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Rich

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[54] **DEVICE FOR COOLING FOOD AND BEVERAGES ESPECIALLY FOR AN INFANT**

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[51] **Int. Cl.⁶** **F25D 3/08**

[52] **U.S. Cl.** **62/457.3**

[58] **Field of Search** 62/457.2, 457.3, 62/457.4, 530

[56] **References Cited**

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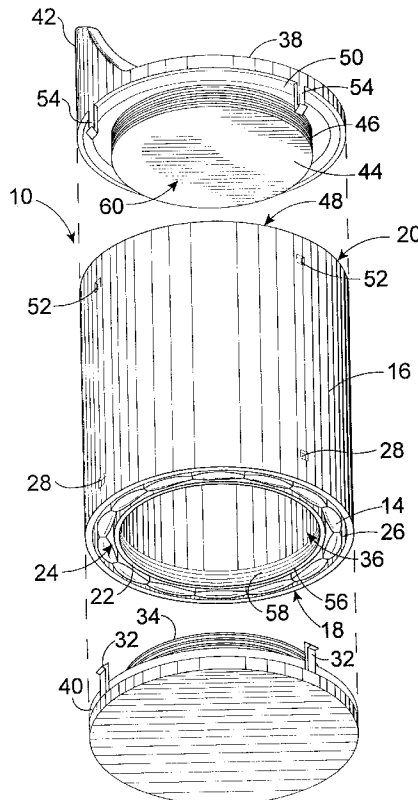
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[57] **ABSTRACT**

A device for cooling food and beverages includes an outer cylindrical body having an open bottom end and an open top end and at least one detent positioned a predetermined distance from both the open bottom side and open top side. An inner cylindrical shell having an inner side, an outer side, an open top end, an open bottom end, a first thread extending around the inner side of the top end and a second thread extending around the inner side of the bottom end. The inner cylindrical shell is connected at its open top end to the open top end of the outer cylindrical body to form a sleeve therebetween. A cooling producing element positioned within the sleeve formed between the outer cylindrical body and the inner cylindrical shell. A bottom cap having a protrusion extending from a central portion thereof and at least one clip extending from a periphery thereof. The protrusion has a thickness and a third thread extending around a periphery thereof for mating with the first thread, wherein the clip is received within the detent on the bottom end of the outer cylindrical body when the first and third threads are completely mated sealing the cooling producing element between the outer cylindrical body and the inner cylindrical shell. A top cap having a protrusion extending from a central portion thereof and at least one clip extending from a periphery thereof. The protrusion has a thickness and a fourth thread extending around a periphery thereof for mating with the second thread, wherein the clip is received within the detent on the bottom end of the outer cylindrical body when the second and fourth threads are completely mated.

