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(54) **BEVERAGE APPARATUS FOR FREEZER**

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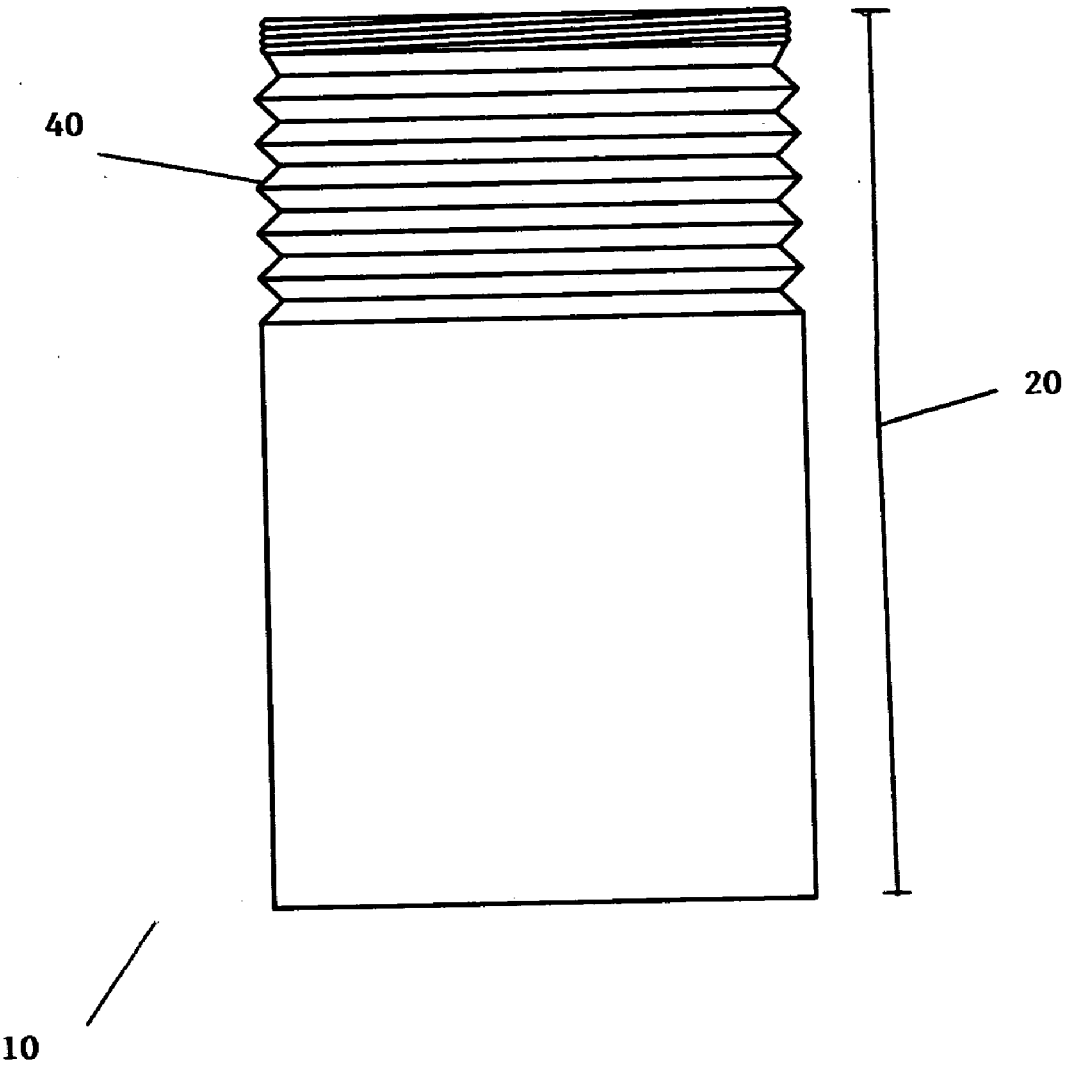
(57) **ABSTRACT**

The present invention is an apparatus for holding a beverage container, which may be placed into a refrigerator or freezer. The apparatus has a lid, which tightly fastens to a body which holds the beverage container. The apparatus has a region manufactured out of a flexible type of material in an accordion style, similar to a flexible straw. If the beverage explodes within the apparatus and within the freezer, the accordion region is able to expand. Thus, the beverage contents are confined to the inside of the apparatus. The apparatus may also be used as a personalized cooler for the beverage outside of the freezer.



