Oct. 24, 1967 W. H. WRIGHT 3,348,730

CARRIERS FOR BOTTLES AND OTHER ARTICLES

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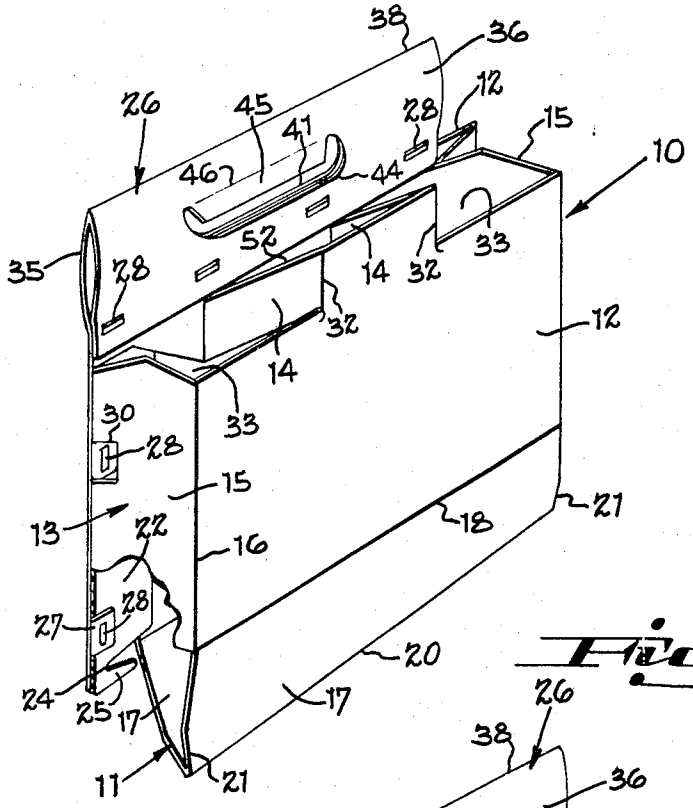


