A liquid container beneficially configured for use with a water bottle cage attached to a frame member of a bicycle for use by the bicyclist when riding the bicycle. The liquid container has a container body, a cap removably attached to the upper end of the container body to close the inlet opening which is utilized to fill the liquid container with liquid and a spout located in the bottom wall of the container to allow the bicyclist to drink from the container in a more ergonomic manner than existing water bottles. In one embodiment, the spout includes a nozzle removably attached to a discharge tube integral with the bottom wall to allow the user to select the type of nozzle. In another embodiment, a storage container for storing items and/or a gel dispenser for dispensing an energy gel are utilized at the upper end to close the inlet opening.
LIQUID CONTAINER HAVING BOTTOM SPOUT

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] None.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH

[0002] Not Applicable.

REFERENCE TO A SEQUENCE LISTING, A TABLE OR A COMPUTER PROGRAM LISTING APPENDIX SUBMITTED ON A COMPACT DISC


BACKGROUND OF THE INVENTION

[0004] A. Field of the Invention
[0005] The present invention relates generally to containers for holding liquids. In particular, the present invention relates to such containers that are configured for improved access to the container when the container is held in a bottle cage mounted to the frame of a bicycle or the like so the user may easily and efficiently drink liquid form the container while riding. Even more particularly, the present invention relates to such containers that also provide storage for non-liquid items, such as keys, money, credit cards and/or dispense energy gel.

[0006] B. Background

[0007] Containers for holding liquids are widely available in many different configurations and for many different uses. Some liquid containers are specially configured to be beneficially utilized for a particular purpose. An example of one group of such containers are those liquid containers that are commonly referred to as water bottles and which are specially configured to be utilized with a bottle cage that is affixed to a bicycle. Although commonly referred to as water bottles and frequently utilized to hold water, it is well known that these containers are also utilized to hold a wide variety of different liquids, including non-carbonated, flavored sport drinks and the like that are formulated to rehydrate the user and provide him or her with nutrients, particularly carbohydrates and electrolytes, lost during physical activity (such as bicycle riding).

For purposes of the present disclosure, the term “water bottle” is used interchangeably with the terms “liquid container” and/or “container” and include use of such containers to hold water, sport drinks and virtually any other type of liquid that may be contained in the container. As set forth in more detail below, in one use, the liquid contained in the water bottle is selected for consumption by the user while he or she is engaged in the activity of riding a bicycle.

[0008] One common configuration for water bottles for storing liquids is a container having a container body, typically made out of plastic or the like, with a removable cap at the upper end of the container body that is removed for filling the water bottle with liquid. The standard container body is generally or at least somewhat cylindrically shaped with a closed bottom and an open top. The open top of the container body, which typically includes external threads for removably attaching the cap, defines an inlet that is primarily utilized for receiving liquid into the container body. Although the cap can be removed for drinking liquid from the water bottle, the standard water bottle has a spout in the cap that allows the user to draw liquid from inside the container body without having to remove the cap. To avoid loss of liquid from the container body, the spout is configured to be in a closed condition when not being used to draw liquid from the container body. Typical spouts used for water bottles and the like, particularly water bottles used for biking activities, comprise either a bite-pull mechanism that opens when a portion of the spout is pulled out by the user’s teeth or a one-way valve disposed in the spout body that remains closed until suction is drawn through the spout by the user or the container body is squeezed. Some water bottles utilize a removable member that closes an open spout or a suction straw that is disposed through the cap and into the container body for drawing liquid therefrom. Due to the general impracticality of their use when riding a bicycle, these water bottle configurations are not typically utilized for biking.

[0009] The typical water bottle utilized for biking is sized and configured to be secured in a bottle cage attached to the bicycle, usually to a frame member of the bicycle, and to be comfortably gripped by the user’s hand while riding his or her bicycle. A standard configuration for a bottle cage is an elongated section that attaches to the bicycle frame, an outwardly extending portion which extends outward from the bottom of the elongated section to support the bottom of the water bottle in the cage and an upwardly extending portion that at least partially envelopes the water bottle to hold it in the bottle cage. Typically, the bottle cage is made from a stiff wire-like material that is configured to flex open around the container body when the water bottle is inserted into the bottle cage to securely grip the water bottle and to allow the user to easily pull the water bottle out of the bottle cage to drink from the container and re-insert the water bottle into the bottle cage after drinking. As well known, very often the actions of pulling a water bottle out of the bottle cage, taking a drink from the water bottle and then inserting the water bottle back into the bottle cage are performed while the user continues to ride the bicycle. For competitive bike racing, the user intends to accomplish the above as quickly and efficiently as possible so as to minimize the impact of taking a drink on his or her performance.

