



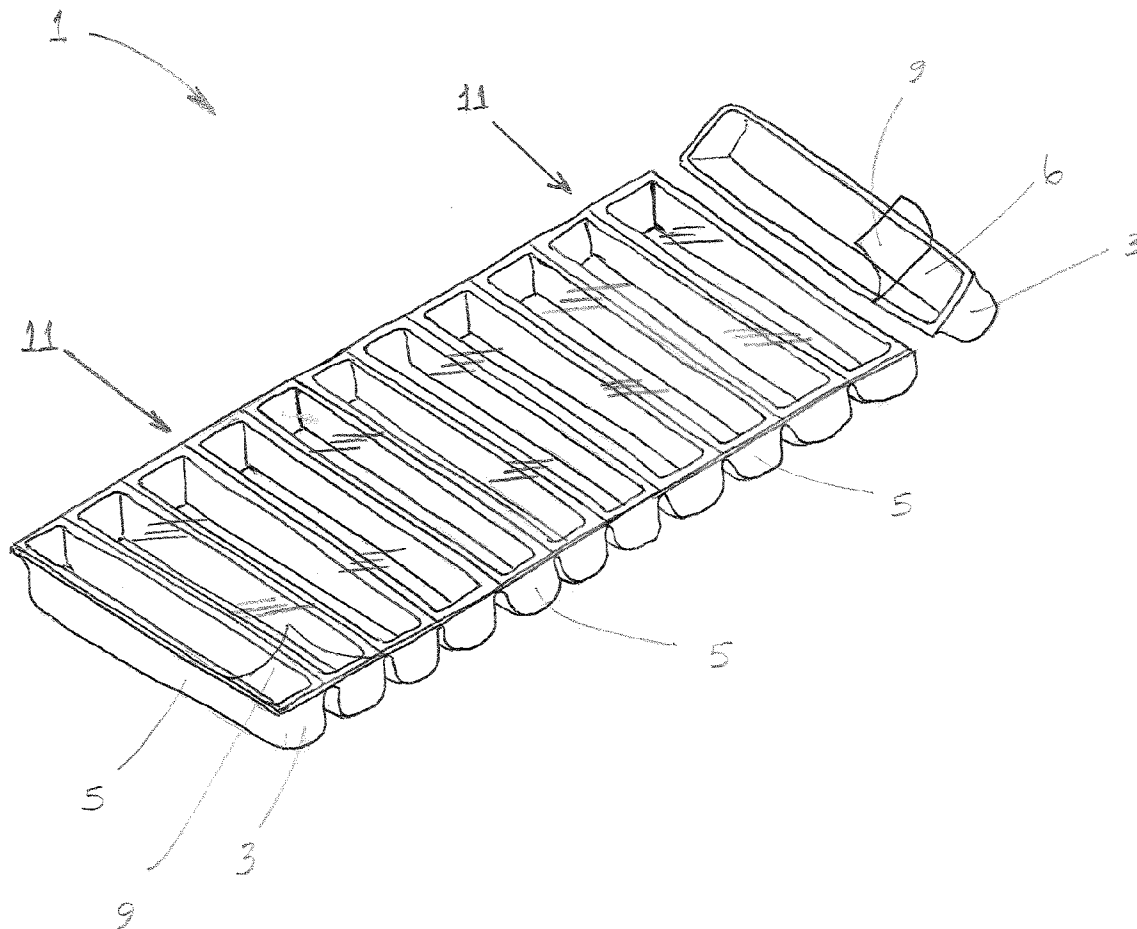
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(19) **United States**(12) **Patent Application Publication**
Moore(10) **Pub. No.: US 2008/0245800 A1**(43) **Pub. Date: Oct. 9, 2008**(54) **DISPOSABLE CONTAINER FOR FROZEN LIQUID****Related U.S. Application Data**

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(52) **U.S. Cl.** **220/507; 53/467**Correspondence Address:
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AKRON, OH 44311-1076 (US)(57) **ABSTRACT**

A container having individually sealed container cells stores liquid that may be frozen into a shape suitable for inserting the frozen article into a bottle or can. The container cells may be individually detachable for convenient use and may be constructed from an inexpensive and disposable material. The container cells may store purified water and/or a combination of various types of liquids.

