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(54) **CAN END WITH TAB RETAINED BY CHEMICAL ADHESIVE MEMBER**

DOSENENDE MIT DURCH CHEMISCHES KLEBSTOFFGLIED FESTGEHALTENER LASCHE
EXTREMITE DE CANETTE A LANGUETTE DE PREHENSION RETENUE PAR UN ELEMENT
ADHESIF CHIMIQUE

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Description

TECHNICAL FIELD

[0001] The present invention relates to end closures for two-piece beer and beverage metal containers, having a frangible tear panel and a retained-tab. More specifically, the present invention relates to improved characteristics for staking the tab to the end closure and for limiting retained-tab rotation.

BACKGROUND OF THE INVENTION

[0002] Typical end closures for beer and beverage containers have an opening panel and an attached leverage tab for pushing the opening panel into the container to open the end. The container is typically a drawn and ironed metal can, usually constructed from a thin plate of aluminum or steel. End closures for such containers are also typically constructed from a cutedge of thin plate of aluminum, formed into a blank end, and manufactured into a finished end by a process often referred to as end conversion. These ends are formed in the process of first forming a cutedge of thin metal, forming a blank end from the cutedge, and converting the blank into an end closure which may be seamed onto a container.

[0003] These types of container ends have been used for many years, with almost all such ends in use today being the "ecology" or "stay-on-tab" ("SOT") ends in which the tab remains attached to the end after a tear panel, including large-opening ends ("LOE"), is opened. The tear panel being a portion of the can end defined by a score length. The tear panel may be opened, that is the score may be severed, and the tear panel displaced at an angular orientation relative to the remaining portion of the can end. The tear panel remains hingedly connected to the remaining portion of the can end by a hinge segment, leaving an opening through which the user draws the contents of the container. In an LOE, the opening is at least 3.23 cm² (0.5 square inches) in area.

[0004] Opening of the tear panel is operated by the tab which is attached to the can end by a rivet. The rivet is generally formed by a portion of the can end, thus being of the same material. The tab is attached to the can end such that a nose of the tab extends over a proximal portion of the tear panel. A lift end of the tab is located opposite the tab nose and provides access for a user to lift the lift end, such as with the user's finger, to force the nose against the proximal portion of the tear panel.

[0005] When the tab nose is forced against the tear panel, the score initially ruptures at a vent region of the score. This initial rupture of the score is primarily caused by the lifting force on the tab resulting in lifting of a central region of the can end, immediately adjacent the rivet. As the tab is lifted further, the score rupture propagates along the length of the score, eventually stopping at the hinge segment.

[0006] One problem associated with the SOT and LOE

ends is rotation of the tab on the rivet in a clockwise or counterclockwise direction prior to opening. When the tab rotates on the rivet, the probability of an opening failure increases. An opening failure is defined as an instance when the can end is opened in a manner other than that described above, or when the container cannot be opened using the SOT (i.e., some force must be supplied by an instrument other than the SOT).

[0007] One method aimed at eliminating tab rotation includes placing an "up" dimple on the can end near the rivet area. The up dimple is aligned with, and fits within, a small hole on the tab. The up dimple is created by tooling that strikes the product or beverage side of the can end. One drawback of this proposed solution is that the tooling that creates the up dimple damages a film that coats the product side of the can end, and such damage might allow direct contact between the metal of the can end and the contents of the container. Another drawback occurs when the tab is slightly lifted above the dimple, and tab rotation occurs above the dimple.

[0008] In WO 2004/065236, another method of retaining the tab in proper position is to bend a portion of the tab downwardly such that it contacts the center panel of the can end. A small detent in the center panel may be adapted to receive the bent down portion of the tab.

[0009] The present invention is provided to solve the problems discussed above and other problems, and to provide advantages and aspects not provided by prior can ends of this type. A full discussion of the features and advantages of the present invention is deferred to the following detailed description, which proceeds with reference to the accompanying drawings.

SUMMARY OF THE INVENTION

[0010] An aspect of the present invention is to provide an end closure for a container according to claim 1.

[0011] Another aspect of the invention is to provide the end closure wherein the chemical adhesive attaches the tab to the public side of the central panel wall.

[0012] Another aspect of the invention is to place the chemical adhesive in communication with the central webbing of the tab.

[0013] Another aspect of the invention is to provide the rivet island with a first aperture. At least a portion of the chemical adhesive is located within the first aperture.

[0014] Another aspect of the invention is to provide the chemical adhesive in the form of a plurality of chemical adhesive members.

[0015] Another aspect of the present invention is to provide a rivet of the central panel wall. The rivet attaches the tab to the central panel wall.

[0016] Another aspect of the present invention is to provide a rivet of the chemical adhesive. The chemical adhesive rivet attaches the tab to the central panel wall.

[0017] Another aspect of the invention is to provide the rivet island with a second aperture. The rivet of the central panel wall located within the second aperture.

