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(54) Aseptic liquid packaging container with reclosable opening member

Aseptische Flüssigkeitsverpackung, versehen mit einem wiederverschliessbaren Öffnungselement

Emballage aseptique pour liquides pourvu d'une élément d'ouverture refermable

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(56) References cited:
EP-A- 0 332 800 **EP-A- 0 385 603**
WO-A-92/00884 **DE-A- 2 659 275**
GB-A- 774 247 **US-A- 4 934 590**

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Description

Field of the invention

The present invention relates to aseptic packaging containers for liquids according to the preamble of claim 1 with a reclosable opening member for pouring. In particular, the invention relates to aseptic laminate material containers having a push-in opening in the form of flap doors. The doors are formed in the laminate material by removing the structural stability layer, usually a paper or cardboard layer, from the laminate material on three sides of the doors and keeping the fourth side intact as a hinge for the doors. Further the laminate material comprises outer barrier layers on each side of the cardboard layer which are joined to the cardboard layer but also joined to each other where the cardboard layer has been removed, thereby preventing the cardboard from being exposed to humidity or liquid when the flap doors are opened. The reclosable opening member is attached above the flap doors such that the doors are pushed in by a lever which is cantilevered on one side of a pouring aperture of the reclosable opening member. The push-in lever has at least one recess along its sides into which a flap door engages upon initial opening. Thereby a permanently open opening aperture in the container laminate is maintained, which remains unobstructed over an extended period.

Background of the invention

Opening devices for disposable packaging containers for liquids are well known and have been developed over a long period. For example, DE 2232799 discloses so called gable top cartons as packaging for liquids. The opening is provided by tearing off one side of the top of the gable, thereby creating a pouring spout. This package does not provide reclosure and requires considerable strength or a cutting tool for opening. DE 2407345 discloses flat top packaging for liquids. The opening is a hole, cut out of the flat top which is sealed with a plastic film before filling of the carton. The plastic film is laminated onto the outside of the package and drawn into the hole. Thereby the plastic film seals the side walls of the laminate material. The plastic film can also be used as a reclosing device, however, only with limited resealing function after initial opening. If this opening is provided as a two piece system, the plastic film also has to be disposed of, which in general is negatively registered by the user of such packaging containers.

DE 2520569, DE 2706735, DE 2758092 all disclose improvements to opening designs for packaging made of laminated carton. Partial cutting (half-depth or dashed cutting) of the laminate for easier tearing when opening a package, as well as complex pouring spout constructions are disclosed. Multiple tape closures, for sealing the apertures in such a laminate material, provide initial closure and easy opening. However, they lack the desired reclosability.

DE 2659275 discloses the problem of sterile packaging and the aesthetic issue if laminate material which comprises a layer of fibrous material (like paper or carton), which softens when being exposed to humidity, is used. As a solution DE 2659275 suggests to cut an aperture which is larger than the designed opening for the container into the material, then laminate a film from both sides over the opening. Thereby the fibrous material is fully covered in non-absorbent, humidity insensitive material like polyethylene film. Since this technology was first developed for holes to be punctured by drinking straws, it is hereinafter referred to as straw-hole technology. Straw-hole technology on its own does not provide reclosability or a package without disposable opening tapes or without other pieces which need to be discarded by the user contrary to the present invention. Application of the straw-hole technology is technically not limited to round holes but could be provided along straight or shaped lines or as strips.

DE 3513976 addresses the problem of an aperture in laminate material which has no exposed fibrous materials. The disclosure suggests a multiple layered closure with several sealing points between the additionally introduced layers and the laminate adjacent to the aperture. The aperture itself is simply punched through the laminate.

DE 3808303 provides a reclosable opening device which is applicable to aseptic packaging and using the straw-hole technology to prevent humidity build-up in the fibrous structure of the laminate. The opening device is applied as a single piece. However, a distance ring is removed from the opening device upon initial opening and remains permanently separated from the packaging. It thereby foregoes the advantage of being a single piece opening device. Further, this design has the drawback that the construction height in its unopened state creates problems when packages are stacked onto each other.

EP-A- 167095 discloses a sealed gable top carton having a reclosable opening and pouring spout which is provided as a single piece. The opening device is sealed to the sloped side of the gable top covering a cut away aperture in the carton laminate material. It thereby does not allow separate sterilizing treatment of the opening device and the laminate material. Also the danger of pocket building is not properly addressed by this design.