[0010] The present configuration of water bottles, with their nozzles located in the removable cap positioned at the top of the container body when disposed in a bottle cage, require the user to grab the water bottle with the nozzle pointing upward when he or she is riding the bicycle. In order to drink liquid from the water bottle, the user must elevate the bottom of the water bottle and tilt his or her head backward. As the water bottle empties, the bicyclist must fully flex his or her shoulder and elbow and fully pronate the hand, generally with the palm rotated so it is facing away from the bicyclist. As well known by most bicyclists, this motion is not very ergonomic.

[0011] Bicyclist commonly desire to carry various items with them when they are riding their bicycle, particularly keys, credit cards, identification cards, health insurance or other health-related information, park passes and the like. Due to space constraints, the bicyclist generally does not have room to carry a wallet or purse which would normally be utilized to carry such items. Those bicyclist who compete in long distance races or otherwise ride relatively long distances often carry food items, particularly food such as energy bars, energy gels and the like, with them so they may “refuel” as necessary. Although these items are usually necessary and/or useful to have, whether the bicyclist is out for a casual ride or competing, carrying such items inside the pants pockets of the
clothes worn by the bicyclist is neither convenient nor comfortable when riding a bicycle. Some bicyclist attach a small bag or pouch-like apparatus to their bicycle so they can carry the desired items and others utilize specially configured shirts or jackets that have a large pocket, typically positioned at or near the bicyclist’s lower back area, which can be utilized for carrying items. Although these carrying devices are available, most bicyclist generally prefer not to carry items in a bike-attached bag or pouch or in the pocket of their shirt.

What is needed, therefore, is an improved water bottle that allows the bicyclist to retrieve the water bottle from a bottle cage and drink liquids from the water bottle in a more ergonomic manner. Preferably, the water bottle should be sized and configured to fit within and be securely grasped by standard bottle cages that are commonly utilized with bicycles. The improved water bottle should allow the bicyclist to grasp and lift the water bottle from the bottle cage without having to fully flex their shoulder and elbow and without having to fully pronate their hand. The water bottle should be configured for use with different types of nozzles. Preferably, the improved water bottle should also be configured to carry small items and/or an energy gel pack so they may be readily available to the bicyclist without having to carry the items or a gel pack in his or her clothing or in a bag, pouch or other device attached to the bicycle.

**SUMMARY OF THE INVENTION**

**[0012]** The liquid container of the present invention provides the benefits and solves the problems identified above. That is to say, the present invention discloses an improved water bottle having a spout disposed in the bottom wall of the container body or otherwise positioned at the bottom of the water bottle which allows the bicyclist to retrieve the water bottle from a bottle cage affixed to the bicycle and drink liquids from the water bottle in a much more ergonomic manner than existing water bottles. In a preferred configuration, the water bottle is sized and configured to fit within and be securely grasped by conventional bottle cages that are commonly utilized with bicycles. The improved water bottle allows the bicyclist to grasp and lift the water bottle from the bottle cage without having to fully flex his or her shoulder and elbows and without having to fully pronate his or her hand. In a preferred configuration, the water bottle of the present invention is configured for use with a variety of different nozzles, including nozzles having a bite/pull mechanism or a one-way valve, and in a manner that allows the user to select which type of nozzle he or she uses. In one embodiment, the water bottle of the present invention is provided with a removable storage cap configured to carry small items and/or an energy gel pack, thereby allowing the bicyclist to carry the items or gel pack without having to do so in his or her clothing or in a bag, pouch or other device attached to the bicycle.