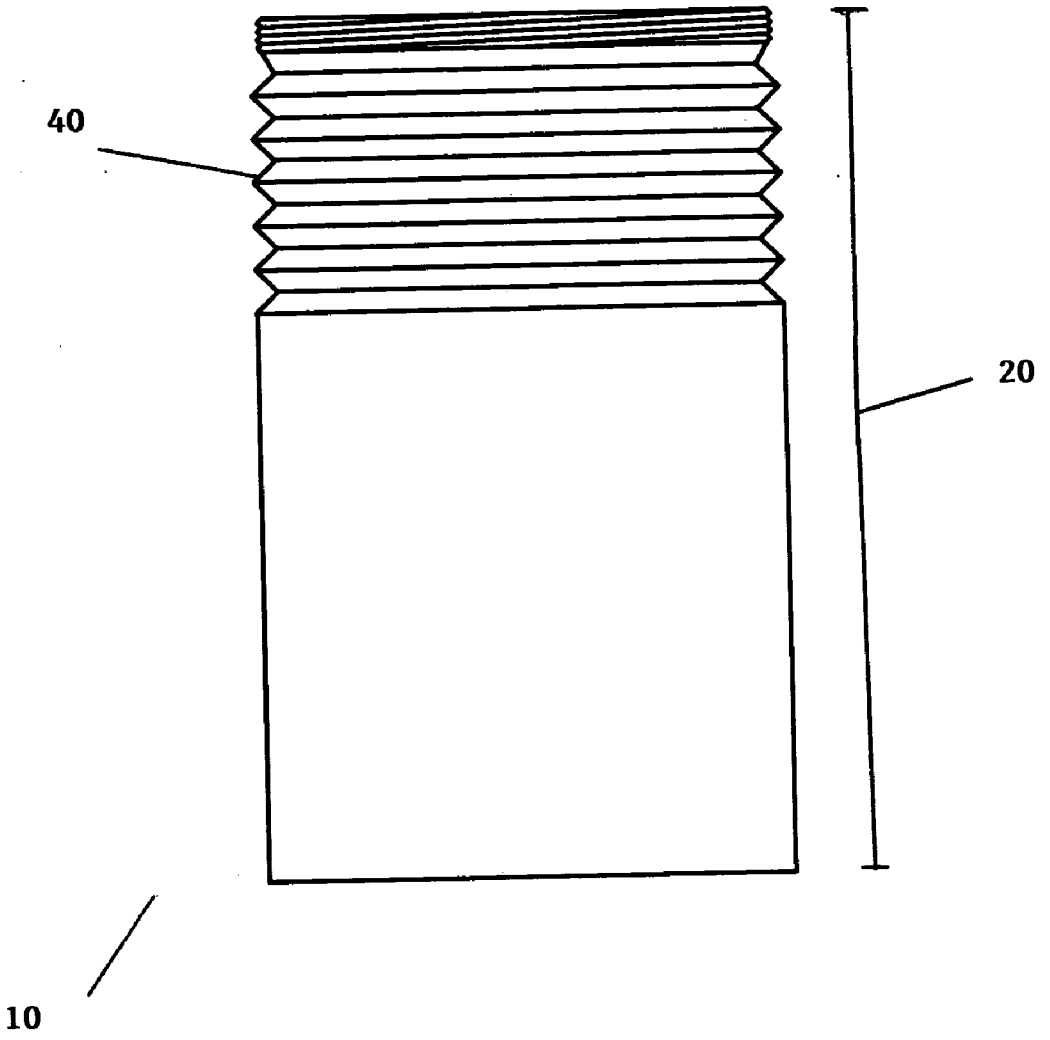


FIG. 1

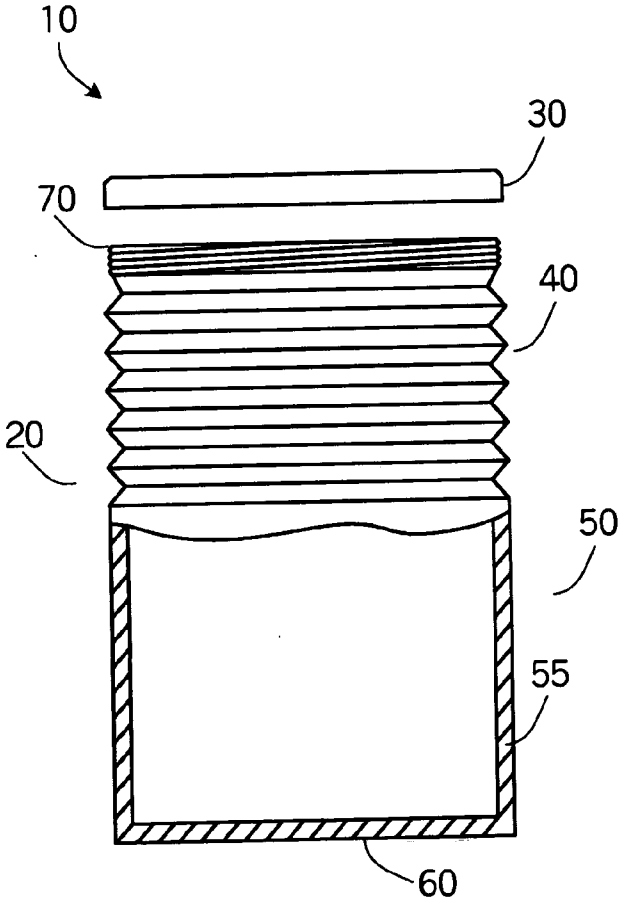


