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(54) **A beverage container with means for frothing the beverage and a method of forming such a container**

Getränkbehälter mit Aufschäummitteln für das Getränk und Verfahren zur Herstellung dieses Behälters

Réceptient pour boisson comprenant des moyens pour faire mousser ladite boisson et procédé pour préparer un tel réceptient

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(56) References cited:
GB-A- 1 266 351

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Description

TECHNICAL FIELD & BACKGROUND ART

[0001] The present invention relates to a sealed beverage package and a method of forming such a package. More particularly it concerns a sealed package of the kind containing beverage having gas in solution and within which package is located a froth developing means, typically a hollow insert containing gas under pressure which, upon opening of the package and in response to a pressure differential developed thereby, causes fluid in the form of a gas or a liquid and gas, to be ejected from the insert to cause, or assist in, the formation of a head of froth on the beverage by the evolution of gas dissolved in the beverage. Froth developing means are now well known in the art and can take many forms of structure and operation and an example of which is discussed in our Patent Specification G.B.-A-2,183,592.

[0002] Beverage packages made in accordance with the preferred embodiment of our aforementioned British Patent Specification have met with considerable commercial success where, as with many other froth developing means, the insert is located at or towards the bottom of a container and retained as a press or interference fit with an upstanding side wall of the container. However, for some beverage packages it has been found desirable to locate and retain the froth developing means other than as aforementioned, for example to facilitate fitting of the insert within a particular form of container that is utilised and to locate the froth developing means at what is considered to be a preferred position for effecting froth development in the particular beverage that is packaged. For example, our Patent Specification EP-A-0 518 522 discloses the location of a hollow insert within a narrow necked bottle and retained by an upward extension of the insert frictionally engaging with the narrowed top part of the bottle.

[0003] Our Patent Specification G.B.-A-1,266,351 discloses a sealed beverage package in which the froth developing means is carried within a container having an openable top by a removable closure or cap for that top. The carriage of the froth developing means by the removable closure of the container is particularly convenient for some beverage packaging lines, for example where the container is in the form of a narrow necked open topped bottle, and it is an object of the present invention to provide an improved sealed beverage package and a method of forming such a package where the froth developing means is carried by a closure for an openable top of the package. The preamble of claim 1 is based on this prior art.

STATEMENTS OF INVENTION & ADVANTAGES

[0004] According to the present invention there is provided a sealed beverage package comprising a con-

tainer having an openable top and a closure part for said top; the container containing beverage which has gas in solution and forms a headspace that is at a pressure greater than atmospheric; froth developing means comprising an insert part carried within the container by said closure, said froth developing means reacting when the top of the container is opened and in response to a pressure differential developed thereby to cause gas to be liberated from solution in the beverage for froth development, and wherein the insert part is carried by the closure part through a coupling which comprises a spigot on one of said parts engaging in a socket on the other of said parts, said spigot having a head and said socket engaging over the head to retain it from withdrawal from the socket and to capture the head in the event of its separation from the part on which it is located.

[0005] Further according to the present invention there is provided a method of forming a sealed beverage package as specified in the immediately preceding paragraph which comprises providing one of a socket and spigot on a closure part; providing the other of said socket and spigot on an insert part of froth developing means; press fitting the socket to the spigot to form a coupling in which the socket engages over a head of the spigot to retain the head from withdrawal from the socket and to capture the head in the socket in the event of the head becoming separated from the part on which it is located and so that the insert part is carried through the coupling by the closure part; moving the insert part into an open topped container through the open top thereof and which container contains beverage having gas in solution and sealing the closure part to the container to close the open top whilst providing pressure greater than atmospheric in a headspace formed by the beverage in the container.

[0006] By the present invention it is intended that the socket and spigot engagement between the closure part and the insert part provides a coupling which may be regarded as inseparable other than for when excessive separation forces are applied to the coupling (to the extent that such separation forces would result in identifiable damage being caused to components in the package, particularly the coupling, the insert part or the closure part). Commercially it is important that the froth developing means does not separate from the closure part which carries it to become a free body within the beverage; whilst such separation may not hinder the reaction of the froth developing means when the package is opened, the free body may be dispensed along with the beverage with undesirable consequences.

[0007] Usually the froth developing means will comprise a hollow insert part which contains at least gas at a pressure greater than atmospheric (and may contain both such gas and liquid/beverage) and have a restricted aperture so that when the top of the container is opened for the headspace to communicate with atmosphere, the pressure differential which develops

causes fluid (gas or gas and liquid) in the insert to be ejected through the restricted aperture into the beverage for the development of a head of froth on the beverage by the evolution of gas from solution in the beverage. During the opening of the package, typically by removal of the closure part as in the case of a crown-type cap, it is possible for the package to be tilted and/or the hollow insert to be tilted to an extent where the restricted aperture is exposed from the beverage thereby reducing or negating the froth developing characteristics. To alleviate this possibility it is preferred that the insert part is carried by the coupling pendulously relative to the closure part. To achieve this the head of the spigot may be a loose fit within the socket whilst clearance is provided between a neck of the spigot on which the head is carried and the socket to permit the insert part to hang from, and swing relative to, the closure part so that if the container is tilted (within reason) from the vertical, a vertical orientation can be maintained for the insert to retain the restricted aperture submerged.

