A liquid storage, isolation and dispensing assembly (10) includes a container (12), which defines an axis (55) and has an inner surface (58), a top (16) and a float (14). The top is mountable to the upper end (22) with a sealing element (52) engaging the inner surface at a liquid sealing position. The open upper end is least partially unobstructed when the top is at the liquid pouring position. The float includes a top portion (36), a bottom portion (38) and a sealing edge (40) sized to create a minimal gap between the sealing edge and the interior surface when floating on the liquid surface with the axis generally vertical. In some examples tilting the container creates a gap (72) between the float and the inner surface permitting the liquid to pass the sealing edge and out of the open upper end.
LIQUID STORAGE, ISOLATION AND DISPENSING ASSEMBLY

BACKGROUND OF THE INVENTION

[0001] Some beverages, such as wine, are susceptible to undergoing chemical changes once the beverage container has been opened, primarily due to contact with the oxygen in air. However, often the wine or other beverage from the newly open container is not consumed or otherwise used. Several techniques have been devised for keeping an open bottle of wine from changing after being opened. One way involves removing the air from the container by either collapsing the container, such as the bag in a box concept, or dropping marbles into the wine bottle to reduce the headspace. Another way is to replace all or most of the air in the bottle, which is about 21% oxygen, with a relatively inert gas such as nitrogen. This is typically accomplished using a spray can of nitrogen followed by resealing the bottle. Another way is to partially evacuate the headspace using a vacuum pump and a special bottle closure. A further way is to pour the wine into a smaller bottle so that there is less headspace. The exposure of other beverages, such as coffee, to air is also a problem. While many of these techniques can be useful to help preserve the quality of a beverage which has not been consumed, they all suffer from one or more of the following shortcomings: being only partially effective, hard to use, expensive, and providing less than elegant solutions, as well as often requiring repeat purchases.

BRIEF SUMMARY OF THE INVENTION

[0002] A first example of a liquid storage, isolation and dispensing assembly includes a container, top and float. The container has a bottom and a circumferentially extending sidewall, the sidewall having a lower end an open upper end. The sidewall defines an axis and has an inner surface. The bottom and the sidewall define a container interior for holding a liquid. The top is mountable to the upper end, the top having a sealing element engageable with the inner surface. The top is positionable at a liquid sealing position and at a liquid pouring position. The sealing element creates a liquid seal with the inner surface when the top is at the liquid sealing position. The open upper end is least partially unobstructed when the top is at the liquid pouring position. At least a portion of the inner surface has a constant cross-sectional shape and size along the axis. The float is positionable within the interior. The float includes a top portion, a bottom portion, and a sealing edge. The sealing edge has the same cross-sectional shape as the portions of the inner surface. The sealing edge is sized to create a minimal gap between the sealing edge and the interior surface when (1) the float is floating on the surface of a liquid
within the container, (2) the axis is generally vertical, and (3) the liquid surface is along the portion of the inner surface. A liquid within the container can be poured from the container by placing the top at the liquid pouring position and tilting the container causing a portion of the sealing edge of the float to move away from the inner surface permitting the liquid to pass the sealing edge and out of the open upper end.

[0003] The first example of the liquid storage, isolation and dispensing assembly can include one or more the following. At least a portion of the sidewall between the lower end and the upper end can have a cylindrical shape. The entire open upper end can flare outwardly to accommodate pouring from the container in any direction. The top can be completely removed from the container when in the liquid pouring position, and the container can include a float retaining element at the open upper end to help maintain the float in the container interior during use with the top in the liquid pouring position. The container can include a float retaining element at the open upper end to help maintain the float in the container interior during use. The float can have a center of gravity positioned within the bottom portion. The float can be configured so that when the float is floating at the surface of a liquid, the sealing edge is generally coincident with the surface of the liquid.

[0004] In some examples of the first example of the assembly, the upper end of the sidewall can define a pouring element, and the sealing element and the inner surface can create a pouring gap between the sealing element and the inner surface at the pouring element when the top is at the liquid pouring position, so that a liquid poured from the container passes through the pouring gap and out of the pouring element. At least a portion of the sidewall between the lower end and the upper end can have an other than round cross-sectional shape, such as an oval cross-sectional shape. The other than round cross-sectional shape can have bilateral symmetry, and the top can be mountable to the open upper end at both the liquid sealing position and at the liquid pouring position, with the liquid sealing and liquid pouring positions of the top being oriented at an angle from one another. The pouring element can include an outwardly extending spout-like pouring element. In some examples, the sidewall defines a first axis extending between the upper and lower ends and the top has a second axis oriented generally parallel to the first axis when the top is mounted to the upper end; the top has a top end and a bottom end, the bottom end being positioned within the upper end of the container when the top is mounted to the upper end; the sealing element is a closed loop sealing element; the sealing element has upper and lower regions at different positions along the sealing element, the upper region being closer to the upper end of the container than the lower region; the upper region is aligned with the pouring element when
the top is at the liquid pouring position; and the upper region is misaligned from the pouring element when the top is at the liquid sealing position.