EP-A-4332, EP-A-141229 and EP-A-214791 provide attempts at reclosable aseptic packaging by using adhesive tape, by inserting a corner of a flat top box into the opening as a reclosure or by a form fitting insertion of the laminate material cut out.

Document WO-A-92/00884 discloses a reclosable liquid tight container corresponding to the preamble of claim 1.

None of the aforementioned packaging containers provides all advantages desired by consumers of such packaging containers. As shown, the available packaging either lacks compatibility with modern aseptic packaging requirements, has no or only dissatisfactory pouring or

even dripping, does not provide tight reclosing which would allow to shake the content of such a packaging container, or leaves the user of such packaging with the requirement to dispose of a piece of material which has to be removed from the opening member upon initial use.

It is therefore an objective of the present invention to provide the following advantages and combine some characteristics which had been satisfied individually by previous container designs but not in the present combination. It is desired to provide a convenient reclosable opening member in an aseptic container made of laminate material such that the inside surface of the container can easily be sterilized by having an uninterrupted and pocket free layer forming the inside surface. Also the opening member should provide a drip free or drip reducing pouring spout, preferably one which directs fluid remaining on the spout back into the container when bringing the container into an upright position. Further, the opening member has to be convenient when initially opening the container while preventing unintentional opening during transport and handling and has to provide a pilfer or tamper indicator, however without adding a piece of material which has to be removed upon initial opening and which would have to be disposed of by the user. In particular the opening member should be such as to not require detachment of any part from the container whether initially or upon reopening. Primarily, however, the opening member in the container has to provide and maintain an unobstructed and preferably hygienic opening over an extended period despite being exposed to liquid or humidity.

These and other objectives of the present invention will be more readily apparent when considered in reference to the following description and when taken in connection with the accompanying drawings.

Summary of the invention

The invention relates to liquid tight containers which have a reclosable opening member. The containers are made of a laminate material and are typically gable top or flat top containers, preferably of a parallelepiped form. The laminate material comprises two barrier layers on the outside and a structural stability layer between the barrier layers. Most commonly these containers are used for beverage drinks like fruit juices, nectars or milk. They contain usually a family size serving and are kept for some time after opening since they contain more than a single serving quantity. There is also a tendency to increase the container volume to save packaging material for environmental and economical reasons.

According to the invention, the reclosable opening member comprises a flange forming a pouring aperture, preferably also a pouring spout to reduce dripping when pouring and to drain liquids from the spout back into the pouring aperture. The flange has a rim which is joined by an endless, liquid tight seal to the outside of the upper side of the container, preferably by hotmelt glueing or welding. Hinged to the opening member is a lid for clos-

ing the pouring aperture, preferably the lid also has a flange which fits into the pouring aperture and can have a protruding bulge to form a tight seal between the flange of the lid and the pouring aperture when the lid is closed.

The opening member also has a lever which is cantilevered inside the pouring aperture to the flange of the opening member such that the lid can be closed without moving the lever. The lever is used for initial push-in opening of the container and preferably has a key hole shape with a dimple at the free end to induce and communicate push-in opening action.

The opening member is placed with its pouring aperture above a designated opening aperture in the container. The opening aperture is formed by a flap door, preferably two flap doors, which is pushed in by the lever and held open by engaging the flap door into a recess in the side of the lever. The flap door is provided by using straw-hole technology such that the structural stability layer is removed in a contour shape around the flap door but remains hinged on one side. Then the two barrier layers are laminated together where the stability layer has been removed. Thereby a designated opening aperture is provided without injury or destruction of the barrier layers or pocket building on the innerside of the container. This allows easy sterilization of the laminate material around the opening aperture and does not consume additional materials.

The side where the flap door is hinged to the container by the full laminate material is preferably provided with a crease for easy folding. When pushing the lever, the lever presses on the flap door which opens by destruction of the barrier material where the structural stability layer has been removed.

The structural stability layer extending into the flap door provides the flap door with the stiffness to engage into the recess of the lever and remain in that position. Due to the straw-hole technology, the structural stability layer is fully covered by barrier layer material and hence not exposed to humidity or liquid. The combination of the opening member with push-in lever and a flap door having its stability layer not exposed to humidity or liquid, prevents delamination and softening which would otherwise lead to deformation of the flap door or to disengaging the flap door from the lever and hence obstruction of the opening aperture.

Brief description of the drawings

Figure 1 is a partially cut away perspective view of the opening member.

Figure 2 is a cut away perspective view of the opening aperture in the laminate material.

