perspective view of a flexible permeable container according to the second embodiment of the present invention which is in folded form;

Fig. 7 is a sectional view of a flexible permeable container according to the second embodiment of the present invention which is in folded form;

Fig. 8 is a perspective view of a flexible permeable container according to the second embodiment of the present invention which is being subjected to extraction;

Fig. 9 is a perspective view of one form of bag body having a hanging member secured thereto;

Fig. 10 is a perspective view of one form of bag body having a plurality of hanging lines secured thereto;

Fig. 11 is a perspective view of another form of bag body in folded form;

Fig. 12 is a plan of another planar morphology of bag body;

Fig. 13 is a plan of still another planar morphology of bag body;

Fig. 14 is a plan of a further planar morphology of bag body;

Fig. 15 is a plan of still a further planar morphology of bag body;

Fig. 16 is a plan of still a further planar morphology of bag body;

Fig. 17 is a perspective view of a flexible permeable container according to the third embodiment of the present invention;

Fig. 18 is a plan of a tag used in the third embodiment of the present invention;

Fig. 19 is a sectional view of a flexible permeable container according to the third embodiment of the present invention;

Fig. 20 is a perspective view of a flexible permeable container according to the third embodiment of the present invention which is being subjected to extraction;

Fig. 21 is a plan of a conventional flexible permeable container;

Fig. 22 is a perspective view of the conventional flexible permeable container which is being subjected to extraction;

Fig. 23 is a perspective view of another conventional flexible permeable container;

Fig. 24 is a perspective view of the other conventional flexible permeable container which is being subjected to extraction; and

Fig. 25 is a perspective view of the other conventional flexible permeable container which is being subjected to another mode of extraction.

Detailed Description of The Invention

[0017] For attaining the above objects, in the present invention, there is provided a flexible permeable container comprising

a liquid-permeable flexible bag body having a top surface and a bottom surface ,

the top surface and the bottom surface coupled together by means of a side surface , and the top surface and the bottom surface being planar,

characterized in that:

the side surface before immersion in a liquid has essentially only one bending zone on which the side surface is bent and folded up, while the side surface after immersion in a liquid is unfolded to result in substantial elimination of the bending.

[0018] In this structure, the bag body is flat in ordinary form because of the folding of the side surface. Therefore, the flexible permeable container is free from bulkiness and it can easily be accommodated in an external pack. Moreover, the top surface and bottom surface lie one upon the other because of the folding of the side surface, so that the flexible permeable container has an orderly configuration to exhibit enhanced appearance.

[0019] At the time of extraction, the side surface is released from folded form and straightened by the weight of swollen contents, the elongation of the material constituting the bag body, etc. Thus, the bag body assumes an unfolded state and a large internal space is realized by the change of the side surface from the folded state to the extended unfolded state. Contents are placed in the large internal space, so that the amount of charged contents can be satisfactorily large.

[0020] The flexible permeable container of the present invention may further comprise at least one hanging member having an end fixed to the top surface or bottom surface of the liquid-permeable flexible bag body.

[0021] In this structure, the use of the hanging member fixed to the bag body enables not only hanging the bag body to thereby promote straightening of the side surface of the bag body but also shaking the bag body to thereby expedite the extraction. This hanging member is, for example, a hanging line, a hard stick or the like.

[0022] In the flexible permeable container of the present invention, the hanging member may be a hanging line and the hanging line may be wound around an external surface of the bag body across part folded, the above hanging line having its one end fixed to the top surface or bottom surface of the bag body and having its other end detachably secured to the top surface or bottom surface of the bag body.

[0023] In this structure, the hanging line is wound around the bag body across the folded part of the side surface of the bag body. Thus, the hanging line is wound

not only over the top surface and bottom surface but also across the folded part of the side surface of the bag body. Therefore, the total length of the hanging line is increased, so that not only is the falling into the vessel prevented at the time of hanging but also it becomes unnecessary to winding around the bag body doubly or trebly.

[0024] Moreover, the flexible permeable container of the present invention may further comprise not only at least one hanging line having an end fixed to the top surface or bottom surface of the bag body but also a tag having a locking part for locking to an external member, which tag is attached to the other end of the hanging line.

[0025] In this flexible permeable container, the tag is physically joined with the external member such as a vessel by engaging the locking part of the tag with the external member. Therefore, falling of the tag from the external member is prevented. Thus, the flexible permeable container is free from falling of the tag and the hanging line, so that it is not necessary to increase the length of the hanging line for avoiding the falling thereof.

[0026] With respect to the locking part, it may be either a slit having its one end open at an peripheral edge of the tag and having its other end extending to an internal part of a surface of the tag or a lip formed in the tag along a cutting line having the form of a partially open closed loop so that the lip can be raised up in the state of being partially coupled to the tag.

[0027] In each of the above flexible permeable containers, the side surface may be folded so as to lie over the top surface and the bottom surface of the bag body or may be folded so as to lie outside the top surface and the bottom surface of the bag body.

[0028] Moreover, in the flexible permeable container of the present invention, the top surface and bottom surface of the bag body may have polygonal shapes, may have polygonal shapes having curved corners or may be shaped so as to have curved peripheries. It is preferred that the top surface and bottom surface of the bag body have polygonal shapes having curved corners or be shaped so as to have curved peripheries from the viewpoint that the contents are not caught and not stopped by the bag body with the result the contents smoothly move in the bag body to thereby enhance extraction efficiency.

Effect of The Invention

[0029] The flexible permeable container of the present invention comprises a liquid-permeable flexible bag body having a top surface and a bottom surface, the top surface and the bottom surface coupled together by means of a side surface, the side surface having a bending zone on which the side surface is bent and folded up. By virtue of this structure, the bag body is flat and free from bulkiness, so that the flexible permeable container can easily be accommodated in an external pack. Further, hence, the flexible permeable container has an

orderly configuration to thereby exhibit enhanced appearance. Still further, the accommodating capacity of the bag body can be large, so that the amount of charged contents can be satisfactorily increased. The contents can smoothly move in the bag body to thereby enhance extraction efficiency.

[0030] In the present invention, the hanging member is secured to the above bag body to thereby enable hanging the bag body. Therefore, the extracting operation can be easily performed.

[0031] Further, in the present invention, the hanging line is wound around the external surface of the bag body across the folded part of the side surface to thereby enable satisfactorily increasing the length of the hanging line. Therefore, falling of the hanging line into the vessel can be prevented at the time of extraction.

[0032] Still further, in the flexible permeable container of the present invention, the tag is locked to an external member, so that falling of the tag from the external member can be prevented. Therefore, not only can sanitary extraction be performed but also it is not necessary to increase the length of the hanging line. Hence, the handling thereof can be facilitated and the bulkiness of the bag body can be avoided.

Preferred Embodiment of The Invention

[0033] The present invention will now be described in greater detail with reference to the following Embodiments, which should not be construed as limiting the scope of the invention.

Embodiment 1

[0034] The first embodiment of the present invention will now be described with reference to Figs. 1 to 5. The flexible permeable container 1 comprises the bag body 2, which encloses contents 3 (see Fig. 3).

[0035] The bag body 2 is composed of a material having such a permeability that liquids can be infiltrated therethrough and having such a flexibility that a folding or unfolding can be performed. For example, a net of woven synthetic resin fibers, a nonwoven fabric, a nylon gauge or the like can be mentioned as the flexible liquid-permeable bag body material. The bag body material is generally supplied in the form of a long sheet and folded, sealed and/or cut into shown shapes.

[0036] Referring to Fig. 3, the bag body 2 comprises a top surface 4 and a bottom surface 5 arranged opposite to each other, the top surface 4 and the bottom surface 5 coupled together by means of right and left side surface segments 6,6. In this embodiment, each of the top surface 4 and the bottom surface 5 is shaped into a sideways long hexagon, and the right and left side surface segments 6,6 couple the top surface 4 and the bottom surface 5 together in the direction of the length of the bag body 2. That is, as shown in Figs. 1 and 2, the top surface 4, the bottom surface 5 and the side surface

6 coalesce at both lengthways ends 2a,2b of the bag body 2, but, between these lengthways ends 2a,2b, the side surface 6 is folded so as to lie over the top surface 4 and the bottom surface 5.

[0037] Referring to Figs. 1 to 3, numeral 7 denotes a bending zone provided for folding the side surface 6. This bending zone 7 is positioned in approximately the middle of each side surface segment 6 and linearly extends along the direction of the length of the bag body 2. Each of the right and left side surface segments 6,6 is folded with its one half upon the other on the border of the bending zone 7. Numeral 15 denotes a folding part formed on the side surface 6. This folding causes the top surface 4 and the bottom surface 5 to pile one upon the other through the medium of the side surface 6, so that the bag body 2 can have a thin flat shape.