[0005] A second example of a liquid storage, isolation and dispensing assembly includes a container and a float. The container has a bottom and a circumferentially extending sidewall, the sidewall having a lower end extending from the bottom and an open upper end. The container is positionable at a first, storage orientation and a second, liquid dispensing orientation. The sidewall has an inner surface. The bottom and the sidewall define a container interior for holding a liquid. At least a portion of the inner surface has a constant horizontally oriented cross-sectional shape and size. The portion of the inner surface defines an axis extending between the lower end and the upper end. The float is positionable within the interior. The float includes a top portion, a bottom portion, and a sealing edge. The float is configured so that when the float is floating at the surface of a liquid, the sealing edge is generally coincident with the surface of the liquid. The sealing edge has the same cross-sectional shape as the inner surface. The sealing edge is configured so that when the float is floating on the surface of a liquid within the container and the liquid surface is along the portion of the inner surface, (1) a minimal gap is created between the sealing edge and the interior surface when the container is at the first orientation, and (2) a pouring gap created between the sealing edge and the interior surface when the container is at the second orientation.

[0006] An example of a liquid storage and dispensing container assembly includes a container and a top. The container has a bottom and a circumferentially extending sidewall, the sidewall having a lower end extending from the bottom and an open upper end. The sidewall has an inner surface. The bottom and the sidewall defines a container interior for holding a liquid. The upper end includes a pouring element. The top is mountable to the upper end. The top includes a sealing element engageable with the inner surface. The top, when mounted to the upper end, is positionable at a liquid sealing position and at a liquid pouring position. The sealing element creates a liquid seal with the inner surface when the top is at the liquid sealing position. The sealing element and the inner surface create a gap between the sealing element and the inner surface at the pouring element when the top is at the liquid pouring position.

[0007] Other features, aspects and advantages of the present invention can be seen on review the drawings, the detailed description, and the claims which follow.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] Fig. 1 is an exploded side elevation view of a first example of a liquid storage, isolation and dispensing assembly.
Fig. 2 is a three-dimensional view of the top of the assembly of Fig. 1.

Fig. 3 is a three-dimensional view of the float of the assembly of Fig. 1.

Fig. 4 is a cross-sectional view of the assembly of Fig. 1 in an assembled condition with the float floating on the surface of the liquid within the container.

Figs. 5-8 are simplified views showing the use of the assembly of Fig. 1.

Fig. 5 shows pouring a liquid into the container.

Fig. 6 shows placing the float through the open upper end of the container.

Fig. 7 shows the float resting at the upper surface of the liquid with the top mounted to the open upper end of the container.

Fig. 8 shows the liquid being poured from the container after the top has been removed and illustrates how the float naturally becomes repositioned within the container interior when the container is tilted to allow the liquid to be poured from the container.

Fig. 9 shows a second example of a liquid storage, isolation and dispensing assembly in which the container has an other than round cross-sectional shape and showing the top in a liquid sealing position.

Fig. 10 is a top plan view of the container of Fig. 9 showing the oval cross-sectional shape of the container and the spout-like pouring element created at the outwardly flared open upper end of the container.

Fig. 11 is a three-dimensional view of the float of the assembly of Fig. 9.

Figs. 11A and 11B are side elevation cross-sectional views taken through the widest and narrowest portions of the float of Fig. 11.

Fig. 12 is a three-dimensional view of the top of the assembly of Fig. 9.

Figs. 12A and 12B are side elevation cross-sectional views taken through the widest and narrowest portions of the top of Fig. 12.

Fig. 13 shows the structure of Fig. 9 but with the top removed and re-oriented 180° from the position of Fig. 9 placing the top in a liquid pouring position and creating a gap between the sealing element of the top and the inner surface of the container at the spout-like pouring element.

