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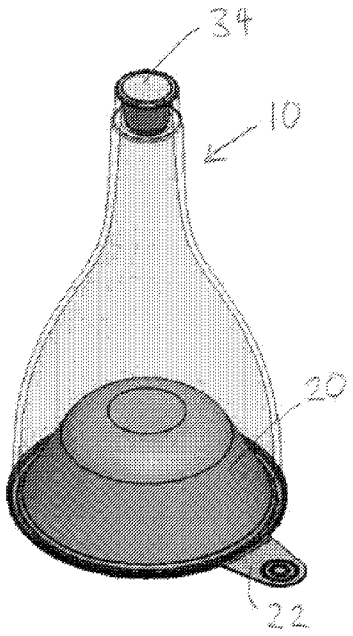


Figure 3B

(57) Abstract: The disclosure herein is directed to a beverage container that can be used as a cup comprising: a body defining an internal volume for a single-serve of a beverage, the body has a mouth at a first end having a removable seal for drinking the beverage from the container and a stem having a filling opening at second end, wherein the filling opening is sealed by a closure after filling, and the filling opening and the stem adjacent to the filling opening are narrower than the mouth.

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A BEVERAGE CONTAINER

Field of the Invention

The disclosure generally relates to beverage containers and a method of filling beverage containers, for example containers that can be used for single-serve applications.

Background of the Invention

Some beverages, such as wine, are unstable in the presence of oxygen (e.g., the wine goes off). As a result, reducing the amount of oxygen in the headspace in the packaging of these beverages can extend the shelf life of the packaged beverage.

Recently there has been demand from consumers to purchase wine in single-serve portions, with the containers sometimes resembling a cup, including those that have a standard wine glass shape. However, due to the smaller volume of wine in a single-serve container, a single serving of wine will deteriorate proportionately faster than, for example, a bottle of wine. This is because the amount of oxygen/headspace present in the single-serve container, as a ratio of the entire volume of the container, is significantly greater than in a bottle of wine. Accordingly, the shelf life of these single-serve products can be relatively short compared to bottles of wine.

Some manufacturers have opted to fill the cup close to the top, in order to reduce the amount of oxygen/headspace present in the cup. However, this can lead to the contents being splashed or spilled during removal of the lid. In addition, drinking from a cup that is filled to the top is awkward, and not desirable for

consumers as the aromas of the wine cannot be appreciated prior to tasting.

It is in view of some of the above problems that the invention was conceived.

Summary of the Invention

The present disclosure provides a beverage container that is inverted into a cup comprising: a body having a mouth and a stem, wherein the mouth is larger than the stem, the body defining an internal volume that is filled with a beverage, the mouth being sealed by a removable seal, wherein the stem has a filling opening leading to a passage in fluid communication with the internal volume, the opening being sealed by a volume reducing closure after filling.

By providing a stem through which the beverage container can be filled, and wherein the stem is smaller or narrower in size, area, or diameter than the mouth of the container, the volume of headspace in the beverage container, and therefore the amount of oxygen in the beverage container, can be reduced. The internal diameter of the stem is smaller than the internal diameter of the mouth. Beverage filling equipment usually needs to leave a minimum headspace height between the surface of the liquid and the top of the stem or mouth rim. If the beverage container was filled through the mouth the result would be a greater volume of headspace (and therefore oxygen) for the same minimum height of headspace at which the stem could be filled.

The closure may be a plug that extends through the opening and into the passage, thereby reducing the headspace. A removable base can be attached to the beverage container. The base can be selectively attached

to the stem so that the container can be inverted and stabalised in an inverted position for use as a cup. In this embodiment the base is positioned across the mouth. In one embodiment the base sits within the mouth and may be attached across the mouth or retained within the mouth by a lid, such as a foil or plastic lid, overlying the base and attached to the mouth.

The removable seal may include a lid and/or may include a punt that extends into the internal volume of the beverage container. The punt can be hollow. The base can sit substantially within the hollow punt. The removable seal may have a tab to assist in removal. The punt has the effect of raising the level of the liquid relative to the rim of the mouth but to drop the liquid level to a more practical and appropriate level for drinking once the punt is removed.

The beverage container may be designed to have the shape and appearance of a wine glass. The beverage container is designed to accommodate a single serving of the beverage (i.e., the beverage container may be a single-serve container). The beverage container can have the appearance of a small bottle before use and may be inverted to be used as a cup.

In another aspect, there is disclosed a method of filling a beverage container that is inverted into a cup including: attaching a seal to a mouth of the beverage container; filling an interior volume of the beverage container through a passage in a stem of the beverage container via an opening located in the stem, wherein the mouth is larger than the stem; and sealing the opening in the stem after the beverage container has been filled.

The method may include sealing the opening in the stem, either permanently or removably, with a plug that

extends through the opening and into the passage. The method may include attaching a hollow punt to seal the mouth of the beverage cup. The method may include attaching a base to the hollow punt so that the base sits substantially within the hollow punt.

In another aspect, there is disclosed a beverage container that is inverted into a cup comprising: a body having a mouth and a stem, wherein the mouth is larger than the stem, the body defining an internal volume that is filled with a beverage, the mouth being sealed by a removable seal, wherein the stem has a filling opening leading to a passage in fluid communication with the internal volume, the filling opening being 17mm or less in diameter, the filling opening being sealed by a closure after filling.

In another aspect, there is disclosed a beverage container that is inverted into a cup comprising: a body having a mouth for drinking from and a stem, the body defining an interior volume to be filled with a beverage, the mouth being sealed by a removable seal, and wherein the stem has a filling opening leading to a passage in fluid communication with the interior volume to allow the beverage container to be filled through the stem, the filling opening being 17mm or less in diameter.

In another aspect, there is disclosed a beverage container that is inverted into a cup comprising: a body having a mouth and a stem, wherein the mouth is larger than the stem, the body defining an internal volume that is filled with a beverage, the mouth being sealed by a removable seal, wherein the stem has a filling opening leading to a passage in fluid communication with the internal volume, the opening being permanently sealed by a closure after filling.

In another aspect, there is disclosed a beverage container that is inverted into a cup comprising: a body having a mouth for drinking from and a stem, the body defining an interior volume to be filled with a beverage, the mouth being sealed by a removable seal, and a removable punt extending into the interior volume; wherein the stem has an opening leading to a passage in fluid communication with the interior volume to allow the beverage container to be filled through the stem.

In another aspect, there is disclosed a beverage container comprising: a body having a stem and a pair of openings disposed at opposing ends thereof, a first opening of the pair being larger than a second opening of the pair, the body and stem together defining an internal volume that is fillable through the stem with a beverage, wherein the first opening is sealed by a removable seal and the second opening is sealed by a closure, each of the removable seal and the closure being configured to protrude into the internal volume of the body to adjust a headspace therein.

In another aspect, there is disclosed a beverage container that can be used as a cup, in which the beverage container contains a beverage and comprises: a body defining an internal volume in which a single-serve of the beverage is retained, the body having a mouth at one end including a removable seal for drinking the beverage from the container and a stem having a filling opening at second end, wherein the filling opening is sealed by a closure after filling, and the filling opening and the stem adjacent to the filling opening are narrower than the mouth to control oxygen trapped within the container.

