The present disclosure generally relates to beverage containers having integrated straws, beverage container accessories having integrated straws, as well as methods of making and using the beverage containers and beverage container accessories with integrated straws. In particular, the disclosure relates to embodiments of such containers in the form of a pouch, a bottle, and a box, each having integrated straws and embodiments of accessories with integrated straws for use with conventional beverage cans and beverage bottles.
BEVERAGE CONTAINERS AND ACCESSORIES
WITH INTEGRATED STRAW

CROSS-REFERENCE TO RELATED
APPLICATION

[0001] This application claims priority to copending U.S.
provisional patent application Ser. No. 60/704,850, entitled
“Flexible Beverage Pouch with Integrated Straw” filed on
Aug. 2, 2005, which is entirely incorporated herein by
reference.

FIELD OF THE INVENTION(S)

[0002] The present disclosure relates to beverage contain-
ers of the type used for convenient packaging and consump-
tion of beverages, providing improved dispensing and/or
consumption of the beverage via an integrated straw. The
present disclosure also relates to accessories adapted for use
with standard beverage containers, where the accessory
provides a cap with an integrated straw adapted to fit the
opening of a standard beverage container, which provides
for improved ease of consumption of the beverage.

BACKGROUND

[0003] Stand-up, disposable, flexible pouch constructions
containing drinking fluids, e.g. juices etc., have become
popular consumer items, and a variety of such constructions
are known. One type is a pouch construction sold under the
trade designation Capri Sun® and containing fruit drink.
The Capri Sun® products, and similar constructions, typi-
cally are in the form of pouches that include flexible front
and back panels, sometimes with a flexible bottom or base
gusset. In one of the panels, there is typically provided an
aperture covered by a reusable membrane. In use, one
punches a sharpened straw through the aperture and into the
pouch. The liquid is then dispensed through the straw to the
drinker.

[0004] Pouch constructions that are used in this way are
described for example in U.S. Pat. Nos. 5,873,656; 5,997,
177; and 5,425,583, the complete disclosures of which are
incorporated herein by reference.

[0005] One of the most important problems in disposable
beverage containers of the type mentioned above is opening
the pouches. In pouch or bag-shaped beverage containers
having a membrane seal of or on a sidewall of the pouch,
which is to be pierced by a pointed straw, there is a problem
making the seal sufficiently easy for the consumer to pierce
with a straw. The piercing of the membrane seal may be
a particular problem for small children who frequently utilize
such containers and who lack the dexterity of adults. It is
often difficult for young children (e.g., ages 4-9) to open
such pouches without assistance since the membrane must
be struck with the straw only in the hole in the barrier wall
and at the same time with somewhat of a downward angle
so that the straw does not also pierce through the back
barrier wall of the pouch. In addition, due to the location of
the straw aperture in the pouch sidewall, as opposed to at or
near the top of the pouch, during or after piercing the
membrane with the straw, squeezing of the pouch may result
in the beverage being pushed up around the outside of the
straw and out of the straw hole causing undesired spillage.
Also, the pouch construction is less convenient to handle
because the straw projects from a side as opposed to the top.

[0006] A problem with the use of a membrane-covered
aperture to provide for a region to punch is the provision of
a membrane and seal that are both adequately impervious to
passage of air and/or moisture to provide for a good seal
while still being relatively easy to puncture with a straw.
Also, such a seal entails a manufacturing step of applying
and sealing the membrane.

[0007] Additional drawbacks to such pouches are associ-
ated with the straw. First, the straw is generally provided in
a separate wrapping and attached to the exterior of the pouch
with an adhesive. Often the straws become detached from
the container and “lost”, leaving the user without a way to
open or consume the beverage. The user is also faced with
the need to dispose of the straw wrapping before disposal of
the entire drink container and may be inclined to dispose of
it in an improper manner (e.g., “littering”). Also, the straw
must be pointed and made of a relatively strong or stiff
material in order to facilitate piercing the pouch sidewalk.
In some cases, schools have actually banned students from
bringing beverage pouches to school due to the straw being
used as a weapon.

[0008] Some of the shortcomings characterized above
with respect to the punch-through arrangements are
addressed by an arrangement in which a tab is torn from the
top of the package, as depicted in design patents U.S. Pat.
No. D448,988 and D555,645. In this type of arrangement, a
protrusion or tab is provided on the pouch, which can be
torn off to allow access to the contained liquid. When used
with a contained drink, typically one either tears off the tab
to open a hole between the panels and drinks directly from
the package or, after the tab is torn off, inserts a drinking
straw through the open hole. There are also drawbacks to
this configuration, however, including difficulty in opening,
the need to dispose of the torn tab-top, the problems (dis-
cussed above) associated with an external straw, and the
propensity for spillage of the beverage since the opening is
generally larger than with the punch-through arrangements.