12 Claims, 6 Drawing Sheets



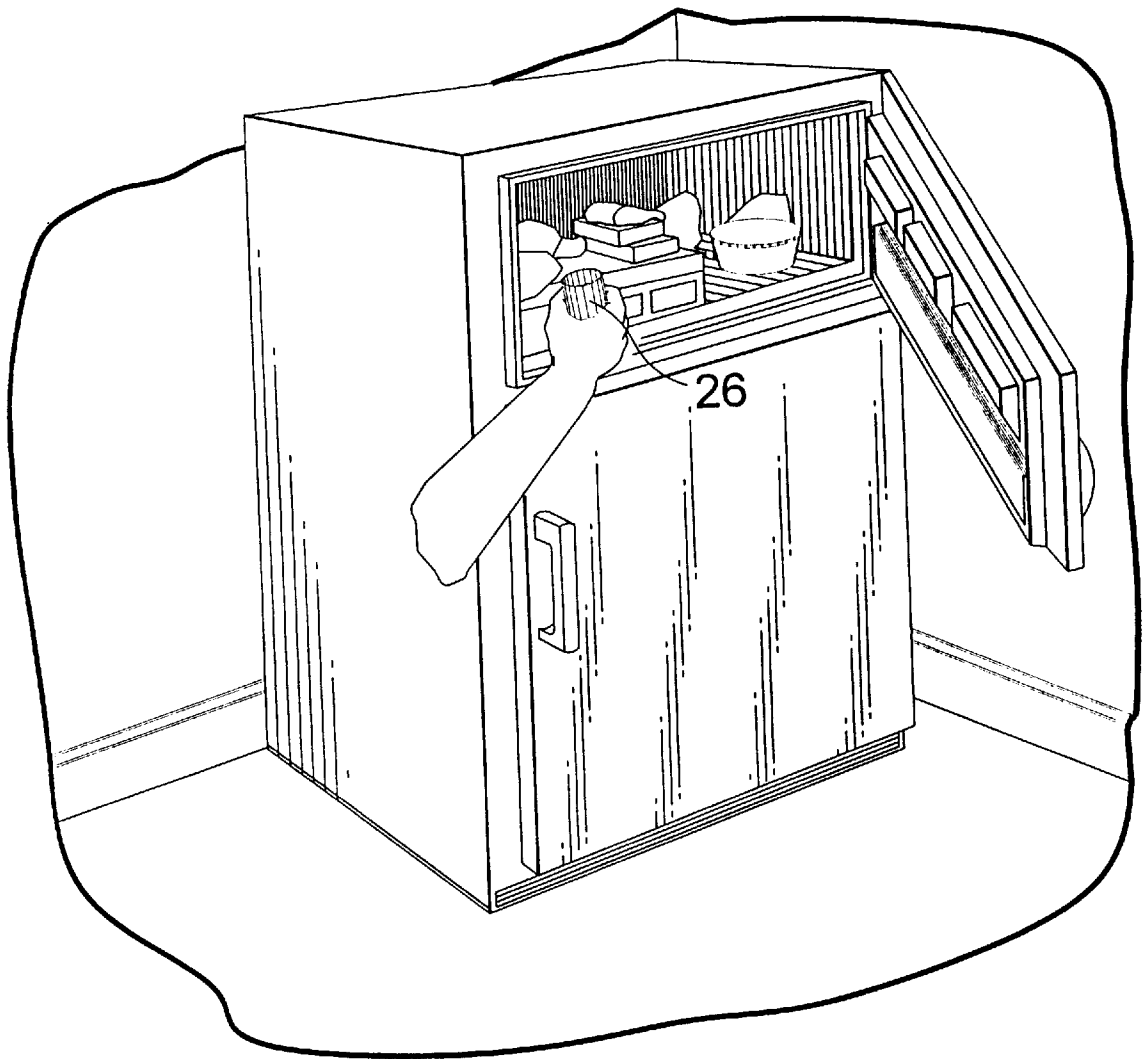


FIG 1

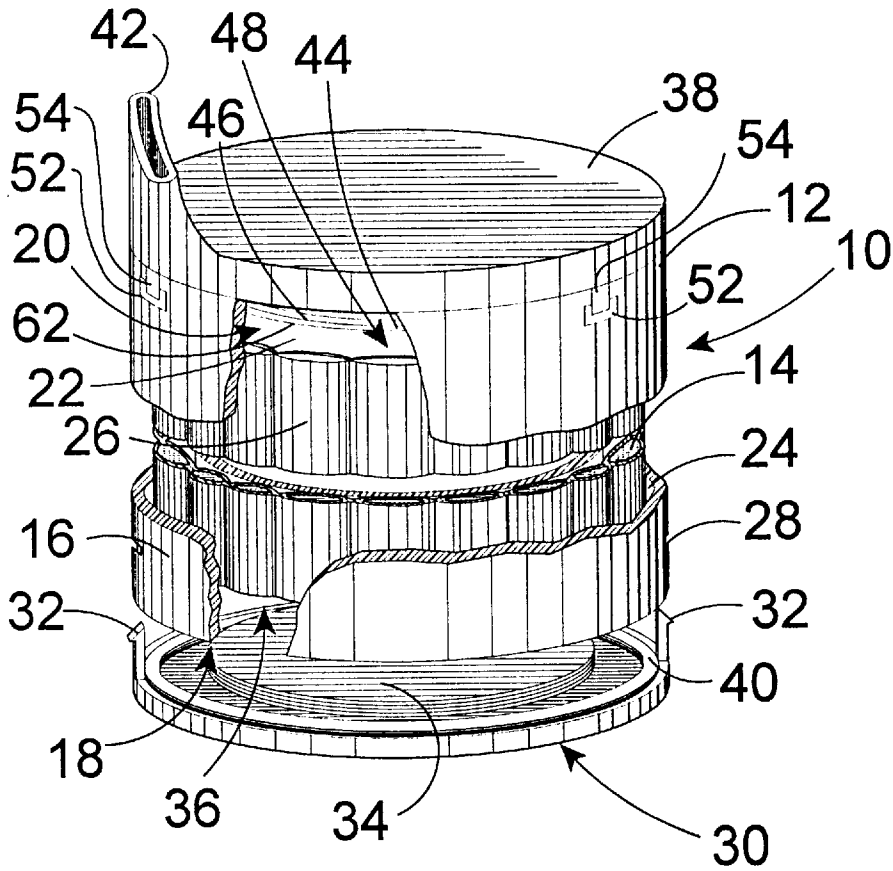