Fig. 1

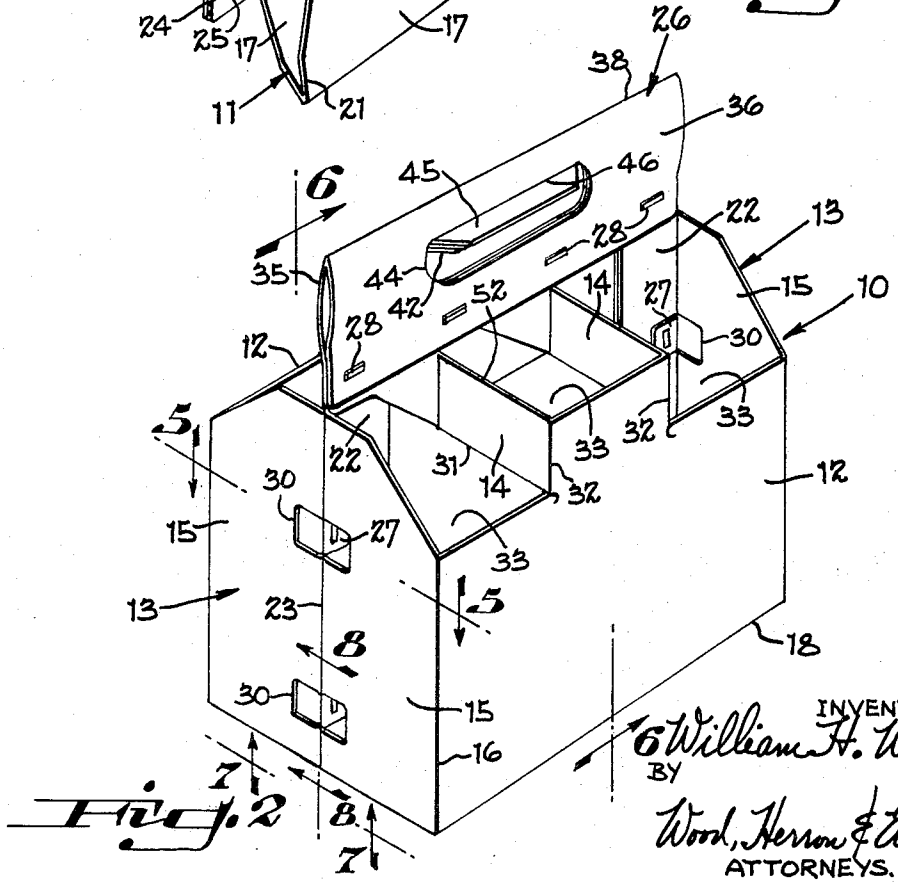


Fig. 2

INVENTOR.
William H. Wright
BY
Wood, Herron & Evans.
ATTORNEYS.

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CARRIERS FOR BOTTLES AND OTHER ARTICLES

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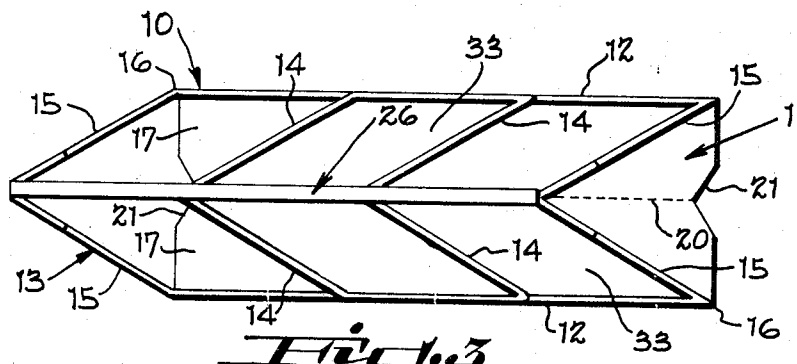