FIG. 2

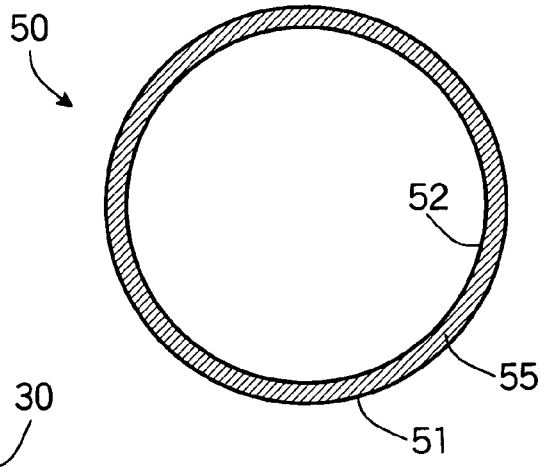
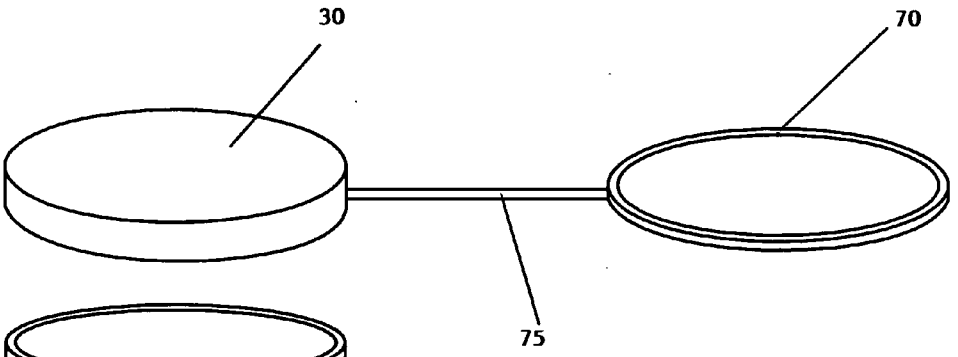