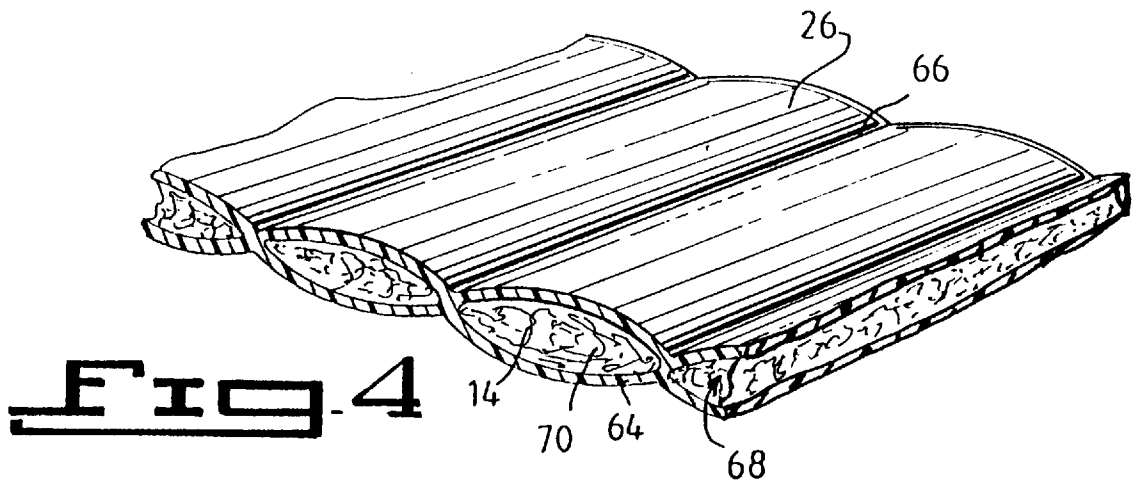
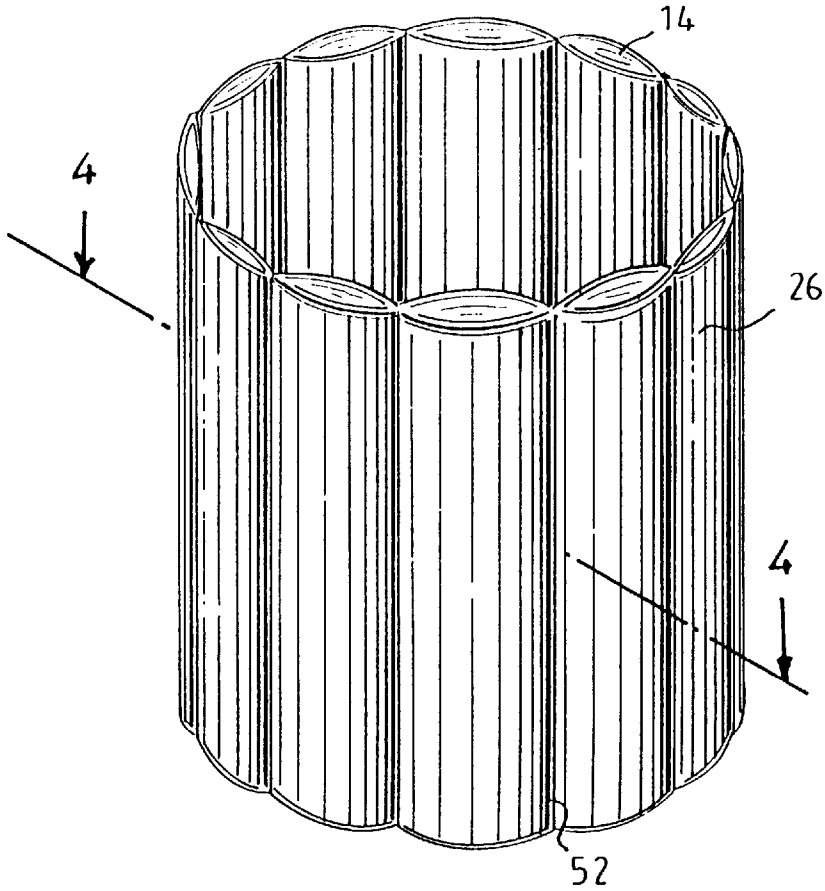


