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(54) **MULTI-PURPOSE INFUSER OF CONSUMABLE MATTER INTO BOTTLES**

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(57) **ABSTRACT**

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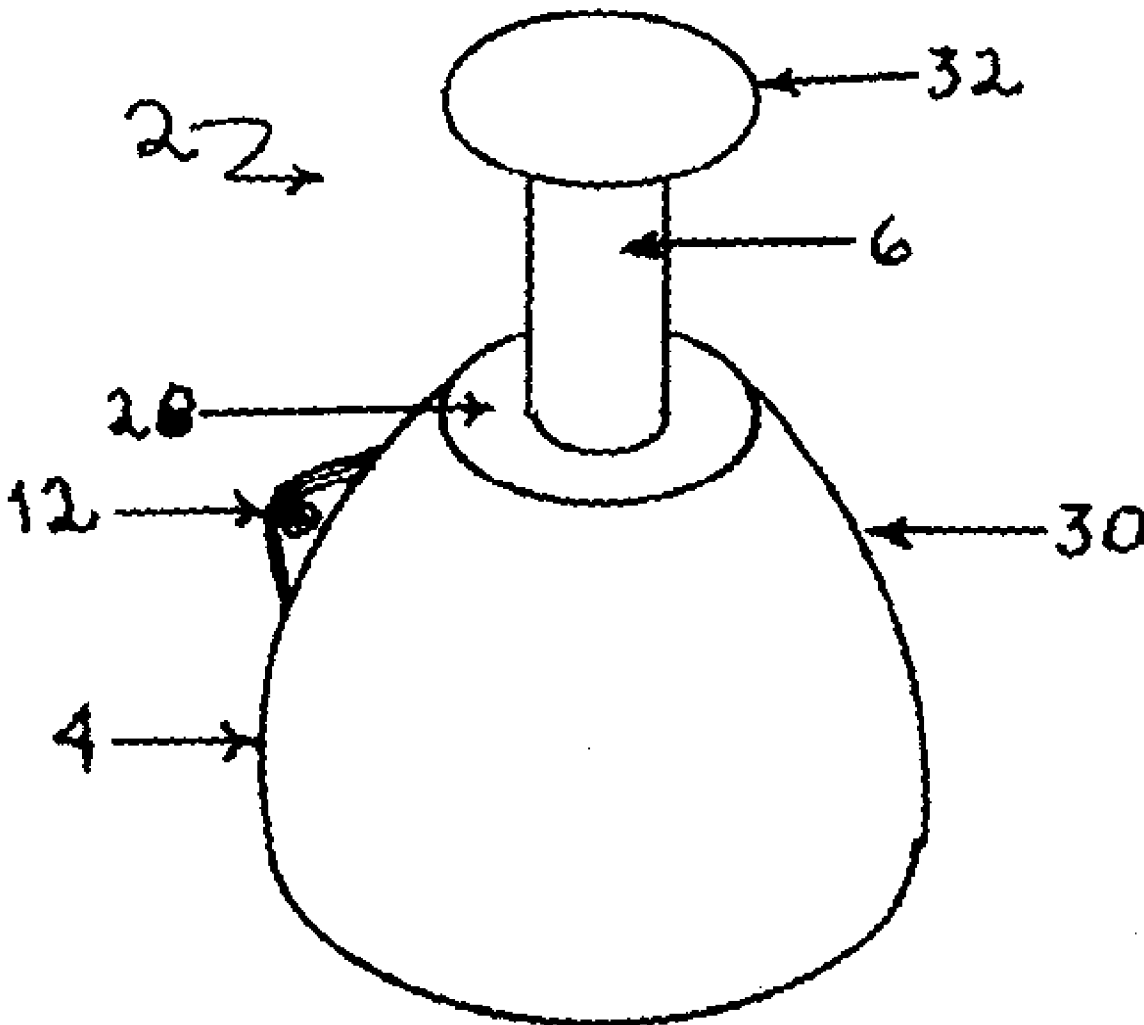
The invention relates to a multi-purpose mechanical device for use in conjunction with a bottle, specifically a bottle whose opening is mechanically closed with a top of sorts and whose contents are meant for consumption and suitable for the addition of supplemental tastes after the top of the bottle has been removed. The multi-purpose mechanical device of the present invention may be used as a bottle opener, an infuser or injector of consumable matter into an open bottle, or a vessel for use in measurement and/or ingestion of a liquid consumable. Additional benefits of the mechanical device of the present invention are that it has a low production cost; is a simple, two-component mechanism; is small, compact, and easily portable; it is able to fit into a palm of a hand of a user, a pocket of an article of clothing, a carry means, or the like; and it may be attached to a lanyard, key ring or the like.

