



Coffee Heater

A new product. A styrofoam disc, which simply

floats on top of the coffee keeping it hot for a

longer period of time. As the heat attempts to

escape, this disc simply slows the process.



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(54) **DRINK SERVING TEMPERATURE MAINTAINER**

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(57) **ABSTRACT**

A hot (cold) drink heat (chill) maintainer formed as a floating internal lid, in addition to the external sealed lid, that is placed on top of a drink poured into a suitable drink cup. The hot drink heat maintainer additionally insulates and maintains heat (or chill) within a drink poured for consumption. Because the hot drink heat maintainer floats directly on the top of the liquid, rather than being suspended above the liquid as with a common cup lid, insulating properties of the hot drink heat maintainer are brought directly to bear in maintaining heat in the drink, particularly as the drink is being consumed. The hot drink heat maintainer adds a layer of insulation directly and continuously to the top of a hot drink such as coffee, to prevent or slow heat from escaping from the drink to the surrounding air as it is being consumed.

(21) Appl. No.: **11/134,376**

(22) Filed: **May 23, 2005**

Related U.S. Application Data

(60) Provisional application No. 60/621,675, filed on Oct. 26, 2004.

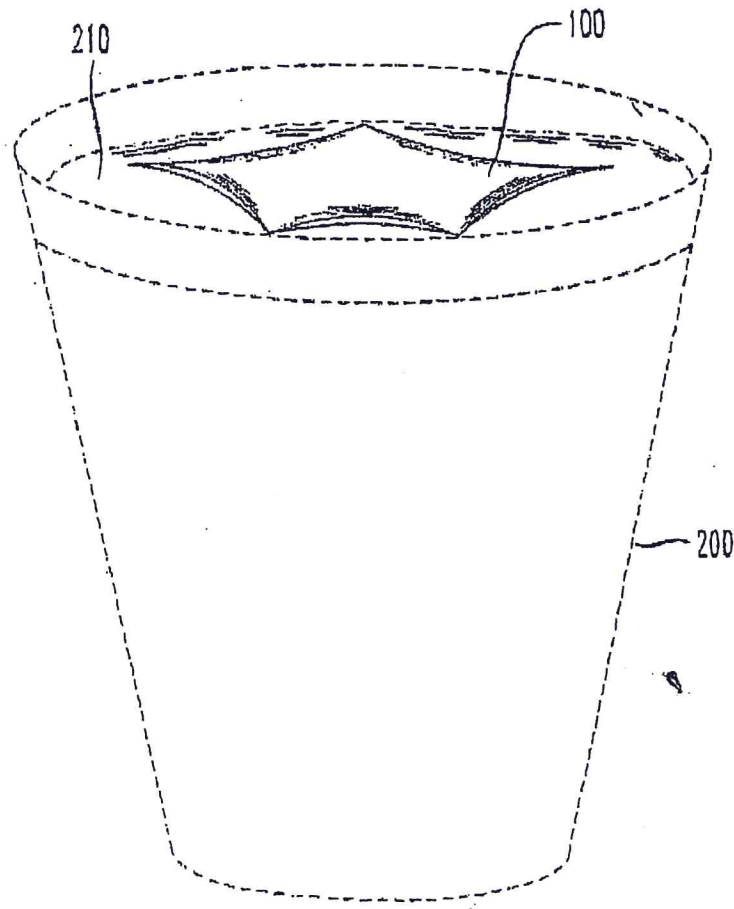
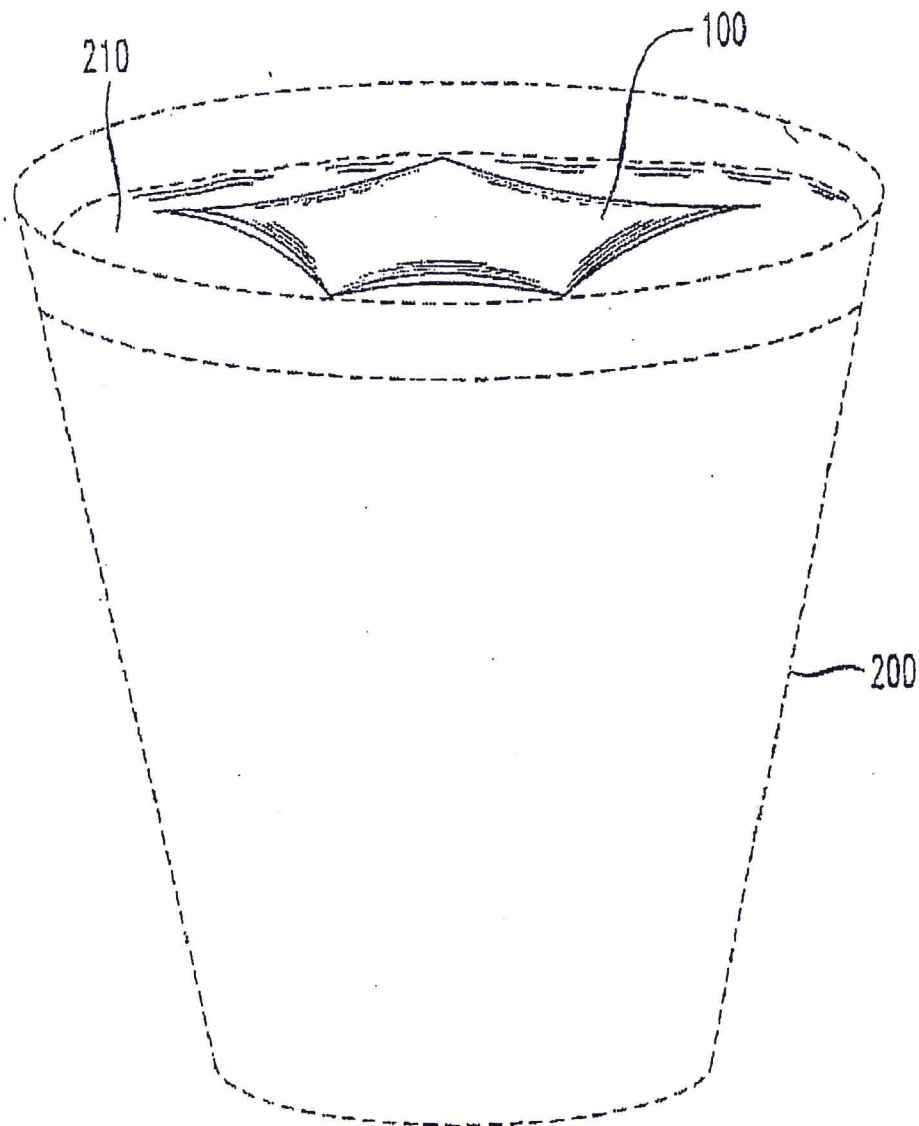