Brief Description of the Drawings

Elements of the present description will now be

described by way of example only with reference to the accompanying drawings in which:

Figure 1A is a side view of a beverage container in accordance with an embodiment;

Figure 1B is a cross-sectional view of the beverage container shown in Figure 1A along the line F-F;

Figure 1C is an enlarged cross-sectional view of the beverage container shown in Figure 1B at Area G;

Figure 1D is an enlarged cross-sectional view of the beverage container shown in Figure 1B at Area H;

Figure 2A is a side view of the beverage container shown in Figure 1A inverted and with a base attached to a stem of the beverage container;

Figure 2B is a cross-sectional view of the beverage container shown in Figure 2A along the line B-B;

Figure 3A is a top isometric view of the beverage container shown in Figure 1A without a closure sealing a stem opening;

Figure 3B is a top isometric view of the beverage container shown in Figure 3A with a closure sealing the stem opening;

Figure 3C is a bottom isometric view of the beverage container shown in Figure 3B;

Figure 3D is a top isometric view of the beverage container shown in Figure 2A;

Figure 3E is a top isometric view of the beverage

container shown in Figure 3D with a seal removed from a mouth of the beverage container; and

Figure 4 is a flowchart, detailing the steps of a method of packaging a beverage as disclosed herein.

Detailed Description of Preferred Embodiments

Figures 1A to 3E illustrate a beverage container that is inverted into a cup, for example having the shape of a wine glass. The beverage container is shown as single-serve wine glass 10, comprising a body 12 having a mouth 14 and a stem 16. As the mouth is adapted from which a consumer can drink a beverage, the mouth is larger than the stem. The body 12 defines an internal volume 18 that is filled with a beverage 19. The mouth 14 is sealed by a removable seal, which in the embodiment shown is punt 20. The stem 16 has an opening 30 leading to a passage 32 in fluid communication with the internal volume 18. The opening 30 is sealed by a closure, such as an insert in the form of a volume reducing closure, which is shown as plug 34. The closure may be permanently or temporarily (i.e., removably) sealed.

The opening 30 in the stem 16 allows the wine glass 10 to be filled through the stem 16, rather than through the mouth 14 of the wine glass. In a standard filling situation a beverage cup will have a single opening that is used for both filling the cup and for drinking (i.e., the mouth). During filling a specified height of the internal volume of the cup is left unfilled. This is known as a headspace (i.e., the volume of air, and therefore oxygen, in the cup that is not filled with the consumable product). A headspace may be necessary because the filling equipment along the assembly line usually needs a headspace to avoid spillage during filling. For example, the filling head (with a valve) of a filling system may be

inserted 10mm to 15mm into a filling opening during filling, resulting in a 10mm to 15mm headspace once the filling head is removed.

In practice it is envisaged that during filling, the filling head could be inserted further into the cup through the stem and almost to the base so that the cup will start to fill from the base and the filling head will gradually lift as the fluid enters until the head is at approximately 10 mm from the rim of the mouth 14. This has the effect of decreasing the foaming effect of the liquid on filling thereby further reducing the level of oxygen that contained in the sealed cup that can impact the quality of the liquid, e.g., wine.

Furthermore, when filling a "shot" of nitrogen could be injected into the container before the container is filled so that the resulting head space after filling contains nitrogen rather than oxygen.

By including an opening in the stem, which is narrower than the mouth, the internal volume of the cup can be filled to the same height but have a smaller headspace volume. In other words, as the diameter of the passage 32 in the stem 16 is smaller than the diameter of the mouth 14, filling the wine glass 10 through the opening 30 in the stem can reduce the headspace volume. This method of packaging a beverage is illustrated in stages in the flow chart of Figure 4.

It will be understood that "permanently sealed by a closure" means that the seal is not intended to be opened by a consumer to allow the consumer to access the beverage through the opening in the stem. "Permanently sealed by a closure" is intended to mean that the opening is sufficiently sealed to discourage a consumer from unplugging the stem. In some embodiments the closure can

be ultrasonically welded to the stem of the container, such that any attempt to remove the closure will damage the stem.. The stem is intended to be designed solely for the purpose of filling, rather than for filling and for pouring liquid back out of the container.

It will be understood that the term "wine glass" when referring to the shape of the container is not limited to containers made from glass, and that the term is widely used to describe both glass and plastic containers for holding wine.

The term "single-serve" is understood herein to refer to a serving of a beverage that equates to one portion. It is understood that for alcoholic drinks, the portion may be varied according to local laws and/or preferences.

The method of filling the wine glass 10 includes attaching the seal, shown as punt 20, to the mouth 14 of the wine glass 10. It also includes filling the interior volume 18 of the wine glass 10 through the passage 32 in the stem 16 of the wine glass 10 via an opening 30 located in the stem 16, and sealing the opening 30 in the stem 16 after the wine glass 10 has been filled.

As mentioned above, the closure that seals the opening 30 in the stem 16 is shown as a volume reducing plug 34. The plug 34 extends through the opening 30 in the stem 16 and into the passage 32 and sits flush with the opening 30. The plug 34 is tapered so that when the plug 34 is inserted into the opening 30 the air in the headspace that is displaced by the plug 34 is able to escape from the beverage cup, rather than simply being pressurised. This helps to further reduce the amount of oxygen left in the wine glass 10 once it has been sealed. For example, the headspace may be reduced from 10mm-15mm to about 2mm-3mm once the plug 34 has been inserted into

the stem 16. The plug 34 is ultrasonically sealed at the opening 30.

Referring to Figures 1A, 1B, 2A and 2B, the wine glass 10 has a base 40 that is removably attached to the wine glass 10. In Figures 2A and 2B the wine glass 10 is inverted and the base 40 is shown attached to the stem 16 of the wine glass 10. This is the position that the base 40 would be in when a user is drinking from the wine glass 10. In Figures 1A and 1B the base 40 is shown attached to the punt 20. This is preferably the position that the base 40 would be in when the wine glass is being sold in store (and how it is transported to a store). In other words, the base 40 is first attached to the mouth of the glass 10 and/or to the removable seal, and is provided in this form for consumption, whereafter a consumer can remove the base from the mouth and attach it to the stem to take the form of a cup, such as having a wine glass shape.

While it is envisaged that the punt could be designed to act as the base, having a base 40 that is separate and distinct from the punt 20 (which is in contact with the beverage) allows the base 40 to remain dry. This is an advantage for consumers, as it avoids the chance of the base transferring unwanted beverage onto clothing or other objects, such as tables, etc.

The punt 20 is shaped so that it extends into the internal volume 18 of the wine glass 10. The punt 20 has two preferred functions. The first is to seal the mouth 14 of the wine glass 10. The seal is achieved for example only, either through heat sealing or ultrasonic welding. The seal is fluid proof but allows the seal to be broken when a user peels the material back on itself. In other words, the seal is preferably a peelable seal. The second is to displace a volume of the beverage in the wine glass 10. The punt facilitates this by having a domed shape. The

domed shape of the punt 20 allows the beverage to occupy a space between the punt and the body 12 of the wine glass 10 (in a similar way to a punt in a wine bottle). This allows the wine glass, which is bigger than it needs to be to hold the beverage volume, to appear full when packaged for sale. In addition, removal of the punt 20 causes the height of the wine to drop below the mouth 14 of the wine glass 10, reducing the likelihood of spillage by the consumer.

The punt 20 is hollow and has protrusions (not shown) that extend into the hollow area 24 of the punt 20 and act as friction points. The protrusions hold the base 40 in contact with the punt 20. The hollow area 24 of the punt allows the base 40 to sit substantially within the punt 20. Alternatively, the protrusions may support the base 40, and a cover, such as a shrink wrapped sleeve (not shown) may be used to retain the base 40 in position. In such an embodiment the protrusions can be designed to not be equally spaced around the punt 20, thereby allowing a consumer to push down on an area of the base 40 that is not supported by a protrusion in order to tilt or pivot the base 40 relative to the punt 20 so that it rocks upwards, providing easy removal of the base 40 from the punt 20.