[0038] The thus obtained flexible permeable container 1 is accommodated in a gas-barrier external pack 8 (see Fig. 1) and shielded from outside air in order to prevent the oxidation of the contents 3 and the evaporation of odor therefrom. The accommodation in this external pack 8 is conducted with the side surface 6 folded up as shown in Fig. 1. When the side surface 6 is thus folded, the whole of the bag body 2 is flat and is not bulky, so that the flexible permeable container 1 is not brought into engagement with the external pack 8 to thereby enable smoothly carrying out the accommodation into the external pack 8.

[0039] Further, when the side surface 6 is thus folded, the top surface 4 and the bottom surface 5 are piled one upon the other in a complete fashion to thereby exhibit an orderly configuration. Therefore, the flexible permeable container 1 has enhanced appearance and, when taken out by opening the external pack 8, exhibits enhanced attractiveness to thereby bring about a marketability increase.

[0040] Fig. 4 shows the flexible permeable container of this embodiment which is being subjected to an extraction. The bag body 2 in folded form is placed in a vessel such as a cup 9 and hot water 10 is poured therein. Alternatively, the bag body 2 in folded form is placed in a vessel such as a cup 9 having hot water poured therein in advance. As a result, hot water 10 is infiltrated into the bag body 2 and absorbed by the contents 3 charged in the bag body 2. The contents 3 swell. The side surface 6 is released from the folded form and straightened by the weight of the swollen contents 3 and by an action or interaction of relaxation and thermal expansion of the bag body material attributed to the contact of the bag body 2 with hot water, so that the top surface 4 and bottom surface 5 are set apart from each other to thereby reach an unfolded state.

[0041] In this unfolded state, the bag body 2 has a large internal space and, in the space, the contents 3 contact hot water. Therefore, an extraction can be conducted at high efficiency within a short period of time. The above means that the contents 3 are charged in a space which will be enlarged by the unfolding. Thus, the

amount of contents charged in the bag body 2 can be increased so that the charging of contents in a satisfactory amount can be realized. Examples of the above contents 3 include tea leaves such as those of green tea, black tea and oolong tea, powder of table luxuries such as that of coffee beans, soup stock materials such as dried small sardines, tangle and powdery shavings of dried bonito, drugs such as medical decoction and other materials to be extracted.

[0042] At the above extraction, hot water 10 may be stirred by a spoon, etc., so that a water flow occurs in the vessel 9. In this embodiment, the internal space of the bag body 2 is enlarged as mentioned above and, in the large internal space, the contents 3 can freely move. Therefore, the degree of contact of the contents 3 with hot water is increased to thereby realize further enhancement of extraction efficiency.

[0043] The effect of the water flow 12 made by stirring will be described below, referring to Fig. 5. In this embodiment, the bag body 2 is shaped into a sideways long hexagon whose corners 11 have obtuse angles greater than 90°. Therefore, the corners 11 do not interfere with the move of the contents 3, so that the contents 3 are neither brought into engagement with the corners 11 nor stopped at the corners 11 and, together with the water flow 12 made by stirring, can conduct a smooth revolving movement in the bag body 2. Therefore, the extraction efficiency dependent on the stirring can further securely be enhanced.

Embodiment 2

[0044] The second embodiment of the present invention will now be described with reference to Figs. 6 to 8. As in the first embodiment, the bag body 2 has a top surface 4 and a bottom surface 5 both shaped into a sideways long hexagon, which are coupled together by means of a side surface 6. The side surface 6 is provided with a bending zone 7 on which the side surface 6 is folded so as to lie over the top surface 4 and the bottom surface 5, thereby exerting the same effect as in the first embodiment.

[0045] In this embodiment, the flexible permeable container is additionally provided with a hanging line 20. The hanging line 20 has its one end 21 fixed to approximately the center of the top surface 4 of the bag body 2 by, for example, ultrasonic fusion bonding or thermal fusion bonding.

[0046] A tag 22 of, for example, a piece of paper or plastic is secured to the other end of the hanging line 20, and the tag 22 is detachably secured to the top surface 4 of the bag body 2. The method of detachably securing the tag 22 is not particularly limited. For example, a hot melt adhesive may be applied to the bottom of the tag 22, heated and cooled to thereby develop an adhesive strength between the tag 22 and the top surface 4 of the bag body 2.

[0047] The intermediate part of the hanging line 20

between the fixed end 21 and the tag 22 is wound around the external surface of the bag body 2. This winding is conducted not only around the peripheral part but also across the folding part of the side surface 6.

[0048] Figs. 6 and 7 show the way of winding the hanging line 20. The side surface 6 of the bag body 2 has the folding part 15 formed by folding the side surface 6 on the bending zone 7 to thereby cause the same to lie over the top surface 4 and the bottom surface 5. The hanging line 20 having its one end 21 fixed to approximately the center of the top surface 4 of the bag body 2 first extends on the top surface 4, secondly across the folding part 15 of one side (right side in Fig. 7) of the side surface 6, thirdly on the bottom surface 5, fourthly across the folding part 15 of the other side (left side in Fig. 7) of the side surface 6 and finally again on the top surface 4. The tag 22 secured to the other end of the hanging line 20 is attached to the top surface 4.

[0049] In the above structure in which the hanging line 20 extends not only on the top surface 4 and bottom surface 5 of the bag body 2 but also across the folding part 15 of the side surface 6, the length of the hanging line 20 is increased as much as that corresponding to the folding part 15 as compared with the structure in which the hanging line 20 is wound around only the external surface of the bag body. Therefore, the hanging line 20 can have a satisfactory length to thereby avoid falling of the hanging line 20 into the vessel 9 at the time of extraction and enable securely conducting extraction operation such as shaking.

[0050] Further, despite the thus increased length, the hanging line 20 extends across the folding part 15, so that the hanging line 20 is not set apart from the bag body 2 to thereby realize a compact structure. Therefore, not only can engagement of the hanging line 20 with the external pack be avoided at the time of accommodation in the external pack to thereby enable smooth accommodation but also a pleasant design free of superfluity of the hanging line 20 can be realized.

[0051] Fig. 8 shows the way of extraction conducted in this embodiment. The tag 22 is peeled from the bag body 2, and the bag body 2 is hung. Either is the bag body 2 immersed in hot water 10 of the vessel 9 or hot water 10 is poured on the bag body 2. Thus, the contents 3 of the bag body 2 swell to thereby increase the weight thereof, so that the folded side surface 6 is straightened with the result that the bag body 2 is three-dimensionally expanded, leading to an enlargement of the internal space of the bag body 2. Therefore, as in the first embodiment, not only is the degree of contact of the contents 3 with hot water 10 increased but also the contents 3 smoothly move in the bag body 2 to thereby enhance extraction efficiency.

[0052] Figs. 9 and 10 show examples of hanging members used for hanging the bag body 2. In Fig. 9, use is made of a hard stick 25 such as a plastic rod. One end 26 of the stick 25 is fixed to approximately the center of the top surface 4 of the bag body 2. The use of the

hard stick 25 realizes a strong coupling of the bag body 2 with the stick 25 to thereby enable straightforward transmission of shaking to the bag body 2. Therefore, there is an advantage in that the bag body 2 can efficiently be shaken.

[0053] In Fig. 10, two hanging lines 20 provided with tags 22 are secured to the bag body 2, so that the bag body 2 can be hung stably and firmly. The use of this structure in a large-capacity bag body 2 packed with a large amount of contents enables effective hanging and shaking. The same effect as in Fig. 10 can be exerted by the use of a single hanging line 20 whose both ends are fixed to the bag body 2. Instead, use can be made of at least three hanging lines 20.

[0054] Fig. 11 shows another mode of folding of the bag body 2. The bag body 2 has a top surface 4 and a bottom surface 5 both shaped into a quadrangle such as a square or rectangle, both lateral sides of the top surface 4 and bottom surface 5 coupled together by means of a side surface 6. The side surface 6 is provided with a bending zone 7 on which the side surface 6 is folded into two sections. Although this folding is conducted so that the top surface 4 and the bottom surface 5 are piled one upon the other, the side surface 6 is folded toward outside these surfaces piled one upon the other.

