Embodiments relate to a drinking container, and specifically to an adapter configured to be placed within the container and to receive and hold a tube. The adapter is configured with a primary aperture, through which fluid may flow. A tube is configured to be placed in direct contact with the primary aperture, or in indirect contact with the primary aperture through use of a connector. The adapter holds the tube in a position while fluid and/or frozen fluid are placed into the container. Once the container is filled, the tube is received by a container top, and the container is closed. Accordingly, the adapter functions to hold the tube within the container as the container is filled with fluid and frozen fluid, and mitigates interference with placement of a tube into the container after the container has been filled with fluid and/or frozen fluid.
1102 PROVIDE EMPTY CONTAINER

1104 ALIGN TUBE WITH RESPECT TO THE CONTAINER TOP

1106 PLACE TUBE IN COMMUNICATION WITH ADAPTER APERTURE

1108 PLACE FLUID AND/OR ICE IN THE CONTAINER

1110 SECURE LID WITH TUBE

1112 SECURE TOP TO THE CONTAINER

FIG. 11
DRINK CONTAINER ADAPTER
CROSS REFERENCE TO RELATED APPLICATION(S)


BACKGROUND

[0002] The present invention relates to an adapter for a drinking container. More specifically, the invention relates to placement of a tube in the vessel that mitigates interference with placement of fluids.

[0003] Drinking containers are employed to store a fluid and to allow for the fluid to be dispensed. The fluid is known to be in a liquid or frozen state, or a combination of both. Conventional containers may contain an outlet, and the container is moved into a position so that gravity dispenses the fluid through the outlet. Some conventional containers may be configured for multiple uses, either through the single outlet as described above, or with a tube that is placed in the container with an opening outside of the container where fluid may be dispensed through suction. The multi-use container with the tube also requires multiple steps to fill the container prior to use. Specifically, the tube is known to be secured to a container lid. Fluid is placed in the interior of the container prior to placement of the tube within the interior of the container and attachment of the container lid. Accordingly, interference between the tube and the fluid takes place by the order in which the fluid and tube are placed in communication with the container.

SUMMARY

[0004] The invention includes an apparatus and method for mitigating interference associated with placement of fluid in a drinking container.

[0005] An apparatus and method are provided for facilitating placement of liquid and frozen fluid in a container. An adapter is provided with a surface and primary and secondary openings formed between opposing surfaces. The primary opening is sized to receive a tube, and the secondary opening is configured to allow fluid to pass. The primary opening is sized to receive and hold a tube, while enabling both ingress of fluid to the container and egress of fluid from the container via the tube.

[0006] Other features and advantages of this invention will become apparent from the following detailed description of the presently preferred embodiment(s) of the invention, taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0007] The drawings reference herein form a part of the specification. Features shown in the drawings are meant as illustrative of only some embodiments of the invention, and not of all embodiments of the invention unless otherwise explicitly indicated.

[0008] FIG. 1 depicts a perspective view of an adapter, in accordance with one embodiment.

[0009] FIG. 2 depicts a perspective view of an adapter, in accordance with one embodiment.

[0010] FIG. 3 depicts a front view of one form of a connector, in accordance with one embodiment.

[0011] FIG. 4 depicts a front view of an alternate configuration of the connector, in accordance with one embodiment.

[0012] FIG. 5 depicts a perspective view of the connector, in accordance with one embodiment.

[0013] FIG. 6 depicts a perspective view of another form of the connector, in accordance with one embodiment.

[0014] FIG. 7 depicts a perspective view of one embodiment of the adapter in communication with a drinking container prior to placement of fluid within the container.

[0015] FIG. 8 depicts a perspective view of one embodiment of the adapter and one embodiment of the connector in communication with a drinking container prior to placement of fluid within the container.

[0016] FIG. 9 depicts a sectional view of the container in receipt of fluid.

[0017] FIG. 10 depicts a sectional view of the container in receipt of the adapter and a tube, as well as fluid, with the top secured.

[0018] FIG. 11 depicts a flow chart illustrating a process of employing the adapter for a container.

