Dec. 25, 1962 R. P. BROWN 3,070,253

INSULATED CONTAINER

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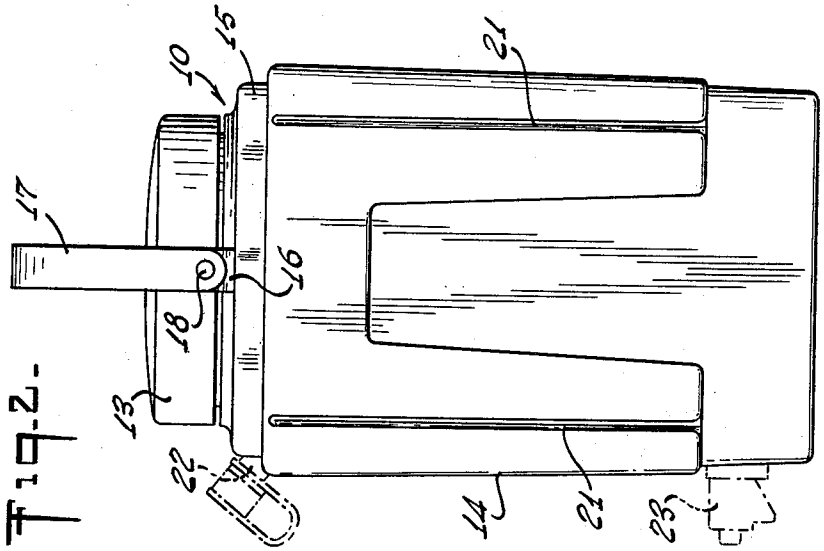

Fig. 2.

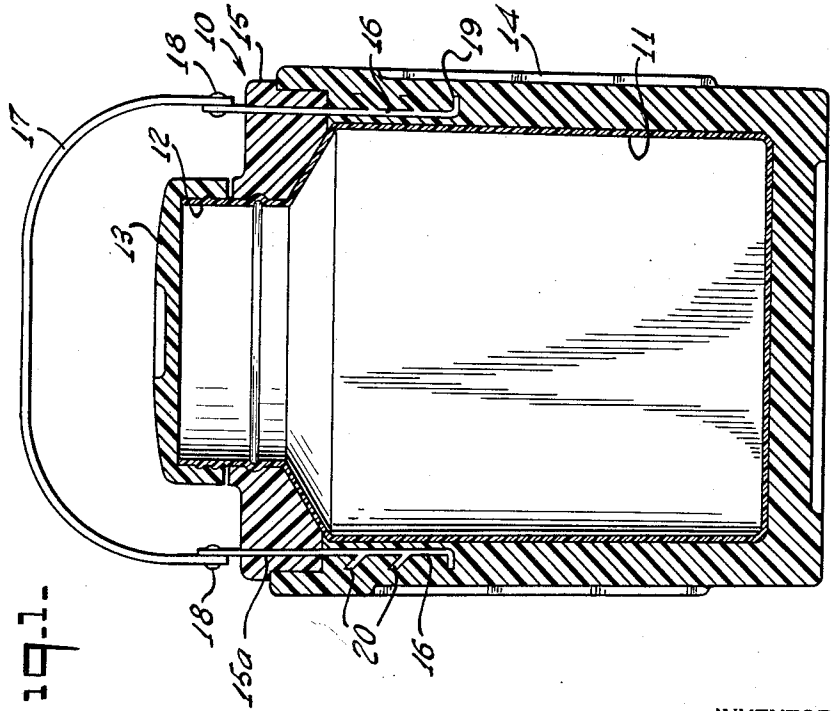

Fig. 1.

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Fig. 6.