FIG. 3



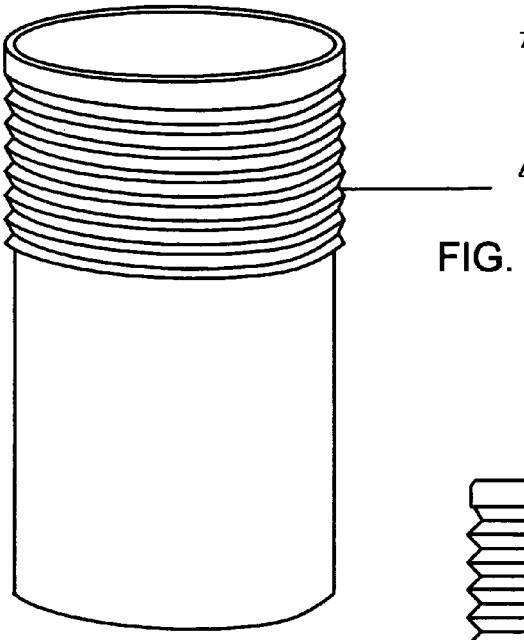


FIG. 4

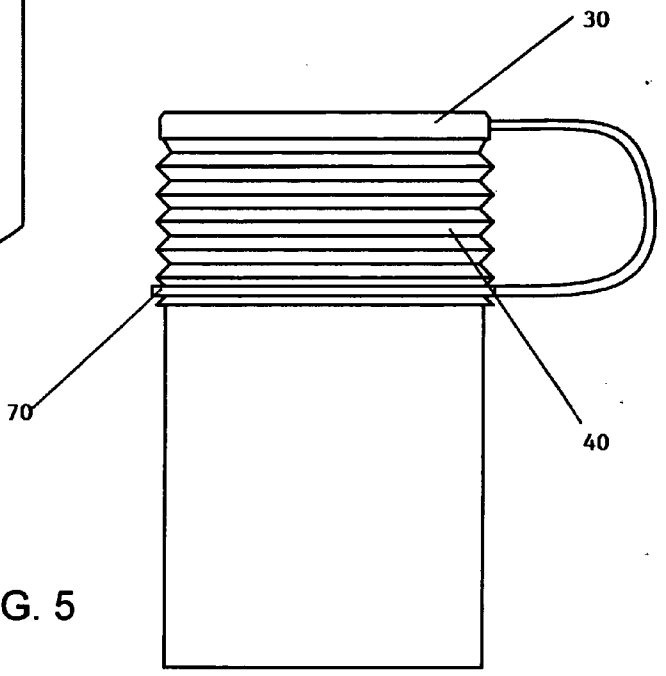


FIG. 5

BEVERAGE APPARATUS FOR FREEZER

TECHNICAL FIELD

[0001] This invention provides a means of efficiently and conveniently chilling or storing beverage containers that are best when stored or served cold. The present invention relates to an apparatus for holding and cooling a beverage container.

BACKGROUND

[0002] Consumers enjoy a cold, frosty beverage. However, because of limited space in refrigeration appliances, often, beverages are sold or stored at ambient conditions. Many juice products, soft drinks, or soda products, and alcoholic beverages are packaged in an aluminum can container. Since the beverage containers are often warm and a consumer wants to drink a cold beverage, rapidly cooling the beverage container is necessary. It remains a problem that has perplexed man, for the best manner in which to rapidly cool a beverage container, such an aluminum can of beer from the ambient to a pleasant drinking temperature.

[0003] To solve this problem, often a consumer will place the beverage container into a freezer for a short period of time before consuming. However, upon cooling, the contents of the aluminum can will begin to freeze. Since water expands as it freezes, the sealed can may explode under the pressure. This explosion may also result if a consumer leaves the beverage container in the freezer for a longer period of time. Since the contents of the can are not entirely frozen, there is a slushy mess of beverage exploded inside the freezer. The task of cleaning the freezer of this slushy mess is quite laborious and inconvenient.

