Dec. 6, 1960 C. J. PALERMO 2,963,188

INSULATED DUAL CONTAINER

Filed Aug. 25, 1958 2 Sheets-Sheet 1

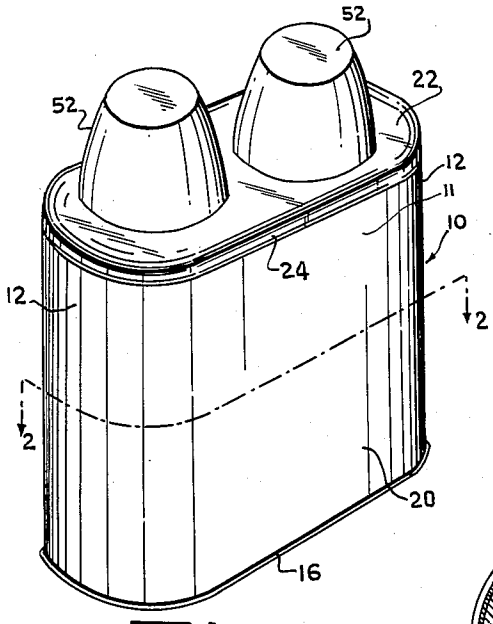


Fig. 1.

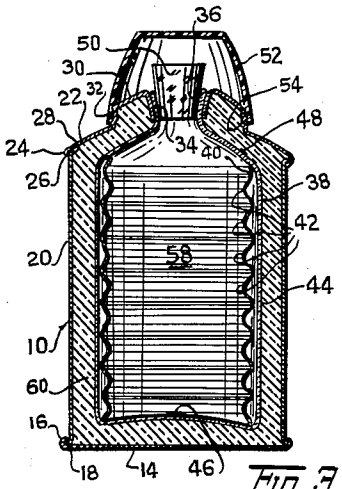


Fig. 3.

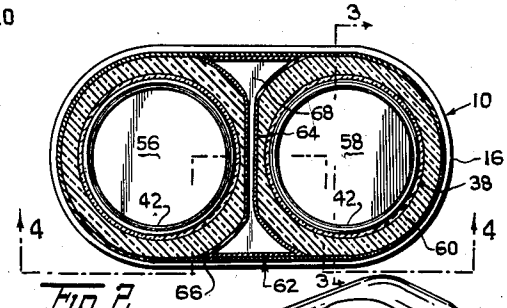


Fig. 2.

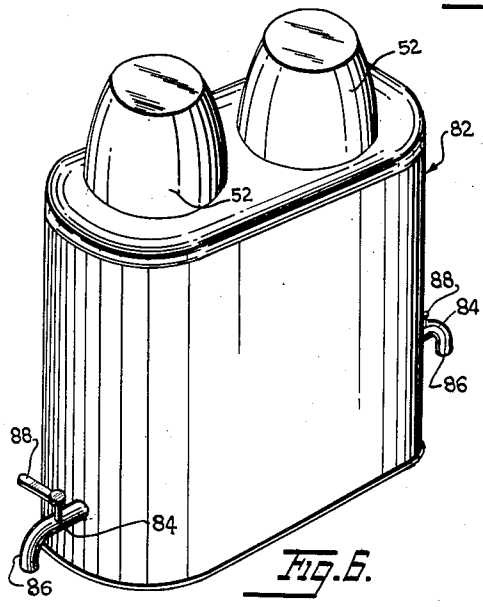


Fig. 6.

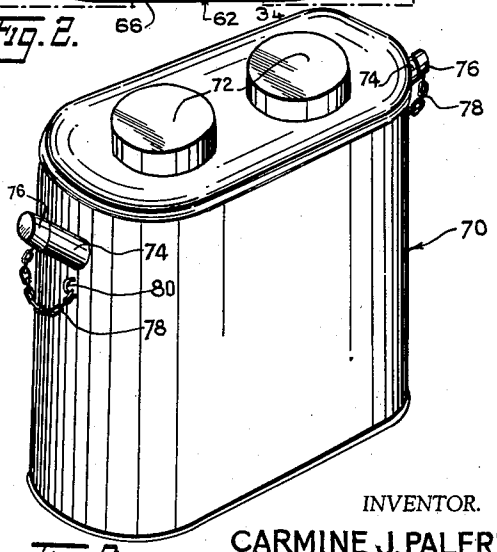


Fig. 5.

