Dec. 5, 1961 G. E. STRUBLE 3,011,677

CARRIER CARTON

Filed Aug. 19, 1959 3 Sheets-Sheet 1

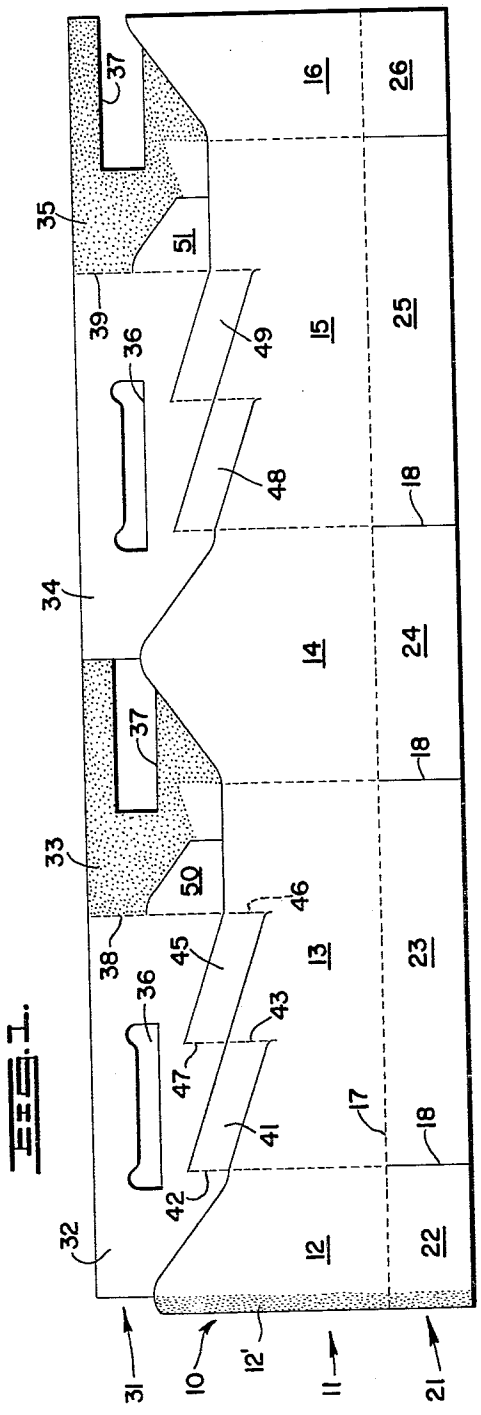


FIG. 1.