FIG 2

FIG. 3



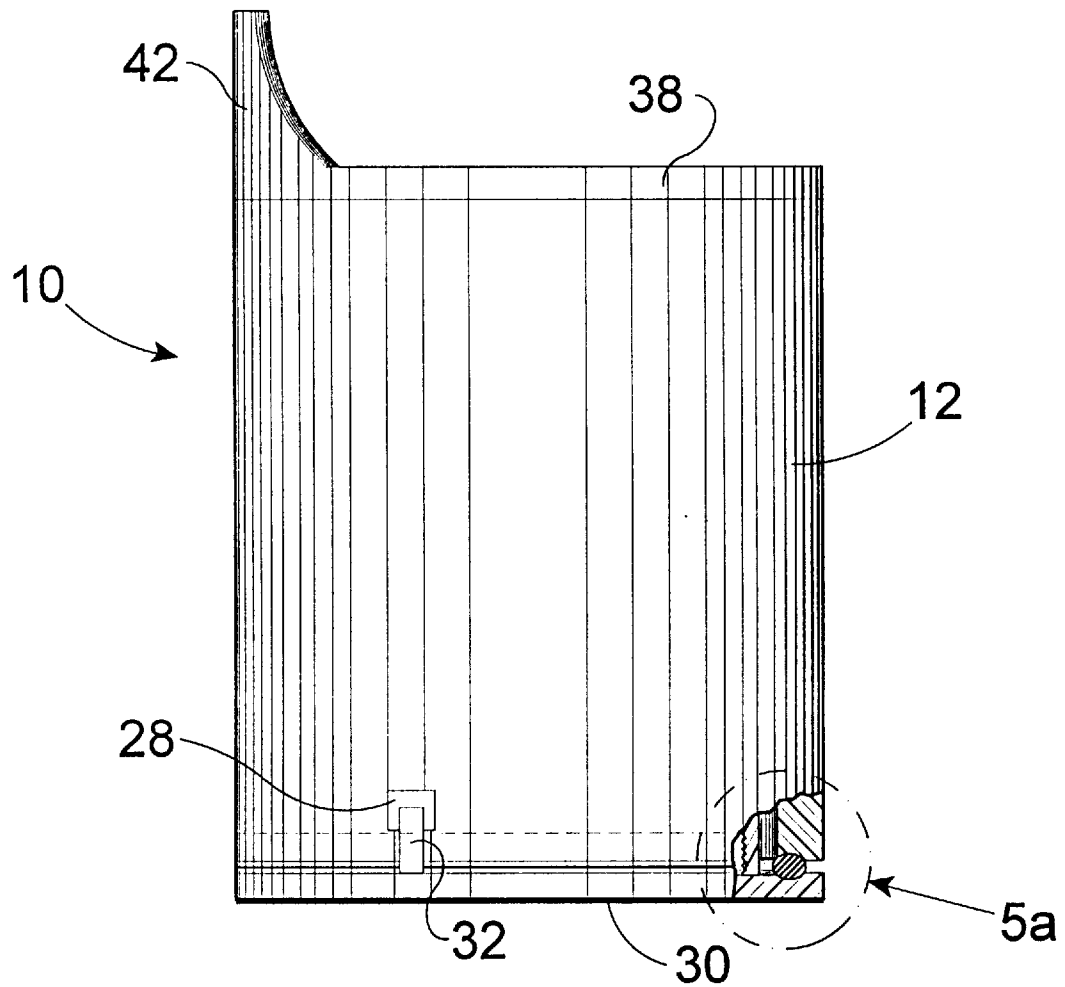


FIG 5

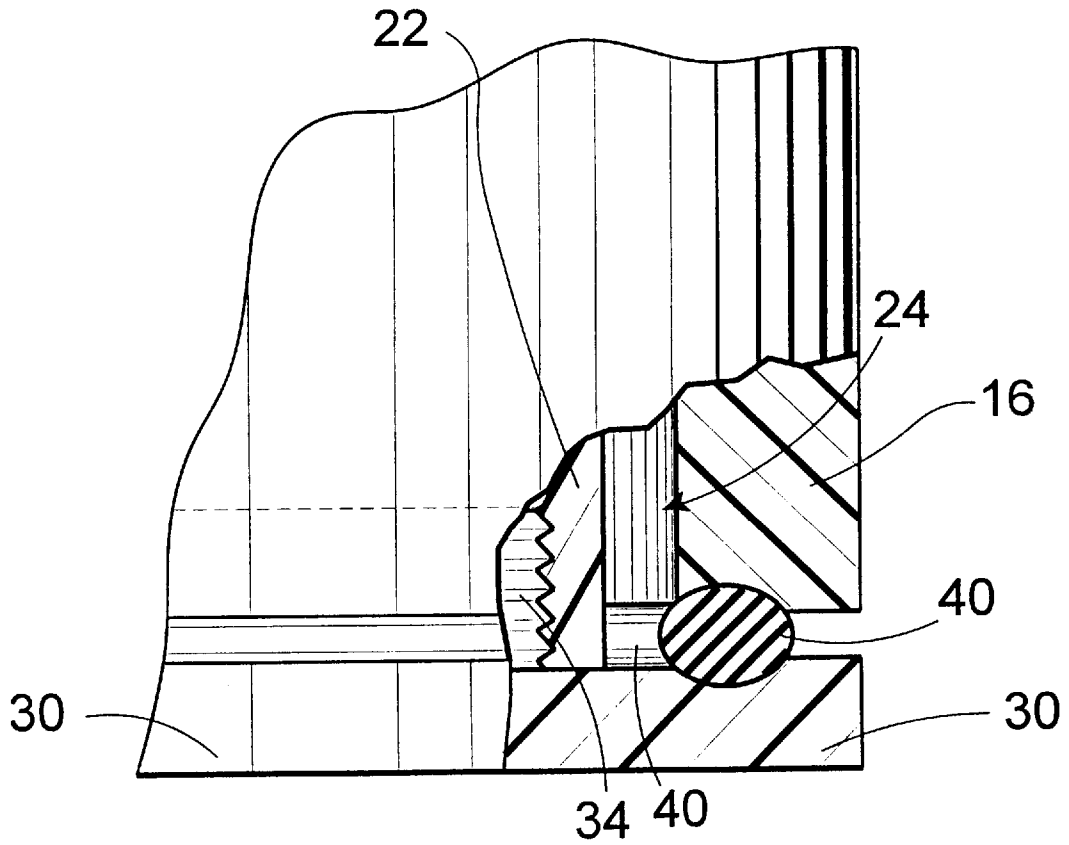


FIG 5a

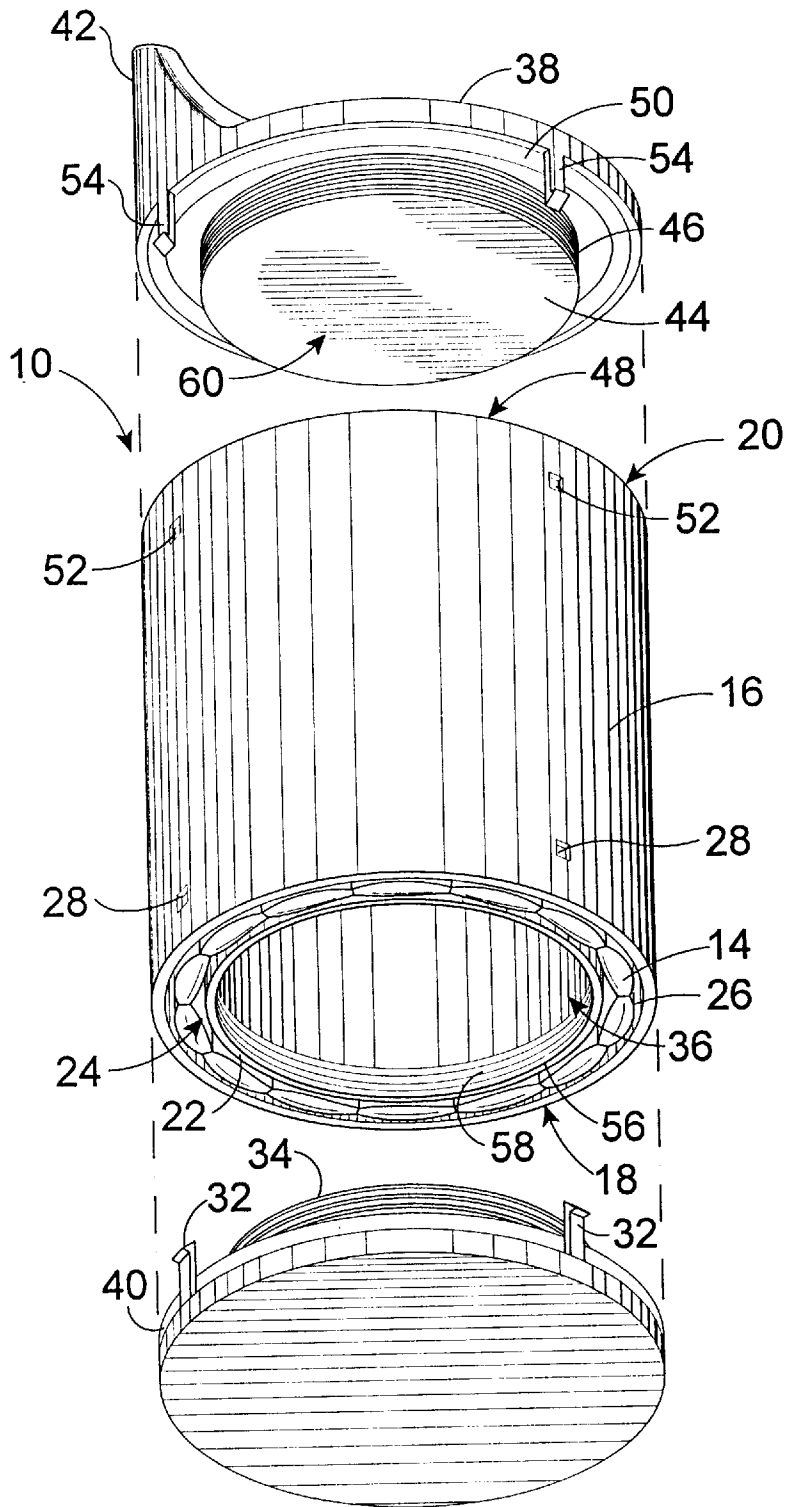


FIG 6

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DEVICE FOR COOLING FOOD AND BEVERAGES ESPECIALLY FOR AN INFANT

BACKGROUND OF THE INVENTION

1. Field of the Invention

The instant invention relates generally to coolers and, more specifically, to a device for cooling food and beverages especially for an infant.

2. Description of the Prior Art

Numerous devices for cooling food and drinks have been provided in prior art. For example, U.S. Pat. Nos. 4,292,817; 4,311,022; 4,324,111; 4,441,336; 4,470,264 and 4,877,128 all are illustrative of such prior art. While these units may be suitable for the particular purpose to which they address, they would not be as suitable for the purposes of the present invention as heretofore described.

U.S. Pat. No. 4,292,817

Inventor Terry L. Loucks

Issued Oct. 6, 1981

A controlled temperature shipping assembly is disclosed which comprises a container, a plurality of liquid retention members and temperature control means. The container includes both an outer protective layer and an inner insulating layer. The outer protective layer and the insulating layer define a shipping cavity containing the liquid retention members and the temperature control means. The liquid retention members are removably positioned in the shipping cavity such that at least one surface of each of the liquid retention members is in direct contact with at least one surface of the temperature control means. The temperature control means are positioned in the shipping cavity such that the temperature of each of the liquid retention members can be controlled below predetermined levels.

U.S. Pat. No. 4,311,022

Inventor John M. Hall

Issued Jan. 19, 1982

An ice pack which is constructed of a plurality of separate compartments which are connected together through a webbing assembly. Each of the compartments is movable in respect to each other permitting the ice pack to be located within confined various sizes of spaces. Within each compartment of the ice pack is located a quantity of freezable substance which is to be used as a refrigerant. Each compartment is enclosed by a wall assembly which retards the accumulation of moisture on the exterior surface of the wall assembly.

