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F. J. MARINO

3,425,472

FLEXIBLE CARGO CONTAINER

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FIG. 4

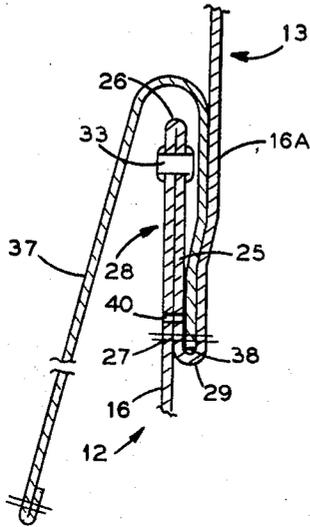


FIG. 3

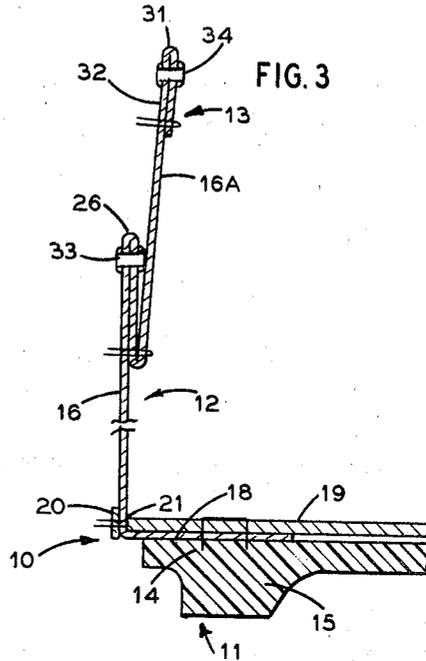


FIG. 2

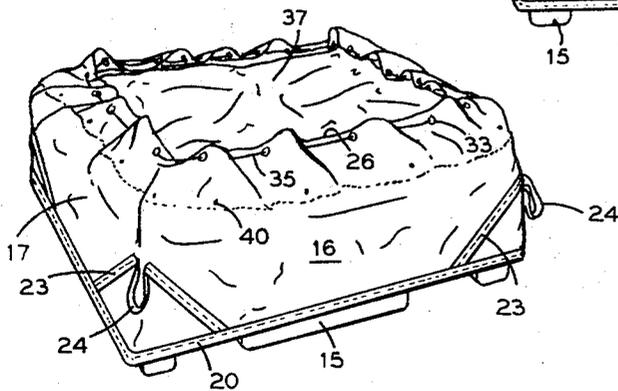
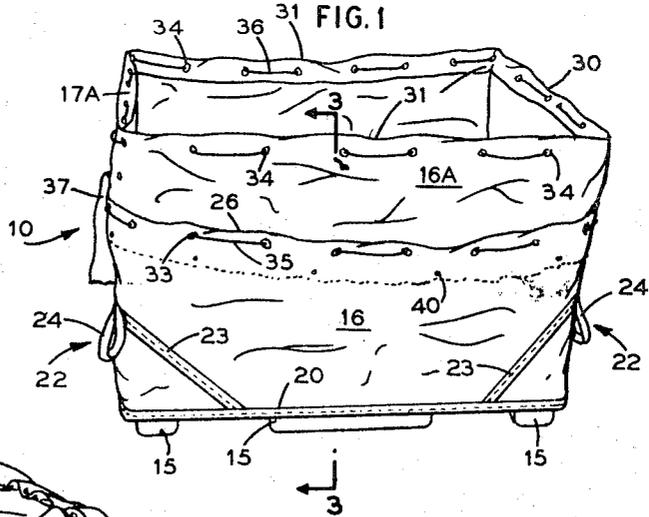


FIG. 1



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**FLEXIBLE CARGO CONTAINER**

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6 Claims

**ABSTRACT OF THE DISCLOSURE**

A flexible walled container conformable to varying amounts of contents of the container, together with means for conveniently compacting and retaining unused wall portions of the container.

*Background of the invention*

Containers of the flexible walled type for packaging cargo items of small and intermediate sizes have a wall construction defining a fixed capacity. When such containers are partially filled, the excess unused wall portions thereof present problems in disposition of the same. Further, in such cases, the unused portion of the container interferes with the normal utility of the container including handling, storage and retrieval of the contents of the container.

Accordingly, an object of this invention is to provide a flexible walled container having multiple wall sections which may be independently manipulated to reduce the effective volume of the container to the actual volume of the contents of the container; and further, to closely conform the containers walls to the boundary contours of the contents thereof.

Another object of this invention is to provide a container of the character described, which includes a rigid base portion to thereby palletize the container to facilitate the handling thereof by means of conventional pallet handling equipment.