Figure 3 is a cross-sectional view of the laminate material along line 3---3 of Figure 2.

Figures 4 to 7 are plan views of alternative flap-door designs for the opening aperture.

Detailed description of the invention

The liquid tight containers of the present invention are made of laminate material. The laminate material comprises two barrier layers and a structural stability layer sandwiched between the barrier layers. The barrier layer forming the outside surface of the container, has the function of providing protection of the container against humidity and contamination from the container's environment. It preferably consists of one or several plies of plastic film, for example polyethylene, providing a liquid barrier and being weldable and compatible with many adhesives, particularly hotmelt adhesives.

The barrier layer forming the inside surface of the container has the function of protecting and containing the liquid inside the container as well as protecting the structural stability layer from exposure to the liquid contents of the container. Preferably, it also comprises one or several plies of plastic film, for example polyethylene. Additionally it may comprise a ply of gas tight material for example an aluminum foil which prevents in particular oxygen migrating into the container.

The structural stability layer is sandwiched between the barrier layers and any other additional layers which may be desired. The structural stability layer provides the laminate with the structural stability allowing to form self supporting containers with it. Most commonly used materials for the structural stability layer are paper or cardboard plys which themselves may be sandwiched together forming the structural stability layer. According to the present invention the laminate comprises a structural stability layer which under exposure to humidity or liquid begins to soften and lose its structural stability. This is particularly true for the frequently used fibrous materials like paper and cardboard materials.

The laminate is formed in lamination processes well known in the art. Typically the two barrier layers and the structural stability layer are sandwiched together while applying high pressure and heat thereby forming an intimate bond between the layer interfaces. Bonding materials, if used at all, can be selected from a wide range of pressure sensitive, heat sensitive, hot melt type adhesives and other bonding agents.

According to the present invention, the container is made of laminate material. It preferably is made out of a single piece of laminate material which is cut and folded together so as to form either a gable top container or preferably a container resembling a parallelepiped. The important characteristic of the container is that it provides secure and hygienic containment for products like fruit juices, fruit nectars, water or dairy products. The container has an upper side which in the case of a gable top container is tilted and in case of a parallelepiped is a flat horizontal surface.

According to the invention this upper side comprises an opening member. Preferably, the opening member is made of polyethylene, polypropylene, polystyrol or mixtures thereof. Preferably it is permanently joined to the outside of the upperside of the container, preferably by

an endless, liquid tight seal formed by a hot melt adhesive, welding or ultrasonic bonding.

Figure 1 shows a preferred embodiment of the opening member (10). The opening member (10) comprises a flange (12) which forms a pouring aperture (14) and has a rim (16). In a preferred embodiment the rim (16) as shown has a rectangular shape with rounded edges. The lower side of the rim (16) provides the contact area for the above mentioned endless liquid tight seal joining the opening member (10) to the outside of the upper side of a container.

A preferred embodiment of the opening member (10) as shown in Figure 1 has a lid (18) which is hinged to the rim (16). The lid (18) could also be hinged to other parts of the opening member, for example the lid (18) could be directly hinged to the flange (12). The lid (18) of Figure 1 further comprises a flange (19) which engages into the pouring aperture (14) thereby improving the tightness of the opening member (10) when the lid (18) is closed. Not shown in Figure 1 but preferably also included is a protruding bulge on the outside of flange (19) of the lid (18) further improving the tightness of the closed lid.

According to the invention, the opening member (10) as shown in Figure 1 comprises a lever (20) which is cantilevered to the flange (12). The lever (20) in a particular preferred embodiment has a dimple (26) at the unsupported end. According to the invention the lever (20) has a recess (22) on its side as shown in Figure 1. The lever is preferably joined to the flange in such a way that it provides indication of tampering or pilfering once it has been pushed in. This can be achieved for example by small material bridges between the lever (20) and the flange (12) material which break upon push-in.

Still referring to Figure 1, the opening member (10) preferably also has a pouring spout (24). The pouring spout (24) is preferably at the opposite end of the pouring aperture (14) from where the lid (18) is hinged to the opening member (10). Most preferred are pouring spouts (24) which not only direct liquids coming through the pouring aperture (14) for pouring but which extend beyond the outer perimeter of the rim (16) to guide liquids clear of the rim (16). Most advantageous are pouring spouts (24) which are also angled relative to the upper side of the container to which the opening member (10) is joined such that liquid, which remains on the pouring spout (24), is drained back through the pouring aperture (14).

