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CONTAINER

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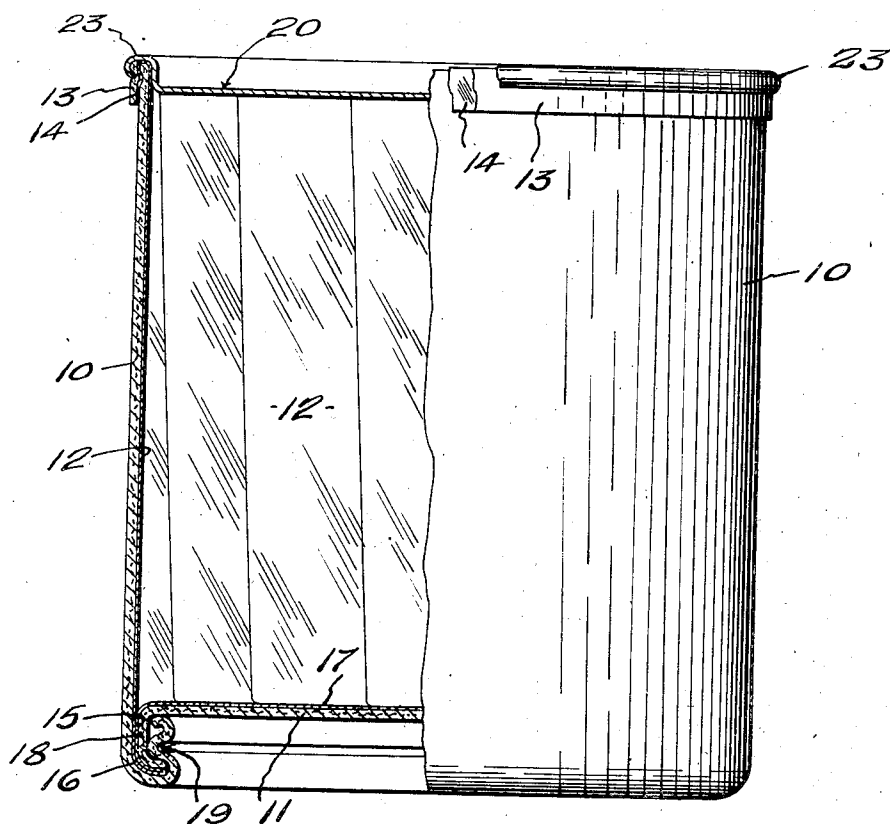


Fig-1-

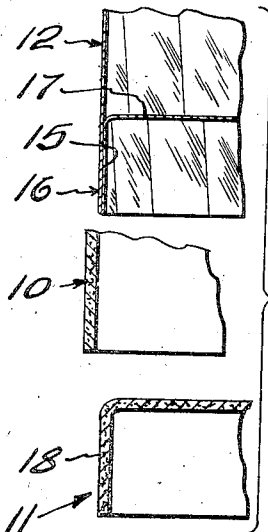


Fig-2-

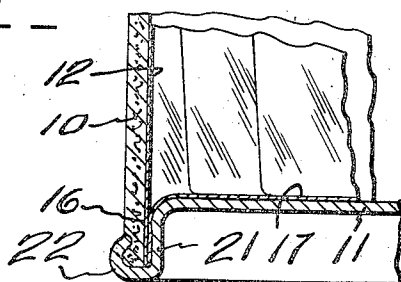


Fig-3-

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CONTAINER

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3 Claims. (Cl. 229-14)

This invention relates to containers formed with an outer casing of comparatively stiff, rigid, material and an inner bag of thin, flexible material having the characteristic of being moisture, liquid, oil or gas-proof.

The chief object of the invention is to provide a container of the type referred to wherein the bottom of the liner bag is completely supported by the bottom of the casing at all times. That is, the bottom of the liner bag is not supported, or suspended, by the side walls of the bag, the top of which is usually sealed to the top of the rigid casing.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawing in which like characters designate corresponding parts in all the views.

Figure 1 is a side elevational view, partly in section, of a container embodying my invention.