[0008] For convenience of assembly of the froth developing means with the closure part, typically in association with a packaging line where the open topped containers move towards a filling and sealing station, it is preferred that the head is simply press fitted to the socket to snap engage therewith. With this in mind, at least one of the head and socket may be provided with a tapered lead-in surface for facilitating the location of the head in the socket and the press fitting engagement. To ensure that the head of the spigot is captured by the socket, such head may have a barb which engages with a shoulder of the socket to restrain withdrawal of the head from the socket.

[0009] It is not unknown for purchasers of beverage packages which include froth developing means to seek compensation for alleged damage caused by the froth developing means or portions thereof becoming loose or breaking free within the container. With the package of the present invention it will be usual, but not essential, for the closure part to be completely removed from the container on opening and to carry with it the froth developing means thereby exposing such means to the user. It is possible therefore for damage to be inflicted purposely on the froth developing means with the intention of seeking compensation with an unjustified claim. With this in mind it is preferred that the or a neck on which the head of the spigot is located is frangible so that the head will break off and be retained in the socket in response to a manual bending force applied between the insert part and the closure part. Obviously where a claim for compensation is made the components of the beverage package must be available for inspection and if the neck is broken purposely as aforementioned (as compared with such breakage as may occur naturally following normal packaging and handling), this will become apparent by stress form analysis of the break surfaces presented on the neck, particularly by the material of the head that is retained in the socket. Alternatively, or

in addition, the neck on which the head is located may be provided with a weakened region at which the head can be broken off to be retained in the socket in response to a manual bending force applied between the insert part and the closure part so that following such a break the head captured by the socket can again be subjected to stress form analysis.

[0010] Either or both of the socket and spigot will usually be formed as a plastics moulding. Typically the insert part will be formed as a plastics moulding and the socket or spigot on that part is conveniently moulded integral therewith. The present invention was primarily, but not essentially, developed for a beverage package formed with an open topped bottle having a closure part which carries a sealant for effecting a seal between that part and the bottle. This sealant is usually thermoformed, hot plate welded or glued on to the closure part and may itself be moulded to present the socket or spigot. However, sealant materials will usually be too resilient to define and serve for the socket or spigot, particularly the latter. It is preferred therefore that when the closure part comprises a sealant as aforementioned, the socket or spigot on the closure part is formed as a plastics moulding and that moulding is captured on the closure part by the sealant.

[0011] Preferably the spigot is on the insert part and the socket is on the closure part, this is particularly convenient for open topped bottles where the closure part is in the form of a crown cap but it will be realised that the reverse arrangement can be employed. Furthermore, whilst the closure part and froth developing means carried thereby will usually be completely removed from the container on opening of the container for dispensing the beverage, such complete removal is not essential, for example where the closure part may be partially removed or an opening otherwise formed in the beverage package for dispensing purposes.

DRAWINGS

[0012] One embodiment of a sealed beverage package constructed in accordance with the present invention will now be described, by way of example only, with reference to the accompanying illustrative drawings in which:-

Figure 1 is a section through the package showing the coupling between the closure cap and a hollow insert of the froth developing means, and

Figure 2 is an exploded view, in section, showing the closure cap and components for the coupling and the hollow insert comprised in the package of Figure 1.

DETAILED DESCRIPTION OF DRAWINGS

[0013] The sealed beverage package is formed with a container 1 which consists of a conventionally shaped

bottle, usually of glass, ceramic or plastics having a base 2 and an upwardly extending cylindrical side wall 3 that converges to a neck 4 which defines an open top 5 for a chamber 6 within the bottle.

[0014] Located within the chamber 6 is a hollow plastics insert 7 which contains gas under pressure and has a restricted aperture 8 through which gas and/or liquid/beverage in the insert 7 is to be ejected for the purpose of developing a head of froth on beverage 23 contained in the chamber 6.

[0015] The insert 7 is carried through a coupling 9 by a closure 10 for the open top 5. The closure is in the form of a crown cap 10 which is retained in conventional manner by crimping over an external annular lip 11 at the mouth of the bottle neck 4 so that the crown cap 10 can be removed with the aid of a bottle opener or by twisting.

[0016] The hollow insert 7 is conveniently formed as a two part moulding 7A, 7B of which an upper part 7A has an external annular rib 12 and a lower part 7B has an internal annular groove 13 and includes, at its bottom end, the aperture 8. The insert 7 is assembled by snap fitting the rib 12 within the groove 13 and heat sealing the parts 7A and 7B together to form a chamber in the insert which is sealed other than for the aperture 8. The insert 7 is elongated along an axis 7C for convenience of fitting co-axially within the neck 4 of the bottle and to provide clearance with the neck.