FIG. 1



DRINK SERVING TEMPERATURE MAINTAINER

[0001] This application claims priority from U.S. Provisional Application No. 60/621,675, entitled "Drink Serving Temperature Maintainer," filed Oct. 26, 2004, the entirety of which is expressly incorporated herein by reference.

BACKGROUND OF THE INVENTION**[0002] 1. Field of the Invention**

[0003] This invention relates generally to apparatus for and methods of consuming hot or cold drinks. More particularly, it relates to apparatus and methods for continuously maintaining a serving temperature of a hot or cold drink throughout its consumption.

[0004] 2. Background

[0005] Drinks are a necessary part of human life. In addition to various flavorings, carbonation, etc., drinks are often best if served hot or cold.

[0006] Hot drinks are often served in an insulated cup, e.g., an 8 oz. Styrofoam cup with a plastic air tight lid that snaps on top after the hot drink has been poured into the individual serving sized cup.

[0007] The larger the cup is, the longer it will generally take to fully consume. The longer a drink takes to consume, the closer it will become to the ambient temperature, thereby not being as hot.

[0008] To counteract the loss of heat (or cold) in a drink, the sides of the cup are often insulated. A plastic, non-insulated top is often used on top of the cup. A portion of the top is often removed to allow the consumer to drink the liquid therethrough.

[0009] As the drink is consumed, the top surface of the hot liquid goes further and further down the cup, which is of course natural. This increases the amount of air between the top surface of the liquid and the cup lid. While sealed air is an insulator of sorts, it is not a good one. Moreover, together with a lid that has an opening allowing consumption therethrough, the air is an even worse insulator. Thus, generally speaking, the more a drink is consumed, the greater the air gap on top of the liquid, and the worse the insulative effect of the air between the surface of the liquid and the cup lid.

[0010] There is a need for improved insulation in a hot (or cold) drink, minimizing the loss of heat as a drink is consumed.

SUMMARY OF THE INVENTION

[0011] In accordance with the principles of the present invention, a drink temperature maintainer comprises a floatable disk adapted for floating on top of, and in contact with a top surface of, a liquid as it is consumed through a cup. A method of maintaining temperature in a drink poured for consumption in accordance with another aspect of the invention comprises placing a floating, insulative temperature maintainer in a drink cup. A drink is poured for consumption from said drink cup. The floating, insulative temperature maintaining disk floats in direct contact with a top surface of the drink during an entire consumption of the drink from the drink cup by a consumer.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] Features and advantages of the present invention will become apparent to those skilled in the art from the following description with reference to the drawings, in which:

[0013] FIG. 1 shows an insulated cup together with an exemplary hot drink heat maintainer (or cold drink chill maintainer) floating on a drink poured therein, in accordance with the principles of the present invention.