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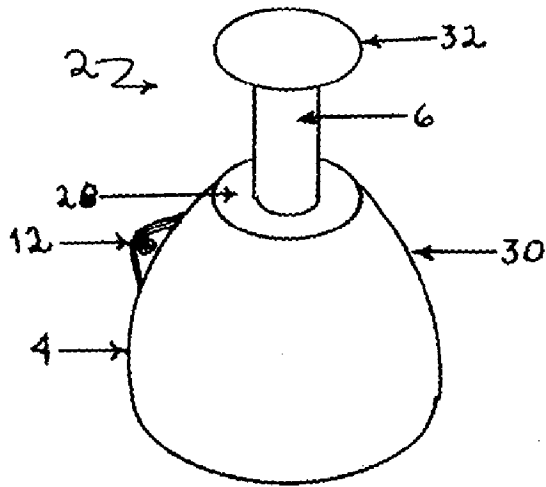


FIG. 1

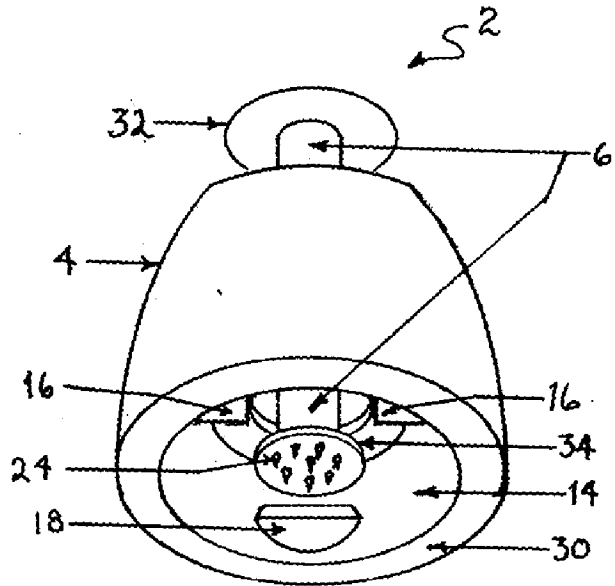


FIG. 2

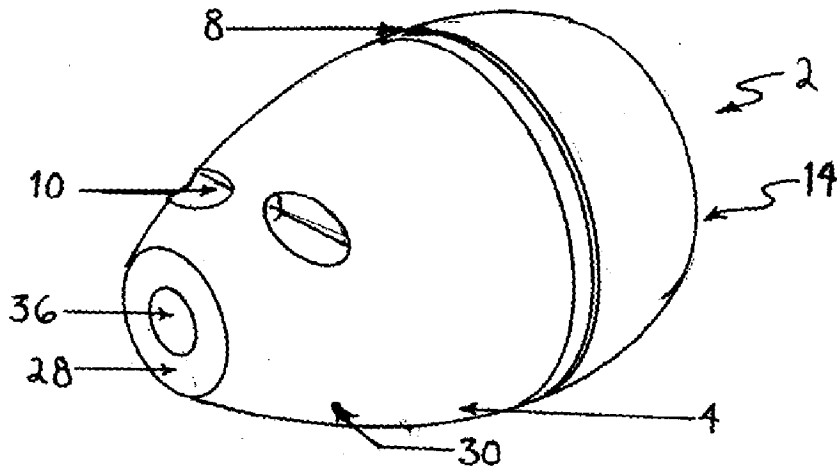
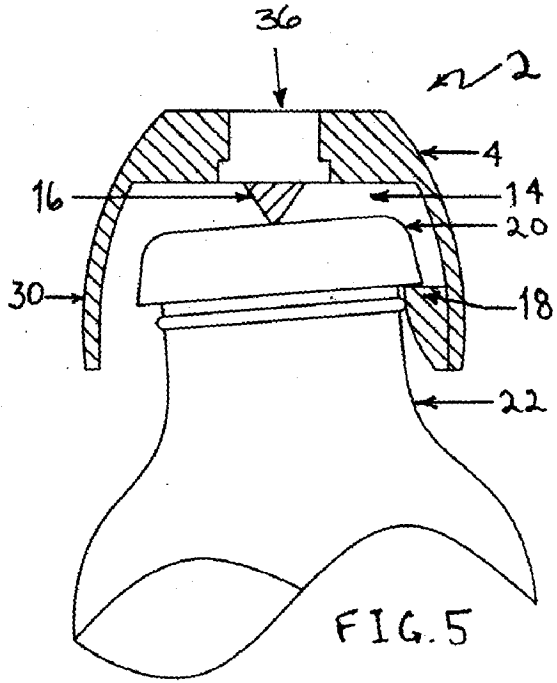
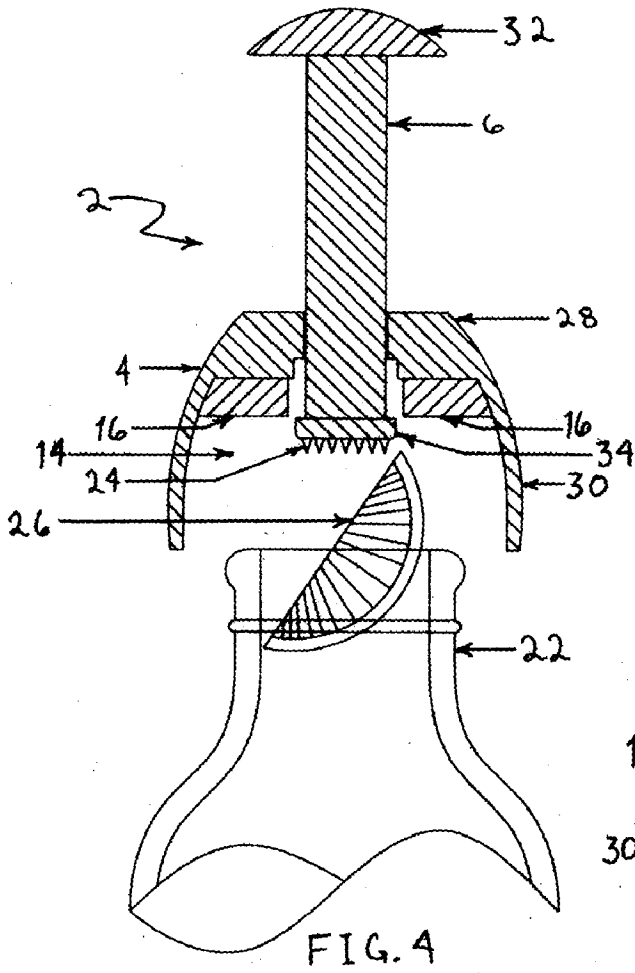


FIG. 3



MULTI-PURPOSE INFUSER OF CONSUMABLE MATTER INTO BOTTLES

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The invention relates to a multi-purpose mechanical device for use in conjunction with bottled beverages, specifically those whose opening is mechanically closed with a top of sorts and whose contents are meant for consumption and which are suitable for the addition of consumable matter after the top of the bottle has been removed; wherein the mechanical device may be used as a bottle opener, infuser of consumable matter, and/or as a vessel for use in measurement and/or ingestion of a liquid consumable.

[0003] 2. Description of Related Art Including Information Disclosed Under 37 CFR 1.97 and 37 CFR 1.98

[0004] There are known mechanical devices of varying purposes, such as bottle openers, shot glasses and consumable matter infusers or injectors, used in conjunction with bottled beverages and the like. U.S. Pat. No. D367,413 by Ballin for a Combined Shot Glass and Bottle Opener serves the purpose of use as a shot glass and the additional purpose of a bottle opener; wherein the base of the shot glass is adapted to serve as a bottle opener mechanism.

[0005] U.S. Pat. No. 5,772,065 by Kalamaras for a Shot Glass teaches a shot glass with a recessed base that may be filled with an element, such as confetti or the like, for decorative purposes and then sealed. The decorative element is visible by a user through the top of the shot glass.

