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(54) **Single piece reclosable opening member for liquid packaging container**

Wiederverschliessbares Öffnungselement aus einem Stück für Flüssigkeitsverpackungen

Élément d'ouverture refermable en une seule pièce pour emballages pour liquides

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(56) References cited:  
**WO-A-92/00884**                      **DE-A- 2 659 275**  
**US-A- 4 934 590**

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## Description

### Field of the invention

The present invention relates to a reclosable opening member according to the preamble of claim 1 for pouring liquids from packaging containers. In particular, the opening member comprises a push-in opening in the form of a flap door. The flap door is hinged to the opening member providing a pouring aperture when pushed-in. The flap door is pushed-in by a lever which is cantilevered on one side of the pouring aperture of the reclosable opening member. The push-in lever has a recess along its side into which the flap door engages upon initial opening.

In another aspect of the present invention the reclosable opening member is joined to a laminate container such that the pouring aperture corresponds to a designated opening aperture in a container. Thereby a permanently open opening aperture in the container is provided when activating the opening member.

### 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. 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 as lines or 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.

WO 92/00884 discloses reclosable opening members for rectangular cartons which comprise a pouring aperture having a rim sealed to the carton, a reclosable lid and a lever for initial opening of the carton all according to the preamble of claim 1.

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.

None of the aforementioned opening members or devices provides all advantages desired by consumers for opening of liquid packaging containers. As shown, the available opening members or devices either lack compatibility with modern aseptic packaging requirements, have no or only dissatisfactory pouring or even dripping, do not provide tight reclosing which would allow to shake the content of such a packaging container or leave the user of such opening members or devices 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 opening member designs but not in the present combination. It is desired to provide a convenient reclosable opening member particularly for 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 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 present invention is distinguished from the prior art by the features of the characterizing portion of claim 1.

The invention relates to a reclosable opening member, in particular for use with liquid packaging containers. 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 non-carbonated beverages like fruit juices, nectars, fruit juice drinks 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 opening member comprises a flange forming a pouring aperture. Preferably a pouring spout extends from the flange to reduce dripping when pouring and to drain liquids from the spout back into the pouring aperture. The flange has an upper side and a base. The upper side of the flange forms the upper end of the pouring aperture where liquids flow through when exiting the opening member. Hinged to the opening member is a lid for closing the pouring aperture

at the upper side of the flange. Preferably the lid has a protruding lip which fits into the pouring aperture and can have a protruding bulge to form a tight seal between the lip and the upper end of the pouring aperture when the lid is closed.

Before initial opening, the pouring aperture is closed at the base of the flange by a flap door, preferably by two flap doors, which are hinged to the flange. The flap door does not form a liquid tight closure of the pouring aperture but typically extends substantially along the inside contour of the pouring aperture. The flange further has a rim which extends outside the pouring aperture around the base of the flange.

For initial opening the opening member also has a lever inside the pouring aperture above the flap door. The lever is cantilevered to the flange of the opening member such that the lid can be closed without moving the lever. The lever has a recess for engaging the flap door upon initial opening. The lever preferably has a key hole shape with opposed symmetrical recesses and with a dimple on the top surface of the free end to induce and communicate push-in opening action.

In another aspect of the present invention the opening member is joined by an endless, liquid tight seal along its rim to the outside of the upper side of a container, preferably by hotmelt glueing or welding. The opening member is placed with its pouring aperture above a designated opening aperture in the container. The pouring aperture and the opening aperture are initially opened by pressing on the lever thereby pushing-in the flap door which is held open by engaging into the recess of the lever.

In a preferred embodiment of the present invention the flap door is also attached to the container laminate in the area of the designated opening aperture. Preferably, the laminate material of the container is weakened along the circumference of the designated opening aperture to provide a designated breaking contour. The weakening of the laminate material can be achieved by well known techniques without destruction of the inner barrier layer or pocket building inside the container. If the flap door of the opening member is attached to the laminate material in the area of the designated opening aperture, the designated breaking contour can form an endless line without losing the detached laminate material from the opening aperture upon initial opening. Otherwise, it is preferred that the designated breaking contour forms a finite line such that the detached laminate material from the opening aperture remains hinged after opening the container and is permanently held back from obstructing the opening aperture by the flap door of the opening member.