[0009] Other attempts to overcome the shortcomings asso-
ciated with the punch-through arrangements involve provid-
ing a “peel-seal” opening at the top of the pouch/container
where a straw is pushed through to break the peel-seal
between the front and back panels/sidewalls of the pouch.
A pouch of this construction is described in U.S. Pat.
No. 6,485,177, which is hereby incorporated by reference in
its entirety. However, this pouch design still presents the
problems associated with an external straw, and still generally
features a pointed straw which could be used as a weapon.

[0010] Thus, there remains a need for an improved bev-
erage pouch, which provides easy dispensing/consumption
of the beverage contained therein and which overcomes at
least some of the disadvantages described above. There is
also a need for improved beverage containers and/or acces-
sories for beverage containers providing for easy consump-
tion of the contained beverage with reduced spillage.

SUMMARY

[0011] The present disclosure relates to beverage contain-
ers and/or accessories for beverage containers, in particular
beverage containers and accessories providing an integrated
straw for convenient consumption of the beverage from the
beverage container, particularly disposable beverage con-
ainers. In embodiments of the present disclosure, the bev-
verage containers and/or beverage container accessories with integrated straws help to reduce or substantially prevent spilling of the beverage.

[0012] Briefly described, embodiments of the beverage container(s) of the present disclosure include a container having one or more sidewalls, a bottom end, and a top end defining an interior compartment for containing a beverage, and an integrated straw having an upper straw portion with a top opening and a lower straw portion with a bottom opening. The lower straw portion of the integrated straw is in communication with the interior compartment of the container for accessing a beverage contained therein via the bottom straw opening, and the upper straw portion is releasably enclosed within a releasable portion of the container that is located adjacent to the top end of the container.

[0013] In certain aspects, the present disclosure relates to a disposable, flexible beverage pouch of the type used for convenient packaging and consumption of beverages, providing an integrated straw for improved opening of the pouch and dispensing and/or consumption of the beverage. Such beverage pouches are generally flexible and made of a mono-material or a multi-layer compound material. In other aspects, the present disclosure relates to a beverage bottle, box, or can including means for providing an integrated straw or for integrating a straw with such a container.

[0014] In an exemplary embodiment, the beverage pouch of the present disclosure provides a flexible pouch construction, generally including front and back opposed panel sections, which form front and back barrier walls/sidewalls, and a bottom or base gusset. The opposed panel sections and base are secured together, such as by one or more base and peripheral seals around an outer perimeter edge and an upper seal securing the front and back panels together and defining a top end, to form a stand-up flexible pouch with sidewalls, a bottom end and top end, and an open interior compartment which can be used to contain liquid.

[0015] The beverage pouch further includes an integrated straw contained within the outer peripheral edge of the pouch construction where at least a portion of the lower portion of the integrated straw is in communication with the interior compartment to allow access to a beverage to be contained therein. An internal peripheral seal at least partially separates the lower straw portion from the interior compartment. Additionally, in the beverage pouch of the present disclosure, an upper portion of the integrated straw is releasably enclosed in a releasable portion and may be easily released from the releasable portion via an opening system (e.g., a pull-tab, tear-tab or a peel-seal region) adjacent to the upper end of the container and the releasable portion.

[0016] In other embodiments of the present disclosure, other beverage containers with integrated straws are provided. In one exemplary embodiment, a molded beverage bottle is provided having a bottle portion, an integrated straw with a flexible top to be contained under a cap. The bottle portion includes sidewalls, a bottom end, a top end, and a neck portion forming part of the top end. In embodiments, a lower portion of the integrated straw is an “in-mold” straw (e.g., the lower straw portion is integral with the interior of an outer wall of the bottle) that is at least partially defined by the sidewalls of the bottle portion. In embodiments, the bottle also includes two caps, an upper cap and a lower cap. The lower cap is designed to couple to the neck portion of the bottle and includes a flexible upper straw portion designed to mate with and/or engage the lower, in-mold straw portion. The upper cap is designed to releasably couple to the top of the first lower cap and to releasably enclose the upper portion of the integrated straw. In yet other embodiments, the first lower cap includes a seal ring for engaging/aligning the upper straw portion with the lower, in-mold straw portion, and one or more air vents to provide airflow between the interior and exterior of the bottle. In exemplary embodiments, the bottle is disposable.

[0017] In another exemplary embodiment, a disposable beverage box is provided having opposing front and back panels and opposing first and second side panels forming the sidewalls of the container. The beverage box also includes a top flap defining a top end of the container and a bottom flap defining a bottom end of the container. The front, back, and side panels and top and bottom flaps form an interior compartment for containing a beverage. The beverage box also includes an integrated straw having a lower straw portion housed within or formed from an integral, interior straw chamber formed within the interior compartment and along one or more sidewalls of the container (e.g., the back panel of the box). The box also includes an upper straw portion adapted to be releasably enclosed under a second, releasable top flap on the top end of the box. In embodiments, the releasable flap is optionally removable. The straw may also include a seal to align and/or engage the upper straw portion of the integral straw to the lower straw portion and/or internal straw chamber.