Fig. 3

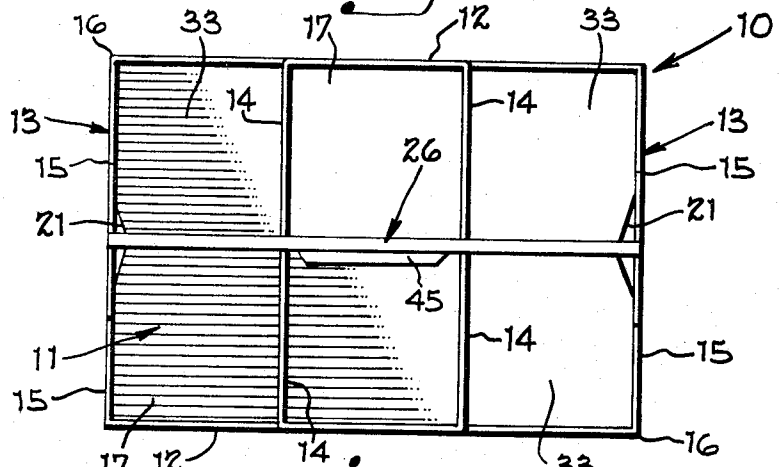


Fig. 4

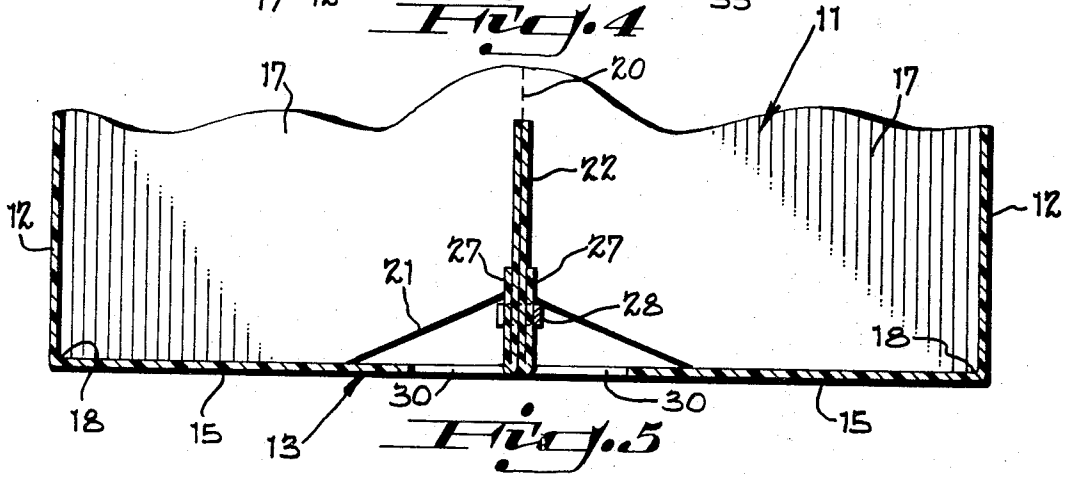


Fig. 5

INVENTOR.
William H. Wright
BY
Wood, Herron & Evans
ATTORNEYS

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CARRIERS FOR BOTTLES AND OTHER ARTICLES

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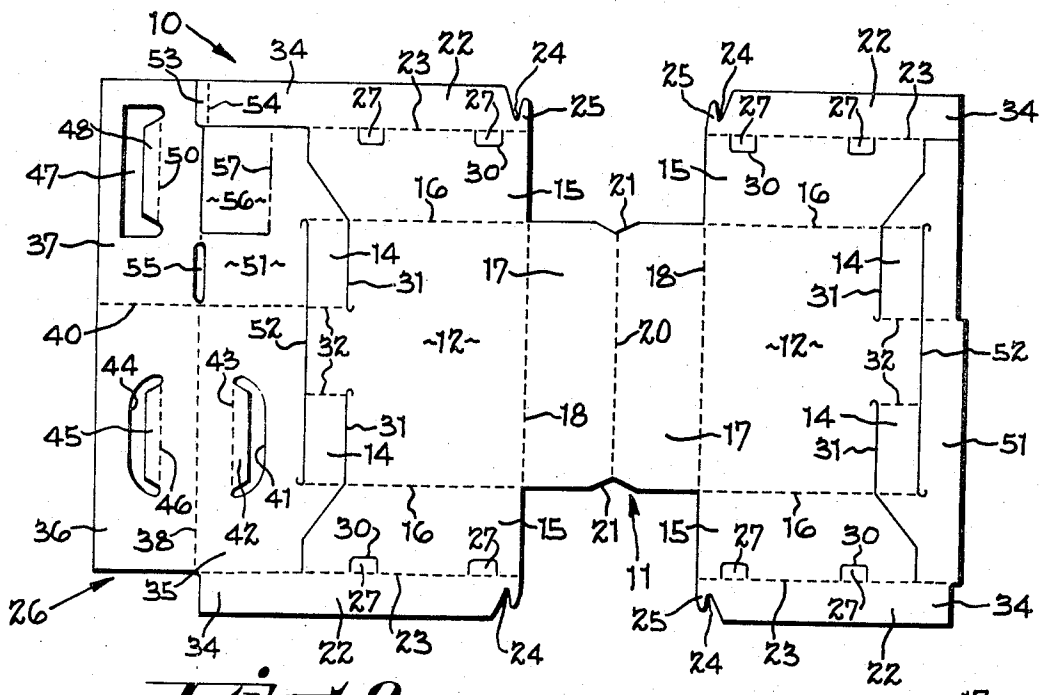


