Sept. 18, 1956 N. H. MOORE 2,763,398

ARTICLE CARRIER

Filed March 8, 1951

Fig. 1

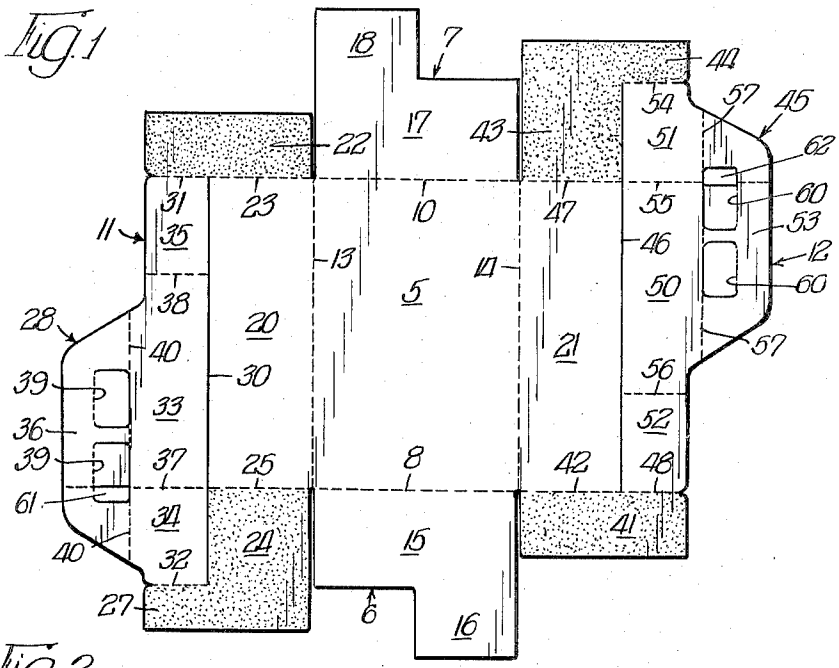


Fig. 2

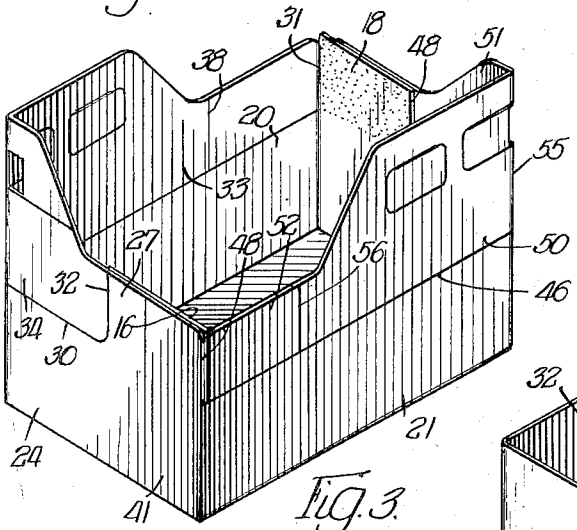


Fig. 3

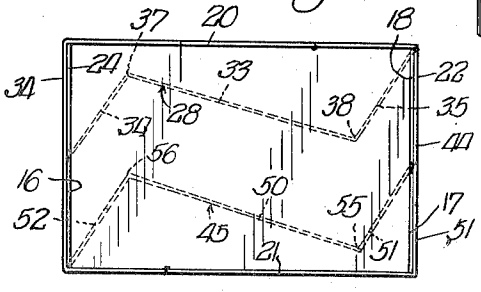
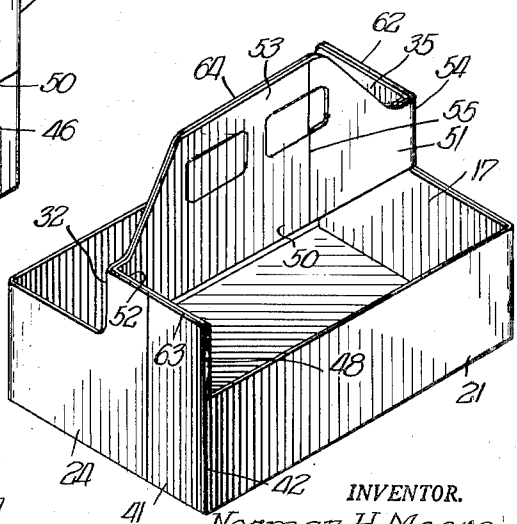


Fig. 4



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ARTICLE CARRIER

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3 Claims. (Cl. 220—112)

The present invention relates, generally, to paperboard carriers for articles of uniform size and shape, such as cans, bottled soft drinks, and the like, and it relates particularly to certain innovations and improvements in such paperboard carriers which are of a relatively rigid, non-collapsible type and provided with a carrying handle centrally located over a closed bottom box portion, the handle acting to separate two rows of bottles or cans which are loaded into the carrier.