**[0013]** In a primary embodiment of the present invention, the water bottle generally comprises a container body having an upper or first end and an oppositely disposed lower or second end, a cap that is removably attached to the first end of the container body and a spout at a bottom wall at the second end of the container body. The container body has an inlet opening at the first end that is utilized to receive liquids into the container body. The cap has a solid wall, without any openings, spouts or nozzles therein, that is configured to close the inlet opening. The spout has a nozzle with an outlet aperture. The nozzle is configured to allow the user to selectively drink liquid from the container body when in its open position or close the outlet aperture when in its closed position. The spout can be integral with or attached to the bottom wall or the spout can have a discharge tube that is integral with the bottom wall with the nozzle being integral with or attached to the discharge tube. In a preferred embodiment, the nozzle is removably attached to the discharge tube or bottom wall so the user can choose which type of nozzle, such as the bite-pull or one-way valve types, he or she wants to use with the liquid container. The wall closing the inlet opening can be a closed end wall on a lid-type of cap that is threadably received onto the first end of the container body. In another embodiment, the cap has a lid member and a storage adapter that are cooperatively configured to define a storage chamber that is useful for holding items such as a keys, identification cards, credit cards, park passes and the like. Preferably, the lid member has a closed upper and a lower end that is configured to attach to the upper end of the storage adapter. The storage adapter has at least one sidewall and a separating wall that define the closed storage chamber when the lid member is attached to the upper end of the storage adapter. The separating wall is configured to close the inlet opening. In an alternative configuration, the cap is configured as a gel dispenser that encloses a squeezable gel packet having a spout which extends out of the gel dispenser through an aperture in a sidewall of the gel dispenser. The gel dispenser has a dispensing mechanism for dispensing gel from the gel packet through the spout, typically directly into the mouth of the user. Preferably, the dispensing mechanism is configured to squeeze the gel packet to dispense gel through the spout. In one embodiment, the dispensing mechanism comprises a push bar that is moveably positioned in a slotted opening along the top of the gel dispenser and hingedly connected to the sidewall of the gel dispenser. The push bar is configured to squeeze the gel packet and dispense gel through the spout. In yet another embodiment, the cap can comprise both a storage adapter and a gel dispenser, with the storage adapter having a separating wall that closes the inlet opening of the container body.

**[0014]** Accordingly, the primary aspect of the present invention is to provide an improved water bottle that has the advantages discussed above and which overcomes the disadvantages and limitations associated with prior art water bottles.

**[0015]** It is an important aspect of the present invention to provide a water bottle having a removable cap at the top of the water bottle and a downwardly directed spout at the bottom of the water bottle so the bicyclist may retrieve the water bottle from a bottle cage affixed to a bicycle and drink liquids from the water bottle in a more ergonomic manner than prior art water bottles.

**[0016]** It is also an important aspect of the present invention to provide a water bottle that allows the bicyclist to lift the water bottle out of the bottle cage with a supinated hand and elevate the bottom of the water bottle with a simple pronation of the hand.

**[0017]** It is also an important aspect of the present invention to provide a water bottle having a bottom spout that allows the user to easily remove and replace the nozzle component thereof so he or she may utilize the type of nozzle of his or her choice.

**[0018]** It is also an important aspect of the present invention to provide a water bottle having a bottom spout that further comprises a cap with a storage area for items such as keys, identification cards, health-related information, credit cards
or the like and/or a gel dispenser having one or more energy gel packets that contain energy gel product which the bicyclist can consume.

Another important aspect of the present invention is to provide an improved water bottle having a spout at the bottom of the water bottle's container body which is sized and configured to fit within and be securely held by standard bottle cages utilized with bicycles.

The above and other aspects and advantages of the present invention are explained in greater detail by reference to the attached figures and the description of the preferred embodiment which follows. As set forth herein, the present invention resides in the novel features of form, construction, mode of operation and combination of the above presently described and understood by the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings which illustrate the preferred embodiments and the best modes presently contemplated for carrying out the present invention:

FIG. 1 is a side view of prior art water bottle and bottle cage shown attached to a frame member of a bicycle;

FIG. 2 is a perspective view of a water bottle configured according to a preferred embodiment of the present invention shown with a bite/pull nozzle;

FIG. 3 is an exploded perspective view of the water bottle of FIG. 2;

FIG. 4 is a bottom view of the water bottle of FIG. 2 with the nozzle removed from the spout to better illustrate the bottom spout thereof;

FIG. 5 is a bottom view of the nozzle utilized with the water bottle of FIG. 2;

FIG. 6 is a perspective view of an alternative embodiment of a cap having a storage compartment therein that is utilized in place of the cap shown on the water bottle of FIG. 2;

FIG. 7 is a top view of a storage compartment of a cap having a gel dispensing apparatus that is utilized in place of the cap shown on the water bottle of FIG. 2;

FIG. 8 is a cross-sectional side view of the gel dispensing cap of FIG. 7 taken through lines 8-8 of FIG. 7;

FIG. 9 is an exploded side view of the gel dispensing cap of FIGS. 7 and 8;