U.S. Pat. No. 4,324,111

Inventor William A. Edwards

Issued Apr. 13, 1982

Freezing gel containment structure is comprised of a plurality of adjacent tubes. The tubes are secured in adjacent edgewise relationship and each is separately filled with freezing gel. The tubes are tall and narrow and are sufficiently filled so that they have some cylindrical structural strength. The containment structure comprised of the plurality of tubes is strong enough to stand.

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U.S. Pat. No. 4,441,336

Inventor John P. Cannon

Issued Apr. 10, 1984

A portable cooler has a hollow chest provided with a lid and with a lower food compartment as well as an upper food chamber used alternately depending upon the horizontal or vertical disposition of a capped bottle in the chest. Water in the bottle is initially frozen and beverage cans are then placed against concavities formed exteriorly of the bottle. Tabs on the ends of the bottle are either caused to slide within opposed grooves in the chest or laid on an upwardly-facing shoulder in the chest.

U.S. Pat. No. 4,470,264

Inventor Stanley D. Morris

Issued Sep. 11, 1984

A transportable self-contained life support apparatus steadily reduces in temperature whole blood collected from donors to a predetermined temperature range. The whole blood is kept live by maintaining the temperature of the blood within such range through conductive heat transfer to an adjacent coolant. The coolant, in a frozen state and having a freezing temperature just below the predetermined range, absorbs heat commensurate to/with its latent heat of fusion and precludes temperature excursion of the blood until all of the coolant has become liquid. Similarly, platelets, extracted from the blood, can be maintained at the predetermined temperature range during storage and transport. Over chilling is precluded by limiting the low temperature of the coolant to its freezing temperature and a life destroying temperature rise is self-evident by and can only occur after a complete change in the state of the coolant.