Fig. 9

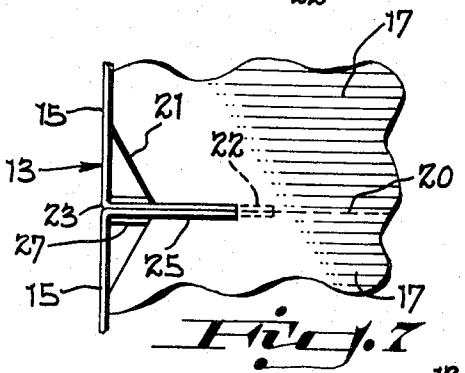


Fig. 7

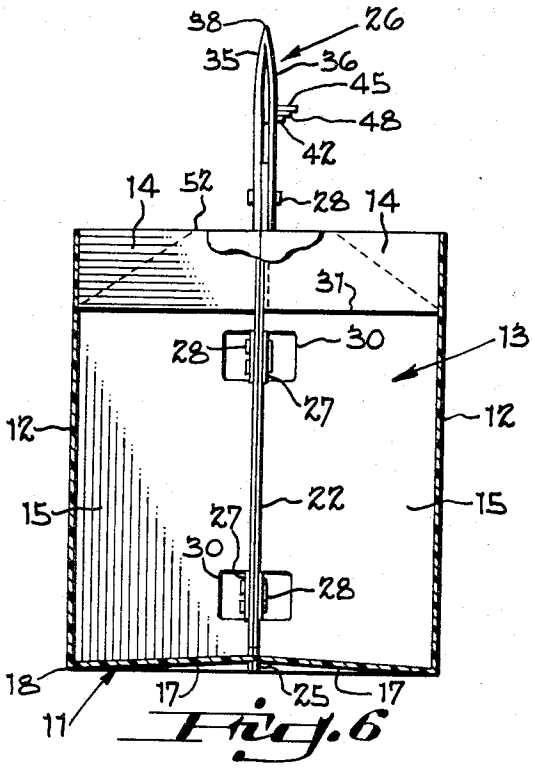


Fig. 6

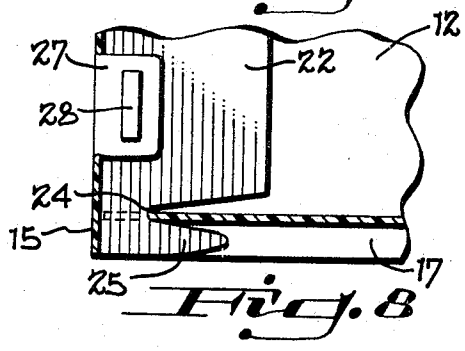


Fig. 8

INVENTOR
William H. Wright.
BY
Wood, Herron & Evans.
ATTORNEYS.

