

April 8, 1969

R. L. PAQUIN

3,436,932

COOLING DEVICE FOR BEVERAGE CONTAINERS

Filed July 24, 1967

Sheet 1 of 2

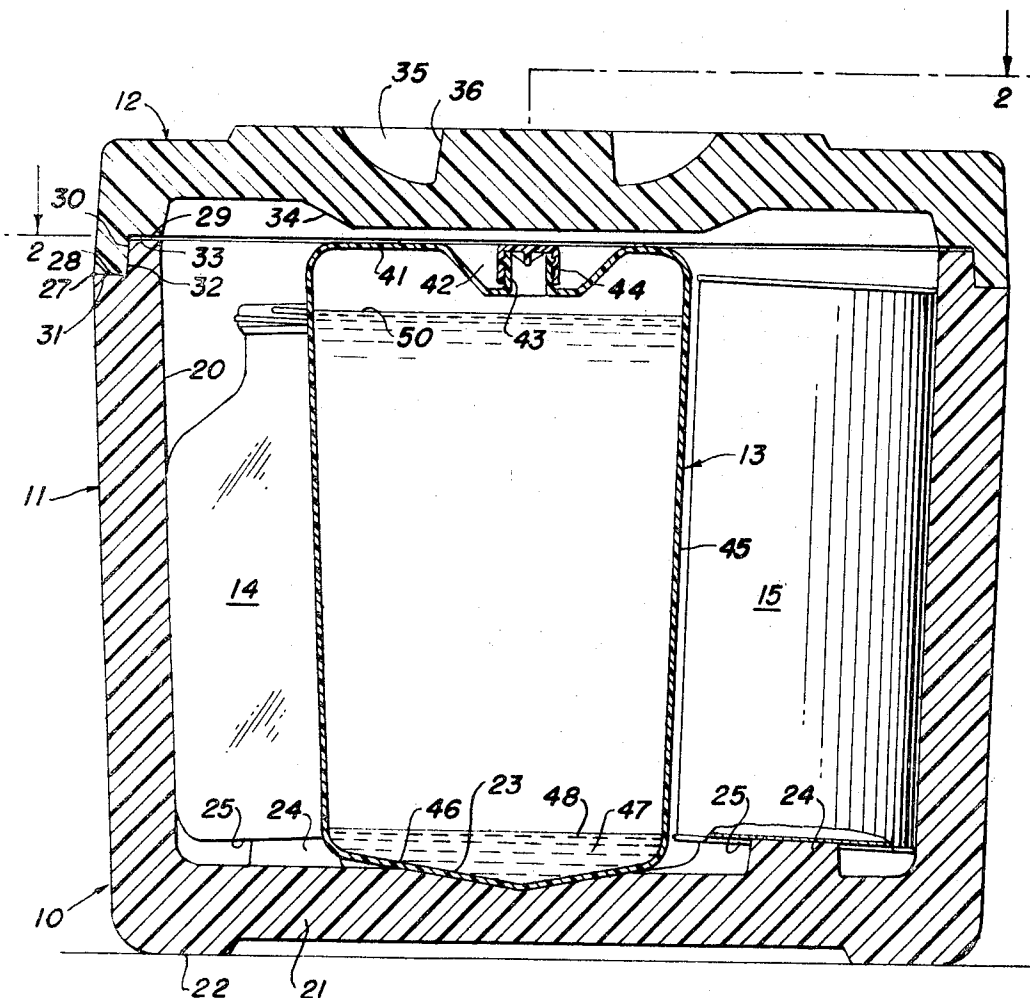


Fig. 1.