[0004] There have been several designs proposed to hold or cool beverages. For example, an apparatus provided in U.S. Pat. No. 4,638,645, is a beverage container cooler, which holds an individual beverage can. The apparatus has an outer container of stainless steel, a locking cover or cap, a central opening into which an individual beverage can may be placed, and a cylindrical skirt.

[0005] There remains a need to rapidly cool a beverage container quickly, conveniently, and economically. One final solution that has been proposed is to provide a separate freezer-like appliance simply for the cooling of beverages. However, consumers have been reluctant to purchase a separate appliance unit for this purpose, because of the expense of these units. It has been found that a simple device may allow for rapid cooling of a beverage container without the disadvantages associated with freezer explosion.

SUMMARY

[0006] An apparatus for holding and cooling an individual beverage container, which allows for expansion and containment of the spilled beverage contents, has been designed. One embodiment of the invention is an apparatus for holding a beverage container comprising a body defining an chamber having a volume, wherein the volume is capable of holding a beverage container, wherein the body is substantially cylindrical or rectangular, wherein the body has an opening at one vertical end and is enclosed at the other vertical end, wherein the body has at least one accordion region along its vertical axis, wherein the accordion region is made of a flexible material and is capable of expanding along the vertical axis of the body such that the volume of the chamber may be increased upon expansion of the region; and a lid, wherein the lid has attachment means to attach securely to the opening.

[0007] Another embodiment of the invention is an apparatus for holding a beverage container comprising a body defining a chamber having a volume, wherein the volume is capable of holding a beverage container, wherein the body is substantially cylindrical or rectangular, wherein the body has an opening at one end, wherein the body has at least two regions along its vertical axis, wherein one region contains an inner and outer shell defining a space, wherein the space contains a freezable fluid, wherein the second body region is an accordion region made of a flexible material and is capable of expanding along the vertical axis of the body such that the volume of the chamber may be increased upon expansion of the region; and a lid, wherein the lid has attachment means to attach securely to the opening.

[0008] In the apparatus embodiments, the flexible accordion region may be designed so that the volume of the chamber may be increased by a volume equal to about half the volume of the beverage container. The attachment means of the lid may be a threaded coupling or a snap design. The bottom region of the body may have an inner and outer shell defining a space between the inner and outer shell, wherein the space contains a freezable fluid. Thus, the apparatus may be used as a cooler cup once to maintain a cool beverage while a user is consuming the beverage. The region of the body containing the freezable fluid may be attached to an enclosed bottom region of the body.

[0009] Apparatus embodiments may be of any suitable size. The body may be approximately three inches in diameter, such as to hold an aluminum can. The beverage container may be a twelve ounce container. In the apparatus embodiments, the body may have a second region made of a flexible material that is capable of expanding along the vertical axis of the body. An apparatus for holding a beverage container may be designed, wherein the body region which is not the accordion flexible region has an outer layer of insulation.

[0010] Another embodiment of the present invention is a method of cooling a beverage container comprising placing a beverage container in an apparatus, and placing the apparatus in a freezer for a period of time. Another embodiment of the present invention is a method of cooling a beverage container comprising placing an apparatus in a freezer for a period of time, removing the apparatus from the freezer, and placing a beverage container in the apparatus for a period of time to cool the beverage. Another embodiment of the present invention is a method of keeping a beverage container cold comprising placing a beverage container in an apparatus, placing the apparatus in a freezer for a period of time, removing the apparatus from the freezer, removing the lid of the apparatus, removing the beverage container, opening the container, and keeping the container within the apparatus to keep the beverage cool.

BRIEF DESCRIPTION OF THE DRAWINGS

[0011] Various aspects and applications of the present invention will become apparent to the skilled artisan upon

consideration of the brief description of the figures and the detailed description of the invention, which follows:

[0012] **FIG. 1** is a side view of one embodiment of an apparatus for holding a beverage container.

[0013] **FIG. 2** is a side view of another embodiment of an apparatus for holding a beverage container.

[0014] **FIG. 3** is a cross section of the base on one embodiment of an apparatus for holding a beverage container.

[0015] **FIG. 4** is side view an apparatus and lid design according to one embodiment of the invention.