[0018] Other features, advantages, and combinations of the invention will be apparent from the following specification taken in conjunction with the following drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] To understand the present invention, it will now be described by way of example, with reference to the accompanying drawings in which:

FIG. 1 is a top view of an end closure of the present invention having a plurality of chemical adhesive members;

FIG. 2 is a top view of an end closure of the present invention having a plurality of chemical adhesive members and a chemical adhesive aperture in the rivet island;

FIG. 3 is a cross-sectional view of an end closure of the present invention having a plurality of chemical adhesive members, and the tab attached to the central panel wall by the chemical adhesive;

FIG. 4 is a cross-sectional view of an end closure of the present invention having a plurality of chemical adhesive members and a rivet of the chemical adhesive; and

FIG. 5 is a top view of an end closure without the tab, illustrating possible locations of the chemical adhesive members along the central panel wall.

DETAILED DESCRIPTION

[0020] While this invention is susceptible of embodiments in many different forms, there is shown in the drawings and will herein be described in detail preferred embodiments of the invention with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the broad aspect of the invention to the embodiments illustrated.

[0021] The Figures show the article of the present invention. The end closure or can end of the present invention has improved opening characteristics, having structure adapted to provide a stiff center panel region around the central attachment area which serves as the leverage point for opening, and structure adapted to provide improved leverage and smooth openability for the end.

[0022] As shown in Figures 1-5, the end closure 10 for a container (not shown) has a central panel wall 12 having a seaming curl 14 for joining the wall to the container. The container is typically a drawn and ironed metal can, usually constructed from a thin plate of aluminum or steel. End closures for such containers are also typically constructed from a cutedge of thin plate of aluminum or steel, formed into blank end, and manufactured into a finished end by a process often referred to as end conversion. In the embodiment shown in the Figures, the central panel 12 is joined to a container by a seaming curl 14 which is

joined to a mating curl of the container. The seaming curl 14 of the end closure 10 is integral with the central panel 12 by a countersink area 16 which is joined to the panel outer edge 18 of the central panel 12. This type of means for joining the central panel 12 to a container is presently the typical means for joining used in the industry, and the structure described above is formed in the process of forming the blank end from a cutedge of metal plate, prior to the end conversion process. However, other means for joining the central panel to a container may be employed with the present invention.

[0023] The steps of manufacturing the end begin with blanking the cutedge, typically a round or non-round cut-edge of thin metal plate. Examples of non-round cutedge blanks include elliptical cutedges, and convoluted cutedges. A convoluted cutedge may be described as generally having three distinct diameters, each diameter being 45° relative to the others. The cutedge is then formed into a blank end by forming the seaming curl, countersink, panel radius and the central panel.

[0024] The conversion process for this type of end closure typically includes the following steps: forming a rivet by first forming a projecting bubble in the center of the panel and subsequently working the metal of the bubble into a button and into the more narrow projection of metal being the rivet; forming the tear panel by scoring the metal of the panel wall; forming an inner bead on the tear panel; forming a deboss panel by bending the metal of the panel wall such that a central area of the panel wall is slightly lower than the remaining panel wall; staking the tab to the rivet; and other subsequent operations such as wipe-down steps to remove sharp edges of the tab, lettering on the panel wall by scoring or embossing (or debossing), and restriking the rivet island. As will be discussed in more detail below, the step of forming a rivet of the central panel wall is optional using the teaching of the present invention.

[0025] The central panel wall 12 has a displaceable tear panel 20 defined by a frangible score 22 and a non-frangible hinge segment 24. The tear panel 20 of the central panel 12 may be opened, that is the frangible score 22 may be severed and the tear panel 20 displaced at an angular orientation relative to the remaining portion of the central panel 12, while the tear panel 20 remains hingedly connected to the central panel 12 through the hinge segment 24. In this opening operation, the tear panel 20 is displaced at an angular deflection. More specifically, the tear panel 20 is deflected at an angle relative to the plane of the panel 12, with the vortex of the angular displacement being the hinge segment 24.

[0026] The tear panel 20 is formed during the conversion process by a scoring operation. The tools for scoring the tear panel 20 in the central panel 12 include an upper die on the public side 12a having a scoring knife edge in the shape of the tear panel 20, and a lower die on the product side 12b (see Figures 3 and 4) to support the metal in the regions being scored. When the upper and lower die are brought together, the metal of the panel

wall 12 is scored between the dies. This results in the scoring knife edge being embedded into the metal of the panel wall 12, forming the score which appears as a wedge-shaped recess in the metal. The metal remaining below the wedge-shaped recess is the residual of the score 22. Therefore, the score is formed by the scoring knife edge causing movement of metal, such that the imprint of the scoring knife edge is made in the public side of the panel wall 12.