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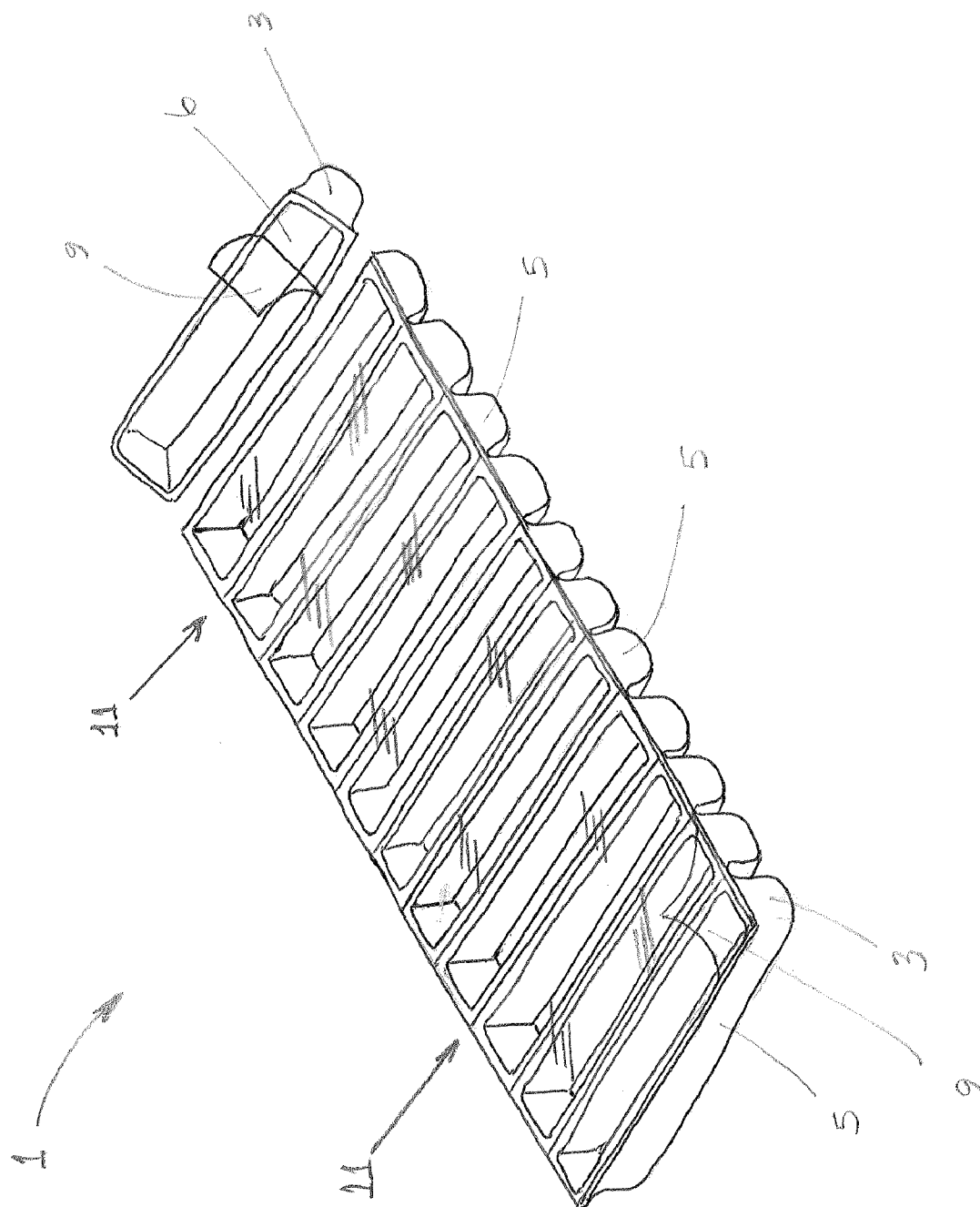