FIG. 10 is a side perspective view of an alternative nozzle for use with the water bottle of FIG. 2;

FIG. 11 is a side perspective view of another alternative nozzle for use with the water bottle of FIG. 2;

FIG. 12 is a perspective view of a water bottle having both a storage cap and a gel dispensing cap with the bottom portion of the container body sized and configured to fit within the bottle cage; and

FIG. 13 is a perspective view of a water bottle having both a storage cap and a gel dispensing cap and the spout affixed to a removable bottom cap.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to the figures where like elements have been given like numerical designations to facilitate the reader's understanding of the present invention, the preferred embodiments of the present invention are set forth below. The enclosed text and drawings are merely illustrative of one or more preferred embodiments and, as such, disclose one or more different ways of configuring the present invention. Although specific components, materials, configurations and uses are illustrated, it should be understood that a number of variations to the components and to the configuration of those components described herein and in the accompanying figures can be made without changing the scope and function of the invention set forth herein. For instance, although the figures and description provided herein show and discuss certain shapes and configurations for the container body of the improved water bottle, those skilled in the art will understand that this is merely for purposes of simplifying this disclosure and that the present invention is not so limited.

A liquid container (water bottle) that is configured pursuant to a preferred embodiment of the present invention is shown generally as 10 in FIGS. 2 and 3. As set forth in more detail below, the liquid container 10 of the present invention is sized and configured to be utilized with a conventional bottle cage 12 that is securely attached to a frame member 14 of bicycle 16, as shown in use with a prior art water bottle 18 in FIG. 1. The typical prior art water bottle 18 is sized and configured to be securely received in bottle cage 12 and to be gripped by the user's hand while riding the bicycle 16. Typically, a conventional bottle cage 12 has an elongated first section 20 that attaches to the frame member 14, an outwardly extending second section 22 extending outward from the bottom of the first section 20 to support the closed, generally flat bottom wall 24 of the prior art water bottle 18 in the bottle cage 12 and an upwardly extending third section 26 that, as shown, at least partially envelopes the water bottle 18 to hold it upright in the bottle cage 12. The bottle cage 12 is typically made from a stiff wire-like material that is configured to flex open around the container body 28 of the prior art water bottle 18 when it is inserted into the bottle cage 12 to securely grip the water bottle 18 and allow the user to easily pull the water bottle 18 out of the bottle cage 12 to drink from the water bottle 18 and re-insert the water bottle 18 into the bottle cage 12 after drinking therefrom. In the embodiment shown in FIG. 1, the prior art water bottle 18 has a lower section 30 sized and configured to snugly fit within the bottle cage 12, an intermediate section 32 sized to allow persons having different hand sizes to comfortably grip water bottle 18 and an upper section 34 that extends above the intermediate section 32.

The upper or first end 36 of container body 28 of the prior art water bottle 18 has an inlet opening (not shown) that allows the user to put water or other liquids into water bottle 18. This opening is closed off with a cap 38 that has a spout 40 therein, typically at or near the center of the cap 38. The spout 40 comprises a nozzle 42 having an outlet aperture 44 (an example of which is shown in FIG. 5 with regard to the liquid container 10 of the present invention). Nozzle 42 is configured to allow the user to access the interior of water bottle 18 and drink the fluid therein through the outlet aperture 44. As stated above, a variety of different nozzles 42 are utilized with prior art water bottles 18. The water bottle 18 of FIG. 1 is the type having a bite/pull mechanism. Prior art water bottles 18 are provided with a spout 40 that is fixedly attached to or integral with cap 38 at the first end 36 of water bottle 18, thereby requiring replacement of cap 38 if the user desires a different type of nozzle 42. The lower or second end 46 of container body 28 of prior art water bottle 18 has the closed bottom wall 24 which contains the liquid inside water bottle 18 and is supported by the second section 22 of bottle cage 12. As will be readily apparent from the figures and as used by
those skilled in the art, the upper/first end 36 and lower/second end 46 are in reference to the water bottle 18 being inside bottle cage 12 when water bottle 18 is in use with or will be used by the user when he or she is riding bicycle 16. At certain times, such as when the user is drinking from water bottle 18, the first end 36 will be below the second end 46 so the user can more easily drink the liquid from water bottle 18.