Fig. 14 shows the structure of Fig. 13 at a tilted, pouring orientation permitting the liquid within the container to flow through the gap and out of the container.

**DETAILED DESCRIPTION OF THE INVENTION**

The following description will typically be with reference to specific structural embodiments and methods. It is to be understood that there is no intention to limit the invention
to the specifically disclosed embodiments and methods but that the invention may be practiced using other features, elements, methods and embodiments. Preferred embodiments are described to illustrate the present invention, not to limit its scope, which is defined by the claims. Those of ordinary skill in the art will recognize a variety of equivalent variations on the description that follows. Like elements in various examples and embodiments are commonly referred to with like reference numerals.

A first example of a liquid storage, isolation and dispensing assembly is shown in Fig. 1 as including a carafe type container, a float and a top. Container includes a grip ring which is positioned within a groove at the open upper end of container. Container has a generally cylindrical side wall extending from a bottom at the lower end of the sidewall to a position adjacent to groove at open upper end. Open upper end is outwardly flared around its entire circumference to facilitate pouring.

Float includes a float body having a top portion and a bottom portion joined by a sealing edge. Top portion of float is configured to form pouring handle. Sealing edge includes a groove housing a sealing edge skirt. Float also includes a cap which covers an opening at the top portion. Float is shown in an assembled form in Figs. 3 and 4.

Top includes a top body having a lower extension to which a top sealing element is mounted. See Figs. 2 and 4 which show top in an assembled form. Sealing element and the sealing edge skirt can be made of flexible, resilient material, such as high density polypropylene (HDPP), which should be compatible with the wine or other liquid to be held within container.

Fig. 4 is a cross-sectional view of the assembly in an assembled condition with top mounted to open upper end and float floating on the surface of the liquid within container. The inner surface of container is cylindrical in shape from position just below grip ring down to a position at bottom of container. The inner surface of container from position down to position defines a container axis. Inner surface above position has a smaller inner diameter than below the lower position to help keep float from inadvertently passing through open upper end during use; that portion of inner surface can be referred to as a float retaining element. Sealing edge skirt is sufficiently flexible to permit float to be passed through open upper end and past float retaining element to get the float into the container interior. Float has an axis generally parallel to, and typically coincident with, container axis. Float is configured so that it is
bottom-heavy with an axially-centered center of gravity 66 within bottom portion 38; this helps to ensure that float 14 remains upright within liquid 56. The weight and configuration of float 14 is designed based upon the expected specific gravity of liquid 56 so that sealing edge skirt 44 is generally coincident with liquid surface 54.

[0030] In some examples, the sealing edge skirt 44 may be arranged to be offset from, such as somewhat above, liquid surface 54 without creating an excessive area of exposed liquid surface 54. Also, in some examples float 14 could be designed so that the center of gravity 66 is aligned with sealing edge skirt 44 so that the float would be stably positioned on liquid surface 54 regardless of its orientation, that is with the top facing up or down. In addition, float 14 could be shaped, such as a flattened disk shaped member, so that it would float stably on the liquid regardless of whether the top were facing up or down. In some examples, the top portion could be at the level of the sealing edge skirt 44. Float 14 could, for example, be a flat disc having a sealing edge skirt 44 positioned between its two edges or along one of the two edges, or in some examples the sealing edge skirt 44 and could be positioned along both of the two edges.

[0031] During use the level of liquid surface 54 will change. To ensure that float 14 properly follows the liquid level at liquid surface 54, the outside diameter of sealing edge skirt 44 is made to be somewhat less than the inside diameter of inner surface 58 between positions 30 and 60. The difference between the two diameters can be chosen to create a minimal gap, such as about 0.03 inch (0.76 mm) to about 0.13 inch (3.3 mm). A larger gap will help ensure that float 14 freely follows liquid surface 54 but also exposes more of liquid 56 to the air above the float. Also, making skirt 44 out of a slippery material, such as PTFE, should help to ensure free movement of float 14 within container 12.

[0032] It should be noted that the flange elements 57 of top sealing element 52 would typically be deflected upwardly to rest on the inner surface 58 of container 12 when the top 16 is mounted to open upper end 22 of container 12. However, flange elements 57 are shown extending straight outwardly in Fig. 4 as an artifact of the drafting process. This artifact is also present in Figs. 1, 9, 13 and 14.