[0014] FIG. 2 is a top view of a floating exemplary hot drink heat maintainer having one of many possible circumferential shapes, in accordance with the principles of the present invention.

[0015] FIGS. 3A to 3C show side views of exemplary hot drink heat maintainers having different thickness variations across a diameter, in accordance with the principles of the present invention.

[0016] FIG. 4 is a top view of a floating exemplary hot drink heat maintainer having another one of many possible circumferential shapes, in accordance with the principles of the present invention.

[0017] FIG. 5 is a top view of a floating exemplary hot drink heat maintainer having yet another one of many possible circumferential shapes, in accordance with the principles of the present invention.

[0018] FIG. 6 is a top view of a floating exemplary hot drink heat maintainer having still another one of many possible circumferential shapes, in accordance with the principles of the present invention.

DETAILED DESCRIPTION OF ILLUSTRATIVE EMBODIMENTS

[0019] The present invention relates to a hot drink heat maintainer (or a corollary cold drink chill maintainer) formed as a floating internal lid, in addition to the external sealed lid, that is placed on top of a drink poured into a suitable drink cup. The hot drink heat maintainer additionally insulates and maintains heat (or chill) within a drink poured for consumption. Because the hot drink heat maintainer floats directly on the top of the liquid, rather than being suspended above the liquid as with a common top or lid of the cup, insulating properties of the hot drink heat maintainer are brought directly to bear in maintaining heat in the drink.

[0020] This is particularly true as the drink is being consumed. For instance, as a hot drink is consumed, the upper surface of the hot drink becomes lower and lower in the cup. This corresponds to a larger and larger distance between the upper portion of the drink and the lid of the cup. This larger distance is filled with air, which has relatively weak insulating properties.

[0021] The present inventor has appreciated the weak insulating properties of air, and has developed a simple device and method for continuously insulating a hot drink as it is being consumed, throughout its consumption period.

[0022] In accordance with the principles of the present invention, heat is prevented from escaping from the hot drink being continuously insulated on all sides. A conventional hot drink cup insulates only from a bottom and sides.

The top of a hot drink is exposed to air, albeit air within the cup. Nevertheless, the relatively small insulating properties of moving air provides little insulative properties, as have been appreciated by the present inventor.

[0023] The present invention adds a layer of insulation directly and continuously to the top of a hot drink such as coffee, to prevent or slow heat from escaping from the drink to the surrounding air as it is being consumed.

[0024] FIG. 1 shows an insulated cup together with an exemplary hot drink heat maintainer (or cold drink chill maintainer) floating on a drink poured therein, in accordance with the principles of the present invention.

[0025] In particular, as shown in FIG. 1, an insulated cup 200 has a hot drink 210 poured therein. On top of the hot drink a hot drink heat maintainer 100 is dropped in. The hot drink heat maintainer is importantly of a weight and consistency that will allow it to float on top of the poured drink 210.

[0026] The hot drink heat maintainer 100 is preferably made of an insulating material such as Styrofoam or other appropriate type material. A sealed hollow material is also possible, such as a sealed, hollow extrusion of a plastic shape.

[0027] In an average hot drink cup 200, the disclosed embodiments of the hot drink maintainer 100 is generally between 1 1/4" to 2 1/2" in diameter, though other sizes and shapes are possible and within the principles of the present invention.

[0028] In operation, the hot drink heat maintainer 100 is placed on top of the hot drink 210 once the hot drink 210 is poured into the relevant cup 200. Alternatively, the hot drink heat maintainer 100 may be placed in the relevant cup 200 before the hot drink 210 is poured, with the hot drink liquid being poured into the cup 200 over the hot drink heat maintainer 100. In such case, the hot drink heat maintainer 100 will merely float to the top of the hot drink 210 either during or after the drink 210 is poured. When floating on top of the hot drink liquid 210, the hot drink heat maintainer 100 will aid in maintaining heat within the hot drink 210 so that the drink 210 stays hotter significantly longer than it would have without the use of the hot drink heat maintainer 100.

[0029] In disclosed embodiments, the hot drink heat maintainer 100 is kept in continuous contact with the drink 210 being consumed (e.g., coffee), however preferably places little if any downward pressure on the drink 210. Thus, a light weight material such as Styrofoam is preferred.

[0030] FIG. 2 is a top view of a floating exemplary hot drink heat maintainer 100 having one of many possible circumferential shapes, in accordance with the principles of the present invention.