[0027] The central panel 12 further includes a tab 26 also constructed from aluminum or steel. The tab 26 has a generally elongated body with a central longitudinal axis A-A defined by a central cross section through the tab nose 30, and through a central webbing 42 and the lift end 32. The tab is attached to the public side of the central panel wall 12 at a location spaced apart from the tear panel 20. Typical prior art container ends often have a tab 26 which is staked in the final steps of the conversion process by staking the area of the panel wall 12 adjacent and under the rivet island 46 at an angle, to bias the tab 26 such that the lift end 32 of the tab 26 rests close to the panel wall 12.

[0028] The opening of the tear panel 20 is operated by the tab 26 which is attached to the central panel 12 by the rivet 28 (as will be explained in more detail the rivet 28 of the present invention maybe produced from the material of the central panel 12 or from a chemical adhesive), generally through a rivet aperture 29. The tab 26 is attached to the central panel 12 such that the nose 30 of the tab 26 extends over a proximal portion of the tear panel 20. The attachment point of the tab 26 to the central panel 12 may be in any location on the central panel 12, including the tear panel 12; however, the attachment point is preferably in the location of a typical rivet 26 location which is spaced apart from the tear panel 20. In other words, in can ends of this type, the tab 26 is typically not attached to the tear panel 20, but acts on the tear panel 20 as set forth below.

[0029] The lift end 32 of the tab 26 is located opposite the tab nose 30 and provides access for a user to lift the lift end 32, such as with the user's finger, to force the nose 30 against the proximal portion of the tear panel 20.

[0030] When the tab nose 30 is forced against the tear panel 20, the score 22 initially ruptures at the vent region of the score 22 of the tear panel 20. This initial rupture of the score 22 is primarily caused by the lifting force on the tab resulting in lifting of a central region of the center panel, immediately adjacent the rivet 28, which causes separation of the residual metal of the score 22. The force required to rupture the score in the vent region, typically referred to as the "pop" force, is a lower degree of force relative to the force required to propagate other regions of the score 22 by continued lifting of the lift end 32 of the tab 26. Therefore, it is preferable for the panel 12 in the area around the rivet 28 only lifts enough to assist with initial score rupture, or "pop," and remains substantially stiff and flat to provide the needed leverage for the tab 26 propagate the scoreline of the tear panel 20. Thus,

the opening of the tear panel 20 is achieved by pulling upwardly on the lift end 32 of the tab 26 to force the nose 30 of the tab downwardly against the tear panel 20. No pulling force is required.

[0031] After the initial "pop", or venting of the tear panel, the user continues to lift the lift end 32 of the tab 26 which causes the tab nose 30 to be pushed downward on the tear panel 20 to continue the rupture of the score 22, as an opening force. As the opening operation is continued, the tear panel 20 is displaced downward and is rotated about the hinge region 24 to be deflected into the container.

[0032] As is best illustrated in Figures 1 and 2, the tab 26 has a central webbing 42 located between the nose 30 and the lift end 32. The central webbing 42 includes a hinge region 44 and a rivet island 46 partially surrounding the rivet 28. An opening or void region 48 of the tab webbing 42 provides an exposed area of the central panel 12. The void region 48 has a curvilinear geometry which borders the rivet island 46 and at least partially surrounds the rivet 28 at a generally equal distance, with a first end of the void region 48 being disposed generally to one side of the rivet 28, and a second end being generally disposed on an opposite side of the rivet 28. The hinge region 44 of the tab webbing 42 includes a hinge line which is defined by a substantially straight line passing between the first end and the second end of the void region 48.

[0033] The void region 48 is generally defined a void region perimeter 50 of the tab webbing 42. As illustrated in Figure 1, the void region 48 may have a generally arch-shaped configuration. In this configuration, the rivet island 46 again follows the general shape of the void region 48.

[0034] Alternatively, the void region 48 can have a U-shaped configuration as illustrated in Figure 2. In this configuration, the rivet island 46 generally follows the shape of the void and region 48. Accordingly, the rivet island 46 has a substantially linear edge portion 52 opposite the hinge region 44 of the webbing 42.

[0035] Figures 1 and 2 represent only two examples of the rivet island 46 configuration. However, those individuals who are ordinary skilled in the art would understand that the rivet island 46 and the void region 48 can take any number of shapes without departing from the spirit of the invention, including but not limited to all notch or lance type rivet islands.

[0036] As shown in Figures 1-5, the end closure 10 further comprises a chemical adhesive, generally in the form of one or a plurality of chemical adhesive members 60, to inhibit rotational movement of the tab 26 along the public side 12a of the central panel 12. The chemical adhesive members 60 are located on the public side 12a of the central panel 12. When located on the public side 12a of the central panel wall 12, the chemical adhesive members 60 have a height sufficient to contact or operably communicate with a portion of the tab 26, primarily the central webbing 42, to inhibit rotation of the tab 26

along the public side 12a of the central panel 12, including the embodiments wherein the rivet 28 is produced from the chemical adhesive. When located on the tab 26, the chemical adhesive is engageable or engaging the public side 12a of the central panel 12.