[0033] Fig. 5 shows pouring a liquid 56 into container 12. In some cases, in particular with certain still wines, it may be desired to provide additional aeration to the wine as it is poured into container 12, which can act as a serving carafe. In that case, float 14 can be placed into container 12 before all or part of liquid 56 is poured into the container. The liquid 56 landing on top portion 36 of float 14 will cause additional aeration of the wine. Fig. 6 shows float 14 being passed through the open upper end 22 of the container. Flange 67 of sealing edge skirt 44 is
sufficiently flexible to permit float 14 to pass through float retaining element 62 and enter the
cylindrical region of inner surface 58 between positions 30 and 60.

[0034] Fig. 7 shows assembly 10 in a storage condition or state. Float 14 is shown resting
at the surface 54 of the liquid 56 with top 16 mounted to the open upper end of the container.
Float 14 covers virtually the entire liquid surface 54 to effectively prevent air above float 14
from affecting the wine or other liquid 56 within container 12. It is therefore important that float
14 be properly buoyant so that the flange 67 of skirt 44 is at or close to liquid surface 54.

[0035] Fig. 8 shows assembly 10 of Fig. 7 after removal of top 16 with container 12 being
tilted to cause liquid 56 to be poured from container 12. This figure illustrates how float 14
naturally becomes repositioned within the container interior 64 when container 12 is tilted to
allow liquid 56 to be freely poured from the container.

[0036] Fig. 9 shows a second example of a liquid storage, isolation and dispensing
assembly 10 in which container 12 has an other than round cross-sectional shape; in this
example, an oval cross-sectional shape. Other cross-sectional shapes are also possible. Fig. 10
is a top plan view of container 12 of Fig. 9 showing the oval cross-sectional shape of the
container and an outwardly extending, spout-like pouring element 68 created along the
outwardly flared open upper end 22 of the container. Figs. 11, 11A, 11B, 12, 12A and 12B are
three-dimensional and side elevation cross-sectional views of the float 14 and top 16 used with
this example.

[0037] Top 16 of Figs. 9-14 is similar to top 16 of Figs. 1-8 with the main difference being
that the orientation of the plane defined by top sealing element 52 is at an angle 70 to container
axis 55. Top 16 has a top axis 74 which is generally coincident with axis 55. Angle 70 can be in
the range of about 21° to 25°; in this example, angle 70 is 23°. Sealing element 52 has upper and
lower regions 76, 78 at different positions along the sealing element. Upper region 76 is closer
to upper and 22 of container 12 than is lower region 78. The upper region 76 misaligned with
the spout like pouring element 68 when the top is at the liquid sealing position of Fig. 9. In this
way top sealing element 52 can provide a full 360° circumferential seal by its engagement with
the inner surface 58 when at the liquid sealing position of Fig. 9.

[0038] Sealing edge 40 of float 14 of Fig. 9 has the same oval shape as the inner surface 58
of container 12 between positions 30, 60. Again there is a small gap between sealing edge 40
and inner surface 58 to permit float 14 to move freely with liquid 56 during use.

[0039] Fig. 13 shows the structure of Fig. 9 but after top 16 has been removed and re-
oriented 180° from the liquid sealing position of Fig. 9. Doing so places top 16 in a liquid
pouring position and causes upper region 76 to be aligned with spout like pouring element 68. This creates a gap 72 between top sealing element 52 and inner surface 58 of container 12 at the spout-like pouring element 68.

[0040] Fig. 14 shows the structure of Fig. 13 at a tilted orientation permitting the liquid within the container to flow through gap 72. In contrast with the example of Figs. 1-8, in which top 16 is completely removed from open upper end 22 when at the pouring position, top 16 remains mounted to open upper end 22 at the pouring position. Top 16, being mounted to open upper end 22, prevents float 14 from passing out of container 12 while pouring liquid 56. This eliminates the need for the float retaining element 62 of the Fig. 1-8 example and the need for any type of flexible flange, such as flange 67 of skirt 44.

[0041] The above descriptions may have used terms such as above, below, top, bottom, over, under, et cetera. These terms may be used in the description and claims to aid understanding of the invention and not used in a limiting sense.