#### Brief description of the drawings

Figure 1a is a partially cut-away perspective view of an embodiment of the opening member. Figure 1b shows the same embodiment as Figure 1a without the lever.

Figure 2 is a partially cut-away perspective view of an alternative embodiment of the opening member, not showing the lever.

Figure 3 is a detailed perspective view of the lever of the opening member of Figure 1.

Figure 4 is a top plan view of the lever of Figure 3.

Figure 5 is a top plan view of an alternative embodiment of a lever particularly useful for the opening member of Figure 2.

Figure 6 is a top plan view of the laminate material of a container around the designated opening aperture.

Figure 7 is a cross-sectional view of the laminate material along line 7-7 of Figure 6.

Figure 8 is a top plan view of an alternative embodiment of the laminate material around the designated opening aperture.

Figure 9 is a cross-sectional view of the laminate material along line 9-9 of Figure 8.

#### Detailed description of the invention and the drawings

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). The flange has a base (117) and an upper side (118). The upper side (118) of the flange (12) forms the upper end of the pouring aperture (14) through which liquids flow and exit the opening member (10) during use.

The rim (16) extends outside the pouring aperture (14) from the base (117) of the flange (12). In a preferred embodiment as shown in Figure 1 and 2 the rim (16) has a rectangular shape with rounded edges, however other shapes for the rim (16) like an oval shape or a shape following the outline of the flange (12) can also be used. The lower side of the rim (16) provides the contact area for joining the opening member (10) to a container.

A preferred embodiment of the opening member (10) as shown in Figure 1 or 2 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 (10), for example the lid (18) could be directly hinged to flange (12). The lid (18) of Figure 1 further comprises a lip (19) which engages into the pouring aperture (14), thereby improving the tightness of the opening member (10) against spilling of liquid when the lid (18) is closed. Not shown in Figure 1 but preferably also included is a protruding bulge on the outside of lip (19) of the lid (18) or a conical shape both of which further improve the tightness of the closed lid at the upper end of the pouring aperture (14).

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) as shown in a particular preferred embodiment in Figure 3 is of a key-hole shape and has a dimple (26) at the unsupported end. According to the invention, the lever (20) has a recess (22) or several recesses (22) as shown in Figures 3, 4 and 5. 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) which break upon initial use of the opening member (10).

Still referring to Figure 1 and 2, 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 provide not only direction to 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 rim (16). Most advantageous are pouring spouts (24) which are also angled such that liquid, which remains on the pouring spout (24), is drained back through the pouring aperture (14).

Still referring to Figures 1 and 2, the opening member has two flap doors (28) which extend inside the pouring aperture (14) and which are hinged on one side (29) to the flange (12). The flap doors (28) are disposed below the lever (20) such that upon initial opening the flap doors rotate in opposite direction around the hinged side (29) and engage into the recess (22) of the lever to provide a permanently open pouring aperture (14). Preferably, before opening, the flap doors (28) extend inside the pouring aperture (14) in the same plane as the rim (16) and at the level of the base (117) of the flange (12).

Typically the opening member is made of plastic material. Preferably it is made of polyethylene, polypropylene, polystyrol or mixtures thereof. It can be produced by any manufacturing technique usual in the art. Preferably it is made by injection molding as a single piece.

In a second aspect the present invention provides a reclosable liquid tight container comprising the opening member described above.

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 together with 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.

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 liquid products like non carbonated beverages. 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 as described above. The opening member (10) is permanently joined to the outside of the laminate of the upperside of the container by an endless, liquid tight seal around the rim (16). The seal can also extend to the flap door (28) where it is not required to be liquid tight. The seal can be formed by any known technique but preferably is formed by an adhesive especially hot melt adhesive or welding especially ultrasonic bonding.