Referring to Figure 2 a preferred embodiment of a designated opening aperture (38) is shown. The designated opening aperture (38) is located in the laminate material (30) and comprises a flap door (40), preferably two flap doors (40) as shown in Figure 2, which is hinged on one side (42) to the laminate material. In Figure 3 a cross-sectional view taken along line 3-3 of Figure 2 can be seen where the outer barrier layer (32), the structural stability layer (36) and the inner barrier layer (34) are indicated. In a preferred embodiment the hinged side (42) between flap door (40) and laminate material (30) is indi-

cated as a weakening of the structural stability layer (36). This weakening can be provided by simple compressing of the structural stability layer (36) alone, or of the whole laminate material (30) along the hinged side (42) of the flap door (40).

When opening the designated opening aperture (38), the laminate material (30) breaks along the non hinged contour (44) around the flap door (40). The non hinged contour (44) is therefore also termed designated breaking contour (44). As can be seen from Figure 3, the structural stability layer (36) has been removed to introduce the designated breaking contour (44) allowing the flap door (40) to open the designated opening aperture (38). The two barrier layers (32 and 34) are laminated together through the removed part of the structural stability layer (36). Thereby the structural stability layer (36) becomes fully enclosed in barrier layer material, and remains non exposed to humidity or liquid even after opening the container. The technology to laminate the outer barrier layers through a structural stability layer is also referred to as straw-hole technology since it was first used to provide holes in single serve containers which could be punctured by drinking straws.

As can be seen from Figure 2, a preferred embodiment has two flap doors (40) being hinged to the laminate material (30) such that they rotate in opposite rotation directions upon opening. A single flap door or other possible double flap door designs are shown in Figure 4 through 7. The dashed line in each of these Figures indicates the hinged side of the flap door or flap doors while the thicker dark line indicates the breaking contour of the flap doors provided by straw-hole technology.

It is preferred that the opening aperture (38) created when pushing-in the flap door or flap doors has the same or a similar shape as the pouring aperture (14) of the opening member (10). A practical example would be the opening member (10) according to the embodiment shown in Figure 1 disposed on the laminate material (30) shown in Figure 2 such that the pouring aperture (14) of opening member (10) corresponds to the opening aperture (38) in the laminate material (30).

A container according to the invention comprises the opening aperture (38) preferably at the edge of its upper side so that the pouring spout (24) reaches all the way to or even beyond the edge of the upper side of such a container. During transportation the lid (18) is preferably closed to protect the pouring aperture (14) for hygienic reasons as well as to provide the desired security against accidental opening of the opening aperture (38).

To use the opening arrangement of the present invention the lid (18) is lifted and the lever (20) is pushed into the container thereby opening the flap doors (40). The flap doors (40) engage in the recess (22) of the lever (20) and thereby are maintained permanently in an open position not obstructing the opening aperture (38) or the pouring aperture (14). The pouring aperture (14) can be reclosed by closing the lid (18) after initial opening.

While several particularly preferred embodiments of the present invention have been described and illus-

trated, it will be obvious to those skilled in the art that various changes and modifications can be made without departing from the invention. Furthermore, while the preceding description of the present invention was generally directed to a non-carbonated beverage, the present invention can be applied with equal facility to any type of product that is poured from a container.

Claims

1. A reclosable liquid tight container having an opening member (10) on its upper side and being made of a laminate material (30) comprising two barrier layers (32, 34) on the outside and a structural stability layer (36) between said barrier layers (32,34), said opening member (10) comprising :

a) a flange (12) forming a pouring aperture (14) and having a rim (16), said flange (12) being joined to the outside of said upper side of said container by an endless, liquid tight seal along its rim (16);

b) a lid (18) to close said pouring aperture (14), said lid (18) being hinged to said opening member (10) to close said pouring aperture (14); and

c) a lever (20) for initial push-in opening of said container, said lever (20) being cantilevered to said flange (12), said lever fitting into said pouring aperture (14) below said lid (18) in a closed position;

said container comprising a designated opening aperture (38) corresponding to said opening member (10), said opening aperture (38) being formed in said laminate material (30) as a flap door (40) which can be pushed-in by said lever (20) of said opening member (10) and one side (42) of said flap door (40) being hinged to said container by said laminate material (30); said container being characterized in that