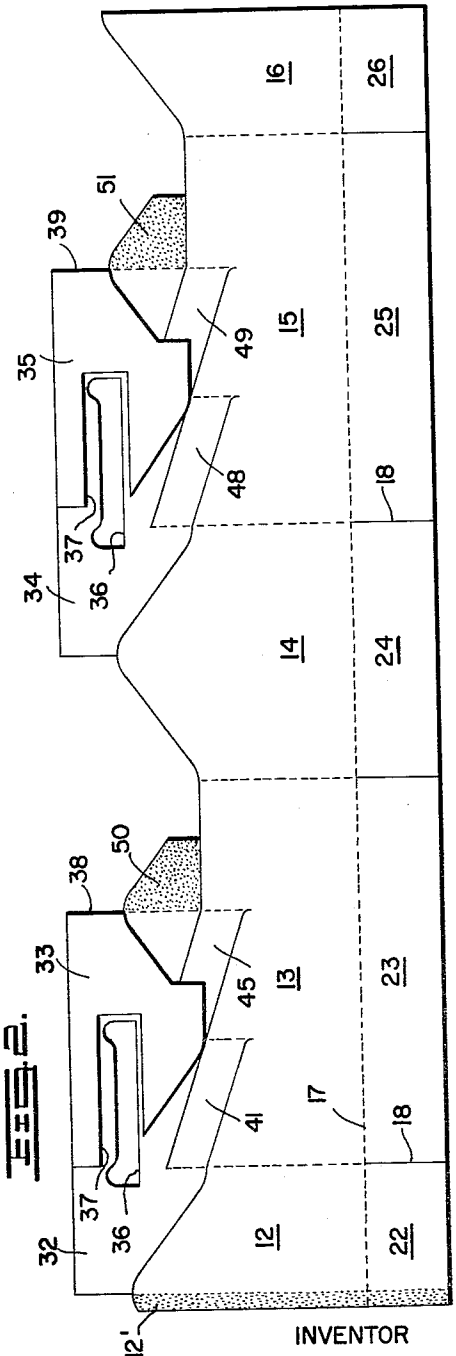


FIG. 2.

INVENTOR
GLENN E. STRUBLE
BY KARL W. FLOCKS
ATTORNEY

Dec. 5, 1961 G. E. STRUBLE 3,011,677

CARRIER CARTON

Filed Aug. 19, 1959 3 Sheets-Sheet 2

Fig. 3.

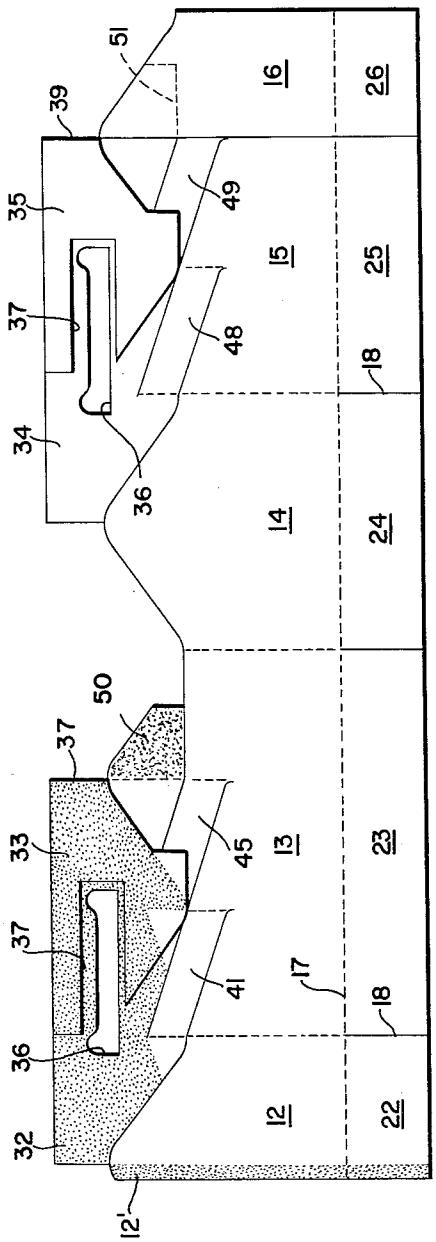


Fig. 5.

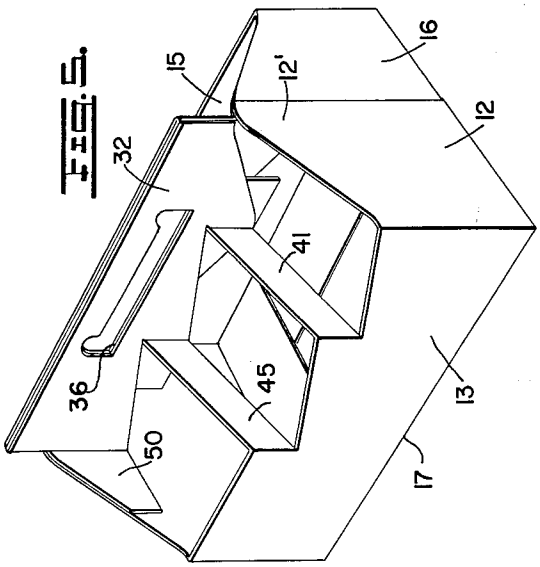
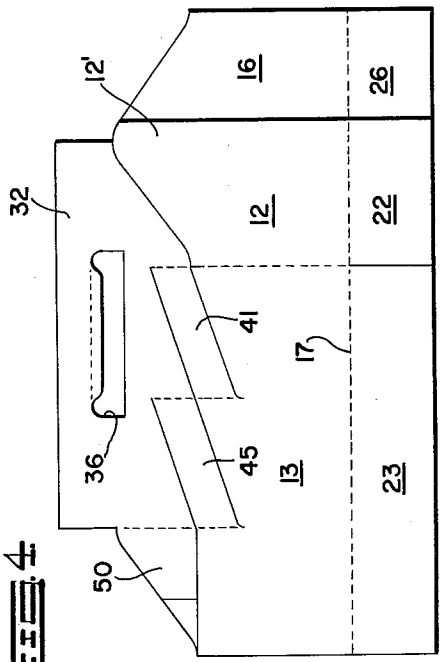


