BOTTLE CLOSURE ASSEMBLY

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ABSTRACT

A closure assembly that connects to a bottle, the closure assembly comprising a cap with a top and a bottom, said cap having an opening that communicates with the top and the bottom; a straw that fits within the cap opening; a cover that removably attaches to one side of the cap top whereby the cover surrounds one end of the straw.
BOTTLE CLOSURE ASSEMBLY

This application claims priority from the U.S. provisional application Ser. No. 61/026,899, filed Feb. 7, 2008.

FIELD OF THE INVENTION

The present invention relates to bottle closure assemblies, and more particularly to bottle closure assemblies with an integrated straw or drinking apparatus that provide for enhanced user experience when drinking liquids from a bottle or container.

BACKGROUND OF THE INVENTION

Bottle closure assemblies of various types are well known in the art. Such devices are typically used in connection with bottles or other containers to seal the liquid within the bottle to prevent contamination of the liquid and to prevent the liquid from spilling out of the bottle when not in use.

However, previous bottle closure assemblies have some inherent disadvantages. One of the disadvantages with existing closure assemblies is that they do not provide the user with a means to hold the bottle in an upright position when drinking the liquid. The present invention overcomes these and other problems inherent in existing water bottle assemblies. The present invention provides a bottle closure assembly that contains a straw or integrated drinking apparatus that provides for a user to drink the liquid from the bottle without removing the closure from the bottle. In some forms of the invention, the bottle can remain in the upright position and the user can drink the liquid without inverting or tilting the bottle.

BRIEF SUMMARY OF THE INVENTION

In one embodiment, a bottle may have a closure assembly that in one form includes a straw, a cover and a cap. In one form, a cap may have a female valve or opening (which can be constructed of rubber, plastic, or some other substantially flexible material), which allows the straw to move freely (or be snugly fit) within the opening and whereby the opening acts substantially to prevent the water (or other liquid) from escaping the bottle and spilling on a person’s clothing, while still allowing the person to easily drink from the bottle using the straw. In one form, a cover may screw onto the top of the bottle and be easily removable, and yet in another form, the cover may snap or otherwise permanently be affixed to the top of the bottle and not be removable. In one embodiment, the cover may fit and connect to the cap attached to the bottle whereby the straw is completely enclosed within the cover and the bottle to maintain a substantially germ free environment when the bottle is in storage. In yet other embodiments the straw may have a safety cover. This cover or other sealing device further provides to prevent liquid from leaving the straw before use. In other forms, the closure assembly may be provided without a bottle.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front partial cut away view of one embodiment of the bottle closure assembly shown attached to a container.

FIG. 2 is a partial cut away view of one embodiment of a straw used with the bottle closure assembly of FIG. 1;

FIG. 3 is a front partial cut away view showing multiple components of the bottle closure assembly of FIG. 1 including a cap and a cover;

FIG. 4 shows one embodiment of a bottle closure assembly in its assembled form;

FIG. 5 shows an alternate embodiment of a bottle closure assembly including a straw sealing device;

FIG. 6 shows an alternate embodiment of a bottle closure assembly wherein the cover is attached to the cap with a hinge;

FIG. 7 shows an alternate embodiment of a bottle closure assembly wherein the straw is offset with regards to the cap center;

FIG. 8 shows an alternate embodiment of a bottle closure assembly wherein the straw is offset from the cap center and the closure assembly is designed for a wide mouth bottle;

FIG. 9 shows yet another alternate embodiment of a bottle closure assembly in place on a bottle;

FIG. 10 shows a bottle closure assembly of FIG. 9 having a flip-open drinking device integrated into the cap;

FIG. 11 shows another alternate embodiment of the bottle closure assembly of FIG. 10 wherein a straw is integrated into the cap.

DETAILED DESCRIPTION OF THE INVENTION

While the present invention is susceptible of embodiments in various forms, there is shown in the drawings and will hereinafter be described some exemplary and non-limiting embodiments, with the understanding that the present disclosure is to be considered an exemplification for the invention and is not intended to limit the invention to the specific embodiments illustrated. In this disclosure, the use of the disjunctive is intended to include the conjunctive. The use of the definite article or indefinite article is not intended to indicate cardinality. In particular, a reference to “the” object or “a” object is intended to denote also one of a possible plurality of such objects.