Referring to Figures 1B and 1C, the punt 20, which seals the mouth 14 of the wine glass 10, has a tab 22 to assist removal of the punt 20. The tab 22 is connected to the rest of the punt by a hinge 26 so that the tab can lie flat along the wall of the glass during transport and sale. The hollow area 24 of the punt 20 can also be used to house items other than, or in addition to, the base 40. For example, the hollow area 24 could hold small food items, mixer liquid, a novelty item or a toy (e.g., for non-alcoholic beverages).

The wine glass 10 may be sold with external information and graphics. For example, the wine glass may have a label or a shrink wrapped sleeve (not shown) to provide details about the product and the contents, and also for promotional purposes. As described above, the shrink wrapped sleeve can also hold the base in position in a hollow area 24 of the punt 20. By having the base 40 detachable from the stem 16 during transport a tight fitting shrink wrapped sleeve made from light resistant colour and materials to be securely shrunk over the stem 16, body 12, mouth 14 and base 40 to protect the fluids during storage, transport and presentation. Moving the base 40 from the stem 16 to the mouth 14 is advantageous because it simplifies the shape of the transportable and sellable product, thereby allowing a sleeve to be more easily applied to the glass 10.

If the beverage is red wine, or any other light sensitive beverage, a black film may be applied underneath the shrink wrapped sleeve. It is envisage that the shrink wrapped sleeve could cover part of the body 12 of the wine glass 10, cover the entire body 12 of the wine glass 10, or cover the entire body 12 of the wine glass 10 and the punt 20. Alternatively, the wine glass may have a lid (not shown) that protects the punt 20 and base 40. The shrink wrapped sleeve can also act as a tamper evidence device. The shrink wrapped sleeve can also provide hygienic protection of the rim of the mouth 14.

The shrink wrapped sleeve can cover the entire body 12 of the wine glass 10; however, in some embodiment the mouth 14 can be left partially uncovered by the sleeve to allow a consumer to grasp an edge of the shrink wrapped sleeve and remove the sleeve from the glass 10.

The shrink wrapped sleeve can be perforated or otherwise formed to provide a line of weakness along which

the shrink wrapped sleeve can be opened and removed from the container. For example, if the shrink wrapped sleeve extends at least partially over the mouth 14, the line of weakness may be arranged in radial direction of the mouth 14 and extend to an edge of the shrink wrapper sleeve. The line of weakness can be formed in a circumferential direction around the mouth 14 of the glass 10. The line of weakness can be formed in a longitudinal direction that extends from the mouth 14 of the glass 10 towards the stem 16. Multiple lines of weakness can be formed in each of a circumferential and a longitudinal direction to facilitate removal of the shrink wrapped sleeve.

The shrink wrapped sleeve can comprise a plastic or polymer plastic, such as bi-axially oriented polypropylene (BOP). The sleeve is shrunk over the glass 10 once in place by the application of heat. A very fine gauge polypropylene having a thickness of less than 15 microns and preferably less than 10 microns is contemplated, for ease of disposal.

The shrink wrapped sleeve can extend the entire length of the glass 10 and can be used to display information. The surface of the sleeve can be printed upon or pre-printed to convey at least one of the following: product information, branding and logos, nutritional information, and a decorative motif or pattern.

The stem opening 30 is designed to allow filling of the wine glass 10, but it is not intended to be used for drinking from the wine glass. As a result the internal diameter of the opening 30 can be made much smaller than on a standard drinking bottle. The internal diameter of the opening 30 in the stem 16 of the wine glass is less than 18mm, and is preferably 17mm or less. More preferably the internal diameter is between about 10mm and about

16mm, and still more preferably between about 10mm and about 14mm, and at about 12mm, 13mm or 14mm.

The body 12 of the wine glass is moulded. For example, the body 12 of the wine glass 10 can be injection moulded, for example using a plastics material, such as clear PET, for example PET WK811. The material that the body 12 is made from can also have oxygen scavenging additives, which reduce the rate of oxygen transmission to further increase the shelf life of the beverage in the wine glass 10. For example, the oxygen scavenging additive may be an Amosorb™ oxygen scavenger. The material of the body has a low transmission of oxygen, for example less than $0.3cm^3/m^2/day$, or less than $0.1cm^3/m^2/day$ (under Standard Temperature and Pressure (STP) conditions). The material is also a food-grade material, allowing it to be in contact with the beverage.

The body 12 of the wine glass 10 is preferably transparent, allowing a consumer to see the beverage through the wine glass, thereby allowing a consumer to visually inspect the wine while drinking the wine. It is envisaged that the body 12 could instead be made from any other suitable material, such as A-PET; polycarbonate; polystyrene or polyvinyl chloride. The diameter of the mouth 14 is preferably between about 65mm and 80mm, and is preferably 72mm.

The plug 34 can be made using the same process as the body 12 of the wine glass, and can be made from any of the above-listed materials. The body 12 and the plug 34 are preferably made from the same material. The body 12 and the plug 34 are ultrasonically welded together to form a permanent seal. The base 40 can also be made using the same process as the body 12 of the wine glass, and can be made from any of the above-listed materials.

The punt 20 is formed from a laminate material. For example, the punt may be thermo-formed using a multi-layer film with oxygen resistance properties and a peelable seal, for example, as is used in some pharmaceutical packaging. The multi-layer film may have three main layers, with two tie layers to hold the three layers together. The multi-layer film may have a peel seal layer (which will be in contact with the body 12 to form the peelable seal), a high oxygen resistant layer (such as EVOH, PVDC or Al foil), and an abrasive and/or impact resistant layer (such as PET, Polypropylene, Nylon). These layers are fused together with a tie layer of specially selected compatible materials. The high oxygen resistant layer is located between the peel seal layer and the abrasive and/or impact resistant layer. This protects the high oxygen resistant layer from the beverage, which may be acidic (such as wine). The thickness of the punt 20 is less than about 2mm, and preferably between about 0.6mm and about 1.3mm. The punt 20 is rigid enough to resist the weight of the wine during filling, but flexible enough to allow easy peeling during removal.

It will be understood that the material used for the peelable seal will depend on the material used to make the body 12. The material for the peelable seal is therefore achieved by careful selection of two compatible plastic materials. In addition, it is envisaged that a hydrophobic surface treatment or layer could be applied to the peelable seal of the punt 20 in order to reduce the amount of the beverage on the punt when the punt is removed. For example, the “lotus effect” may be applied to the liquid-facing surface of the punt.

Alternatively, the punt could also be made from aluminium that has been pressed formed into the shape of the punt. The aluminium punt will have a peel seal layer on the side that is sealed to the body 12 and a protective

lacquer on the other side. The edge of the aluminium punt will be formed to roll down to provide protection and strength for the punt.

Referring to Figure 1B, the method of filling the wine glass 10 includes:

- attaching a hollow punt 20 to a mouth 14 of the wine glass 10;filling an interior volume 18 of the wine glass 10 through a passage 32 in a stem 16 of the wine glass 10 via an opening 30 located in the stem 16;
- sealing the opening 30 in the stem 16 with a plug 34 that extends through the opening 30 and into the passage 32 in the stem 16 after the wine glass 10 has been filled;
- attaching a base 40 to the hollow punt 20 so that the base 40 sits substantially within the hollow punt 20; and
- attaching a shrink wrapped sleeve to the exterior of the wine glass 10.