Fig. 4.



INVENTOR
GLENN E. STRUBLE

BY Karl W. Flocks

ATTORNEY

Dec. 5, 1961 G. E. STRUBLE 3,011,677

CARRIER CARTON

Filed Aug. 19, 1959 3 Sheets-Sheet 3

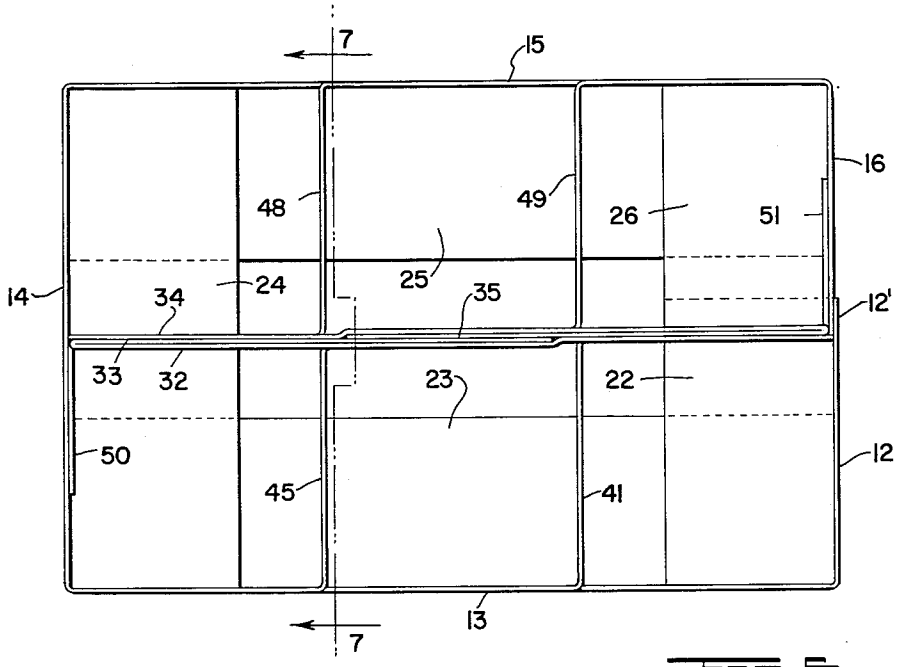


FIG. 6.