[0039] The improved liquid container 10 of the present invention has many of the same components of the prior art water bottle 18. As set forth in more detail below, however, some of these components have been rearranged or repositioned to make the liquid container 10 easier to use and more ergonomic for a person riding the bicycle 16. One of the primary modifications present in liquid container 10 is the placement of the spout 40 at the bottom wall 24 of the liquid container 10, as best shown in FIGS. 2 and 3, instead of spout 40 being attached to or integral with the cap 38 at the upper/first end 36 of the container body 28, as shown in FIG. 1. The cap 38 utilized with liquid container 10 shown in FIGS. 2 and 3 is configured as a lid having a closed end wall 48 that sealably closes inlet opening 50, shown in FIG. 3, at the first end 36 of container body 28. Unlike the prior art water bottle 18, the spout 40 is not associated with the cap 38 and there are no openings through cap 38. As with the cap 38 of the prior art water bottle 18, the cap 38 removably attaches to the first end 36 of the container body 28 so the user can fill container body 28 through inlet opening 50, with his or her desired liquid, which may be water, sport drink or the like. In the embodiment of FIGS. 2 and 3, cap 38 is threadably received on corresponding threads located at the first end 36 of the container body 28, as shown in FIG. 3, which use is well known in the art. Other connecting mechanisms are also well known in the art for connecting cap 38 to the first end 36 of container body 28. As also well known, the cap 38 utilized in the preferred embodiment of the liquid container 10 has a plurality of spaced apart ridges 52 on the side of the cap 38 to facilitate the secure tightening of cap 38 onto the container body 28 and ease the removal of cap 38 from container body 28. Various configurations for ridges 52 on cap 38 are also well known.

[0040] Although different configurations are possible for container body 28, an example of which is shown in FIG. 12, in the embodiment of FIGS. 2 and 3 container body 28 has a uniform diameter that is sized and configured to fit snugly in the bottle cage 12 so it may be carried therein when the user is riding bicycle 16. Most commonly used bottle cages 12 are sized and configured substantially the same such that the first section 20, second section 22 and third section 26 will securely envelope a common size and configuration for container body 28 to hold liquid container 10 on the bicycle 16. In one embodiment, the container body 28 is made out of plastic or plastic-like material and has a surface 54 that is generally smooth along the length of container body 28. In a preferred embodiment, however, liquid container 10 comprises one or more grip members 56 that assist the user with gripping onto and gripping liquid container 10. As known in the art, the grip members 56 can be made out of rubber, silicone or other suitable grip-facilitating material. The embodiment of liquid container 10 shown in FIGS. 2 and 3 utilizes a pair of grip members 56, one that is located generally towards the upper/first end 36 and one that is located generally towards the lower/second end 46.

[0041] In one embodiment, the spout 40 is integral with the bottom wall 24 of the liquid container 10 and provides the nozzle 42 and outlet aperture 44 which are utilized by the user to withdraw liquid from liquid container 10. In a preferred embodiment, the spout 40 comprises a nozzle 42 that is removably attached to a discharge tube 58, having the outlet opening 60, at the bottom wall 24 of liquid container 10, as best shown in FIGS. 3 and 4, so the user may change out the type of nozzle 42 to one that better accommodates his or her preferences. The discharge tube 58 is integrally formed with or fixedly attached to the bottom wall 24 and comprises a connecting mechanism 62 for removably connecting the nozzle 42 to the discharge tube 58. In one embodiment, connecting mechanism 62 comprises corresponding threads on the discharge tube 58 and nozzle 42 such that the nozzle 42 is threadably received onto the discharge tube 58. Other connecting mechanisms 62, including various twist-and-lock type of connectors well known in the art can also be utilized to connect nozzle 42 to the discharge tube 58. Any connecting mechanism 62 utilized with liquid container 10 should be configured to securely receive nozzle 42 and prevent leakage of liquid from liquid container 10. In the embodiment shown in FIG. 3, the nozzle 42 is received over the discharge tube 58. As will be obvious to a person skilled in the art, however, these components can be configured such that the discharge tube 58 is received over the nozzle 42.

