Sept. 24, 1968 R. W. MATTHEWS ET AL 3,402,849

ARTICLE CARRIER

Filed March 29, 1966

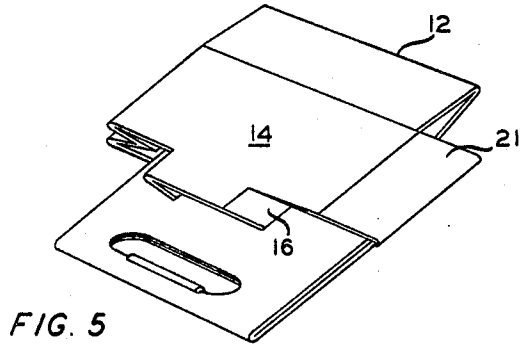


FIG. 5

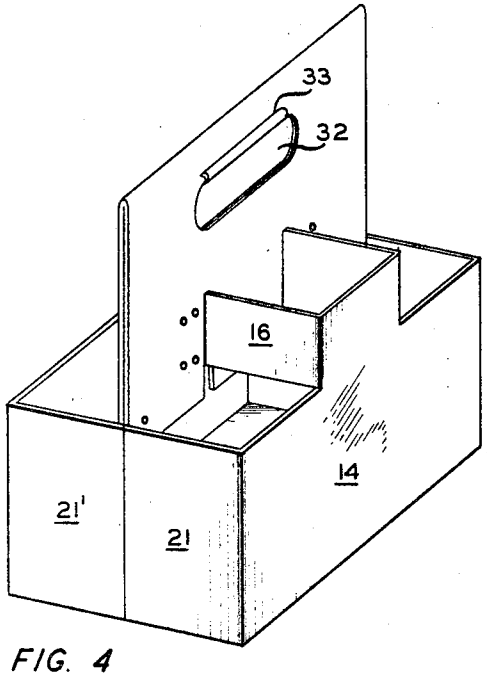


FIG. 4

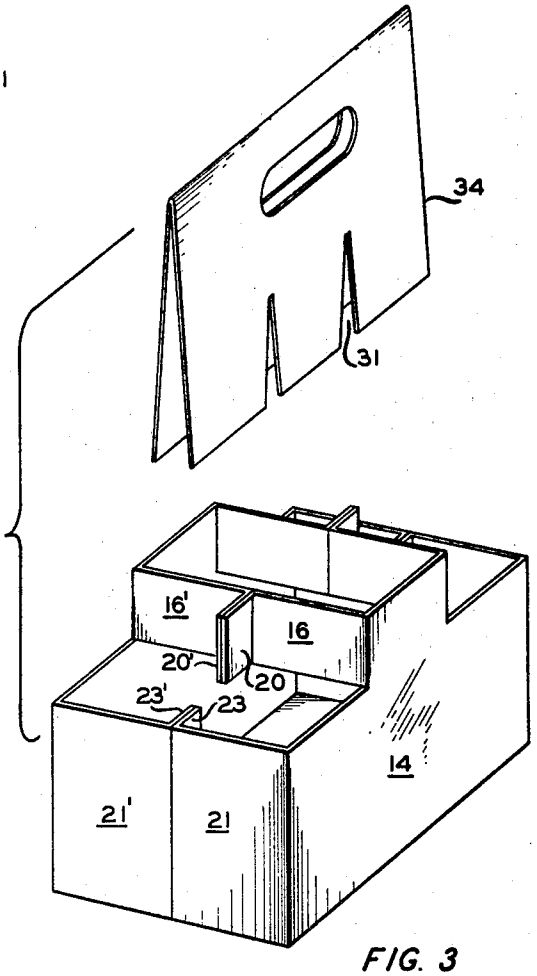


FIG. 3

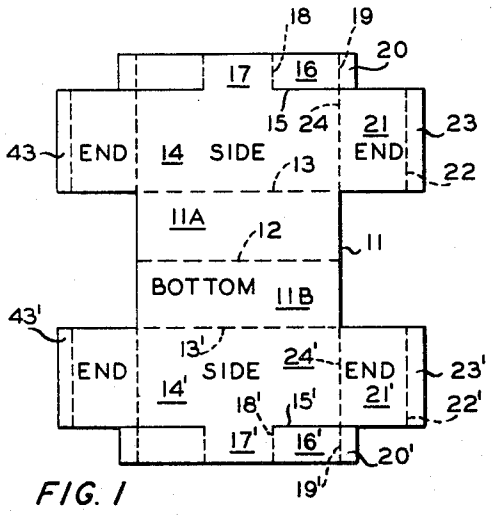


FIG. 1

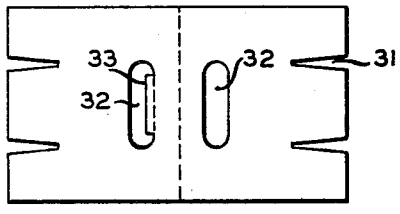


FIG. 2

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ARTICLE CARRIER

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ABSTRACT OF THE DISCLOSURE

A collapsible container is formed of two pieces of foldable sheet material. One piece is a separate handle portion, and the other piece is formed of a foldable blank to produce a bottom panel, two side panels, two end panels, and partition-forming members surmounting the carrier.

