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COOLER CONTAINER

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FIG. 1

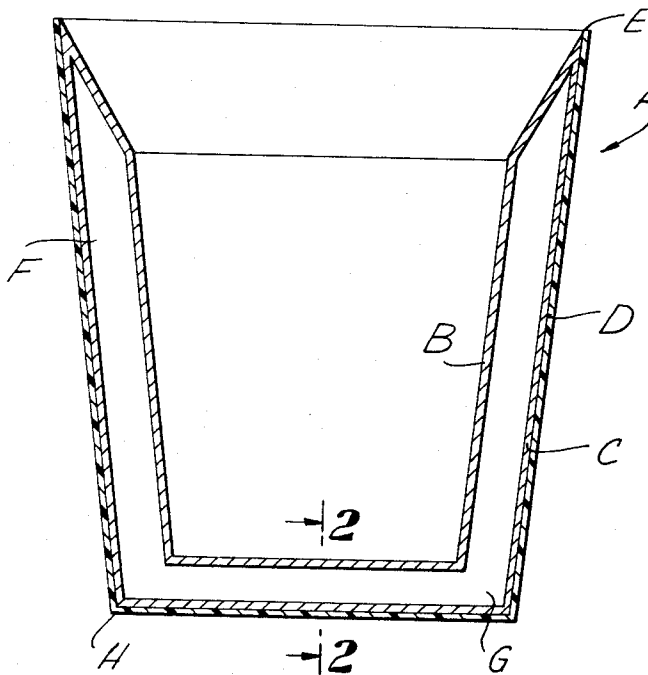
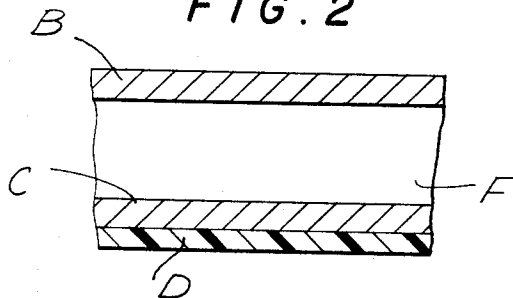


FIG. 2



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COOLER CONTAINER

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ABSTRACT OF THE DISCLOSURE

As an abstract of the present disclosure, there is disclosed a double walled aluminum container, which has a fluorinated chlorinated hydrocarbon, always in liquid or gaseous stage, between the walls.

The present disclosure relates to a double wall container which may be a pitcher or a boxlike enclosure but which is preferably a conical shaped structure like a drinking glass, in which there are parallelly separated walls coming together at the upper edge of the glass and gradually separating from one another until at the base they reach a maximum separation.

The walls are desirably of light-weight aluminum, with plastic coatings. The plastic coating is desirably a fluorinated hydrocarbon coating, such as Teflon. There is a coolant material between the walls, desirably of the nature of a fluorinated chlorinated low molecular weight hydrocarbon having one, two or three carbon atoms per molecule and a boiling point below atmospheric temperature.

Description of the invention

The invention particularly relates to containers and particularly to inverted frusto-conical containers of the double wall type having an interior filling of a coolant material, such a fluorinated chlorinated light molecular weight hydrocarbon as Freon.

It is among the objects of the present invention to provide a cooling container of the character described which may be made in various sizes and shapes and can be conveniently utilized as a goblet in connection with the serving of carbonated, cooling or iced drinks.

Another object is to provide a novel container which may be conveniently handled and will greatly enhance the cooling of various types of drinks and which may be either used on a serving tray or kept in a refrigerator.

Still further objects and advantages will appear in the more detailed description set forth below, it being understood, however, that this more detailed description is given by way of illustration and explanation only and not by way of limitation, since various changes therein may be made by those skilled in the art without departing from the scope and spirit of the present invention.

In accomplishing the above objects it has been found most satisfactory to provide a so-called coolant container or cold cup to keep various types of beverages cold through long periods of time with or without icing and which will eliminate dilution of the beverage, particularly where a large amount of ice must be used.

In the preferred form of the invention it has been found that a hollow cup of light weight spun aluminum is most satisfactory, having separate walls along the sides and bottom which may start at a junction at the top of the cup and increase to a separation of $\frac{1}{16}$ to $\frac{1}{8}$ and then to $\frac{1}{4}$ of an inch. Desirably the bottom of the cup is at least $1\frac{1}{2}$ to 2 times more separated than the sides of the cup and the walls of the cup have come together until at their top edge they will join so as to form a sealed junction between the inside and the outside of the cup.