Figure 2 is a fragmentary, exploded view of the bottom portion of the container, bag and bottom closure.

Figure 3 is an enlarged, fragmentary, sectional view of the lower end of a container similar to that shown in Figure 1, with a modified bottom structure.

Heretofore containers have been fabricated by inserting or arranging a liner bag in a container casing. Usually the casing is composed of comparatively heavy, stiff, paper-board, the object in this instance being to employ the liner bag to render the paper casing suitable as a package for particular merchandise such as liquids and solids which, because of chemical reactions normally prevent their being packaged in a paper container. However, such liner bags have also been employed in connection with metallic casings, in which instance, the object of the bag is to prevent chemical action between the contents of the container and the thin casing.

The packaging of different commodities produces generally a different problem in each instance, and in many instances the so-called lined containers heretofore constructed have been found unsatisfactory.

The liner bags are usually constructed of treated parchment, or Cellophane. There are available different kinds of Cellophane, each kind having its particular characteristic. Some are liquid-proof, others moisture-proof, others gas-proof, and still others oil-proof. In some instances, certain types of liner bag material

have characteristics that present packaging problems. For example, some such liner materials that are oil-proof have a particular tendency to become brittle at low atmospheric temperatures and simultaneously lose a great deal of their tensile strength. Also, in some liner materials age results in a considerable degree of contraction or shrinkage. These undesirable characteristics are particularly advantageous in connection with the packaging of comparatively heavy commodities, such for example as cylinder oil used by automobile engines.

Where the bag is formed and inserted in the casing, the bottom of the bag generally connects with the side wall of the bag on an ascending curve or radius. From a practical standpoint, the top or open end of the bag is usually fastened in some manner to the top of the casing, with the result that the ascending curve portion between the bottom and side wall of the bag is unsupported, except inasmuch as it is suspended by the side wall of the bag. If the container is placed in low atmospheric temperatures, such as prevail customarily in the winter months in the Northern States, the material in the bag becomes extremely brittle, and if the container is shaken or moved quickly in an axial direction the weight of the oil, or other contents in the container, will completely sever the bottom of the bag from the side wall of the bag. This is very likely to happen if the package is a few weeks old, by which time there has been a considerable shrinkage in the bag material, resulting in forming a greater unsupported corner portion of the bag.

The invention comprises generally, a container comprising a casing formed of rigid material, an integral liner bag arranged within the casing with the open end of the bag secured to the top of the casing, the bag being so formed and arranged within the casing as to permit shrinkage in the side wall and the bottom of the bag, and to provide the entire bottom area of the bag with adequate support from the bottom closure of the casing.

As here shown, the casing 10 is of conventional circular form, and is provided with a suitable bottom closure 11. The casing 10 and the bottom closure 11 are in this case formed of comparatively thick paper-board, and are comparatively rigid. A liner bag 12 of thin, flexible material, such as Cellophane, is arranged in the casing 10. The side walls of the bag 12 are of pleat formation and are integral with the bottom of the bag. The upper or open end of the

bag extends over the upper edge of the casing 10 and is preferably secured thereto.

Referring to Figure 1, a ring 13 also of fibrous material encircles the top portion 14 of the bag 5 which overlaps the outer surface of the casing 10 adjacent the upper edge thereof. The ring 13 may be secured to the portion 14 of the bag as by adhesive, or the portion 14 may be secured to the upper outer surface of the casing 10. The 10 object of securing the open end of the bag to the upper end of the casing 10 is to maintain the bag in place until the contents has been inserted in the container and the top of the container sealed by the closure 20.

To afford adequate support at all times to the 15 bottom of the bag 12, and to prevent any unnecessary tension on the bag or the bottom thereof by shrinkage, or otherwise, the bottom edge of the bag is yieldingly held between the casing 20 10 and the bottom closure 11. The side wall of the bag continues downwardly below the bottom closure 11 and is refolded upon itself as at 15, forming a depending annular fold 16 extending between the casing and the bottom closure 11. The bottom closure may be secured in 25 any suitable manner to the casing 10. As shown in Figure 1, the bottom closure 11 is provided with a depending annular flange 18, and the lower end of the casing is crimped inwardly against 30 the inner surface of the flange 18, as at 19.