[0042] As set forth above, cap 38 has a closed end wall 48 that encloses the liquid inside the container body 28 of liquid container 10. Because the cap 38 is only being utilized to close inlet opening 50 and not being utilized to support the spout 40, cap 38 can include a lid member 63 and a storage adapter 64 that provide a storage chamber 66 therein. As shown in FIG. 6, that can be used to store keys, identification cards, credit cards, park passes and/or other items that may be necessary or useful for the person riding bicycle 16. As shown in FIG. 6, the upper end 68 of lid member 63 is closed to close storage chamber 66 when the lid member 63 is connected to storage adapter 64 and the lower end 70 of lid member 63 is configured to removably connect to the upper end 72 of the storage adapter 64. The lower end 74 of storage adapter 64 connects to the upper/first end 36 of container body 28, typically having threads that correspond to the threads on container body 28. Disposed between the upper end 72 and lower end 74 of storage adapter 64 is a separating wall 76 that closes the liquid inside the container body 28 and, with the sidewall 78 of storage adapter 64 and lid member 63, defines the storage chamber 66 that can be utilized to store one or more items. If desired, the sidewall 78 of storage adapter 64 and lid member 63 can be provided with a plurality of ridges 52 similar to those described above to assist with the tight engagement of storage adapter 64 onto container body 28 and removal therefrom and the tight engagement of the lid member 63 onto the storage adapter 64 and removal therefrom. As described above, various means of connecting storage adapter 64 to the container body 28 are available. The height of sidewall 78 can be selected so as to provide a desired capacity for storage chamber 66 and storage adapter 64 can be made available in different sizes to allow the user to select a storage capacity that best fits his or her needs. In addition, the storage adapter 64 can be wider than the first end 36 of container body 28 to provide increased width for larger sized items that may not be able to fit within the diameter defined by the container body 28.

[0043] In addition to accommodating storage adapter 64, the configuration of liquid container 10 also allows the cap 38 to be configured as a gel dispenser 80 that can be used to
dispense energy gel from a replaceable packet 82 of such gel. As well known, many bicycle riders desire to be able to “refuel” while riding their bicycle 16, particularly on long and/or competitive rides. As with the storage adapter 64, the gel dispenser 80 is preferably configured to removably connect to the upper first end 36 of container body 28 or, as shown in FIGS. 12 and 13, to the upper end 72 of the storage adapter 64. Different configurations are possible for the gel dispenser 80. The gel dispenser 80 shown in the figures comprises a separating wall 76 and a sidewall 78 that are similar in configuration to that described for the storage adapter 64. Gel packet 82 has a spout 84 that is sized and configured to extend outwardly through an aperture 86 in sidewall 78, as best shown in FIG. 8, and through which the user will obtain the energy gel from gel packet 82. In one configuration, the spout 84 of gel packet 82 will be semi-hard and have a bite off tab that allows the user to quickly open the spout 84 and start dispensing energy gel from the gel packet 82. The gel dispenser 80 of FIGS. 7 through 9, has a top wall 88 at the upper end 90 thereof that encloses the gel packet 82 inside the gel dispenser 80 and an opening 92 at the lower end 94 thereof that provides space for the threads or other connecting mechanism that allows the user to connect the gel dispenser 80 to the container body 28 or storage adapter 64. The separating wall 76 closes the liquid inside liquid container 28 or in the items inside the storage adapter 64. The gel packet 82 is made out of a generally flexible material that allows the user to compress the upper wall 96 towards the lower wall 98 to squeeze energy gel out of the gel packet 82. The gel packet 82 sits inside the gel dispenser 80 with the lower wall 98 of gel packet 82 against separating wall 76, as best shown in FIG. 8.

[0044] Gel dispenser 80 has a dispensing mechanism 100 that is configured to allow the user to quickly and efficiently squeeze the energy gel out of the gel packet 82. In one configuration, the dispensing mechanism 100 comprises a push bar 102 that is hingedly attached to the sidewall 78 of the gel dispenser 80 with hinge 104 and moveably disposed inside slotted opening 106, as best shown in FIG. 7, such that the user can push down on the push bar 102 to squeeze the gel packet 82 and dispense energy gel therefrom through spout 84. If desired, the hinge 104 can be a separate element or integrally formed with the sidewall 78 and push bar 102. The bottom surface 108 of the push bar 102 rests against the upper wall 96 of the gel packet 82 and the user pushes against the upper surface 110 of the push bar 102, shown in FIG. 9, to squeeze the gel packet 82. The gel packet 82 is shaped such that the first end 112 of the push bar 102 is raised to at or near the top edge of the slotted opening 106 and the second end 114 is at or near the bottom of the angled gel packet 82, as best shown in FIGS. 8 and 9. If desired, gel dispenser 80 and gel packet 82 can be configured with the thick end of gel packet 82 opposite spout 84 (i.e., opposite that shown). When the user desires to obtain some energy gel from gel packet 82, he or she bites of the tab at the end of spout 84 and pushes down on push bar 102 to squeeze the energy gel out of the gel dispenser 80. Typically, the user will dispense the energy gel directly into his or her mouth.