U.S. Pat. No. 4,877,128

Inventor E. L. McCain

Issued Apr. 9, 1918

A baby bottle caddy carrying container is set forth wherein the container is formed with an interior flexible matrix of four compartments formed of wall structure of a flexible, relatively thin first thickness spaced from an exterior wall surface of a second greater thickness. The spacing between the first and second wall structure provides for acceptance of containers of cooling medium therewithin. The relatively thin first wall structure accommodates bottles of complementary square cross-sectional configuration wherein the bottles positionable within the matrix of compartments provide rigidity to the carrying case and accommodates varying size bottles to vary the spacing between the first and second walls. A third wall shell structure is in surrounding relationship to provide strength and support to the carrying container of the instant invention.

SUMMARY OF THE INVENTION

The instant invention relates generally to coolers and, more specifically, to a device for cooling food and beverages especially for an infant.

A primary object of the present invention is to provide a device for cooling food and beverages that will overcome the shortcomings of the prior art devices.

Another object of the present invention is to provide device for cooling food and beverages including an internal

cooling packet which can be separately frozen to remain cold for a long time and also used as an ice pack for minor bumps, bruises and bites.

An additional object of the present invention is to provide device for cooling food and beverages that is in the form of a training cup for infants and includes an insert sleeve containing a coolant to be frozen and thereby keep the beverage cold for an extended period of time.

A further object of the present invention is to provide device for cooling food and beverages in the form of a bottle carrier having an insert frame including a coolant to be frozen to keep baby bottles placed within the bottle carrier cool.

An even further object of the present invention is to provide a device for cooling food and beverages that is simple and easy to use.

A still further object of the present invention is to provide device for cooling food and beverages that is economical in cost to manufacture.

Further objects of the invention will appear as the description proceeds.

A device for cooling food and beverages includes an outer cylindrical body having an open bottom end and an open top end and at least one detent positioned a predetermined distance from both the open bottom side and open top side. An inner cylindrical shell having an inner side, an outer side, an open top end, an open bottom end, a first thread extending around the inner side of the top end and a second thread extending around the inner side of the bottom end. The inner cylindrical shell is connected at its open top end to the open top end of the outer cylindrical body to form a sleeve therebetween. A cooling producing element positioned within the sleeve formed between the outer cylindrical body and the inner cylindrical shell. A bottom cap having a protrusion extending from a central portion thereof and at least one clip extending from a periphery thereof. The protrusion has a thickness and a third thread extending around a periphery thereof for mating with the first thread, wherein the clip is received within the detent on the bottom end of the outer cylindrical body when the first and third threads are completely mated sealing the cooling producing element between the outer cylindrical body and the inner cylindrical shell. A top cap having a protrusion extending from a central portion thereof and at least one clip extending from a periphery thereof. The protrusion has a thickness and a fourth thread extending around a periphery thereof for mating with the second thread, wherein the clip is received within the detent on the bottom end of the outer cylindrical body when the second and fourth threads are completely mated.

To the accomplishment of the above and related objects, this invention may be embodied in the form illustrated in the accompanying drawings, attention being called to the fact, however, that the drawings are illustrative only, and that changes may be made in the specific construction illustrated and described within the scope of the appended claims.

BRIEF DESCRIPTION OF THE DRAWINGS

Various other objects, features and attendant advantages of the present invention will become more fully appreciated as the same becomes better understood when considered in conjunction with the accompanying drawings, in which like reference characters designate the same or similar parts throughout the several views, and wherein:

FIG. 1 is a perspective view showing an insert packet of the device for cooling food and beverages in accordance

with the present invention being inserted into a freezer compartment of a refrigerator;

FIG. 2 is a partially exploded perspective view with parts broken away of the device for cooling food and beverages in accordance with the present invention;

FIG. 3 is a perspective view of the insert sleeve of the device for cooling food and beverages in accordance with the present invention;

FIG. 4 is a cross sectional perspective view taken along line 4—4 in FIG. 3, showing the coolant therein;

FIG. 5 is a side view of the training cup of FIG. 2;

FIG. 5a is an enlarged view in partial cross-section of the base of the training cup within the circle labeled 5a in FIG. 5; and

FIG. 6 is an exploded perspective view of the training cup of the device for cooling food and beverages in accordance with the present invention.

DESCRIPTION OF THE REFERENCE NUMERALS

Turning now descriptively to the drawings, in which similar reference characters denote similar elements throughout the several views, the Figures illustrate a device for cooling food and beverages in accordance with the present invention. With regard to the reference numerals used, the following numbering is used throughout the various drawing figures.

10	device for cooling food and beverages
12	drinking cup portion of device for cooling food and beverages
14	element producing cooling effect
16	outer cylindrical body of drinking training cup portion
18	open bottom end of outer cylindrical body
20	open top end of outer cylindrical body
22	inner cylindrical shell
24	cylindrical compartment
26	cylindrical sleeve
28	detent in bottom end of outer cylindrical body
30	bottom cap
32	clip extending from bottom cap
34	circular protrusion on top side of bottom cap
36	open bottom end of the inner cylindrical shell
38	spill proof lid
40	rubber or polymeric seal around bottom cap
42	drinking spout on spill proof lid
44	protrusion depending from spill proof lid
46	thread around protrusion depending from spill proof lid
48	top end of inner cylindrical shell
50	seal on spill proof lid
52	detent in top end of outer cylindrical body
54	clip extending from spill proof lid
56	inner side of inner cylindrical shell
58	internal thread on inner side of inner cylindrical shell
60	spill proof lid attaching component
62	thread spiraling around inner side of inner cylindrical shell
64	flexible plastic covering
66	longitudinal seal in the flexible plastic covering
68	chamber in the flexible plastic covering
70	cooling agent

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Turning now descriptively to the drawings, in which similar reference characters denote similar elements throughout the several views, FIGS. 1 to 6 illustrate a device for cooling food and beverages 10 especially for cooling a beverage for an infant's consumption. FIG. 1 shows a cylindrical sleeve 26 containing a cooling element 14 therein

used with the device for cooling food and beverages **10** being placed within a freezer for cooling prior to the insertion of a food or beverage.