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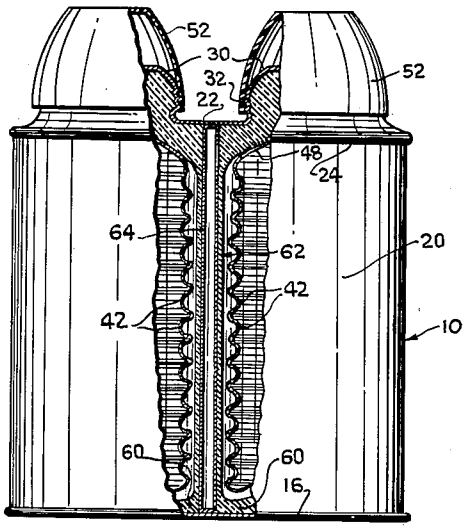


Fig. 4.

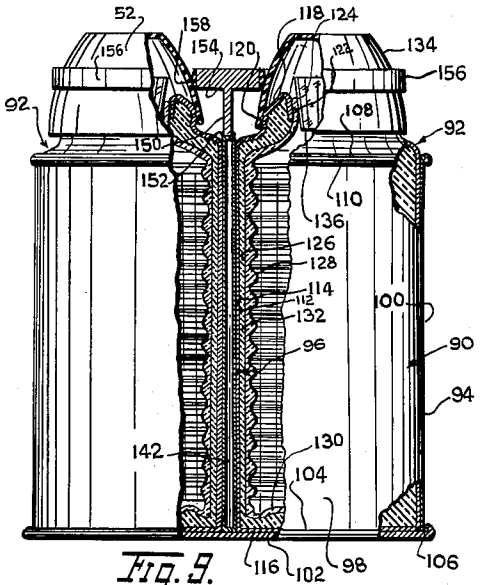


Fig. 9.

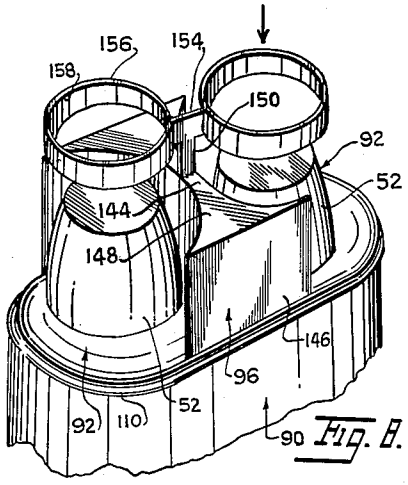


Fig. 8.

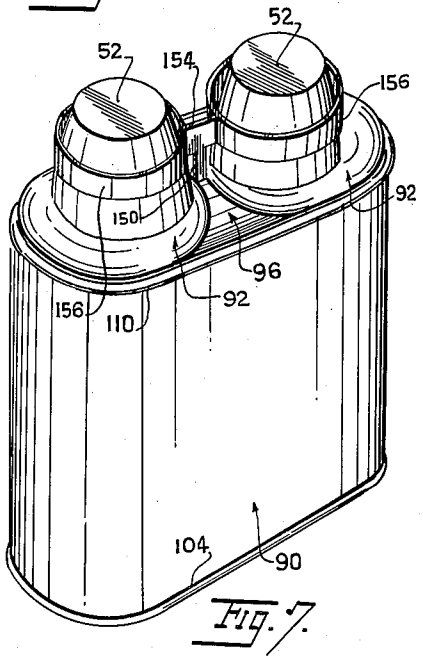


Fig. 7.

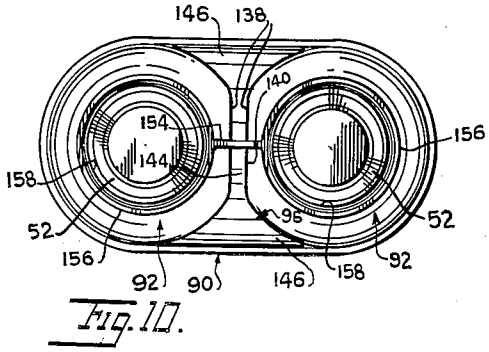


Fig. 10.