[0019] FIG. 12A depicts a side view of a tool for removal of the adapter from the container.

[0020] FIG. 12B depicts a side view of a tool for removal of the adapter from the container.

[0021] FIG. 13 depicts a perspective view of the tool of FIG. 12A in communication with the adapter.

[0022] FIG. 14 depicts a block diagram illustrating the components of the kit.

DETAILED DESCRIPTION

[0023] It will be readily understood that the components of the present invention, as generally described and illustrated in the Figures herein, may be arranged and designed in a wide variety of different configurations. Thus, the following detailed description of the embodiments of the apparatus, system, and method of the present invention, as presented in the Figures, is not intended to limit the scope of the invention, as claimed, but is merely representative of selected embodiments of the invention.

[0024] Reference throughout this specification to “a select embodiment,” “one embodiment,” or “an embodiment” means that a particular feature, structure, or characteristic described in connection with the embodiment is included in at least one embodiment of the present invention. Thus, appearances of the phrases “a select embodiment,” “one embodiment,” or “an embodiment” in various places throughout this specification are not necessarily referring to the same embodiment.

[0025] The illustrated embodiments of the invention will be best understood by reference to the drawings, wherein like parts are designated by like numerals throughout. The following description is intended only by way of example, and simply illustrates certain selected embodiments of devices, systems, and processes that are consistent with the invention as claimed herein.

[0026] With reference to FIG. 1, a perspective view (100) of an adapter is provided. As shown, the adapter (100) is provided with a body (110). The body (110) has two opposing surfaces, including a first surface (120) and a second surface (130). In addition, the body (110) includes at least one primary aperture (140) and at least one secondary aperture (150). The primary aperture (140) extends through the body
(110) from the first surface (120) to the secondary surface (130). Although only one primary aperture (140) is shown herein, in one embodiment, the adapter may include one or more additional primary apertures. Accordingly, the primary aperture (140) is formed in the body (110) and extends from the first surface (120) to the second surface (130).

[0027] As shown, the body (110) has a perimeter (160) that defines the border or outer boundary of the surface area of the adapter (100). Similarly, the primary aperture (140) is centrally or near centrally located with respect to the perimeter (160). As shown herein, there are four secondary apertures (150), (152), (154), and (156). The quantity of secondary apertures should not be considered limiting. In one embodiment, there may be a minimum of one secondary aperture, and in another embodiment, there may be more than four secondary apertures. Each secondary aperture is shown in communication with the perimeter (150). Similarly, the secondary apertures (150)-(156) are shown evenly spaced across the perimeter (160), although this should not be considered a limiting characteristic. The body (110) extends from the primary aperture (140) to the perimeter (160) defined by distance (180), and from the primary aperture (140) to any one of the secondary apertures (150)-(156) defined by distance (170). Each of the distances (170) and (180) are defined to separate the primary aperture (140) and each of the secondary apertures (150)-(156), so that the functionality of the apertures remains intact.

[0028] An important feature of the adapter shown and described in FIG. 1 is the properties of the material of the body (110). The structural and functional properties of the body (110) may be comprised of a material having a flexible characteristic, and in one embodiment impermeable. For example, the body (110) can have a unitary contiguous construction comprised of a material having omnidirectional elastic properties. For example, the body (110) may be comprised of a plastic material, silicone, rubber, or combinations thereof. The functionality of the adapter is for fluid to pass through the primary aperture (140) and the secondary apertures (150)-(156) and not the body (110) formed between and around the primary and secondary apertures (140) and (150), respectively. Accordingly, the adapter (100) is provided with openings formed in the body (110), with the openings to allow passage of fluid, and the material of the body between the openings to prevent fluid from passage.

[0029] The adapter shown and described in FIG. 1 is comprised of an impermeable material. Furthermore, as shown in FIG. 1, the adapter (100) is in a rest state, i.e. inactive, and as such is shown a flat or relatively flat state, also referred to herein as planar or relatively planar. The material that comprises the body is configured to flex so that it may bend without breaking or tearing. In one embodiment, the flexed state of the body is also referred to as an active state.

