Feb. 17, 1970 W. W. HANNA ET AL 3,495,734

COLLAPSIBLE BOTTLE CARRIER

Filed June 17, 1968 2 Sheets-Sheet 1

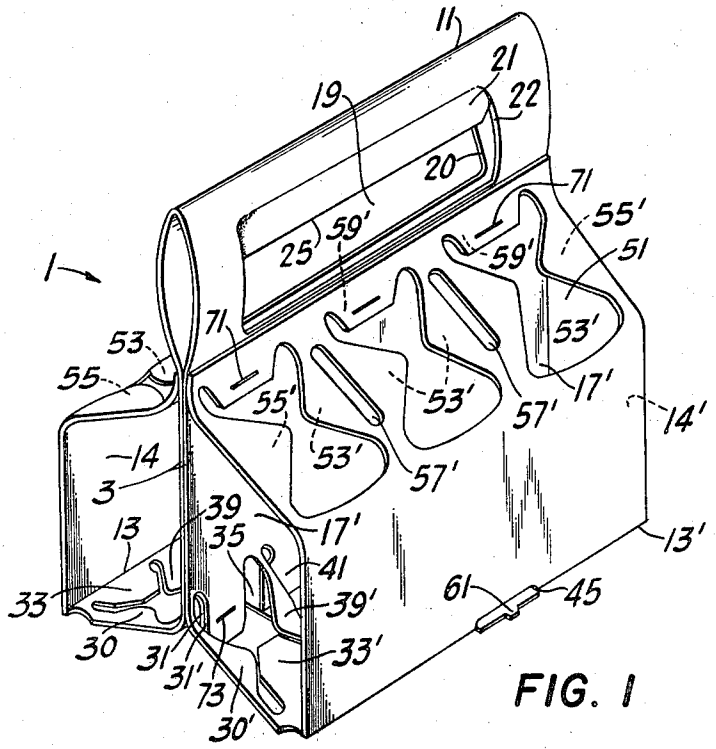


FIG. 1

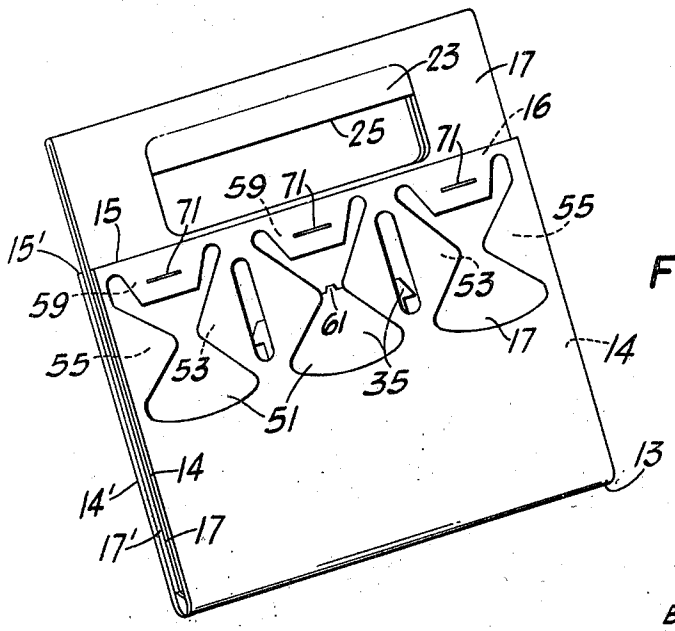


FIG. 2

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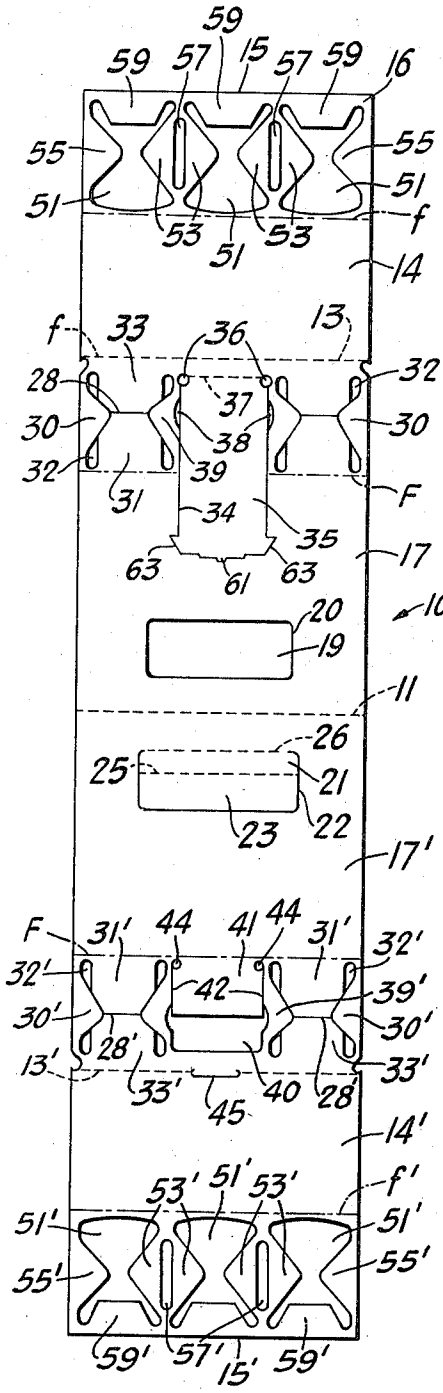


FIG. 3

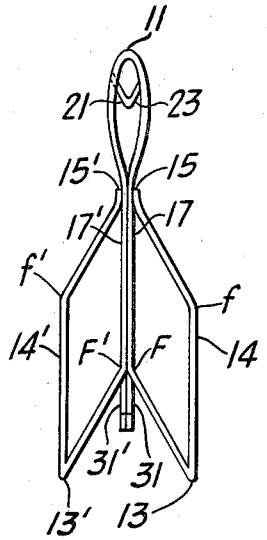


FIG. 4

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COLLAPSIBLE BOTTLE CARRIER

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Int. Cl. B65d 25/28, 5/46
U.S. Cl. 220—111 9 Claims

ABSTRACT OF THE DISCLOSURE

A collapsible carrier for bottles and the like is formed by cutting and scoring a continuous sheet of flexible material. The resulting carrier has substantially vertically extending interior walls, with legs at the bottom portion thereof, outwardly extending portions providing cushions, upwardly extending walls substantially parallel to the interior walls, the upper portions of the exterior walls folding inwardly to the central partition and having therein apertures and braces to maintain the bottles separately.

BACKGROUND OF THE INVENTION

The bottle carriers heretofore known have suffered from one or more disadvantages, such as the inability to use the carriers for more than one trip, the inability to clean or sterilize such carriers and the tendency of carriers to warp or become damaged through moisture. Particularly, the inability of such carriers to fold or collapse results in the need for a large amount of storage or shipping space, even though the carriers may be empty.

The bottle carrier of this invention can be formed from a sheet of continuous flexible material. The novel carrier has a configuration which enables the container to be collapsed into a flat position for storage or shipping with the consumption of relatively little space and yet to be readily assembled into an upstanding container and locked into standing position, for the insertion or transportation of bottles within the carrier. The carrier is preferably formed from polyethylene sheet which can be cleaned or sterilized for reuse.