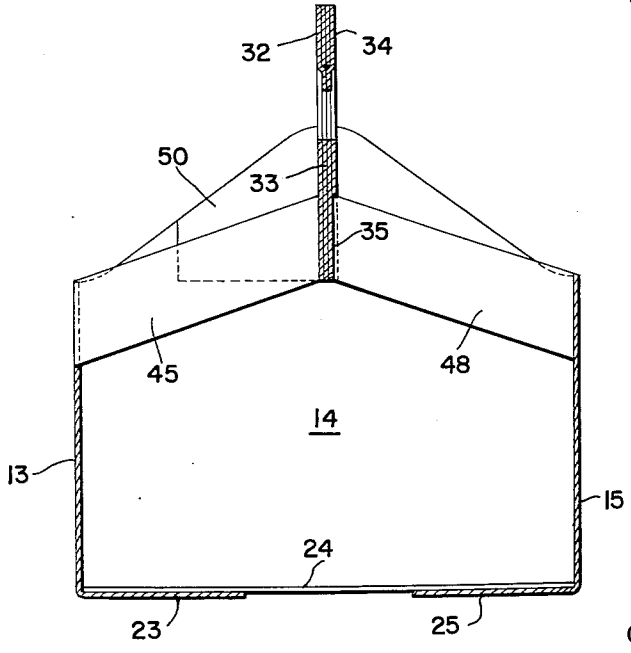


FIG. 7.

INVENTOR
GLENN E. STRUBLE

BY KARL W. FLOCKS
ATTORNEY

United States Patent Office 3,011,677 Patented Dec. 5, 1961

3,011,677

CARRIER CARTON

Glenn E. Struble, Hamilton, Ohio, assignor to Diamond National Corporation, a corporation of Delaware

Filed Aug. 19, 1959, Ser. No. 834,855
4 Claims. (Cl. 220—113)

The present invention relates to a carrier carton, and more particularly to a carrier carton for bottles or the like made from a single blank of paperboard, and more particularly to such a carrier carton made from a paperboard blank that is generally rectangular in configuration and having a minimum amount of waste area, the bottle carrier itself having a strong handle and bottom.

Paperboard bottle carriers made from a single blank are well-known and widely used. These carriers are formed from blanks that are cut and scored from paperboard and it is characteristic of the blanks heretofore used that they have presented a generally irregular outline, so that when several blanks are to be cut from the paperboard stock there results a considerable amount of waste material. This waste material must be removed from the blank, which is somewhat expensive and to a certain degree complicates the manufacturing processes.

Workers in the art have contemplated blanks so configured that they interfitted with each other, and thus provided for as little waste as possible. These solutions to the problem resulted in complicated dies and structures that were either complicated, or hard to glue or did not have the necessary strength characteristics to perform their function.

In some cases, there have been provided blanks which have approached the highly desirable rectangular shape, but those that have approached this shape have nevertheless been characterized by waste areas and/or by handles which were not as strong as is desirable.

An object of the present invention is to provide a blank for a bottle carrier carton that has a generally rectangular configuration.

Another object of the present invention is the provision of a blank for a bottle carrier carton using a minimum amount of paperboard stock.

Still another object of the present invention is to provide a blank for a bottle carrier carton having a minimum of scrap areas.

Yet another object of the present invention is the provision of a carton for carrying bottles and the like that is made from a substantially rectangular blank and will have a strong handle.

Other objects and the nature and advantages of the instant invention will be apparent from the following description taken in conjunction with the accompanying drawings, wherein:

FIG. 1 is a plan view of a blank in accordance with the present invention.

FIG. 2 shows the blank of FIG. 1 during an intermediate folding stage.

FIG. 3 shows the blank of FIG. 1 after further folding thereof.

FIG. 4 is a view of the blank after all but the bottom forming structure has been folded and glued.

FIG. 5 is a perspective view of the carton erected from the blank of FIG. 1.

FIG. 6 is a plan view of the carton of FIG. 5.

FIG. 7 is a cross-sectional view taken on the line 7—7 of FIG. 6.

Referring now to the drawings wherein like reference characters are used to designate like or corresponding parts throughout the several views, there is shown in FIG. 1 a blank 10 comprising a first tier 11 of walls, the walls comprising in order a half-end wall 12, a side wall 13, a full end wall 14, a side wall 15 and a half-end wall 16. The half-end wall 12 is extended so as to form a glue flap 12'.