FIGURE 1

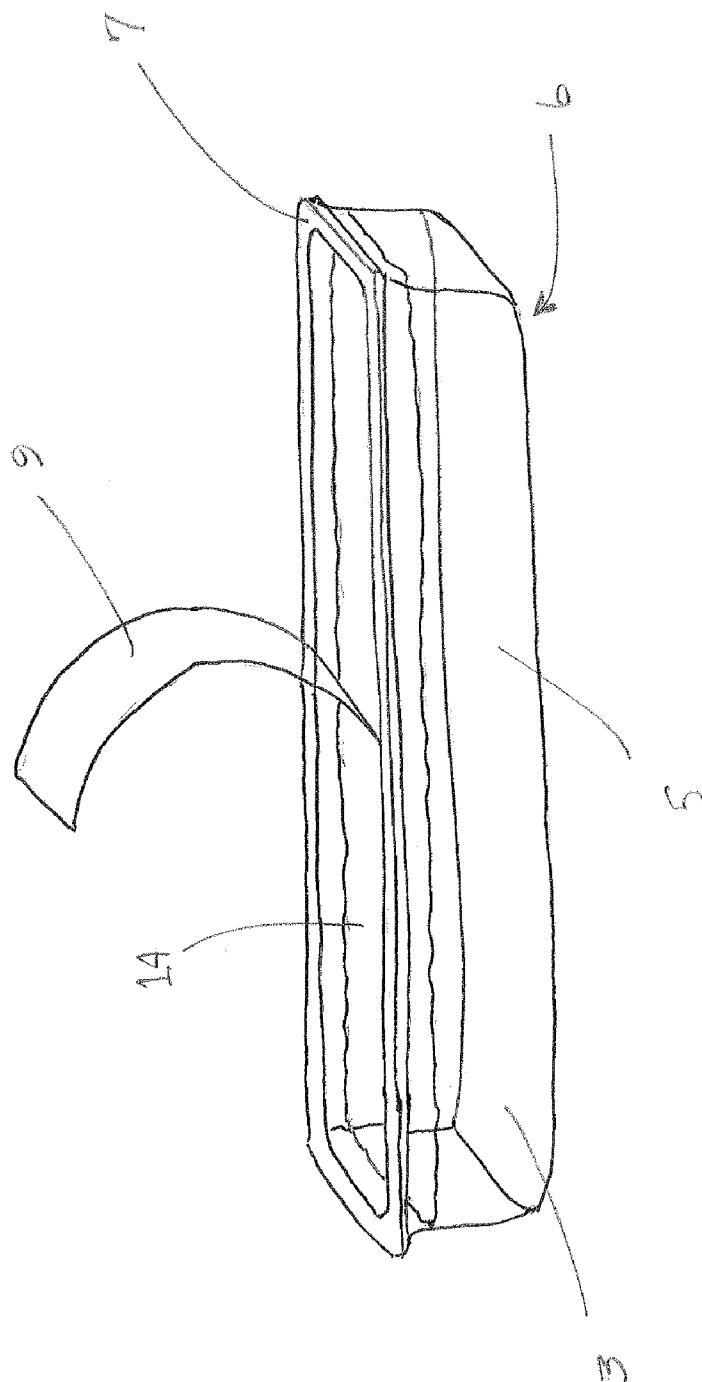
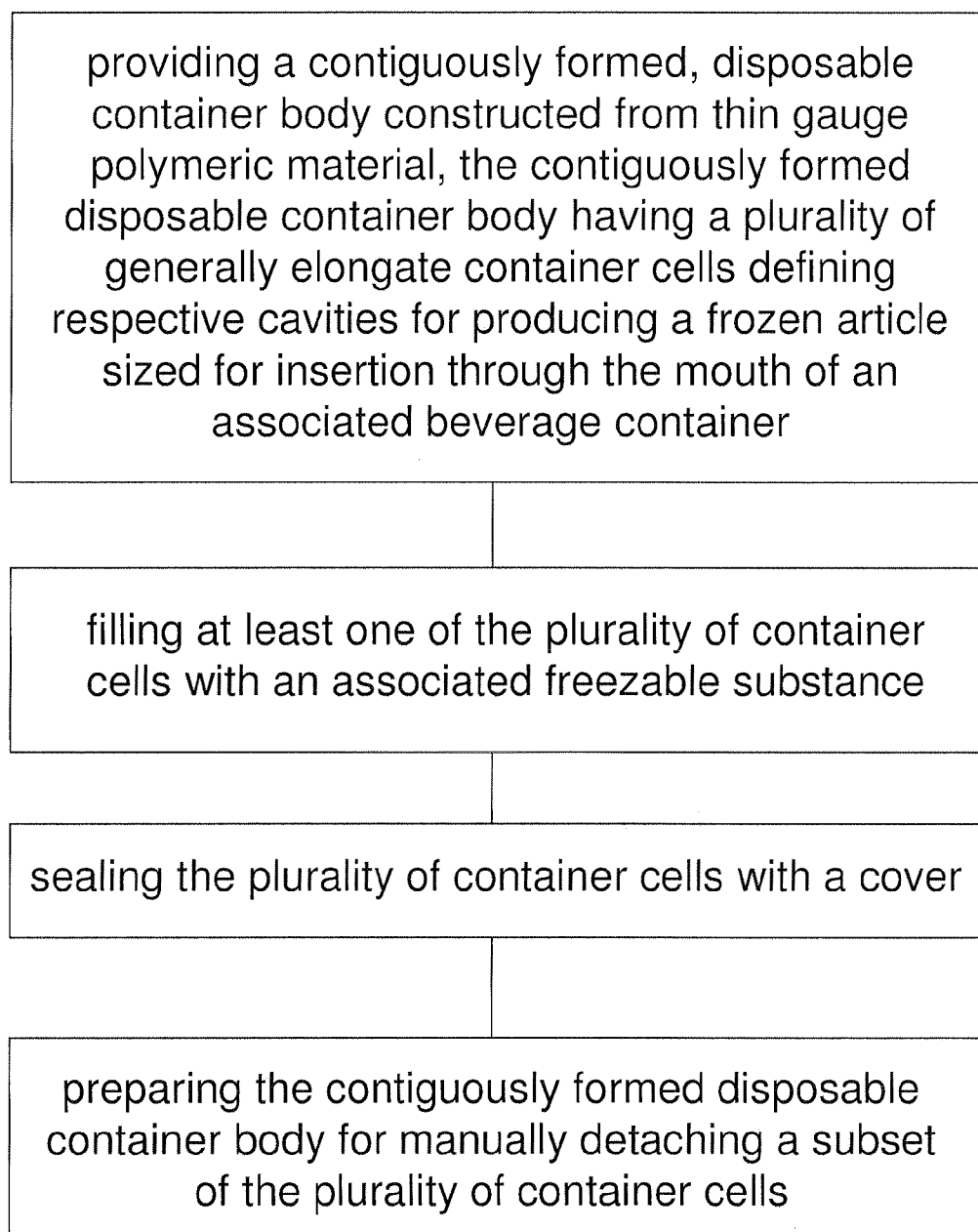