Referring to Figure 6-9 two preferred embodiments of a designated opening aperture (38) are shown. The designated opening aperture (38) is located in the laminate material (30). As shown the opening aperture (38) preferably consists of two parts which are hinged on one side (42) to the laminate material. In Figure 7 and 9 a cross-sectional view taken along line 7-7 and 9-9 of Figure 6 and 8 respectively can be seen where the outer barrier layer (32), the structural stability layer (36) and the inner barrier layer (34) are indicated. In these preferred embodiments the hinged side (42) between the designated opening aperture (38) the surrounding laminate material (30) is indicated as crease of the structural stability layer (36). This crease 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).

The designated opening aperture (38) is formed by weakening the laminate material along the circumference of each part of the designated opening aperture (38) excluding the hinged side (42).

This provides the designated breaking contour which breaks upon initial opening of the container when pressing on the lever (20) and pushing-in the flap doors (28) of the opening member (10). The designated breaking contour as indicated in Figure 6 and 7 can be formed by straw-hole technology, that is by eliminating the struc-

tural stability layer (36) and laminating the two barrier layers (32,34) to each other through the removed structural stability layer (36).

Alternatively the designated breaking contour can also be formed as indicated in Figures 8 and 9 by partial cut technology. Partial cut technology simply provides cuts into the laminate (30) which do not extend through the full thickness of the laminate (30) and therefore maintain the integrity of the inner barrier layer (34).

If the flap door (28) of the opening member (10) is attached to the laminate material (30) in the area of the designated opening aperture (38) then there is no reason to keep the designated opening aperture (38) hinged on one side (42) to the surrounding laminate material. This is only done in order to prevent the laminate of the designated opening aperture (38) from falling inside the container. Therefore the designated breaking contour in case of an attachment between the flap door (28) and the laminate material (30) can be an endless line.

The shape of the pouring aperture (14) and the designated opening aperture (38) is not limited to the shape shown in the drawings. Both apertures independently can be selected from round, oval, rectangular and triangular shapes or any other desired shape useful in providing the desired function.

It is of course preferred that the opening aperture (38) 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 or 2 disposed on the laminate material (30) shown in Figure 6 or 8 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 (28) of the opening member (10). The flap doors (28) of the opening member (10) push-in the designated opening area (38). The flap doors (28) of the opening member 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 illustrated, it will be obvious to those skilled in the art that various changes and modifications can be made without departing from the invention as defined by the claims. 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 opening member (10) comprising
  - a) a flange (12) forming a pouring aperture (14), said flange (12) having a rim (16) at the base (117), said rim (16) extending outside of said pouring aperture (14);
  - b) a lid (18) to close said pouring aperture (14), said lid (18) being hinged to said flange (12);
  - c) a lever (20), said lever (20) being cantilevered to said flange (12), fitting into said pouring aperture (14) below said lid (18) in a closed position, and having a fixation recess (22) on the side;

said reclosable opening member (10) being characterized by further comprising

  - d) a flap door (28) being disposed below said lever (20) and extending inside said pouring aperture (14), said flap door (28) being hinged on one side (29) to said flange (12),

whereby the lever (20) is used for initial push-in opening of the flap door (28),  
 such that upon initial push-in opening said flap door (28) engages into said recess (22) of said lever (20) to form a permanently open pouring aperture (14).
2. A reclosable opening member (10) according to claim 1 characterized in that it comprises two flap doors (28) having an opposite direction of rotation upon opening.
3. A reclosable opening member (10) 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 the edge of said rim (16) and being angled to guide liquid back into said pouring aperture (14).
4. A reclosable opening member (10) 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).
5. A reclosable opening member (10) according to any of the preceding claims characterized in that said opening member (10) is made of polyethylene, polypropylene, polystyrene or mixtures thereof.