A further object of this invention is to provide a container of the character described including flexible wall portions which are highly resistant to abrasion, moisture and wear; said wall portions including successive, spaced mouth portions with independent means for constricting the mouth portions whereby to adjust the volume of the enclosure to the actual volume of the contents thereof and to automatically relate the gathered wall portions of the container to the boundary contours of the contents of the container.

Still another object of this invention is to provide an improved flexible walled cargo container having structural details which facilitates the manufacture thereof in an economical manner; which allows for efficient filling, closing and emptying operations; allows for convenient transport of the containers and their contents; and permits for simple collapse of empty containers to a minimized bulk and a flat condition to allow for stacking of the empty containers.

*Summary of the invention*

The container of the instant invention comprises essentially a base container portion of fabric, with one or more bottomless peripheral wall sections in telescoped relation to the base container portion, thereby providing multiple independent mouth portions with means for

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separately constricting each mouth portion to effect closure of the overall container and to closely conform the walls of the container to the boundary contours of the contents of the container.

*Brief description of the drawing*

FIG. 1 is a perspective view showing the cargo container embodying the invention, in its open form;

FIG. 2 is a view similar to that of FIG. 1, showing the container in its closed condition;

FIG. 3 is a vertical sectional view taken on the line 3—3 of FIG. 1; and

FIG. 4 is an enlarged vertical sectional view showing details of the mouth portion of the lower container section.

*Description of the preferred embodiment*

The transportation of cargo has placed great emphasis on containerization for more efficient handling of the same. Such containers vary greatly in size and contours, in accordance with the type of cargo and the particular transportation means for carrying the same. More specifically, air transport has found to its advantage the containerization of cargo of all sizes and contours.

However, in the case of small or intermediate size items which are to be transported by air, it is difficult to aggregate such items in a form convenient for handling, except by loading the same into rigid or flexible containers.

Thus, as shown in the drawings, 10 designates a cargo container embodying the invention. The same comprises a rigid base portion 11, which for the purpose of illustration, is shown as rectangular in shape. Upstanding from the peripheral edge portions of base portion 11, is a tubular flexible lower container section 12 and a tubular flexible upper container extension section 13 extending upwardly from lower section 12.

The base portion 11 may be formed of molded plastic, wood, metal or the like, and may take pallet form. Thus, base portion 11 comprises a bottom wall portion 14 with laterally spaced leg portions 15 extending downwardly therefrom to raise wall portion 14 above a supporting surface and to allow container 10 to be lifted and transported by suitable devices such as a fork lift truck or the like.

The container sections 12, 13 may be formed of plastic coated fabric and may be in integral form. The fabric may be of nylon with a vinyl coating, thus providing material which is highly resistant to abrasion, moisture and wear in general.

The lower container section 12 comprises side wall portions 16, end wall portions 17; said portions 16, 17 terminating at their lower edges in inturred marginal portions 18 which are fixed between bottom wall portion 14 and a sheet insert 19 of plywood or the like, by staples, rivets, or the like, not shown. Preferably, the peripheral edges of insert 19 project slightly beyond the peripheral edges of bottom wall portion 14.

A peripheral bumper strip 20 of nylon webbing is stitched to the lower edge portion 21 of container section 12 on the outer surface thereof. Handles 22 are provided at the corners of container section 12, the same being formed of nylon webbing strips 23 with the terminal portions thereof extending diagonally of side wall portions 16 and end wall portions 17 and stitched thereto, handle forming loop portions 24 projecting from the corners of said container section 12.

The upper container extension section 13 is formed by first folding a peripheral marginal portion 25 of the lower container section 12, downwardly about the peripheral top edge 26 of said container section 12 and stitched in place as at 27 to form a reinforced mouth portion 28 for lower container section 12. The plastic coated fabric forming sections 12, 13 is then folded at the bottom of marginal portion 25, as at 29, to provide an upwardly extending walled portion including side wall portions 16A and end wall portions 17A.

The upper edge portions of end wall portions 17A are folded inwardly on edge 30 and wall portions 16A are similarly folded on edges 31, to provide a reinforced mouth portion 32 for the upper container extension portion 13.

Means is provided for independently constricting the mouth portions 28, 32 of the container sections 12, 13 respectively. To this end, mouth portion 28 is provided with peripherally spaced grommet members 33 and mouth portion 32 is similarly provided with spaced grommet members 34. Elongated members 35, 36, such as cords, cables or the like, are threaded through the grommet members 33, 34 respectively.

A weatherproof flap 37 of plastic coated fabric may be secured along one side edge thereof within one side of mouth 28; the edge 38 thereof being located adjacent folded edge 29, see FIG. 4. Mouth 28 may also be vented with a series of spaced drainage openings 40 adjacent fold 29, to allow the escape of any water collecting between sections 12, 13.

It will be apparent that container 10 may be held with its sections 12, 13 in open upright condition, as indicated in FIG. 1, frame means, not shown, being used to hold the container walls in distended relation. The container 10 may then be filled with small or intermediate size packages, as well as postal material and the like. The volume of such contents may vary up to the maximum capacity of container 10.