[0055] That is, this folding is such that the side surface 6 is shaped into a flap and protrudes toward outside the top surface 4 and bottom surface 5. Despite the folding toward outside the top surface 4 and bottom surface 5, the bag body 2 only has its width in folded form enlarged and assumes a thin flat shape free from bulkiness. Further, its outer configuration can be orderly. Thus, accommodation in an external pack is not interfered with. Still further, at the time of extraction, the folded side surface 6 is smoothly straightened so that the internal space of the bag body 2 is enlarged to thereby enable enhancing extraction efficiency.

[0056] Figs. 12 to 16 show other modified shapes of the planar configuration, namely, top surface 4 (or bottom surface 5) of the bag body 2. Even in the use of the above modified shapes, the top surface 4 and the bottom surface 5 are coupled together by means of the side surface 6 in folded form in the same manner as described above.

[0057] In Figs. 12 and 13, the top surface 4 (and the bottom surface 5) of the bag body 2 is shaped into a quadrangle, in which the four corners 30 are cut off by a curve. Specifically, in Fig. 12, each corner 30 of the top surface 4 is curved into an arc with a protrusion inward which would result from cutting off by an arc applied from outside. On the other hand, in Fig. 13, each corner 30 of the top surface 4 is curved into an arc with a protrusion outward which would result from cutting off by an arc applied from inside. This curving of each corner 30 enables smooth move of the contents 3 in the bag body 2 without being stopped by engagement with the corner 30. Therefore, the degree of contact with the

contents 3 is increased to thereby enable enhancing extraction efficiency.

[0058] Moreover, the top surface 4 of the bag body 2 may have a circular shape as shown in Fig. 14 or may have a shape of two circles partially united with each other as shown in Fig. 15. Furthermore, the top surface 4 may have an elliptic shape as shown in Fig. 16. In these shapes, the top surface 4 has an outer configuration surrounded by a curve, so that the contents 3 can smoothly move in the bag body 2 without engaging with the body. Therefore, these shapes also ensure high extraction efficiency.

[0059] In the above embodiments, a single bending zone 7 is provided for folding the side surface 6.

Embodiment 3

[0060] The flexible permeable container 1 according to the third embodiment of the present invention will now be described with reference to Figs. 17 to 20, in which the same characters are used to denote the same parts or elements as in the preceding embodiments. In this embodiment as well, the bag body 2 has a top surface 4 and a bottom surface 5 both shaped into a sideways long hexagon, which are coupled together by means of a side surface 6. The side surface 6 is provided with a folding part 15, at which the side surface 6 is folded so as to lie over the top surface 4 and the bottom surface 5.

[0061] In this embodiment, a hanging line 20 has its one end 21 fixed to the top surface 4 of the bag body 2, so that the hanging line 20 is secured to the bag body 2. A tag 40 is secured to the other end 22 of the hanging line 20.

[0062] The tag 40 is separately shown in Fig. 18, which comprises a tag body 41 having a slit 42 as a locking part. The tag body 41 is composed of a piece of paper, a piece of synthetic resin or other material and is generally shaped into a small thin quadrangle. It is to be noted that the tag body 41 is not limited thereto as long as it is a small thin piece. The tag body 41 may be rectangular, circular, triangular or polygonal or may have other shapes.

[0063] The slit 42 has its one end 42a open at an peripheral edge of the tag body 41 and has its other end 42b linearly extending to an internal part of a surface of the tag body 41. The slit 42 extends to the vicinity of the center of the tag body 41, and the other end 42b of the slit 42 is connected in communicating relationship to a circular locking hole 43 whose diameter is larger than the width of the slit 42. The slit 42 is locked to an external member such as a vessel 9.

[0064] Fig. 20 shows the flexible permeable container 1 according to this embodiment which is being subjected to extraction. The inside of the vessel 9 as an external member is filled with hot water 10. At the time of extraction, the open end 42a of the slit 42 is brought to the brim of the vessel 9, and the brim of the vessel 9 is inserted in the slit 42 through the open end 42a. The in-

sertion is stopped when the brim of the vessel 9 has reached the locking hole 43. This insertion causes the tag body 41 of the tag 40 to catch the brim of the vessel 9. The tag 40 is locked to the vessel 9 by this catching.

[0065] The thus attained locking of the tag body 41 to the brim of the vessel 9 prevents the tag 40 from falling in the vessel 9. Hence, the tag 40 is not dipped in hot water 10, so that neither sanitary problem nor leaching of the printing ink of the tag would occur. Moreover, it is not necessary to increase the length of the hanging line 20 for the purpose of preventing falling of the tag 40, so that not only is the consumption of hanging line material reduced but also tangling of the hanging line 20 itself or tangling of the hanging line 20 with the external pack is avoided to thereby ensure enhanced handability.

[0066] Further, the volume of the whole of the flexible permeable container 1 is small because of the use of the short hanging line 20, so that the expansion of the external pack can be prevented at the accommodation of the flexible permeable container 1 in the external pack to thereby ensure enhanced appearance. The length of the hanging line 20 is satisfactory if, as shown in Fig. 19, the hanging line 20 starts from the fixing end 21 on the top surface 4, rounds only the top surface 4 and bottom surface 5 of the bag body 2 without the need to be folded into the bag body 2 across the folding part 15 and holds the tag 40 out on the top surface 4 to thereby lock the tag 40 to the top surface 4.

[0067] Still further, in this embodiment, the large-diameter locking hole 43 connected in communicating relationship to the slit 42 absorbs or relaxes the stress attributed to the insertion of the brim of the vessel 9. Therefore, even when the brim of the vessel 9 has a width larger than that of the slit 42, the slit 42 is not torn to thereby enable secure locking.

Claims

1. A flexible permeable container (1) comprising a liquid-permeable flexible bag body (2) having a top surface (4) and a bottom surface (5), said top surface (4) and said bottom surface (5) coupled together by means of a side surface (6), and said top surface (4) and said bottom surface (5) being planar,
characterized in that
said side surface (6) before immersion in a liquid has substantially only one bending zone (7) on which the side surface (6) is bent and folded up, while said side surface (6) after immersion in a liquid is unfolded to result in substantial elimination of the bending.
2. The flexible permeable container (1) according to claim 1, which further comprises at least one hanging member having an end fixed to the top surface (4) or bottom surface (5) of the liquid-permeable

flexible bag body (2).

3. The flexible permeable container (1) according to claim 2, wherein the hanging member is a hanging line (20) and the hanging line is wound around an external surface of the bag body across part folded, said hanging line (20) having its other end removably secured to the top surface (4) or bottom surface (5) of the bag body (2).
4. The flexible permeable container (1) according to claim 2, wherein the hanging member is a hanging line (20) and wherein a tag (40) having a locking part for locking to an external member is attached to the other end of the hanging line (20).
5. The flexible permeable container (1) according to any of claims 1 to 4, wherein the side surface (6) is folded so as to lie over the top surface (4) and the bottom surface (5) of the bag body (2).
6. The flexible permeable container (1) according to any of claims 1 to 4, wherein the side surface (6) is folded so as to lie outside the top surface (4) and the bottom surface (5) of the bag body (2).
7. The flexible permeable container (1) according to any of claims 1 to 6, wherein the top surface (4) and bottom surface (5) of the bag body (2) have polygonal shapes.
8. The flexible permeable container (1) according to any of claims 1 to 6, wherein the top surface (4) and bottom surface (5) of the bag body (2) have polygonal shapes having curved corners (30).
9. The flexible permeable container (1) according to any of claims 1 to 6, wherein the top surface (4) and bottom surface (5) of the bag body (2) are shaped so as to have curved peripheries.
10. The flexible permeable container (1) according to claim 4, wherein the locking part is a slit (42) having its one end open at an peripheral edge of the tag (40) and having its other end extending to an internal part of a surface of the tag (40).
11. The flexible permeable container (1) according to claim 4, wherein the locking part is a lip (61) formed in the tag (40) along a cutting line (60) having the form of a partially open closed loop so that the lip (61) can be raised up in the state of being partially coupled to the tag (40).
12. The flexible permeable container (1) according to claim 10, wherein the slit (42) at the other end thereof is connected in communicating relationship to a locking hole (43) of dimension greater than that of

the width of the slit (42).

Patentansprüche

1. Flexibler permeabler Behälter (1) mit:

einem flüssigkeitsdurchlässigen Beutalkörper (2) mit einer Oberseite (4) und einer Unterseite (5),

wobei die Oberseite (4) und die Unterseite (5) durch eine Seitenfläche (6) miteinander verbunden sind, und wobei die Oberseite (4) und die Unterseite (5) eben sind,

dadurch gekennzeichnet, daß

die Seitenfläche (6) vor dem Eintauchen in eine Flüssigkeit im wesentlichen nur eine Biegezone (7) aufweist, in der die Seitenfläche (6) gebogen und gefaltet ist, während die Seitenfläche (6) nach dem Eintauchen in eine Flüssigkeit entfaltet ist und sich eine wesentliche Aufhebung der Biegung ergibt.