[0037] One ordinary skilled in the art would recognize that the rivet 28 provides an impediment to tab 26 rotation. Further, because a rivet of the central panel 12 material creates a risk of leakage along the rivet, by eliminating the rivet of the central panel material and replacing with a rivet of chemical adhesive or by simply attaching the tab with the chemical adhesive, the risk of leaks around the rivet is eliminated.

[0038] The chemical adhesive is preferably glue or any a fluid epoxy or an adhesive tape, preferably providing sufficient strength to inhibit tab rotation or providing sufficient strength to retain the tab 26 to the public side 12a of the central panel 12 when necessary.

[0039] It is believed that chemical adhesion may be preferable to mechanical attachment (metallic rivets) for a number of reasons. First, while metallic rivets are quick and easy to use, they create stresses in the central panel 12 which may lead to distortion or cracking. Second, metallic rivets create extra forming operations which must be purchased and maintained. Finally, metallic rivets concentrate all of their holding power at the rivet location while chemical adhesion can spread the load evenly over a greater area of the tab and the central panel wall.

[0040] In the embodiment shown in Figure 1, portions of the chemical adhesive members 60 are visible through the void region 48. In addition, the rivet 28 may be produced from the material of the central panel 12. Alternatively, the rivet 28 can be produced from the chemical adhesive.

[0041] In the embodiment shown in Figure 2, portions of the chemical adhesive members 60 are visible through the void region 48. Here, the rivet island 46 includes a plurality of apertures. Once such aperture being the rivet aperture 29. Another being a chemical adhesive aperture 62. A chemical adhesive member 60 is located within the chemical adhesive aperture 62. Again, in this embodiment, the rivet 28 may be produced from the material of the central panel 12. Alternatively, the rivet 28 can be produced from the chemical adhesive. In other words, the rivet island 46 may have one or more apertures in which chemical adhesive members are located to attach the tab 26 to the public side 12a of the central panel 12 and/or to inhibit tab 26 rotation. These apertures can be placed in any orientation along the rivet island 46, symmetrically or asymmetrically.

[0042] Figure 3 is an illustration of an end closure 10 of the present invention in cross section. Here, the tab 26 is attached to the public side 12a of the central panel 12 by a chemical adhesive member 60. This chemical adhesive member 60 may be applied to the tab 26 prior to attachment to the public side 12a of the central panel 12, or it may be applied to the public side 12a of the central panel 12 prior to attaching the tab 26. In either

case, the chemical adhesive member 60 is located between the tab 26 and the public side 12a of the central panel 12. In this embodiment, a rivet 26 is not necessary, as the chemical adhesive member 60 bonds to a lower side the rivet island 46. The rivet island 46 may or may not include apertures. A second chemical adhesive member 60 may be included within the void region 48.

[0043] Figure 4 is an illustration of an end closure 10 of the present invention in cross section. Here, the tab 26 is attached to the public side 12a of the central panel 12 by a rivet 28 produced from a chemical adhesive member 60. The rivet island 46 may or may not include apertures other than the rivet aperture 29. A second chemical adhesive member 60 may be included within the void region 48.

[0044] Finally, Figure 5 illustrates various patterns of chemical adhesive members. Any end closure of the present invention may include several chemical adhesive "dots" 64, elongated (or any known geometrical configuration) members 66, and/or a chemical adhesive tape 68.

[0045] One ordinary skilled in the art would understand that the principles of the present invention are readily adaptable to LOEs as well as the SOT ends shown in the drawings, and could be provided with food container ends as well.

[0046] Several alternative embodiments have been described and illustrated. A person ordinary skilled in the art would appreciate that the features of the individual embodiments, for example, variations of the rivet material, can be applied in combination with any of the chemical adhesive member forms, such as dots, geometrical patterns, tapes, etc., and central panel 12 locations as along as the chemical adhesive member is in such a location and has a sufficient height to contact the tab when necessary to inhibit rotation and/or retain the tab to the central panel. Further, the terms "first," "second," "upper," "lower," etc. are used for illustrative purposes only and are not intended to limit the embodiments in any way, and the term "plurality" as used herein is intended to indicate any number greater than one, either disjunctively or conjunctively as necessary, up to an infinite number. The term "attached" is used to mean connected to as with as many intervening elements as necessary or desired. For example, the tab 26 may be attached to the central panel 12 by a rivet, either metallic or of a chemical adhesive, or by the chemical adhesive or by both.