INVENTOR
ROGER LEE PAQUIN

BY *Owen, Wickens & Erickson*
ATTORNEYS

April 8, 1969

R. L. PAQUIN

3,436,932

COOLING DEVICE FOR BEVERAGE CONTAINERS

Filed July 24, 1967

Sheet 2 of 2

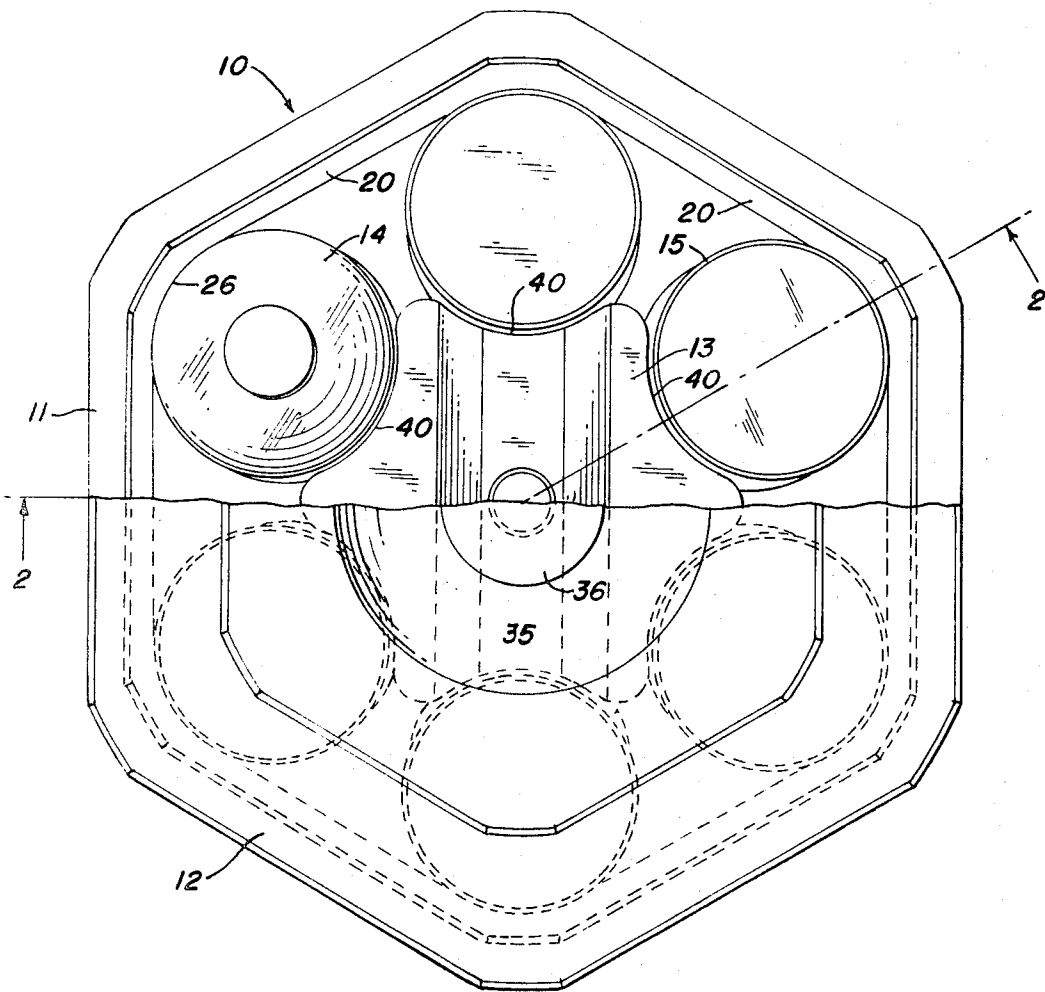


Fig. 2.

INVENTOR
ROGER LEE PAQUIN

BY *Owen, Wickersham & Erickson*
ATTORNEYS

1

3,436,932

COOLING DEVICE FOR BEVERAGE CONTAINERS

Roger Lee Paquin, Killingworth, Conn., assignor to
Glacier Ware, Inc., Clinton, Conn., a corporation
of Connecticut

Filed July 24, 1967, Ser. No. 655,562

Int. Cl. F25d 3/08

U.S. Cl. 62-457

7 Claims

ABSTRACT OF THE DISCLOSURE

This cooler device includes (1) a polygonal chest of insulating material having short arcuate corners and having small pedestals on the interior bottom wall for support of bottles or cans having bottom walls substantially larger than the pedestals and having a conical central recess in the bottom wall, (2) a polygonal cover for the chest, of insulating material, and (3) a hollow cooler unit having a conical bottom wall to fit into the conical central recess and an exterior wall with arcuate recesses, one for the side wall of each bottle or can and corresponding in number to the side walls of the chest, and a top wall, and filled with refrigerant fluid. For six-packs, the chest and cover are hexagonal, and the cooler chest has six arcuate recesses.

This invention relates to beverage cooler for a plurality of containers of beverage.