Referring to Figures 1A and 1B, the configuration in which a consumer would buy the single-serve wine glass 10 is shown. To open the single-serve wine glass 10 and drink the wine the consumer first removes the shrink wrapped sleeve. The shrink wrapped sleeve may have perforations or other lines of weakness to allow easy removal of the shrink wrapped sleeve. Once the shrink wrapped sleeve has been removed, the consumer removes the base 40 from the punt 20 and installs it on the stem 16 of the wine glass 10. The wine glass 10 is then inverted so that it rests on the base 40 (as shown in Figures 2A, 2B and 3D). The consumer then holds onto the tab 22 of the punt 20 and peels the punt 20 away from sealing engagement with the mouth 14 of the wine glass 10.

Referring to Figure 3E, removing the punt 20 from the

wine glass 10 causes the height 21 of the wine 19 to drop below an upper rim 15 of the mouth 14 of the wine glass 10 as the punt was displacing a volume of the wine in the wine glass 10. The lower height of wine in the wine glass 10 is more comfortable for the consumer, as it reduces the likelihood of spillage by the consumer. Utilising a punt 20 has the benefit of allowing the wine glass 10 to be filled to the top (to reduce the amount of oxygen) while also providing a product that is not filled to the top once it is opened.

As the wine glass 10 is a single serve wine glass (i.e., it is designed to hold a standard single-serve, or portion size, of the desired beverage e.g., 120 ml or 150 ml), once the consumer has drunk the beverage the wine glass 10 can be placed in the garbage/recycling bin.

Referring to Figure 1B, the base 40 has a hub 42 located in the centre of the base to allow for easy attachment to the stem 16 of the wine glass 10. When attaching the base 40 to the stem 16 an inner surface 44 of the hub 42 comes into contact with and surrounds an outer surface 17 of the stem 16. Surface 17 has a reduced outer diameter relative to the outer diameter of stem 16. The inner surface 44 of the hub 40 also has protrusions 46 that create a stronger fit between the base 40 and the stem 16. The base has a circular outer perimeter.

It is envisaged that the wine glass 10 may be sold empty to wine manufacturers and contract fillers in the wine industry (see Figure 3A). The wine manufactures and or contract fillers would then fill the wine glass 10 and seal the opening 30 in the stem 16 (see Figure 3B). They would then insert the base 40 into the punt 20 (see Figure 3C) and apply a shrink sleeve over the body as required.

While the closure has been described as a plug 34, it

is envisaged that the closure could be any suitable type of closure. For example, the closure could be a foil cover or a plastic cap. The closure does not need to extend through the opening 30 and into the passage 32 in the stem 16. However, it will be appreciated that by including a closure, such as plug 34, that does extend through the opening 30 and into the passage 32 the volume of air, and therefore oxygen, in the beverage cup can be further reduced.

While the removable seal has been described as a punt 20, it is envisaged that the seal could be any suitable type of seal. For example, the seal could be a foil cover or a plastic cap. If the seal was to still include a protrusion that extends into the internal volume, the protrusion could be attached to an inner part of the seal (i.e., away from the perimeter where the seal contacts the mouth). It is envisaged that the seal does not need to extend into the internal volume 18 of the wine glass 10. However, it will be appreciated that by including a removable seal, such as punt 20, that does extend into the internal volume the height of the beverage in the beverage container can be lowered by removing the seal, thereby providing a more convenient drinking height for a consumer. Furthermore, although the mouth 14 of the body 12 is shown as being sealed at an upper rim of the mouth, it is envisaged that the seal may be positioned lower down from the upper rim of the mouth. In other words, the seal may be positioned lower inwardly into the mouth of the body 12, thereby creating a hollow area between an inner wall of the body and the upper portion of the seal.

While the beverage cup has been described as a single-serve wine glass 10, having the shape of a standard wine glass, it is envisaged that the beverage cup could be any shape having a mouth and a stem, where the mouth is larger than the stem. Relative largeness between the mouth

and stem can be defined by the size of their internal diameters, or the area at their minimum openings.

While the base 40 is described as being located substantially within the punt 20, it is envisaged that the base 40 could also be mounted to the mouth end of the beverage cup in other ways. For example, the base 40 could be attached so that the base is substantially outside of the hollow area of the punt. In addition, rather than being secured to the punt by the protrusions on the punt, the base 40 could have a perimeter skirt that could contact an outer surface of the mouth of the beverage cup.

It is to be understood that, if any prior art publication is referred to herein, such reference does not constitute an admission that the publication forms a part of the common general knowledge in the art, in Australia or any other country.

In the claims which follow and in the preceding description of the invention, except where the context requires otherwise due to express language or necessary implication, the word “comprise” or variations such as “comprises” or “comprising” is used in an inclusive sense, i.e., to specify the presence of the stated features, but not to preclude the presence or addition of further features in various embodiments of the invention.

Claims:

1. A method of packaging a beverage, the method including:

forming a beverage container having a body defining an internal volume for a single-serve of a beverage, the body having a mouth at a first end for drinking the beverage from the beverage container and a stem having a filling opening at a second end;

attaching a seal to a mouth of the beverage container;

filling the interior volume of the beverage container via the filling opening;

sealing the filling opening using a closure after the beverage container has been filled;

wherein the filling opening and the stem adjacent to the filling opening are narrower than the mouth to control a headspace formed at the filling opening.

2. The method of claim 1, further comprising the step of selecting a closure configured to adjust a volume of air in the headspace.

3. The method of claim 2, wherein the volume of air in the headspace is based at least in part on the size of the stem.

4. The method of any one of claims 1 to 3, wherein the closure comprises a plug that extends through the filling opening and into the stem.

5. The method of any one of claims 1 to 4, wherein the seal is removable.

6. The method of any one of claims 1 to 5, wherein the seal comprises a punt configured to provide a chamber inside the mouth of the container.

7. The method of claim 6, further comprising the step of locating a base within the chamber of the punt.

8. The method of claim 7, further comprising the step of retaining the base within the chamber of the punt with a sleeve.

9. The method of claim 8, including locating the sleeve in an operative position so as to overlay at least part of the first end of the container and extend along the body of the beverage container.

10. The method of claim 8 or claim 9, wherein the sleeve is heat shrunk to secure the sleeve in the operative position.

11. A beverage container that can be used as a cup comprising:

a body defining an internal volume for a single-serve of a beverage, the body has a mouth at a first end having a removable seal for drinking the beverage from the container and a stem having a filling opening at second end,

wherein the filling opening is sealed by a closure after filling, and the filling opening and the stem adjacent to the filling opening are narrower than the mouth.

12. The beverage container of claim 11, wherein a headspace is formed within the filled container that is at least in part based on a size of the stem.

13. A beverage container of claim 11 or claim 12, wherein a headspace is formed within the filled container that is at least in based on a configuration of the closure.

14. The beverage container of claim 12 or claim 13, wherein the closure is configured to extend into each of the filling opening and the stem and thereby adjust the headspace within the container.

15. The beverage container of any one of claims 12 to 14, wherein the closure comprises a plug.

16. The beverage container of claim 15, wherein the plug has a tapered side wall, such that as the plug is inserted into the filling opening air in the headspace is displaced from the stem.

17. The beverage container of any one of claims 11 to 16, wherein the removable seal comprises a punt.

18. The beverage container of claim 17, wherein the punt extends into the internal volume of the beverage container.

19. The beverage container of claim 17 or claim 18, wherein the punt is configured to provide a chamber inside the mouth of the container.