[0006] There are also known mechanical devices for the infusion or injection of consumable matter into bottles or bottled beverages. U.S. Pat. No. 5,071,034 by Corbiere for a Distributing Device for Liquid Preparations teaches a bottle, in particular for use in the preparation of liquid pharmaceutical admixtures, which has a top with a reservoir that is filled with a liquid and a bellows injection mechanism, which top is used in conjunction with a bottle containing another liquid. When activated, the bellows mechanism perforates a seal juxtaposed between the liquid reservoir in the top and the bottle and injects the liquid contained in the reservoir through the perforation and into the bottle, thus, admixing the two liquids.

[0007] U.S. Pat. No. 5,772,017 by Kang for a Beverage Mixing Dispenser Device teaches a beverage mixing dispenser device for a bottle having a body and a neck for holding a beverage therein. The device comprises a closed container for insertion into the neck of the bottle, which container retains a separate ingredient therein. After the device is inserted into the neck of the bottle, a plunging mechanism within the device is activated, thus, opening the closed container and dispensing the separate ingredient into the bottle and the contents thereof.

[0008] U.S. Pat. No. 6,165,523 by Story for an Injector Bottle Cap Assembly teaches a flavor enhancing mechanism for bottled water, club soda, and bland liquid comestibles; wherein the flavor enhancing mechanism includes a bottle cap with a flexible bellows which contains a flavor enhancer sealed therein. The bottle cap and bellows are mounted upon a bottle containing a liquid comestible and when activated, the bellows breaks the seal and injects the flavor enhancer into the bottle.

[0009] U.S. Pat. No. 6,389,783 and U.S. Pat. No. 6,568,155 both by Segal and both for a Fruit Injector teach a mechanical device and a method, respectively, for squeezing a fruit seg-

ment into a container, particularly, a beer bottle. The device has a hollow body with an inlet and an outlet, the outlet adapted for disposition over a beer bottle container top; a plunger slidably mounted within the body for reciprocal movement within the body; and a compression member moveably mounted to the body to compress the fruit, whereby a compressed fruit may be injected into the beer bottle container through the outlet of the body.

[0010] Although there are known mechanical devices that serve a variety of purposes as openers, shot glasses and consumable matter infusers or injectors for use in conjunction with bottled beverages and the like, there are no known mechanical devices which are for multi-purpose use with a bottled beverage, in particular, for multi-purpose use as a bottle opener and consumable matter infuser or injector. The mechanical device of the present invention permits such multi-purpose use as a bottle opener and a consumable matter infuser or injector. An additional multi-purpose benefit of the mechanical device of the present invention is that it may serve as a vessel, such as, by way of illustrative example, but not limited thereto, what is commonly known as a shot glass or the like, for use in measurement and/or ingestion of a liquid consumable. Further additional benefits of the mechanical device of the present invention are that it is small, easily portable; able to fit into a palm of a hand of a user, a pocket in an article of clothing, a carry means, such as, by way of illustrative example, but not limited thereto, a purse, backpack, tote or the like; and may be attached to a lanyard, key ring or the like.

BRIEF SUMMARY OF THE INVENTION

[0011] The mechanical device of the present invention comprises (a) a cup; wherein the cup is a unitary device comprising a base which is continuous with a side wall extending upwardly from the base at an angle of at least 45 degrees; further wherein the cup has a cavity of a sufficient diameter and depth to permit the cup to be inverted and placed over a portion of a neck of a bottle; and (b) a reciprocal piston means irremovably engaged with the cup; further wherein the reciprocal piston means passes through an aperture of the base of the cup; further wherein a length of the reciprocal piston means is directly proportional to a depth of the cup cavity; further wherein an end of the reciprocal piston means that retracts into the cavity has a constraint means thereon to engage with and secure the consumable matter for infusion into an open bottle. The device of the present invention, preferably, may further comprise a bottle opener means contained within the cavity; further wherein the bottle opener means is comprised of at least one fulcrum and at least one lever.

[0012] The mechanical device of the present invention, optionally, may further comprise an affixture means by which the device may be affixed to another device; further wherein the affixture means is selected from a group comprising an affixture means recessed into the side wall of the cup, and an affixture means protruding from the side wall of the cup.

[0013] The mechanical device of the present invention, optionally, may further comprise a friction means on an exterior surface of the side wall of the cup to aid a user in gripping the cup; further wherein the friction means is selected from a group comprising a rubber grip strip, raised ridges, recessed ridges, or the like.