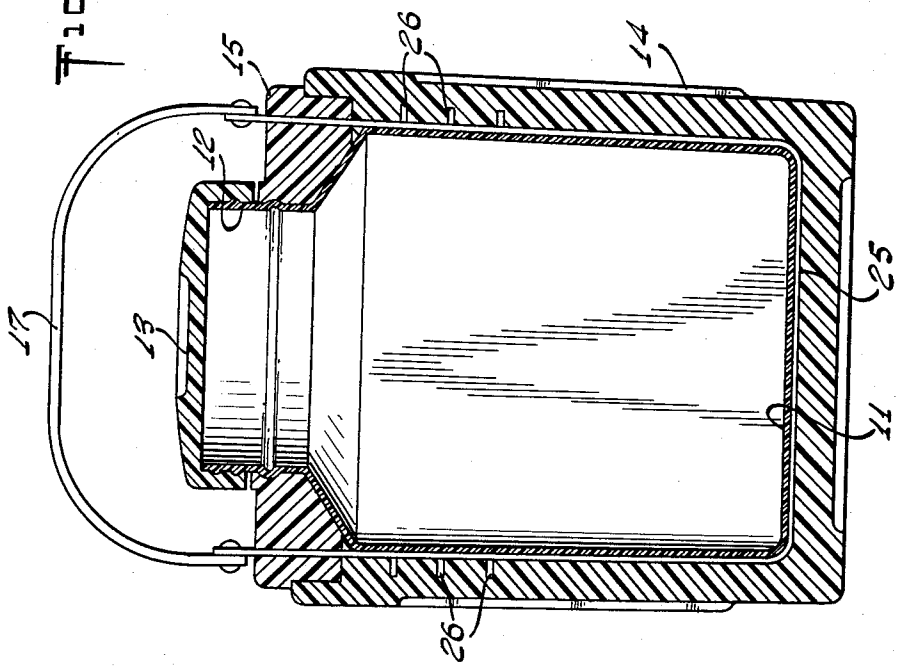


Fig. 5.

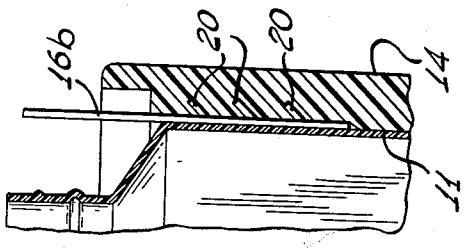
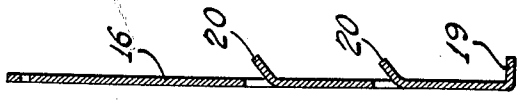


Fig. 4.

Fig. 3



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3,070,253

INSULATED CONTAINER

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1 Claim. (Cl. 220—9)

The present invention is directed to improvements in insulated container structures.

In the construction of thermally insulated vessels such as jugs for containing liquids, ice cubes and the like, a common practice is to employ typically a jacket composed of dry insulating material confined within an outer shell. In such a device the carrying handle or bail is normally attached to the outer shell, usually at the upper portion or shoulder thereof, which construction requires that the shell parts be made sufficiently strong and rigid to support the weight of the jug and its contents without danger of flexing and breakage at the points of handle attachment. The outer shell complication adds appreciably to both material and assembly costs, at the same time resulting in an inconveniently heavy or rigid jug.

This invention has as one of its objects the provision of an improved insulated container structure characterized by its simplicity, efficiency, light weight and relatively low cost.

A further object resides in the provision of an improved insulated jug structure in which the insulation itself constitutes the sole outer jacket.

A further object is to provide an improved light-weight jug structure which is readily assembled, low in cost, attractive in appearance, and cushioned against exterior shocks due to rough or careless handling.

Other objects and advantages of the invention will become evident during the course of the following description in conjunction with the accompanying drawings, in which—

FIGURE 1 is a vertical sectional view of a typical insulated jug embodying the invention;

FIGURE 2 is an exterior side view of the same;

FIGURE 3 is an enlarged longitudinal detail section of one of the handle mounting members shown in FIGURE 1;

FIGURE 4 is a similar section of an alternative form of handle mounting member;

FIGURE 5 is a fragmental sectional view showing an alternative assembly arrangement of the handle mounting members, and

FIGURE 6 is a sectional assembly view similar to FIGURE 1 but illustrating an alternative one-piece construction of the handle mounting means.

Referring to FIGURE 1, the numeral **10** generally denotes a jug having an inner liner or container **11**, preferably of plastic and formed with an upper neck **12** adapted to receive a screw closure cap **13**, the cap also preferably being of plastic. Enveloping the liner **11** is an insulating jacket made up of a main body **14** and an upper shoulder portion **15** secured thereto. A pair of oppositely disposed handle holders or mounting members **16**, embedded in the body **14** and extending upward through close-fitting slots **15***a* in the shoulder portion **15**, mount a handle or bail **17** hinged to their upper ends by means of rivets **18** or the like. The handle **17** may

preferably be made of strong plastic such as extruded vinyl.

The body **14** and shoulder portion **15** are moulded of light expanded plastic material such as polystyrene foam. The members **16**, which in this form of the device are embedded as inserts in the body during the molding operation, are made preferably of strip metal and are formed with lower feet or barbs **19** and upwardly inclined barbs **20** which serve to anchor the members firmly and permanently in the insulating material. For clarity in assembly illustration, the members **16** are depicted in full profile rather than section in FIG. 1, their described individual structure being shown in enlarged sectional detail in FIGURE 3.

