

June 23, 1964

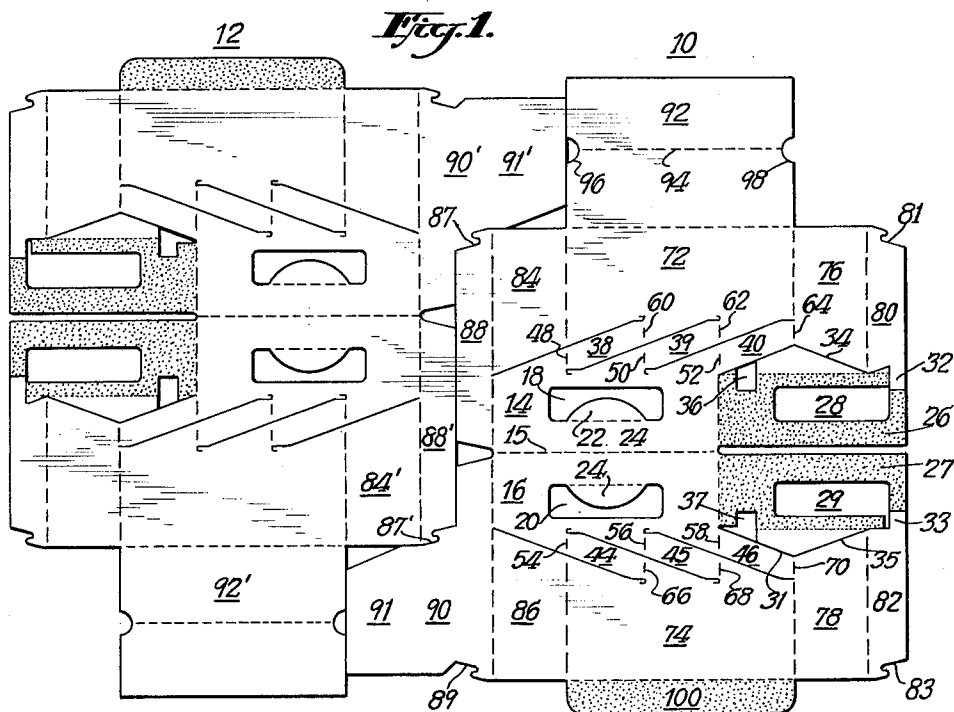
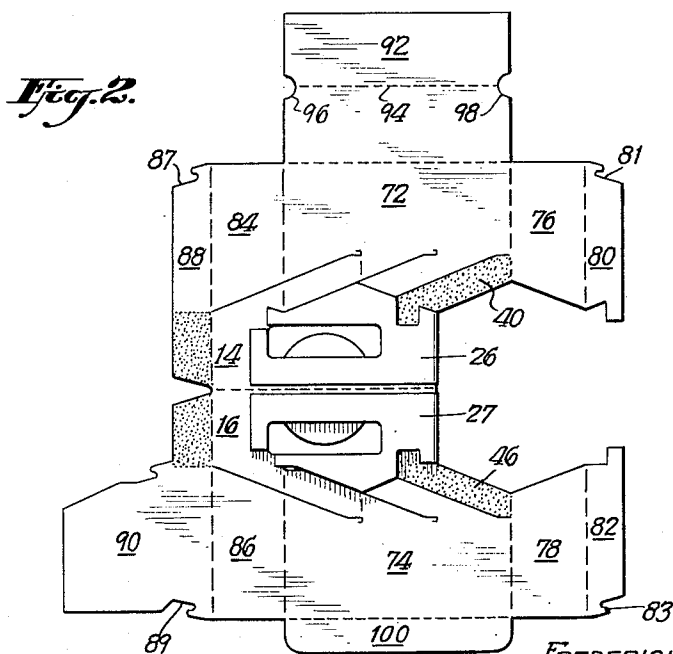
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3,138,285

COLLAPSIBLE ARTICLE CARRIER

Filed June 1, 1962

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 3.