[0016] **FIG. 5** is a side is side view an apparatus and lid design according to one embodiment of the invention.

DETAILED DESCRIPTION

[0017] Before the present compositions and methods are described, it is to be understood that this invention is not limited to the particular materials, dimensions, designs, or uses, as these may vary. It is also to be understood that the terminology used in the description is for the purpose of describing the particular versions or embodiments only, and is not intended to limit the scope of the present invention which will be limited only by the appended claims.

[0018] It must also be noted that as used herein and in the appended claims, the singular forms "a", "an", and "the" include plural reference unless the context clearly dictates otherwise. Unless defined otherwise, all technical and scientific terms used herein have the same meanings as commonly understood by one of ordinary skill in the art. Although any methods and materials similar or equivalent to those described herein can be used in the practice or testing of embodiments of the present invention, the preferred compositions, methods, devices, and materials are now described. All publications mentioned herein are incorporated by reference in their entirety. Nothing herein is to be construed as an admission that the invention is not entitled to antedate such disclosure by virtue of prior invention.

[0019] One embodiment of the invention is an apparatus for holding a beverage container comprising a body defining a chamber, wherein the chamber is of a size suitable to hold a beverage container, wherein the body is substantially cylindrical or rectangular, wherein the body has an opening at one end, wherein the body has at least two regions along its vertical axis, wherein one region contains an inner and outer shell defining a space, wherein the space contains a freezable fluid, wherein the second body region is made of a flexible material and is capable of expanding along the vertical axis of the body, and a lid, wherein the lid has attachment means to attach securely to the opening.

[0020] Referring to the drawings, **FIG. 1** illustrates a side view of an embodiment of the present invention. The apparatus **10** comprises a body portion **20**, wherein the body portion has at least one flexible region **40** that is capable of expanding. Referring to **FIG. 2**, the apparatus comprises a lid **30**. The body **20** may have at least two regions including the flexible region **40** and the region **50** containing the freezable fluid **55**. The body **20** of the apparatus may have two regions along its vertical axis, wherein one region **50** contains an inner and outer shell defining a space, wherein the space contains a freezable fluid, wherein the second body region **40** is made of a flexible material and is capable of expanding along the vertical axis of the body. If the beverage explodes within the apparatus and within the freezer, the accordion region is able to expand. Thus, the beverage contents are confined to the inside of the apparatus. The apparatus may have a bottom portion **60**, which connects to the region containing the freezable fluid. The bottom portion **60** may also contain freezable fluid **55**. The lid **30** attaches securely to the body at the opening of the body. Attachment may be by threaded coupling **70**. The lid may also fit securely to the body by snap means or other suitable means.

[0021] The body **20** may be any suitable height and diameter for holding a beverage container. Preferably, the height is at least about 4.5 inches. The diameter may be about 3 inches thick. Other designs are of course possible. The apparatus may be designed to hold two or more beverage containers, for example, one can be placed on top of the other. Such an apparatus would still allow for rapid freezing and containment of any explosion.

[0022] **FIG. 3** illustrates a cross-sectional view of one end of an apparatus for holding a beverage container in an apparatus. The region **50** of the apparatus containing the freezable fluid **55** contains an outer shell **51** and an inner shell **52**. The shape of the apparatus is designed such that a beverage container fits within the chamber of the apparatus. Thus, the apparatus is a rectangular or cylindrical shape. The diameter may be any suitable diameter, such as a diameter for holding a twelve ounce aluminum can. Thus the outer shell **51** may be about 3 inches in diameter. The inner shell **52** may be about 2 and ⅝ inches in diameter. Thus the space holding the freezable fluid **55**, is about a ⅜ inch thick ring. The freezable fluid may be a freezable gel or other suitable fluid.

[0023] **FIGS. 4 and 5** illustrate a lid embodiment of the present invention. The lid **30** may be a snap design as illustrated and may also contain a ring **70** that may be placed over the accordion region **40**. Therefore, the apparatus comprising the body **20** and the lid **30** may be sold and stored as a combined device. The ring is attached to the **30** by a thin strip of plastic **75**. The ring **70** is of suitable diameter, such that it may be placed around the accordion region **40**. The ring **70** should not interfere with the expansion of the accordion region **40** under pressure.