The device for cooling food and beverages **10** is clearly shown in FIG. 2 as a drinking training cup **12** having an element **14** therein for producing a cooling effect over a long period of time when frozen. When an infant drinks from the drinking training cup **12**, the beverage placed therein will be cooled.

The drinking training cup **12** includes an outer cylindrical body **16** having an open bottom end **18** and an open top end **20**. An inner cylindrical shell **22** is concentrically attached to the outer cylindrical body **16** at the open top end **20** to form a cylindrical compartment **24** therebetween. The cylindrical sleeve **26** as is clearly illustrated in FIGS. 3 and 4 includes the element **14** for producing a cooling effect over a long period of time when frozen positioned therein. The cylindrical sleeve **26** is removably inserted into the cylindrical compartment **24** between the outer cylindrical body **16** and the inner cylindrical shell **22**. Around an outer side of the outer cylindrical body **16** are positioned a plurality of detents **28** for receiving a clip **32** extending from a bottom cap **30**.

The bottom cap **30** is clearly illustrated in FIGS. 2, 5, 5a and 6. A circular protrusion **34** extends from a top side of the bottom cap **30** and is for attaching the bottom cap **30** to an open bottom end **36** of the inner cylindrical shell **22** in a removable manner. This will seal off the open bottom end **18** of the outer cylindrical body **16** so as to form a receptacle for the beverage. A seal **40** made of rubber or any other polymeric material is provided around the protrusion **34** for producing a leak proof seal around the open bottom end **18** of the outer cylindrical body **14** when the bottom cap **30** is attached to the drinking training cup **12**. When the bottom cap **30** is attached to the open bottom end **36** of the inner cylindrical shell **22**, the clips **32** extending from the bottom cap **30** are secured within the detents **28** on the outer cylindrical body **16** to provide a further more secure connection and assist in preventing an infant or child from removing the bottom cap **30**. Alternatively, the detent **28** may be formed as a cylindrical slot extending around the bottom end **18** of the outer cylindrical body **16**.

A spill proof lid **38** includes a drinking spout **42** as is illustrated in FIG. 6. A cylindrical protrusion **44** depends from the spill proof lid **38** and includes a thread **46** extending around an outer side thereof for attaching the spill proof lid **38** to a top end **48** of the inner cylindrical shell **22** in a removable manner. This will seal off the open top end **36** of the outer cylindrical body **32**. A seal **50** made of rubber or any polymeric material is positioned around the protrusion **44** so as to fit between the inner cylindrical shell **22** and the spill proof lid **38** and thus prevent a liquid within the drinking training cup **12** from leaking. Furthermore, detents **52** similar to the detents **28** may be positioned about the open top end **20** of the outer cylindrical body **16** for mating with clips **54** extending from the spill proof lid **38** to further secure the spill proof lid **38** to the drinking training cup **12**. Alternatively, the detent **52** may be formed as a cylindrical slot extending around the top end **20** of the outer cylindrical body **16**. An infant can now drink from the drinking spout **42** without spilling the cool beverage and fear of the infant removing the spill proof lid **38**.

The bottom cap attaching structure consists of the cylindrical protrusion **34** extending from a center of the bottom cap **30**. The protrusion **34** includes a thread **40** extending around an external surface thereof and is concentrically

formed on a top surface of the bottom cap **30**. In order for the bottom cap **30** to close the open bottom end **18** of the outer cylindrical body **16**, the protrusion **34** is threaded into the bottom end **36** of the inner cylindrical shell **22**. An inner side **56** of the bottom end **36** of the inner cylindrical shell **22** includes a thread **58** spiraling therearound which mates with the thread **40** around the protrusion **34** to secure the bottom cap **30** to the cup **12**. The clips **32** extending from the bottom cap **30** are received by the detents **28** in the outer cylindrical body **16**.

The spill proof lid attaching component **60** includes the inner cylindrical shell **38** having the thread **62** extending around the inner side of the top end **48**. The protrusion **44** including the thread **46** extending around the external side is provided. The protrusion **44** is concentrically formed on a bottom surface of the spill proof lid **34**. The protrusion **44** is threaded into the top end **48** of the inner cylindrical shell **22**. When the spill proof lid **38** is attached, the clips **54** extending therefrom are caused to be received by the detents **52** and further secure the spill proof lid **38** to the cup **12**. This provides added security from removal of the spill proof lid **38** by a child or infant drinking therefrom.

The cylindrical sleeve **42**, as best seen in FIGS. 3 and 4, contains a flexible plastic covering **64** having a plurality of longitudinal seals **66**, to form a plurality of chambers **68** to store the cooling producing element **14** therein. The cooling producing element **14** is a coolant agent **70**, such as BLUE ICE, which when frozen will stay cold over a period of time. Furthermore, each of the plurality of longitudinal seals **66** are connected to adjacent seals along a length thereof and are flexible with respect to each other. This allows the cylindrical sleeve **66** to adapt to a plurality of differing shapes to fit within a plurality of differently shaped areas not limited to that of the cylindrical compartment of the of the drinking training cup **12** shown in FIGS. 1, 2, 5 and 6.