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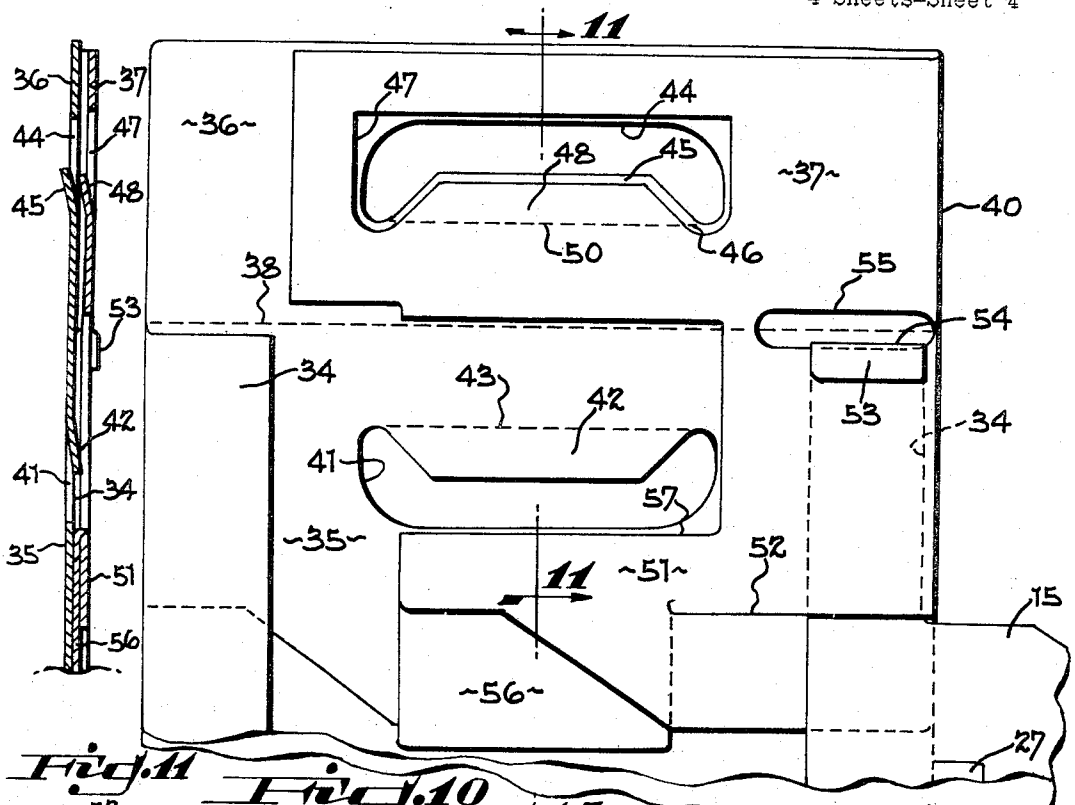


Fig. 11

Fig. 10

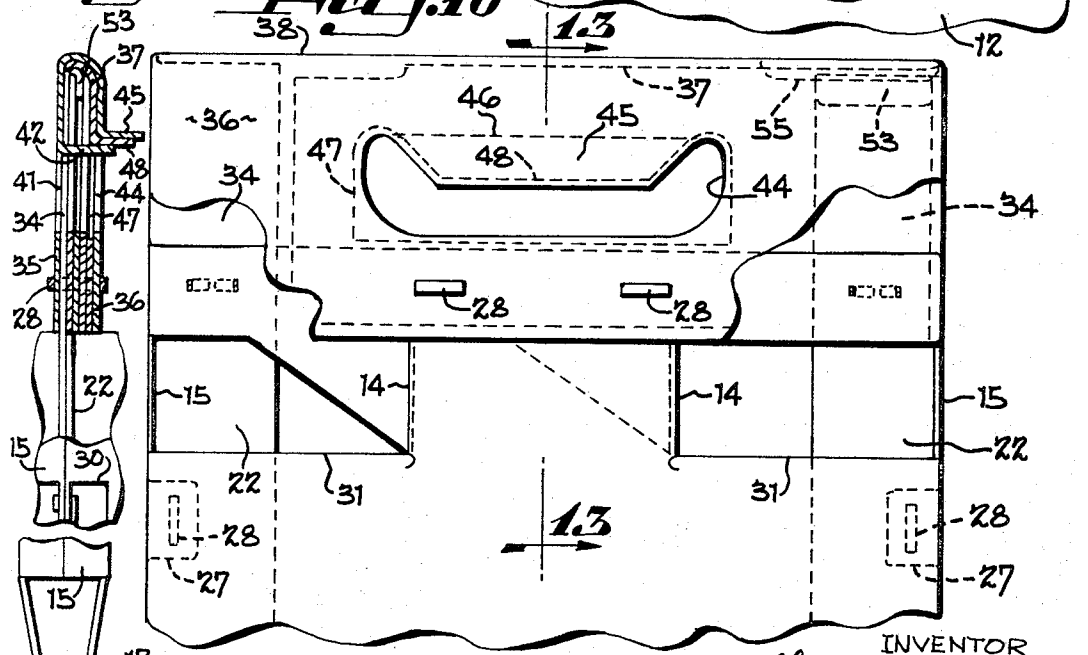


Fig. 12

Fig. 13

INVENTOR
William H. Wright.
BY
Wood, Herron & Evans.
ATTORNEYS.