6. A reclosable liquid tight container having an upper side and being made of a laminate material (30), said container comprising a designated opening aperture (38) in said upper side, characterized in that it further comprises one of the opening members (10) of claims 1 to 5 and that said opening member (10) is disposed to correspond to said opening aperture (38) and joined to the outside of said container by an endless liquid tight seal along said rim (16).
7. A reclosable liquid tight container according to claim 6 characterized in that said container is a parallelepiped.
8. A reclosable liquid tight container according to claim 6 or 7 characterized in that said endless liquid tight seal is provided by hotmelt adhesive or welding.
9. A reclosable liquid tight container according to claim 6 to 8 characterized in that said laminate material (30) comprises an outer and inner liquid barrier layer (32,34) around a structural stability layer (36), preferably said structural stability layer (36) comprising paper, cardboard or combinations thereof.
10. A reclosable liquid tight container according to claim 9 characterized in that said outer and inner barrier layers (32,34) comprise a polyethylene layer, preferably said inner barrier layer (34) further comprising a gas tight layer.

## Patentansprüche

1. Ein wiederverschließbarer Öffnungsbauteil (10), welcher umfaßt:
  - a) einen Flansch (12), welcher eine Ausgußöffnung (14) bildet, wobei der genannte Flansch (12) an der Basis (117) einen Saum (16) aufweist, wobei der genannte Saum (16) sich über die genannte Ausgußöffnung (14) hinaus erstreckt;
  - b) einen Deckel (18), um die genannte Ausgußöffnung (14) zu verschließen, wobei der genannte Deckel (18) am genannten Flansch (12) schwenkbar ist;
  - c) einen Hebel (20), wobei der genannte Hebel (20) am genannten Flansch (12) einseitig eingespannt ist und in einer geschlossenen Position in die genannte Ausgußöffnung (14) unterhalb des genannten Deckels (18) paßt, und welcher an der Seite einen Fixierungsrücksprung (22) aufweist;

wobei der genannte wiederverschließbare Öffnungsbauteil (10) dadurch gekennzeichnet ist, daß er weiters umfaßt:

d) eine Klappentür (28), welche unterhalb des genannten Hebels (20) angeordnet ist und sich im Inneren der genannten Ausgußöffnung (14) erstreckt, wobei die genannte Klappentür (28) an einer Seite (29) am genannten Flansch (12) schwenkbar ist,

wobei der Hebel (20) zum anfänglichen Öffnen durch Eindrücken der Klappentür (28) verwendet wird,

sodaß nach anfänglichem Öffnen durch Eindrücken der genannten Klappentür (28) er in den genannten Rücksprung (22) des genannten Hebels (20) eingreift, um eine permanent offene Ausgußöffnung (14) zu bilden.

2. Ein wiederverschließbarer Öffnungsbauteil (10) nach Anspruch 1, dadurch gekennzeichnet, daß er zwei Klappentüren (28) umfaßt, welche auf das Öffnen hin eine entgegengesetzte Drehrichtung aufweisen.

3. Ein wiederverschließbarer Öffnungsbauteil (10) nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß der genannte Öffnungsbauteil (10) weiters eine Ausgußtülle (24) umfaßt, wobei sich die genannte Ausgußtülle (24) vorzugsweise vom genannten Flansch (12) über den Rand des genannten Saums (16) hinaus erstreckt und sich in einem Winkel befindet, um die Flüssigkeit zurück in die genannte Ausgußöffnung (14) zu lenken.

4. Ein wiederverschließbarer Öffnungsbauteil (10) nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß der genannte Hebel (20) die Form eines Schlüsselloches mit einer Vertiefung (26) am freien Ende des genannten Hebels (20) aufweist.

5. Ein wiederverschließbarer Öffnungsbauteil (10) nach einem der vorhergehenden Ansprüche, dadurch gekennzeichnet, daß der genannte Öffnungsbauteil (10) aus Polyethylen, Polypropylen, Polystyrol oder Mischungen derselben hergestellt ist.

6. Ein wiederverschließbarer flüssigkeitsdichter Behälter, welcher eine Oberseite aufweist und aus einem Laminatmaterial (30) hergestellt ist, wobei der genannte Behälter an der genannten Oberseite eine bezeichnete Öffnungsausnehmung (38) umfaßt, dadurch gekennzeichnet, daß er weiters einen der Öffnungsbauteile (10) der Ansprüche 1 bis 5 umfaßt, und dadurch, daß der genannte Bauteil (10) angeordnet ist, um der genannten Öffnungsausnehmung (38) zu entsprechen, und mit der Außenseite des genannten Behälters durch eine

endlose flüssigkeitsdichte Dichtung entlang dem genannten Saum (16) verbunden ist.