20. The beverage container of claim 19, further comprising a removable base.

21. The beverage container of claim 20, wherein the base is located within the chamber of the punt.

22. The beverage container of claim 21, wherein the base is retained within the chamber by a sleeve.

23. The beverage container of claim 22, wherein the sleeve comprises a polymer or plastic, partially overlying at least one of the base and the first end of the container.

24. The beverage container of any one of claims 20 to 23, wherein the base is attachable to the stem to stabilise the container in an inverted orientation, for use as a cup.

25. The beverage container of any one of claims 20 to claim 24, wherein the base is positioned across the mouth of the container.

26. The beverage container of any one of claims 11 to 25, wherein the beverage container is filled via the stem.

27. The beverage container of claim 26, wherein the stem has a cross-sectional area smaller than a cross-sectional area of the mouth of the container.

28. The beverage container of claim 26, wherein an internal diameter of the stem is less than an internal diameter of the mouth of the container.

29. The beverage container of any one of claims 11 to 28, wherein the removable seal further comprises a removal tab.

30. The beverage container of any one of claims 1 to 29, configured to have the shape and appearance of a wine glass.

31. The beverage container of any one of claims 1 to 29, wherein the body is configured to accommodate a single-serving of the beverage.

32. The beverage container of any one of claims 1 to 29, configured to have the appearance of a small bottle before use and inverted, in use, to provide a cup.

33. A beverage container comprising:

a body having a stem and a pair of openings disposed at opposing ends thereof, a first opening of the pair being larger than a second opening of the pair,

the body and stem together defining an internal volume that is fillable through the stem with a beverage,

wherein the first opening is sealed by a removable seal and the second opening is sealed by a closure, each of the removable seal and the closure being configured to protrude into the internal volume of the body to adjust a headspace therein.

34. A beverage container that can be used as a cup, in which the beverage container contains a beverage and comprises:

a body defining an internal volume in which a single-serve of the beverage is retained, the body having a mouth at one end including a removable seal for drinking the beverage from the container and a stem having a filling opening at second end,

wherein the filling opening is sealed by a closure after filling, and the filling opening and the stem adjacent to the filling opening are narrower than the mouth to control oxygen trapped within the container.