This invention relates to a carrier for a plurality of articles. In one aspect, it relates to a carrier formed from two pieces of sheet material, one for the article carrying body, and the second for a handle. In another aspect, it relates to a foldable blank of sheet material suitable for folding into an article carrier. In another aspect, it relates to a collapsible article carrier which may be folded flat when not being used for containing articles. In another aspect, it relates to a bottle carrier equipped with a carrying handle. In still another aspect, it relates to a bottle carrier formed from plastic sheet material. In yet another aspect, it relates to a plastic bottle carrier which is collapsible when not in use. In yet another aspect, it relates to a plastic 6-pack, 8-pack, or 12-pack bottle carton which is formed from two sheets of plastic, one for bottled cells and one for a handle, by individually shaping and folding the sheets, and then fusing them into a complete carton.

The larger consumer market for various bottle and canned drinks created a necessity for inexpensive, durable, attractive carriers whereby the consumers may handle a plurality of bottles or cans conveniently, and reuse the same containers for returning the bottles to the store from which they were purchased. A number of such carriers have been developed, generally holding six, eight or twelve bottles in individual compartments. In general, these carriers are made of cardboard because of its low cost, but many of them are so designed that they could be made of plastic or any other type of sheet material. The requirements of these carriers are that they be economical, durable, attractive, of rigid build, and be collapsible to a compact flat package for storage and transportation purposes. It is also desirable that the carrier be provided with dividers which will prevent glass bottles in the carrier from striking each other. It is additionally desirable that the material used for forming the container have good wet strength so that it will not disintegrate or tear under the weight of carried bottles if it should become wet.

It is, therefore, an object of our invention to provide a low cost article carrier. It is a further object of our invention to provide a collapsible article carrier formed from sheet material. It is still a further object of our invention to provide a bottle carrier which is pendent from a handle. It is a still further object of our invention to provide a collapsible bottle carrier formed from two pieces of sheet material. It is a still further object of our invention to provide a plastic bottle carrier which is collapsible when not in use.

Other aspects, objects and the several advantages of this invention are apparent to one skilled in the art from a study of this disclosure, drawings and the appended claims.

The article carriers of our invention are illustrated in the appended drawings. FIGURE 1 shows the blank sheet material from which the bottom portion of our article carrier is formed by folding. FIGURE 2 shows the blank sheet material used for forming the handle for our article carrier. FIGURE 3 shows the assembled bottom part of our article carrier. FIGURE 4 shows the article carrier with handle attached. FIGURE 5 shows the assembled carrier folded flat.

The bottom part of the container is formed from the blank shown in FIGURE 1. This blank has a bottom panel **11** divided by longitudinal fold line **12** to form subpanels **11**–A and **11**–B. Attached to opposite sides of the bottom panel along longitudinal fold lines **13** and **13'** are side panels **14** and **14'**. The top portions of side panels **14** and **14'** are cut as shown by lines **15** and **15'** to form partition-forming members **16** and **16'**. As shown, the middle portion of these partition-forming members is not cut, and thus leaves an upward extension of the side panel denoted by **17** and **17'**, which extensions are joined to the partition-forming members **16** by fold line **18** and **18'**. Partition-forming members **16** and **16'** are provided with fold lines **19** and **19'** which create flange-forming members **20** and **20'**.

Attached to each end of the side panels **14** and **14'** are end panels **21** and **21'**, which are equipped with fold lines **22** and **22'** forming flange members **23** and **23'**.

As shown in FIGURE 2, the handle member is formed from a separate blank, and is equipped with notches **31** and hand holes **32**. If desired, one of the hand holes can be provided with an inwardly and upwardly rolled edge at the top of the hand hole adapted to interlock the other hand hole, and to provide a smooth surface for grasping the handle of the carrier.

As can be seen from FIGURE 3, the bottle carrier is assembled by folding the blank of FIGURE 1 along fold lines **13**, **13'**, **24** and **24'** to form a generally rectangular box. Flange members **23** and **23'** attached to end members **21** and **21'** are folded longitudinally of the carrier and joined to each other by any convenient means of affixation. While these flange members will generally be folded inwardly of the carrier, it is possible to fold them outwardly if desired. Partition-forming members **16** and **16'** are folded inwardly, and their corresponding flange members **20** and **20'** are attached to each other. Once again, these flange members may be folded either inwardly or outwardly along the longitudinal axis of the carrier. The bottom part of the carrier is now prepared for attachment of the handle portion. The handle is slipped into place with notches **31** extending over partition-forming members **16**. The handle is then attached to flange members **20**–**20'** and **23**–**23'** by any convenient means, thus forming the carrier as shown in FIGURE 4. In the embodiment shown, the handle portion forms the longitudinal partition between the two rows of bottles in the carrier.