7. Ein wiederverschließbarer flüssigkeitsdichter Behälter nach Anspruch 6, dadurch gekennzeichnet, daß der genannte Behälter ein Quader ist.

8. Ein wiederverschließbarer flüssigkeitsdichter Behälter nach Anspruch 6 oder 7, dadurch gekennzeichnet, daß die genannte endlose flüssigkeitsdichte Dichtung durch Aufschmelzklebstoff oder Schweißen beigestellt ist.

9. Ein wiederverschließbarer flüssigkeitsdichter Behälter nach Anspruch 6 - 8, dadurch gekennzeichnet, daß das genannte Laminatmaterial (30) eine äußere und eine innere Flüssigkeitssperrschicht (32, 34) um eine strukturelle Stabilitätsschicht (36) herum aufweist, wobei die genannte strukturelle Stabilitätsschicht (36) vorzugsweise Papier, Karton oder Kombinationen derselben umfaßt.

10. Ein wiederverschließbarer flüssigkeitsdichter Behälter nach Anspruch 9, dadurch gekennzeichnet, daß die genannte äußere Sperrschicht (32) und die genannte innere Sperrschicht (34) eine Polyethylenschicht umfassen, wobei die genannte innere Sperrschicht (34) vorzugsweise weiters eine gasdichte Schicht umfaßt.

## Revendications

1. Élément d'ouverture refermable (10) comportant

a) un rebord (12) formant une ouverture verseuse (14), ledit rebord (12) ayant un pourtour (16) au niveau de la base (117), ledit pourtour (16) s'étendant à l'extérieur de ladite ouverture verseuse (14);

b) un couvercle (18) destiné à fermer ladite ouverture verseuse (14), ledit couvercle (18) étant articulé sur ledit rebord (12);

c) un levier (20), ledit levier (20) étant en porte-à-faux sur ledit rebord (12), se logeant dans ladite ouverture verseuse (14) sous ledit couvercle (18) dans une position fermée, et ayant un renforcement de fixation (22) sur le côté;

ledit élément d'ouverture refermable (10) étant caractérisé en ce qu'il comporte en outre

d) un rabat (28) disposé sous ledit levier (20) et s'étendant à l'intérieur de ladite ouverture verseuse (14), ledit rabat (28) étant articulé, sur un côté (29), audit rebord (12),

le levier (20) étant ainsi utilisé pour l'ouverture initiale par enfoncement du rabat (28),

- de telle sorte que, lors de l'ouverture initiale par enfoncement, ledit rabat (28) s'engage dans ledit renforcement (22) dudit levier (20), afin de former une ouverture verseuse ouverte en permanence (14). 5
2. Élément d'ouverture refermable (10) selon la revendication 1, caractérisé en ce qu'il comporte deux rabats (28) ayant des sens de rotation opposés lors de l'ouverture. 10
3. Élément d'ouverture refermable (10) 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). 15  
20
4. Élément d'ouverture refermable (10) 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). 25
5. Élément d'ouverture refermable (10) 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. 30
6. Récipient refermable étanche aux liquides ayant une face supérieure et qui est fabriqué en une matière stratifiée (30), ledit récipient comportant une ouverture prédécoupée (38) dans ladite face supérieure, caractérisé en ce qu'il comporte en outre un des éléments d'ouverture (10) des revendications 1 à 5 et en ce que ledit élément d'ouverture (10) est disposé de façon à correspondre à ladite ouverture (38) et est relié à la surface extérieure dudit récipient par un joint sans fin étanche aux liquides le long dudit pourtour (16). 35  
40
7. Récipient refermable étanche aux liquides selon la revendication 6, caractérisé en ce que ledit récipient est un parallélépipède. 45
8. Récipient refermable étanche aux liquides selon la revendication 6 ou 7, caractérisé en ce que ledit joint sans fin étanche aux liquides est réalisé à l'aide d'une colle thermofusible ou par soudage. 50
9. Récipient refermable étanche aux liquides selon l'une quelconque des revendications 6 à 8, caractérisé en ce que ladite matière stratifiée (30) comporte une couche-barrière extérieure et intérieure étanche aux liquides (32, 34) autour d'une couche de stabilité structurelle (36), ladite couche de stabil- 55
- ité structurelle (36) comprenant du papier, du carton ou des combinaisons de ceux-ci.
10. Récipient refermable étanche aux liquides selon la revendication 9, caractérisé en ce que lesdites couches-barrières extérieure et intérieure (32, 34) comprennent une couche de polyéthylène, ladite couche-barrière intérieure (34) comportant, en outre, une couche étanche aux gaz.