In one form, the invention includes a bottle for holding water or any other liquid, fluid or substance. The bottle may be shaped substantially as shown in FIG. 1 and whereby in one form the bottle is a disposable aluminum bottle. The bottle interior is lined with, in one form, a water based polymer. In other embodiments, the bottle can be lined or coated with a variety of different substances depending on the requirements of the specific application. The bottle can be constructed of aluminum and other materials, metals or plastics, to provide for proper operation of the bottle. In one form, other type liners for the interior of the bottle may also be used.

As shown in FIGS. 1-3, bottle 10 may comprise a closure assembly 14 that in one form includes a straw 16, a cover 30 and a cap 20. In one form, cap 20 may have a female valve, or opening 24 (which can be constructed of rubber, plastic or some other substantially flexible material), which allows the straw 16 to move freely (or be snugly fit) within the opening 24 and whereby the opening 24 acts substantially to prevent the water (or other liquid) from escaping bottle 10 and spilling on a person’s clothing, while still allowing the person to easily drink from bottle 10 using straw 16. In one form, cap 20 may screw onto the top of the bottle 10 and be easily removable, and yet in another form, cap 20 may snap or otherwise permanently be affixed to the top of bottle 10 and not be removable. In one embodiment, cover 30 may fit and connect to cap 20 attached to the bottle substantially as shown.
in FIG. 1 whereby the top of straw 16 is completely enclosed within cover 30 to maintain a substantially germ free environment when bottle 10 is in storage. In yet other embodiments the straw 16 may have a safety cover 19 as shown in FIG. 5. This cover or other sealing device provides further to prevent liquid from leaving the straw before use. In other forms, cover 19 can be shaped and formed in a variety of different ways to cover/seal straw 16. Also, in one embodiment, as shown in FIG. 3, a hole 26 or other opening may be provided in cap 20 to allow for air to enter or leave bottle 10. The hole 26 provides for ease of removing fluid from bottle 10 and prevents pressure or vacuum build-up within the bottle 10.

[0020] In one form, straw 16, cap 20 and/or cover 30 may be made out of a variety of different materials, such as, for example, plastic, metal, rubber, composite materials, glass or any other material that will provide for proper operation of the bottle and closure assembly 14 as herein described. It is understood that any of these materials may be used for any of the components or elements described herein.

[0021] In yet other forms of the invention, the closure assembly may be provided as a stand-alone invention (or as a set with a container or bottle) that may be used in a variety of applications for removing fluids of all sorts from different containers, bottles and/or vessels.

[0022] FIG. 4 shows one embodiment of a closure assembly in a stand-alone application whereby the straw 16 is in place within cap 20. Cover 30 is shown in a closed position on cap 20. In this embodiment, straw 16 fits within opening 24 in a substantially snug fit to prevent fluids from exiting the area where straw 16 meets with cap 20 at opening 24. In one embodiment, opening 24 may be constructed in a variety of different ways to accomplish a substantially snug fit between straw 16 and cap 20 to prevent fluids from leaking past cap 20 into cover 30. In one application, cap 20 at the area of contact where straw 16 meets cap 20 at opening 24, a variety of different materials and construction may be used to provide for proper sealing at this location. For example, a rubber ring may be used, a rubber insert portion, a silicone-based insert portion, or other material which will provide for a proper sealing as disclosed herein. The sealing device may be integrated into cap 20 or it may be a separate portion that is put in place during the assembly of the closure assembly. In yet other forms of the invention, the closure assembly may be provided as a stand-alone invention (or as a set with a container or bottle) that may be used in a variety of applications for removing fluids of all sorts from different containers, bottles and/or vessels.