[0014] The mechanical device of the present invention, optionally, may be used as a vessel for a liquid consumable;

further wherein prior to use as a vessel the reciprocal piston means is either protracted from or retracted into the cavity of the cup; and, optionally, further wherein the side wall of the cup further comprises measurement indicia.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0015] FIG. 1 is a top plan perspective view of the exterior of the device of the present invention.

[0016] FIG. 2 is a bottom plan perspective view of the interior of the device of the present invention.

[0017] FIG. 3 is a side plan perspective view of the exterior of the device of the present invention.

[0018] FIG. 4 is a longitudinal cross-section view of the device of the present invention in relation to a bottle demonstrating the consumable matter infuser or injector purpose of the device.

[0019] FIG. 5 is a longitudinal cross-section view of the device of the present invention in relation to a bottle demonstrating the bottle opener purpose of the device.

LIST OF REFERENCE NUMERALS

[0020]	2 device
[0021]	4 cup
[0022]	6 piston means
[0023]	8 friction means
[0024]	10 affixture means
[0025]	12 alternative affixture means
[0026]	14 cavity
[0027]	16 fulcrum means
[0028]	18 lever means
[0029]	20 bottle top
[0030]	22 bottle
[0031]	24 constraint means
[0032]	26 consumable matter
[0033]	28 base of cup 4
[0034]	30 side wall of cup 4
[0035]	32 stop means
[0036]	34 retention means
[0037]	36 aperture of base 28

DETAILED DESCRIPTION OF THE INVENTION

[0038] The device of the present invention is multi-purpose and may be used to open bottles; to infuse or inject (hereinafter referenced only by conjugation of the verb "to infuse," or use of the nouns "infuser" or "infusion") consumable matter, such as, by way of illustrative example, but not limited thereto, fruits, powders, capsules, encapsulated flavoring, other food stuffs or the like into a liquid consumable or beverage contained within a bottle; and as a vessel for use in measurement and ingestion of a liquid consumable. The device of the present invention has further advantages in addition to the aforementioned multi-purpose usage in that it has a low production cost; and it is a small and compact device comprising two, simple mechanism components.

[0039] The device 2 of the present invention is illustrated in FIG. 1 through and including FIG. 5. The main components of the device 2 are a cup 4 and a reciprocal piston means 6 irremovably engaged with the cup 4; wherein the cup 4 is a unitary device comprising a base 28 which is continuous with a side wall 30 extending upwardly from the base 28 at an angle of at least 45 degrees; and further wherein, a cavity 14 of the cup 4 is of a sufficient diameter and depth to permit an

inverted cup 4 to be placed over a portion of a neck of a bottle 22 as shown in FIG. 5. Optionally and, preferably, the cup 4 may be ergonomically shaped to fit comfortably in a hand of a user.

[0040] The reciprocal piston means 6 passes through an aperture 36, as shown in FIG. 2, in a base 28 of the cup 4, and has a stop means 32 to prevent the reciprocal piston means 6 from being disengaged from the cup 4 when the reciprocal piston means 6 is fully retracted into the cup 4, and a retention means 34 to prevent the reciprocal piston means 6 from being disengaged from the cup 4 when the reciprocal piston means 6 is fully protracted from the cup 4. A length of the reciprocal piston means 6 is directly proportional to a depth of the cup 4 cavity 14, such that when the reciprocal piston means 6 is fully retracted into the cup 4, the reciprocal piston means 6 does not protrude beyond the cavity 14 of the cup 4.

[0041] As shown in FIG. 3, the exterior surface of the side wall 30 of the cup 4 optionally may further comprise a friction means 8 to aid a user in gripping the cup 4, such as, by way of illustrative example, but not limited thereto, a rubber grip strip, raised ridges, recessed ridges, or the like.

[0042] The exterior surface of the side wall 30 of the cup 4 optionally may further comprise an affixture means 10 to enable the device 2 to be affixed to other devices, such as, by way of illustrative example, but not limited thereto, a lanyard, key ring, or the like. As shown in FIG. 3, a preferred affixture means 10 is a through-hole means recessed into the exterior surface of the side wall 30 of the cup 4. In an alternative embodiment of the device 2 of the present invention, an alternative affixture means 12 is a through-hole means protruding from the exterior surface of the side wall 30 of the cup 4 as shown in FIG. 1. Other affixture means known to those of ordinary skill in the art may be suitable and neither the preferred affixture means 10 nor the alternative affixture means 12 should be construed as a limiting feature of the device 2.