[0045] As stated above, different types of nozzles 42 can be utilized with the liquid container 10 of the present invention. The liquid container 10 of FIGS. 2 and 3 show use of a bite-pull mechanism 116 for the nozzle 42. These types of nozzles 42 are well known in the art and require the user to bite down on a portion of the nozzle 42 and pull it out with his or her teeth to open the nozzle 42 so liquid can be withdrawn from the liquid container 10. The nozzles 42 of FIGS. 10 and 11 have a one-way silicone valve, shown as 118, that is normally closed but opens when suction is applied to the outlet aperture 44 or pressure is applied, typically by squeezing, to the liquid inside the liquid container 10. The use of the one-way silicone valve 118 is also well known in the art. The nozzle 42 of FIG. 11 is angled towards the outlet aperture 44, which is preferred by some users for ease of access to the nozzle 42 when riding their bicycle 16. The end of the nozzle 42 opposite outlet aperture 44 is configured to attach to the bottom wall 24 or to a discharge tube 58 extending outward from bottom wall 24. Typically, although other mechanisms are also utilized, the nozzles 42 will be threadably connected to the bottom wall 24 or discharge tube 58.

[0046] The embodiment of FIG. 12 shows a liquid container 10 that has a container body 28 with a lower section 30 that is sized and configured to fit within the bottle cage 12 and an upper section 34 that is sized and configured to be more easily grasped by some users, particularly those with relatively small hands, so that he or she may comfortably and efficiently drink liquid from liquid container 10 while riding the bicycle 16. The embodiment shown in FIGS. 12 and 13 illustrate use of a cap 38 that comprises both the storage adapter 64 and gel dispenser 80 components described above. In these embodiments, the storage adapter 64 attaches to the first end 36 of container body 28, with the separating wall 76 of the storage adapter 64 closing the inlet opening 50, and the gel dispenser 80 attaches to the storage adapter 64, with the separating wall of the gel dispenser 80 defining and closing the storage chamber 66. With this configuration, the user can have both the benefit of the storage chamber 66 and the ability to dispense energy gel from the gel packet 82 in the gel dispenser 80. The embodiment of FIG. 12 utilizes the same configuration for the spout 40 as described above for the embodiments of FIGS. 2 and 3, with the spout 40 being attached to the otherwise closed bottom wall 24. In the embodiment of FIG. 13, the spout 40 is shown attached to a bottom cap 120 that is threadably received on the second end 46 of the container body 28. Although generally not preferred, this embodiment may have some advantages for the user with regard to cleaning the liquid container 10 between uses.

[0047] In use, the user removes the cap 38 from the first end 36 of the container body 28 and closes the nozzle 42 to fill the liquid container 10 with the desired liquid. The liquid is placed into the container body 28 through the inlet opening 50 and the cap 38 is re-attached to the container body 28, typically by threadably attaching, to close the liquid in the liquid container 10. Depending on the configuration, either end wall 48 or separating wall 76 (if cap 38 includes the storage adapter 64, gel dispenser 80 or both) will close the liquid container 10. The liquid container 10 is placed in the bottle cage 12 with the spout 40 facing downward, which is opposite the normal and intended positioning of the prior art water bottle 18. When the user desires liquid from the liquid container 10 while riding his or her bicycle 16, he or she will reach down to grasp the container body 28. The user then lifts the liquid container 10 out of the bottle cage 12 with a supinated hand and elevates the lower second end 46 of the liquid container 10 with a simple pronation of the hand. Most users will find this motion to be quicker and more ergonomic than that which can be achieved with the prior art water bottle 18.
apparent to those skilled in the art that the invention is not so limited, but is susceptible to various modifications and rearrangements in design and materials without departing from the spirit and scope of the invention. In particular, it should be noted that the present invention is subject to various modifications with regard to any dimensional relationships set forth herein, with regard to its assembly, size, shape and use and with regard to the materials used in its construction. For instance, there are a number of components described herein that can be replaced with equivalent functioning components to accomplish the objectives of the present invention.

What is claimed is:

1. A liquid container, comprising:
   a container body having an inlet opening at a first end and a bottom wall at an oppositely disposed second end, said inlet opening configured to receive liquid into said container body;
   a cap removably attached to said first end of said container body, said cap having a wall configured to close said inlet opening; and
   a spout at said bottom wall, said spout having a nozzle with an outlet aperture, said nozzle configured for selectively drinking liquid from said container body or closing said outlet aperture.