United States Patent Office

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CARRIERS FOR BOTTLES AND OTHER ARTICLES

William H. Wright, Cincinnati, Ohio, assignor to The C. W. Zumbiel Company, Norwood, Ohio, a corporation of Ohio

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2 Claims. (Cl. 220—111)

ABSTRACT OF THE DISCLOSURE

The invention resides in a carrier formed from a plastic sheet material in which the handle is of beam-like construction, comprising overlapped sections or panels, combined with composite end walls which comprise pairs of end wall panels joined along vertical seams at the center of the composite end walls. The end wall seams include end wall flaps bent inwardly from the end wall panels and having extensions which project upwardly above the upper edges of the end walls. The upwardly projecting extensions of the end wall flaps are connected to the handle panels at opposite ends by means of staples so as to provide a re-enforced connection between the handle portion and the carrier body. In combination with the re-enforced handle and its connection with the carrier body, the carrier further includes cut out sections in the end wall panels which delineate attachment tabs connected to the associated end wall panels, the tabs delineating respective openings in the end wall panels and being folded inwardly from the end wall panels. The attachment tabs overlie the opposite sides of the face-to-face end wall flaps and are secured thereto by staples which are applied through the openings delineated by the tabs. The arrangement has the double function of delineating the attachment tabs and also of providing the access openings through which the staples are attached by a suitable tool upon erection of the carton from its blank formation.

This invention relates to improvements in portable carriers of the type used in displaying and transporting bottled beverages and the like. Bottle carriers of the present invention are of the well-known type constructed to confine the bottles in groups of six or eight for convenient transportation.

Carriers of this category are normally constructed from a unitary, one-piece sheet of material having cut and score lines judiciously located, whereby the sheet of material, when folded and secured, includes space for the designated group of similarly shaped bottles. The prior art discloses many carriers of this general type, each having advantages and disadvantages with respect to the others. Cardboard and other paper-based materials have been a favored product for use as the body of such carriers, since it has the advantage of being inexpensive, relatively strong, and easily cut, folded and glued. The primary disadvantage of paper-based material is its short life. Once wet, its strength is greatly diminished and, due to the nature of bottled products, carriers of this material oftentimes do come in contact with ice and other moisture-producing substances.

The most obvious advantages of carriers formed from plastic material are their strength, their long life, their light weight and their ability to be unaffected by moisture. One principal difficulty of plastic carriers of sufficient strength and durability to support heavy canned and bottled beverages is the problem of securing the various flaps after erection. Cardboard, on the other hand, readily adapts itself to adhesive securements, as noted above.

It has been a primary object of the invention to provide a bottle carrier of the type designated which is formed of plastic sheet material having an upstanding, centrally located carrying handle which is of multi-ply overlap construction which includes reinforcing flaps joined to the body of the carrier and interfitted within the handle to strengthen the connection between the carrier body and handle.

A further objective of this invention has been to provide a bottle carrier wherein the handle portion is provided with a hand-grip opening having a relatively wde, beam-like bearing surface covering the edges of the opening, thereby to spread the weight of the container and merchandise evenly over the hand.

A still further objective of this invention has been the provision of a novel cutout in the end panels of a carrier to form tabs in which staples may be applied to permanently secure the edges of the carrier together and at the same time provide openings whereby the stapling instrument can reach the interior of the carrier.

These and other objects of the invention will be more fully understood by those skilled in the art from the following detailed description taken in conjunction with the drawings.