An important feature of the present invention resides

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in the fact that the aluminum is coated, desirably with a thick plastic coating which should not exceed one-half the thickness of the aluminum, which should be one-half to two times the thickness of the aluminum, which desirably is between 1 and 5 and sometimes as much as 8 gauge. The coating on the outside wall of the container desirably may give a coloration or decorative appearance to the exterior of the container and an extra thickness at the bottom may serve as a convenient base.

The plastic coating should be so arranged that the double aluminum shell itself will not be in contact with either the table, the refrigerator shelf or with the hands or lips of the consumer. Desirably the material of the cup is provided with a slight vacuum so that there is always a subatmospheric pressure between the separated walls, and it should be devoid of air and contain a volatile solvent which will normally be under such pressure as to vary between liquid and gaseous condition during normal usage.

Preferably a fluorinated hydrocarbon is utilized which will be liquid at temperatures varying from 20 to 30° F. and which will vaporize at temperatures between 30 to 40° F. A plurality of miscible hydrocarbons of this character are desirable employed, which will give a gradual liquification and vaporization range so that quantities of liquid will exist, even with partial vaporization between 20 to 20° F. with the major portion being liquid. On the other hand, in the range of 30 to 40° F. the major portion of the material will be in vapor form with small quantities of the material still in liquid form. It is found that this may be achieved by varying the degree of vacuum so that the vacuum will be between one-half to three-quarters of the atmospheric pressure with all air excluded at a mean temperature of 30° F. and with the coolant consisting of varying quantities of the fluorinated low molecular weight hydrocarbons varying from 2 to 5 carbon atoms and 3 to 8 fluorine atoms attached to said carbon atoms and the balance being hydrogen. This balance is not readily obtainable with chlorinated hydrocarbons.

Normally this type of container or cup will serve to keep the beverages cold for a long period of time without the addition of ice cubes or the necessity of first cooling the beverage. The containers may be stacked together in a refrigerator and maintained between 20 to 30° F. before usage. When removed from the refrigerator, a drink poured therein will be chilled to between 32 and 45° F. without the addition of ice, and this temperature can be maintained for a period of fifteen to sixty minutes, or even longer.

The plastic coatings will not only protect the aluminum and insulate the aluminum but will also aid in the maintenance of the cooling effect.

Although preferable for the shape of glasses, it is also possible to use the graduated spacing as applied to pitchers, mugs, boxes and the like.

Brief description of drawings

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts as hereinafter more specifically described, and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which fall within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:

FIG. 1 is a diagrammatic side sectional view of the glass container according to one embodiment of the present invention.

FIG. 2 is a fragmentary transverse sectional view upon the line 2—2 of FIG. 1.

Description of the preferred embodiment

Referring to FIG. 1 there is shown a container A having an inner wall B, an outer wall C, with a plastic coating D on said outer wall. The container walls are joined together by the integral junction E to form an interspace F which gradually increases to a maximum of G at the base H of the cup.

Normally, although the coating D is shown on the exterior wall, it desirably may be applied to the interior wall B up to the sealed edge E so that the entire exterior has been provided with a coating which is not only insulating but will be resistant to wear, to various types of liquids and various types of food acids and food ingredients, such as citric acid or ethyl alcohol. The interior faces of the outside wall C and the inside wall B are also desirably lined with a thin coating of a plastic material to protect them against any attack by the coolant agent which is used. The coolant agent may be a mixture of various fluorinated hydrocarbons of the nature of Freon at a sub-atmospheric pressure varying from one-third to two-thirds that of the atmosphere, which is 15 pounds per square inch.

Desirably the spaces F and G are filled with a mixture of gas and liquid which is always on the verge either of becoming all liquid or all gas as the temperature may range from 20° F. to 40° F.

A warm liquid placed in the interior wall B will normally be brought down to a temperature between 32 and 45° F. or below 50° F. by this balance of vapor and liquid. The containers may be initially cooled so that

liquid will be preponderant by placement in a refrigerator. They then may be used for receptacles for various types of drinks, whether they be carbonated, alcoholic, or otherwise.

As many changes could be made in the above cooler container, and many widely different embodiments of this invention could be made without departure from the scope of the claims, it is intended that all matter combined in the above description shall be interpreted as illustrative and not in a limiting sense.

Having now particularly described and ascertained the nature of the invention, and in what manner the same is to be performed, what is claimed is:

1. A coolant container comprising a double wall vessel, hermetically sealed, with said double wall extending over the sides and base thereof and having an open top to receive the drinking liquids to be cooled and maintained in cooled condition and the walls being of thin sheet metal and a coolant fluid sealed between said walls, said walls consisting of thin sheets of aluminum and a plastic coating thereon, and said coolant consisting of a low molecular weight fluorinated hydrocarbon mixture which liquifies and vaporizes between 20 and 40° F.

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