SUMMARY OF THE INVENTION

The novel carrier which is formed from a continuous sheet of flexible material, comprises a pair of substantially vertically extending interior walls, extending from an integral fold line intermediate the ends of the sheet, which are interconnected to form a central partition for the carrier. The central partition has an aperture in the top portion to serve as a handle and has in the lower portion thereof a plurality of legs upon which the carrier rests, with the remainder of the interior walls sloping downwardly and outwardly to form a bottom support for the articles in the container. The interior walls terminate in upwardly, substantially vertical exterior side walls, generally parallel to the central partition, having upwardly and inwardly sloping portions, with apertures therein, at the upper ends thereof, which are connected to the central partition. One of the pair of the interior walls has a tongue cut therefrom, attached to the wall at a position near the attached exterior wall, the tongue extendable horizontally below the central partition and securable to the exterior wall opposite the hinged portion to retain the carrier in an open position. The carrier is readily collapsed to a flat position by disengaging the tongue and folding it into its position within the interior wall.

The objects and novel features of the invention are described by the following detailed description when the same is read in connection with the accompanying drawings. It is to be expressly understood, however, that the drawings are not intended as a definition of the invention, but are for the purpose of illustration only.

BRIEF DESCRIPTION OF THE DRAWING

FIGURE 1 is a perspective view of the carrier of the invention in upstanding, locked position.

FIGURE 2 is a side elevational view of the carrier of FIGURE 1 in collapsed position.

FIGURE 3 is a plan view of the blank, useful in forming the carrier of the invention, having fold lines, flex lines and apertures therein.

FIGURE 4 is an end view of the container of the invention in semi-collapsed position.

DETAILED DESCRIPTION

The carrier **1** of the invention, FIGURE 1, is formed from a single sheet **100** of flexible material. The sheet is generally in the shape of an elongated rectangle. A fold line **11** extends transversely across the sheet dividing the sheet into a first and second section, each section being divided into interior and exterior walls, **17**, **17'** and **14**, **14'**. The sheet **100**, is folded along fold line **11**, to form a pair of substantially vertically extending interior walls, **17** and **17'** that are interconnected to form a central partition **3** for the container. The central partition has an aperture **19** therein, as a handle. The lower portions of the interior walls **17** and **17'** have a plurality of flaps forming legs **31**, **31'** and **41** cut therefrom. The remainder portions of the lower portion of the interior walls are downwardly and outwardly extending and form a bottom support for bottles placed in the carrier **1**, with flaps forming cushions **33** and **33'** and braces **30**, **30'**, **39** and **39'** to hold the bottles in position so that they do not fall from the open sides of the carrier or contact each other. The walls **17** and **17'** terminate in substantially vertically extending exterior walls **14** and **14'** which, in turn, terminate in upwardly and inwardly sloping portions at the upper ends, the upwardly and inwardly sloping portions being attached to the interior walls **17** and **17'**, below the handle, by means of attachment flaps **59**. In the upwardly and inwardly sloping portions of the exterior walls **14** and **14'** are hour-glass shaped apertures **51**, through which the bottles are inserted to be placed in the carrier. The flexible ears **53**, **53'** and **55**, **55'** prevent movement and contacting of the upper portion of bottles placed in the carrier and brace the bottles. The carrier is held in upright, locked positions by means of tongue **35**, extending across the bottom of the carrier, below leg **41**; with appendage **61** of tongue **35** being engaged with slot **45**. Slot **45** is in wall **14'**, opposite the fold line **13** by which tongue **35** is hingedly connected to interior wall **17**. Carrier **1** rests on legs **31** and **31'**, fold lines **13** and **13'** and leg **41** rests on tongue **35**.

FIGURE 3 illustrates a blank from which the carrier of the present invention is formed. The blank comprises a single sheet of flexible material **100** which has a transverse fold line **11** dividing the sheet into first and second sections, each section being sub-divided into interior and exterior walls, between fold line **11** and the ends **15** and **15'** thereof. Thus, extending from fold line **11** is a pair of interior walls **17** and **17'** which terminate at fold lines **13** and **13'**, with exterior walls **14** and **14'** extending therefrom.