[0031] In particular, as shown in FIG. 2, the hot drink heat maintainer has numerous linear portions 301-305, each preferably shaped so as to not allow the entire circumference of the hot drink heat maintainer 100a (all sub-categories of the 100 reference, such as 100a, 100b, etc., are all collectively referred to herein as a hot drink heat maintainer 100) to contact the internal sides of the cup at the same time. This allows greater mobility of the hot drink heat maintainer as the drink is consumed, and minimizes the effects to the consumer as the drink is consumed. Since the hot drink heat

maintainer floats so freely on top of the hot drink 210, the consumer is barely (if at all) aware of the presence of the hot drink heat maintainer 100.

[0032] Though a perfect fit within the side walls of a hot drink cup 200 might be ideal, for practical purposes, as a drink 210 is consumed and the liquid recedes within the cup 200, the hot drink cup maintainer 100 passes through continually shrinking cross sectional diameters of a typical cup 200 from top to bottom. Thus, the hot drink heat maintainer 100 might preferably be the same diameter of a bottom of a cup 200 in which it is used, allowing operation of the hot drink heat maintainer 100 continuously until the hot drink 210 reaches the bottom of the cup 200 (i.e., is completely consumed).

[0033] The thickness of the disclosed embodiments of the hot drink heat maintainer 100 may be about 1/4", or less, particularly in a center portion thereof. For instance, in one embodiment, the thickness of the hot drink heat maintainer 100 is about 1/4" in its thickest part. The thickest portion of the hot drink heat maintainer 100 is generally toward a center, though not necessarily toward a center.

[0034] FIGS. 3A to 3G show side views of exemplary hot drink heat maintainers 100b, 100c, 100d, 100e, 100f, 100g and 100h having different thickness variations across a diameter, in accordance with the principles of the present invention.

[0035] In one embodiment shown in FIG. 3A, the hot drink heat maintainer 100b has a thickest vertical area in a center, with thinner vertical areas about a circumference thereof.

[0036] In the embodiment of FIG. 3B, the hot drink heat maintainer 100c has a relatively consistent vertical cross-sectional thickness, perhaps with the exception of the edges, which are preferably thinned to allow minimal friction with the inside edges of the cup as the hot drink 210 is consumed.

[0037] In the embodiment of FIG. 3C, both the upper and lower surfaces of the hot drink heat maintainer 100d bulge in thickness toward a center, again with thinner edges to minimize friction when rubbing and sliding along the internal edges of the cup.

[0038] Other embodiments are possible wherein the thickest portion of the hot drink heat maintainer 100e is near a circumference of the hot drink maintainer as shown in FIG. 3D. In such a case, an embodiment of a hot drink heat maintainer 100e may be formed from a lower approximate 1/2" of an inverted hot drink cup.

[0039] In yet another exemplary embodiment shown in FIG. 3E, the hot drink heat maintainer 100f may be non-planar. For instance, the hot drink heat maintainer 100f may have a generally curved in nature, particularly toward a center.

[0040] As shown in the exemplary embodiments of FIGS. 3F and 3G, a portion (e.g., a center portion) may have a cavity formed therein intended for placement against the surface of the drink 210. When in use, the void (357, 358) formed by the non-planar inner surface of the hot drink heat maintainer 100g, 100h, preferably captures and maintains a given portion of air, which acts as an insulator in the present embodiments largely because of its ability to capture and maintain a constant sampling of airspace thereunder. Once

heated, the captured air maintains a good insulative property. Thus, by preferably not allowing exchange of the captured air under the hot drink heat maintainer 100, 100h as the drink 210 is consumed, the captured air maintains a constant insulative property against the surface of the drink 210.

[0041] The hot drink heat maintainer 100 may be of any shape or size, so long as it is capable of floating on top of a hot drink 210 within a cup 200. In disclosed embodiments, the hot drink heat maintainer 100 is preferably circular in shape, oblong in shape, square in shape, pentagonal in shape, etc. Within the parameters that the hot drink heat maintainer 100 is preferably no larger than the diameter (or other shape) of the inside bottom of the cup 200 in which it is used, the hot drink heat maintainer 100 may have decorative and/or functional shapes. For instance, other than circular, the hot drink heat maintainer 100 may have a rectangular shape, a triangular shape, a square shape, a square shape with rounded edges (FIG. 4), a pentagonal shape, an octagonal shape (FIG. 5), an oblong, an oval shape (FIG. 6), etc., each allowing free and easy rotation of the hot drink heat maintainer 100 while in operation floating on top of a hot drink 210 while it is being consumed. The particular shape being used may relate to the shape of a company logo, increasing brand awareness. Virtually any shape is possible, so long as the hot drink heat maintainer 100 is free to float directly on the top surface of a hot drink 210 as it is being consumed, throughout its consumption in a given cup, glass or mug.