In assembling the device, the liner **11** is first inserted in the body **14**, after which the shoulder portion **15** is pressed downward over the mounting members **16** and cemented or bonded to the body **14** as shown. Thereafter the handle **17** is hinged to the members **16** and the cap **13** is added to complete the basic jug structure. The body **14** and shoulder portion **15** when so assembled constitute the sole jacket enveloping the liner **11**, the firm vertical anchoring of the members **16** in the body **14** providing ample lifting strength without the necessity for additional outer shells or other exterior reinforcements. During the initial molding of the body **14** and shoulder portion **15** these elements acquire an outer skin impervious to liquids and which may obviously be of any desired color for attractive appearance. To further augment the attractive aspect, the body **14** may be formed with exterior decorative features such as flutes **21** as shown in FIG. 2. In addition to its function as an insulator, the simple expanded plastic jacket has the further advantage of sufficient inherent resilience to provide cushioning against damage or clatter in case of rough or careless handling.

The structural and assembly features described above may be applied to jugs of any desired convenient shape, for example of cylindrical rather than the generally rectangular form illustrated in FIGS. 1 and 2. For many services such jugs are advantageously employed in their simplest basic container form, while if desired for other types of service they may be provided with pouring spouts **22**, bottom faucets **23**, or both, as indicated in FIG. 2, provisions in such case being made in the formation of the jackets and liners for installation of these fixtures in any suitable manner.

In the detail variation in handle mounting member formation shown in FIG. 4 the members **16***a* employ a plurality of holes **24** instead of barbs. When the members of this type are molded as inserts in the jacket body the molding material fills the holes **24** and is set therein as bridges to provide, in cooperation with the feet **19**, the required anchoring against vertical movement.

FIG. 5 illustrates an alternative arrangement in which the handle mounting members may be incorporated during final assembly rather than as inserts in the initial molding operation. In this case the liner **11** is first inserted snugly in the jacket body **14** as before, after which the mounting members **16***b*, from which the lower feet have been omitted, are forced downward between the walls of the liner and jacket. Thereupon the barbs **20** embed themselves in the body **14** in effective anchoring relation as shown.

In the second alternative assembly structure shown in FIG. 6, the handle mounting means is formed as a single U-shaped member or stirrup **25** having barbs **26** extending outwardly at right angles from its vertical side portions. In assembling, the member **25** is sprung laterally inward and inserted in the jacket body **14**, the contraction permitting the barbs **26** to clear the tip of the body so that the stirrup may bottom in the body cavity. The contracting force is then released to allow the sides of the stirrup to spring outwardly and bring the barbs into engagement with the body **14**, after which the liner **11** is forced into place. During these operations the barbs **26**, which may advantageously be formed with sharp outer points, are forced into the jacket body **14** exterior backing pressure being supplied to the outside of the jacket walls if necessary to ensure complete and snug embedding. Thereafter, addition of the shoulder jacket portion **15**, the bail **17** and the cap **13** completes the assembly in the manner previously described. It will be noted that in this form of the device the great preponderance of the loaded weight of the container when lifted is supported directly by the one-piece stirrup **25**. It will also be noted that in this form as well as the others described, the preponderant lifting stress on the handle mounting member or members is practically all tensional, allowing these parts to be made of relatively thin material with consequent snug assembly, minimum weight, and low cost.

While the shoulder portion **15** has been shown as being cemented to the main body, it may be held against the main body by securing means carried by the holders **16**. For instance, each holder may have a tab extruded therefrom to lock the shoulder portion **15** in place or a spring lock member or clip may be pressed over the end of the holder so that the holder will not only support the main body but will also hold the shoulder in place on the main body.

In the foregoing description of typical embodiments certain general preferences as to component materials have been noted, but it will be understood that the concept is not confined thereto. For example, for some types of service the liner **11** may be made of glass, ceramics or metals, such as aluminum, steel and the like. Also, it will be evident that in addition to jugs the general structural features are similarly applicable to other containers

such as ice buckets and the like. Thus, while the invention has been set forth in preferred typical forms, it is not limited to the exact embodiments illustrated, as various modifications may be made without departing from the spirit of the invention within the scope of the appended claim.

What is claimed is:

A thermally insulated structure comprising an inner container having bottom, side and top walls, a jacket of molded insulting material having a main body portion and an upper cover-like shoulder portion, said body portion enclosing the bottom and at least part of the side walls of said container and having an upwardly extending peripheral portion of reduced width to form a peripheral recess for the reception of said cover-like shoulder portion, said shoulder portion engaging the top wall of said inner container, handle mounting means carried by said body portion and extending upwardly therefrom a distance greater than the thickness of said shoulder portion, said shoulder portion having a peripheral recess formed in the edge thereof for cooperation with the internal peripheral recess in said body portion and having a pair of vertically disposed openings for reception and accommodation of the upwardly extending portion of said handle mounting means and a handle secured to the upper ends of said handle mounting means, said means each including at least one outwardly extending barb anchored in said jacket body.

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