[0023] As shown in FIG. 5, in an additional embodiment, the closure assembly may further comprise a straw cover 19 whereby cover 19 is positioned in place over straw 16 to maintain straw 16 in substantially clean state for a user drinking fluid from the bottle. Not shown in the drawing, another embodiment, a protective moisture-proof seal may be placed directly over straw 16 opening that is located within cover 30 which can be peeled away or otherwise removed from the straw 16 tip and whereby the seal provides for a variety of positive results. The seal will eliminate fluid from leaking into cover 30 and allow for a sanitary straw tip that the user will use to remove liquid from the bottle. In one embodiment, as shown in FIG. 5, the straw opening 24 in cap 20 may be shaped in a variety of different ways, for example, the opening of a substantially central hole within cap 20 and allows for the straw to fit into the hole and thereby into the bottle. The hole or opening may also further have a rubber ring placed around its inner circumference in which the straw may fit snugly to minimize leakage from the cap portion into cover 30. In yet other forms of the invention, the closure assembly may be provided as a stand-alone invention (or as a set with a container or bottle) that may be used in a variety of applications for removing fluids of all sorts from different containers, bottles and/or vessels.

[0024] As shown in FIG. 6, yet another embodiment of a closure assembly is shown. In one form, the closure assembly 36 may have a straw 16, a cap 40, a cover 42 and a hinge 38 that connects the cover 42 to the cap 40 substantially as shown in FIG. 6. In one application, the closure assembly 36 may also have a hole 26 positioned within cap 40 to allow for air to enter and leave the bottle or other container in which closure assembly 36 is being used. In yet other embodiments of closure assembly 36, the hinge 38 may be comprised in a variety of different ways and using a variety of other construction to allow cover 42 to be connected to cap 40 while still allowing cover 42 to be positioned so that a user may properly drink from the bottle using straw 16. In yet other forms of the invention, the closure assembly may be provided as a stand-alone invention (or as a set with a container or bottle) that may be used in a variety of applications for removing fluids of all sorts from different containers, bottles and/or vessels.

[0025] FIG. 7 shows yet another embodiment of a closure assembly 48 having a cap 50, a straw 16, a cover 51. In this embodiment, cover 51 may be connected to cap 50 via a hinge as previously disclosed in other embodiments or cover 51 may be a snap-fit cover as it mates to cap 50. A tamper-proof seal may be incorporated within the closure assembly wherein cover 51 and cap 50 meet. The straw 16 may be inserted within cap 50 substantially offset from the center of cap 50 as shown in FIG. 7. In yet other forms of the invention, the closure assembly may be provided as a stand-alone invention (or as a set with a container or bottle) that may be used in a variety of applications for removing fluids of all sorts from different containers, bottles and/or vessels.

[0026] FIG. 8 shows yet another embodiment of a closure assembly 52 wherein closure assembly 52 is using similar elements to closure assembly 48 as shown in FIG. 7. However, in this application, cap 54 is designed to accommodate wide-mouth sized bottles, vessels or containers. In this application, it is understood that the cover may be sized to fit the accordingly larger cap substantially as shown in FIG. 8. As with other caps disclosed herein, the cap may screw on to bottle 10 or may be permanently mounted to bottle 10. A hinge as shown in FIG. 8 may also be supplied but it is not necessary for the functioning of closure assembly 52. In yet other forms of the invention, the closure assembly may be provided as a stand-alone invention (or as a set with a container or bottle) that may be used in a variety of applications for removing fluids of all sorts from different containers, bottles and/or vessels.

[0027] Yet another embodiment of a water bottle or bottle for holding fluid is shown in FIG. 9. In this embodiment, a bottle 10 is provided and may be lined with a water-based polymer. A cap 68 as shown in FIG. 10 is provided and may be lined with a water-based polymer. A cap 68 as shown in FIG. 10 may have a solid, flip type mouthpiece sipping device 74 built into the cap 68 substantially as shown in FIG. 10. In yet other forms of the invention, the closure assembly may be provided as a stand-alone invention (or as a set with a con-
Another embodiment of closure assembly 62 is shown in FIG. 11 or in closure assembly 62 can be supplied as a stand-alone unit. As shown, in one embodiment, cap 68 has at least one flip-mouth piece 74 that can open into a position whereby a user may drink fluid from the bottle and may close to a position whereby the fluid will not leak out of the bottle. A straw 64 is supplied wherein the straw 64 attaches to cap 68. In one embodiment, the straw 64 may be permanently attached to cap 68, and in yet another embodiment, the straw 64 may be removably attached to cap 68. In one form, straw 64 and cap 68 may be manufactured whereby there are one piece, and in yet another embodiment, straw 64 and cap 68 may be manufactured whereby they are two independent pieces. In yet other forms of the invention, the closure assembly may be provided as a stand-alone invention (or as a set with a container or bottle) that may be used in a variety of applications for removing fluids of all sorts from different containers, bottles and/or vessels.