Many drinks including soft drinks and beer are sold in packs of six cans or bottles. It is often convenient to carry such a pack along on a picnic or trip, and it is desirable to have the drinks cool. Consequently, a major purpose of the present invention is to provide a unit which accommodates six cans or bottles of beverage and helps to cool them or to keep them cool for a period of several hours. The invention may be adapted to more or fewer containers.

It is desirable for the unit to be convenient and simple, rather than complex with several different cooling chambers, and this also is accomplished by the invention.

Basically the invention comprises a cooling chest with a cover, both of which are made of simple insulating material and which impart no cooling to the bottles, and a central cooling unit located centrally inside the chest and adapted to be in contact with all of the containers. The cooling unit, the chest, and the cover are made to cooperate together and with the containers so that the unit is not only compact and so that all parts fit well, but also affords maximum insulation of the containers from the heat outside the chest while imparting efficient cooling on the inside.

Other objects and advantages of the invention will appear from the following description of a preferred embodiment:

In the drawings:

FIG. 1 is a view inside elevation and in section of a cooling unit embodying the principles of the invention, showing one can and one bottle inside.

FIG. 2 is a view in section taken along the line 2-2 in FIG. 1.

A unit 10 of the present invention involves three principal elements: a polygonal chest 11, a polygonal cover 12, and a refrigerant unit 13 of unique shape. The chest 11 and cover 12 are preferably made from a suitable lightweight insulating material such as expanded polystyrene foam. While no cooling is to be imparted by these members, they do serve to insulate the contents from outside heat. The bottles 14 or cans 15 preferably come into contact with the chest 11 in only relatively small areas, and they do not ordinarily touch the cover 12 at all. The

2

refrigerating unit 13 takes up the center of the unit 10, with the bottles 14 or cans 15 around it and in contact with it. Thus, all the actual cooling is imparted by this central unit 13.

For six packs, the chest 11 has six approximately straight side walls 20, with a slight taper to enable better draft in molding. The chest's bottom wall 21 is preferably raised on a rim 22 to minimize ground contact and improve insulation. The bottom wall 21 is thick and is provided with a central tapered recess 23 to receive and to locate the unit 13.

The bottom wall 21 is also provided with a short, preferably round pedestal 24 for each of the six cans or bottles. The pedestal 24 comes into contact with only a small area of the bottom 25 of the bottle 14 or can 15, and thereby the remainder of the bottom 25 is spaced from the bottom wall 21 and from contact with any other member. Similarly, the chest 11 has short curved corner portions 26 that engage the cans 15 or bottles 14 on only a small area and limit them to a minimum contact with the insulating materials, while giving sufficient contact to hold them securely in place. Thus, the bottles 15 or cans 14 are carried in good contact with the central refrigerant unit 13 but are spaced from the walls 20 and 21 of the cooling chest 11.

The cooling chest 11 has an upper edge 27 provided with a recessed outer rim 28 and a higher inner rim 29 connected by a tapered edge 30. The cover 12 is provided with a projecting outer rim 31 to engage the rim 28, and a tapered wall 32 to engage the taper 30. Its recessed inner rim 33 is ordinarily spaced from the rim 29.

The cover 12 is preferably provided with a central projection 34 which extends down toward and a short distance from the refrigerant bottle 13, to keep it from bouncing around too much on rough roads. Preferably, it is not in direct contact, but is close enough to it so that the unit 13 cannot shift to any great extent. The cooling chest 11 is preferably made taller than the bottles 14 or cans 15 to be used, or at least taller than their straight-sided portions, as is the cooling unit 13 itself. In some units the tops of bottles may project up above the unit 13 and touch the cover 12, but usually the bottles or cans can move a slight amount. The top of the cover 12 may also have a recess 35 to provide a central handle 36, which enables easy removal of the cover 12.

The unit 13 is a refrigerant bottle provided with arcuate indentations 40, six for a six pack unit, each to receive a can 15 or bottle 14. The diameter across the deepest indentations 40 is somewhat larger than the diameter of a bottle 14 or can 15, so that the bottles 14 and cans 15 are preferably kept slightly apart from each other; they do not touch each other. It is not intended that there be necessarily perfect contact with the unit 13, just so long as there is an appreciable contact at each arcuate segment 40; so the segments are made to have a radius approximately equal to that of the largest bottle or can be used in the device; hence smaller cans and bottles do not get complete contact over the arc, but will get a substantial amount of contact.