A rigid, box type paperboard container having an uncreased bottom panel and four uncreased side walls hinged to the edges of the bottom panel and appropriately secured in the erected position by glue flaps or staples has certain inherent advantages as a carrier for articles of the sort referred to. For one thing, such a box is characterized by its rigidity which is obtained by having closed seams around all of the edges and corners. The various collapsible type bottle carriers cannot have such closed seams and uncreased bottom panel and side and end walls, and for that reason they cannot be as rigid as a set-up, non-collapsible box.

While box type containers having uncreased bottom panel and side and end walls of closed seam construction, made from single paperboard blanks, are available commercially at low cost, it is a further requirement of bottle carriers that they be provided with a carrying handle or divider partition which extends above the box or tray portion. In order that the cheapness of the carriers may be retained, it is essential from the practical standpoint that they be formed from a single paperboard blank. It is also important that the article carriers be capable of being assembled from the blank by means of automatic set-up machinery of the reciprocating plunger type having cooperating glue fingers.

An important object of the present invention is to provide a paperboard bottle or can carrier having a bottom box or tray portion composed of a relatively rigid uncreased bottom panel and uncreased side and end walls integrally connected to the bottom with all of the seams closed, the carrier having a central handle or partition portion of double thickness extending midway between the opposite sides and supported from the opposite end walls by oppositely directed end portions which are interlocked with vertical extensions of the end walls of the box-like bottom.

Another important object of the invention is the provision of a set-up, non-collapsible paperboard bottle or can carrier formed from a single blank of flexible paperboard and having a bottom box or tray portion wherein the bottom panel and the side and end walls are uncreased and the connecting corners and bottom edges are integrally connected together, with the end walls having a double-thickness construction and having an integrally formed central partition and suspending portion of double thickness, characterized by oppositely or reversely directed end portions of three ply construction, two thicknesses or plies being formed by vertical extensions of the opposite

end walls and a third thickness being integrally formed as a lateral extension of one of the partition thicknesses.

Another important object of the invention is to provide a paperboard blank formed of a single piece of material and so cut and scored that it can be erected into a non-collapsible type bottle carrier having a box or tray type bottom, the bottom panel and the side and end walls being interconnected together and integrally sealed at all seams and corners, and having a double-thickness carrier handle centrally positioned over the box or tray portion and supported from the opposite end walls by means of reversely or oppositely directed multi-thickness construction formed in part by vertical extensions of the end walls and in part by lateral extensions of the separate thicknesses of the handle.

Certain other objects of the invention will, in part, be obvious and will, in part, appear hereinafter.

For a more complete understanding of the nature and scope of the invention, reference may now be had to the following detailed description thereof taken in connection with the accompanying drawings, wherein:

Fig. 1 is a top plan view showing a paperboard blank as died out, creased and preliminarily glued for the production of a set-up, non-collapsible type bottle carrier, in a preferred embodiment thereof;

Fig. 2 is a top perspective view showing the blank of Fig. 1 in a partially set-up condition wherein the box or tray portion is completely formed and the handle forming portions are temporarily positioned as upward extensions of the side and end walls;

Fig. 3 is a top plan view in which the positions of the handle forming portions are indicated in broken line intermediate the temporary positions they occupy in Fig. 2 and the final positions they occupy in the completely set-up condition of the carrier; and

Fig. 4 is a top perspective view showing the bottle carrier in completely erected condition.

Referring to Fig. 1 of the drawings, a paperboard blank is shown having a central bottom panel **5** to which end wall panels **6** and **7** are integrally hinged along the score or crease lines **8** and **10**, respectively, and having side wall and handle defining panels **11** and **12** integrally hinged along the opposite sides along score lines **13** and **14**, respectively. The end wall panel **6** has a rectangular end wall portion **15** from which extends a rectangular tab portion **16**. The tab or extension **16** has a width equal approximately to one-half of the width of the panel portion **15**. The end wall panel **7** likewise has a rectangular end wall portion **17** from which extends a tab **18** also having a width equal approximately to one-half of the width of the end flap **7**. It will be noted that the tabs or extensions **16** and **18** are located on the opposite halves of the panels **6** and **7**.