Figure 1 a

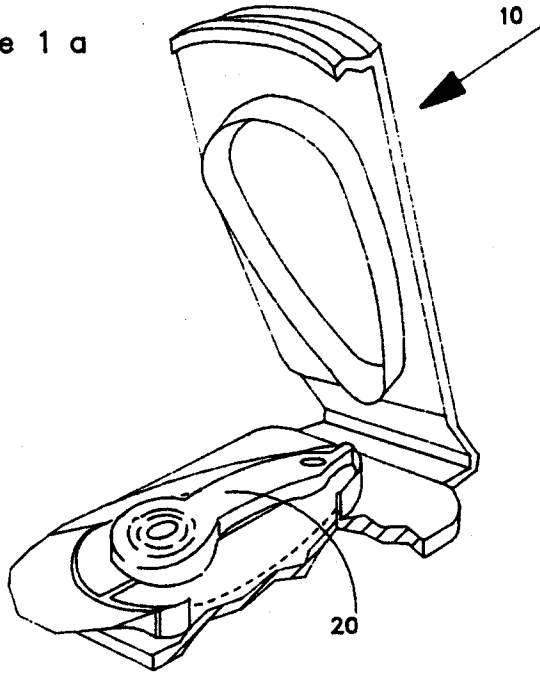


Figure 1 b

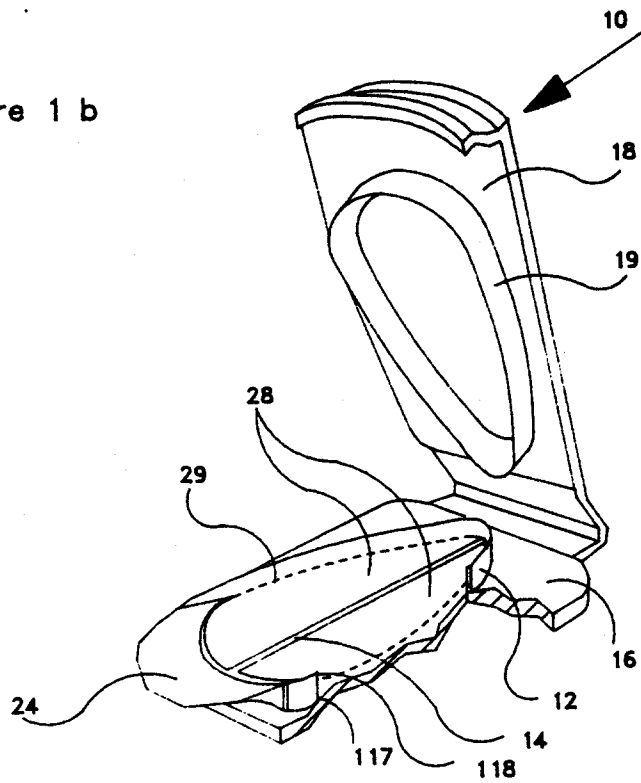
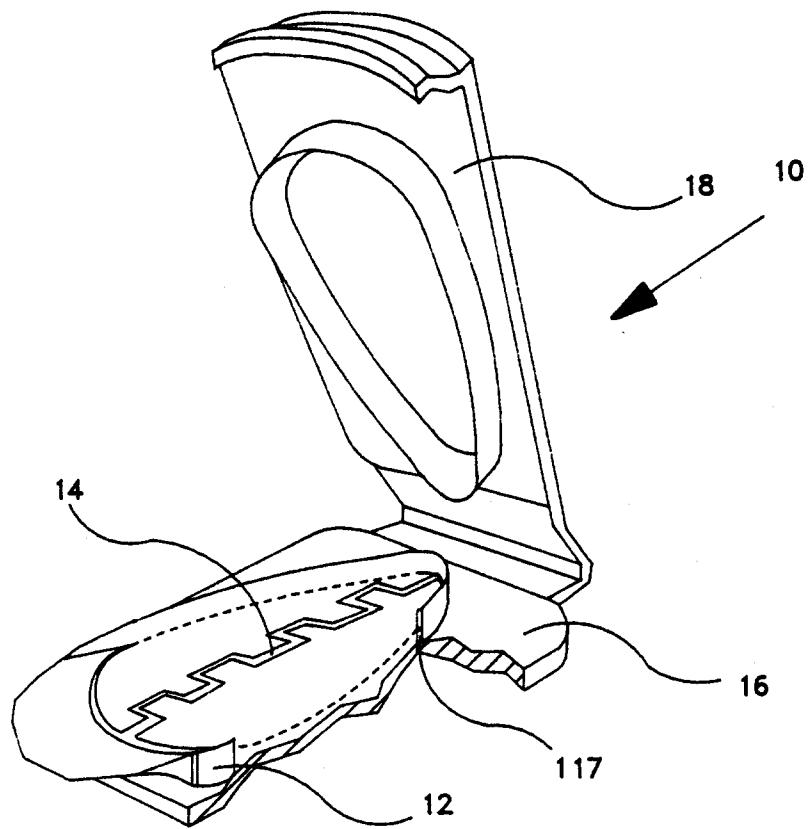