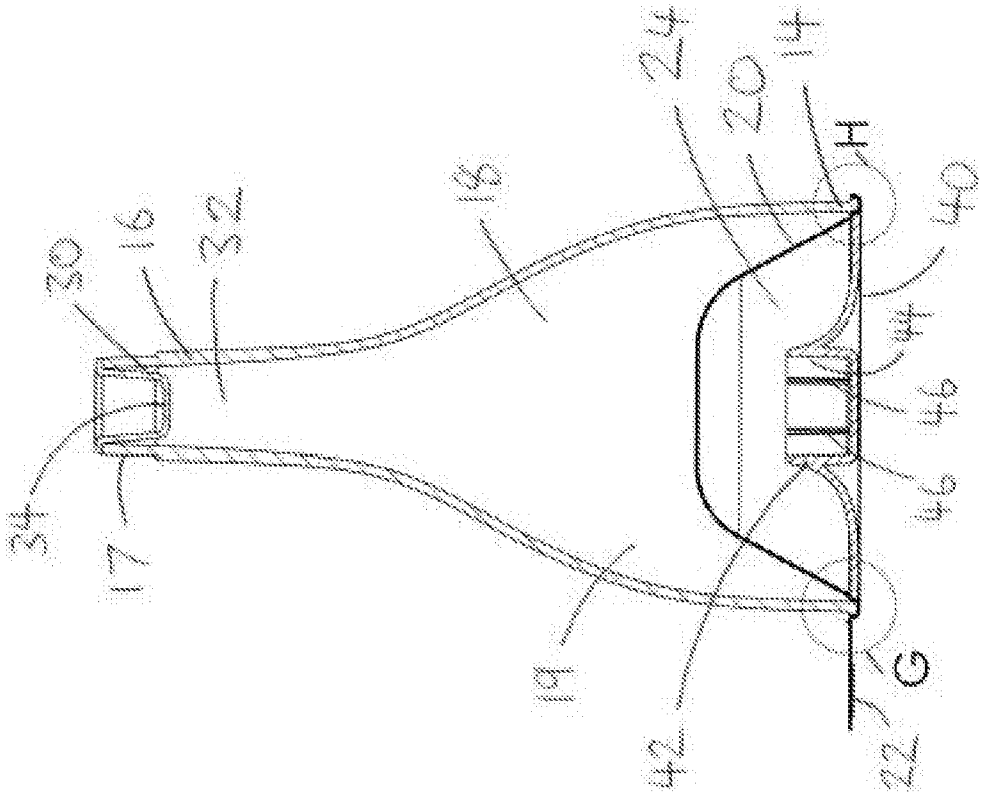


Figure 1B

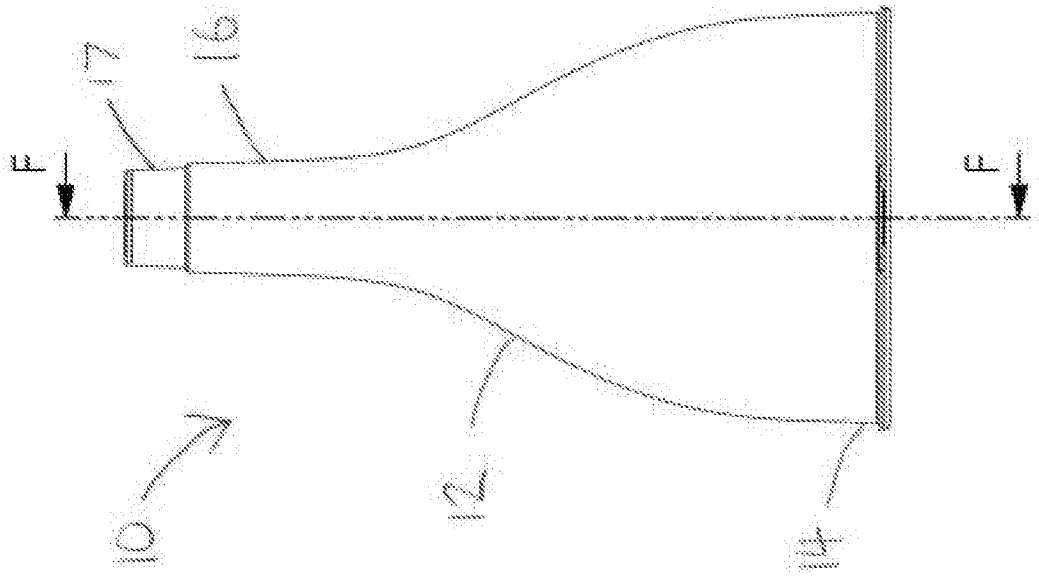


Figure 1A

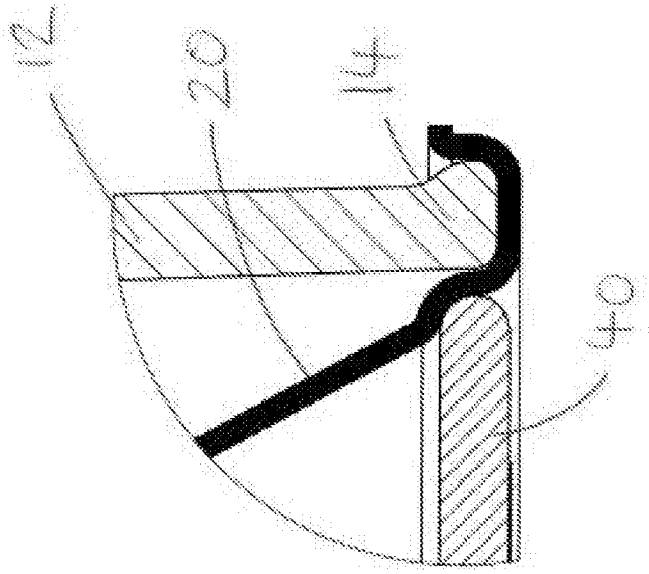


Figure 1D