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2,963,188

INSULATED DUAL CONTAINER

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3 Claims. (Cl. 215—13)

This invention relates to insulated containers, that is, containers of the type in which liquids may be kept either in a hot or in a cold condition, as desired.

Ordinarily, containers of the character described comprise a metal shell or outer jacket, an inner shell or liner which is of a heat and cold insulating material, such as glass, and insulation filling the space between the inner and outer shells, said insulation being of various types.

A container of the character described is usually of the single type, and this has certain disadvantages. Notable among these is the fact that such a container can hold a hot liquid, or alternatively a cold liquid. However, it cannot hold both at the same time, since there is only a single liquid receptacle.

The main object of the present invention is to provide a dual container of the general kind described above, which container will have two receptacles separated from each other by insulation material. In one of these receptacles hot liquid may be placed. In the other, a cold liquid may be placed. Both liquids may be carried in the double container at the same time. Obviously, hot liquids could if desired be placed in both of the receptacles. Alternatively, cold liquids could be placed in both of the receptacles. It is thus proposed, in carrying out the invention, to provide a novel, large-capacity container characterized by its distinct versatility in respect to the amount and different types of liquids which it may carry at one and the same time.

Another object is to provide a novel formation of the surface of the inner, glass shell. In achieving this object, it is proposed to provide an undulant or wavy inner surface in direct contact with the liquid. Said surface, by reason of its particular shape, is particularly designed to improve the insulation action of the glass material or equivalent insulating means.

Another object is to provide a container of the type stated which, though of the double type, will be compact so as to be capable of storage in a relatively small area. This is important, of course, on trips taken in automobiles, in circumstances in which it is often necessary to conserve every possible space.

A further object is to provide a double container as described which can be manufactured at comparatively low cost.

Still another object is to provide a double container that will be, in one form of the invention, equipped with a removable partition which is hermetically sealed and is completely hollow to provide a dead air space. In this way, it is proposed that the partition serve a dual function. In carrying out one function, the partition separates two individually removable containers which could be used separately if desired. In discharging its other function, the partition serves as a heat insulation means. In discharging a third function, the partition serves as a hold-down device for the individually removable containers.

Another object, in both forms of the invention, is to provide partitioning means which will in any event definitely serve as a highly efficient insulator, thus to prevent heat transfer between the hot and cold liquids to the maximum degree.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:

Fig. 1 is a perspective view of a double container according to the present invention.

Fig. 2 is an enlarged horizontal section through the container taken substantially on line 2—2 of Fig. 1.

Fig. 3 is a vertical section through the container, on the same scale as Fig. 2, taken on line 3—3 of Fig. 2.

Fig. 4 is a view partly in elevation and partly in vertical section, on the same scale as Fig. 2, taken substantially on line 4—4 of Fig. 2.

Fig. 5 is a view like Fig. 1 showing a modified construction of the double container.

Fig. 6 is a view like Fig. 1 showing another modification in the double container.

Fig. 7 is a view like Fig. 1 showing yet another modification.

Fig. 8 is a fragmentary perspective view of the container shown in Fig. 7, with the combined partitioning, insulating, and hold-down means being partly removed.

Fig. 9 is an enlarged view like Fig. 4 of the modified construction shown in Figs. 7 and 8.

Fig. 10 is a top plan view of the device shown in Fig. 7, on the same scale as Fig. 9.

Referring to the drawings in detail, in the form of the invention shown in Figs. 1–4, the double container has been generally designated 10, and includes an outer shell 11 having rounded ends 12. The outer shell 11 also includes a flat bottom plate 14 (see Figs. 2 and 3) having an upwardly rolled bead 16 extending continuously throughout its periphery, said bead engaging an outwardly directed peripheral lip 18 formed upon the bottom edge of the side wall 20 of the shell 11.

The shell further includes a top wall 22, which, like the side wall and bottom plate, has rounded ends so that the peripheries of the top wall, side wall, and bottom plate will all be in substantial registration. The top wall 22 has a continuous, depending peripheral flange 24, the bottom edge of which has an inwardly directed lip 26 crimped into engagement with an outwardly directed lip 28 formed upon the top edge of the side wall 20. The top wall 22 slopes downwardly toward its periphery as shown to best advantage in Figs. 3 and 4.