In one form, either of these components may be made out of a variety of different materials, such as, for example, plastic, rubber, metal, glass or any other material that will provide for proper operation of the bottle as herein described. In one form, other types of liners for the interior or exterior of the bottle may also be used. Other features of the herein described embodiment(s) may also be incorporated into bottle 10. In any of the embodiments discussed herein, the straw and cap may be constructed as one piece or two independent components that are joined together.

Specific embodiments of novel methods and apparatus for construction of a bottle and closure assembly according to the present invention have been described for the purpose of illustrating the manner in which the invention is made and used. It should be understood that the implementation of other variations and modifications of the invention and its various aspects will be apparent to one skilled in the art, and that the invention is not limited by the specific embodiments described. Therefore, it is contemplated to cover the present invention any and all modifications, variations, or equivalents that fall within the true spirit and scope of the basic underlying principals disclosed and claimed herein.

What is claimed is:

1. A closure assembly that connects to a bottle, the closure assembly comprising:
   - a cap with a top and a bottom, said cap having an opening that communicates with the top and the bottom;
   - a straw that fits within the cap opening; and
   - a cover that removably attaches to the cap top whereby the cover surrounds one end of the straw.

2. The closure assembly of claim 1 wherein the cap has a second opening passing through the cap and travels from the top side to the bottom side to allow air to flow through the second opening.

3. The closure assembly of claim 1 wherein a bottle is further provided and the closure assembly is connected to the bottle at a bottle opening and one end of the straw is positioned in the bottle.

4. The closure assembly of claim 3 wherein the cap is connected to the bottle by a screw-type feature located on the cap and the bottle.

5. The closure assembly of claim 3 wherein the cap opening further comprises a means for sealing so that when the straw passes through the opening, a liquid proof seal is formed around the straw.

6. The closure assembly of claim 1 further comprising a means for covering one end of the straw to prevent liquid from escaping the one end of the straw until the straw is in use.

7. The closure assembly of claim 1 wherein the cover is connected to the cap by a hinge to enable the cover to be connected to the cap when the straw is in use.

8. The closure assembly of claim 1 wherein the hole in the cap is positioned in the cap so that it is offset from the center of the cap.

9. The closure assembly of claim 8 wherein the cover further comprises a tamper-proof seal.

10. A closure assembly that can be connected to a bottle containing fluid, the closure assembly comprising:
    - a cap;
    - a mouth piece rotatably integrated into the cap; and
    - a straw connected to one side of the cap opposite the mouth piece.

11. The bottle closure assembly of claim 10 further comprising a bottle wherein the closure assembly is attached to the bottle.

12. The closure assembly of claim 10 wherein the cap has a second opening passing through the cap and travels from the top side to the bottom side to allow air to flow through the second opening.

13. The closure assembly of claim 10 wherein a bottle is further provided and the closure assembly is connected to the bottle at a bottle opening and one end of the straw is positioned in the bottle.

14. The closure assembly of claim 10 wherein the cap is connected to the bottle by a screw-type feature located on the cap and the bottle.

15. A closure assembly that connects to a container, the closure assembly comprising:
    - a cap with a top and a bottom, said cap having an opening; a means for removing fluid from the bottle that fits within the cap opening; and
    - a cover that removably attaches to the cap top whereby the cover surrounds one end of the means for removing fluid.

16. The closure assembly of claim 15 wherein the cap has a second opening passing through the cap and travels from the top side to the bottom side to allow air to flow through the second opening.

17. The closure assembly of claim 15 wherein a container is further provided and the closure assembly is connected to the container at a container opening and one end of the means for removing fluid is positioned in the container.

18. The closure assembly of claim 15 wherein the cap is connected to the container by a screw-type feature located on the cap and the container.

19. The closure assembly of claim 15 further comprising a means for covering one end of the means for removing fluid to prevent liquid from escaping the one end of the means for removing fluid.

20. The closure assembly of claim 15 wherein the cover is connected to the cap by a hinge to enable the cover to be connected to the cap when the means for removing fluid is in use.