[0042] While the term 'cup' 200 is used herein, such term should be interpreted as encompassing any vial, cup, mug, glass, etc. from which an individual portion of a hot (or cold) drink 210 may be consumed.

[0043] The shape of the hot drink heat maintainer 100 may include open spaces such as slots, holes, or other openings allowing fluid to pass therethrough, so long as some insulative material continues to float on top of the drink 210 being consumed, and thus slow the process of heat escaping from the hot drink 210 being consumed, as it is being consumed.

[0044] The hot drink heat maintainer 100 may have a small handle or other holder in a convenient place, e.g., on top, so as to ease placement of the hot drink heat maintainer 100 either before or after a hot drink 210 is dispensed into a single serving cup.

[0045] While the present invention is disclosed in embodiments relating to maintaining heat in a hot drink as it is consumed, the principles, methods and apparatus are equally applicable to maintaining coolness within a cold drink as it is consumed. For instance, a hot drink heat maintainer 100 may be used atop a soda pop drink to continuously maintain coolness and/or carbonation within the drink 210 as it is being consumed.

[0046] While the invention has been described with reference to the exemplary embodiments thereof, those skilled in the art will be able to make various modifications to the described embodiments of the invention without departing from the true spirit and scope of the invention.

What is claimed is:

1. A drink temperature maintainer, comprising:
 - a floatable disk adapted for floating on top of, and in contact with a top surface of, a liquid as it is consumed through a cup.
2. The drink temperature maintainer according to claim 1, wherein:
 - said liquid is a hot liquid.
3. The drink temperature maintainer according to claim 1, wherein:
 - said liquid is a cold liquid.
4. The drink temperature maintainer according to claim 1, wherein:
 - said floatable disk is formed from a plastic material.
5. The drink temperature maintainer according to claim 4, wherein:
 - said plastic material is Styrofoam.
6. The drink temperature maintainer according to claim 1, wherein:
 - said floatable disk is able to float on said liquid from top to bottom as said drink is consumed, without substantial friction caused by contact with an inner side of said cup.
7. The drink temperature maintainer according to claim 1, wherein:
 - said cup is a ceramic mug.
8. The drink temperature maintainer according to claim 1, wherein:
 - said cup is a disposable Styrofoam cup
9. The drink temperature maintainer according to claim 1, wherein:
 - said cup is a paper cup.
10. The drink temperature maintainer according to claim 1, wherein:
 - said cup is a plastic cup.
11. The drink temperature maintainer according to claim 1, wherein:
 - said cup is a glass.
12. A method of maintaining temperature in a drink poured for consumption, comprising:
 - placing a floating, insulative temperature maintainer in a drink cup; and
 - pouring a drink for consumption from said drink cup;
 wherein said floating, insulative temperature maintaining disk floats in direct contact with a top surface of said drink during an entire consumption of said drink from said drink cup by a consumer.
13. The method for maintaining temperature in a drink poured for consumption according to claim 12, wherein:
 - said drink is poured after said drink temperature maintainer is placed in said cup.
14. The method for maintaining temperature in a drink poured for consumption according to claim 12, wherein:

said drink is poured before said drink temperature maintainer is placed in said cup.

15. Apparatus for maintaining temperature in a drink poured for consumption, comprising:

means for placing a floating, insulative temperature maintainer in a drink cup; and

means for pouring a drink for consumption from said drink cup;

wherein said floating, insulative temperature maintaining disk floats in direct contact with a top surface of said drink during an entire consumption of said drink from said drink cup by a consumer.

16. The apparatus for maintaining temperature in a drink poured for consumption according to claim 15, wherein:

said means for pouring pours said drink after said means for placing places said drink temperature maintainer in said cup.

17. The apparatus for maintaining temperature in a drink poured for consumption according to claim 15, wherein:

said means for pouring pours said drink before said means for placing places said drink temperature maintainer in said cup.