[0017] The upper end of the insert part 7A has integrally moulded therewith an upwardly extending spigot 14 of the coupling 9. The spigot 14 is co-axial with the axis 7C and has a barbed head 15 carried on a neck 16. Also forming part of the coupling 9 is a plastics moulded socket 17 of tubular form and which has an internal shoulder 18 and an external flange 19. A tapered mouth 20 of the socket provides a lead-in surface to a necked region 18A formed in the bore of the socket adjacent to the shoulder 18. The socket 17 is secured to the underside of the cap 10 substantially centrally thereof. Conventionally crown caps 10, particularly when of metal, are provided on their underside face with a sealant 22 (Figure 1) which forms a seal between the cap and the lip 11 during the crimping operation. Conveniently therefore the socket 17 is secured to the underside of the cap 10 by the sealant 22 as the latter is thermally formed, welded or glued on the cap to capture the flange 19. It will be appreciated however that alternative techniques may be employed for securing the socket 17 on the underside of the cap 10, for example by adhesive or welding and it is also possible for the socket 17 to be formed integral with the cap 10 or with the sealant 22.

[0018] In the packaging process the insert 7 assembled from the parts 7A and 7B heat seal together as aforementioned will usually be supplied separately from the cap 10 having the socket 17 already secured thereto by the sealant 22. Whilst an empty bottle 1 in an upstanding condition is moving along a bottle filling line (on which it is charged with an appropriate volume of

beverage 23 containing gas in solution) the cap 10/socket 17 assembly and the insert 7 are conveniently moving parallel with the bottle and being connected together through the coupling 9. For this connection the head 15 of the spigot is press fitted co-axially into the socket 17 through the mouth 20 and necked region 18A thereof so that its barbs snap engage over the shoulder 18 and thereby the head is captured in the socket and prevented from being withdrawn. The barbed head 15 is conveniently tapered to provide a lead-in surface which cooperates with the lead-in surface 20 of the socket to facilitate the engagement of the coupling co-axially. The coupling 9 that is formed may be relatively rigid. Preferably however the head 15 is a loose fit within the socket 17 whilst a clearance is provided between the necked region 18A in the bore of the socket 17 and the neck 16 of the spigot 14 so that the insert 7 will hang from the cap 10 in pendulous manner (whereby the insert 7 is permitted to swing through the coupling 9 relative to the cap 10). It will be noted that the tapered lead-in surface 20 also provides clearance to permit for the aforementioned swinging movement.

[0019] Following coupling of the insert 7 to the cap 10 and charging of the bottle chamber 6 with the required beverage 23 (containing gas such as carbon dioxide and/or nitrogen in solution) to form a headspace 24, the insert 7 is located co-axially within the neck 4. The beverage 23 will usually be alcoholic such as fermented stout, ale, lager or cider or non-alcoholic such as so-called soft drinks. The headspace 24 is pressurised conveniently by liquid nitrogen dosing or within a pressure chamber and the open top 5 of the bottle sealed by crimping the crown or screw cap to the lip 11 as aforementioned to form the beverage package with its headspace at pressure greater than atmospheric.

[0020] The hollow insert 7 will contain gas under pressure which is maintained by the pressurisation of the headspace 24. Upon opening of the container 1 by removal of the cap 10, the headspace 24 reduces to atmospheric pressure and, in known manner, a pressure differential results which causes pressurised gas and/or liquid in the insert 7 to be ejected therefrom through the restricted aperture 8 for the development of a head of froth on the beverage 23 (for example in the manner discussed in our Patent Specification G.B.-A-2,183,592).

[0021] During opening of the bottle it is most desirable that the aperture 8 is submerged in the beverage 23 for optimum froth development. It is possible that during removal of the cap 10 the bottle will be tilted from an upright condition. With a rigid coupling between the cap 10 and the insert 7, this tilting can result in the aperture 8 being exposed from the beverage or have its depths of submersion reduced to an extent that the froth development characteristics are less effective. However, by pendulously mounting the insert 7 through the coupling 9 as aforementioned, if the bottle 1 is tilted (within reason) from its upright condition, the insert 7 can swing on

the cap 10 to maintain an upright condition and alleviate the likelihood of the aperture 8 becoming exposed from, or too shallow in, the beverage 23.

[0022] In the present embodiment it is intended that the cap 10 together with the insert 7 carried thereby is removed fully from the bottle 1 for dispensing of the beverage after the initiation of the froth development. Following exposure of the insert 7 from the bottle it is possible that the insert 7 may be purposely broken off from the cap 10 with the intention of making an unjustified claim for compensation as a result of damage allegedly caused by the insert being a free body within the beverage 23 during its dispersion and consumption. With this in mind it is preferred that the neck 16 of the spigot 14 is frangible and/or has a weakened region whereby the barbed head 15 can break off from the insert 7 in response to a manual bending force applied between the insert 7 and the cap 10. Upon such breakage the head 15 is captured to be retained within the socket 17. In the event of a claim for damage as aforementioned it is reasonable to expect the components of the bottle package to be returned to the manufacturer for examination, particularly the cap 10 or the insert 7 and preferably both. By stress form analysis of the break surface on the head 15 captured in the socket 17 it will be possible to determine whether the breakage occurred as a result of natural usage and faulty manufacture or was inflicted purposely. Similar comments apply to the break surface presented on the neck 16.