[0042] While the present invention is disclosed by reference to the preferred embodiments and examples detailed above, it is to be understood that these examples are intended in an illustrative rather than in a limiting sense. It is contemplated that modifications and combinations will occur to those skilled in the art, which modifications and combinations will be within the spirit of the invention and the scope of the following claims. For example, the other than round cross-sectional shape of container 12 can be other than generally oval, such as triangular. With a triangular configuration, spout like pouring element 68 could be made at, for example, two of the corners of the triangular shaped container 12 and could have different size gaps 72 to control desired for the flow of liquid 56 out of container 12. Container axes 55 of the disclosed examples are straight lines. However, in appropriate cases container 12 could be configured so that axis 55 is not a straight line; this would, however, typically require that the cross-sectional shape and size of the inner surface 58 between positions 30 and 60 as measured along horizontal planes would need to remain constant for the gap between sealing edge 40 and inner surface 58 to remain constant.

[0043] The following clauses describe aspects of various examples of liquid storage, isolation and dispensing assemblies as well as liquid storage and dispensing assemblies.

[0044] 1. A liquid storage, isolation and dispensing assembly comprising:

   a container having a bottom and a circumferentially extending sidewall, the sidewall having a lower end extending from the bottom and an open upper end;

   the sidewall defining an axis and having an inner surface;
the bottom and the sidewall defining a container interior for holding a liquid;
a top mountable to the upper end, the top having a sealing element engageable with the
inner surface;
the top positionable at a liquid sealing position and at a liquid pouring position;
the sealing element creating a liquid seal with the inner surface when the top is at the
liquid sealing position;
the open upper end being least partially unobstructed when the top is at the liquid pouring
position;
    at least a portion of the inner surface having a constant cross-sectional shape and size
along said axis;
    a float positionable within the interior;
    the float comprising a top portion, a bottom portion, and a sealing edge;
    the sealing edge having the same cross-sectional shape as the portions of the inner
surface;
    the sealing edge sized to create a minimal gap between the sealing edge and the interior
surface when (1) the float is floating on the surface of a liquid within the container, (2) the axis is
generally vertical, and (3) the liquid surface is along the portion of the inner surface;
whereby a liquid within the container can be poured from the container by placing the top
at the liquid pouring position and tilting the container causing a portion of the sealing edge of the
float to move away from the inner surface permitting the liquid to pass the sealing edge and out
of the open upper end.

2. The assembly according to clause 1, wherein:
    at least a portion of the sidewall between the lower end and the upper end has a
cylindrical shape; and
    the entire open upper end flares outwardly to accommodate pouring from the container in
any direction.

3. The assembly according to clauses 1 or 2, wherein the top is completely
removed from the container when in the liquid pouring position; and
    the container comprises a float retaining element at the open upper end to help maintain
the float in the container interior during use with the top in the liquid pouring position.

4. The assembly according to clause 1, wherein:
    the upper end defines a pouring element; and
the sealing element and the inner surface creates a pouring gap between the sealing element and the inner surface at the pouring element when the top is at the liquid pouring position;

whereby a liquid poured from the container passes through the pouring gap and out of the pouring element.

[0048] 5. The assembly according to clauses 1 or 4, wherein at least a portion of the sidewall between the lower end and the upper end has an other than round cross-sectional shape.

[0049] 6. The assembly according to clause 5, wherein the other than round cross-sectional shape is an oval cross-sectional shape.

[0050] 7. The assembly according to clauses 5 or 6, wherein the other than round cross-sectional shape has bilateral symmetry, and the top is mountable to the open upper end at both the liquid sealing position and at the liquid pouring position, the liquid sealing and liquid pouring positions of the top being oriented at an angle from one another.

[0051] 8. The assembly according to any of clauses 4-7, wherein the pouring element comprises an outwardly extending spout-like pouring element.

[0052] 9. The assembly according to any of clauses 4-8, wherein:

the sidewall defines a first axis extending between the upper and lower ends and the top has a second axis oriented generally parallel to the first axis when the top is mounted to the upper end;

the top has a top end and a bottom end, the bottom end being positioned within the upper end of the container when the top is mounted to the upper end;

the sealing element is a closed loop sealing element;

the sealing element has upper and lower regions at different positions along the sealing element, the upper region being closer to the upper end of the container than the lower region;

the upper region being aligned with the pouring element when the top is at the liquid pouring position; and

the upper region being misaligned from the pouring element when the top is at the liquid sealing position.

[0053] 10. The assembly according to any of clauses 1-3, wherein the container comprises a float retaining element at the open upper end to help maintain the float in the container interior during use.

[0054] 11. The assembly according to any of clauses 1-10, wherein the float has a center of gravity positioned within the bottom portion.
12. The assembly according to any of clauses 1-11, wherein the float is configured so that when the float is floating at the surface of a liquid, the sealing edge is generally coincident with the surface of the liquid.