Claims

1. An end closure (10) for a container including a central panel wall (12) having a product side, a public side (12a), and a displaceable tear panel (20) in the central panel wall (12) at least substantially defined by a frangible score (22) and a non-frangible hinge segment (24), comprising:

a tab (26) attached to the public side (12a) of the central panel wall (12) at a location spaced apart from the tear panel (20), at least a nose portion of said tab (26) extending over a portion of the tear panel (20), a lift end of said tab (26) being opposite said tab nose and spaced from the tear panel (20); and

a central webbing (42) of said tab (26) between said nose and said lift end wherein said central webbing (42) has a rivet island (46) and a void region (48) partially surrounding said rivet island (46) to provide an exposed area of the central panel (12), said void region (48) defined by a void region (48) perimeter of said central webbing (42), **characterized by:**

a chemical adhesive (60) to inhibit rotational movement of the tab (26) wherein the chemical adhesive (60) is located on the public side (12a) of the central panel wall (12), the chemical adhesive (60) having a height above the public side (12a) of the central panel wall (12), said height being sufficient to contact a portion of said tab (26) to inhibit rotational movement of said tab (26), at least a portion of said chemical adhesive (60) located within the said void region (48).

2. The end closure (10) of Claim 1 wherein said chemical adhesive (60) attaches said tab (26) to the public side (12a) of the central panel wall (12).
3. The end closure (10) of Claim 2 wherein the chemical adhesive (60) is in communication with said central webbing (42) of said tab (26).
4. The end closure (10) of Claim 2 wherein said chemical adhesive (60) is in communication with said rivet island (46).
5. The end closure (10) of Claim 4 wherein said rivet island (46) has a first aperture, at least a portion of said chemical adhesive (60) located within said first aperture.
6. The end closure (10) of Claim 1 wherein said chemical adhesive (60) includes a plurality of chemical adhesive (60) members.
7. The end closure (10) of Claim 1 wherein the end closure (10) includes a rivet formed of the chemical adhesive (60).
8. The end closure (10) of Claim 1 including a rivet of the central panel wall (12), said rivet attaching said tab (26) to the central panel wall (12).
9. The end closure (10) of Claim 9 wherein said rivet

island (46) includes a rivet aperture, said rivet passing through said rivet aperture.

10. The end closure (10) of Claim 1 wherein said central webbing (42) includes a first aperture, said chemical adhesive (60) located within said first aperture.
11. The end closure (10) of Claim 10 wherein said rivet island (46) has a second aperture, a rivet of the central panel wall (12) located within said second aperture for attaching said tab (26) to the central panel wall (12).
12. The end closure (10) of Claim 11 including a plurality of chemical adhesive members (60) located along the public side (12a) of the central panel wall (12).
13. The end closure (10) of Claim 1 wherein said rivet island (46) includes a first aperture, a second aperture, and a rivet, said rivet located within said first aperture, and at least a portion of said chemical adhesive (60) located within said second aperture.

Patentansprüche

1. Endverschluß (10) für einen Behälter mit einer zentralen Plattenwand (12), der eine Produktseite, eine Werbeseite (12a) und eine entfernbare Reißlasche (20) in der zentralen Plattenwand (12) aufweist, welche wenigstens von einer zerbrechlichen Kerbe (22) und einem nicht zerbrechlichen Gelenksegment (24) begrenzt ist, umfassend eine Nase (26), die an der Werbeseite (12a) der zentralen Plattenwand (12) an einer Stelle angebracht ist, welche mit Abstand neben der Reißlasche (20) liegt, wobei sich wenigstens ein Nasenteil der Nase (26) über einen Teil der Reißlasche (20) erstreckt und ein Hubende der Nase (26) dem Nasenteil gegenüberliegt und von der Reißlasche (20) mit Abstand getrennt ist, und des weiteren umfassend ein zentrales Gurtband (42) der Nase (26) zwischen der Nase und dem Hubende, wobei dieses zentrale Gurtband (42) eine Nietinsel (46) und einen Leerbereich (48) aufweist, der teilweise die Nietinsel (46) umgibt, um dadurch einen freiliegenden Bereich der zentralen Plattenwand (12) zu bilden, und wobei der genannte leere Bereich (48) von einem Leerbereich-Umfang (48) des zentralen Gurtbandes (42) begrenzt wird, **gekennzeichnet durch** einen chemischen Klebstoff (60), der dazu dient, die Drehbewegung der Nase (26) zu unterbinden und der auf der Werbeseite (12a) der zentralen Plattenwand (12) angeordnet ist, wobei der chemische Klebstoff (60) eine Höhe hat, die über der Werbeseite (12a) der zentralen Plattenwand (12) liegt und diese Höhe ausreicht, um einen Teil der Nase (26) zu berühren und **dadurch** die Drehbewegung der Nase (26) zu unterbinden, und wobei we-