In the drawings:

FIGURE 1 is a perspective view of a carrier constructed according to the principles of the invention, with the carrier in partially expanded condition;

FIGURE 2 is a perspective view of the carrier fully expanded;

FIGURE 3 is a plan view of FIGURE 1;

FIGURE 4 is a plan view of FIGURE 2;

FIGURE 5 is a partial cross-sectional view along the line 5—5 of FIGURE 2;

FIGURE 6 is a cross-sectional view along the line 6—6 of FIGURE 2;

FIGURE 7 is a fragmentary bottom view of the carrier as indicated by the line 7—7 of FIGURE 2;

FIGURE 8 is a fragmentary cross-sectional view along line 8—8 of FIGURE 2; and

FIGURE 9 is a plan view of the blank from which the carrier is made.

FIGURE 10 is a fragmentary view of the carrier in partially erected but in flat condition, with the body portion of the carrier assembled and stapled and with the front portion of the carrier body broken away. In this view, the handle portion of the carrier is in partially folded condition before being doubled over to its final form.

FIGURE 11 is a sectional view taken along line 11—11 of FIGURE 10, further illustrating the construction of the handle in its unfolded condition.

FIGURE 12 is a view showing the carrier in its erected and stapled flat condition, similar to FIGURE 10, the front portion of the carrier shown in its overfolded position. In this view the handle portion is doubled over upon itself and stapled in its final position.

FIGURE 13 is a sectional view taken along line 13—13 of FIGURE 12, further detailing the construction of the handle in folded and stapled condition.

Described generally with reference to the drawings, the carrier of this invention is indicated generally at **10** in FIGURES 1 and 2. As shown in these views, the carrier comprises a composite bottom, indicated generally at **11**, a pair of side wall panels **12—12**, and a pair of composite end walls **13—13**. As noted above, the carrier is fabricated from a one-piece sheet blank of plastic material, as indicated in FIGURE 9. The several wall panels for the composite bottom **11**, side wall panels **12** and composite end walls **13** and also the other components of the carrier are delineated by score lines which are impressed in the plastic sheet while it is in its flat blank form. The several score lines are called "fold lines" in the detailed description of the carrier which follows.

The bottle carrier, which has been selected to illustrate the principles of the invention, is arranged for confining a group of six bottles, the individual bottles being segregated from one another by separators **14** which are integral with the sheet blank from which the carrier is fabricated. It will be understood that carriers which are intended for containing groups of eight bottles, or which are intended for any other desired number of bottles or other objects may be fabricated in the same manner, with suitable changes in the sheet blank to accommodate the desired group size.

As best shown in FIGURES 2–4 and 9, one composite end wall **13** of the carrier comprises end wall panels **15—15** which are joined to the side wall panels **12** along the vertical score lines or fold lines **16**. The opposite composite end wall **13** comprises a similar pair of end wall panels **15** joined to the opposite edges of the side wall panels **12** along the fold lines **16**. In the partially collapsed condition of the carrier (FIGURE 3), and in the fully collapsed condition (FIGURES 10 and 12) the end wall panels **15** on the right hand end are folded inwardly between the side wall panels **12** while end wall panels **15** at the left hand end project outwardly.

The bottle separators **14**, as explained later, are bent along lines parallel with the end wall panels **15**. In the fully collapsed condition of the carrier (not shown), the end wall panels **15** and separators **14** reside in a common plane with reference to the side wall panels **12**.

As best shown in FIGURES 1, 5, 6 and 9, the composite bottom **11** comprises a pair of bottom panels **17—17** joined to the side wall panels **12** along the fold lines **18**. The two bottom panels **17** are subdivided by an intermediate fold line **20** extending parallel with the fold lines **18—18**. The fold line **20** permits the composite bottom **11** to be bent upwardly (FIGURE 1) when the carrier is collapsed to its flat condition. The opposite edges of the composite bottom **11** are chamfered to provide respective V-shaped notches **21—21**, with the apex of the notches coinciding with the intermediate fold line **20** (FIGURE 9). These notches **21** form a part of a snap-type latch for locking the carrier in its erected condition (FIGURE 2), as described below.