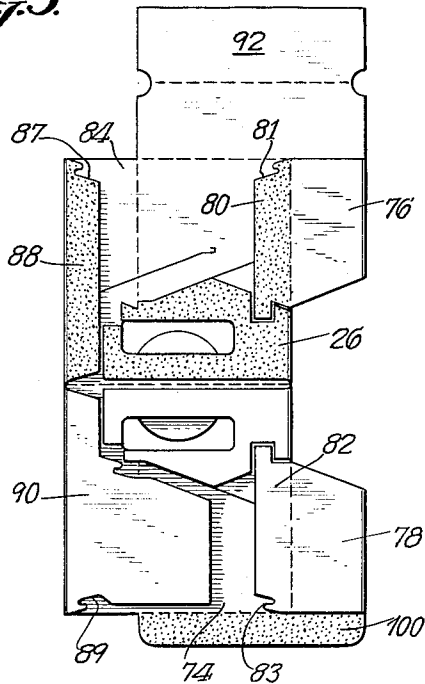


Fig. 4.

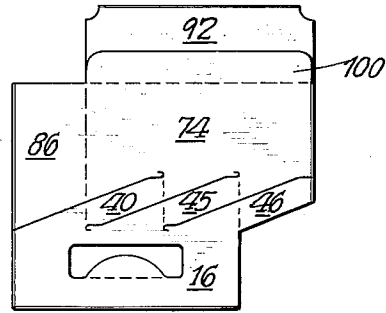
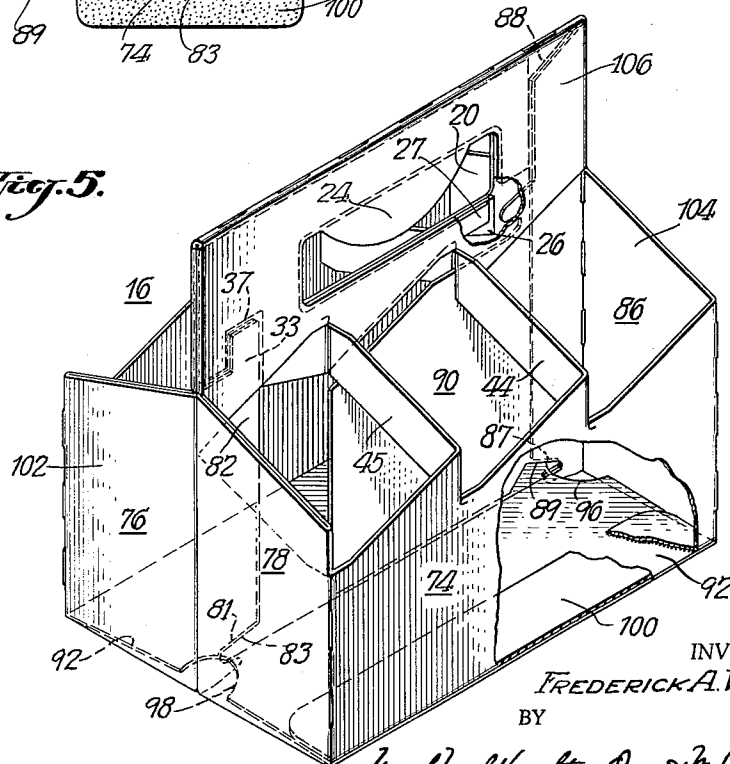


Fig. 5.



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COLLAPSIBLE ARTICLE CARRIER

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3 Claims. (Cl. 220—113)

This invention relates to improved collapsible article carriers formed of paperboard or the like semi-rigid sheet material.

Carriers embodying the invention are particularly adapted, among other possible uses, for carrying containers such as bottles, cans or other packages, used for beverages and foods. Individual containers are separated from each other by means of partitions so that damage will not be incurred by the interaction of one container rubbing or striking the next adjacent container as often occurs during handling, loading or stacking thereof.

The invention is adapted for providing a collapsible carrier such as may be supplied by manufacturers of carriers who make it a practice to ship large quantities thereof in collapsed condition to bottlers or distributors of the commodities, the carriers being of such form that the distributors may readily set them up and fill them by the use of available machinery with little or no change.

Further, in accordance with the invention, the construction is such that the blanks thereof may be placed in nest-like relationship one to the other upon the original sheet material stock and thereby effect considerable economies in production due to the elimination of waste material.