[0018] In a further embodiment of the present disclosure, beverage container accessories are provided for adapting conventional beverage containers for consuming the beverage with a straw integrated with the beverage accessory. Embodiments of such an accessory include a cap capable of being removable fitted over an opening in a beverage container and an integrated straw. The integrated straw passes through the opening in the beverage container when the cap is fitted on the beverage container, such that a lower portion of the straw is in communication with a beverage contained in the beverage container and an upper portion of the straw is external to the container to permit consumption of the beverage by a user. In embodiments the cap-straw accessory is reusable, and in other embodiments it is disposable and/or reusable.

[0019] In an exemplary embodiment of a beverage container accessory of the present disclosure, an accessory is provided for a beverage can including a cap capable of being removable fitted over a can top, and a straw coupled to the cap and adapted to fit through a standard can “pop top” opening to access a beverage contained therein. In another exemplary embodiment, an accessory is provided for a bottle including a cap adapted to fit over a bottle opening, preferably including threads for removable securing the cap to a threaded neck of the bottle and including a straw coupled to the cap to permit consumption of a beverage contained in the bottle. In one embodiment of the straw-cap beverage accessory, the straw is provided with valve for substantially preventing/reducing spills while allowing consumption of the beverage.

[0020] Other embodiments, features, methods, aspects, and advantages of the disclosed beverage containers and
accessories will be or become apparent to one with skill in the art upon examination of the following drawings and detailed description. It is intended that all such additional embodiments, features, and advantages be included within this description, be within the scope of the present disclosure, and be protected by the accompanying claims.

BRIEF DESCRIPTION OF THE DRAWINGS

Many aspects of the disclosed beverage containers can be better understood with reference to the attached drawings, FIGS. 1-13. The components in the drawings are not necessarily to scale, emphasis being placed upon clearly illustrating the principles of the present disclosure. Moreover, in the drawings, like reference numerals refer to corresponding parts throughout the several views. While several embodiments are described in connection with these drawings, there is no intent to limit the disclosure to the embodiment or embodiments disclosed herein. On the contrary, the intent is to cover all alternatives, modifications and equivalents.

FIG. 1 is a schematic plan view of a beverage pouch with integral straw according to the present disclosure.

FIG. 2 is a schematic, exploded plan view of the beverage pouch of FIG. 1, where the pouch has been opened and the upper portion of the straw released for use.

FIG. 3 is an exploded plan view of an alternative beverage container with an integrated straw according to the present disclosure.

FIG. 4 is a schematic, fragmentary plan view of the upper straw portion and cap assembly of the beverage container of FIG. 3.

FIG. 5 is a schematic side view of the lower cap and upper portion of an integrated straw of the beverage container of FIG. 3.

FIG. 6 is a top plan view of the lower cap of the beverage container of FIG. 5.

FIG. 7 is a side plan view of a beverage can and a cap-straw beverage container accessory according to yet another embodiment of the present disclosure.

FIG. 8 is a side cross-sectional view of the cap-straw beverage container accessory of FIG. 7.

FIG. 9 is a side view of several cap-straw beverage container accessories of FIGS. 7 and 8 in a folded configuration.

FIGS. 10(A) and (B) are side and front schematic views, respectively, of a beverage box with integrated straw according to the present disclosure.

FIGS. 11 (A), (B), and (C) are back plan views of the beverage box of FIGS. 10(A) and (B) showing the box (A) in a closed configuration, (B) with the additional top flap open to reveal the integrated straw, and (C) with the upper straw portion released and the additional top flap removed.

FIG. 12 is a side plan view of the box of FIGS. 10 (A) and (B) and 11 (A) and (B) with additional top flap lifted and the upper straw portion released.

FIG. 13 is a plan view of upper straw portion and straw seal of the box of FIGS. 9-12.

DESCRIPTION OF EXEMPLARY EMBODIMENTS

As described generally above, the present disclosure relates to beverage containers and/or accessories for beverage containers having an integrated straw to provide for convenient consumption of the beverage from the beverage container. As used herein, the term “integrated straw” indicates that the straw is coupled, formed, composed, combined, and/or united with another object (e.g., a container, a cap, or other object) that together make a whole. As used herein, “integrated straw” also indicates that the straw is a “part of” and not provided separately from the primary object to which it is “integral” (container, cap, accessory, etc.). Specifically, the term “integrated straw” does not include straws for use with certain beverage containers and/or accessories where the straw is packaged with, but external to or separate from the container and/or accessory (e.g., conventional beverage boxes and pouches where the straw is packaged with and sometimes externally, removably affixed to, the outside of the container.)