Below the tier 11 is a second tier 21, tier 21 comprising the bottom-forming flaps 22, 23, 24, 25 and 26. Each of these bottom-forming flaps 22–26 is separated from the walls 12–16 above by a fold line 17 and the bottom-forming flaps 22–26 are separated from each other by cut-lines 18. The bottom-forming flaps 22–26 are each rectangular in shape and all extend the same distance from fold line 17.

Above the tier 11 is a tier 31 of full and partial handle panels. Thus, tier 31 may be seen to comprise a full handle panel 32 which is the same length as the side walls 13 and 15, and extends from above the half-end wall 12 over the side wall 13. A partial handle panel 33 is foldably joined to an edge of full handle panel 32 and extends from the edge of full handle panel 32 above half of full end wall 14.

A second full handle panel 34 is the same length as full handle panel 32 and extends from adjacent partial handle panel 33, above the other half of full end wall 14 and also extends above part of the side wall 15. The second partial handle panel 35 may be seen to be foldably connected to and to extend from an edge of the full handle panel 34, partial handle panel 35 extending above part of side wall 15 and above the half-end wall 16. It will be observed that partial handle panel 35 terminates substantially coextensively with the free edge of half-end wall 16.

Aperture-forming cuts 36 are provided in full handle panels 32 and 34, and aperture-forming cuts 37 are provided in the partial handles 33 and 35.

Partition straps 41 and 45 are severed from the blank between full handle panel 32 and side wall 13, partition straps 41 being joined to full handle panel 32 by the fold line 42 and being joined to the side wall 13 by fold line 43. Similarly, partition strap 45 is joined to full handle panel 32 by fold line 47 and is joined to side wall 13 by fold line 46.

Cross partition straps 48 and 49 are similarly partially severed from and secured to the full handle panel 34 and the side wall 15.

A pair of connecting flaps 50 and 51 are provided, flap 50 being foldably connected at fold line 38 to full handle panel 32, the fold line 38 also being that line which connects partial handle panel 33 to full handle panel 32. Connecting flaps 50 and 51 are located between the partial handle panel 33 and side wall 13 and partial handle panel 35 and side wall 15, respectively, and are severed therefrom. These connecting flaps 50 and 51 are preferably of generally triangular shape, as shown, but variations of this shape, are of course possible.

To erect a carton from the blank 10, the partial handle panels 33 and 35 have glue applied thereto, as shown in FIG. 1, and are folded about the fold lines 38 and 39 respectively. As shown in FIG. 2, there is thus formed by the full handle panel 32 and the partial handle panel 33 a two-ply structure above the hand opening provided by the cuts 36 and 37. A similar two-ply structure is formed by the full handle 34 and partial handle panel 35.

The next step in the assembling of the blank 10 is the application of glue to connecting flaps 50 and 51 and to one of the two-ply handle structures. This may be, for example, the structure formed by full handle panel 32 and partial handle panel 33. Thereafter, half-end wall 16 is folded over so as to partially overlie the side wall 15 and at this step the half-end wall 16 is secured to the connecting flap 51. Glue may be applied to the glue flap 12' and half-end wall 12 and side wall 13 folded as a unit over the full end wall 14, side wall 15, and half-end wall 16 to thereby cause the glue flap 12' to be secured to the

half-end wall **16**. At this time, also the connecting flap **50** overlies and is secured to a part of the full end wall **14**. The handle structure **32, 33** is also secured to the handle structure **34, 35** to provide a four-ply handle structure in the region of the handle aperture formed by the various cuts **36** and **37**.

The carton thus formed is in a flat condition and is shipped to the bottling plant in this condition. At the bottling plant, the carton is opened so that the handle structure becomes parallel to the side walls **13** and **15**. As shown in FIG. 5, full handle panel **32**, forming part of the handle structure, is parallel to side wall **13** and is connected thereto by the cross partition straps **41** and **45**.