The side wall portion **20** of panel **11** has a glue flap **22** integrally secured thereto along the score line **23** and on the opposite end has another glue flap **24** integrally secured to the end of the panel along a score line **25**. The glue flap **22** is of uniform width and has a height approximately equal to the height of the rectangular tab portion **18** on the end wall panel **7**. The width of the glue flap **22** is substantially less than one-half the width of one of the end wall tabs **16** or **18**. The glue flap **24** has a lower rectangular portion having a height equal approximately to the height of one of the end wall panels **15** or **17** and a width substantially greater than one-half the width of one of the end wall flaps **6** or **7**. It also has an integral extension **27** of a height approximately equal to the height of the tab **16** on the end panel **6**. The width of the extension **27** of the glue flap **24** is substantially less than the width of the glue flap **22** of the opposed end of the side wall panel **20**.

A handle and longitudinal partition section **28** is integrally formed on the side wall and handle defining panel **11** by slitting the panel along the line **30** and by scoring the opposite ends of the section **28** along the score lines **31** and **32** which are in alignment with creases or score lines **23** and **24**. This is where the section **28** joins the glue flaps **22** and **24**, respectively. The section **28**, hereinafter referred to simply as a handle section, is divided into a rectangular panel portion **33**, end panel portions **34** and **35** and a gripping portion or panel **36** which is an outer extension of portions **33** and **34**. The panel **34** is hinged to the panel **33** along a score line **37** while the panel **35** is hinged to the panel **33** along a score line **38**. The handle or gripping panel **36** is scored or hinged to the remainder of the panel section along a score line **40**, along which it may be bent for stacking of loaded carriers in use. Two finger openings **39—39** are provided in the panel **36**.

The panel **12** corresponds to the panel **11** but its position relative to the bottom panel **5** is reversed. The side panel **12** includes, in addition to side wall portion **21**, panel portions or sections which correspond to similar panels or panel areas of the member **11** and are designated by the reference numerals **41**, **43**, **44**, **50**, **51**, **52** and **53**. The handle portion **45** corresponds to handle portion **28** and the various panels of member **12** are laterally defined by score or crease lines which correspond to similar score or crease lines on the member **11** and are designated **42**, **47**, **48**, **54**, **55**, **56** and **57**. The panel area **53** is provided with two finger openings **60—60** corresponding to the openings **39**.

If desired, one of the two finger openings **39** may have a locking tab **61** extending therein to be folded through the finger opening **60** which registers with it when the carton is set up. Likewise, the other finger opening **60** may have a similar locking tab **62** for folding through its registering finger opening **39**.

The blank shown in Fig. 1, and described in connection therewith may be dyed, cut and scored from paperboard stock by the use of known type machinery now in use for this purpose. The blanks will ordinarily be stacked and packaged and then sold and shipped to the using customers such as canners or bottlers of soft drinks or other beverages. The bottling plant or other user will be provided with box making equipment of the reciprocating plunger type with cooperating gluing fingers suitably modified and adapted for erecting the bottle carriers from the blanks. In the first operation in setting up one of the bottle carriers from the blank shown in Fig. 1, the two opposite end wall panels **6** and **7** are folded along the crease lines **8** and **10**, while the side wall flaps **11** and **12** are folded up along the crease lines **13** and **14**. Then glue is applied as indicated by stippling in Fig. 1, i. e., to the glue tabs **22** and **24**, including the extension **27**, and to glue tabs **41** and **43**, including the extension **44**. The glue tabs **22** and **43** are folded against the outside of the end flap **7**, while the glue flaps **41** and **24** are folded against the outside of the end flap **6**, it being understood that these gluing and folding operations take place during a single downstroke of a plunger on the blank in the set-up machine. The carrier is now set up in the condition shown in Fig. 2 as the result of this series of operations.

In the final series of operations to complete the erection of the bottle carriers, glue may first be applied to the end wall panel extensions **16** and **18** on the interiors thereof as indicated by stippling in Fig. 2. Next each of the handle portions **28** and **45** is folded or buckled inwardly and in opposite directions about creases **32**, **54** into the central position, shown in Fig. 4, over the bottom box-like portion. The handle portions **28** and **45** are shown in the transitory intermediate position in Fig. 3 which they occupy in going from the rectangular positions shown in Fig. 2 to the final position shown in Fig. 4.

Referring to Fig. 4, it will be noted that each of the end walls of the box portion or tray portion of the bottle carrier is of two-thickness construction while the vertical extensions of the end walls which are indicated in Fig. 3 at **62** and **63** are of three-thickness construction. The handle portion of the carrier **64** is of two-thickness construction. The vertical extensions **62** and **63** may be regarded as reversely directed extensions of the handle portion of the carrier. The triple-thickness construction of these extensions and the double-thickness construction of the end walls to which they are joined, together with the double-thickness of the handle portion **64**, provides a strong and rigid attachment to the bottom box portion of the carrier. The latter is itself of rigid construction since the bottom panel **5** and the side and end walls are formed of uncreased panels and all of the seams between the panels and the bottom as well as the corners of the box portion are completely and integrally closed together.