[0024] The region of the apparatus that is a flexible region **40** may be designed to be an accordion region, capable of expanding under pressure, made of suitable material such as any plastic material. The accordion style is collapsible and expandable, such as a flexible straw. The flexible region is designed of suitable materials and dimensions, such that the volume of the apparatus is able to increase upon explosion. For example, there may be an increase in volume that equals about half of the volume of a typical beverage container, so that any spilled contents of the beverage container remain confined in the apparatus. A typical beverage container is for example, a 12 fluid ounce container, or about 355 milliliters. If a beverage container were to explode in the freezer, about half of its contents would be displaced from the beverage container. Therefore, a suitable design of the apparatus would allow for expansion in the flexible region, such that the volume may increase by about 200 milliliters.

[0025] An apparatus for holding a beverage container may be designed, wherein the body region containing the freez-

able fluid has another layer of insulation outside of the outer shell. In another embodiment of the apparatus, the body has another region made of a flexible material that is capable of expanding along the vertical axis of the body. Such a design would comprise two flexible regions **40** on either side of the region **50** holding the freezable fluid, along the vertical axis of the apparatus.

[**0026**] The body of the apparatus may be a blown or extruded plastic bottle material. Any number of polymers are suitable for the body, such as polyethylenes, polyurethanes and polyethyleneterephthalates. The lid and optional ring may be any suitable polymer material.

[**0027**] The apparatus embodiments may be used to rapidly cool a beverage container in a freezer without the risk of freezer explosion and clean-up. Another embodiment of the present invention is a method of cooling a beverage container comprising placing a beverage container in an apparatus, and placing the apparatus in a freezer for a period of time. Another embodiment of the present invention is a method of cooling a beverage container comprising placing an apparatus in a freezer for a period of time, removing the apparatus from the freezer, and placing a beverage container in the apparatus for a period of time to cool the beverage. Thus the apparatus may be stored in the freezer with or without the beverage container inside the apparatus. The apparatus with its freezable fluid design is capable of acting as a personal cooler for a beverage container. A user may keep the beverage container within the apparatus while consuming the beverage contents.

[**0028**] The apparatus may also be use as a personalized cooler for the beverage outside of the freezer. Another embodiment of the present invention is a method of keeping a beverage container cold comprising placing a beverage container in an apparatus, placing the apparatus in a freezer for a period of time, removing the apparatus from the freezer, removing the lid of the apparatus, removing the beverage container, opening the container, and keeping the container within the apparatus to keep the beverage cool.

[**0029**] While preferred embodiments have been described in detail, variations may be made to these embodiments without departing from the spirit or scope of the attached claims.

What is claimed is:

1. An apparatus for holding a beverage container comprising:

a body defining an chamber having a volume, wherein the volume is capable of holding a beverage container, wherein the body is substantially cylindrical or rectangular, wherein the body has an opening at one vertical end and is enclosed at the other vertical end, wherein the body has at least one accordion region along its vertical axis, wherein the accordion region is made of a flexible material and is capable of expanding along the vertical axis of the body such that the volume of the chamber may be increased upon expansion of the region; and

a lid, wherein the lid has attachment means to attach securely to the opening.

2. The apparatus of claim 1, wherein the attachment means is selected from threaded coupling and a snap design.

3. The apparatus of claim 1, wherein the body region comprises an outer layer of insulation.

4. The apparatus of claim 1, wherein the body is cylindrical.

5. The apparatus of claim 1, wherein the body is approximately three inches in diameter.

6. The apparatus of claim 1, wherein the beverage container is a twelve ounce sealed container.

7. The apparatus of claim 1, wherein the beverage container is an aluminum can.

8. The apparatus of claim 1, wherein the body comprises a second accordion region made of a flexible material that is capable of expanding along the vertical axis of the body.