Figure 2



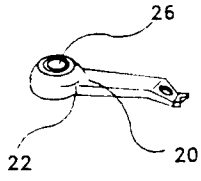


Figure 3

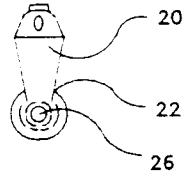


Figure 4

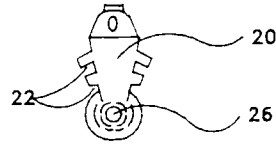


Figure 5

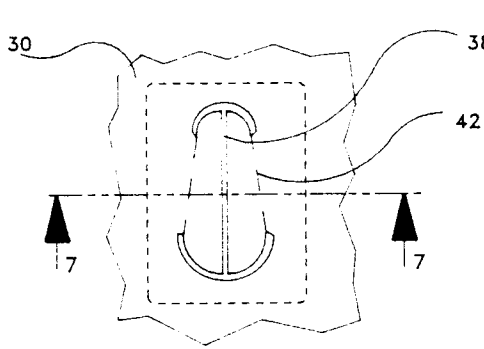


Figure 6

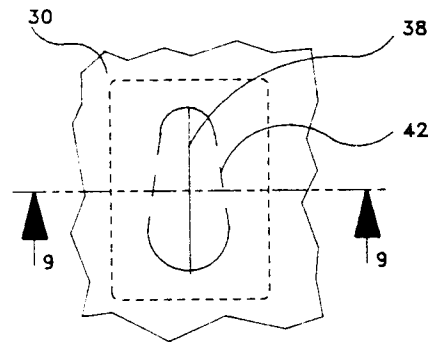


Figure 8

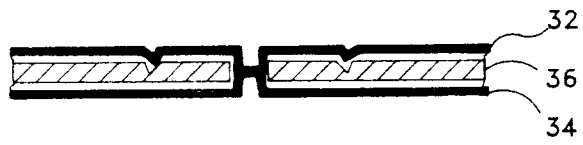


Figure 7

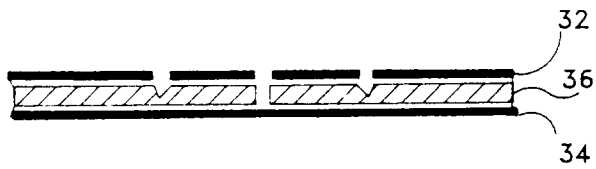


Figure 9