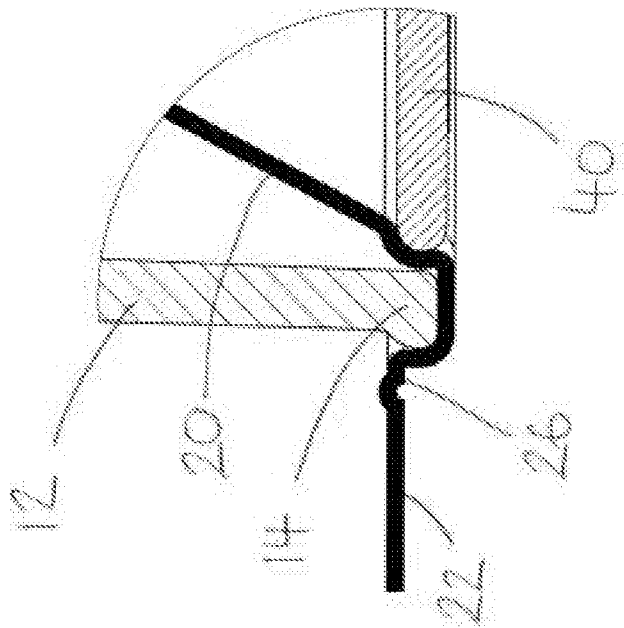


Figure 1C

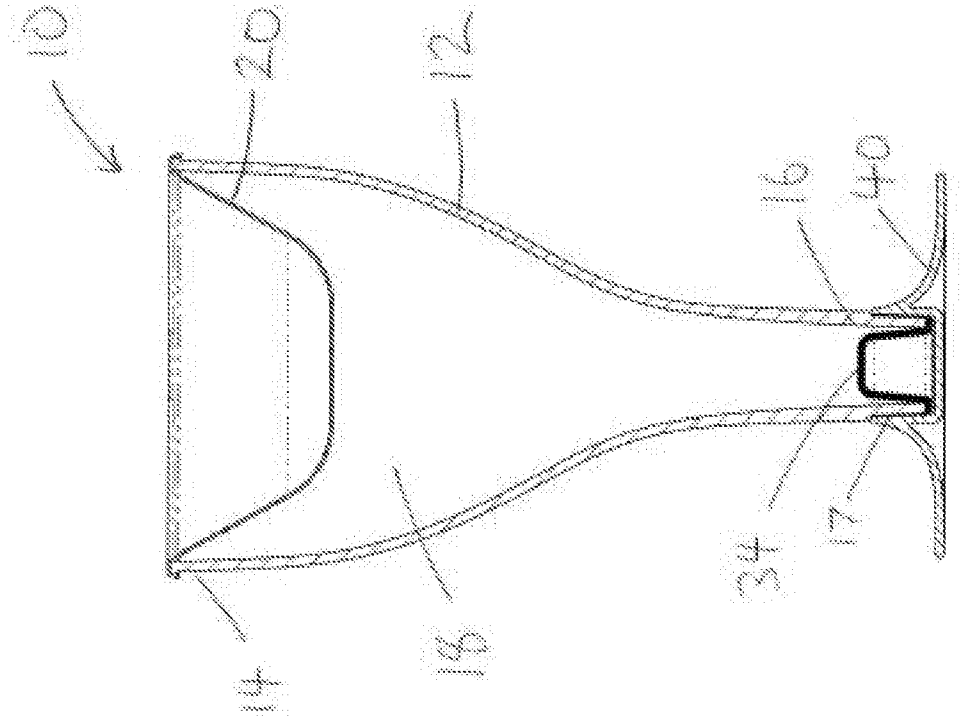


Figure 2B

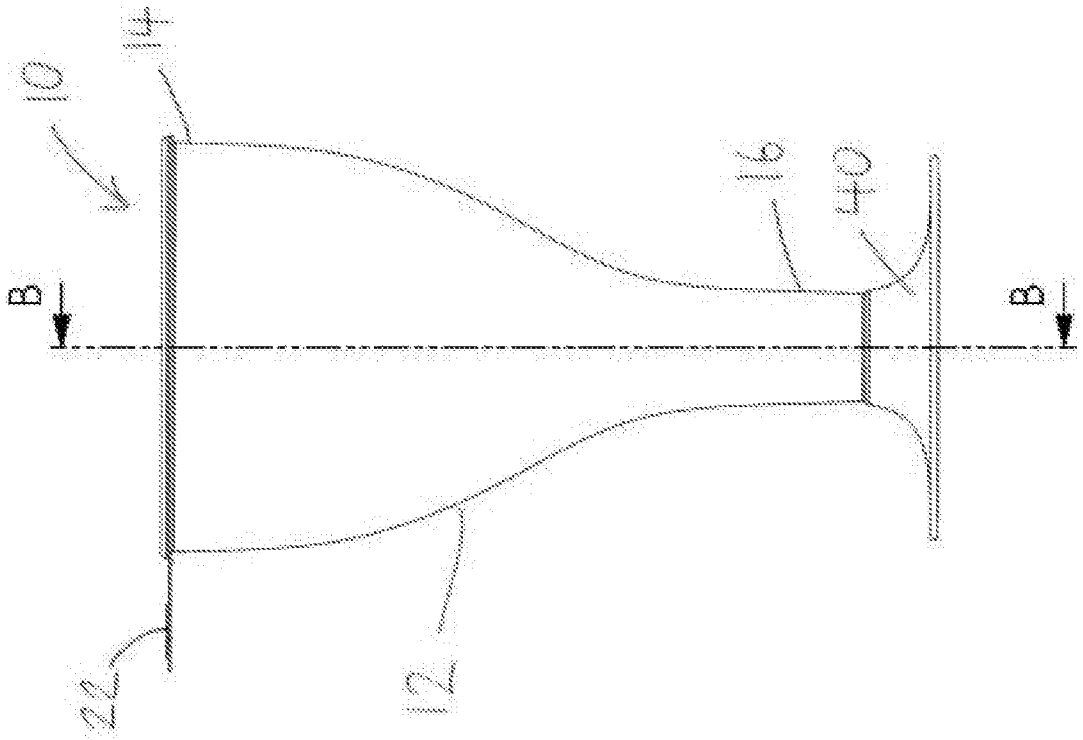
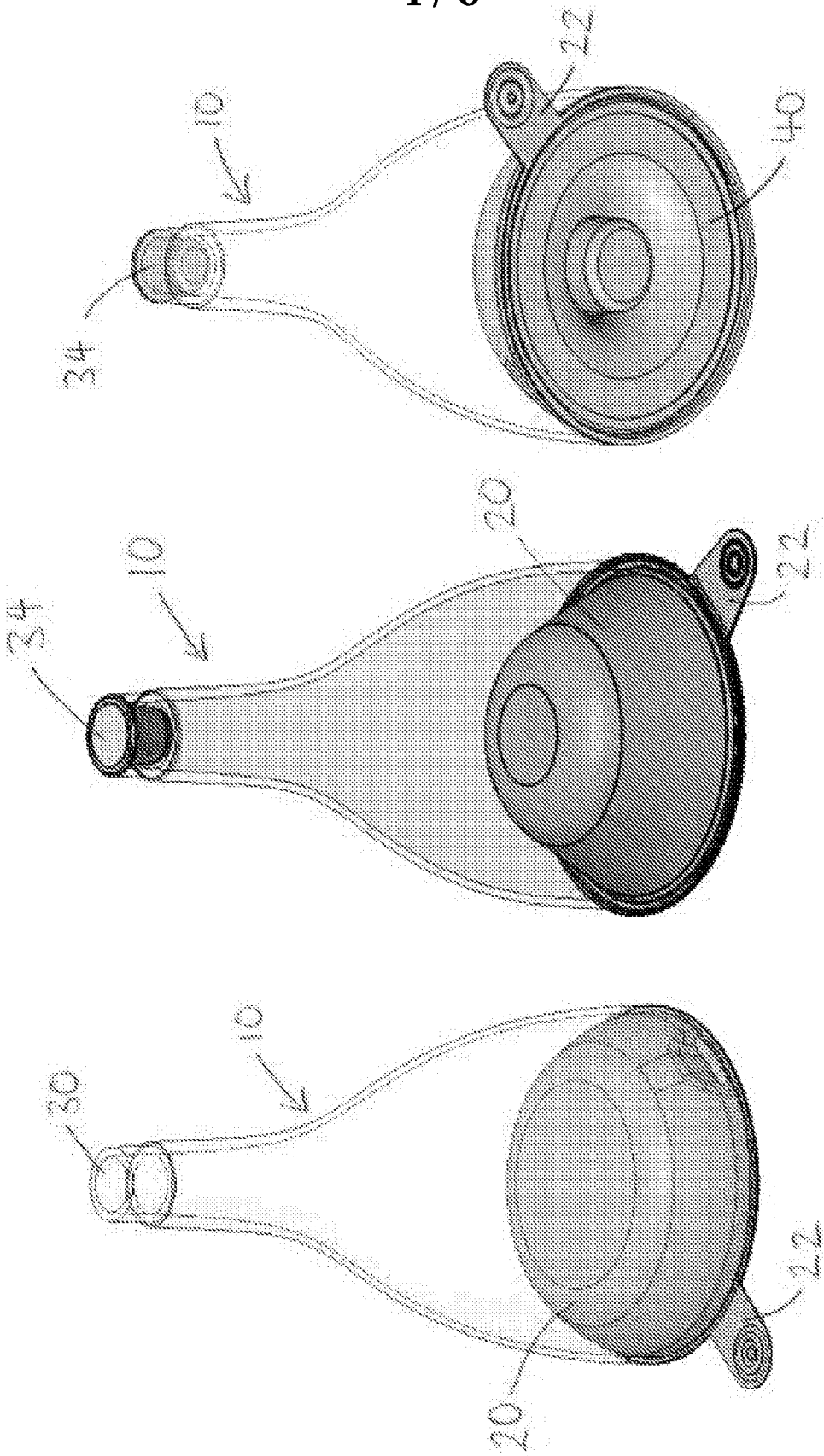