- the other sides of said flap door are formed by removing said structural stability layer (36) along a contour (44) around said other sides of said flap door (40) and said two barrier layers (32,34) are laminated to each other along said contour strip (44) to fully enclose said stability layer (36);
- said lever (20) has a recess (22) on the side, and said flap door (40), is held down by engaging into said recess (22) of said lever (20)

2. A reclosable liquid tight container according to claim 1 characterized in that said container is a parallelepiped.

3. A reclosable liquid tight container according to any of the preceding claims characterized in that said opening member (10) further comprises a pouring spout (24), said pouring spout (24) preferably extending from said flange (12) beyond said rim (16) and being angled to guide liquid back to said pouring aperture (14). 5
4. A reclosable liquid tight container according to any of the preceding claims characterized in that said flange (12) is joined to said upper side of said container by hotmelt adhesive or by welding. 10
5. A reclosable liquid tight container according to any of the preceding claims characterized in that said lever (20) has a key hole shape with a dimple (26) at the free end of said lever (20). 15
6. A reclosable liquid tight container according to any of the preceding claims characterized in that said opening aperture (38) comprises two of said flap doors (40) having an opposite direction of rotation upon opening. 20
7. A reclosable liquid tight container according to any of the preceding claims characterized in that said opening member (10) is made of polyethylene, polypropylene, polystyrol or mixtures thereof. 25
8. A reclosable liquid tight container according to any of the preceding claims characterized in that said barrier layers (32,34) of said laminate material (30) comprise a polyethylene film. 30
9. A reclosable liquid tight container according to any of the preceding claims characterized in that the barrier layer (34) forming the inside surface of said container comprises a gas tight barrier layer. 35
10. A reclosable liquid tight container according to any of the preceding claims characterized in that said structural stability layer (36) of said laminate material (30) consists of paper, cardboard or combinations thereof. 40

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Patentansprüche

1. Ein wiederverschließbarer flüssigkeitsdichter Behälter, welcher einen Öffnungsbauteil (10) an seiner Oberseite aufweist und aus einem Laminatmaterial (30) hergestellt ist, welches zwei Sperrschichten (32, 34) an der Außenseite und eine strukturelle Stabilitätsschicht (36) zwischen den genannten Sperrschichten (32, 34) aufweist, wobei der genannte Öffnungsbauteil (10) umfaßt: 50
- a) einen Flansch (12), welcher eine Ausgußöffnung (14) bildet und einen Saum (16) aufweist, wobei der genannte Flansch (12) durch eine 55

endlose flüssigkeitsdichte Dichtung mit der genannten Außenseite der genannten Oberseite des genannten Behälters entlang seinem Saum (16) verbunden ist;

- b) einen Deckel (18), um die genannte Ausgußöffnung (14) zu verschließen, wobei der genannte Deckel (18) am genannten Öffnungsbauteil (10) schwenkbar ist, um die genannte Ausgußöffnung (14) zu verschließen; und
- c) einen Hebel (20) für das anfängliche Öffnen durch Eindrücken des genannten Behälters, wobei der genannte Hebel (20) am genannten Flansch (12) einseitig eingespannt ist, wobei in einer geschlossenen Position der genannte Hebel in die genannte Ausgußöffnung (14) unterhalb des genannten Deckels (18) paßt;

wobei der genannte Behälter eine gekennzeichnete Öffnungsausnehmung (38) aufweist, welche dem genannten Öffnungsbauteil (10) entspricht, wobei die genannte Öffnungsausnehmung (38) im genannten Laminatmaterial (30) als eine Klappentür (40) ausgebildet ist, welche vom genannten Hebel (20) des genannten Öffnungsbauteils (10) eingestoßen werden kann, und wobei eine Seite (42) der genannten Klappentür (40) am genannten Behälter durch das genannte Laminatmaterial (30) schwenkbar ist; wobei der genannte Behälter dadurch gekennzeichnet ist,

- daß die anderen Seiten der genannten Klappentür durch Entfernen der genannten strukturellen Stabilitätsschicht (36) entlang einer Umrißlinie (44) um die genannten anderen Seiten der genannten Klappentür (40) gebildet sind, und die genannten zwei Sperrschichten (32, 34) entlang dem genannten Umrißstreifen (44) aneinander laminiert sind, um die genannte Stabilitätsschicht (36) vollständig einzuschließen;
- wobei der genannte Hebel (20) an den Seiten einen Rücksprung (22) aufweist und die genannte Klappentür (40) durch Eingreifen in den genannten Rücksprung (22) des genannten Hebels (20) niedergehalten ist.