FIGURE 2

**FIGURE 3**

DISPOSABLE CONTAINER FOR FROZEN LIQUID

[0001] This utility patent application claims priority to U.S. provisional patent application Ser. No. 60/910,476 filed on Apr. 6, 2007, which is incorporated herein by reference in its entirety.

TECHNICAL FIELD

[0002] The present invention pertains to disposable devices for freezing consumable liquids into slender shapes, and more particularly into shapes for use in containers having relatively small openings such as a plastic bottle, soda can and the like.

BACKGROUND OF THE INVENTION

[0003] In recent times consumers have become increasingly interested in making health conscience choices. Fitness companies provide equipment, like treadmills and elliptical machines that are priced for purchase by the average consumer. Packaged food products boast low fat and low sodium content for the weight conscience consumer. Beverage distributors are selling substantial volumes of purified water, in some cases as much or more than the traditional carbonated soft drinks.

[0004] In particular, water quality has become a major consideration in today's market place. Water filters are available for many products like refrigerators, water faucets and water pitchers. Still others purchase water delivery services that deliver spring water right to your home, which is used for both drinking and cooking.

[0005] Today's consumer is also under tight time constraints and as a result convenience products fair well in a hurried environment. Everyone from athletes to mothers find it handy to have purified pre-packaged bottled water. Still, water taste better when is chilled. It would be desirable to have frozen water shaped for insertion into the bottle. Moreover, it would be desirable to have pre-packaged frozen water that is also purified or filtered for healthy consumption. The embodiments of the present invention obviate the aforementioned problems.

BRIEF SUMMARY

[0006] In one embodiment of the present invention, a pre-packaged container is provided that is constructed for freezing consumable liquids in shapes suitable for insertion into liquid storage containers, the liquid containers having different and smaller openings such as, for example, plastic bottles. The pre-packaged containers may be elongate having a substantially longer first dimension (length) than its remaining dimensions (width or height). The containers may be constructed from a recyclable material such as thermoplastic polymer safe for use in food related products.

[0007] In one aspect of the embodiments of the subject invention, the pre-packaged container for freezing consumable liquids is disposal and may be constructed from PETE (Polyethylene Terephthalate).