In embodiments of the beverage containers and/or accessories with integrated straws of the present disclosure, the use of the containers and/or accessories reduces or even substantially prevents spillage of the beverage. As used herein, the term “reduced” spillage or spilling and/or indicates that use of the container and/or accessory of the present disclosure results in less frequent and/or lower volume spills than use without the container and/or accessory of the present disclosure. The term “substantially reduces” spillage or spilling indicates that use of the container and/or accessory of the present disclosure rarely results in spills of the beverage, as compared to standard use and/or use without the container and/or accessory of the present disclosure. The term “substantially prevents” spillage or spilling, as used herein, indicates that use of the container and/or accessory of the present disclosure, under standard conditions, almost never results in spillage of the beverage.

Having described the containers and accessories of the present disclosure briefly above, the following discussion provides a description of some exemplary embodiments. While embodiments of the beverage containers and accessories with integrated straws of the present disclosure and methods of making and using the containers and accessories are described in connection with the following text and the corresponding figures, there is no intent to limit embodiments to these examples. On the contrary, the intent is to cover all alternatives, modifications, and equivalents included within the scope of the disclosure. Now referring more specifically to the drawings in which like reference numerals refer to like elements throughout the several views, exemplary embodiments of the beverage containers of the present disclosure are illustrated in FIGS. 1-13.

In one exemplary embodiment, the beverage pouch 10 of the present disclosure, as depicted in FIGS. 1 and 2, provides a flexible pouch construction, generally including first and second opposed panel sections, which form front and back barrier walls (e.g. sidewalls) 12 and 14, and a bottom, or a base gusset 15. As appreciated by those in the art, the barrier walls 12 and 14 are suitably formed as a
sealing foil, of either a mono-material or a multi-layer compound material which are well known to those of skill in the art.

[0039] The barrier walls 12 and 14 and the base 15 are secured together (e.g., by a seal) around an outer peripheral edge to form a stand-up flexible pouch. The pouch includes sidewalls (defined by the panels/barrier walls 12 and 14), a bottom end (defined by base 15), and a top end (defined by the area where the panels 12 and 14 are secured together along an upper portion, e.g., an upper seal 32), which define an open interior compartment 24, which can be used to contain a potable liquid. The general pouch construction, with barrier walls 12 and 14 and base gusset or bottom 15 are known in the art as described, for example, in U.S. Pat. Nos. 3,380,646, 5,425,583 and 6,485,177 which are hereby incorporated by reference in their entirety.

[0040] The outer peripheral edge of the pouch generally has two side edges 16 and 18, a top end edge 20, and a bottom end edge 22. The base 15 and barrier walls 12 and 14 are generally secured together along peripheral edges 16, 18, 20 and 22 via peripheral seals as depicted by the hatched regions in FIGS. 1 and 2. The seals are preferably permanent seals, which are generally formed by adequate heat and pressure to permanently secure the various engaged pieces to one another. In embodiments of the present disclosure, an optional gap may be left in the permanent seal along one of the edges to provide for an opening system (such as a perforation or notch in a pull or tear tab system, or for a non-permanent seal in a peel-seal system), discussed in greater detail below. For example, in FIG. 1 a gap is left in the permanent seal along side edge 16 for the opening system, perforated line 34.

[0041] An integrated straw 26 is provided within the outer peripheral edge of pouch 10. In an exemplary embodiment, an upper portion 29 of integrated straw 26 is provided in a releasable portion, pocket 42, along the upper edge of closed pouch 10. In the embodiment shown in FIG. 1, the integrated straw 26 has a lower portion 28 which is in communication with interior compartment 24 at a lower region 31 in order to access a liquid contained in the compartment. The remainder of the integrated straw 26 is separated from the interior compartment 24 by additional seals provided between the integrated straw 26 and the interior compartment 24, such as permanent seal lines 30 and 32. In the embodiment shown, the integrated straw 26 has a flexible joint 27 separating the lower portion 28 of the integrated straw, which is aligned generally parallel to side edge 18 of the pouch, from an upper straw portion 29, which is aligned generally parallel to top edge 20 of the pouch 10. As used herein, “generally parallel” indicates that one object or line may be exactly parallel to or it may be near enough to parallel to another object or line that it appears to be parallel to, almost parallel to, or oriented in the same general direction as the other object or line. The integrated straw 26 is typically contained between side edges 18 and 20 and permanent seal lines 30 and 32. However, it will be appreciated by one of skill in the art that the orientation of the integrated straw could be reversed, and thus contained between side edges 16 and 18, respectively, in a similar manner.