In operation, the cylindrical sleeve **26** containing the cooling producing element **14** is placed in a freezer to cool. When the cylindrical sleeve **26** is sufficiently cool it is removed from the freezer and placed within the slot between the outer cylindrical body **16** and the inner cylindrical shell **22**. The bottom cap **30** is then positioned at the open bottom end of the cup **12** and is turned in a clockwise direction causing the thread **40** spiraling around the protrusion **34** to mate with the thread **58** spiraling around the bottom end **56** of the inner cylindrical shell **22**. When the threads **40** and **58** are in complete engagement, the clips **32** extending from the bottom cap **30** are received by the detents **28** in the outer cylindrical body **16** to create a secure locking engagement.

A beverage may now be poured into the cup **12**. The cooled cylindrical shell **26** will act to cool the beverage for an extended period of time. The spill proof lid **38** may now be attached to the cup **12** for use by an infant or child. The spill proof lid **38** is positioned at the open top end **20** of the cup **12** and is turned in a clockwise direction causing the thread **46** spiraling around the protrusion **44** to mate with the thread **62** spiraling around the top end **48** of the inner cylindrical shell **22**. When the threads **44** and **62** are in complete engagement, the clips **54** extending from the spill proof lid **38** are received by the detents **52** in the outer cylindrical body **16** to create a secure locking engagement. A child or infant may now drink a cooled beverage through the drinking spout **42** on the spill proof lid **38** without possibility of spilling.

Based upon the above description it is evident that the device for cooling food and beverages of the present invention will overcome the shortcomings of the prior art devices.

This device includes an internal cooling packet which can be separately frozen to remain cold for a long time and also used as an ice pack for minor bumps, bruises and bites and is in the form of a training cup for infants and includes an insert sleeve containing a coolant to be frozen and thereby keep the beverage cold for an extended period of time. The device for cooling food and beverages is also the form of a bottle carrier having an insert frame including a coolant to be frozen to keep baby bottles placed within the bottle carrier cool. Furthermore, the device for cooling food and beverages is simple and easy to use and economical in cost to manufacture.

It will be understood that each of the elements described above, or two or more together may also find a useful application in other types of methods differing from the type described above.

While certain novel features of this invention have been shown and described and are pointed out in the annexed claims, it is not intended to be limited to the details above, since it will be understood that various omissions, modifications, substitutions and changes in the forms and details of the device illustrated and in its operation can be made by those skilled in the art without departing in any way from the spirit of the present invention.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can, by applying current knowledge, readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention.

What is claimed is new and desired to be protected by Letters Patent is set forth in the appended claims:

1. A device for cooling food and beverages comprising:

- a) an outer cylindrical body having an open bottom end and an open top end and at least one detent positioned a predetermined distance from both said open bottom side and said open top side;
- b) an inner cylindrical shell having an inner side, an outer side, an open top end, an open bottom end, a first thread extending around said inner side of said top end and a second thread extending around said inner side of said bottom end, said inner cylindrical shell being positioned within and connected at said open top end to said open top end of said outer cylindrical body to form a sleeve therebetween;
- c) a cooling producing element positioned between said outer cylindrical body and said inner cylindrical shell;
- d) a bottom cap having a protrusion extending from a central portion thereof and at least one clip extending from a periphery thereof, said protrusion having a thickness and a third thread extending around a periphery thereof for mating with said first thread, wherein said clip is received within said detent on said bottom

end of said outer cylindrical body when said first and third threads are completely mated sealing said cooling producing element between said outer cylindrical body and said inner cylindrical shell;

- e) a top cap having a protrusion extending from a central portion thereof and at least one clip extending from a periphery thereof, said protrusion having a thickness and a fourth thread extending around a periphery thereof for mating with said second thread, wherein said clip is received within said detent on said bottom end of said outer cylindrical body when said second and fourth threads are completely mated.

2. A device for cooling food and beverages as recited in claim 1, wherein said cooling producing element is in the form of a cylindrical sleeve.

3. A device for cooling food and beverages as recited in claim 2, wherein said cooling producing element includes an outer shell, an inner shell and a cooling material positioned therebetween.

4. A device for cooling food and beverages as recited in claim 3, wherein said cooling producing element further includes plurality of longitudinally extending seals to form a plurality of pockets for storing said cooling element therein.

5. A device for cooling food and beverages as recited in claim 4, wherein said cooling element is a coolant agent which when frozen will stay cold over a long period of time.

6. A device for cooling food and beverages as recited in claim 1, wherein said top cap includes a drinking spout for preventing spills.

7. The device for cooling food and beverages as recited in claim 1, wherein said bottom cap further includes a means for sealing the food and beverages within said device.

8. The device for cooling food and beverages as recited in claim 1, wherein said means for sealing surrounds said protrusion extending from said bottom cap and engages said bottom end of said outer cylindrical body when said first and third threads are mated.

9. The device for cooling food and beverages as recited in claim 8, wherein said means for sealing is one of rubber or polymeric material or the like.

10. The device for cooling food and beverages as recited in claim 1, wherein said top cap further includes a means for sealing the food and beverages within said device.

11. The device for cooling food and beverages as recited in claim 10, wherein said means for sealing surrounds said protrusion extending from said top cap and engages said top end of said outer cylindrical body when said second and fourth threads are mated.

12. The device for cooling food and beverages as recited in claim 11, wherein said means for sealing is one of rubber or any other polymeric material.