2. Ein wiederverschließbarer flüssigkeitsdichter Behälter nach Anspruch 1, dadurch gekennzeichnet, daß der genannte Behälter ein Quader ist.

3. Ein wiederverschließbarer flüssigkeitsdichter Behälter nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß der genannte Öffnungsbauteil (10) weiters eine Ausgußtülle (24) umfaßt, wobei die genannte Ausgußtülle (24) sich vorzugsweise vom genannten Flansch (12) über den genannten Saum (16) hinaus erstreckt und in einem Winkel angeordnet ist, um die Flüssigkeit

zurück zur genannten Ausgußöffnung (14) zu lenken.

4. Ein wiederverschließbarer flüssigkeitsdichter Behälter nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß der genannte Flansch (12) mit der genannten Oberseite des genannten Behälters durch Aufschmelzklebstoff oder durch Schweißen verbunden ist. 5
5. Ein wiederverschließbarer flüssigkeitsdichter Behälter nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß der genannte Hebel (20) eine Schlüsselochform mit einer Vertiefung (26) am freien Ende des genannten Hebels (20) aufweist. 10
6. ein wiederverschließbarer flüssigkeitsdichter Behälter nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß die genannte Öffnungsausnehmung (38) zwei der genannten Klap-pentüren (40) umfaßt, die auf das Öffnen hin eine entgegengesetzte Drehrichtung aufweisen. 15
7. Ein wiederverschließbarer flüssigkeitsdichter Behälter nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß der genannte Öffnungsbauteil (10) aus Polyethylen, Polypropylen, Polystyrol oder Mischungen derselben hergestellt ist. 20
8. Ein wiederverschließbarer flüssigkeitsdichter Behälter nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß die genannten Sperrschichten (32, 34) des genannten Laminatmaterials (30) eine Polyethylenfolie umfassen. 25
9. Ein wiederverschließbarer flüssigkeitsdichter Behälter nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß die Sperrschicht (34), welche die innenseitige Oberfläche des genannten Behälters bildet, eine gas-dichte Sperrschicht umfaßt. 30
10. Ein wiederverschließbarer flüssigkeitsdichter Behälter nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß die genannte strukturelle Stabilitätsschicht (36) des genannten Laminatmaterials (30) aus Papier, Karton oder Kombinationen derselben besteht. 35

Revendications

1. Récipient refermable étanche aux liquides ayant un élément d'ouverture (10) sur sa face supérieure et qui est fabriqué en une matière stratifiée (30) comportant deux couches-barrières (32, 34) sur l'extérieur et une couche de stabilité structurelle (36) 55

entre lesdites couches-barrières (32, 34), ledit élément d'ouverture (10) comportant :

- a) un rebord (12) formant une ouverture verseuse (14) et ayant un pourtour (16), ledit rebord (12) étant relié à l'extérieur de ladite face supérieure dudit récipient par un joint sans fin, étanche aux liquides, le long de son pourtour (16);
- b) un couvercle (18) destiné à fermer ladite ouverture verseuse (14), ledit couvercle (18) étant articulé sur ledit élément d'ouverture (10) afin de fermer ladite ouverture verseuse (14); et
- c) un levier (20) pour l'ouverture initiale par enfoncement dudit récipient, ledit levier (20) étant en porte-à-faux sur ledit rebord (12), ledit levier se logeant dans ladite ouverture verseuse (14) sous ledit couvercle (18) dans une position fermée;

ledit récipient comportant une ouverture prédécoupée (38) correspondant au dit élément d'ouverture (10), ladite ou prédécoupée (38) étant formée dans ladite matière stratifiée (30) sous forme d'un rabat (40) qui peut être enfoncé par ledit levier (20) dudit élément d'ouverture (10) et un côté (42) dudit rabat (40) étant articulé sur ledit récipient par ladite matière stratifiée (30); ledit récipient étant caractérisé en ce que

- les autres côtés dudit rabat sont formés en enlevant ladite couche de stabilité structurelle (36) le long d'un contour (44) autour desdits autres côtés dudit rabat (40), et lesdites deux couches-barrières (32, 34) sont appliquées l'une sur l'autre le long de ladite bande de contour (44), afin d'enfermer totalement ladite couche de stabilité (36);
- ledit levier (20) possède un renforcement (22) sur le côté; et ledit rabat (40) est maintenu par engagement dans ledit renforcement (22) dudit levier (20).