Referring to FIG. 6 there may be seen the full end wall **14** and the opposite end wall made up of the half-end walls **12** and **16** and the glue flap **12'**. The end walls are in spaced relation to each other and are foldably connected to the side walls **13** and **15**. End wall **14** is of a single thickness of material throughout and the opposite end wall is of double thickness where the glue flap **12'** overlaps the part **16** thereof. The handle structure may be seen to comprise the full handle panels **32** and **34**, with handle panel **32** having the integral connecting flap **50** foldably connected to it at one end and adhesively secured to end wall **14**.

Similarly, full handle panel **34** has integral connecting flap **51** foldably connected to it, and at the opposite end of the handle structure from connecting flap **50**, connecting flap **51** being adhesively secured to the end wall part **16**.

Handle panel **32** also has partial handle panel **33** foldably connected to it, partial handle panel **33** being connected at the same end as connecting flap **50** and extending towards the opposite end of the carton. In similar fashion, full handle panel **34** has partial handle panel **35** foldably connected to it at the same end as the connecting flap **51**, partial handle panel **35** extending towards the opposite end wall, end wall **14**. As may be seen, the partial handle panels **33** and **35** are between the full handle panels **32** and **34** and provide a four-ply handle structure.

The bottom of the carton has been formed by upfolding the bottom end flap **22**, **26** and the bottom end flap **24**, and thereafter upfolding the bottom side flaps **23** and **25**. Where the bottom side and end flaps **22—26** overlie one another, they are adhesively secured together. Thus, each bottom-forming flap is secured to two other bottom-forming flaps which extend from the carton walls perpendicular to the walls to which that flap is joined. The four bottom flap overlap areas, being thus secured together, are sufficient to provide a strong bottom for the carton and this is so even though the carton bottom has an aperture therethrough.

The width of each of the bottom-forming flaps from the wall to which it is connected to the free edge thereof is sufficient to provide that in the erected carton the bottles will not either slip through the aperture that remains in the bottom nor will the blue area be so small that the weight of the bottles will cause separation of the bottom-forming flaps.

There may also be seen in FIG. 6 the cross partition straps **41** and **45** extending between and joined to the full handle panel **32** and side wall **13**, and corresponding cross partition straps **48** and **49** extending between and joined to full handle panel **34** and side wall **15**. Thus, the four cross partition straps connect the four-ply handle structure with each of the side walls of the carton.

In FIG. 7 there may be seen the connecting flap **50** secured to the end wall **14**, the handle structure comprising the four plies made up of full handle panel **32**, partial handle panels **33** and **35**, and full handle panel **34**. There may also be seen the bottom end flap **24** and the underlying bottom side flaps **23** and **25** to which it is secured.

There has been provided a carton made from a blank that is substantially rectangular in outline having but slight departure from a true rectangle. There are a minimum of scrap areas provided in the stock material from which the blanks of the present invention are cut and the blank herein provided uses a minimum amount of stock material.

The carton herein provided is characterized by a strong, four-ply handle structure at the hand aperture and by a strong bottom structure in which each of four bottom-forming flaps is secured to two of the other bottom-forming flaps.

It will be obvious to those skilled in the art that various changes may be made without departing from the spirit of the invention and therefore the invention is not limited to what is shown in the drawings and described in the specification but only as indicated in the appended claims.

What is claimed is:

1. A substantially rectangular blank for a partitioned bottle carrier comprising in order, a first tier including from one end of the blank to the other a flap, a half-end wall, a first side wall, a full end wall, a second side wall and a second half-end wall, score lines foldably connecting adjacent walls, a second tier including a bottom-forming flap joined to the bottom of each of said walls and separated therefrom by a fold line, said flaps being separated from each other by cut lines, said flaps each being rectangular and extending from said fold line the same distance less than the width of said half-end walls, and a third tier including from said one end to the other a first full handle panel of length equal to a side wall extending above said first half-end wall and part of said first side wall, a first partial handle panel foldably joined to an edge of said first full handle panel and extending therefrom above half of said full end wall, a second full handle panel of length equal to a side wall adjacent said first partial handle panel and extending above the other half of said full end wall and above part of said second side wall, a second partial handle panel foldably joined to and extending from an edge of said second full handle panel above said second half-end wall and terminating substantially coextensively therewith, partition straps partially severed from said blank and located between and joined to said side walls and said full handle panels, and a pair of connecting flaps each foldably connected to a full handle panel and each located between and severed from a partial handle panel and the side wall therebelow.