[0030] Referring to FIG. 2, a perspective view (200) of an adapter according to one embodiment is provided. As shown, the adapter (200) is provided with a body (210). The body (210) has two opposing surfaces, including a first surface (220) and a second surface (230). In addition, the body (210) includes at least one primary aperture (240) and at least one secondary aperture (252). The primary aperture (240) extends through the body (210) from the first surface (220) to the secondary surface (230). Although only one primary aperture (240) is shown herein, in one embodiment, the adapter may include one or more additional primary apertures. Accordingly, the primary aperture (240) is formed in the body (210) and extends from the first surface (220) to the second surface (230).

[0031] As shown, the body (210) has a perimeter (270) that defines the border or outer boundary of the adapter. Similarly, the primary aperture (240) is centrally or near centrally located with respect to the perimeter (260). As shown herein, there are eight secondary apertures (252), (254), (256), (258), (260), (262), (264), and (266). As described above, the quantity of secondary apertures should not be considered limiting. In one embodiment, there may be a minimum of one secondary aperture, and in another embodiment, there may be more than eight secondary apertures. Each secondary aperture is shown in communication with the perimeter (270). Similarly, the secondary apertures are shown evenly spaced across the perimeter (270), although this should not be considered a limiting characteristic. The body (210) extends from the primary aperture (240) to the perimeter (270) defined by distance (280), and from the primary aperture (240) to any one of the secondary apertures defined by distance (290). Each of the distances (280) and (290) are defined to separate the primary aperture (240) and each of the secondary apertures, so that the functionality of the apertures remains intact.

[0032] The adapter shown and described in FIG. 2 may be comprised of a material having a flexible characteristic, as well as be impermeable. For example, the adapter may be comprised of a plastic material, silicone, rubber, or combinations thereof. The functionality of the adapter is for fluid to pass through the primary aperture (240) and the secondary apertures and not the body (210) formed between and around the primary and secondary apertures. Accordingly, the adapter (200) is an alternative configuration provided with multiple openings formed in the body, with the openings to allow passage of fluid, and the material of the body between the openings to prevent fluid from passage.

[0033] The adapter shown and described in FIG. 2 is comprised of an impermeable material. Furthermore, as shown in FIG. 2, the adapter (200) is in a rest state, i.e. inactive, and as such is shown in a flat or relatively flat state, also referred to herein as planar or relatively planar. The material that comprises the body is configured to flex so that it may bend without breaking or tearing. In one embodiment, the flexed state of the body is also referred to as an active state.

[0034] The central apertures (140) and (240) shown in FIGS. 1 and 2, respectively, are sized to receive a tube (not shown). In one embodiment, the size of the primary aperture is equal to the cross sectional size of the tube. Similarly, in one embodiment, the size of the primary aperture is less than the cross sectional size of the tube, with the size of the primary aperture configured to receive and hold the tube. Similarly, in one embodiment, the adapter shown in FIGS. 1 and 2 may include two or more primary apertures spaced within the body, each aperture sized and configured to receive a tube.

[0035] Referring to FIG. 3, a perspective view (300) of a connector is provided. As shown, the connector is provided with a connector body (310). In one embodiment, at least a portion of the connector body (310) is sized to be received by the primary aperture, (140) and (240), respectively. The body (310) is shown herein with two oppositely disposed ends, including a first end (320) and a second end (330). The body is generally comprised of a cylindrical shape with a wall (340) extending between the two ends (320) and (330). The first end (320) has adapter material (322) extended across the circumference thereof, with an opening (324). Similarly, the second
end (330) is open, without any of the body material extending across the circumference. To preserve the functionality of the primary aperture (140) and (240), respectively, in the adapter (110) and (210), respectively, the first end (320) is provided with the aperture (324). Specifically, the aperture (324) is configured to enable the passage of fluid. The circumference of the adapter body (310) is sized slightly greater than the size of the primary apertures (140) and (240), respectively, with the sizing to hold the connector in communication with the adapter body (110) and (210), respectively.