Essentially, the invention affords the now collapsible rigidity and strength inherent in a preformed, pre-erected box-like bottom, along with an integral handle construction medially overlying the bottom which is a necessity in an article carrier.

Since further modifications may be made in the preferred embodiment of the invention shown in the accompanying drawings and described above in connection therewith, it will be understood that this particular embodiment is intended to be interpreted as illustrative of the invention and not in a limiting sense.

What is claimed as new is:

1. A paperboard blank from which a bottle carrier of the set-up, non-collapsible type can be erected, comprising, a rectangular bottom panel, end wall panels integrally hinged to opposite ends of said bottom panel, and side sections integrally hinged to the opposite sides of said bottom panel, each of said end wall panels and side sections having, respectively, an end and side wall panel portion of equal height which serve as the end and side walls of a bottom box portion of the erected bottle carrier, a rectangular tab integrally formed on each of said end wall panels without creasing and extending from one edge of each end wall panel for approximately one-half the width thereof, with said tabs located on opposite halves of said end wall panels, each of said side sections having a pair of glue flaps integrally connected to opposite ends thereof along score lines, said glue flaps having a height approximately equal to the height of said end wall panel tabs, one glue flap of each of said pairs thereof having a uniform width substantially less than one-half the width of said end wall panels and the other glue flap of each pair having a lower portion of height equal to that of said side wall sections and width substantially greater than one-half the width of said end wall panels, and having an upper portion of width substantially less than the width of said glue flap of uniform width, the pair of glue flaps on one of said side wall sections being reversely located in respect to the glue flaps on the other one of said side wall sections, and a carrier handle providing portion integrally hinged at opposite ends between the portions of said pairs of glue flaps projecting above the height of said side wall sections, said handle providing portions being scored so as to be foldable into opposed two-thickness relationship.

2. A bottle carrier formed from a blank of paperboard material which is cut and scored to provide, when erected, a plurality of hingedly connected wall forming panels comprising a rectangular bottom wall panel, oppositely disposed side and inner end wall panels in upstanding relation at the side and end edges, respectively, of said bottom wall panel, said end wall panels extending between opposite end edges of said side wall panels, outer end wall forming panels of different widths hinged along the end edges of opposite ends of said side wall panels and secured to the outer faces of said inner end wall

panels to provide double thickness end walls and a longitudinal partition wall structure comprising a pair of like panel members in face engaging relation which are each hinged at one end to an intermediate portion of the widest outer end wall panels on a vertical hinge line approximately in the center of the end wall and hinged at the other end to a connecting panel extending in face engaging relation along the inside of the inner end wall panel from approximately the center thereof to a side wall and being hingedly connected to an outer end wall panel, said longitudinal partition wall structure having its lower edge spaced from the bottom wall a distance corresponding to the height of the side wall panels and having handle forming extensions on the upper edge thereof, said end wall forming panels having diagonally opposite portions the same height as the side walls and adjoining portions extending above the side walls a distance equal to the height of the longitudinal partition wall structure.

3. A bottle carrier formed from a single blank of paperboard material which is cut and scored to provide, when erected, a plurality of integrally connected and hingedly related wall forming panels consisting of a rectangular bottom wall, side walls hinged into upstanding oppositely disposed relation at the side edges of said bottom wall, inner end wall members hinged into upstanding relation at the end edges of said bottom wall and extending between the ends of said side walls, outer end wall members of different widths hinged inwardly on vertical hinge lines at opposite ends of the side walls and secured to the outer faces of said inner end wall members

and a two ply longitudinal center partition wall extending between said inner end wall members, the lower edge of said center partition wall being at the same height as the upper edge of said side walls, said inner end wall members having diagonally opposite portions at the same height as the adjoining side walls and adjoining portions extending above the side walls to a height corresponding to the height of the upper edge of said center partition wall and said center partition wall plies each being cut in part from a side wall and in part from the adjoining outer end wall and being hinged along a vertical hinge line at one end thereof to an intermediate portion of said last mentioned outer end wall member, said last mentioned outer end wall member being wider than the cooperating outer end wall member and said center partition wall plies each being hinged at the other end thereof to a connecting panel member which is also cut from the side wall and which is folded against and secured to the inner face of the portion of the adjoining inner end wall member which extends above the side wall.

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