Interior wall **17** has therein an aperture **19**, near the fold line **11** which provides a handle. Positioned in the half of the wall **17** in the vicinity of fold line **13** are a plurality of vertically extending apertures **32**, which apertures permit the formation of flaps which constitute legs **31** and cushions **33**. Legs **31** and cushions **33** are formed by cutting the flexible material at **28**, said cut being formed generally intermediate the apertures **32** and trans-

verse said sheet **100**, terminating so as to leave triangular or arcuate portions **30** and **39** which serve as braces for the bottles placed in the assembled carrier. Between the plurality of legs **31** and cushions **33**, and hingedly attached by means of fold line **37** to the sheet near the fold line **13**, is a tongue **35**. The tongue is cut from the sheet along line **34** and has at the terminal part thereof an appendage **61**. Juxtaposed to tongue **35** are apertures **38**, cut from the sheet on both sides of tongue **35** to permit insertion therethrough of flanges **63** of tongue **35** when the carrier is to be placed into an upstanding position. Apertures **36** are also provided at either side of the fold line **37** to provide easy and ready flexing of the tongue **35**. In the exterior wall **14** are cut, in the upper half portion of the wall, hour-glass shaped apertures **51** which provide cells for insertion of bottles into the assembled carrier. The hour-glass shaped apertures **51** have at the upper end thereof, downwardly extending attachment flaps **59**. Intermediate each pair of apertures **51**, is a vertically extending aperture **57** which results in the formation of flexible ears or triangular portions **53**. Also provided are ears **55**. Ears **53** and **55** brace the upper portions of bottles placed in an assembled carrier and prevent shifting or contact of the adjacent bottles.

Interior wall **17'** has cut therein, along line **22**, a reinforcing or protective handle portion hingedly attached to the sheet at fold line **26**, the handle portion being divided into two sections **21** and **23** by means of fold line **25** which enables the folding of section **23** intermediate of the two interior walls **17** and **17'** when the carrier is assembled.

In the half of interior wall **17'** near the fold line **13'** are a plurality of vertically extending apertures **32'**, legs **31'** and cushions **33'**, formed by cuts **28'** and triangular portions **30'** and **39'** which correspond to **32**, **31**, **33**, **28**, **30** and **39** of interior wall **17**. Between the plurality of flaps forming legs **31'** and cushions **33'** is an aperture **40**, for insertion of tongue **35** therethrough when the carrier is assembled, as described hereafter in more detail. Also cut in the interior wall **17'**, between the flaps forming legs **31**, is a flap forming a leg **41**, by means of cuts **42** and apertures **44**. On the opposite side of fold line **13'**, in exterior wall **14'** is a cut or slot **45** which will engage the appendage **61** of tongue **35** when the carrier is in upright position. In exterior wall **14'** are hour-glass shaped apertures **51'**, attachment flaps **59'**, vertically extending apertures **57'** and ears **53'**, and **55'** corresponding to the apertures **51**, flaps **59**, apertures **57** and ears **53** and **55** in exterior wall **14**.

To assemble the carrier, the assembler brings the ends **15** and **15'** together, away from the assembler, and preferably attaches walls **17** and **17'** together by means of staples, heat sealing, adhesive or other means at a position between flex lines F and F' and fold line **11**. Legs **31** are then attached to legs **31'**, such as by staples **73**, so as to form reinforced legs of double ply. The exterior walls **14** and **14'** are then brought into a position, substantially parallel position, to the interior walls **17** and **17'** by bending the sheet upwardly, at fold lines **13** and **13'**, towards the assembler. When the exterior walls **14** and **14'** are in parallel position, the upper portions of the exterior walls **14** and **14'** are flush with interior walls **17** and **17'** of the carrier and are then attached to the carrier, by means of attachment flaps **59** and **59'**, such as by staples **71**, at a position so that the edges **15** and **15'** of the sheet are positioned slightly below the aperture **19** of the handle. At this stage, the carrier is assembled in collapsed position as shown in FIGURE 2. In this position, the body of the carrier comprises four plies of sheet material and the handle portion two plies of sheet material, and in this collapsed position is readily shipped or stored.