In one embodiment, one or more extensions (350) are provided in the exterior surface of the body (310). The extension (350) is shown herein as a ring surrounding the circumference adjacent to the first end (320). However, in one embodiment, the extension may be a localized element (360) shown adjacent to the second end (330). The extension functions to hold the connector body (310) in communication with the adapter body (110) and (210). In one embodiment, only one extension (350) or (360) is provided, adjacent to either the first or second end (320) or (330). Similarly, in another embodiment, at least two extensions are provided (350) and (360), both as a ring shown at (350) or a localized element shown at (360), or a combination of the both. In one embodiment, when the connector is placed in communication with the adapter, the extension (350) is in communication with the first surface (112) and holds the connector in position with respect to the adapter. In another embodiment, the portion of the extension (350) together with the connector body has a circumference greater than the opening in the adapter. Accordingly, one or more extensions may be configured with the connector body to facilitate and hold the communication of the connector with the adapter.

Referring to FIG. 4, a front view (400) of another form of the connector is shown. The connector (470) is provided with an elongated body (472), with a first end (474) and an oppositely disposed second end (476), with an aperture (478) extending through the body. One or more extensions (480) are positioned on an exterior wall of the body, or in one embodiment, are a part of the body. The body is tapered such that the second end (476) has a larger diameter than the first end (474). The connector (470) may be placed in communication with the adapter, and specifically fed through one of the primary apertures (140) and (240) from the second surface (130) to the first surface (120), with the extension (480) holding the connector (470) in communication with the adapter.

Referring to FIG. 5, a perspective view (500) of an alternate configuration of the connector is provided. As shown, the connector is provided with a connector body (510) and a ridge (550) along an exterior circumference of the body (510). In one embodiment, the ridge (550) is configured to be in communication with the second surface (130) of the adapter body (110) when the connector is placed in communication with the primary aperture. Similar to the configuration shown in FIGS. 3 and 4, at least a portion of the adapter body (510) is sized to be received by the primary aperture. The body (510) is shown herein with two oppositely disposed ends, including a first end (520) and a second end (530). The second end (530) is in communication with the ridge (550). The body (510) is generally comprised of a cylindrical shape with a wall (540) extending between the two ends (520) and (530). The first end (520) has material (522) extended across the circumference thereof, with an opening (524). Similarly, the second end (530) is open, without any of the body material extending across the circumference. To preserve the functionality of the primary aperture in the adapter body (110), the first end (520) is provided with an aperture (524). Specifically, the aperture (524) is configured to enable the passage of fluid. Similarly, the ridge is configured with an open circumference to enable the passage of fluid through the openings, with the passage extending through the body (510) and the ridge (550). Furthermore, the ridge (550) is shown with a cylindrical profile, although this configuration should not be limiting. In one embodiment, the ridge (550) may be comprised of different shapes and sizes while preserving the functionality of holding the connector in communication with the primary aperture of the adapter, while supporting the passage of fluid through the primary and secondary apertures. Accordingly, the adapters (310) and (410) are configured and sized to be in communication with the adapter.

The connector (500) shown in FIG. 5 is provided with a cylindrical or relatively cylindrical body shape. However, the shape shown therein should not be considered limiting. Referring to FIG. 6, a perspective view (600) is a connector with an alternative configuration. As shown, the connector is provided with a connector body (610). In one embodiment, at least a portion of the connector body (610) is sized to be received by at least one of the primary apertures (140) and (240). The body is shown herein with two adjacently positioned tiers (620) and (630). Each of the tiers is generally comprised of a cylindrical shape with a wall (622) and (632), respectively. Each of the tiers is provided with two oppositely disposed ends. The first tier (620) includes a first end (624) and a second end (626), and the second tier (630) includes a first end (634) and a second end (636). As shown herein, the first end (624) of the first tier (620) is relatively closed with the adapter material extended across the circumference thereof and an aperture (628) formed therein. Similarly, the second end (626) is open, without any, or in one embodiment with limited material, of the body material extending across the circumference. To preserve the functionality of the primary apertures (140) and (240) in the adapter body (110) and (210), respectively, the first end (624) is provided with an aperture (628). Specifically, the aperture (628) is configured to enable the passage of fluid through the connector. The first end (634) and the second end (636) of the second tier (630) are both open, or in one embodiment, with limited body material extending across the circumference. The first end (634) is in communication with the second end (636).