As shown in FIGURE 4, an upwardly rolled edge **33** of one hand hole **32** is interlocked with the other hand hole, and serves to protect the hand during carrying. Alternately, a piece of longitudinally split tubing could be used at the upper edge of the hand holes for protection of the hands in place of rolled edge **33**.

As shown in FIGURE 5, the carrier can be collapsed by folding the bottom panel along longitudinal fold line **12**.

While we have chosen to illustrate our invention with a carrier having perfectly square corners on both the bottom portion and the handle, it is contemplated that various design configurations of these parts could be made without departing from the scope of our invention.

As indicated above, the carrier of our invention can be formed from any rigid sheet of material, including

cardboard, paper, metal, or plastics. The currently preferred embodiment is a carrier formed of a thermoplastic material, such as polystyrene, polyamines, vinyls, and polyolefins. Particularly, useful are polymers of aliphatic mono-1-olefins having a maximum of 8 carbon atoms per molecule and no branching nearer the double bond than the 4-position, such as ethylene, propylene, butene-1, hexene-1, octene-1, and the like. Both homopolymers and copolymers of these olefins are suitable. When such thermoplastic materials are used, the joining of the flange members with each other, and with the handle portion, will generally be accomplished by fusion bonding, through means of a plastic spot welder as is known in the art. alternately, any adhesives suitable for the particular thermosplastic being used may find use in this bonding, or mechanical attachment means can also be used.

In our preferred embodiment, end panels **21** are of rectangular shape, and enclose the entire end of the bottle carrier. Flange members **23** are of a height coextensive with the height of side panel **14** for additional strength in bonding these flanges together.

We have shown handle assembly **34** to consist of a single sheet of material doubled over to provide two thicknesses by which the carrier is carried. It is, however, within the contemplation of this invention to use a single thickness of material for the handle assembly, or to use two individual pieces of sheet material bonded together at the top edge.

The bottle carrier which we have illustrated will hold six bottles, with partitions therebetween. If it is desired to form bottle carriers having eight, twelve, or more bottles, it is only necessary to extend the longitudinal dimensions of the bottom and side panels to the necessary extent. In such a case, however, additional divider panels would be supplied to separate the bottles within each row, and would be equipped with flanges whereby they could be affixed to side panels **14** and **14'**.

The carrier as depicted in the drawings has flange members **20**, **20'**, **23**, and **23'** of only sufficient width to form an adhesive bond therebetween and with the handle member. However, any one or all of these flange members could be extended if desired to form longitudinal partitions between the rows of bottles. If desired, these flange members could be coextensive with the length of the bottle carrier. For example, flange members **23** and **23'** could be extended to a length equal to that of fold line **12**, and be affixed to flange members **43** and **43'** at the opposite end of the bottle carriers. Alternately, flanges **23**, **23'**, **43**, and **43'** could be of substantially equal length, each being slightly longer than the length of fold line **12**, whereby the flanges would overlap in the middle of the carrier, and be bonded to each other at that point.

Reasonable variation and modification are permissible within the spirit and scope of our invention as described in the specification, drawings, and appended claims.

We claim:

1. A collapsible contained formed of foldable sheet material comprising:

(1) an article-carrying bottom part including:

(a) a bottom panel;

(b) two side panels attached to opposite sides of the bottom panel at fold lines;

(c) end panels attached to each end of each of said side panels at fold lines, each end panel being foldable half-way across the end of said bottom part;

(d) partition-forming members having a middle portion comprising an upright planar extension of the middle part of each said side panel, each such member having two cross-partition strips attached to the edges of said middle portion along fold lines and being folded and extending half-way across said bottom part to mate with the cross-partition strips of its opposite partition-forming member, said partition-forming member lying above the plane formed by the upper edges of said side panels; and

(2) a separate handle portion of foldable material.

2. The container of claim **1** wherein said end panels are rectangular.

3. The container of claim **1** wherein said handle portion comprises a folded panel of sheet material having the said fold at the top of said carrier when said carrier is in use.

4. The container of claim **1** wherein each of said end panels has a foldable extension at its outer edge to form a longitudinal partition in said bottom part, said end panels being folded longitudinally of said bottom panel to mate with the extension of its opposite end panel, said end panels being affixed to enclose the end of said bottom part.

5. The container of claim **4** wherein said extension is of equal height to said side panels and wherein the lower part of said handle portion forms a longitudinal partition in said bottom part.

6. The container of claim **4** wherein each of said cross-partition strips has a foldable extension at its outer edge folded longitudinally of said bottom part to mate with the extension of its opposite cross-partition member and said cross-partition members are affixed to each other.

7. The container of claim **6** wherein said handle portion is affixed to the extensions of said end panels and the extensions of said cross-partition members.

8. The container of claim **7** wherein said foldable material is thermoplastic, and said affixing is fusion bonding.

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