[0042] An opening system is also provided for releasing the upper portion 29 of the integrated straw 26 from the releasable portion 42 for use by the consumer. In embodiments, the opening system is located on or near a portion of an outer perimeter edge (e.g., the upper perimeter edge) adjacent to the upper portion 29 of the integrated straw 26. In the embodiment shown in FIGS. 1 and 2, the opening system is a tear-tab type system where the top of the container (e.g., the releasable portion, such as pocket 42) is pulled off at perforated line 34 between permanent seal 32 and the upper portion 29 of the integrated straw 26. In an exemplary embodiment, an additional permanent seal is also provided along line 36, between perforation line 34 and the upper straw portion 29 so that when the user tears along the perforation line 34, the upper portion 29 of the integrated straw 26 is separated from the main body of the pouch 10, but remains completely encased in pocket 42, as shown in FIG. 2. The integrated straw can then be exposed for use by twisting or tearing off, or otherwise removing, a removable portion 37 of a pocket 42 containing the upper portion 29 of the integrated straw 26 along a second perforation line 38. In an alternate embodiment, the integrated straw 26 may be pushed through the end 40 of pocket 42 to avoid having to dispose of removable portion 37.

[0043] In alternate embodiments, the opening system may include, but is not limited to, other tear tab or pull tab systems and peel-seal opening systems. Provision of “peel-seals” between flexible members, for example the panels of a flexible pouch, is known and described, for example in U.S. Pat. Nos. 5,832,570; 5,604,000; 5,538,345; 5,470,156; 5,474,382; 5,464,969; 5,425,825; 4,782,951; 5,330,269; 5,005,707; 4,966,470; 4,925,518; and 4,823,961, the complete disclosures of which are incorporated herein by reference. As used herein, the term “peel-seal” refers to a type of opening system where two or more panels or portions of a container are releasable sealed together along a seal line, such that the initial seal is strong enough to provide a sufficient semi-permanent seal from the environment, but the seal is releasable upon the application of sufficient forces, usually by a user’s hands. In embodiments, a “peel seal” may optionally be re-sealable. Provision of pull tabs, tear lines and other common bag opening systems, for example, perforation lines, is also known and described, for example, in U.S. Pat. Nos. 4,986,673; 6,318,894; 3,519,197; 3,473,589 and 4,572,577, the complete disclosures of which are hereby incorporated by reference. It is foreseen that the peel-seals, tear tabs, pull tabs, and other opening systems of the general type described in the above references and/or known to those of skill in the art, can be utilized in association with arrangements according to the present disclosure.

[0044] In yet other possible embodiments of the beverage pouch according to the disclosure, the pouch may be resealable. In such an embodiment, the opening system would be located between the integrated straw 26 and an outer edge (e.g., edge 20) of the pouch 10, and a resealing system would be located between the integrated straw and the opening system in order to allow the integrated straw to be resealed in the pouch for later consumption of the beverage after initial opening. Resealing systems are known in the art, for example zipper type systems employing a traditional rib and trough design, and are described in U.S. Pat. No. 4,986,673 other U.S. Patents listed above.

[0045] In some embodiments, the beverage pouch is made of material including a plastic film material is used having an appropriate coating thereon to allow for activation by
selected heat and pressure to selectively generate a permanent seal or a peel-seal, as desired. It is foreseen that if such material is utilized, it would be of a type for which if an alternate pressure/heat combination is selected, a permanent seal can be provided, as is desired in certain portions of the construction. Useable materials, for example, include substrates of polyester, nylon, and polypropylene (available from DuPont or Unitika), which can be laminated together using conventional lamination techniques. In some instances, a layer of aluminum foil is added in the lamination to provide for an attractive appearance. The lamination may include peel-seal constructions as described in the references cited above, including a polypropylene sealant comprising dissimilar materials. Further, a resin formulated to result in a peel-seal may be added.

0046] Pouch constructions according to the present disclosure are readily manufacturable using high speed manufacturing line techniques. With such techniques, typically gusset members will be brought in line, between two elongate webs. Heat seal bars and cutters, can be used to form the particular configuration of pouch construction chosen, including for example those depicted in FIGS. 1 and 2. The heat seal bar can specifically be prevented from encountering the pouch construction and causing sealing in the regions that are to be left open for pouch filling, for access by the integrated straw to the interior portion containing the beverage or for provision of the opening system as described above. Typically, the region left over for pouch filling is on a top edge of the beverage pouch. In the beverage pouch of the present disclosure, the unsealed region may alternatively be located on an upper portion of the side edge of the pouch that is not adjacent to the integrated straw, in order to allow for easy filling by the drink packager. After filling, the opening is permanently sealed by the drink packager.