As further shown, the first and second tiers (620) and (630) respectively, are comprised of different sized openings. In one embodiment, the circumference of the first tier (620) is smaller than the circumference of the second tier (630). As demonstrated on the exterior surface (640) of the connector, a first ridge (650) is formed between the two tiers (620) and (630), respectively, and a second ridge (660) is formed adjacent to the second tier (630). Although only two tiers are shown herein, in one embodiment, the connector may be configured with additional tiers. The first ridge (650) provides a plurality of functions with respect to the connector body (610). In one embodiment, the connector body (610) is configured to be placed through one of the primary apertures (140) and (240), respectively, in the adapter body (110) and (210), respectively, so that the first ridge (650) is in communication with the first surface (120) of the body (110), and the second ridge (660) is in communication with the second surface (130) of the body (110). Accordingly, the plurality of
ridges (650) and (660) enables the connector to be in communication with the first and second surfaces (120) and (130) of the adapter.

[0041] Referring to FIG. 7, a perspective view (700) of the adapter in communication with a drinking container, also referred to herein as a vessel, is provided prior to placement of fluid within the container. As shown, a vessel body (710) is provided with top and bottom surfaces (712) and (714), respectively. A lid (716) is provided and shown separate from the vessel body (710). The lid (716) includes a top surface (718). The adapter (720) is shown inserted in an interior portion of the body (710). As shown and described in FIG. 1, the adapter (720) includes at least one primary aperture (722) and at least one secondary aperture (724). In addition, a tube (730) is provided to be inserted into the body (710) to enable fluid placed in the body to exit the body. In the embodiment shown herein, there is no fluid, whether in liquid or frozen form, placed within the body. However, the tube (730) is placed in the body (710) and shown inserted through the primary aperture (722) of the adapter (720). The tube (730) may be fitted to extend through the primary aperture (722) or in one embodiment, may be sized to be held within one the primary aperture (722). Accordingly, prior to inserting a fluid into the body of the container (710), the tube (730) is placed in direct communication with the adapter.

[0042] The embodiment shown in FIG. 7 omits the employment of the adapter connector. Referring to FIG. 8 a perspective view (800) of the adapter in communication with a drinking container is provided prior to placement of fluid within the container. As shown, a vessel body (810) is provided with top and bottom surfaces (812) and (814), respectively. A lid (816) is provided and shown separated from the container. The lid (816) includes a top surface (818). The adapter (820) is shown inserted in an interior portion of the body (810). Although the adapter (820) is shown adjacent to the bottom surface within the body (810), this embodiment is not limiting. In one embodiment, the adapter (820) may be positioned at any height within the body (810) between the top and bottom surfaces (812) and (814), respectively.

[0043] As shown and described in FIG. 1, the adapter (820) includes at least one primary aperture (822). Furthermore, as shown and described in FIGS. 4 and 5, a connector (840) may be provided in communication with opening (822). In the embodiment shown herein, the connector (840) is provided with a first ridge (842) in communication with a top surface (826) of the adapter (820), and a second ridge (844) in communication with a bottom surface (828) of the adapter (820). In addition, a tube (830) is provided to be inserted into the container (810) to enable fluid placed in the container to exit the container. In the embodiment shown herein, there is no fluid, whether in liquid or frozen form, placed within the container. However, the tube (830) is placed in the container (810) and shown inserted over the portion (842) of the connector (840). Accordingly, prior to inserting a fluid into the body of the container (810), the tube (830) is placed in indirect communication with the adapter via the connector (840).