2. Récipient refermable étanche aux liquides selon la revendication 1, caractérisé en ce que ledit récipient est un parallélépipède.

3. Récipient refermable étanche aux liquides selon l'une quelconque des revendications précédentes, caractérisé en ce que ledit élément d'ouverture (10) comporte en outre un bec verseur (24), ledit bec verseur (24) s'étendant de préférence depuis ledit rebord (12) au-delà du bord dudit pourtour (16) et étant incliné afin de guider le liquide qui revient dans ladite ouverture verseuse (14).

4. Récipient refermable étanche aux liquides selon l'une quelconque des revendications précédentes, caractérisé en ce que ledit rebord (12) est relié à

ladite face supérieure dudit récipient par une colle thermofusible ou par soudage.

5. Récipient refermable étanche aux liquides selon l'une quelconque des revendications précédentes, caractérisé en ce que ledit levier (20) a une forme en trou de serrure, avec un bossage (26) au niveau de l'extrémité libre dudit levier (20). 5
6. Récipient refermable étanche aux liquides selon l'une quelconque des revendications précédentes, caractérisé en ce que ladite ouverture prédécoupée (38) comporte deux rabats (40) ayant des sens de rotation opposés lors de l'ouverture. 10 15
7. Récipient refermable étanche aux liquides selon l'une quelconque des revendications précédentes, caractérisé en ce que ledit élément d'ouverture (10) est fabriqué en polyéthylène, en polypropylène, en polystyrène ou en des mélanges de ceux-ci. 20
8. Récipient refermable étanche aux liquides selon l'une quelconque des revendications précédentes, caractérisé en ce que lesdites couches-barrières (32, 34) de ladite matière stratifiée (30) comprennent un film de polyéthylène. 25
9. Récipient refermable étanche aux liquides selon l'une quelconque des revendications précédentes, caractérisé en ce que la couche-barrière (34) formant la surface intérieure dudit récipient comprend une couche-barrière étanche aux gaz. 30
10. Récipient refermable étanche aux liquides selon l'une quelconque des revendications précédentes, caractérisé en ce que ladite couche de stabilité structurelle (36) de ladite matière stratifiée (30) se compose de papier, de carton ou de combinaisons de ceux-ci. 35 40

45

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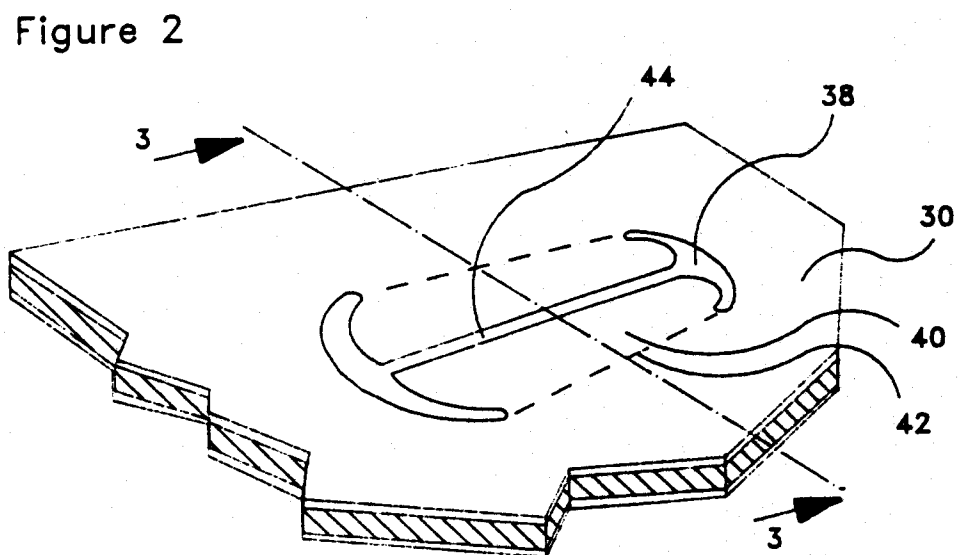
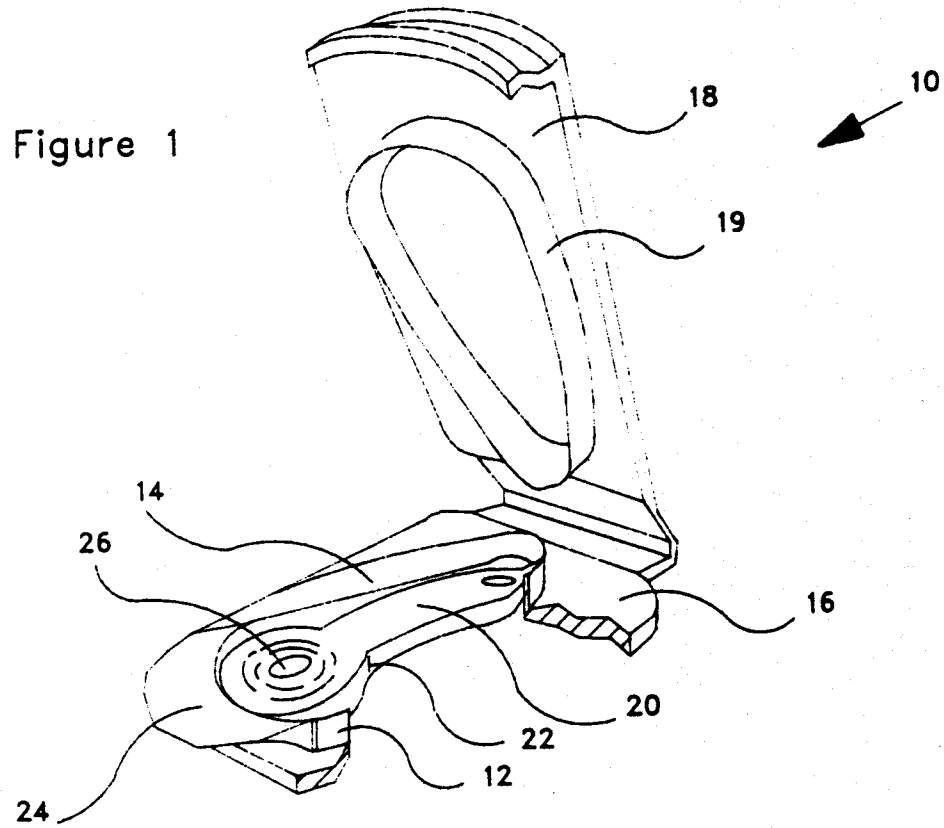