0047] In an alternate embodiment of the beverage pouch according to the present disclosure (not shown), in order to facilitate filling of the pouch by the drink packager from the top of the pouch, the integrated straw 26 (including both lower portion 28 and upper portion 29) and the releasable portion/opening system are provided along side edge 18 (or 16) and/or adjacent to top edge 20, rather than along top end edge 20. In an example of such an embodiment, the upper portion 29 of the integrated straw is bent, at flexible joint 27, back down toward lower portion 28 and another permanent seal line is provided between the upper portion 29 and lower portion 28 of the integrated straw 26. An opening system, such as a perforation line, is provided along a portion of side edge 18, or across a corner defined by the meeting of side edge 18 and top-end edge 20, to release the upper portion 29 of the integrated straw. Many additional embodiments of the beverage pouch with integrated straw are possible, and are intended to be included within the scope of this disclosure.

0048] The concept of an integrated straw may also be applied to other beverage containers. In alternate embodiments of the present disclosure, a beverage bottle is provided with an integrated straw. An exemplary embodiment of such a bottle is shown in FIGS. 3-6. In the embodiment shown, a bottle 50 is provided. The bottle may be made of molded plastic materials, or other suitable materials that are known to those of skill in the art and as described in U.S. Pat. Nos. 5,837,359 and 6,279,505, the complete disclosures of which are hereby incorporated by reference.

0049] The bottle 50 has a body portion 52, with outer wall 58 defining the sidewalls and bottom end of the bottle and a portion of a top end of the bottle, a neck portion 53 also forming a portion of the top end of the bottle, a cap assembly 54, and an integrated straw 60. The integrated straw 60 has a lower, or bottle portion 62, which is preferably an in-mold integrated straw that is continuous with the bottle wall portion 58, such as a channel integrated with the interior of the bottle wall portion 58 to form an integral lower straw portion. Preferably, the bottle wall portion 58 forms part of the outer wall of the integral, in-mold integrated straw 62. The remainder of the bottle portion 62 of integrated straw 60 is formed by channel 66, which may be made of the same or a different material than bottle body portion 52.

0050] The integrated straw also has an upper portion 64 that is preferably made of a flexible material to allow it to be folded under an upper cap 57 of the cap assembly 54. The upper straw portion 64 may be continuous with lower portion 62, or it may be in the form of a separate piece, which may be aligned and engaged with/coupled to lower straw portion 62 by a seal ring 67 contained in a lower cap 56 of cap assembly 54. In this form, lower cap 56 and upper straw portion 64 can be formed from a mold as a unitary piece. Lower cap 56 also may include air vents 68 to allow airflow between the body of the bottle 52 and the exterior of the bottle in order to facilitate beverage consumption.

0051] Upper cap 57 preferably includes threads (not shown) to engage threads 59 on a neck portion of lower cap 56 and/or threads on a neck portion 53 of the bottle 50 for releasably securing upper cap 57 to the lower cap 56 and/or bottle neck portion 53. Lower cap 56 can be thread to allow it to be secured onto the neck portion 53 of the bottle. As lower cap 56 is threaded onto the neck 53 of the bottle, the bottom end of upper straw portion 64 engages with (e.g., couples to, nests within, connects to, interlocks with, or otherwise engages) lower, in-mold, straw portion 62. Upper straw portion 64 may engage lower straw portion 62 via the top of the channel 66 (as illustrated in FIG. 6). Other forms of connection can be used in place of threads, such as snap connections.

0052] Many alternate embodiments of the disclosed beverage bottle with integrated straw are possible. For instance, in one alternate embodiment, the lower straw portion 62 may be integral with lower cap 56, but not integral with the bottle wall portion 58, so that if desired, the consumer may remove lower cap 56 and consume the beverage without the integrated straw. This and various other possible embodiments and are intended to be included within the scope of this disclosure.

0053] In an alternate embodiment of a beverage container according to the present disclosure, a beverage box is provided with an integrated straw. An exemplary embodiment of such a box is shown in FIGS. 10-13. In the embodiment shown, a box 90 is provided. The box 90 may be made of coated cardboard materials, or other suitable materials that are known to those of skill in the art and as described in U.S. Pat. Nos. 6,129,265, 6,220,506, 5,482,202, 4,741,073, 4,120,073, 4,889,376, 5,437,594, and 4,982,989, the complete disclosures of which are hereby incorporated by reference. Such containers are typically formed by folding and sealing a cut and scored cardboard blank to form a box shape. The cardboard may be coated or laminated to
As shown in FIGS. 10-13, the box 90 has interior portion 92 defined by front panel 94, back panel 96, two side panels 98 and 100, top end 102 and bottom end 104. Front and back panels 94 and 96, and side panels 98 and 100 form the sidewalls of the box. Top end 102 and bottom end 104 are defined by upper and lower folded flaps 106 and 108 respectively. The box 90 also includes an integral straw 110, having an upper straw portion 112, lower straw portion 114 and flexible joint 116. The box 90 also includes an internal straw chamber 118, formed along an interior surface of the box 90, (e.g., along the inner surface of one or more panels/sidewalls, such as along back panel 96, as shown in FIG. 10). In some embodiments of the box 90, the straw chamber 118 may be integral with the interior surface of the back panel 96. In two alternate embodiments, the internal, integral straw chamber 118 may house lower straw portion 114, or alternatively, may itself form lower straw portion 114. Some embodiments further include a straw seal 120 to align/engage upper straw portion 112 to lower straw portion 114 and/or internal straw chamber 118. In the embodiment shown in FIG. 13, straw seal 120 is located beneath box top end 102 and between upper straw portion 112 and lower straw portion 114. In an alternative embodiment, seal 120 may be located outside/above box top end 102.