2. Flexibler permeabler Behälter (1) nach Anspruch 1, der ferner wenigstens ein Aufhängeelement aufweist, dessen eines Ende an der Oberseite (4) oder der Unterseite (5) des flüssigkeitsdurchlässigen flexiblen Beutalkörpers (2) angebracht ist.

3. Flexibler permeabler Behälter (1) nach Anspruch 2, bei dem das Aufhängeelement eine Aufhängeschnur (20) ist und die Aufhängeschnur um die Außenfläche des Beutalkörpers über den gefalteten Teil gewickelt ist, wobei das andere Ende der Aufhängeschnur (20) lösbar an der Oberseite (4) oder der Unterseite (5) des Beutalkörpers (2) angebracht ist.

4. Flexibler permeabler Behälter (1) nach Anspruch 2, bei dem das Aufhängeelement eine Aufhängeschnur (20) ist und bei dem ein Tag (40) mit einem Befestigungsteil zum Befestigen an einem externen Teil am anderen Ende der Aufhängeschnur (20) angebracht ist.

5. Flexibler permeabler Behälter (1) nach einem der Ansprüche 1 bis 4, bei dem die Seitenfläche (6) derart gefaltet ist, daß sie über der Oberseite (4) und der Unterseite (5) des Beutalkörpers (2) liegt.

6. Flexibler permeabler Behälter (1) nach einem der Ansprüche 1 bis 4, bei dem die Seitenfläche (6) derart gefaltet ist, daß sie außerhalb der Oberseite (4) und der Unterseite (5) des Beutalkörpers (2) liegt.

7. Flexibler permeabler Behälter (1) nach einem der Ansprüche 1 bis 6, bei dem die Oberseite (4) und die Unterseite (5) des Beutalkörpers (2) polygonale

Form haben.

8. Flexibler permeabler Behälter (1) nach einem der Ansprüche 1 bis 6, bei dem die Oberseite (4) und die Unterseite (5) des Beutalkörpers (2) polygonale Form mit gerundeten Ecken (30) aufweisen.

9. Flexibler permeabler Behälter (1) nach einem der Ansprüche 1 bis 6, bei dem die Oberseite (4) und die Unterseite (5) des Beutalkörpers (2) mit gekrümmtem Umfangsrand ausgebildet sind.

10. Flexibler permeabler Behälter (1) nach Anspruch 4, bei dem das Befestigungsteil ein Schlitz (42) ist, dessen eines Ende am Umfangsrand des Tags (40) offen ist und dessen anderes Ende sich in den inneren Bereich einer Fläche des Tags (40) erstreckt.

11. Flexibler permeabler Behälter (1) nach Anspruch 4, bei dem das Befestigungsteil eine Lippe (61) ist, die in dem Tag (40) entlang einer Schnittlinie (60) in Form einer teilweise offenen Schleife ausgebildet ist, so daß die Lippe (61) teilweise mit dem Tag (40) verbunden angehoben werden kann.

12. Flexibler permeabler Behälter (1) nach Anspruch 10, bei dem der Schlitz (42) an seinem anderen Ende kommunizierend mit einem Befestigungsloch (43) verbunden ist, dessen Abmessung größer als die Breite des Schützes (42) ist.

Revendications

1. Récipient flexible et perméable (1) comprenant :

un corps de sachet flexible et perméable aux liquides (2) ayant une surface supérieure (4) et une surface inférieure (5),
ladite surface supérieure (4) et ladite surface inférieure (5) couplées ensemble au moyen d'une surface latérale (6), et ladite surface supérieure (4) et ladite surface inférieure (5) étant planes,

caractérisé en ce que

ladite surface latérale (6) avant immersion dans un liquide possède sensiblement une seule zone de pliage (7) le long de laquelle la surface latérale (6) est pliée et repliée, alors que ladite surface latérale (6), après immersion dans un liquide, est dépliée avec pour résultat une élimination sensible du pliage.

2. Récipient flexible et perméable (1) selon la revendication 1, **caractérisé en ce qu'il** comprend en outre au moins un élément suspendu ayant une extrémité fixée à la surface supérieure (4) ou à la sur-

face inférieure (5) du corps de sachet flexible et perméable aux liquides (2).

3. Récipient flexible et perméable (1) selon la revendication 2, **caractérisé en ce que** l'élément suspendu est une ligne suspendue (20) et la ligne suspendue est enroulée autour d'une surface externe du corps de sachet à travers la partie repliée, ladite ligne suspendue (20) ayant son autre extrémité fixée de manière amovible à la surface supérieure (4) ou à la surface inférieure (5) du corps de sachet (2). 5
4. Récipient flexible et perméable (1) selon la revendication 2, **caractérisé en ce que** l'élément suspendu est une ligne suspendue (20) et **en ce qu'une** étiquette (40) ayant une partie d'accrochage pour s'accrocher à un élément externe est fixée à l'autre extrémité de la ligne suspendue (20). 10 15 20
5. Récipient flexible et perméable (1) selon l'une quelconque des revendications 1 à 4, **caractérisé en ce que** la surface latérale (6) est repliée de manière à reposer sur la surface supérieure (4) et la surface inférieure (5) du corps de sachet (2). 25
6. Récipient flexible et perméable (1) selon l'une quelconque des revendications 1 à 4, **caractérisé en ce que** la surface latérale (6) est repliée de manière à reposer à l'extérieur de la surface supérieure (4) et de la surface inférieure (5) du corps de sachet (2). 30
7. Récipient flexible et perméable (1) selon l'une quelconque des revendications 1 à 6, **caractérisé en ce que** la surface supérieure (4) et la surface inférieure (5) du corps de sachet (2) ont des formes polygonales. 35
8. Récipient flexible et perméable (1) selon l'une quelconque des revendications 1 à 6, **caractérisé en ce que** la surface supérieure (4) et la surface inférieure (5) du corps de sachet (2) ont des formes polygonales ayant des coins courbes (30). 40
9. Récipient flexible et perméable (1) selon l'une quelconque des revendications 1 à 6, **caractérisé en ce que** la surface supérieure (4) et la surface inférieure (5) du corps de sachet (2) sont formées de manière à avoir des périphéries courbes. 45 50
10. Récipient flexible et perméable (1) selon la revendication 4, **caractérisé en ce que** la partie d'accrochage est une fente (42) ayant une de ses extrémités ouverte à un bord périphérique de l'étiquette (40) et ayant l'autre de ses extrémités s'étendant vers une partie interne d'une surface de l'étiquette (40). 55

11. Récipient flexible et perméable (1) selon la revendication 4, **caractérisé en ce que** la partie d'accrochage est un rebord (61) formé dans l'étiquette (40) suivant une ligne de découpe (60) ayant la forme d'une boucle fermée partiellement ouverte afin que le rebord (61) puisse être relevé dans un état de couplage partiel avec l'étiquette (40).

12. Récipient flexible et perméable (1) selon la revendication 10, **caractérisé en ce que** la fente (42) à son autre extrémité est connectée en relation de communication avec un trou d'accrochage (43) d'une dimension supérieure à celle de la largeur de la fente (42).