The carriers involving the invention are provided with improved handle means which provide greater strength and rigidity characteristics, while being formed with a uniform cross-sectional area. The latter being particularly important during the manufacturing operation when the glue or adhesive is applied to the various surfaces and the carrier blank is subjected to the action of various pressure rolls. Moreover, it has been found that the elimination of bulging of one segment over another simplifies the gluing and pressing operation to such an extent that production speeds may be greatly increased.

Further, in accordance with the invention, the construction is such that the straps which tie the handle panel to the side panels are disposed in an inclined position with the ends thereof foldably connected along vertical creases. This configuration allows the straps to be flush with and substantially part of the side panels when the carrier is in a collapsed state. Thus, only a very short longitudinal movement of the side is required in order to convert the carrier into its set-up position. Quite surprisingly, this arrangement provides increased structural strength when utilizing standard sheet material stock as well as providing an aesthetically pleasing appearance to the end product.

In order to achieve the aforementioned features and objects, my invention contemplates the provision of an article carrier formed of paperboard or the like semi-rigid sheet material and having a multi-ply handle panel which may comprise two foldably connected panels, each panel having a handle flap foldably depending from one edge thereof, the flaps being adapted to be folded over in superposed relation between the panels. The two handle flap members are not provided with identical shape configurations so that over-lapping lines of weakness will not be created. The panels and flaps being adapted to collectively form the handle panel. A plurality of spaced inclined straps are foldably connected to the handle panel. A pair of spaced side panels are foldably connected to the adjacent ends of the inclined straps. Preferably the strap connections are made along vertical creases at the two extremities of the strap. A bottom panel is utilized and

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means for connecting it to the side panels are provided. Each end wall may have a pair of end panels. The end panels adjacent to the handle flaps are each foldably connected to the adjacent end edge of the side panel and the end edge of the adjacent inclined strap. The latter strap co-acts with the end panel to form an upper reinforcing member for added rigidity to the end wall. The two end panels are each provided with vertical inwardly extending partition flaps depending from the central edge thereof. The opposite end wall may comprise a pair of end panels which are each foldably connected to the adjacent end edge of the side panel. Each of these end panels is further provided with inwardly extending partition flaps which are foldably connected to the adjacent edges of the end panel as well as the handle panel. The upper portion of the partition flaps is disposed within the handle panel and is adapted to abut or match with their mating handle panel flaps. Thus, the mating edges of adjacent handle flaps and partition flaps may have irregularly contoured edge portions which match or abut but do not overlap each other. The lower portion of the partition flaps co-act to form a central dividing panel between the front row and the back row of containers which may be inserted in the carrier.

Further objects, features and advantages of the invention hereof will appear from the detailed description given below, taken in connection with the accompanying drawings which form a part of this specification and illustrate by way of example, a preferred embodiment of the invention.

In the drawings:

FIG. 1 is a plan view showing two contiguous article carrier blanks as died out, cut and creased, the closely stippled areas thereon indicating places where adhesive is to be applied for the manufacture of carriers in accordance with the invention;

FIG. 2 is a plan view showing the carrier blank following certain folding and adhesive application steps;

FIG. 3 is a plan view illustrating the carrier blank following additional folding and adhesive application steps;

FIG. 4 is a view showing the completed carrier in a collapsed condition ready for shipment or storage; and

FIG. 5 is a perspective view of the finished carrier in its erected operative position.

Referring now to the drawings in further detail, FIG. 1 shows two article carrier blanks 10 and 12 in contiguous nest-like relationship with one another upon the original sheet material stock which may be paperboard or the like semi-rigid sheet material. The initial carrier blank 10 may comprise a pair of handle panels 14 and 16. Cut-out portions 18 and 20 are each centrally positioned within their respective handle panel. Depending foldable tabs 22 and 24 are provided which extend outwardly and partially fill the cut-out portions 18 and 20 respectively. The handle panels 14 and 16 are adapted to be folded over along crease 15 in face-to-face relationship to each other as will be discussed more fully hereinafter. The foldable tabs 22 and 24 co-act with the cut-out portions 18 and 20 to form a hand grip when the carrier is in the set-up condition. Depending handle flaps 26 and 27 are foldably connected at one end of their respective handle panels 14 and 16 as shown in FIG. 1. Cut-out portions 28 and 29 are provided therein. Handle flaps 26 and 27 are each provided with an irregularly contoured edge portion 30 and 31, respectively, which may comprise a corner notch cut-out 32 and 33, a central triangular projection 34 and 35, and cut-out notches 36 and 37. Adjacent partition flaps 80 and 82 are also provided with irregularly contoured edge portions which match or abut but do not overlap their mating handle flaps 26 and 27. A small space may be provided between the matching edge portions, if desired. It is to be particularly noted that the