[0023] It will be appreciated that the beverage package can have the coupling reversed by forming the socket 17 integral with the insert 7 and securing the spigot 14 to the underside of the cap 10.

Claims

1. A sealed beverage package comprising a container (1) having an openable top (5) and a closure part (10) for said top; the container containing beverage (23) which has gas in solution and forms a head-space (24) that is at a pressure greater than atmospheric; froth developing means comprising an insert part (7) carried within the container (1) by said closure (10), said froth developing means reacting when the top (5) of the container (1) is opened and in response to a pressure differential developed thereby to cause gas to be liberated from solution in the beverage (23) for froth development, characterised in that the insert, part (7) is carried by the closure part (10) through a coupling (9) which comprises a spigot (14) on one of said parts engaging in a socket (17) on the other of said parts, said spigot (14) having a head (15) and said socket (17) engaging over the head (15) to retain it from withdrawal from the socket (17) and to capture the head (15) in the event of its separation from the part on which it is located.
2. A package as claimed in claim 1 in which the froth developing means (7) is carried, by the coupling (9) pendulously relative to the closure part (10).
3. A package as claimed in claim 2 in which the head (15) is a loose fit with the socket (17) and clearance is provided between the socket (17) and a neck (16) of the spigot (14) on which the head (15) is located to permit the insert part (7) to hang and swing relative to the closure part (10).
4. A package as claimed in any one of the preceding claims in which the head (15) is press fitted to the socket (17) and snap engages therewith.
5. A package as claimed in claim 4 in which at least one of the head (15) and socket (17) is provided with a tapered lead-in surface (20) for facilitating said press fitting.
6. A package as claimed in any one of the preceding claims in which the head (15) is barbed to engage with a shoulder (18) of the socket (17) and thereby restrain withdrawal of the head from the socket.
7. A package as claimed in any one of the preceding claims in which the or a neck (16) of the spigot (14) on which the head (15) is located is frangible for the head (15) to break off and be retained in the socket (17) in response to a manual bending force applied between the insert part (7) and the closure part (10).
8. A package as claimed in any one of the preceding claims in which the or a neck (16) of the spigot (14) on which the head (15) is located is provided with a weakened region at which the head (15) can break off to be retained in the socket (17) in response to a manual bending force applied between the insert part (7) and the closure part.
9. A package as claimed in any one of the preceding claims in which at least one of the socket (17) and spigot (14) is formed as a plastics moulding.
10. A package as claimed in claim 9 in which the insert part (7) comprises a plastics moulding and the socket or spigot on that part is moulded integral therewith.
11. A package as claimed in any one of the preceding claims in which the closure part (10) has a sealant (22) for effecting a seal between that part and the container (1) and the socket or spigot (17) on the closure part (10) is retained on that part by the sealant (22).
12. A package as claimed in claim 11 in which the

socket (17) or spigot on the closure part (10) is a plastics moulding and that moulding is captured on the closure part (10) by the sealant (22).

13. A package as claimed in any one of the preceding claims in which the spigot (14) is on the insert part (7) and the socket (17) is on the closure part (10). 5
14. A package as claimed in any one of the preceding claims in which the container (1) comprises an open topped bottle and the closure part is a cap (10) sealed to the bottle. 10
15. A package as claimed in any one of the preceding claims in which the insert (7) contains at least one of gas at pressure greater than atmospheric or gas at pressure greater than atmospheric and liquid and has a restricted aperture (8) arranged so that in response to said pressure differential fluid under pressure is ejected through the restricted aperture (8) into the beverage (23) in the container (1) for said froth development. 15 20
16. A method of forming a sealed beverage package as claimed in any one of the preceding claims which comprises providing one of a socket (17) and spigot (14) on a closure part (10); providing the other of said socket (17) and spigot (14) on an insert part (7) of froth developing means; press fitting the socket (17) to the spigot (14) to form a coupling (9) in which the socket (17) engages over a head (15) of the spigot (14) to retain the head (15) from withdrawal from the socket (17) and to capture the head (15) in the socket (17) in the event of the head (15) becoming separated from the part on which it is located and so that the insert part (7) is carried through the coupling (9) by the closure part (10); moving the insert part (7) into an open topped container (1) through the open top (5) thereof and which container (1) contains beverage (23) having gas in solution and sealing the closure part (10) to the container (1) to close the open top (5) whilst providing pressure greater than atmospheric, in a headspace (24) formed by the beverage (23) in the container (1). 25 30 35 40 45
17. A method as claimed in claim 16 which comprises effecting the coupling (9) so that the froth developing means (7) is carried pendulously relative to the closure part (10). 50
18. A method as claimed in either claim 16 or claim 17 which comprises providing the socket (17) on the closure part (10), providing the spigot (14) on the insert part (7) and press fitting the head (15) of the spigot (14) into snap engagement with the socket (17). 55

19. A method as claimed in any one of claims 16 to 18 which comprises securing whichever of the socket (17) and spigot is on the closure part (10) to that part by a sealant (22) on the closure part (10) which is to form a seal between the closure part (10) and the container (1).