The top 41 of the unit 13 is generally flat with a diametral groove or recess 42 thereacross in which is a central bottle neck 43 and stopper 44, so that the top of the stopper 44 is approximately level with the top wall 41. The sides 45 of the unit 13 are tapered parallel to the walls 20. The bottom wall 46 is conical, to fit into the recess 23.

For the sake of convenience, the unit is generally sold with a refrigerant liquid material 47 up to the level 48 shown in FIG. 1, and the unit 13 has a fill line 50 marked thereon. The user, when he gets the unit, unscrews the cap 44 and fills the unit 13 with water up to the fill line

50. He then screws the cap 44 back on the neck 43 and the unit 13 is ready. The unit 13 is then put into a freezer and its liquid frozen. When it is to be used it is taken out and put into place, and then the bottles 14 or cans 15 are put around it and the unit closed.

To those skilled in the art to which this invention relates, many changes in construction and widely differing embodiments and applications of the invention will suggest themselves without departing from the spirit and scope of the invention. The disclosures and the description herein are purely illustrative and are not intended to be in any sense limiting.

I claim:

1. For cooling and transporting articles, a portable refrigerator comprising a chest having a bottom wall and a side wall, and a separable refrigerating container adapted to receive refrigerant solution therein, the refrigerating container being centrally positioned within the chest and being bodily removable therefrom to be chilled before use, the refrigerating container having a configured side wall defining a series of alternating protruding and recessed peripheral portions providing surface-to-surface contact in intimate heat transfer relation with articles received in the chest, and the refrigerating container cooperating with the chest and serving as an article positioning unit removably maintaining the articles in wedged engagement between the side walls of the chest and the refrigerating container.

2. The refrigerator of claim 1 wherein the refrigerating container additionally serves as the sole separating unit maintaining the articles in spaced apart relation for optimum cooling efficiency.

3. The refrigerator of claim 1 wherein the side wall of the chest includes an interior surface converging toward the bottom wall of the chest, and wherein the side wall of the refrigerating container is tapered toward the bottom wall of the chest to retain articles surrounding the refrigerating container in inclined relation to the bottom wall of the chest and against unintended displacement.

4. The refrigerator of claim 1 wherein a plurality of small article supporting pedestals are formed on an interior surface of the bottom wall of the chest to ensure minimal heat transfer to the articles from the chest and from condensate received in the bottom of the chest.

5. The refrigerator of claim 1 wherein the refrigerating container is a hermetically sealed unit for containing the refrigerant solution.

6. For cooling and transporting articles, a portable

refrigerator comprising a chest having a bottom wall and an upstanding side wall, the side wall having an interior configuration providing a polygonal inside wall surface having a predetermined number of meeting edges, a refrigerating container centrally positioned within the chest and adapted to receive refrigerant solution, the refrigerating container having a side wall with contoured article engaging surfaces corresponding in number and in radially spaced diametrically opposed relation to the interior meeting edges of the chest for removably wedging the articles received therein in surface-to-surface contact and in intimate heat transfer relation with the refrigerating container.

7. For cooling and transporting articles, a portable refrigerator comprising a chest having a bottom wall and a side wall, a separable refrigerating container adapted to receive refrigerant solution therein, the refrigerating container being centrally positioned within the chest and being bodily removable therefrom to be chilled before use, the refrigerating container including a side wall having contoured article engaging surfaces providing surface-to-surface contact in intimate heat transfer relation with articles received in the chest, the refrigerating container serving as an article positioning unit removably maintaining the articles in wedged engagement between the side walls of the chest and the refrigerating container, the refrigerating container including a conical bottom wall, the bottom wall of the chest having a central conical recess conforming to the conical bottom wall of the refrigerating container for receiving and stabilizing the same, and a cover removably secured to the top of the chest with the cover spaced apart a predetermined distance less than the depth of the recess to maintain the refrigerating container in captured relation against accidental displacement within the chest.

References Cited

UNITED STATES PATENTS

40	991,715	5/1911	Good	62-464
	1,692,792	11/1928	Munters	62-433
	1,862,491	6/1932	Hessenbruch	62-464
	2,007,154	7/1935	Bowes	62-371
	2,028,825	1/1936	Christensen	62-457
45	2,030,899	2/1936	Scurlock	62-457 X
	3,262,283	7/1966	Taylor	62-457 X
	3,338,068	8/1967	Piker	62-457 X

LLOYD L. KING, *Primary Examiner.*