FIG. 1

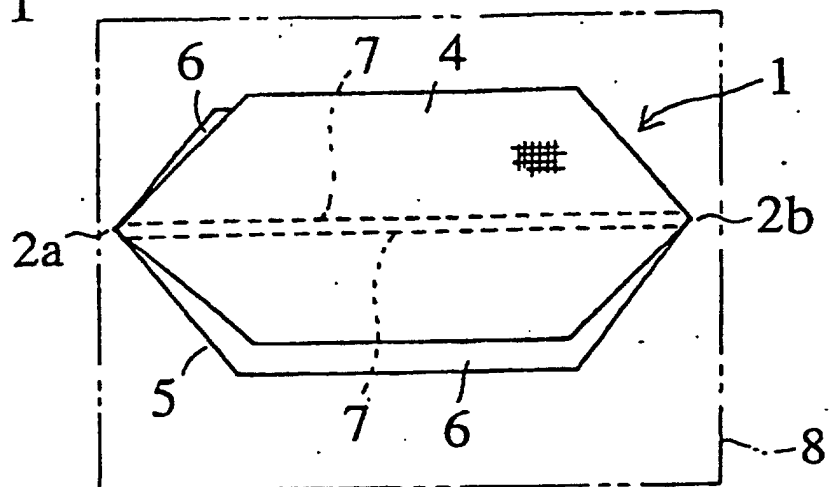


FIG. 2

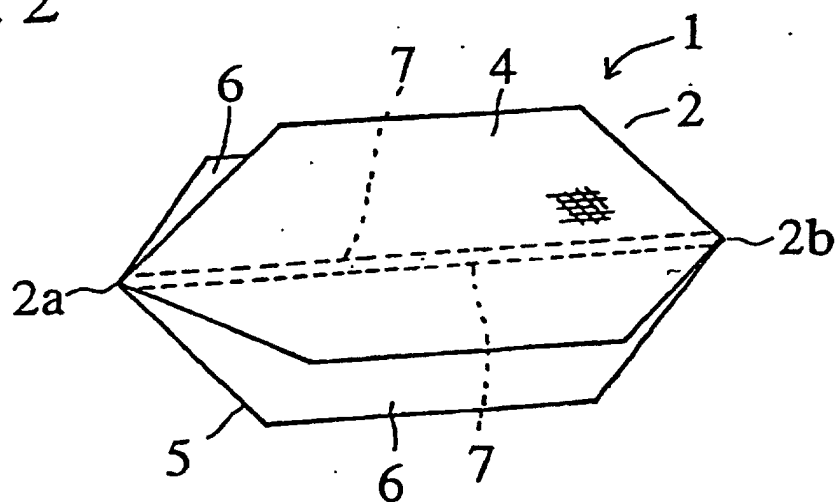


FIG. 3

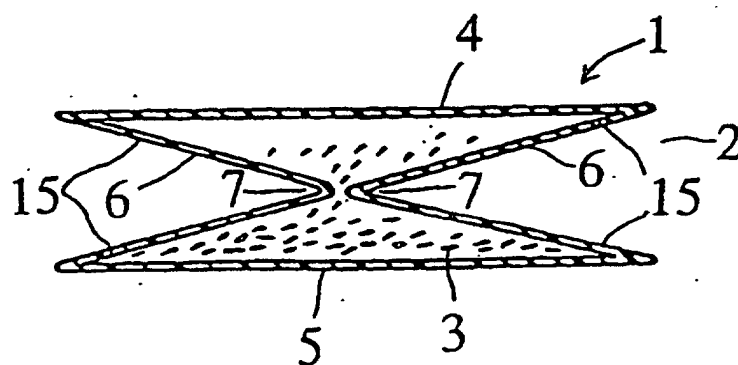


FIG. 4

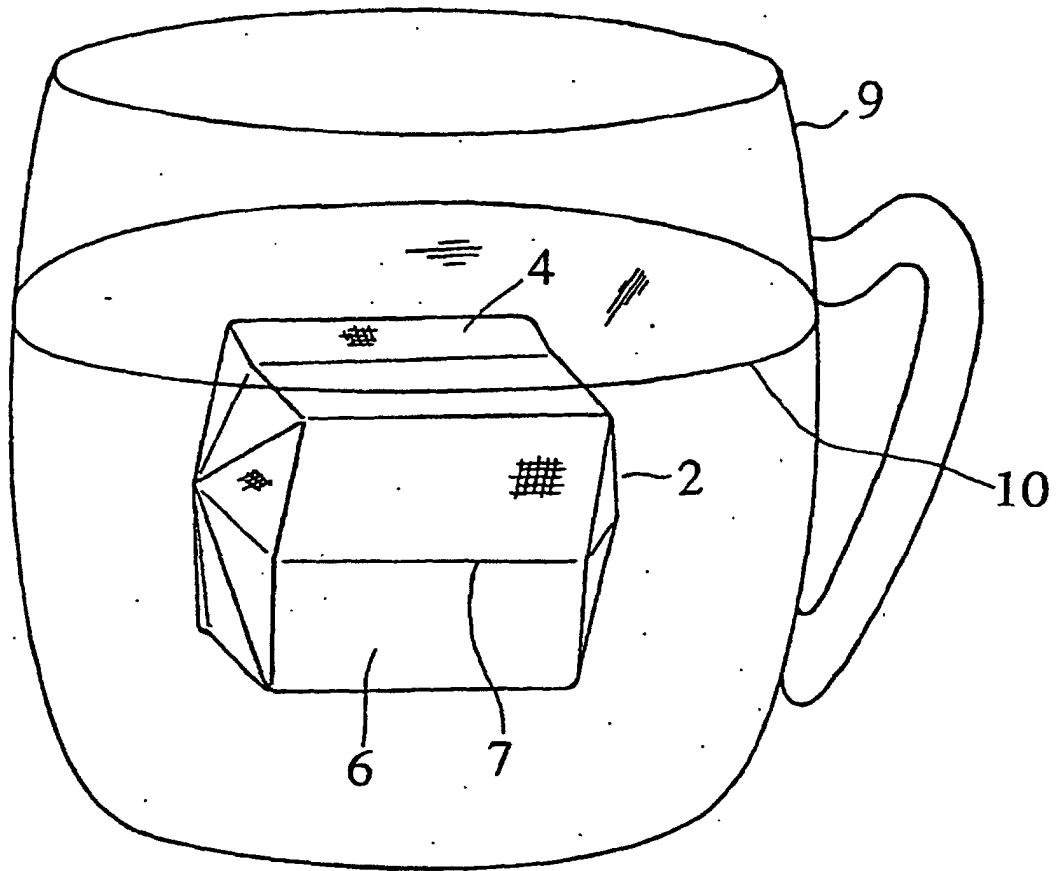


FIG. 5

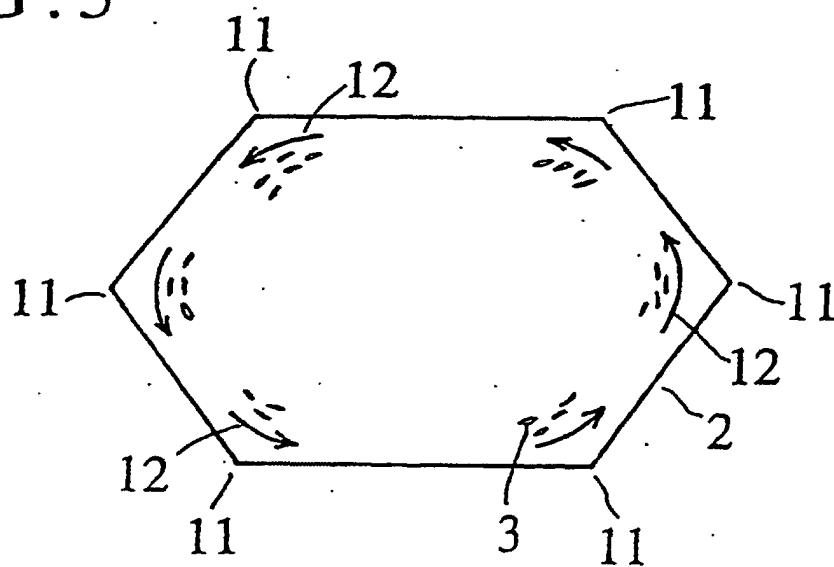


FIG. 6

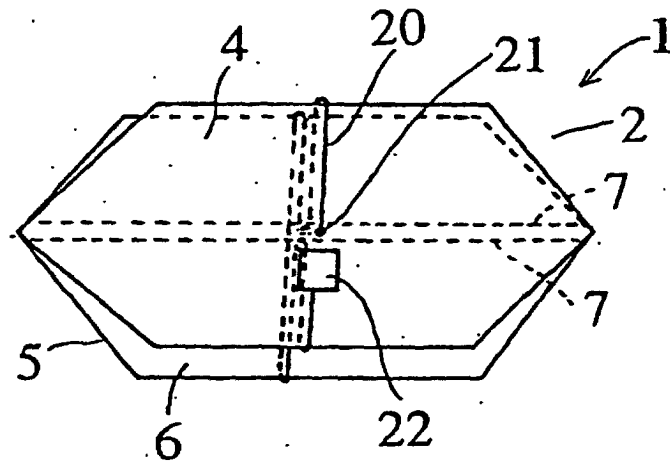


FIG. 7