Patentansprüche

1. Eine abgedichtete Getränkepackung, umfassend einen Behälter (1) mit einer zu öffnenden Oberseite (5) und ein Verschlussteil (10) für die Oberseite; wobei der Behälter Getränk (23) enthält welches Gas in Lösung aufweist und einen Kopfraum (24) bildet, der unter einem größeren Druck als atmosphärischer Druck steht; ein Mittel zur Schaumentwicklung, umfassend ein Einsatzteil (7), das innerhalb des Behälters (1) durch den Verschluss (10) getragen wird, wobei das Mittel zur Schaumentwicklung reagiert, wenn die Oberseite (5) des Behälters (1) geöffnet wird und in Reaktion auf einen Differentialdruck, der dadurch entwickelt wird, um zu verursachen, daß Gas aus Lösung in dem Getränk für die Schaumentwicklung freigesetzt wird, **dadurch gekennzeichnet**, daß das Einsatzteil (7) durch das Verschlussteil (10) durch eine Verbindung (9) getragen wird, welche einen Zapfen (14) an einem der Teile umfaßt, der in eine Fassung (17) an dem anderen der Teile eingreift, wobei der Zapfen (14) einen Kopf (15) aufweist und die Fassung (17) über dem Kopf (15) eingreift, um ihn vom Zurückziehen aus der Fassung (17) abzuhalten und den Kopf (15) für den Fall seiner Trennung von dem Teil, an dem er sich befindet, festzuhalten.
2. Eine Packung gemäß Anspruch 1, worin das Schaumentwicklungsmittel (7) durch die Verbindung (9) herabhängend zu dem Verschlussteil (10) getragen wird.
3. Eine Packung gemäß Anspruch 2, worin der Kopf (15) eine lockere Passung mit der Fassung (17) ist und Spielraum zwischen der Fassung (17) und einem Hals (16) des Zapfens (14), an dem sich der Kopf (15) befindet, vorgesehen ist, um dem Einsatzteil (7) zu ermöglichen, relativ zu dem Verschlussteil (10) zu hängen und zu schwingen.
4. Eine Packung gemäß einem der vorangehenden Ansprüche, worin der Kopf (15) an die Fassung (17) preßgepaßt ist und mit dieser in Schnappverbindung eingreift.
5. Eine Packung gemäß Anspruch 4, worin mindestens der Kopf (15) oder die Fassung (17) mit einer verjüngten Einführungsfläche (20) ausgestattet ist, um das Preßpassen zu erleichtern.