Top wall 22, at locations spaced longitudinally thereof, is integrally formed with an upwardly directed neck 30, having coarse threads 32 formed therein, at the base of the neck. Neck 30, at its upper end, is integrally formed with a depending cylindrical portion or internal flange 34, engaging the reduced diameter upper end portion 36 of an inner shell or liner 38 of glass material, the inner surface 40 of which is formed with regularly spaced, circumferentially extending, continuous undulations or corrugations 42.

The liner 38 thus has a large-diameter lower portion 44, said liner being permanently closed at its lower end by a bottom wall 46. The lower portion 44 at its upper end merges into an upwardly tapering top portion 48 which in turn merges into the reduced neck or mouth portion 36 of the liner. A cork stopper or equivalent plug 50 is engaged in the mouth portion 36.

An inverted cup 52, of molded plastic or the like, is of

tapering formation, and has internal threads **54** engageable with the threads **32**. Thus, when the device is completely closed, the cup **52** is threaded onto the threaded base **32** of the neck **30** of the outer shell, as shown in Fig. 3.

Of course, when liquids are to be poured from the container, the stopper **50** of the selected receptacle is removed, following removal of the cup **52**. The liquid may then be poured out, and can be poured directly into the cup for consumption therefrom.

It will be understood, of course, that the liner shown in Fig. 3 would be duplicated in the other receptacle of the double container, and in fact the construction shown in Fig. 3 is exactly duplicated at the other end of the container, as will be clearly apparent from Fig. 2. In this way, there are provided two, identical, longitudinally spaced receptacles, which have been designated **56**, **58** in Fig. 2, one being adapted to hold a hot liquid and the other being adapted to hold a cold liquid.

Of course, there would be a tendency toward heat transfer between the liquids in these circumstances. Therefore, in addition to the insulation **60** surrounding the glass liner within the shell, there is provided a partition generally designated **62**. Said partition, as shown in Fig. 4, extends the full height of the shell, and a shown in Fig. 2 the partition extends the full width of the container. The partition has a midwidth portion **64** which is relatively narrow, said midwidth portion merging into progressively widened side portions **66** which are in direct contact with the opposite sides of the shell.

The partition **62** is completely hollow, and is permanently sealed so as to provide, over the full width and height of the shell, a completely closed dead air space **68** within the partition. A dead air space is well recognized as being one of the most effective types of insulation, and is particularly valuable in the present instance, cooperating with the installation **60** in preventing heat transfer from the hot to the cold liquid contained in the respective receptacles of the dual container.

The partition **62**, in the form of the invention shown in Figs. 1–4, is permanently secured within the shell, and could be spot welded or otherwise secured to the wall of the shell. Alternatively, the partition could be merely fitted tightly into the shell, during the manufacture of the device.

Referring now to Fig. 5, there is here shown a modified double container generally designated **70**. This is identical in every respect to the container shown in Figs. 1–4, with the exception that instead of the cups **52**, there are merely provided internally threaded closures **72** of inverted cup shape, which serve to cap the respective receptacles, after the stoppers **50** have been applied. However, the cups **52** could be used in the form of the invention shown in Fig. 5 as desired. Conversely, the caps or closures **72** could be used in the form shown in Figs. 1–4, in place of the cups **52**.

The device shown in Fig. 5 differs from the first form in that it has, at its opposite, rounded ends, spouts **74**. These would be in communication with the interiors of the respective receptacles. Caps **76** are applied to the dispensing spouts, being connected to light chains **78** which are connected to small eyes **80** secured to the shell of the container below the respective spouts **74**.

In Fig. 6 there is shown another modification **82**. This is identical in all respects to the first form of the invention, and as will be understood, instead of the cups **52**, the container **82** could be provided with the caps **72**.

The container **82** differs from the first form of the invention only in that it is provided with outwardly projecting faucets **84** at its opposite, rounded ends, adjacent the bottoms of the respective receptacles. The faucets **84** have downwardly turned distal ends **86**. Flow of liquid through the faucets is controlled by valves **88** which would normally be disposed in their closed position shown in Fig. 6.