2. A substantially rectangular blank for a partitioned bottle carrier comprising in order, a first tier including from one end of said blank to the other a half-end wall, a first side wall, a full end wall, a second side wall and a second half-end wall, score lines foldably connecting adjacent walls, a second tier including a bottom-forming flap joined to the bottom of each of said walls and separated therefrom by a fold line, said flaps being separated from each other by cut lines, a third tier comprising from said one end to the other a first full handle panel of length equal to a side wall extending above said first half-end wall and part of said first side wall, a first partial handle panel foldably joined to an edge of said first full handle panel and extending therefrom above half of said full end wall, a second full handle panel of length equal to a side wall adjacent said first partial handle panel and extending above the other half of said full end wall and above part of said second side wall, a second partial handle panel foldably joined to and extending from an edge of said second full handle panel above said second half-end wall and terminating substantially coextensively therewith, partition straps partially severed from said blank and located between and joined to said side walls and said full handle panels, and a pair of connecting flaps each foldably connected to a full handle panel and each located between and severed from a partial handle panel and the side wall therebelow.

3. A bottle carrier comprising a pair of spaced side walls and a pair of spaced end walls foldably connected, one end wall comprising a single thickness of material

and the other end wall comprising two half-end walls connected by an overlapping securing flap, a handle structure comprising first and second full handle panels each having an integral connecting flap foldably connected to an end thereof, said connecting flaps being hingedly connected to opposite side edges of said handle structure and each secured to one of said end walls, said handle structure further comprising first and second partial handle panels between said full handle panels each connected to a different one of said full handle panels at the opposite ends of said handle structure, a bottom for said carrier comprising a rectangular flap foldably connected to each of said walls and extending toward the wall opposite that to which it is joined a distance less than one-half the width of said end walls, each bottom flap being secured to the bottom flaps extending from the two walls perpendicular to the wall to which it is joined, and partition straps connecting said handle structure to said side walls, each of said connecting flaps including an upper margin extending angularly from an intermediate side edge portion of said handle and comprising a portion removed from one of said partial handle panels, said portion removed from said partial handle panels conforming to an upper end portion of said end walls, said full handle panel having a portion removed therefrom and forming an upper end panel portion symmetrical to the portion removed from said partial handle panels.

4. A bottle carrier comprising a pair of spaced side walls and a pair of spaced end walls foldably connected, one end wall comprising a single thickness of material

and the other end wall comprising two half-end walls connected by an overlapping securing flap, a handle structure comprising first and second full handle panels each having an integral connecting flap foldably connected to an end thereof, said connecting flaps being hingedly connected to opposite side edges of said handle structure and each secured to one of said end walls, said handle structure further comprising first and second partial handle panels between said full handle panels each connected to a different one of said full handle panels at the opposite ends of said handle structure, bottom means attached to some of said walls, and partition straps connecting said handle structure to said side walls, each of said connecting flaps including an upper margin extending angularly from an intermediate side edge portion of said handle and comprising a portion removed from one of said partial handle panels, said portion removed from said partial handle panels conforming to an upper end portion of said end walls, said full handle panel having a portion removed therefrom and forming an upper end panel portion symmetrical to the portion removed from said partial handle panels.

References Cited in the file of this patent

UNITED STATES PATENTS

2,322,396	Slevin	Jan. 22, 1943
2,537,615	Arneson	Jan. 9, 1951
2,712,397	Kowal	July 5, 1955
2,733,832	Newton	Feb. 7, 1956
2,742,182	Hickin	Apr. 17, 1956