13. A liquid storage, isolation and dispensing assembly comprising:
   a container having a bottom and a circumferentially extending sidewall, the sidewall having a lower end extending from the bottom and an open upper end;
   the container positionable at a first, storage orientation and a second, liquid dispensing orientation;
   the sidewall having an inner surface;
   the bottom and the sidewall defining a container interior for holding a liquid;
   at least a portion of the inner surface having a constant horizontally oriented cross-sectional shape and size;
   the portion of the inner surface defining an axis extending between the lower end and the upper end;
   a float positionable within the interior;
   the float comprising a top portion, a bottom portion, and a sealing edge;
   the float configured so that when the float is floating at the surface of a liquid, the sealing edge is generally coincident with the surface of the liquid; and
   the sealing edge having the same cross-sectional shape as the inner surface, the sealing edge configured so that when the float is floating on the surface of a liquid within the container and the liquid surface is along the portion of the inner surface, (1) a minimal gap is created between the sealing edge and the interior surface when the container is at the first orientation, and (2) a pouring gap created between the sealing edge and the interior surface when the container is at the second orientation.

14. The assembly according to clause 13, wherein the axis extends vertically when the container is at the first, storage orientation.

15. The assembly according to clause 13, wherein the axis is a straight line.

16. The assembly according to any of clauses 13-15, wherein the top portion comprises a lifting handle.

17. The assembly according to any of clauses 13-16, wherein the bottom portion has a surface extending downwardly and inwardly from the sealing edge.
18. The assembly according to any of clauses 13-17, wherein the float has a centerline extending through the top portion, the sealing edge and the bottom portion, the center of gravity being located along the centerline.

19. The assembly according to any of clauses 13-18, wherein the float has a center of gravity positioned within the bottom portion.

20. The assembly according to any of clauses 13-19, wherein the portion of the sidewall has a cylindrical shape.

21. The assembly according to any of clauses 13-20, wherein the open upper end flares outwardly to accommodate pouring from the container in any direction.

22. The assembly according to any of clauses 13-21, wherein the container comprises a float retaining element at the open upper end to help maintain the float in the container interior during use with the container at the second, liquid dispensing orientation.

23. A liquid storage and dispensing container assembly comprising:
   a container having a bottom and a circumferentially extending sidewall, the sidewall having a lower end extending from the bottom and an open upper end;
   the sidewall having an inner surface;
   the bottom and the sidewall defining a container interior for holding a liquid;
   the upper end comprising a pouring element;
   a top mountable to the upper end, the top comprising a sealing element engageable with the inner surface:
      the top, when mounted to the upper end, positionable at a liquid sealing position and at a liquid pouring position;
      the sealing element creating a liquid seal with the inner surface when the top is at the liquid sealing position; and
      the sealing element and the inner surface creating a gap between the sealing element and the inner surface at the pouring element when the top is at the liquid pouring position.

24. The assembly according to clause 23, wherein at least a portion of the sidewall between the lower end and the upper end has an other than round cross-sectional shape.

25. The assembly according to clause 24, wherein the other than round cross-sectional shape is an oval cross-sectional shape.

26. The assembly according to clause 24, wherein the other than round cross-sectional shape has bilateral symmetry, and the liquid sealing and liquid pouring positions are oriented 180° from one another.
27. The assembly according to any of clauses 23-26, wherein the pouring element comprises an outwardly extending spout-like pouring element.

28. The assembly according to any of clauses 23-27, wherein:

- the sidewall defines a first axis extending between the upper and lower ends and the top has a second axis oriented generally parallel to the first axis when the top is mounted to the upper end;
- the top has a top end and a bottom end, the bottom end being positioned within the upper end of the container when the top is mounted to the upper end;
- the sealing element being a closed loop sealing element;
- the sealing element has upper and lower regions at different positions along the sealing element, the upper region being closer to the upper end of the container than the lower region;
- the upper region being aligned with the pouring element when the top is at the liquid pouring position; and
- the upper region being misaligned from the pouring element when the top is at the liquid sealing position.