- nigstens ein Teil des chemischen Klebstoffes (60) innerhalb des leeren Bereiches (48) liegt.
2. Endverschluß (10) nach Anspruch 1, **dadurch gekennzeichnet, daß** der chemische Klebstoff- (60) die Nase (26) an der Werbeseite (12a) der zentralen Plattenwand (12) befestigt. 5
 3. Endverschluß (10) nach Anspruch 2, **dadurch gekennzeichnet, daß** der chemische Klebstoff (60) in Verbindung mit dem zentralen Gurtband (42) der Nase (26) steht. 10
 4. Endverschluß (10) nach Anspruch 2, **dadurch gekennzeichnet, daß** der chemische Klebstoff (60) in Verbindung mit der Nietinsel (46) steht. 15
 5. Endverschluß (10) nach Anspruch 4, **dadurch gekennzeichnet, daß** die Nietinsel (46) eine erste Öffnung hat, und daß wenigstens ein Teil des chemischen Klebstoffes (60) in dieser ersten Öffnung liegt. 20
 6. Endverschluß (10) nach Anspruch 1, **dadurch gekennzeichnet, daß** der chemische Klebstoff (60) mehrere chemische Klebstoffkörper aufweist. 25
 7. Endverschluß (10) nach Anspruch 1, **dadurch gekennzeichnet, daß** der Endverschluß (10) einen Niet aufweist, der aus dem chemischen Klebstoff (60) gebildet ist. 30
 8. Endverschluß (10) nach Anspruch 1 mit einem Niet der zentralen Plattenwand (12), **dadurch gekennzeichnet, daß** der Niet die Nase (26) an der zentralen Plattenwand (12) befestigt. 35
 9. Endverschluß (10) nach Anspruch 8, **dadurch gekennzeichnet, daß** die Nietinsel (46) eine Nietöffnung aufweist, und daß der Niet durch diese Nietöffnung greift. 40
 10. Endverschluß (10) nach Anspruch 1, **dadurch gekennzeichnet, daß** das zentrale Gurtband (42) eine erste Öffnung aufweist, in der der chemische Klebstoff (60) angeordnet ist. 45
 11. Endverschluß (10) nach Anspruch 10, **dadurch gekennzeichnet, daß** die Nietinsel (46) eine zweite Öffnung aufweist, und daß ein Niet der zentralen Plattenwand (12) in dieser zweiten Öffnung angeordnet ist, um die Nase (26) an der zentralen Plattenwand (12) zu befestigen. 50
 12. Endverschluß (10) nach Anspruch 11, **gekennzeichnet durch** mehrere chemische Klebstoffkörper (60), die entlang der Werbeseite (12a) der zentralen Plattenwand (12) angeordnet sind. 55

13. Endverschluß (10) nach Anspruch 1, **dadurch gekennzeichnet, daß** die Nietinsel (46) mit einer ersten Öffnung, einer zweiten Öffnung und einem Niet versehen ist und daß dieser Niet in der ersten Öffnung angeordnet ist und wenigstens ein Teil des chemischen Klebstoffes (60) sich in der zweiten Öffnung befindet.

Revendications

1. - Fermeture d'extrémité (10) pour un contenant comprenant une paroi de panneau central (12) ayant un côté produit, un côté public (12a), et un panneau de déchirement déplaçable (20) dans la paroi de panneau central (12) défini au moins sensiblement par une découpe d'ouverture prémarquée (22) et un segment d'articulation non cassante (24), comprenant :

- une languette (26) fixée au côté public (12a) de la paroi de panneau central (12) en un emplacement espacé du panneau de déchirement (20), au moins une partie nez de ladite languette (26) s'étendant sur une partie du panneau de déchirement (20), une extrémité de levage de ladite languette (26) étant opposée audit nez de languette et espacée du panneau de déchirement (20) ; et

- une bande centrale (42) de ladite languette (26) entre ledit nez et ladite extrémité de levage, ladite bande centrale (42) ayant un îlot de rivet (46) et une région de vide (48) entourant partiellement ledit îlot de rivet (46) pour fournir une zone exposée du panneau central (12), ladite région de vide (48) étant définie par un périmètre de région de vide (48) de ladite bande centrale (42),

caractérisée par :

- un adhésif chimique (60) pour empêcher un mouvement de rotation de la languette (26), l'adhésif chimique (60) étant disposé sur le côté public (12a) de la paroi de panneau central (12), l'adhésif chimique (60) ayant une hauteur audessus du côté public (12a) de la paroi de panneau central (12), ladite hauteur étant suffisante pour venir en contact avec une partie de ladite languette (26) pour empêcher un mouvement de rotation de ladite languette (26), au moins une partie dudit adhésif chimique (60) étant disposée à l'intérieur de ladite région de vide (48).

2. - Fermeture d'extrémité (10) selon la revendication 1, dans laquelle ledit adhésif chimique (60) fixe ladite languette (26) au côté public (12a) de la paroi de panneau central (12).