In embodiments, top end 102 of the box 90 also includes a depression or indentation 122 adapted to receive upper straw portion 112 when the integrated straw is in a folded configuration prior to use. Upper folded flap 106 includes an additional, or second, top flap 124 which folds over the top end 102 of the box to enclose upper straw portion 112 prior to use as shown in FIG. 11(A). Top flap 124 is releasable (e.g., peels/lifts up and/or unfolds) as shown in FIG. 11(B) to reveal upper straw portion 112, which may then be lifted up for use by a consumer. In an embodiment of the box shown in FIG. 11(C), releasable top flap 124 is removable (e.g., by a perforation line, score line, and the like). Removal of top flap 124 is not necessary, however, to release the upper straw portion 112 for consumption, as shown by FIG. 12. Many alternate embodiments of the disclosed beverage box with integrated straw are possible and are intended to be included within the scope of this disclosure.

The present disclosure also provides beverage container accessories that provide for convenient consumption of a beverage via a cap-straw system to reduce spillage and/or the risk of spilling the beverage in the container. Embodiments of the cap and straw accessory, or “cap-straw accessory,” include a cap for removably fitting to the top of a beverage container and over an opening in the beverage container for reducing beverage spillage, and an integrated straw adapted to fit through the opening in the beverage container to access a beverage contained therein. The integrated straw of the cap-straw accessory has a lower portion in communication with a beverage contained in the beverage container and an upper straw portion external to the container to permit consumption of the beverage by a user.

The aforementioned lower bottle cap 56 with an integral lower straw portion 62 and upper straw portion 64 (illustrated in FIGS. 3-6) is an example of such an accessory for a beverage bottle. The integrated straw can include a valve to allow consumption of the beverage through the integrated straw, while preventing spilling of the beverage. The cap can include threads for removable securing the cap to a threaded neck of a conventional beverage bottle. In embodiments, a beverage bottle accessory including a cap and integrated straw may be provided separately for use with conventional beverage bottles. In embodiments, such a cap-straw bottle accessory may include a cap similar to lower cap 56 of FIGS. 3-6 and an integrated straw (such as integrated straw 60 in FIGS. 3-6, including both upper straw portion 64 and lower straw portion 62, but where lower portion 62 is not integrated with the bottle wall and where portions 64 and 62 are preferably one piece). Such a cap-straw bottle accessory can be implemented by a user by removing the original beverage bottle cap from a beverage bottle and replacing it with the above-described cap-straw accessory for use in consuming the beverage contained in the bottle. In embodiments, the cap-straw accessory for beverage bottles may also include an upper cap, similar to upper cap 57 shown in FIGS. 3 and 4. The upper cap can be releasably coupled to the lower cap to releasable enclose the upper straw portion.

FIGS. 7-9 depict an embodiment of a cap-straw accessory adapted for a beverage can. The beverage can accessory includes a cap 72 adapted to fit over the top of a beverage can 70, such as a typical soda pop can. As shown in FIG. 8, the cap has sides 78 to extend over the upper portion of the can, and flange 80 to secure the cap to the can by fitting over a ridge 71, typically present on the top edge of the can 70 that serves as the seal for the top of the can to the sidewalls of the can. An integrated straw 74 is connected to cap 72 and aligned to fit through an opening in the beverage can (e.g., a conventional "pop top" opening in the top end of a beverage can), as shown in FIG. 7.

In some embodiments, the integrated straw may include a valve 76. In some embodiments, the valve opens when pressure is applied to the exterior of the valve, for instance by the fingers of the consumer. The consumer can lightly squeeze the valve to open the valve to take a drink, and the valve will re-close upon release. In alternative embodiments, the valve is capable of locking in the open position upon the application of stronger force, so the user may squeeze the valve firmly to lock the valve in the open position.

As shown in FIG. 9, the cap-straw accessory may be folded for convenient storage and/or packaging. Various embodiments of the cap-straw accessory are envisioned for use with a multitude of beverage containers, and are intended to be included in the scope of this disclosure.