In any case, the mouth 32 of the upper section 13 is constricted by drawing cord or cable 36 together, thus bring edges 30, 31 at the mouth 32 together. The flap 37 may then be moved in overlying relation to gathered mouth 32. The mouth 28 is then constricted by drawing cord or cable 25 together. This will make the container 10 compactly set up in relation to its contents and with the walls thereof in closely conforming relation to the boundary contours of the contents.

The loaded container 10 lends itself to easy handling via lift trucks and the like, and may also be handled manually by loops 24. The contents of the container 10 are quickly removed therefrom by reversing the closing procedure through untying cords 35, 36 to open mouths 28, 32.

When containers 10 are empty and not in use, they may be collapsed to a flat folded condition for stacking and storage in a minimum amount of space. Preferably, the side walls 16 of section 12 have a height not exceeding one half the width of the bottom wall of container 10; thus facilitating the folding of walls 16 toward each other and downwardly into contact with bottom member 19; the walls of section 13 and flap 37 being suitably tucked into place relative to section 12.

As various changes might be made in the herein disclosed embodiment of the invention without departing from the spirit thereof, it is understood that all matter herein shown or described is by way of illustration and not limiting except as set forth in the appended claims.

What is claimed is:

1. A cargo container comprising a base member and a tubular flexible walled member having the bottom peripheral marginal portions thereof secured to marginal portions of said base member, said tubular member comprising lower and upper sections defined by a reversely folded peripheral zone connecting and integral with said sections, said zone comprising an outwardly disposed top folded peripheral edge portion and an inwardly disposed

bottom folded peripheral edge portion, means for securing the bottom folded peripheral edge portion to an opposed peripheral portion of said lower tubular section leaving the top folded peripheral edge portion free of the opposed peripheral portion of said upper tubular section and thereby providing a mouth for said lower tubular section, means for peripherally constricting the mouth of said lower tubular section, and means for constricting the top edge portions of said upper tubular section.

2. A container as in claim 1 wherein said base member comprises a rigid pallet member having recessed portions therein.

3. A flexible walled container comprising a base container portion having an upstanding peripheral wall portion including a mouth, and a tubular flexible extension having a mouth and in telescoped, offset relation to said base container portion, means for securing a lower peripheral portion of said tubular extension to said upstanding wall portion at a point below the mouth of said base container portion, the mouth of said tubular extension being located above the mouth of said base container portion, means for constricting the mouth of said base container portion, and means for constricting the mouth of said tubular extension, whereby to conform the walls of said base container portion and said tubular extension to the boundary contours of the contents of said container, said base container portion including a rigid bottom wall and means for supporting said container on a surface with portions of said bottom wall in spaced relation to said supporting surface.

4. A container as in claim 3, wherein said bottom wall is of rectangular shape, and said upstanding wall portion has a height not exceeding about one half the width of said bottom wall, whereby to allow said upstanding wall portion and said tubular extension to be compactly folded flat against said bottom wall when said container is not in use.

5. A flexible walled container comprising a base container portion having an upstanding peripheral wall portion including a mouth, and a tubular flexible extension having a mouth and in telescoped, offset relation to said base container portion, means for securing a lower peripheral portion of said tubular extension to said upstanding wall portion at a point below the mouth of said base container portion, the mouth of said tubular extension being located above the mouth of said base container portion, means for constricting the mouth of said base container portion and means for constricting the mouth of said tubular extension, whereby to conform the walls of said base container portion and said tubular extension to the boundary contours of the contents of said container, the bottom peripheral edge of said tubular extension being seamed to a peripheral portion of the upstanding wall portion located intermediate the bottom and top edge portions of said base container portion to thereby provide an upper peripheral portion of said upstanding wall portion in spaced, opposed relation to a lower peripheral portion of said tubular extension; and the upper peripheral portion of said upstanding wall portion is formed along a lower peripheral portion thereof with peripherally spaced vent openings.

6. A flexible walled container comprising a base container portion having an upstanding peripheral wall portion including a mouth, and a tubular flexible extension having a mouth and is telescoped, offset relation to said base container portion, means for securing a lower peripheral portion of said tubular extension to said upstanding wall portion at a point below the mouth of said base container portion, the mouth of said tubular extension being located above the mouth of said base container portion, means for constricting the mouth of said base container portion, and means for constricting the mouth of said tubular extension, whereby to conform the walls of said base container portion and said tubular extension to the boundary contours of the contents of said con-

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tainer, reinforcing means at the mouth of said base container and said tubular extension, said constricting means comprising a series of peripherally spaced grommet means mounted in the mouth portions of said upstanding wall and said tubular extension, and elongated flexible drawing means threaded through the grommet means at said mouth portions.

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U.S. Cl. X.R.

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