Referring now to the form of the invention shown in Figs. 7–10, there is here shown a double container generally designated **90**. This form differs from the forms previously described, in that it can be used as a double container, but will also permit individual use of identical insulated receptacles generally designated **92**. Each receptacle **92** can be used as a conventional, single compartment type of insulated container, independently of the other receptacles. One may thus purchase the device shown in Fig. 9, with the idea of using the insulating containers **92** separately under normal conditions. The containers **92**, thus, could be used daily by two different children in carrying hot or cold liquids to school. At such time, how ever, as it is desired to use a double container, as for example, to carry liquids on an extended automobile trip or on a picnic or hunting trip, one inserts the two, normally separately used containers **92** into an outer shell or jacket **94**. A combined insulating, hold-down, and partitioning means generally designated **96** is inserted between the containers or receptacles **92** in these circumstances as shown in Fig. 9.

This is the overall general arrangement of the double container **90** shown in Figs. 7–10. Considering now the detailed construction thereof, the outer shell or jacket **94** includes a side wall **98**, having rounded ends **100**, that is, the side wall **98** has the same general shape as the side wall **20** of the first form. The outer jacket **94** further includes a bottom plate **102**, having a peripheral bead **104** crimped over the outwardly directed peripheral lip **106** formed integrally upon the lower end of the side wall **100**.

The outer jacket **94** differs from the outer shells of the forms of the invention previously described herein, in that it is formed completely open at its upper end, the upper end of the jacket being designated at **108**. The top edge of the jacket is formed with a continuous, outwardly rolled bead **110** to prevent one from cutting one's self upon the otherwise sharp edge that would be produced at said top edge of the jacket.

The individual insulated receptacles **92** are insertable in the upwardly open jacket **94**, and when the partition **96** is inserted between the receptacles **92** in the manner shown in Fig. 7, said partition serves to wedgingly engage the receptacles in the outer jacket. However, the partition has additional means for holding the receptacles within the jacket.

Before, however, considering the details of the partition construction, it may be appropriate to consider the details of the construction of each receptacle **92**. Each receptacle **92** includes an outer casing **112**, formed of sheet metal material or the like. Casing **112** includes a side wall **114** integral or otherwise made rigid at its lower end with a flat bottom wall **116**. Side wall **114** at its upper end is integral with an upwardly tapering neck **118**, having threads **120** at its lower end. Neck **118**, at its upper end, is integral with a depending sleeve **122** which is in engagement with the reduced-diameter upper end portion **124** of a glass liner **126** having an undulating inner surface **128** and a completely closed bottom **130**. Insulation material **132** fills the space between the liner and the shell **112**. An inverted cup **134** is internally threaded to engage the threaded base **120** of neck **118** and a stopper **136** is engaged in the reduced-diameter portion **124** as shown in Fig. 9.

In some forms of the invention, the outer shell **112** could be completely circular in cross section. In the illustrated example, however, the shell **114**, at one location on its circumference, has a flat surface **138** in directly opposed, parallel relation to a corresponding flat surface of the other receptacle **92**.

The partition **96** includes a hollow spacer member **140**, hermetically, permanently sealed to provide a dead air space **142** extending the full width and length of the outer jacket **94**. Thus, the member **140** provides a very effective insulation, preventing heat transfer between hot and cold liquids carried in the respective receptacles **92**.

The member **140** has a relatively narrow midwidth portion **144**, which fills the space between the flat surfaces **138**. The opposite, flat walls of the midwidth portion **144** are in engagement with the flat surfaces **138** of the outer shells **112** of the respective receptacles **92**. The side portions **146** of the partition are progressively increased in width in a direction toward the respective sides of the outer jacket.

The member **140** at its uper end is permanently closed by a top wall **148**. Medially between the opposite sides of the member **140**, a short, vertically upwardly projecting post or support pin **150**, which can be of flattened formation as shown in Figs. 7 and 8, is welded as at **152** to the top wall. Post **150** at its upper end is integral with a connector plate **154** which in turn is integral at its opposite ends with coplanar, horizontal, hold-down rings **156**, the inner surfaces of which are faced with rubber gaskets **158** (see Fig. 9).