To place the carrier into an upstanding and locked position, for the insertion or transportation of bottles therein, it a simple and speedy operation. The assembler need only grasp the carrier by the bottom portion of the exterior walls, at fold lines **13** and **13'** and pull the exterior wall **14** and **14'** bottom portions away from contact with the interior walls **17** and **17'**. This forces the exterior walls **14** and **14'** away from the interior walls **17** and **17'** while maintaining them in substantially parallel relationship and causes the interior walls **17** and **17'** to bend along flex F and F' and the exterior walls **14** and **14'** to bend along flex lines of *f* and *f'*. Because the legs **31**, **31'** are attached, and the leg **41** is cut from the interior wall **17'**, they are not bent when the carrier is placed into upstanding position, but remain in the substantially same plane as the interior walls **17** and **17'**. The carrier, in a semi-collapsed position is shown in FIGURE 4.

To lock the carrier into upstanding position, the tongue **35** is hingedly placed into a substantially horizontal position by lifting the tongue **35** from the cut position in interior wall **17** and folding it downwardly. This is done by means of fold line **37**. Upon placing the tongue **35** into substantially horizontal position, the tongue **35** will extend below leg **41** of the carrier and through aperture **40** in wall **17'**. To lock the tongue **35** into position and maintain the carrier in open position, appendage **61** is inserted into slot **45**. The appendage **61** need only extend a short distance into slot **45**, as is seen in FIGURE 1. The length of tongue **35** is such that the tongue extends across the bottom portion of the carrier and maintains the carrier in upstanding, locked position. As is seen, the carrier rests upon fold lines **13** and **13'**, legs **31** and **31'** and, when the tongue **35** is in locked position, leg **41** rests upon tongue **35**.

To collapse the carrier for storage or shipping, when empty, the appendage **61** is released from the slot **45** and the tongue **35** positioned into its original position in interior wall **17** by flexing the tongue **35** and slipping it from beneath leg **41**. This semi-collapsed position is shown in FIGURE 4. To fully collapse the carrier, inward pressure is merely exerted on the exterior side walls **14** and **14'** and the walls forced together. This will give the carrier the collapsed position as shown in FIGURE 2.

The carrier is preferably formed from a sheet of polyethylene material such as that sold under the trademark SUPER DYLAN. The thickness of the sheet of polyethylene can be varied, so long as the sheet maintains a flexible character and sufficient strength to support the bottles. Thicknesses of from 10–60 mil are usable, with a thickness of 20–30 mil being preferred. In addition to polyethylene, other flexible polymers, such as polystyrene or vinyls that can be extruded into sheet are usable. The carrier can, of course, be formed from conventional flexible paperboard material if desired.

The creasing, cutting, and scoring of the sheet material may be accomplished by means of conventional rolls, knives and other devices generally used for such purposes.

Although the use of staples is described to attach the various portions of the container, other attachment means, depending on the sheet material used, can suffice. The numerous means of attachment include various fasteners such as staples, snaps, eyelets, riveting, sewing and, of course, various adhesive materials can be used.

The carrier illustrated in the drawing is designed to contain six bottles, the generally used amount. The carrier can, if desired, be designed, using the inventive concepts herein described, to hold eight or possibly more bottles.

There has been described a novel carrier for bottles formed from a single sheet of flexible plastic material. The sheet is formed into a blank having designated apertures and fold lines and the blank is readily assembled into a carrier. The carrier is capable of being stored or shipped, when empty, in a collapsed position and easily and quickly assembled into upstanding, locked position for insertion and transportation of bottles.

What is claimed is:

1. A bottle carrier formed from a sheet of flexible material comprising:

(a) a pair of substantially vertical interior walls that extend from a fold line intermediate the ends of said sheet and that form a central partition;

(b) an aperture in the top portion of said central partition forming a handle; with a section of the lower portions of said interior walls having a plurality of legs upon which the carrier rests, the remainder of said lower portions extending a predetermined distance from said fold line to form a bottom support for bottles and a base for said carrier; and with said interior walls terminating in vertically extending exterior side walls; and

(c) a tongue hingedly attached to one of said pair of interior walls at a position near the attached exterior wall, said tongue extending below said partition and being secured to an opposite exterior wall to retain said carrier in an open position; with a portion of said exterior side walls extending into contact with and being fastened to the central partition of said carrier below said handle and having a plurality of apertures therein for receiving bottles.