6. Eine Packung gemäß einem der vorangehenden Ansprüche, worin der Kopf (15) mit Widerhaken versehen ist, um mit einer Schulter (18) der Fassung (17) in Eingriff zu treten, um dadurch ein Zurückziehen des Kopfes aus der Fassung zu verhindern. 5
7. Eine Packung gemäß einem der vorangehenden Ansprüche, worin der oder ein Hals (16) des Zapfens (14), an dem sich der Kopf (15) befindet, zerbrechlich ist, damit der Kopf (15) abbricht und in der Fassung (17) in Reaktion auf eine manuelle Biege- 10 kraft, aufgebracht zwischen dem Einsatzteil (7) und dem Verschußteil (10), in der Fassung (17) gehalten wird. 15
8. Eine Packung gemäß einem der vorangehenden Ansprüche, worin der oder ein Hals (16) des Zapfens (14), an dem sich der Kopf (15) befindet, mit einer Schwachstelle ausgestattet ist, an der der Kopf (15) abbrechen kann, um in der Fassung (17) in Reaktion auf eine manuelle Biegekraft, aufgebracht zwischen dem Einsatzteil (7) und dem Verschußteil (10), in der Fassung (17) gehalten zu werden. 20 25
9. Eine Packung gemäß einem der vorangehenden Ansprüche, worin mindestens die Fassung (17) oder der Zapfen (14) als ein Kunststoffformteil ausgebildet ist. 30
10. Eine Packung gemäß Anspruch 9, worin das Einsatzteil (7) ein Kunststoffformteil umfaßt und die Fassung oder der Zapfen an dem Teil als integraler Bestandteil davon geformt ist. 35
11. Eine Packung gemäß einem der vorangehenden Ansprüche, worin das Verschußteil (10) eine Dichtung (22) aufweist, um eine Abdichtung zwischen dem Teil und dem Behälter (1) zu bewirken, und die Fassung oder der Zapfen (17) an dem Verschußteil (10) an dem Teil durch die Dichtung (22) gehalten wird. 40
12. Eine Packung gemäß Anspruch 11, worin die Fassung (17) oder der Zapfen an dem Verschußteil (10) ein Kunststoffformteil ist und dieses Formteil an dem Verschußteil (10) durch die Dichtung (22) festgehalten wird. 45 50
13. Eine Packung gemäß einem der vorangehenden Ansprüche, worin der Zapfen (14) an dem Einsatzteil (7) und die Fassung (17) an dem Verschußteil (10) ist. 55
14. Eine Packung gemäß einem der vorangehenden Ansprüche, worin der Behälter (1) eine oben offene Flasche ist und das Verschußteil ein an die Flasche abgedichteter Deckel (10) ist.
15. Eine Packung gemäß einem der vorangehenden Ansprüche, worin der Einsatz (7) mindestens Gas mit einem Druck größer als atmosphärischer Druck oder Gas mit einem Druck größer als atmosphärischer Druck und Flüssigkeit enthält und eine begrenzte Öffnung (8) aufweist, die derart angeordnet ist, daß in Reaktion auf den Differentialdruck Fluid unter Druck durch die begrenzte Öffnung (8) in das Getränk (23) in dem Behälter (1) für die Druckentwicklung ausgestoßen wird.
16. Ein Verfahren zum Formen einer abgedichteten Getränkepackung gemäß einem der vorangehenden Ansprüche, welches umfaßt Bereitstellen einer Fassung (17) oder eines Zapfens (14) an einem Verschußteil (10); Bereitstellen des anderen Teils also der Fassung (17) oder des Zapfens (14) an einem Einsatzteil (7) eines Schaumentwicklungsmittels; Preßpassen der Fassung (17) an den Zapfen (14), um eine Verbindung (9) zu bilden, in welcher die Fassung (17) über einem Kopf (15) des Zapfens (14) eingreift, um den Kopf (15) vom Zurückziehen aus der Fassung (17) zurückzuhalten und den Kopf (15) in der Fassung (17) für den Fall, daß der Kopf (15) von dem Teil, an dem er sich befindet, getrennt wird, festzuhalten, und so daß das Einsatzteil (7) mittels der Verbindung (9) durch das Verschußteil (10) getragen wird; Bewegen des Einsatzteils in einen oben offenen Behälter (1) durch seine offene Oberseite (5), wobei der Behälter (1) Getränk (23) mit Gas in Lösung enthält, und Abdichten des Verschußteils (10) zu dem Behälter (1), um die offene Oberseite (5) zu schließen, während Druck größer als atmosphärischer Druck in einem durch das Getränk (23) in dem Behälter (1) gebildeten Kopfraum (24) bereitgestellt wird.
17. Ein Verfahren gemäß Anspruch 16, welches das Bewirken der Verbindung (9) umfaßt, so daß das Schaumbildungsmittel (7) relativ zu dem Verschußteil (10) herabhängend getragen wird.
18. Ein Verfahren gemäß Anspruch 16 oder Anspruch 17, welches das Bereitstellen der Fassung (17) an dem Verschußteil (10), das Bereitstellen des Zapfens (14) an dem Einsatzteil (7) und das Preßpassen des Kopfes (15) des Zapfens (14) in eine Schnappverbindung mit der Fassung (17) umfaßt.
19. Ein Verfahren gemäß einem der Ansprüche 16 bis 18, welches das Sichern der Fassung (17) oder des Zapfens, je nachdem welches Teil sich an dem Verschußteil (10) befindet, an dem Teil durch eine Dichtung (22) an dem Verschußteil (10) einschließt, wobei die Dichtung eine Abdichtung zwischen dem Verschußteil (10) und dem Container

(1) bilden soll.