irregularly contoured edge portions of handle flaps 26 and 27 are not identically shaped configurations compared to each other so that when the two handle flaps are placed in their final position, as when the carrier is set up, overlapping lines of weakness will not be created. However, cut-out portions 28 and 29 are positioned so that when the flaps 26 and 27 are folded back in superposed relation with their respective handle panels 14 and 16, the cut-out portions 28 and 29 will be in alignment with cut-out portions 18 and 20, respectively.

Inclined straps 38, 39, 40, 44, 45 and 46 are foldably connected to the handle panels 14 and 16 at their respective fold lines, 48, 50, 52, 54, 56 and 58 as illustrated in FIG. 1. The other end edge of the inclined straps 38, 39, 44 and 45 are foldably connected to side panels 72 and 74 at their respective fold lines 60, 62, 66 and 68. The opposite end edges of inclined straps 40 and 46 are hinged to their adjacent end panels 76 and 78 at fold lines 64 and 70, respectively.

Depending from end panels 76 and 78 are two foldably connected partition flaps 80 and 82, respectively. Cut-out notches 81 and 83 are provided at the outer corners of the partition flaps 80 and 82, respectively, as shown in FIGS. 1 and 2. Two additional end panels 84 and 86 are foldably connected to the other side edge of side panels 72 and 74, respectively. Partition flap 88 is foldably connected to the outside edge of end panel 84 and the outside edge of the handle panel 14. Likewise, partition flap 90 is foldably connected to the outside edge of handle panel 16 and the outside edge of end panel 86. The lower portion 91 of partition flap 90 extends outwardly as shown. Cut-out notches 87 and 89 are provided in the outside edges of the partition flaps 88 and 90, respectively. A bottom panel 92 is a flap-like projection extending outwardly and foldably connected to the side edge of side panel 72. A centrally located folding crease 94 is provided therein in order to facilitate collapsing of the finished carton for stacking and shipping purposes. Cut-out portions 96 and 98 are provided at the extremities of folding crease 94 and along the opposite end edges of the bottom panel 92. The edges of notches 81, 83 and 87, 89 are adapted to co-act with the edges of cut-out portions 96 and 98 to support the bottom panel 92 when the carrier is in its set-up condition. Bottom flap 100 is foldably connected and extends outwardly from the side panel 74. This flap is adapted for superposed adhesion to the bottom panel 92 when the carrier is in its completed condition.

FIG. 1 further illustrates the nest-like relationship between carrier blanks 10 and 12 as died, cut and creased upon the original sheet material stock. The partition flap 90 abuts the edges of its adjacent bottom panel 92', end panel 84' and partition flap 88'. In like manner partition flap 90' abuts the edges of its adjacent bottom panel 92, end panel 84 and partition flap 88.

The closely stippled areas shown in FIG. 1 illustrate adhesive which is applied to areas that are to be adhered to their corresponding adjacent components as illustrated in FIG. 2. Referring now to FIG. 2 it is observed that certain folding operations have been executed. Namely, the handle flaps 26 and 27 have been folded back over their respective handle panels 14 and 16 and permanently adhered thereto. Additional quantities of adhesive have been applied to portions of the partition flaps 88 and 90, the strap members 40 and 46, and the handle panels 14 and 16 in preparation for the next folding operation. These areas are indicated in FIG. 2 by the stippled effect.