3. - Fermeture d'extrémité (10) selon la revendication 2, dans laquelle l'adhésif chimique (60) est en communication avec ladite bande centrale (42) de ladite languette (26). 5
4. - Fermeture d'extrémité (10) selon la revendication 2, dans laquelle ledit adhésif chimique (60) est en communication avec ledit îlot de rivet (46). 10
5. - Fermeture d'extrémité (10) selon la revendication 4, dans laquelle ledit îlot de rivet (46) a une première ouverture, au moins une partie dudit adhésif chimique (60) étant disposée à l'intérieur de ladite première ouverture. 15
6. - Fermeture d'extrémité (10) selon la revendication 1, dans laquelle ledit adhésif chimique (60) comprend une pluralité d'éléments d'adhésif chimique (60). 20
7. - Fermeture d'extrémité (10) selon la revendication 1, la fermeture d'extrémité (10) comprenant un rivet formé de l'adhésif chimique (60). 25
8. - Fermeture d'extrémité (10) selon la revendication 1, comprenant un rivet de la paroi de panneau central (12), ledit rivet fixant ladite languette (26) à la paroi de panneau central (12). 30
9. - Fermeture d'extrémité (10) selon la revendication 8, dans laquelle ledit îlot de rivet (46) comprend une ouverture de rivet, ledit rivet passant à travers ladite ouverture de rivet. 35
10. - Fermeture d'extrémité (10) selon la revendication 1, dans laquelle ladite bande centrale (42) comprend une première ouverture, ledit adhésif chimique (60) étant disposé à l'intérieur de ladite première ouverture. 40
11. - Fermeture d'extrémité (10) selon la revendication 10, dans laquelle ledit îlot de rivet (46) a une seconde ouverture, un rivet de la paroi de panneau central (12) étant disposé à l'intérieur de ladite seconde ouverture pour fixer ladite languette (26) à la paroi de panneau central (12). 45
12. - Fermeture d'extrémité (10) selon la revendication 11, comprenant une pluralité d'éléments d'adhésif chimique (60) disposés le long du côté public (12a) de la paroi de panneau central (12). 50
13. - Fermeture d'extrémité (10) selon la revendication 1, dans laquelle ledit îlot de rivet (46) comprend une première ouverture, une seconde ouverture et un rivet, ledit rivet étant disposé à l'intérieur de ladite première ouverture et au moins une partie dudit adhésif chimique (60) étant disposée à l'intérieur de ladite seconde ouverture. 55