In Figure 3, the bottom closure 11 is formed of thin metal and is provided with a flange 21 35 crimped over the lower end of the casing 10, as at 22. In this instance, the fold 16 of the bag 12 extends between the flange 21 and the lower end of the casing 10. In both instances, the fold 16 is yieldingly gripped between the bottom closure 40 and the casing 10, so as to permit a slight movement of the sides of the fold during shrinkage of the bag and/or bottom. That is, the peripheral margin of the bag extending between the bottom closure and the casing and constituting the inner side of the fold 16 is permitted to move upwardly and over the peripheral edge 45 of the bottom closure 11 during shrinkage of the bottom of the bag and likewise, the outer side of the fold 16 is permitted to travel upwardly upon axial shrinkage of the side wall of the bag 12.

It will be observed that the bottom 17 of the 50 bag is entirely supported by the bottom closure 11, and inasmuch as the bag and its bottom are integral, or continuous, the bag forms a liquid, or oil tight liner for the casing. In the event 55 the material of the bag 12 becomes brittle because of low temperature, or ageing, the bottom 17 of the bag will not be severed by rough handling, inasmuch as it is entirely supported by the bottom closure 11, and not by the side wall of the bag.

The container may be provided with any suitable form of top closure. As here shown, the container is provided with a conventional form of thin metallic closure 20 which is formed 60 with an outwardly flaring flange 23, the peripheral margin of which is crimped over the upper edge of the casing 10 and ring 13, whereupon the closure 20 is sealed in liquid tight contact with the upper end of the bag 12.

The bag 12 is formed and inserted in the casing 10 previous to the insertion and crimping

of the bottom closure 11. This structure does not add materially to the cost of the container over and above that of a similar container being provided with a regular liner bag, and the bottom of the bag is prevented from being severed from 5 the side wall of the bag resulting in a defective container and the loss of the contents.

What I claim is:

1. A container comprising a rigid casing, a bottom closure secured in one end of said casing, a 10 bag of thin, flexible material, having the characteristic of expanding and contracting under varying atmospheric conditions, arranged in the casing with the open end of the bag attached to the top of the casing and the bottom of said 15 bag resting upon said bottom closure, said bag being formed with integral bottom and side walls and being initially of greater length than the interior of said casing, the side wall of the bag adjacent the bottom end thereof being formed 20 with an annular fold extending below said bottom closure and being yieldingly held between the inner wall of the casing and the periphery of the bottom closure, whereby the side wall of the bag is free to expand and contract axially 25 of the casing without effecting relative movement between the bottom of the bag and the bottom closure, and a top closure secured to the top of the container.

2. A container comprising a rigid casing, a bottom closure secured in one end of the casing, 30 a bag of thin, flexible material capable of expansion and contraction under varying atmospheric conditions and formed with integral side and bottom walls arranged within the casing 35 with the open end of the bag attached to the top of the casing, said bag being initially of greater length than the interior depth of the casing, the lower end of said bag being folded to form a depending annular flange extending between the 40 inner wall of the casing and the periphery of the bottom closure and being yieldingly clamped therebetween with the bottom of the bag resting upon and being supported by said bottom closure, whereby the side wall of the bag is free to 45 expand and contract without effecting relative movement between the bottom of the bag and the bottom closure, and a top closure for the top of the container.

3. A container comprising a tubular casing of rigid material, a bag of thin, flexible material, 50 capable of expansion and contraction under various atmospheric conditions, arranged in the casing with the open end of the bag secured to the top edge of the casing, said bag having integral 55 side and bottom walls and being initially formed of greater length than the interior depth of said casing, and the lower end of the bag being folded to form a depending annular fold extending below the bottom of the bag, a bottom closure for 60 the container arranged beneath the bottom of the bag and acting as a support therefor, and being provided with a depending peripheral annular flange coacting with said fold to yieldingly secure the lower end of the bag in the casing, 65 whereby the side wall of the bag is free to contract without decreasing the capacity of the bag, and a top closure secured to the top of the container.