Revendications

1. Un emballage scellé pour boisson, comprenant : un 5
récipient (1) présentant une partie supérieure (5)
apte à être ouverte et une partie de fermeture (10)
pour ladite partie supérieure ; le récipient contenant
de la boisson (23) qui comporte du gaz en solution 10
et qui forme un espace de tête (24) dans lequel
règne une pression supérieure à la pression atmos-
phérique ; des moyens de développement de
mousse comprenant une partie insérée (7) portée à 15
l'intérieur du récipient (1) par ladite partie de fer-
meture (10), lesdits moyens de développement de
mousse réagissant lorsque la partie supérieure (5)
du récipient (1) est ouverte et en réponse à une dif-
férence de pression développée à l'intérieur desdits 20
moyens pour provoquer la libération du gaz de la
solution dans la boisson (23) afin d'assurer un
développement de mousse, caractérisé en ce que
la partie insérée (7) est portée par la partie de fer-
meture (10) par l'intermédiaire d'un accouplement 25
(9) qui comporte une broche de centrage (14) sur
l'une desdites parties s'engageant dans une douille
de pivot (17) sur l'autre desdites parties, ladite bro-
che de centrage présentant une tête (15) et ladite 30
douille de centrage (17) venant s'engager sur la
tête (15) pour empêcher son retrait de la douille de
pivot (17) et pour emprisonner la tête (15) dans le
cas où elle est séparée de la partie sur laquelle elle
est située.
2. Un emballage selon la revendication 1, dans lequel 35
les moyens (7) de développement de mousse sont
portés par l'accouplement (9) de façon pendulaire
par rapport à la partie de fermeture (10).
3. Un emballage selon la revendication 2, dans lequel 40
la tête est montée avec du jeu dans la douille de
pivot (17) et dans laquelle du jeu est prévu, entre la
douille de pivot (17) et un col (16) de la broche de
centrage (14) sur laquelle la tête (15) est située
pour permettre à la partie insérée (7) d'être suspen- 45
due et de pivoter par rapport à la partie de fer-
meture (10).
4. Un emballage selon l'une quelconque des revendi-
cations précédentes, dans lequel la tête (15) est 50
montée à force par rapport à la douille de centrage
(17) et s'engage par encliquetage dans cette
douille de pivot (17).
5. Un emballage selon la revendication 4, dans lequel 55
au moins l'un parmi la tête (15) et la douille de pivot
(17) est munie d'une surface de guidage conique
(20) pour faciliter ledit montage à force.
6. Un emballage selon l'une quelconque des revendi-
cations précédentes, dans lequel la tête (15) est
munie d'ardillons aptes à venir en contact avec un
épaulement (18) de la douille de pivot (17), de
manière à empêcher le retrait de la tête hors de la
douille de pivot.
7. Un emballage selon l'une quelconque des revendi-
cations précédentes, dans lequel le ou un col (16)
de la broche de centrage (14) sur lequel la tête (15)
est située est susceptible de se rompre pour sépa-
rer la tête (15) et d'être retenu dans la douille de
pivot (17) en réponse à une force manuelle de
flexion appliquée entre la partie insérée (7) et la
partie de fermeture (10).
8. Un emballage selon l'une quelconque des revendi-
cations précédentes, dans lequel le ou un col (16)
de la broche de centrage (14) sur lequel la tête (15)
est située, est munie d'une région d'affaiblissement
sur laquelle la tête (15) peut être séparée par rup-
ture pour être retenue dans la douille de pivot (17)
en réponse à une force manuelle de flexion appli-
quée entre la partie insérée (7) et la partie de fer-
meture (10).
9. Un emballage selon l'une quelconque des revendi-
cations précédentes, dans lequel au moins l'une
parmi la douille de pivot (17) et la broche de cen-
trage (14) est constituée d'une partie moulée en
matière plastique.
10. Un emballage selon la revendication 9, dans lequel
la partie insérée (7) comporte une partie moulée en
matière plastique et la douille de pivot ou la broche
de centrage sur cette partie est moulée monobloc
avec cette partie moulée.
11. Un emballage selon l'une quelconque des revendi-
cations précédentes, dans lequel la partie de fer-
meture (10) comporte un organe de scellement
(22) pour effectuer un scellement étanche entre
cette partie et dans lequel la douille de pivot ou la
broche de centrage (17) sur la partie de fermeture
(10), est retenue sur cette partie par l'organe de
scellement (22).
12. Un emballage selon la revendication 11, dans
lequel la douille de pivot (17) ou la broche de cen-
trage sur la partie de fermeture (10) est une partie
moulée en matière plastique, qui est emprisonnée
sur la partie de fermeture (10) par l'organe de scel-
lement (22).
13. Un emballage selon l'une quelconque des revendi-
cations précédentes, dans lequel la broche de cen-
trage (14) est sur la partie insérée (7) et la douille
de pivot (17) est sur la partie de fermeture (10).

14. Un emballage selon l'une quelconque des revendications précédentes, dans lequel le récipient (1) comporte une bouteille à partie supérieure ouverte et la partie de fermeture est un capuchon (10) scellé à la bouteille.
15. Un emballage selon l'une quelconque des revendications précédentes, dans lequel la partie insérée (7) comporte au moins un gaz à une pression supérieure à la pression atmosphérique ou un gaz à une pression supérieure à la pression atmosphérique et du liquide et présente une ouverture étranglée (8) agencée de telle façon qu'en réponse à ladite différence de pression du fluide sous pression soit éjecté via l'ouverture étranglée (8) dans la boisson (23) dans le récipient (1) pour provoquer ledit développement de mousse.
16. Un procédé pour former un emballage scellé pour boisson, selon l'une quelconque des revendications précédentes, qui comporte les étapes consistant : à prévoir l'un parmi une douille de pivot (17) et une broche de centrage (14) sur une partie de fermeture (10) ; à prévoir l'autre parmi ladite douille de pivot (17) et ladite broche de centrage (14) sur une partie insérée (7) des moyens de développement de mousse ; à monter à force la douille de pivot (17) sur la broche de centrage (14) pour former un accouplement (9) dans lequel la douille de pivot (17) s'engage sur une tête (15) de la broche de centrage (14) pour empêcher la tête (15) d'être enlevée de la douille de pivot (17) et pour emprisonner la tête (15) dans la douille de pivot (17), dans le cas où la tête (15) est séparée de la partie sur laquelle elle est située, et de telle façon que la partie insérée (7) soit portée par l'intermédiaire de l'accouplement (9) par la partie de fermeture (10) ; à déplacer la partie insérée (7) dans un récipient (1) à partie supérieure ouverte par l'intermédiaire de la partie supérieure ouverte (5) du récipient, lequel récipient contient de la boisson (23) présentant du gaz en solution, et à sceller de façon étanche la partie de fermeture (10) au récipient (1) pour fermer la partie supérieure ouverte (5), tout en une pression supérieure à la pression atmosphérique dans un espace de tête (24) formé par la boisson (23) dans le récipient (1).
17. Un procédé selon la revendication 16, qui comporte l'étape consistant à effectuer l'accouplement (9), de telle façon que les moyens (7) de développement de mousse soient portés de façon pendulaire par rapport à la partie de fermeture (10).
18. Un procédé selon la revendication 16 ou la revendication 17, qui comporte l'étape consistant à prévoir la douille de pivot (17) sur la partie de fermeture (10), à prévoir la broche de centrage (14) sur la partie insérée (7), et à monter à force la tête (15) de la broche de centrage (14) en engagement d'encliquetage avec la douille de centrage (17).
19. Un procédé selon l'une quelconque des revendications 16 à 18, qui comporte l'étape consistant à fixer celle parmi la douille de pivot (17) et la broche de centrage qui est sur la partie de fermeture (10), à cette partie par un organe de scellement (22) sur la partie de fermeture (10) qui est destinée à former un joint d'étanchéité entre la partie de fermeture (10) et le récipient (1).