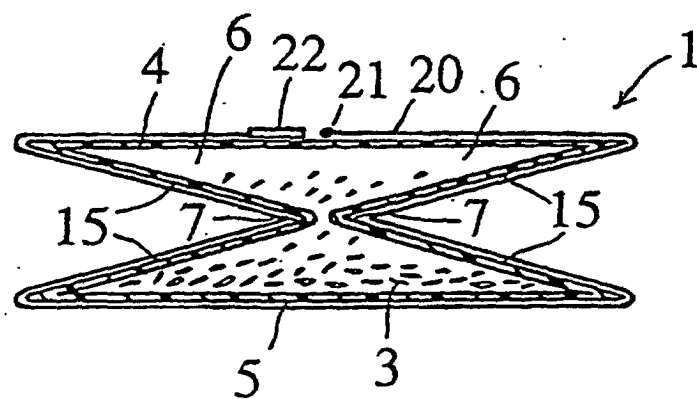


FIG. 8

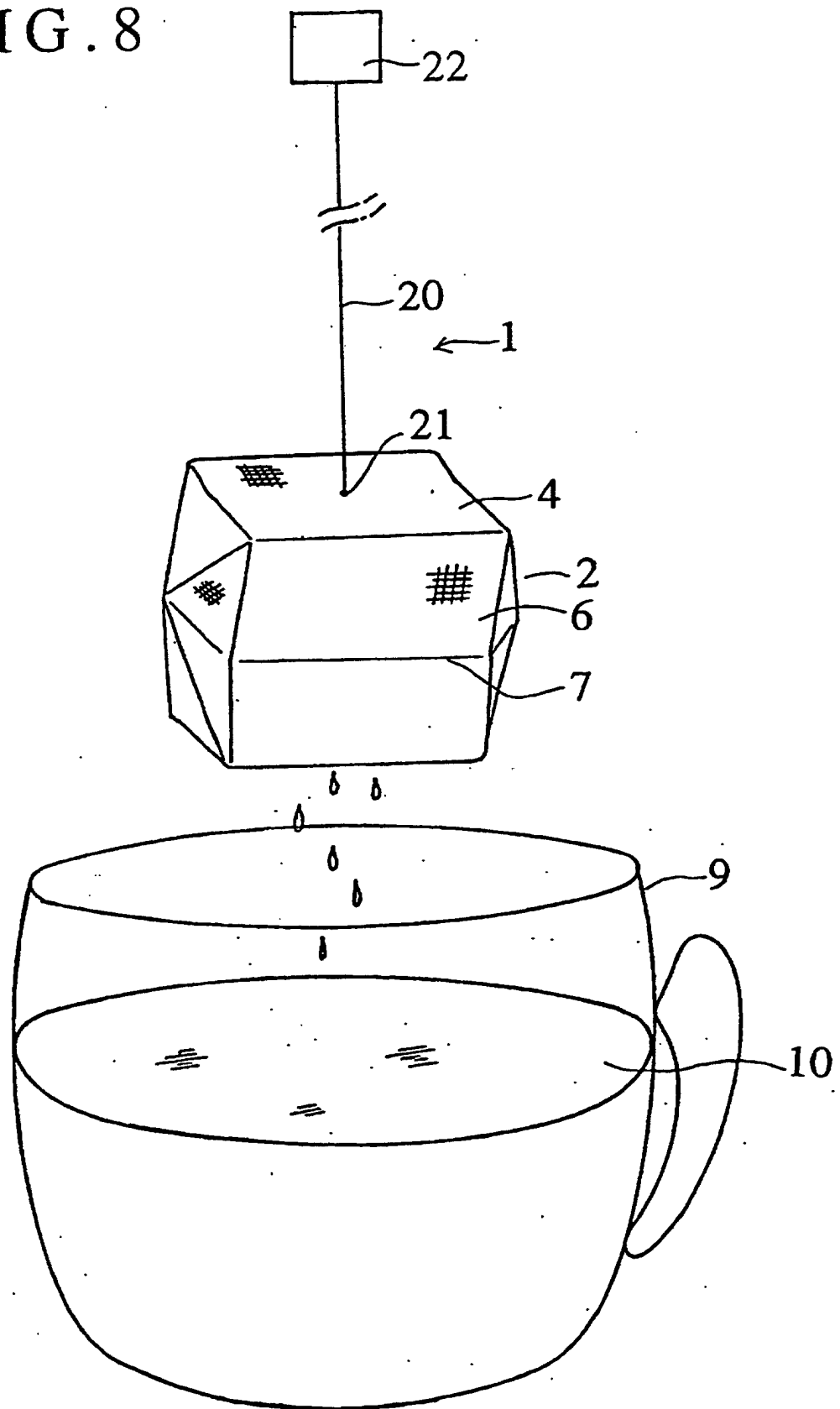


FIG. 9

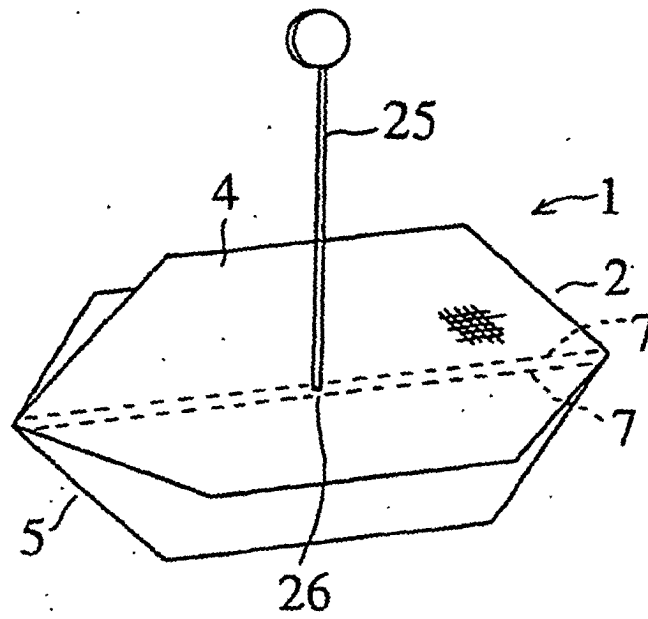


FIG. 10

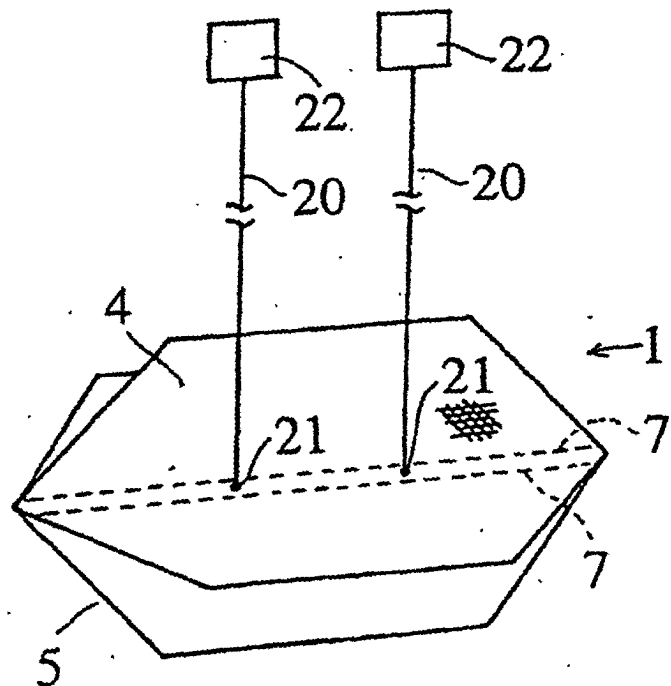


FIG.11

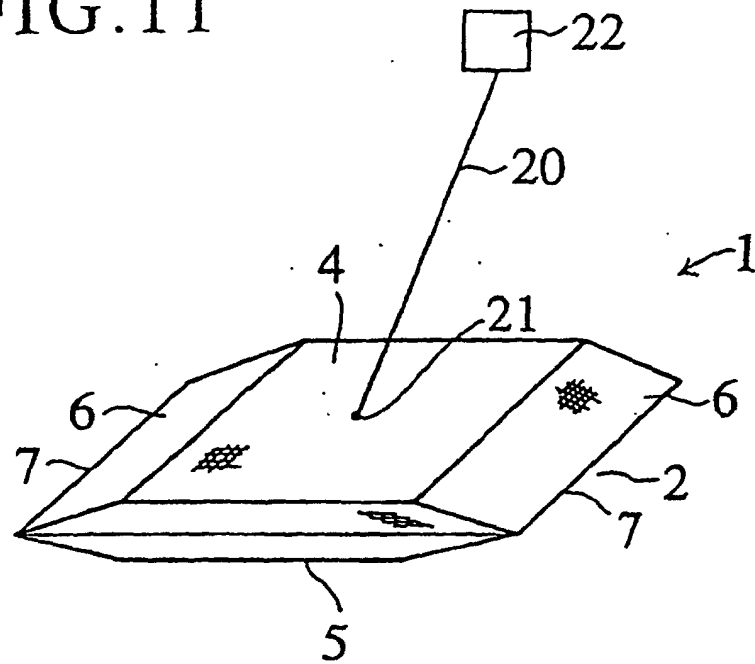


FIG.12

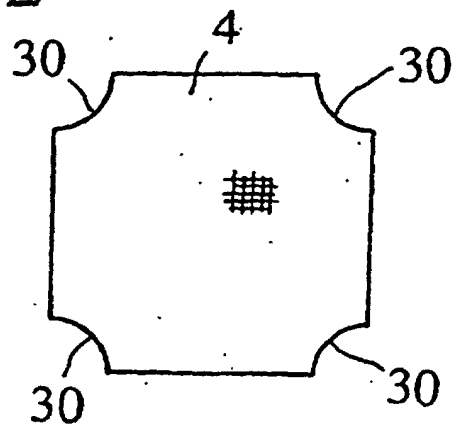


FIG.13