29. The assembly according to any of clauses 23-28, wherein the sealing element comprises a flexible band.

Any and all patents, patent applications and printed publications referred to above are incorporated by reference.
What is claimed is

1. A liquid storage, isolation and dispensing assembly comprising:
   a container having a bottom and a circumferentially extending sidewall, the sidewall having a lower end extending from the bottom and an open upper end;
   the sidewall defining an axis and having an inner surface;
   the bottom and the sidewall defining a container interior for holding a liquid;
   a top mountable to the upper end, the top having a sealing element engageable with the inner surface;
   the top positionable at a liquid sealing position and at a liquid pouring position;
   the sealing element creating a liquid seal with the inner surface when the top is at the liquid sealing position;
   the open upper end being least partially unobstructed when the top is at the liquid pouring position;
   at least a portion of the inner surface having a constant cross-sectional shape and size along said axis;
   a float positionable within the interior;
   the float comprising a top portion, a bottom portion, and a sealing edge;
   the sealing edge having the same cross-sectional shape as the portions of the inner surface;
   the sealing edge sized to create a minimal gap between the sealing edge and the interior surface when (1) the float is floating on the surface of a liquid within the container, (2) the axis is generally vertical, and (3) the liquid surface is along the portion of the inner surface;
   whereby a liquid within the container can be poured from the container by placing the top at the liquid pouring position and tilting the container causing a portion of the sealing edge of the float to move away from the inner surface permitting the liquid to pass the sealing edge and out of the open upper end.

2. The assembly according to claim 1, wherein:
   at least a portion of the sidewall between the lower end and the upper end has a cylindrical shape; and
the entire open upper end flares outwardly to accommodate pouring from the container in any direction.

3. The assembly according to claim 1, wherein the top is completely removed from the container when in the liquid pouring position; and the container comprises a float retaining element at the open upper end to help maintain the float in the container interior during use with the top in the liquid pouring position.

4. The assembly according to claim 1, wherein:
   the upper end defines a pouring element; and
   the sealing element and the inner surface creates a pouring gap between the sealing element and the inner surface at the pouring element when the top is at the liquid pouring position;
   whereby a liquid poured from the container passes through the pouring gap and out of the pouring element.

5. The assembly according to claim 1, wherein at least a portion of the sidewall between the lower end and the upper end has an other than round cross-sectional shape.

6. The assembly according to claim 5, wherein the other than round cross-sectional shape is an oval cross-sectional shape.

7. The assembly according to claim 5, wherein the other than round cross-sectional shape has bilateral symmetry, and the top is mountable to the open upper end at both the liquid sealing position and at the liquid pouring position, the liquid sealing and liquid pouring positions of the top being oriented at an angle from one another.

8. The assembly according to claim 4, wherein the pouring element comprises an outwardly extending spout-like pouring element.

9. The assembly according to claim 4, wherein:
the sidewall defines a first axis extending between the upper and lower ends and the top has a second axis oriented generally parallel to the first axis when the top is mounted to the upper end;

the top has a top end and a bottom end, the bottom end being positioned within the upper end of the container when the top is mounted to the upper end;

the sealing element being a closed loop sealing element;

the sealing element has upper and lower regions at different positions along the sealing element, the upper region being closer to the upper end of the container than the lower region;

the upper region being aligned with the pouring element when the top is at the liquid pouring position; and

the upper region being misaligned from the pouring element when the top is at the liquid sealing position.

10. The assembly according to claim 1, wherein the container comprises a float retaining element at the open upper end to help maintain the float in the container interior during use.

11. The assembly according to claim 1, wherein the float has a center of gravity positioned within the bottom portion.

12. The assembly according to claim 1, wherein the float is configured so that when the float is floating at the surface of a liquid, the sealing edge is generally coincident with the surface of the liquid.

13. A liquid storage, isolation and dispensing assembly comprising:

a container having a bottom and a circumferentially extending sidewall, the sidewall having a lower end extending from the bottom and an open upper end;

the container positionable at a first, storage orientation and a second, liquid dispensing orientation;

the sidewall having an inner surface;

the bottom and the sidewall defining a container interior for holding a liquid;

at least a portion of the inner surface having a constant horizontally oriented cross-sectional shape and size;
the portion of the inner surface defining an axis extending between the lower end and the upper end;

a float positionable within the interior;
the float comprising a top portion, a bottom portion, and a sealing edge;
the float configured so that when the float is floating at the surface of a liquid, the sealing edge is generally coincident with the surface of the liquid; and

the sealing edge having the same cross-sectional shape as the inner surface, the sealing edge configured so that when the float is floating on the surface of a liquid within the container and the liquid surface is along the portion of the inner surface, (1) a minimal gap is created between the sealing edge and the interior surface when the container is at the first orientation, and (2) a pouring gap created between the sealing edge and the interior surface when the container is at the second orientation.