[0044] As shown and described in FIGS. 7 and 8, the adapter is inserted into the container, and a tube is placed in communication with the adapter, all prior to placement of fluid within the interior of the container. Referring to FIG. 9, a sectional view (900) of the container is shown in receipt of fluid. More specifically, the container (910) is shown with a first end (912) and an oppositely disposed second end (914). The adapter (920) is shown positioned adjacent to the second end (914) and a tube (930) is shown in communication with the adapter (920), and specifically the adapter (940), which is shown herein with extensions. Fluid (950), including a mixture of frozen liquid (952) is shown inserted into the container (910). With placement of the tube (930) in communication with the adapter (920), and in one embodiment, the connector (940) prior to receipt of the fluid, the fluid is dispersed around the tube (930) and through any openings in the adapter (920). In one embodiment, the adapter (920) has a buoyancy characteristic. When fluid is held in the container (910), the weight of the adapter (920) with respect to the fluid, causes the adapter (920) to rise within the length of the container, while continuing to hold the tube (930) in the primary aperture, and while maintaining a planar or relatively planar position so that the perimeter of the adapter (920) is in communication with the interior wall of the container. Accordingly, the adapter and tube, in communication with each other are placed in the container and configured to receive the fluid prior to securing the top of the container.

[0045] Once the fluid has been inserted into the container, the top may be secured to the container to mitigate spillage. Referring to FIG. 10, a sectional view (1000) of the container is shown in receipt of the adapter and tube, as well as fluid, and with the top secured. As shown, the container (top 1010) is sized to be received by the vessel body (1020). In one embodiment, the top (1022) of the vessel body (1020) includes a threaded exterior surface (1024), and an interior wall (1012) of the top (1010) includes a threaded interior surface (1014), with the threaded surfaces (1014) and (1024) configured to threadedly secure the top (1010) to the body (1020). In one embodiment, the threaded surfaces may be oppositely configured. Similarly, in one embodiment, an alternative element for securing the top (1010) to the body (1020) may be provided, and as such, the embodiment(s) described herein should not be considered limiting. An interior surface of (1016) of the top (1010) is provided with an opening (1018) to receive the tube (1030). As described in FIG. 9, the tube (1030) may be placed in the container prior to receipt of fluid. When securing the top (1010) to the body (1020), a top surface (1032) of the tube (1030) is received by the opening (1018) to facilitate egress of fluid from the body (1020), while a bottom surface (1034) of the tube (1030) remains in communication with the adapter (1040). Accordingly, the tube is secured to the top (1010) as part of placement and securing of the top (1010) to the body (1020).

[0046] Different containers may be configured with the tube in different positions. For example, in one embodiment, the tube may be centrally position in the container. In another embodiment, the tube may be positioned off-center. To accommodate the position, multiple primary apertures may be provided in the adapter. When the tube is in direct contact with the primary aperture in the adapter, the tube is placed in one of the primary apertures that aligns, or closely aligns, with the opening in the top configured to receive the tube. Similarly, the tube has direct contact or indirect contact with the primary aperture in the adapter via the connector, with the connector placed in one of the primary apertures that aligns, or closely aligns, with the opening in the top configured to receive the tube.

[0047] Referring to FIG. 11, a flow chart (1100) is provided illustrating the process of employing the adapter for a container. As shown, an empty container is provided with both the top of the container and the tube removed (1102). Alignment of the tube with respect to the top of the container is
There are two scenarios for employment of the adapter, including direct contact and indirect contact. In the case of direct contact, the tube is placed through one of the openings in the adapter that aligns or closely aligns with the top of the container. Similarly, in the case of indirect contact, the connector is selected and placed through one of the openings in the adapter that aligns, or closely aligns, with the top of the container, and the tube is placed in communication with the connector. Once the tube is placed, fluid, frozen or liquid, or a combination thereof, is placed in the container. In the case of fluid in the form of liquid, the liquid may pass through the openings of the adapter that are not received by the tube. In addition, any frozen fluid or liquid that does not pass through the openings in the adapter sits in the body of the container that is in communication with the top surface of the adapter. The top of the vessel that contains an opening to receive the top of the tube is placed over the vessel so that the tube is secured to the top, followed by securing the top of vessel to the container. In each embodiment, the distal end of the tube in communication with the adapter accommodates a threaded attachment of a lid adjacent to the top of the vessel. In the case of one embodiment, the tube turns with the threading of the lid to the container. In another embodiment, the end of the tube secured to the top of the container is threaded so that the top of the tube is received in a corresponding receiving end of the top of the container as the top of the container is threaded to receive the tube. In each of these embodiments, the tube is attached to the adapter prior to placement of fluid in the container and prior to engagement with the top closure of the container. Accordingly, the method in which the tube is secured to the adapter prior to securing the top of the vessel to the container mitigates interference between the tube and the fluid, and frozen fluid, placed in the container.