Figure 3

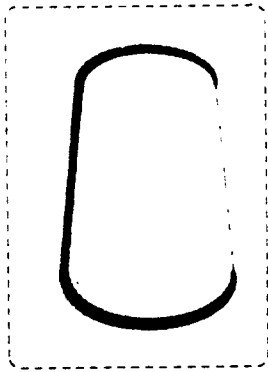
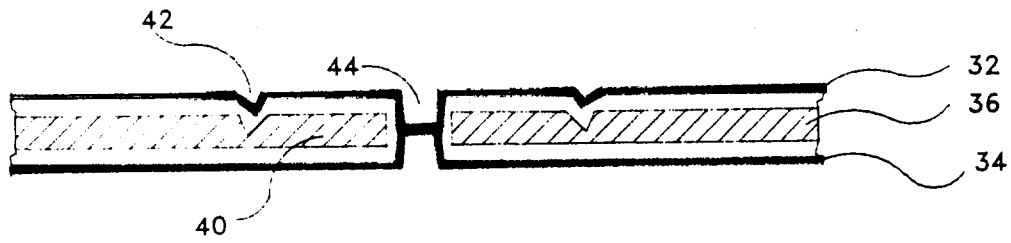


Figure 4

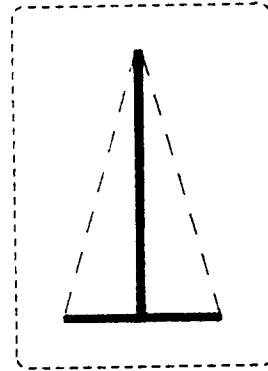


Figure 5

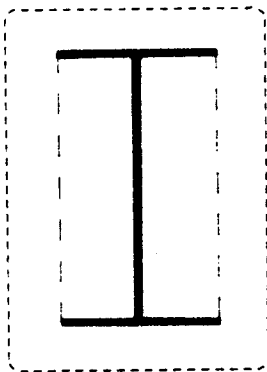


Figure 6

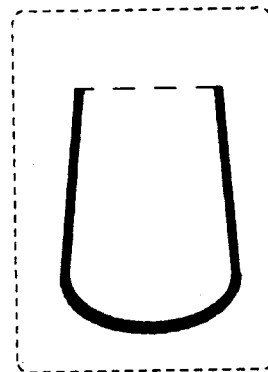


Figure 7