2. The liquid container of claim 1, wherein said spout is integral with or attached to said bottom wall.

3. The liquid container of claim 1, wherein said spout comprises a discharge tube integral with said bottom wall, said discharge tube having an outlet opening, said nozzle integral with or attached to said discharge tube.

4. The liquid container of claim 3, wherein said nozzle is removably attached to said discharge tube.

5. The liquid container of claim 1, wherein said wall is a closed end wall.

6. The liquid container of claim 1, wherein said wall is a separating wall of one of a storage adapter and a gel dispenser at said first end of said container body.

7. The liquid container of claim 1, wherein said cap comprises both a storage adapter and a gel dispenser, said storage adapter having a separating wall closing said inlet opening of said container body.

8. The liquid container of claim 1, wherein said cap comprises a lid member and a storage adapter, said lid member having a lower end configured to attach to an upper end of said storage adapter, said storage adapter having at least one sidewall and a separating wall that define a closed storage chamber when said lid member is attached to said upper end of said storage adapter, said separating wall configured to close said inlet opening.

9. The liquid container of claim 1, wherein said cap is configured as a gel dispenser that encloses a gel packet having a spout which extends outwardly through an aperture in a sidewall of said gel dispenser, said gel dispenser having a dispensing means for dispensing gel from said gel packet through said spout.

10. The liquid container of claim 9, wherein said dispensing means is configured to squeeze said gel packet to dispense gel through said spout.

11. The liquid container of claim 10, wherein said dispensing means comprises a push bar moveably positioned in a slotted opening of said gel dispenser and hingedly connected to said sidewall of said gel dispenser, said push bar configured to squeeze said gel packet and dispense gel through said spout.

12. A liquid container, comprising:
   a container body having an inlet opening at a first end and a bottom wall at an oppositely disposed second end, said inlet opening configured to receive liquid into said container body, a lower section of said container body toward said second end thereof configured to snugly fit within a bottle cage attached to a bicycle;
   a cap removably attached to said first end of said container body, said cap having one of a closed end wall and a separating wall of either a storage adapter or a gel dispenser to close said inlet opening; and
   a spout at said bottom wall, said spout having a nozzle with an outlet aperture, said nozzle configured for selectively drinking liquid from said container body or closing said outlet aperture.

13. The liquid container of claim 12, wherein said spout comprises a discharge tube integral with said bottom wall, said discharge tube having an outlet opening, said nozzle integral with or attached to said discharge tube.

14. The liquid container of claim 13, wherein said nozzle is removably attached to said discharge tube.

15. The liquid container of claim 12, wherein said cap comprises each of said storage adapter and said gel dispenser, said storage adapter having a separating wall closing said inlet opening of said container body, said gel dispenser defining a closed chamber in said storage adapter when attached to said storage adapter.

16. The liquid container of claim 15, wherein said gel dispenser encloses a gel packet having a spout which extends outwardly through an aperture in a sidewall of said gel dispenser, said gel dispenser having a dispensing means for dispensing gel from said gel packet through said spout.

17. The liquid container of claim 16, wherein said dispensing means is configured to squeeze said gel packet to dispense gel through said spout.

18. A liquid container, comprising:
   a container body having an inlet opening at a first end and a bottom wall at an oppositely disposed second end, said inlet opening configured to receive liquid into said container body, a lower section of said container body toward said second end thereof configured to snugly fit within a bottle cage attached to a bicycle;
   a cap removably attached to said first end of said container body, said cap comprising a storage adapter and a gel dispenser, said storage adapter having a separating wall closing said inlet opening of said container body, said gel dispenser defining a closed storage chamber in said storage adapter when said gel dispenser is attached to said storage container, said gel dispenser enclosing a gel packet and having a dispensing means at an upper end of said gel dispenser for dispensing gel from said gel packet; and
   a spout at said bottom wall, said spout having a nozzle with an outlet aperture, said nozzle configured for selectively drinking liquid from said container body or closing said outlet aperture.

19. The liquid container of claim 18, wherein said spout comprises a discharge tube integral with said bottom wall, said discharge tube having an outlet opening, said nozzle removably attached to said discharge tube.

20. The liquid container of claim 18, wherein said dispensing means is configured to squeeze said gel packet to dispense gel through said spout.