Figure 2A


10
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Figure 3C
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Figure 3B
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Figure 3A

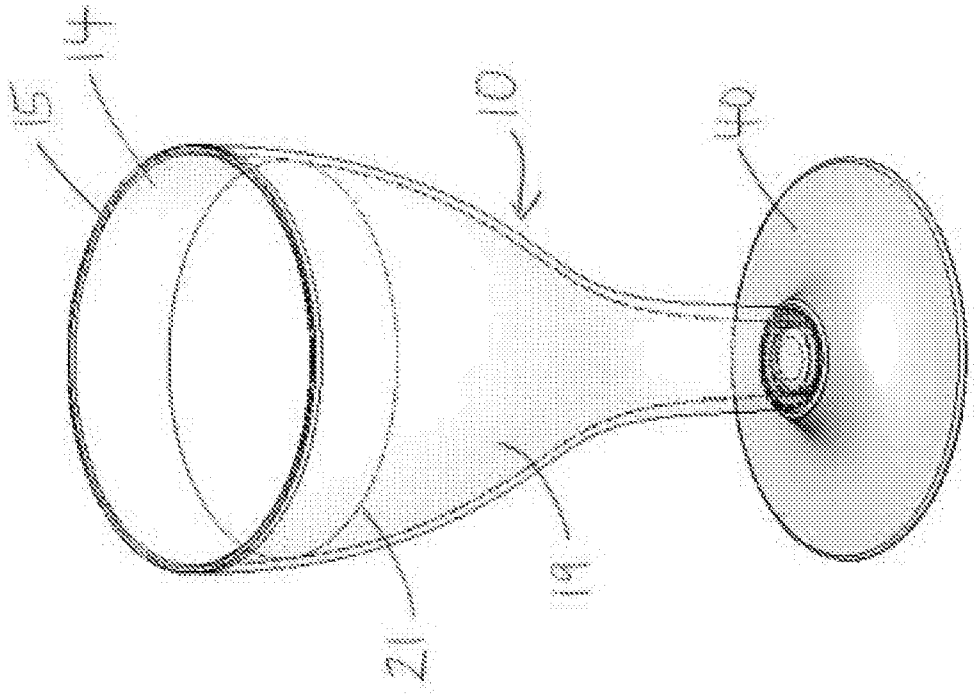


Figure 3E

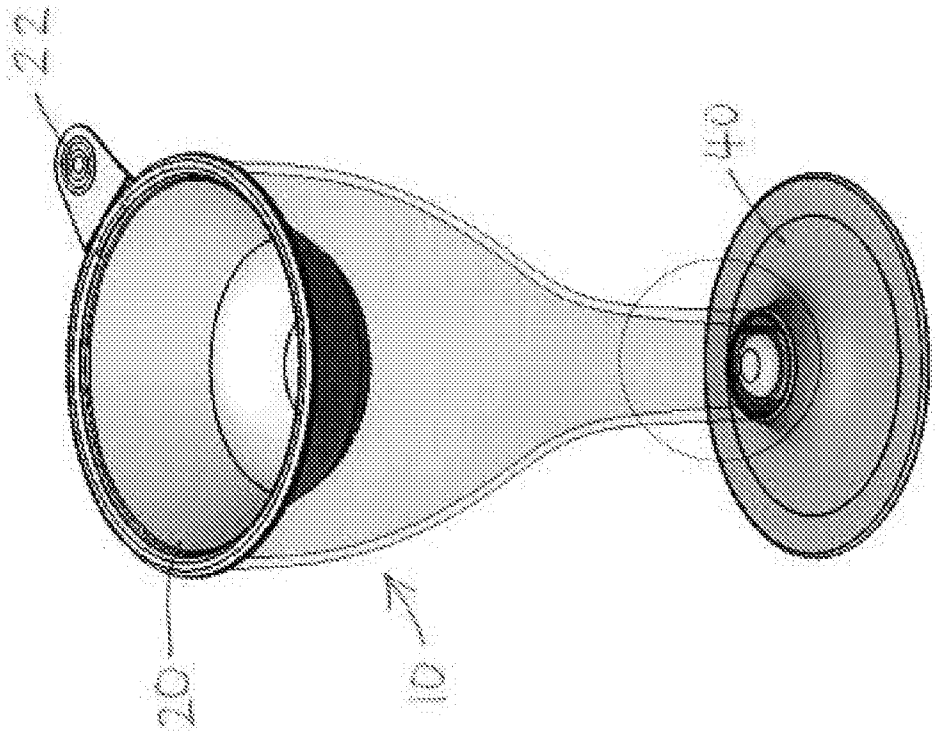


Figure 3D

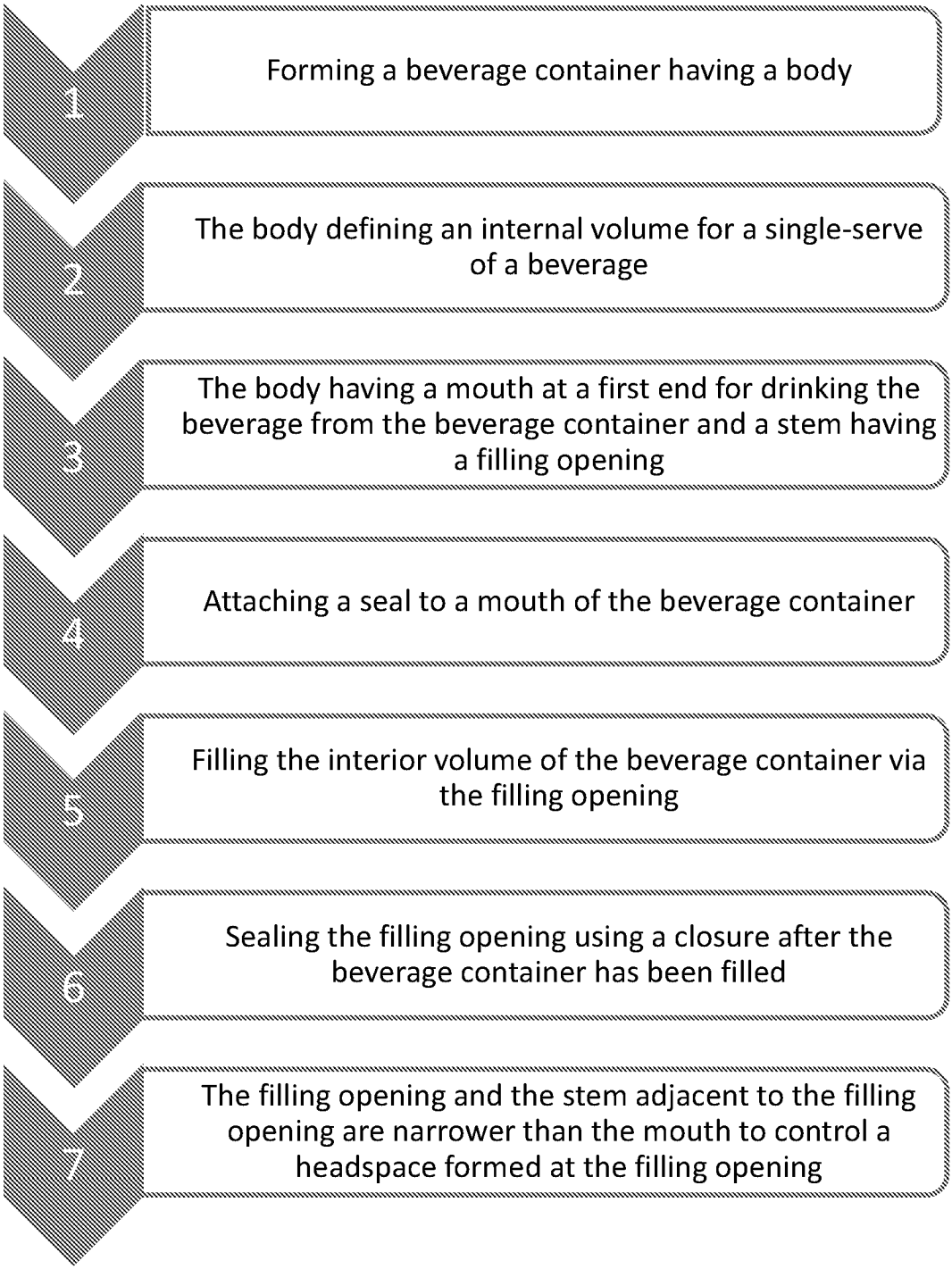

1
Forming a beverage container having a body
2
The body defining an internal volume for a single-serve of a beverage
3
The body having a mouth at a first end for drinking the beverage from the beverage container and a stem having a filling opening
4
Attaching a seal to a mouth of the beverage container
5
Filling the interior volume of the beverage container via the filling opening
6
Sealing the filling opening using a closure after the beverage container has been filled
7
The filling opening and the stem adjacent to the filling opening are narrower than the mouth to control a headspace formed at the filling opening

Figure 4

INTERNATIONAL SEARCH REPORT

International application No.
PCT/AU2017/050702

A. CLASSIFICATION OF SUBJECT MATTER

B65D 1/06 (2006.01) B67C3/222 INVALID B65B 3/18 (2006.01) A47G 19/22 (2006.01) A47G 19/00 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPAIP, PODOC, TXTUS5, TXTUS4, TXTUS3, TXTUS2, TXTUS1, TXTUS0, TXTEP1, TXTGB1, TXTWO1, TXTAU1, TXTCA1, TXTSG1: IPC/CPC: b65d1/06, B67C3/222, B65B3/18, A47G19/22, A47G19/00, A47G19/2205 and Keywords: cup, wine, glass, minimise, control, reduce, headspace, air, gas, oxygen, bottom, second, two, dual, opening, closure, beverage, drink, bottle, combination, transform, use. Applicant/Inventor names searched in Google patents and Espacenet, Names: Silice PTY LTD, Flint Damian Lawrence, Powell Roger Mclean. Google patents searched, keywords: bottle, transform, cup, wine, glass. Citing/cited documents of relevant prior art viewed in Google patents and Espacenet. Applicant/Inventors name searched in internal databases provided by IP Australia.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
	Documents are listed in the continuation of Box C	

[X] Further documents are listed in the continuation of Box C [X] See patent family annex

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
8 August 2017	08 August 2017

Name and mailing address of the ISA/AU	**Authorised officer**
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INTERNATIONAL SEARCH REPORT C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		International application No. **PCT/AU2017/050702**
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2014/0332495 A1 (WON CHEUL CHOI) 13 November 2014 abstract, fig. 4, 5, para. 49, para. 52	1-5, 11-34
X	US 640860 A (BAUM) 09 January 1900 fig. 1-3, whole description	1, 5-9, 11-34
X	US 6662959 B1 (WESTERHOLD) 16 December 2003 abstract, fig. 2, 4-10, col. 4 lines 52-59	1, 5-9, 11-34

INTERNATIONAL SEARCH REPORT Information on patent family members	International application No. **PCT/AU2017/050702**

This Annex lists known patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document/s Cited in Search Report		**Patent Family Member/s**	
Publication Number	**Publication Date**	**Publication Number**	**Publication Date**
US 2014/0332495 A1	13 November 2014	US 2014332495 A1	13 Nov 2014
		CN 104053611 A	17 Sep 2014
		CN 104053611 B	11 May 2016
		EP 2786944 A1	08 Oct 2014
		JP 2015505782 A	26 Feb 2015
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		WO 2013081334 A1	06 Jun 2013
US 640860 A	09 January 1900	US 640860 A	09 Jan 1900
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		AU 2003283993 A1	03 Jun 2004
		US 2004118804 A1	24 Jun 2004
		US 2005092760 A1	05 May 2005
		WO 2004043805 A1	27 May 2004

End of Annex

Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.