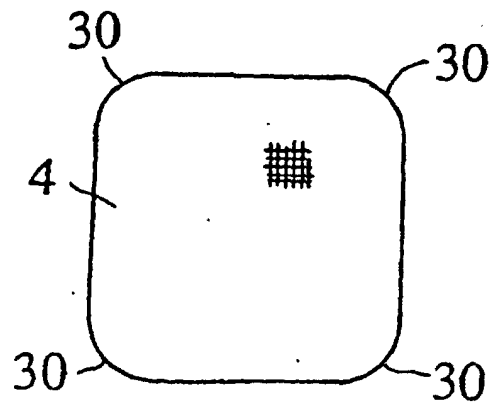


FIG. 14

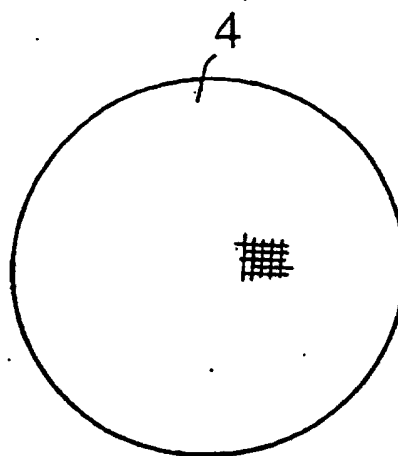


FIG. 15

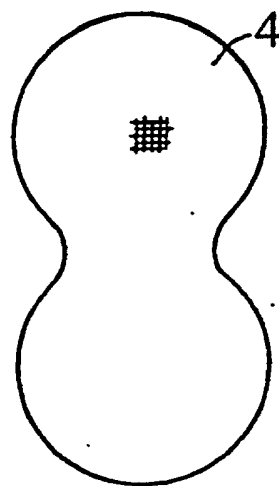


FIG. 16

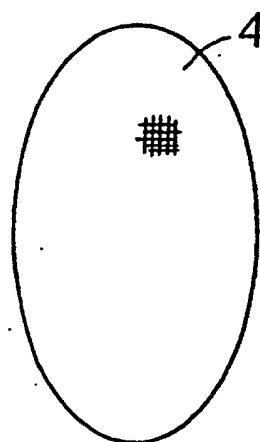


FIG.17

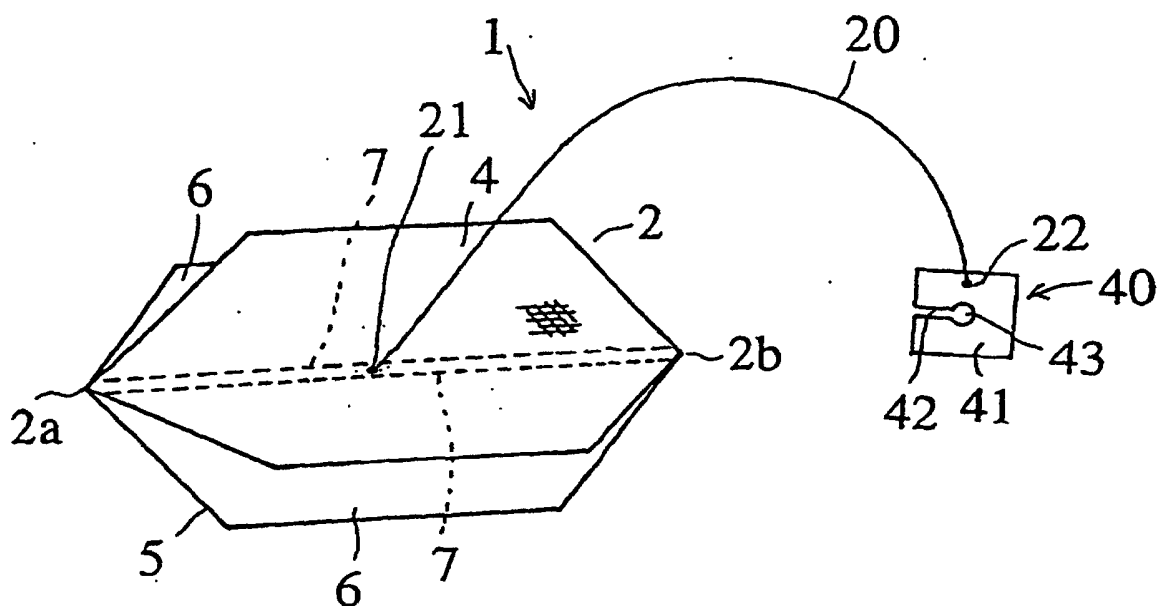


FIG.18

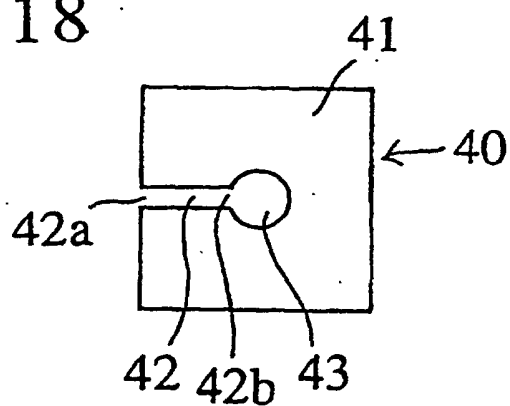


FIG.19