Fig. 1

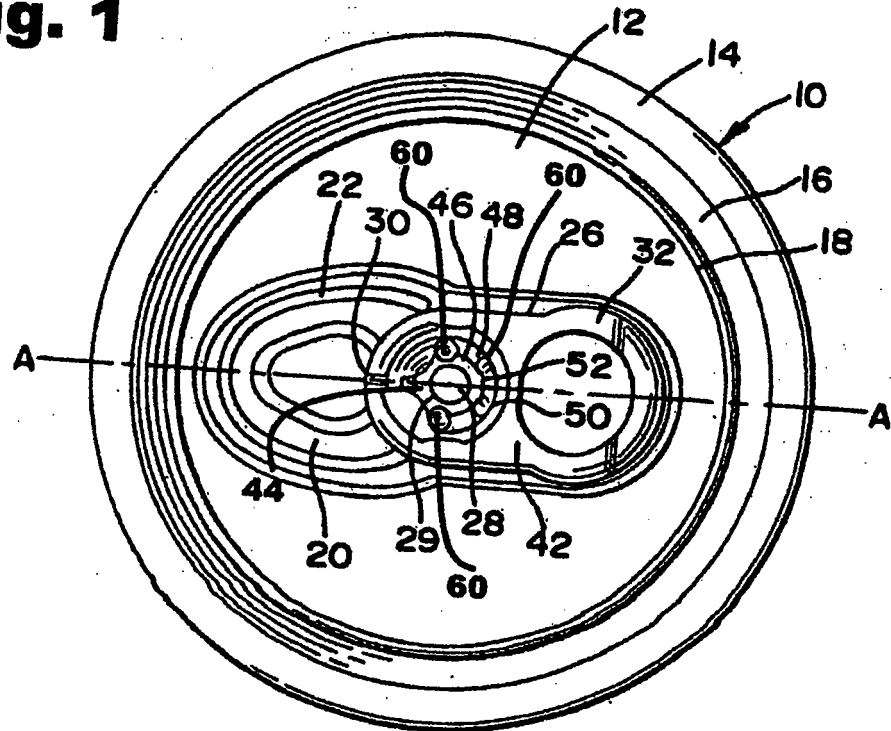


Fig. 2

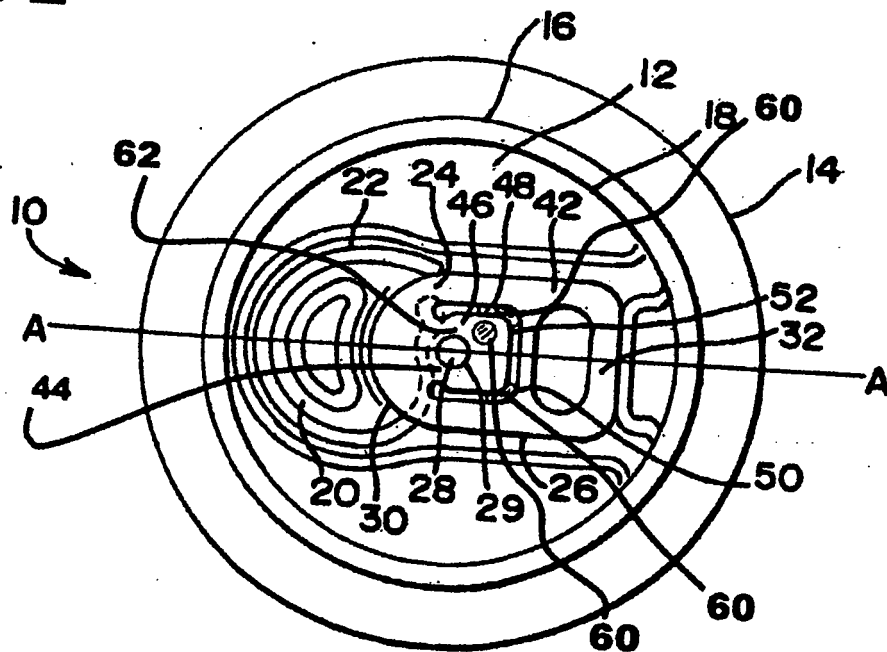


Fig. 3

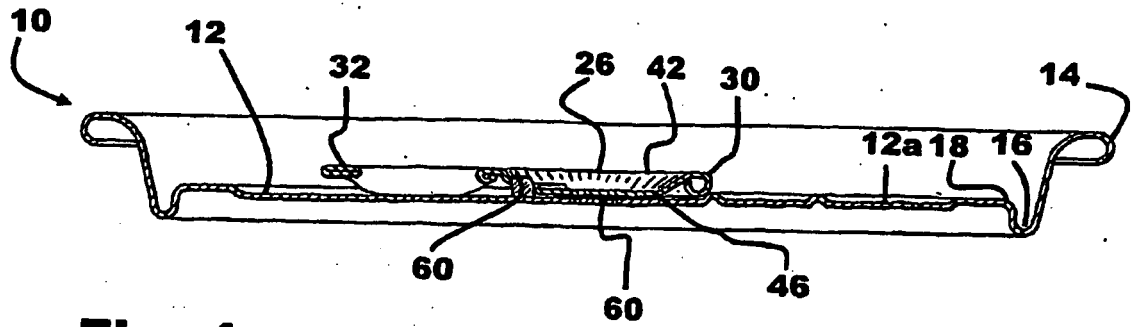


Fig. 4

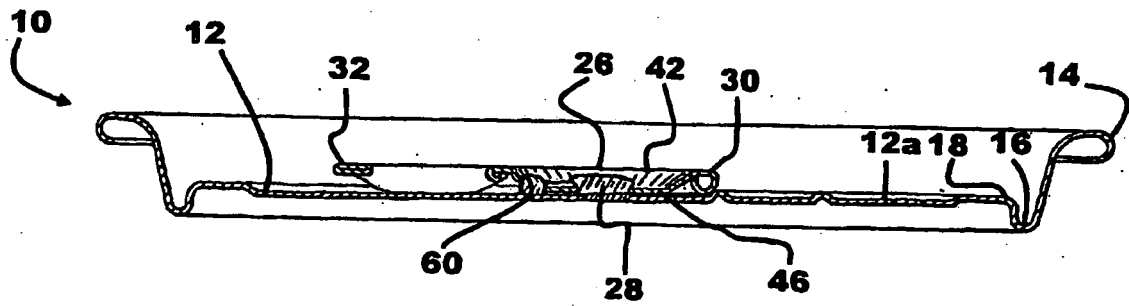
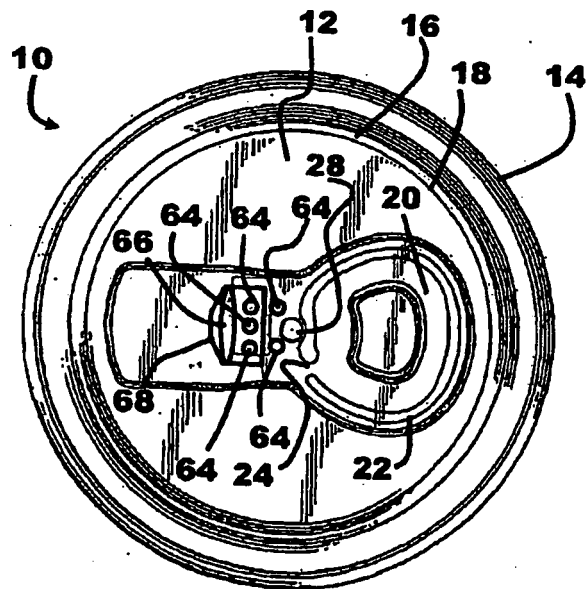


Fig. 5



REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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