[0043] As shown in FIG. 2, the interior of the cup 4 has a cavity 14, which cavity 14 further contains therein components that provide bottle opener functionality through a preferred bottle opener means comprising at least a fulcrum means 16 and at least a lever means 18. A user operates the bottle opener means of the device 2 by protracting a reciprocal piston means 6 from the cup 4 cavity 14 into a non-interfering position and placing the cup 4 upon a bottle top 20 that seals a bottle 22 as shown in FIG. 5. The user then engages the fulcrum means 16 upon the bottle top 20 and the lever means 18 beneath the lower edge of the bottle top 20; whereupon operation of the lever means 18 by the user serves to pry the bottle top 20 off the bottle 22. In an alternative embodiment of the device 2 of the present invention, as shown in FIG. 5, the reciprocal piston means 6 may serve as a fulcrum means by retracting the reciprocal piston means 6 into the cup 4 cavity 14 until the reciprocal piston means 6 contacts the bottle top 20, and steadily engaging the reciprocal piston means 6 with the bottle top 20 during operation of the lever means 18 by a user. Other bottle opener means known to those of ordinary skill in the art may be suitable and the preferred bottle opener means should not be construed as a limiting feature of the device 2.

[0044] After the bottle top 20 has been pried from the bottle 22, the device 2 containing the bottle top 20 is taken off the bottle 22 and the bottle top 20 is removed from the device 2. An empty device 2 may be used to infuse a consumable matter 26 into an open bottle 22. As shown in FIG. 4, by way of

illustrative example, but not limited thereto, the consumable matter 26 is a wedge of citrus fruit.

[0045] As shown in FIG. 2, the cup 4 cavity 14 of the device 2 further contains therein components that provide infusion functionality for the infusion of consumable matter into an open bottle 22 through a preferred infusion means comprising a reciprocal piston means 6; wherein the reciprocal piston means 6 has a preferred consumable constraint means 24, by way of illustrative example, but not limited thereto, of raised spikes configured upon an end of the reciprocal piston means 6, which end of the reciprocal piston means 6 protrudes through the base 32 of cup 4 and into the cavity 14; wherein the constraint means 24 serves to engage with and secure the consumable matter 26. As shown in FIG. 4, a user may infuse a consumable matter 26 into an open bottle 22 by placing the consumable matter 26 into or upon an opening of the open bottle 22; wherein the user operates the infusion means of the device 2 by protracting the reciprocal piston means 6 from the cup 4 cavity 14, inverting and placing the cup 4 upon the open bottle 22, retracting the reciprocal piston means 6 into the cup 4 cavity 14 until the constraint means 24 engages with and secures the consumable matter 26, and then further retracting the reciprocal piston means 6 into the cup 4 cavity 14 to infuse forcibly the consumable matter 26 into the open bottle 22.

[0046] The cup 4 of the device 2 further provides functionality as a vessel means for use in measurement and ingestion of a liquid consumable introduced into the cup 4 by a user. For use as a vessel means, the reciprocal piston means 6 may be either protracted from or retracted into the cup 4 at the discretion and preference of a user, the cup 4 may then be infused with a liquid consumable matter for measurement and/or ingestion of the liquid consumable by a user. The cup 4 may optionally be marked with measurement indicia on the exterior surface and/or the interior surface of the side wall 30 of the cup 4.

[0047] Although the present invention has been described with reference to specific embodiments; modifications and variations of the present invention are possible without departing from the scope of the invention, which is defined by the claims set forth below.

1. A mechanical device comprising:
 - a. A cup; wherein said cup is a unitary device comprising a base which is continuous with a side wall extending upwardly from said base at an angle of at least 45 degrees; further wherein said cup has a cavity of a sufficient diameter and depth to permit said cup to be inverted and placed over a portion of a neck of a bottle;
 - b. A reciprocal piston means irremovably engaged with said cup; wherein said reciprocal piston means passes through an aperture of said base of said cup; further wherein a length of said reciprocal piston means is directly proportional to a depth of said cup cavity; and
 - c. A bottle opener means contained within said cup cavity; Further wherein said device may be used as a vessel for a liquid.
2. The device of claim 1, further wherein said reciprocal piston means is used to infuse consumable matter into an open bottle.
3. The device of claim 2; further wherein an end of said reciprocal piston means that retracts into said cavity has a constraint means thereon; further wherein said constraint means is used to engage with and secure said consumable matter for infusion into an open bottle.
4. (canceled)

5. The device of claim 1; further wherein said bottle opener means is comprised of at least one fulcrum and at least one lever.