[0008] In another aspect of the embodiments of the present invention, the container may be modular having individual fluid cells, which may be separable, allowing the consumer to as many or few as desired for a particular activity.

[0009] In still another aspect of the embodiments of the present invention, the fluid cells are filled with any purified liquid, which may be purified and/or filtered water.

[0010] In yet another aspect of the embodiments of the present invention, some fluid cells may be filled with one type

of consumable liquid and other fluid cells may be filled with another type of consumable liquid, which by way of example may be flavored water.

[0011] In another embodiment of the present invention, the container system for freezing associated substances includes a plurality of disposable container cells defining multiple discrete cavities for storing freezable substances, wherein each of the multiple discrete cavities are suitable to produce a frozen article sized for insertion through the mouth of an associated beverage container, and a cover affixed to the plurality of disposable container cells for sealing the freezable substances.

[0012] In one aspect of the embodiments of the subject invention, at least one of the plurality of disposable container cells is pre-filled with a freezable substance.

[0013] In another aspect of the embodiments of the subject invention, the plurality of disposable container cells are contiguously formed as a unitary article.

[0014] In yet another aspect of the embodiments of the subject invention, the plurality of disposable container cells are constructed from thin gauge polymeric material.

[0015] In even another aspect of the embodiments of the subject invention, each of the plurality of disposable container cells are manually separable from each other.

[0016] In still another aspect of the embodiments of the subject invention, the cover is membranous and may be affixed to the plurality of disposable container cells by an adhesive.

[0017] In another aspect of the embodiments of the subject invention, the cover comprises a plurality of discretely formed sealing members respectively sealing the multiple discrete cavities of the plurality of disposable container cells.

[0018] In yet another aspect of the embodiments of the subject invention, a first group of disposable container cells contains a first type of associated freezable substance, and a second group of disposable container cells contains a substantially different second type of associated freezable substances.

[0019] In even yet another aspect of the embodiments of the subject invention, each of the multiple discrete cavities may have a diameter substantially in a range between 0 and 0.75 inch.

[0020] In still another aspect of the embodiments of the subject invention, each of the multiple discrete cavities have a length in a range between 1 and 5 or 6 inches.

[0021] In another embodiment of the present invention, a container for freezing associated substances includes a single-use container cell having walls constructed from material suitable for freezing liquid, the single-use container cell defining a cavity sized to produce a frozen article for insertion through the mouth of an associated beverage container.

[0022] In another aspect of the embodiments of the subject invention, the single-use container cell is pre-filled with water.

[0023] In yet another aspect of the embodiments of the subject invention, the walls define an opening, and also includes a cover for sealing the opening of the single-use container cell.

[0024] In even another aspect of the embodiments of the subject invention, the walls are formed from a moldable polymer like thin gauge polyethylene or other polymeric material.

[0025] In another embodiment of the present invention, a method for packaging freezable substances includes the steps of providing a contiguously formed, disposable container body constructed from thin gauge polymeric material, the contiguously formed disposable container body having a plurality of generally elongate container cells defining respective

cavities for producing a frozen article sized for insertion through the mouth of an associated beverage container, filling at least one of the plurality of container cells with an associated freezable substance, sealing the plurality of container cells with a cover, and preparing the contiguously formed disposable container body for manually detaching a subset of the plurality of container cells.

BRIEF DESCRIPTION OF THE DRAWINGS

[0026] FIG. 1 is a perspective view of a multi-container package used to freeze liquids according to the embodiments of the invention.

[0027] FIG. 2 is a perspective view of an individual disposal container according to the embodiments of the invention.

[0028] FIG. 3 is a block diagram showing a method of packaging substances according to the embodiments of the invention.

DETAILED DESCRIPTION OF THE INVENTION

[0029] Referring now to the drawings wherein the showings are for purposes of illustrating embodiments of the invention only and not for purposes of limiting the same, FIG. 1 shows a container for storing liquids depicted generally at 1. The container 1 may hold a liquid, such as water or other fluid, which may be placed into a temperature controlled environment and frozen for use as desired. The container 1 may include a plurality of individual container cells 3, also called cells 3, connected together to form the body of the container 1. The cells 3 may be juxtaposed and fixedly connected to each other. The container 1, and cells 3, may also be contiguously formed and constructed as a unitary article. However, it is contemplated in an alternative embodiment that the cells may be selectively detachable for easy separation by a consumer. The cells 3 may be connected to each other by way of a common but perforated or scored edge 10 facilitating easy separation. In this manner, the consumer may separate as many of the individual cells 3 as needed for a given activity.