2. The carrier of claim 1 wherein said plurality of apertures in said exterior sidewalls are of hour-glass shaped configuration.

3. The carrier of claim 2 wherein said sheet has vertically extending apertures between said hour-glass shaped apertures.

4. The carrier of claim 1 wherein said tongue has an appendage, at the end thereof, engageable with a slot in the exterior wall opposite said hinged portion of said flap.

5. A rectangular flexible sheet material blank cut and scored to provide a collapsible article carrier comprising:

(a) a pair of substantially vertical interior walls that extend from a fold line intermediate the ends of said sheet and that form a central partition;

(b) an aperture in the top portion of said central partition forming a handle for said carrier; with a section of the lower portions of said interior walls having a plurality of legs upon which the carrier rests, the remainder of said lower portions extending a predetermined distance from said fold line to form a bottom support for bottles and a base for said carrier; and with said interior walls terminating in vertically extending exterior side walls; and

(c) a tongue hingedly attached to one of said pairs of interior walls at a position near the attached exterior wall, said tongue extending below said partition, and being secured to an opposite exterior wall to retain said carrier in an open position; with a portion of said exterior side walls extending into contact with and being fastened to the central partition of said carrier below said handle and having a plurality of apertures therein.

6. The blank of claim 5 wherein said flexible sheet material is polyethylene sheet material of 20–30 mil thickness.

7. The blank of claim 5 wherein said plurality of apertures in said exterior wall are alternating hour-glass shaped apertures and vertically extending apertures.

8. A carrier for bottles comprising:

(a) an elongated sheet having a first fold line extending transversely across the center of the sheet dividing the sheet into first and second sections;

(b) a second fold line extending transversely across each section and dividing each section into an interior wall and an exterior wall;

(c) apertures in each interior wall section adjacent said first fold line;

(d) an axially extending tongue hinged attached to the interior wall near said second fold line in said first section;

(e) an aperture in the said second interior wall adjacent said second fold line in said second section;

(f) a slot in the exterior wall of said second section adjacent said second fold line, for receiving said tongue, whereby said tongue can extend through the said aperture and engage with said slot;

(g) a first set of flaps in each one of the interior walls on both sides of said tongue and aperture forming legs for said carrier;

(h) a second set of flaps in each one of the interior walls for cushioning said bottles;

(i) a row of hour-glass shaped apertures near the ends of each one of the exterior walls; and

(j) means to fold said sheet about said first fold line with the legs secured together, and with the exterior walls folded back toward said first fold line and secured to said sheet near said handle aperture, and with said tongue being positioned below said interior walls and engaged with said slot.

9. A bottle carrier comprising:

(a) a pair of substantially vertical interior walls that form a central partition;

(b) an aperture in the top portion of said central partition to form a handle; with a section of the lower portions of said interior walls having a plurality of legs upon which the carrier rests, the remainder of said lower portions sloping downwardly and outwardly a predetermined distance from said aperture to form a bottom support for bottles and a base for said carrier; and with said interior walls terminating in upwardly and substantially vertically extending exterior side walls; and

(c) a tongue hingedly attached to said interior wall at a position near the attached exterior wall, said tongue extending horizontally below said partition and being secured to an opposite exterior wall to retain said carrier in an open position; with said exterior side walls terminating a predetermined distance from said carrier base in upwardly and inwardly sloping portions having a plurality of apertures therein for insertion of bottles, said last named sloped portions being fastened to the central partition of said carrier below said handle.

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U.S. Cl. X.R.

206—65; 229—28, 52