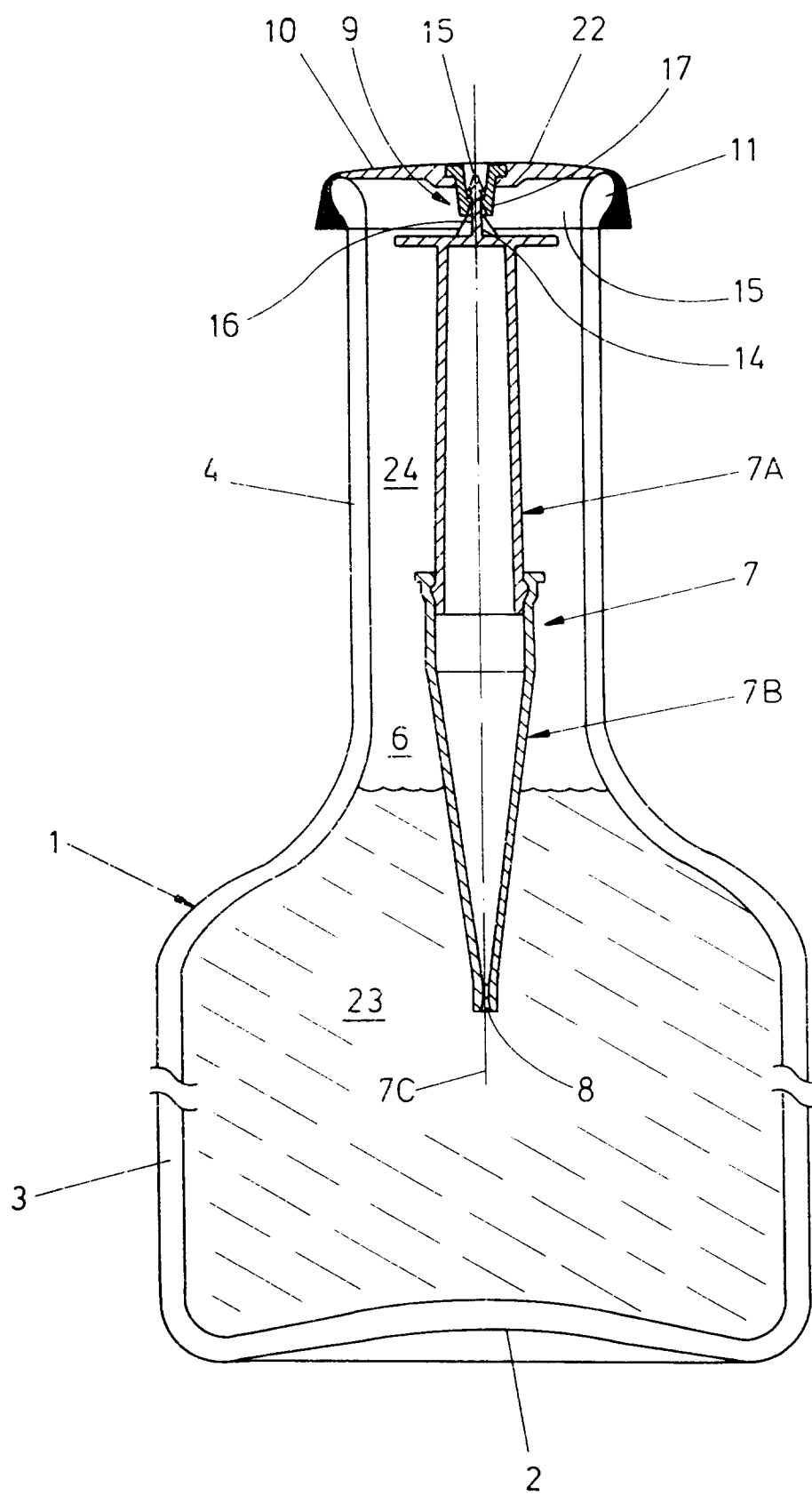


FIG. 1