[0030] The cells 3 may include side walls 5 extended from a base 6 that comprise or define a storage cavity 11 for receiving fluids 14 initially. The cells 3 may be separate from each other so that fluid from one cell 3 may not intermix with fluid from another cell 3. In an exemplary manner, twelve container cells 13 are packaged together, as shown in FIG. 1 where the cells 3 are aligned in the substantially parallel manner. Other orientations may be selected without departing from the intended scope of coverage. Still, any quantity and orientation of container cells 3 may be packaged together without limiting the scope of coverage of the embodiments of the present invention, including the pre-packaging and sale of a single individual cell 1. Each of the cells 3 may contain a fluid 14 like, for example, purified water. It is noted that different types of fluid 14 may be stored in different cells 3, that is in one cell 3 with respect to another cell 3. However, any combination of fluids 14 may be stored in the cells 3 as will be discussed further in a subsequent paragraph. To prevent the fluids from spilling from the container 1, and more specifically the container cells 3, a cover 9 may be applied to the top surface of the container.

[0031] With continued reference to FIG. 1 and now to FIG. 2, the container cells 3 may be constructed from a thermoplastic material, such as polyethylene or other type of plastic, which may be recyclable. Although, any type of material may be used to construct the cells 3 that can withstand the expansion of freezing a water-based liquid product without bursting. The thickness of the cells 3, that is the gauge of the

material making up the side walls 5 and/or base 6, may be relatively thin. Any thickness of the cells 3 may be chosen that is cost-effective for constructing disposable cells 3. In this manner, each cell 3 may be used a single time and then discarded as the cell 3 costs relatively little to manufacture while providing the convenience and security of individually packaged, aseptic containers.

[0032] A container cell 3 may be generally elongate having substantially longer first dimension, which may be the length L, and shorter second and third dimensions, such as the height H and width W. In one embodiment, the ratio of length L to either the width W and/or height H may be in the range of three (3) to fifteen (15). More specifically, the length L may be eight (8) to nine (9) times longer than the height and width. In another embodiment, the length may be in the range of one (1) inches to six (6) inches and the height and width may be between substantially zero (0) to 1.50 inches and more specifically between zero and 0.75 inches. It is noted here that any dimension and/or ratio of dimensions may be selected as is appropriate for use with a particular container, like a beverage bottle or can. In other words, the length, height, and width may be proportionately selected for allowing the frozen article to pass through the container's mouth. It follows that the contour of the cell 3 and more specifically the cavity 11, define the shape that the end product will take on when frozen. Any cross-sectional configuration of the storage cavity 11 may be chosen including but not limited to circular, square or trapezoidal configurations. Because cooling is a function of surface area, the length of the resultant frozen article increases its ability to chill a beverage.

[0033] The cover 9 or sealing member 9 may comprise a thin flexible sheet constructed from polyethylene, polypropylene, poly vinyl chloride, cellophane or any substance suitable for sealing liquids 14 within the container cells 3. The sealing member 9 may be formed from a single sheet, or membrane, spanning the surface of the container 1 and perforated in a manner similar to that of the container cells 3. As such, each cell 3 may be hermetically sealed for aseptic storage of fluids 14. An adhesive may be used to affix the sealing member 9 to the upper surface 7 of the container cells 3. The adhesive may be consumable, that is to say safe for human consumption. The sealing member 9 may also be labeled indicating what type of liquid is stored inside, which will be discussed further below. In one embodiment, the sealing member 9 may be transparent or translucent allowing the consumer to see the liquid stored inside the container cell 3. In any case, the sealing member 9 is readily disposable and may be recycled. Once removed, the sealing member 9 may not be reused again.

[0034] With continued reference to FIGS. 1 and 2, the container cells 3 may be filled with consumable liquid, which in an exemplary manner may be filtered and/or purified water, and subsequently frozen for use in bottles or cans. As described above, the configuration of the freezable liquid may be sized for insertion into the opening or mouth of a bottle or can. The container cells 3 may be pre-filled when sold and sealed for sanitary individual use. In this way, the container 1 of pre-filled liquid may sit on the shelf remaining in a liquid state until needed at which time the desired quantity of cells 3 may be placed into a freezer. In another embodiment, the container cells 3 may contain different types of liquids. For example, a first section or group of container cells 3 may store purified water while another section may store flavored water. The flavored water may contain additives that present a fruity bouquet. Alternatively, one section of fluid cells 3 may store juice, tea or any other type of liquid. In fact, the fluid cells 3

may include any type of liquid and in any combination as is appropriate for use with the embodiments of the present invention.