* * * * *

FIG. 6



FIG. 5

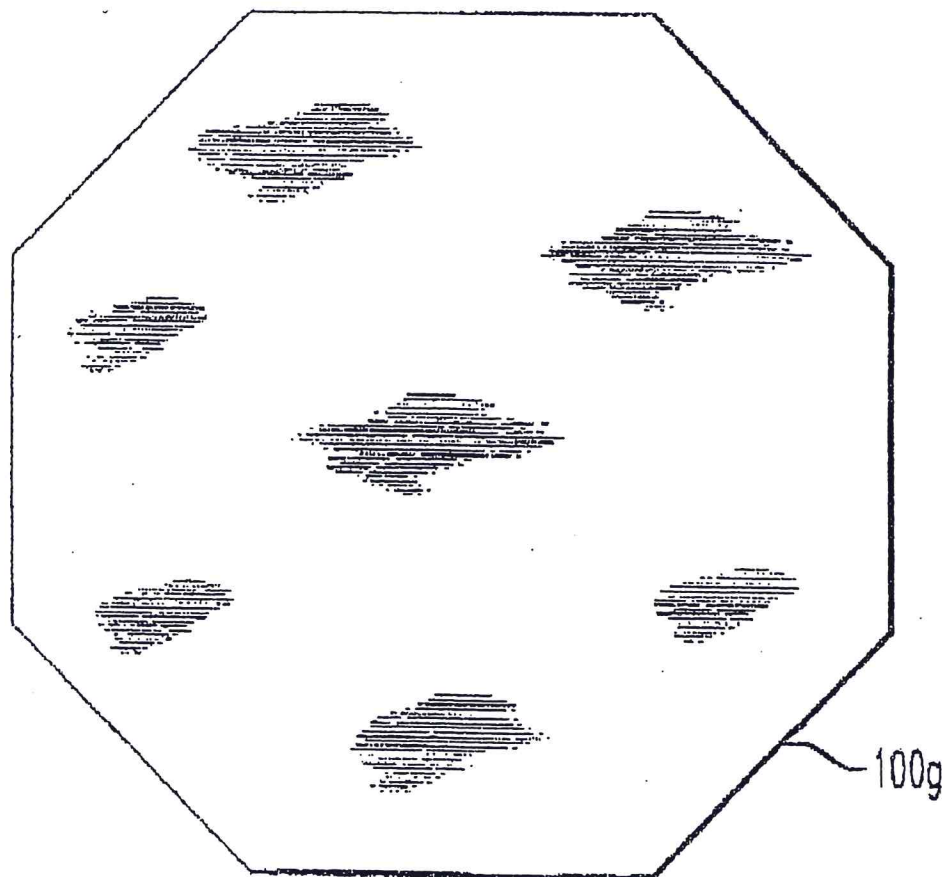


FIG. 4

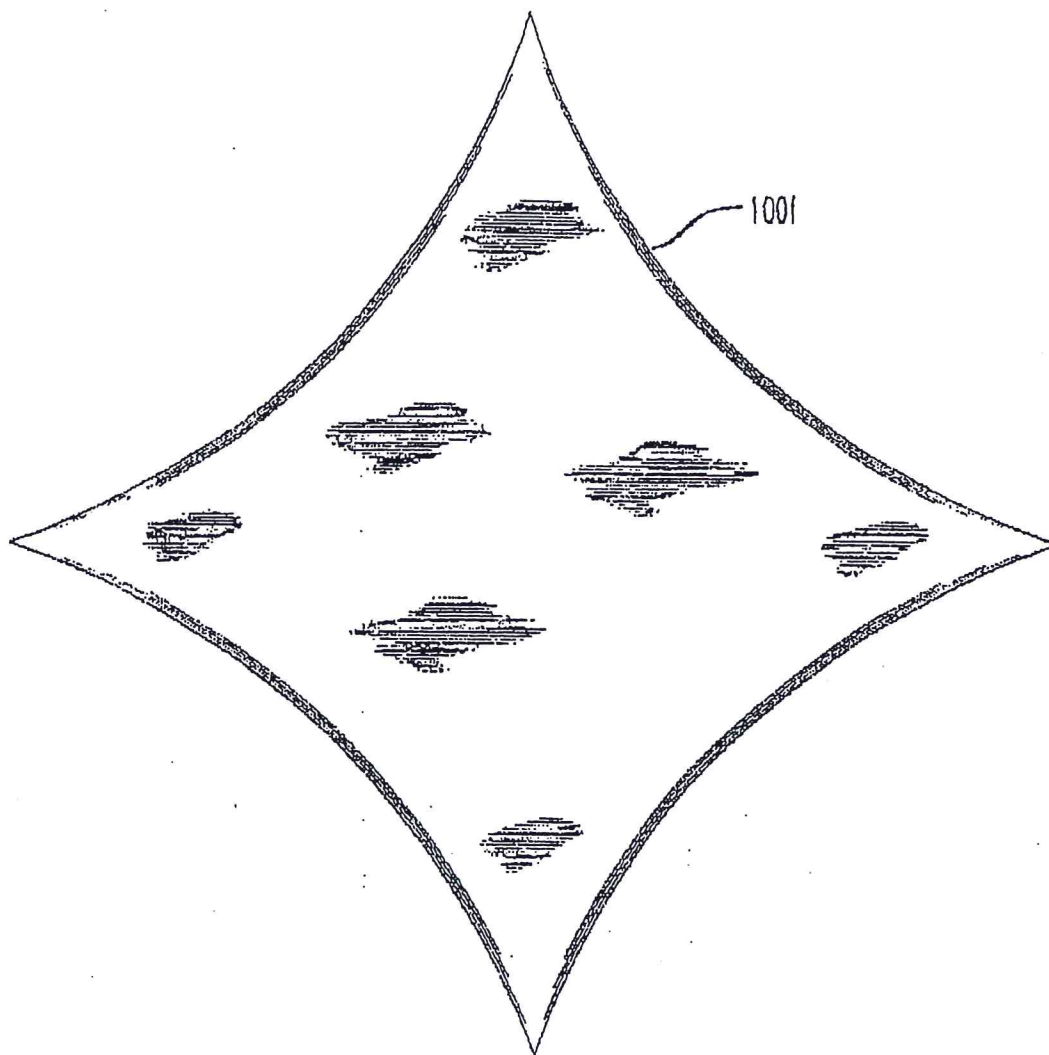


FIG. 3E

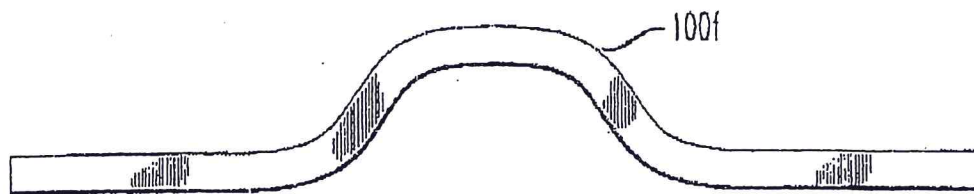


FIG. 3F

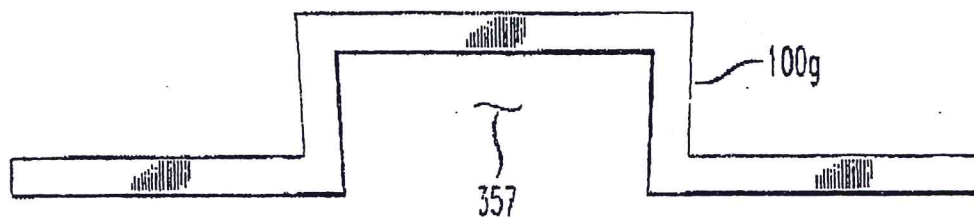


FIG. 3G

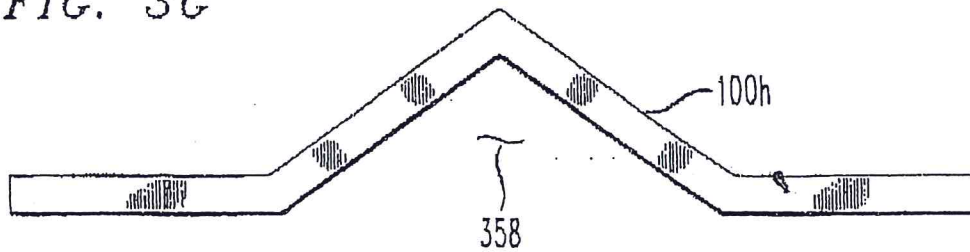


FIG. 3A

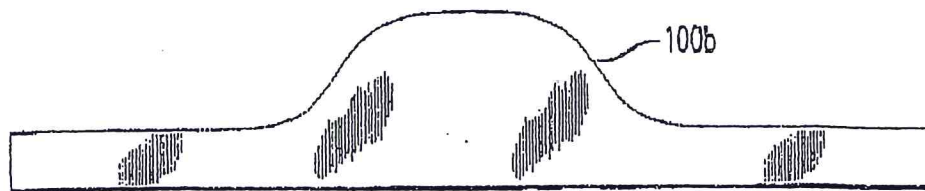


FIG. 3B



FIG. 3C

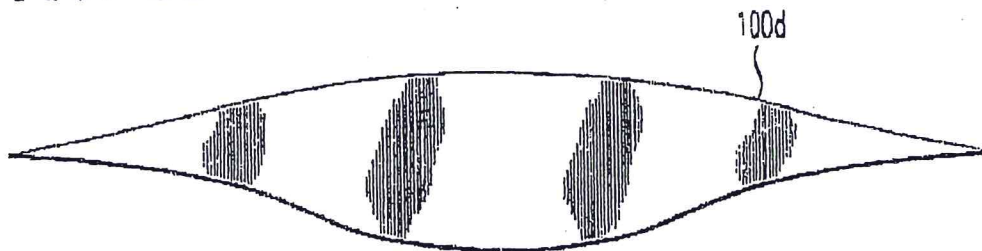
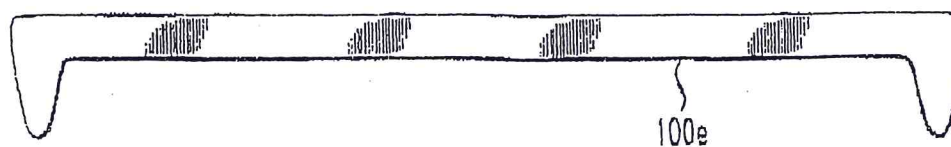
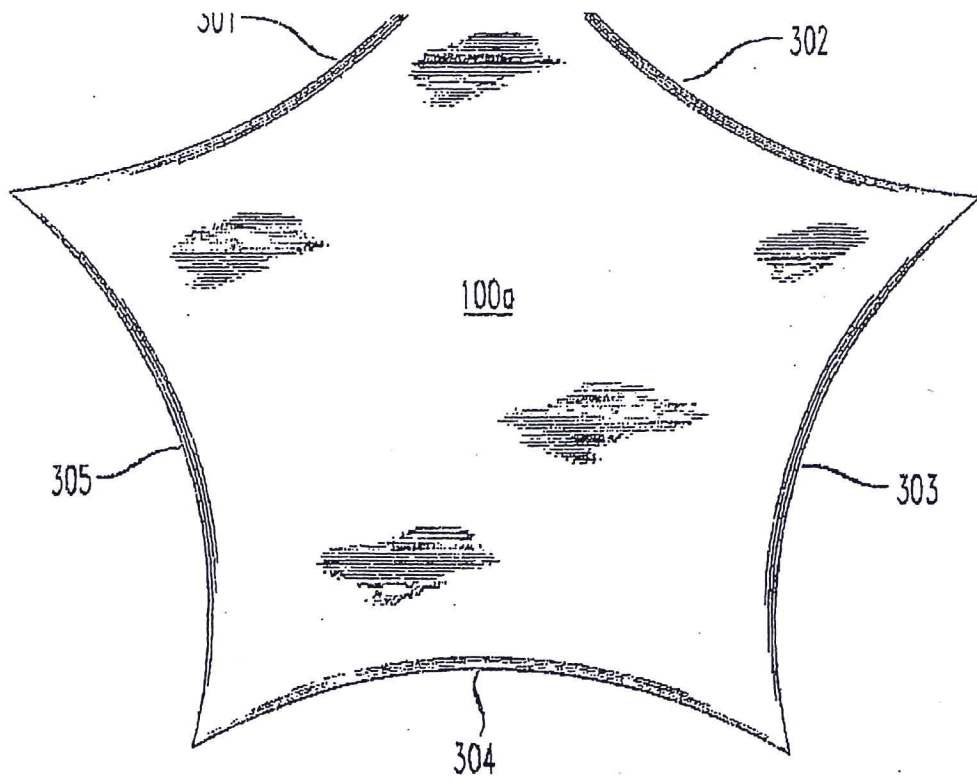


FIG. 3D





July 3, 2012

To whom it may concern,

Patent # and description of the patents.

1. Tap Carbonation concentrator; Patent # 6-401-598 June 11, 2002 (Manelli Denison and Selter Law Firm) It is a tubular device placed in glass to force carbonation to dissolve with in soda rather than carbonation escaping out of drink.
2. Drink service temperature maintainer; Patent # US2006-00 8674381 (Manelli Denison and Selter Law Firm) It's a Styrofoam piece or disc placed on top of coffee or tea witch floats and keeps heat in fluid for longer pd of time.
3. Advertising point of sale check out; Patent # 61457678 (Manelli Denison and Selter Law Firm) Software in scanner that advertises actual name of products in supermarkets, pharmacies, etc...
4. Automotive air deflector and system thereof; Patent # 12/457969. (Jacobson and Hollman) Two different devices placed on automobile fender in front of tires. These allow for a saving of gasoline by lessening friction on automobile.

Demetri Tavlarides

July 3, 2012

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3. Advertising point of sale check out; Patent # 61457678 (Manelli Denison and Selter Law Firm) Software in scanner that advertises actual name of products in supermarkets, pharmacies, etc...
4. Automotive air deflector and system thereof; Patent # 12/457969. (Jacobson and Hollman) Two different devices placed on automobile fender in front of tires. These allow for a saving of gasoline by lessening friction on automobile.

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