As previously noted, the receptacles **92** could be separately used as a normal, single-compartment insulating container. When the device is to be used as a double container, the receptacles are filled with liquids, which may be of different temperatures as previously noted. The receptacles are then inserted in the outer jacket **94**. Then, the partition **96** is inserted in the space between the receptacles **92**, being moved downwardly as shown in Fig. 8. As the partition moves downwardly, it frictionally binds the receptacles **92** against the side wall of the outer jacket. Eventually, when the partition moves to its fully inserted position shown in Fig. 7, the rubber facings **158** of the hold-down rings **156** will bear firmly against the upwardly tapering cups **134** in the manner shown in Figs. 7 and 9. The rubber facings prevent damage to the cups.

The rings, as shown in Fig. 7, completely encircle the cups intermediate the upper and lower ends of the cups. The cups thus cannot be threaded off the necks **118**. At the same time, the rubber gaskets compress to increase frictional engagement between the rings and cups. All the parts are thus interengaged, and since the containers themselves are already quite firmly wedged in the outer jacket, the rings serve to hold the receptacles against moving outwardly from the jacket.

Of course, at such time as it is desired to remove one or the other receptacles for the purpose of pouring liquid therefrom, the partition means is simply lifted out of the space between the receptacles, and the selected receptacle is removed so as to permit it to be uncapped. Subsequently, when it is returned to place, the partition means is swiftly inserted, and once again begins to discharge its partitioning, hold-down, and insulating function.

In all forms of the invention there is the common characteristic wherein there is effective heat insulation in the partition means between the spaced liquid-receiving areas. Further, said means, in all forms of the invention, has still another function which has previously not been mentioned. This is the function of cross-bracing the outer shell or jacket medially between the rounded, opposite ends of said jacket. A strong device, capable of withstanding heavy shocks, thus results.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by United States Letters Patent is:

1. An insulated dual container comprising an outer shell, and a pair of receptacles within said outer shell, having liquid-receiving cavities about which insulation is extended, said receptacles being wholly out of communication with each other, for storage of liquids in each receptacle independently of the other receptacle, each receptacle including a removable cap disposed exteriorly of the shell, and means extending transversely of the shell between the receptacles to form a partition separating the interior of the shell into separate spaces in which the receptacles are respectively disposed, said partition being removable from the shell, the partition including a hollow, hermetically sealed member to provide a dead air space between the receptacles, the receptacles being removably engaged in the shell so as to be usable independently of the shell and of each other, as individual insulated containers, the partition including a pair of integral rings engageable about the caps in the inserted position of the partition to hold the receptacles in the shell.

2. An insulated dual container comprising an outer shell, and a pair of receptacles within said outer shell, having liquid-receiving cavities about which insulation is extended, said receptacles being wholly out of communication with each other, for storage of liquids in each receptacle independently of the other receptacle, each receptacle including a removable cap disposed exteriorly of the shell, and means extending transversely of the shell between the receptacles to form a partition separating the interior of the shell into separate spaces in which the receptacles are respectively disposed, said partition being removable from the shell, the partition including a hollow, hermetically sealed member to provide a dead air space between the receptacles, the receptacles being removably engaged in the shell so as to be usable independently of the shell and of each other, as individual insulated containers, the partition including a pair of integral rings engageable about the caps in the inserted position of the partition to hold the receptacles in the shell, said caps being of tapered form to wedge in the rings.

3. An insulated dual container comprising an outer shell, and a pair of receptacles within said outer shell, having liquid-receiving cavities about which insulation is extended, said receptacles being wholly out of communication with each other, for storage of liquids in each receptacle independently of the other receptacle, each receptacle including a removable cap disposed exteriorly of the shell, and means extending transversely of the shell between the receptacles to form a partition separating the interior of the shell into separate spaces in which the receptacles are respectively disposed, said partition being removable from the shell, the partition including a hollow, hermetically sealed member to provide a dead air space between the receptacles, the receptacles being removably engaged in the shell so as to be usable independently of the shell and of each other, as individual insulated containers, the partition including a pair of integral rings engageable about the caps in the inserted position of the partition to hold the receptacles in the shell, said caps being of tapered form to wedge in the rings, the caps being threaded, the receptacles including threaded necks receiving the caps, thus to hold the caps against rotation in a direction to remove the same, when the caps are wedged in the rings.

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