[0035] With reference to all of the Figures, use of container **1** and container cells **3** will now be described. A container **1** of individual container cells **3** may be constructed, having generally elongate configurations, from a sanitary material suitable for storing liquids consumable by human beings. The material may be lightweight, easily moldable and recyclable making the containers **1** disposable first one time use. The consumer may purchase a container **1** including a plurality of pre-filled container cells **3**. The container **1** may be stored in ambient conditions until needed or placed into a freezer or other low-temperature controlled environment. To use, the consumer removes or detaches the number of container cells **3** desired, peels back the cover **9** and removes the frozen article from the container **1**. The frozen article may then be placed into the mouth of, for example, a water bottle, can, thermos or the like. In this manner, the frozen article containing the consumable liquid, or filtered water, may be used to chill a beverage.

[0036] The invention has been described herein with reference to the preferred embodiment. Obviously, modifications and alterations will occur to others upon a reading and understanding of this specification. It is intended to include all such modifications and alternations in so far as they come within the scope of the appended claims or the equivalence thereof.

What is claimed is:

1. The container system for freezing associated substances, comprising:
 - a plurality of disposable container cells defining multiple discrete cavities for storing freezable substances, wherein each of the multiple discrete cavities are sized to produce a frozen article for insertion through the mouth of an associated beverage container; and,
 - a cover affixed to the plurality of disposable container cells for sealing the freezable substances.
2. The container system as defined in claim **1**, wherein at least one of the plurality of disposable container cells is pre-filled with a freezable substance.
3. The container system as defined in claim **1**, wherein the plurality of disposable container cells are contiguously formed as a unitary article.
4. The container system as defined in claim **3**, wherein the plurality of disposable container cells are constructed from thin gauge polymeric material.
5. The container system as defined in claim **3**, wherein each of the plurality of disposable container cells are manually separable from each other.
6. The container system as defined in claim **5**, wherein the plurality of disposable container cells are demarcated by perforations for manually separating one of the plurality of disposable container cells from another of the plurality of disposable container cells.
7. The container system as defined in claim **1**, wherein the cover is membranous.
8. The container system as defined in claim **7**, wherein the membranous cover is affixed to the plurality of disposable container cells by an adhesive.

9. The container system as defined in claim **1**, wherein the cover comprises a plurality of discretely formed sealing members respectively sealing the multiple discrete cavities.

10. The container system as defined in claim **1**, wherein a first group of disposable container cells contains a first type of associated freezable substance; and,

wherein a second group of disposable container cells contains a substantially different second type of associated freezable substances.

11. The container system as defined in claim **1**, wherein each of the multiple discrete cavities have a diameter substantially in a range between 0 and 0.75 inch.

12. The container system as defined in claim **11**, wherein each of the multiple discrete cavities have a length in a range between 1 and 6 inches.

13. A container for freezing associated substances, comprising:

a single-use container cell having walls constructed from material suitable for freezing liquid, the single-use container cell defining a cavity sized to produce a frozen article for insertion through the mouth of an associated beverage container.

14. The container as defined in claim **13**, wherein the single-use container cell is pre-filled with water.

15. The container as defined in claim **13**, wherein the walls define an opening; and further comprising:

a cover for sealing the opening of the single-use container cell.

16. The container as defined in claim **15**, wherein the cover is membranous, and wherein the cover is affixed to the walls by an adhesive.

17. The container as defined in claim **13**, wherein the diameter of cavity is in a range substantially between 0 and 0.75 inch.

18. The container as defined in claim **13**, wherein the walls are constructed from thin gauge polyethylene.

19. A method for packaging freezable substances, comprising the steps of:

providing a contiguously formed disposable container body constructed from thin gauge polymeric material, the contiguously formed disposable container body having a plurality of generally elongate container cells defining respective cavities for producing a frozen article sized for insertion through the mouth of an associated beverage container;

filling at least one of the plurality of container cells with an associated freezable substance; and,

sealing the plurality of container cells with a cover.

20. The method as defined in claim **19**, further comprising the step of:

preparing the contiguously formed disposable container body for manually detaching a subset of the plurality of container cells.

* * * * *