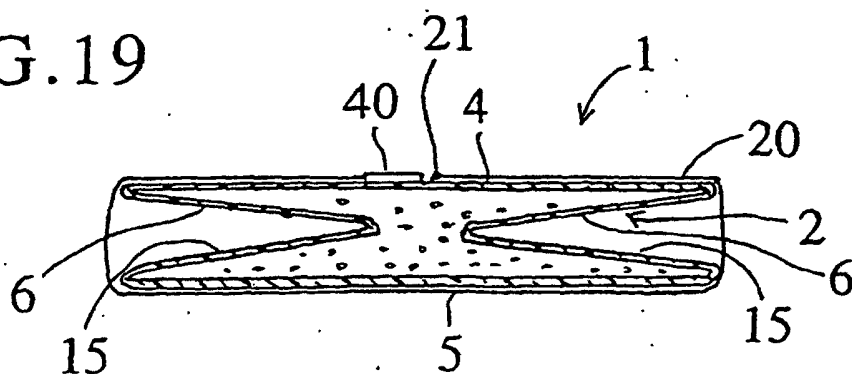


FIG. 20

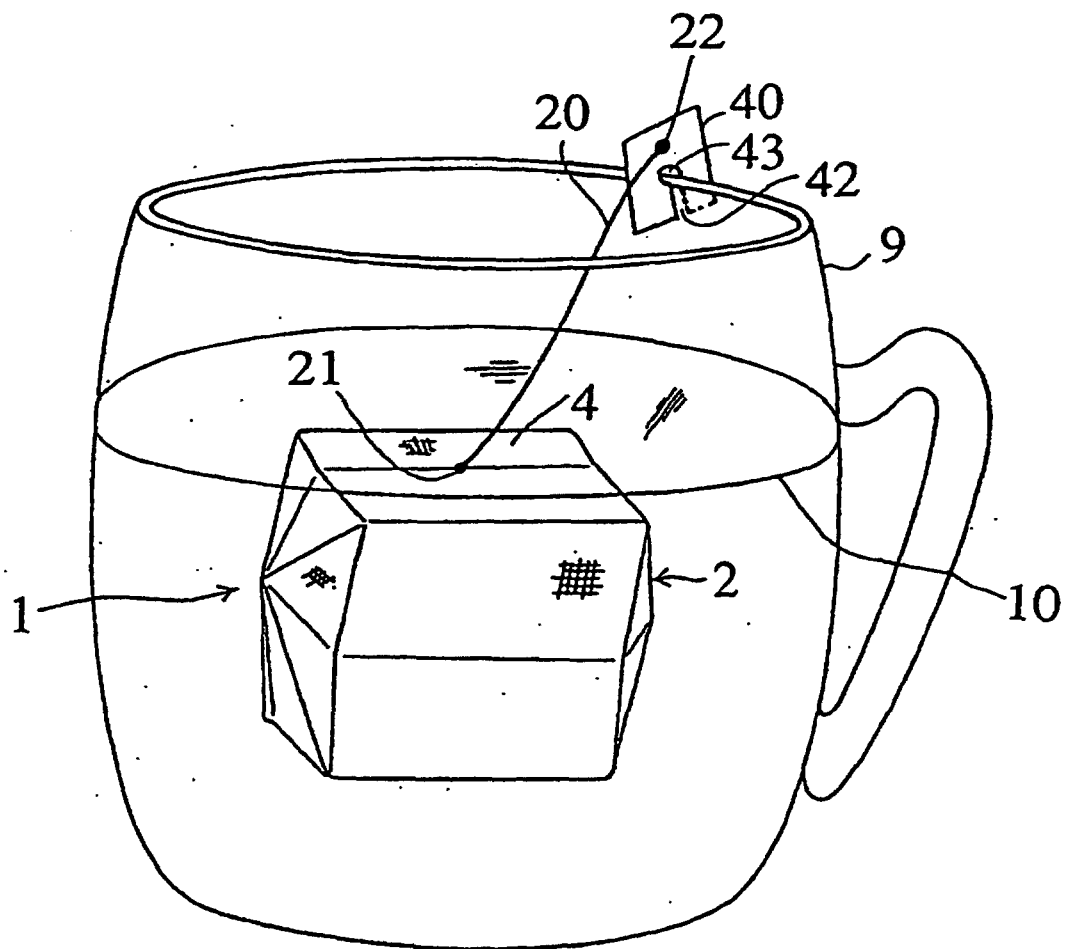


FIG. 21

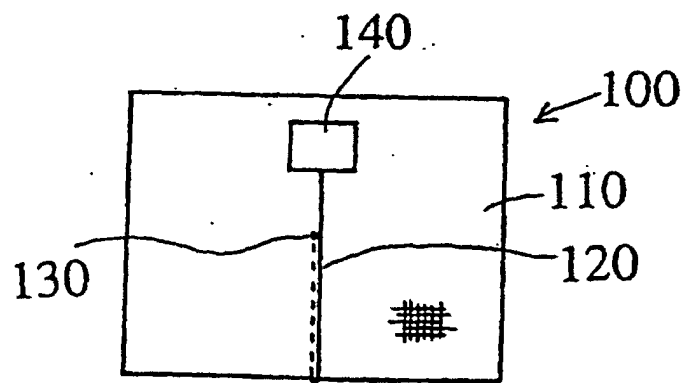


FIG. 22

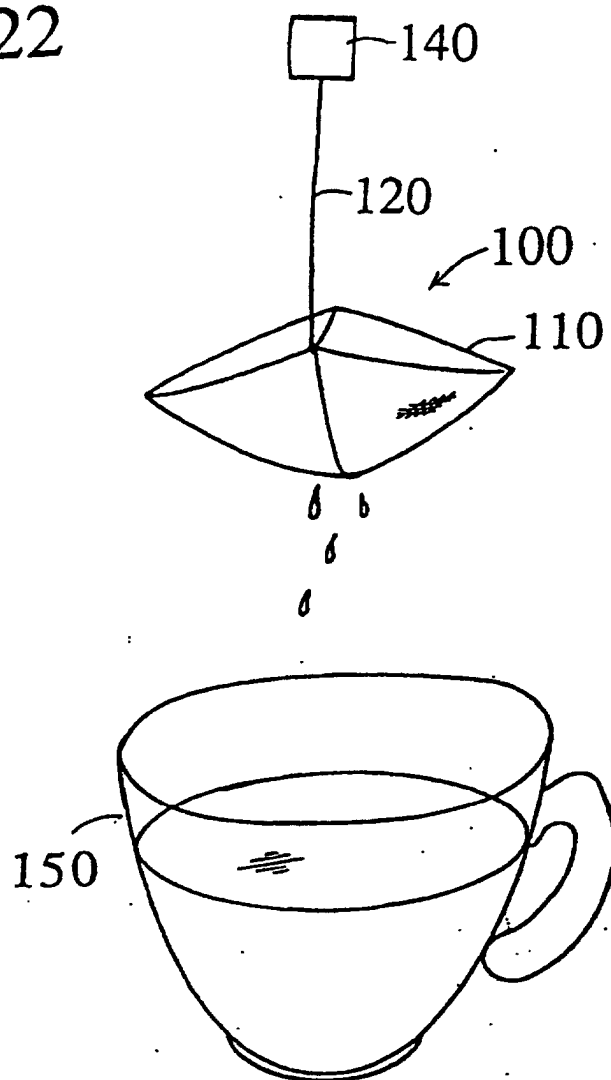


FIG. 23

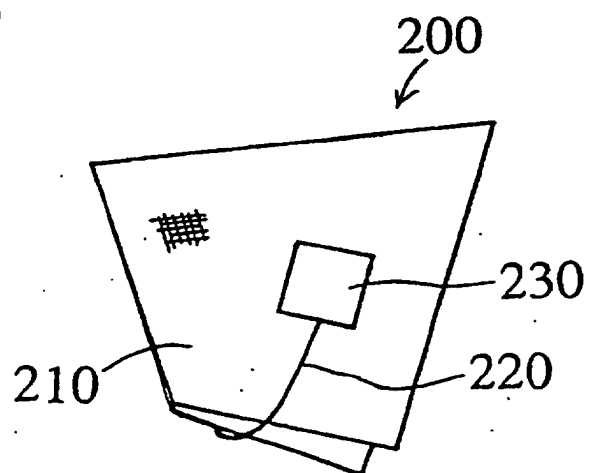


FIG. 24

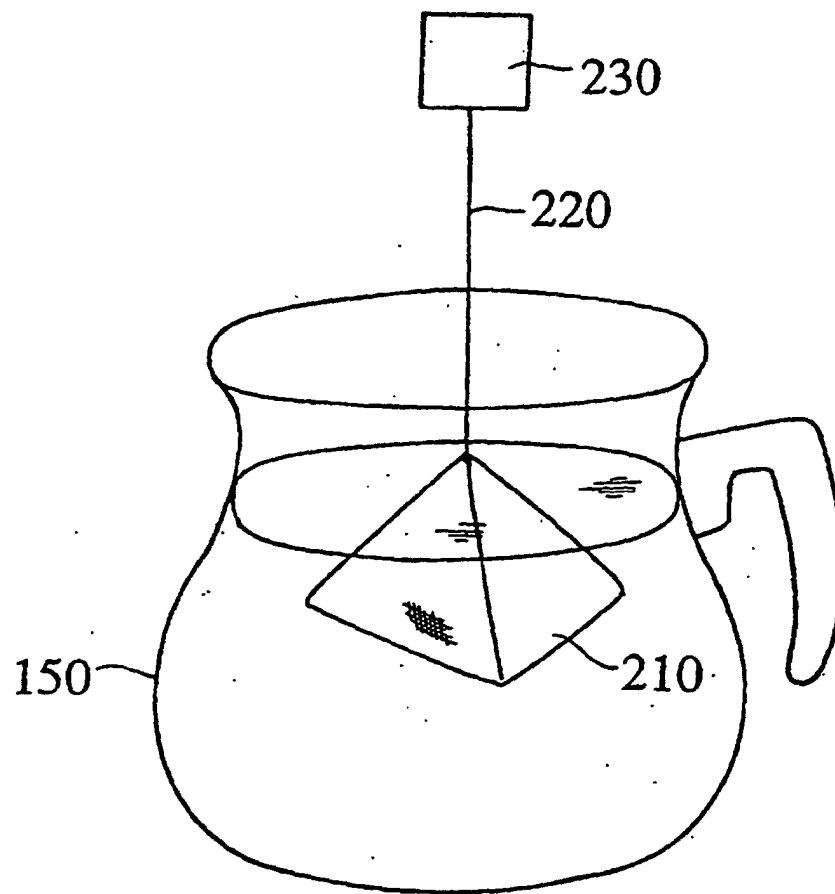


FIG. 25