As shown and described in FIGS. 1-11, an adapter is placed in the container with a tube placed in communication with the adapter. Furthermore, the adapter is sized with a diameter that is less than or equal to the interior diameter of the container. The adapter may be placed in the interior of the container with the insertion of the tube pushing the adapter further into the interior of the container. Either pressure exerted on the tube or the weight of the fluid lowers the position of the adapter in the interior of the container. Similarly, the tube may be released from the adapter through a pulling force, or via separation of the top from the container. However, the pressure fit of the tube to the adapter will not necessarily lift the adapter to the top of the container.

Referring to FIG. 12A, a side view of a tool for removal of the adapter from the container is provided. As shown, the tool includes an elongated body with two sections, including a primary section and a secondary section. A bent joins the primary section with the secondary section. The secondary section is placed through the primary aperture, or in one embodiment any of the apertures, of the adapter so that the bent is adjacent to and in communication with the aperture of the adapter through which the tool was placed and the second section has been placed through the primary aperture. A force in the form of a pull on the distal end of the primary section will lift the adapter out of the container.

Referring to FIG. 12B, a side view of a tool for removal of the adapter from the container is provided. As shown, the tool includes an elongated body with two sections, including a primary section and a secondary section. A bent joins the primary section with the secondary section. The secondary section is placed through the primary aperture, or in one embodiment any of the apertures, of the adapter so that the bent is adjacent to and in communication with the aperture of the adapter through which the tool was placed and the second section has been placed through the primary aperture. A force in the form of a pull on the distal end of the primary section will lift the adapter out of the container.
or act for performing the function in combination with other claimed elements as specifically claimed. The description of the present invention has been presented for purposes of illustration and description, but is not intended to be exhaustive or limited to the invention in the form disclosed.

[0056] Many modifications and variations will be apparent to those of ordinary skill in the art without departing from the scope and spirit of the invention. The embodiment was chosen and described in order to best explain the principles of the invention and the practical application, and to enable others of ordinary skill in the art to understand the invention for various embodiments with various modifications as are suited to the particular use contemplated.

[0057] The adapter is configured to be placed into an empty or near empty container, and to hold the tube within the container. Fluid and frozen fluid, such as ice, may then be placed in the container, after which the container may be closed. Interference between the ice and/or fluid and the tube is minimized. The openings in the adapter enable fluid to enter the tube and leave the container. By configuring the adapter within the container, and specifically, holding the tube in communication with the adapter, any interference associated with placing ice in the container is reduced. Accordingly, the implementation of the adapter with a container enables placement of the tube in the container prior to receipt of fluid, whether liquid or frozen, and mitigates interference caused by placement of the tube into the container after fluid is in the container.

[0058] It will be appreciated that, although specific embodiments of the invention have been described herein for purposes of illustration, various modifications may be made without departing from the spirit and scope of the invention. In particular, the tube may be configured with a distal end having a narrower diameter than the proximal end so that the distal end may extend through one of the adapter apertures. A juncture is formed between the body of the tube and the distal end, with the juncture having a placement adjacent to the aperture.

[0059] Furthermore, the adapter has been described as having a planar or relatively flat shape in a rest or inactive condition. At the same time, the adapter is comprised of a material that enables it to flex to a convex or concave shape, or in one embodiment, to flex from a concave shape to a convex shape, as well as to flex from a convex shape to a concave shape. For example, when the adapter is placed in a container and the tube contacts the adapter, the contact and associated pressure may cause the adapter to flex from the initial flat state to a concave shape. When liquid or frozen liquid, e.g. ice, enter the container and come into contact with the adapter, some of the fluid may fall below the adapter via the secondary aperture(s), and the weight and/or pressure on the fluid exerted on the adapter may cause the adapter shape to change from the concave shape to a convex shape. Regardless of the shape and position of the adapter, the adapter maintains communication with the tube, and enables fluid to exit the container via the tube. With respect to the embodiment employing a connector, the connector may have a convex shape relative to a concave shape of the adapter prior to placement of fluid in the container. Accordingly, the scope of protection of this invention is limited only by the following claims and their equivalents.