It should be emphasized that the above-described embodiments of the present beverage containers and accessories, particularly, any “preferred” embodiments, are merely possible examples of implementations, merely set forth for a clear understanding of the principles of the disclosure. Many variations and modifications may be made to the above-described embodiment(s) without departing substantially from the spirit and principles of the disclosure. All such modifications and variations are intended to be included herein within the scope of this disclosure and protected by the following claims.
What is claimed is:

1. A beverage container comprising:
   - a container having one or more sidewalls, a bottom end, and a top end defining an interior compartment for containing a beverage; and
   - an integrated straw having an upper straw portion with a top opening and a lower straw portion with a bottom opening.

   wherein the lower straw portion is in communication with the interior compartment of the container for accessing a beverage contained therein via the bottom straw opening, and

   wherein the upper straw portion is releasably enclosed within a releasable portion of the container located adjacent to the top end of the container.

2. The beverage container of claim 1, wherein the container is disposable.

3. The beverage container of claim 1, wherein the container is a pouch.

4. The beverage container of claim 1, wherein the container is a bottle.

5. The beverage container of claim 1, wherein the container is a box.

6. The beverage container of claim 1, wherein the integrated straw includes a flexible joint located between the top straw portion and the bottom straw portion.

7. The beverage container of claim 3, wherein the pouch comprises:
   - a front panel and a back panel opposing the front panel, wherein each of the front and back panels has a top edge, a bottom edge, and a first and a second side edge, wherein the panels form the sidewalls of the container;
   - a base gusset forming the bottom end of the container;
   - a base seal securing the base gusset to the front and back panels, at least two peripheral seals securing the front and back panels together along the first and second side edges, and an upper seal securing the front and back panels together and defining a top end of the container, the upper seal, the base seal, and the peripheral seals defining the interior compartment;
   - an internal peripheral seal at least partially separating the lower straw portion from the interior compartment, and
   - an opening system adjacent to the upper end and releasably portion, releasably enclosing the upper straw portion within the releasable portion, wherein opening the opening system releases the releasable portion and provides access to the upper straw portion.

8. The beverage pouch of claim 7, wherein the opening system is selected from: a perforation line, a peel-seal, a pull tab, a tear tab, and a combination thereof.

9. The beverage pouch of claim 7, wherein the releasable portion is re-sealable.

10. The beverage container of claim 4, wherein the bottle comprises:
    - an in-mold straw forming the lower straw portion and at least partially defined by the sidewalls of the bottle portion;
    - a lower cap coupled to the neck portion of the bottle and having a flexible straw forming the upper straw portion; and
    - an upper cap releasably coupled to the lower cap forming the releasable portion, wherein the upper cap releasably encloses the upper straw portion.

11. The beverage bottle of claim 10, wherein the lower cap further comprises a seal ring for engaging the upper straw portion with the lower straw portion.

12. The beverage bottle of claim 10, wherein the lower cap further comprises at least one air vent.

13. The beverage container of claim 5, wherein the box comprises:
    - a front panel and a back panel opposing the front panel, and a first side panel and a second side panel opposing the first side panel, wherein the front and back panels and first and second side panels form the sidewalls of the container;
    - a top flap defining a top end of the container and a bottom flap defining a bottom end of the container;
    - an internal straw chamber formed within the interior compartment and along one or more sidewalls of the container; and
    - a second, releasable top flap forming the releasable portion and releasably enclosing the upper straw portion.

14. The beverage box of claim 13, wherein the internal straw chamber houses the lower straw portion of the integrated straw.

15. The beverage box of claim 13, wherein the internal straw chamber forms the lower straw portion of the integrated straw.

16. The beverage box of claim 15, further comprising a straw seal for engaging the upper straw portion with the internal straw chamber.

17. The beverage box of claim 13, wherein the releasable top flap is removable.

18. An accessory for use with a beverage container comprising:
    - a cap capable of being removably fitted over an opening in a beverage container; and
    - an integrated straw having an upper portion and a lower portion,

    wherein, when the cap is fitted over the opening in the beverage container, the integrated straw passes through the opening in the beverage container such that the lower straw portion is in communication with a beverage contained in the beverage container and the upper straw portion is external to the container to permit consumption of the beverage by a user.

19. The accessory of claim 18, wherein the accessory substantially reduces spilling of the beverage.
20. The accessory of claim 18, wherein the container is a can and wherein the accessory further comprises a flange on the cap for removably securing the cap to the can.

21. The accessory of claim 18, wherein the container is a bottle and wherein the cap further comprises threads for removably securing the cap to a threaded neck of the bottle.

22. The accessory of claim 19, wherein the cap further comprises an upper cap releasably coupled to the lower cap and wherein the upper cap releasably encloses the upper straw portion.

23. The accessory of claim 18, wherein the straw further comprises a valve for substantially preventing spilling of the beverage.

24. The accessory of claim 18, wherein the accessory is reusable.

* * * * *