9. The apparatus of claim 1, wherein the flexible accordion region is capable of increasing the volume of the chamber by a volume equal to about half the volume of the beverage container.

10. The apparatus of claim 1, wherein the lid is attached to a ring which is capable of fitting over the flexible accordion region.

11. An apparatus for holding a beverage container comprising:

a body defining a chamber having a volume, wherein the volume is capable of holding a beverage container, wherein the body is substantially cylindrical or rectangular, wherein the body has an opening at one end, wherein the body has at least two regions along its vertical axis, wherein one region contains an inner and outer shell defining a space, wherein the space contains a freezable fluid, wherein the second body region is an accordion region made of a flexible material and is capable of expanding along the vertical axis of the body such that the volume of the chamber may be increased upon expansion of the region; and

a lid, wherein the lid has attachment means to attach securely to the opening.

12. The apparatus of claim 11, wherein the attachment means is selected from threaded coupling and a snap design.

13. The apparatus of claim 11, wherein the region of the body containing the freezable fluid is attached to an enclosed bottom region of the body.

14. The apparatus of claim 11, wherein the body region containing the freezable fluid has a layer of insulation outside of the outer shell.

15. The apparatus of claim 11, wherein the body is cylindrical.

16. The apparatus of claim 11, wherein the body is approximately three inches in diameter.

17. The apparatus of claim 11, wherein the beverage container is a twelve ounce sealed container.

18. The apparatus of claim 11, wherein the beverage container is an aluminum can.

19. The apparatus of claim 11, wherein the body has another accordion region made of a flexible material that is capable of expanding along the vertical axis of the body.

20. The apparatus of claim 11, wherein the flexible accordion region is capable of increasing the volume of the chamber by a volume equal to about half the volume of the beverage container.

21. The apparatus of claim 11, wherein the lid is attached to a ring which is capable of fitting over the flexible accordion region.

22. A method of cooling a beverage container comprising:

placing a beverage container in an apparatus, wherein the apparatus comprises a body defining an chamber having a volume, wherein the volume is capable of holding a beverage container, wherein the body is substantially cylindrical or rectangular, wherein the body has an opening at one vertical end and is enclosed at the other vertical end, wherein the body has at least one accordion region along its vertical axis, wherein the accordion region is made of a flexible material and is capable of expanding along the vertical axis of the body such that the volume of the chamber may be increased upon expansion of the region and wherein the apparatus further comprises a lid, wherein the lid has attachment means to attach securely to the opening; and

placing the apparatus in a freezer for a period of time.

23. A method of cooling a beverage container comprising:

placing an apparatus in a freezer for a period of time, wherein the apparatus comprises a body defining an chamber having a volume, wherein the volume is capable of holding a beverage container, wherein the body is substantially cylindrical or rectangular, wherein the body has an opening at one vertical end and is enclosed at the other vertical end, wherein the body has at least one accordion region along its vertical axis, wherein the accordion region is made of a flexible material and is capable of expanding along the vertical axis of the body such that the volume of the chamber may be increased upon expansion of the region and wherein the apparatus further comprises a lid, wherein the lid has attachment means to attach securely to the opening;

removing the apparatus from the freezer; and

placing a beverage container in the apparatus for a period of time to cool the beverage.

24. A method of keeping a beverage container cold comprising:

placing a beverage container in an apparatus, wherein the apparatus comprises a body defining an chamber having a volume, wherein the volume is capable of holding a beverage container, wherein the body is substantially cylindrical or rectangular, wherein the body has an opening at one vertical end and is enclosed at the other vertical end, wherein the body has at least one accordion region along its vertical axis, wherein the accordion region is made of a flexible material and is capable of expanding along the vertical axis of the body such that the volume of the chamber may be increased upon expansion of the region and wherein the apparatus further comprises a lid, wherein the lid has attachment means to attach securely to the opening;

placing the apparatus in a freezer for a period of time;

removing the apparatus from the freezer;

removing the lid of the apparatus;

removing the beverage container;

opening the container; and

keeping the container within the apparatus to keep the beverage cool.

* * * * *