14. The assembly according to claim 13, wherein the axis extends vertically when the container is at the first, storage orientation.

15. The assembly according to claim 13, wherein the axis is a straight line.

16. The assembly according to claim 13, wherein the top portion comprises a lifting handle.

17. The assembly according to claim 13, wherein the bottom portion has a surface extending downwardly and inwardly from the sealing edge.

18. The assembly according to claim 13, wherein the float has a centerline extending through the top portion, the sealing edge and the bottom portion, the center of gravity being located along the centerline.

19. The assembly according to claim 13, wherein the float has a center of gravity positioned within the bottom portion.

20. The assembly according to claim 13, wherein the portion of the sidewall has a cylindrical shape.
21. The assembly according to claim 13, wherein the open upper end flares outwardly to accommodate pouring from the container in any direction.

22. The assembly according to claim 13, wherein the container comprises a float retaining element at the open upper end to help maintain the float in the container interior during use with the container at the second, liquid dispensing orientation.

23. A liquid storage and dispensing container assembly comprising:
   a container having a bottom and a circumferentially extending sidewall, the sidewall having a lower end extending from the bottom and an open upper end;
   the sidewall having an inner surface;
   the bottom and the sidewall defining a container interior for holding a liquid;
   the upper end comprising a pouring element;
   a top mountable to the upper end, the top comprising a sealing element engageable with the inner surface;
   the top, when mounted to the upper end, positionable at a liquid sealing position and at a liquid pouring position;
   the sealing element creating a liquid seal with the inner surface when the top is at the liquid sealing position; and
   the sealing element and the inner surface creating a gap between the sealing element and the inner surface at the pouring element when the top is at the liquid pouring position.

24. The assembly according to claim 23, wherein at least a portion of the sidewall between the lower end and the upper end has an other than round cross-sectional shape.

25. The assembly according to claim 24, wherein the other than round cross-sectional shape is an oval cross-sectional shape.

26. The assembly according to claim 24, wherein the other than round cross-sectional shape has bilateral symmetry, and the liquid sealing and liquid pouring positions are oriented $180^\circ$ from one another.
27. The assembly according to claim 23, wherein the pouring element comprises an outwardly extending spout-like pouring element.

28. The assembly according to claim 23, wherein:
   the sidewall defines a first axis extending between the upper and lower ends and the top has a second axis oriented generally parallel to the first axis when the top is mounted to the upper end;
   the top has a top end and a bottom end, the bottom end being positioned within the upper end of the container when the top is mounted to the upper end;
   the sealing element being a closed loop sealing element;
   the sealing element has upper and lower regions at different positions along the sealing element, the upper region being closer to the upper end of the container than the lower region;
   the upper region being aligned with the pouring element when the top is at the liquid pouring position; and
   the upper region being misaligned from the pouring element when the top is at the liquid sealing position.

29. The assembly according to claim 23, wherein the sealing element comprises a flexible band.
A. CLASSIFICATION OF SUBJECT MATTER

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

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

B01J 19/16, B65D 51/00, 88/42, 47/06, 1/00

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)

PatSearch (RUPTO internal), USPTO, PAJ, Esp@cenet, DWPI, EAPATIS, PATENTSCOPE, Information Retrieval System of FIPS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
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<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
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<td>US 2003/01023 11 A1 (JAMES R. BRADY) 05.06.2003, fig. 1-16, abstract</td>
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Further documents are listed in the continuation of Box C. 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 document 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: 15 January 2014 (15.01.2014)

Date of mailing of the international search report: 30 January 2014 (30.01.2014)

Name and mailing address of the ISA/ FIPS

Russia, 123995, Moscow, G-59, GSP-5, Berezhkovskaya nab., 30-1

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Form PCT/ISA/210 (second sheet) (July 2009)
1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of a sequence listing filed or furnished:

   a. (means)
      - [ ] on paper
      - [ ] in electronic form

   b. (time)
      - [ ] in the international application as filed
      - [ ] together with the international application in electronic form
      - [ ] subsequently to this Authority for the purposes of search

2. [ ] In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:
**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. □ Claims Nos.:
   because they relate to subject matter not required to be searched by this Authority, namely:

2. □ Claims Nos.:
   because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. □ Claims Nos.:
   because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

1. □ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. □ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.

3. □ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. □ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**

□ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

□ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

□ No protest accompanied the payment of additional search fees.
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Form PCT/ISA/210 (patent family annex) (July 2009)