We claim:
1. An apparatus comprising:
   an adapter having a body with first and second surfaces and a primary openings formed in the body extending from the first surface to the second surface;
   a connector in communication with the primary aperture, wherein the connector is sized to be received by the primary aperture;
   the connector to project in a direction relatively perpendicular to one of the surfaces of the adapter following receipt by the primary aperture; and
   the connector having a connector aperture formed therein.
2. The apparatus of claim 1, further comprising the connector having a perimeter sized to receive a tube.
3. The apparatus of claim 2, further comprising the connector having an extension, the extension size to hold the connector in communication with one of the surfaces of the adapter adjacent to the primary aperture.
4. The apparatus of claim 3, further comprising placement of the adapter in a drinking vessel, including placing the tube in communication with the connector.
5. The apparatus of claim 4, further comprising the vessel having a bottom interior surface, and placement of fluid into the vessel to force the adapter in a direction proximal to the bottom surface.
6. The apparatus of claim 4, further comprising the vessel having a lid adaptively secured to a top surface of the vessel, the lid having a tube receiver to secure the tube to the top of the vessel.
7. The apparatus of claim 1, further comprising the connector having a stepped exterior surface, wherein a first step is sized to receive the tube having a first perimeter, and a second step is sized to receive the tube having a second perimeter, and wherein the first and second perimeters are different sizes.
8. The apparatus of claim 3, further comprising the connector having a sloped exterior surface sized to receive the tube.
9. The apparatus of claim 5, further comprising the connector having a convex shape relative to a concave shape of the adapter prior to placement of fluid in the container.
10. The apparatus of claim 9, further comprising application of suction to the tube to release the fluid from the container, and the connector to retain the convex shape upon application of suction and the shape of the adapter to change.
11. The apparatus of claim 1, further comprising a placement change of the connector, including removal of the connector from the primary aperture, and placement of the connector in a second secondary aperture formed in the surfaces, the second opening being one of the plurality of openings in the adapter.
12. The apparatus of claim 1, further comprising an adapter release, including a projection to be received through the primary aperture and to communicate with a bottom wall of the adapter, wherein a pull of the release forces the adapter from the position proximal to the bottom surface.
13. An apparatus comprising:
   an adapter having a first surface and an oppositely disposed second surface;
   a primary aperture formed in the adapter, the primary aperture extending from the first surface to the second surface;
   two or more secondary apertures formed on a perimeter of the adapter, each secondary aperture extending from the first surface to the second surface.
14. The apparatus of claim 13, further comprising the primary aperture sized to receive and hold a distal end of a tube in communication with the adapter.

15. The apparatus of claim 14, further comprising the adapter placed in communication with a vessel, including placement of the tube through the primary aperture, wherein the tube is releasably secured to the adapter.

16. The apparatus of claim 13, further comprising placement of a fluid into the vessel following placement of the tube, wherein the fluid to force the adapter in a direction proximal to a bottom interior surface of the vessel.

17. The apparatus of claim 13, further comprising the tube having a proximal end oppositely positioned from the distal end, the proximal end received by a lid adaptively secured to a top surface of the vessel, including a tube receiver to secure the proximal end to a top of the vessel.

18. The apparatus of claim 13, further comprising an adapter release, including a projection to be received through the primary aperture and to communicate with a bottom wall of the adapter, wherein a pull of the release forces the adapter from the position proximal to a bottom surface of the vessel.

19. A method comprising:
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20. The method of claim 19, further comprising placing the adapter into an interior of a container, and placing fluid into the interior.

21. The method of claim 20, further comprising securing a proximal end of the tube to a container top in conjunction with closing the container.

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