6. The device of claim 1; further wherein an exterior surface of said side wall of said cup further comprises an affixture means by which said device may be affixed to another device.

7. The device of claim 6; further wherein said affixture means is recessed into said exterior surface of said side wall of said cup.

8. The device of claim 6; further wherein said affixture means protrudes from said exterior surface of said side wall of said cup.

9. The device of claim 1; further wherein an exterior surface of said side wall of said cup further comprises a friction means to aid a user in gripping said cup.

10. The device of claim 9; further wherein said friction means is selected from a group comprising a rubber grip strip, raised ridges, recessed ridges, or the like.

11. The device of claim 1; further wherein said reciprocal piston means is protracted from said cavity of said cup and said device is used as a vessel for a liquid consumable.

12. The device of claim 1; further wherein said reciprocal piston means is retracted into said cavity of said cup and said device is used as a vessel for a liquid consumable.

13. The device of claim 1; further wherein said side wall of said cup further comprises measurement indicia.

14. A mechanical device comprising:
 - a. A cup; wherein said cup is a unitary device comprising a base which is continuous with a side wall extending upwardly from said base at an angle of at least 45 degrees; further wherein said cup has a cavity of a sufficient diameter and depth to permit said cup to be inverted and placed over a portion of a neck of a bottle;
 - b. A reciprocal piston means irremovably engaged with said cup; further wherein said reciprocal piston means passes through an aperture of said base of said cup; further wherein a length of said reciprocal piston means is directly proportional to a depth of said cup cavity; further wherein an end of said reciprocal piston means that retracts into said cavity has a constraint means thereon to engage with and secure consumable matter for infusion into an open bottle; and
 - c. A bottle opener means contained within said cavity; further wherein said bottle opener means is comprised of at least one fulcrum and at least one lever;

Further wherein said reciprocal piston means may be either protracted from or retracted into said cavity of said cup and said device may be used as a vessel for a liquid.

15. The device of claim 14; further wherein an exterior surface of said side wall of said cup further comprises an affixture means by which said device may be affixed to another device; further wherein said affixture means is selected from a group comprising an affixture means recessed into said side wall of said cup, and an affixture means protruding from said side wall of said cup.

16. The device of claim 14; further wherein an exterior surface of said side wall of said cup further comprises a friction means to aid a user in gripping said cup; further wherein said friction means is selected from a group comprising a rubber grip strip, raised ridges, recessed ridges, or the like.

17. (canceled)
18. (canceled)

19. A mechanical device comprising:

- a. A cup; wherein said cup is a unitary device comprising a base which is continuous with a side wall extending upwardly from said base at an angle of at least 45 degrees; further wherein said cup has a cavity of a sufficient diameter and depth to permit said cup to be inverted and placed over a portion of a neck of a bottle;
- b. A reciprocal piston means irremovably engaged with said cup; further wherein said reciprocal piston means passes through an aperture of said base of said cup; further wherein a length of said reciprocal piston means is directly proportional to a depth of said cup cavity; further wherein an end of said reciprocal piston means that retracts into said cavity has a constraint means thereon to engage with and secure consumable matter for infusion into an open bottle;
- c. A bottle opener means contained within said cavity; further wherein said bottle opener means is comprised of at least one fulcrum and at least one lever;

- d. An affixture means by which said device may be affixed to another device; further wherein said affixture means is selected from a group comprising an affixture means recessed into said side wall of said cup, and an affixture means protruding from said side wall of said cup; and
- e. A friction means on an exterior surface of said side wall of said cup to aid a user in gripping said cup; further wherein said friction means is selected from a group comprising a rubber grip strip, raised ridges, recessed ridges, or the like;

Further wherein said reciprocal piston means may be either protracted from or retracted into said cavity of said cup and said device may be used as a vessel for a liquid consumable.

20. The device of claim **19**; further wherein said side wall of said cup further comprises measurement indicia.

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