FIG. 3 portrays the end panels 76 and 78 together with their respective partition flaps 80 and 82 folded over inwardly and permanently adhered to the aforementioned portions of the handle panels 14 and 16 and the strap members 40 and 46. Likewise, foldable partition flaps 88 and 90 have been folded over inwardly and permanently adhered to portions of the handle panels 14 and

16 in superposed relation thereto. Additional adhesive has been applied, as illustrated in FIG. 3, in preparation for the final folding operation. This application of adhesive is applied to the bottom flap 100, the handle panel 26, the partition flap 88 and the partition flap 80. The bottom panel 92 is then folded inwardly about its crease line 94, thence the bottom half of the carrier blank 10 is folded over upon the top half thereof and permanently adhered in superposed relation thereto. Thus with the adhesive applications and the folding operations completed, the article carrier is in its collapsed condition ready for shipment or storage as shown in FIG. 4.

FIG. 5 is a perspective view of the finished carrier in its erected operative condition. The end walls 102 and 104 are formed by the end panels 76, 78 and 84, 86, respectively. Handle panels 14 and 16, handle flaps 26 and 27 and partition flaps 80, 82, 88 and 90 co-act to form a handle member 106. Foldable tabs 22 and 24 deflect sidewise so that cut-out portions 18, 20, 28 and 29 provide space for the fingers in order to provide a comfortable hand grip. The carrier is readily converted from the collapsed condition as illustrated in FIG. 4 to the set-up condition as illustrated in FIG. 5 by means of a very short longitudinal movement of the side panels. The carrier is locked in the set-up condition by means of the edges of the notches 87, 89 and 81, 83 being snapped into the cut-out portions 96 and 98, respectively. Conversely, the carrier may be readily converted from the set-up condition to the collapsed condition if desired. The illustrated embodiment shows provision for three bottles or containers which may be positioned on each side of the central partition. The bottles are further segregated by the transverse straps 44 and 45 which prevent the bottles from rubbing or striking the next adjacent bottle and thereby causing injury thereto.

Although a certain particular embodiment of the invention is herein disclosed for purposes of explanation, further modifications thereof, after study of this specification, will be apparent to those skilled in the art to which the invention pertains. Reference should accordingly be had to the appended claims in determining the scope of the invention.

What is claimed and desired to be secured by Letters Patent is:

1. An article carrier formed of paperboard or the like semi-rigid sheet material and comprising a handle member having two foldably connected handle panels, each handle panel being provided with a handle flap foldably depending from one edge thereof, said panels and flaps being disposed in face-to-face relationship with each other; a plurality of spaced inclined straps foldably connected to said handle panel, a pair of spaced side panels foldably connected to said inclined straps, a bottom panel, means for connecting said bottom panel to said side panels, a pair of end walls, each of said walls comprising a pair of end panels foldably connected to the end edge of its adjacent side panel, vertical inwardly extending partition flaps depending from the central portion of each of said end panels, and the upper portion of said partition flaps adjacent the foldably depending edge of said handle flaps respectively being disposed within said handle panel and being adapted to abut the edges of said handle panel flaps.

2. An article carrier in accordance with claim 1, in which one of said end walls further comprises at least one upper reinforcing member, and one end edge of said reinforcing member being foldably connected to said handle panel and the other end edge of said reinforcing member being foldably connected to the end edge of said end panel.

3. An article carrier formed of paperboard or the like semi-rigid sheet material and comprising a handle member, a plurality of spaced inclined straps foldably connected to said handle panel, a pair of spaced side panels

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foldably connected to the adjacent ends of said inclined straps, a bottom panel, means for connecting said bottom panel to said side panels, a pair of end walls, each of said end walls comprising a pair of end panels foldably connected to the end edge of its adjacent side panel, vertical inwardly extending partition flaps depending from the central portion of each of said end panels, the upper portion of said partition flaps being disposed within said handle panel and having an irregularly contoured edge portion; said handle member comprising two foldably connected handle panels, each handle panel being provided with a handle flap foldably depending from one

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edge thereof, each handle flap having an irregularly contoured edge portion towards the foldably depending edge which matches its corresponding adjacent partition flap irregularly contoured edge portion in spaced relationship thereto, and said handle flaps and partition flaps being disposed between said handle panels.

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