Referring back to FIGURE 9, the outer edge of each end wall panel **15** includes a flap **22** which is delineated by the fold line **23**. The lower edge portion of each flap **22** is notched out as at **24** to delineate a spur **25**. In the erected condition of the carrier, the end wall flaps **22** are folded inwardly in facial engagement with one another (FIGURES 7 and 8) such that the spurs **25** are arranged in pairs at opposite end to be snapped into engagement with the V-shaped notches **21**. The spurs **25**, upon engagement with the notches **21**, lock the bottom panels **17** in flat condition, thus squaring up the composite end walls **13** with reference to the side wall panels **12** and also squaring up the bottle separators **14**. The carrier, in this condition is ready to be filled.

It will be understood at this point, that prior to erection, the sheet blank shown in FIGURE 9 is folded progressively (FIGURES 10 and 12) to an assembled but flat condition and that the end wall panels **15** are secured permanently together at this stage. This forms a receptacle which is subsequently erected to the condition shown in FIGURES 1 to 3. This arrangement permits the carriers to be packed compactly in the flat condition for storage and shipment and permits them to be erected individually in a convenient manner simply by applying endwise pressure. This brings the carrier to its squared condition (FIGURES 2 and 4) permitting the spurs **25** to be snapped into engagement with the notches **21** (FIGURES 7 and 8).

In order to delineate the individual bottle holding receptacles along opposite sides of the carrier, there is provided a handle, indicated generally at **26** in FIGURES 1, 2, 9, 10 and 12. In the erected carrier, the handle **26** (which is of beam construction) extends along the middle of the carrier parallel with the side wall panels **12** (FIGURES 2 and 4). The bottle confining receptacles are thus delineated on opposite sides of the carrier by the handle **26**. As explained later in detail, the bottle separators **14** are integral with the handle **26** and side wall panels **12**.

In order to convert the flat sheet blank (FIGURE 9) to carrier formation, the side wall panels **12—12** are folded over from the position of FIGURE 10 to the position of FIGURE 12 and into facial engagement with one another. In the second position (FIGURE 13) the composite bottom **11** is doubled upon itself and projects outwardly from the side wall panels **12**. With the blank thus partially folded, the end wall panels **15**, which form the composite end walls **13**, project outwardly beyond the edges of the side wall panels **12** at right angles to the bottom panels **17** (FIGURE 10). The flaps **22** of the end wall panels are then folded inwardly into facial engagement with one another, thus residing between the end wall panels **15**.

In order to facilitate the stapling operation, tabs **27** (FIGURES 6 and 8), arranged in pairs in the end wall panels **15**, are struck from the panels **15—15** along the fold lines **23**. In folding the carrier for erection, the lines of severance provided by the tabs **27** provide openings **30** which permit a stapling mechanism to apply staples **28** directly through the tabs **27** and through the flaps **22** to form four-ply reinforcing sections for the end wall panels **15**.

The stapling operation along the end panels **15** may be carried out with the end panels projecting outwardly, as indicated at the left end of FIGURE 3, prior to folding the handle **26** upon itself. After both composite end walls have been stapled, the handle **26** may be folded and secured by staples **28**, as explained later.

Alternatively, the carrier may be stapled while in its erected condition shown in FIGURE 2. In this event, the staples **28** may be applied to the tabs **27** through the openings, **30** in the same manner with an instrument which reaches through the openings **30** of the squared end walls. In this case, the handle section **26** may be assembled and stapled concurrently with the stapling of the tabs **27**. With the end wall flaps **22** doubled upon themselves, the spurs **25** of the flaps **22** are in doubled formation at opposite ends of the carrier to provide a firm support for the composite bottom **11**, upon erection of the carrier.

The bottle separators **14** are delineated by the cuts **31** (FIGURE 9). These cuts **31**, together with the fold lines **32** of the separators **14** form the individual bottle openings **33** (FIGURE 2) when the carton is expanded to the erected position. It should be noted (FIGURE 9) that the longitudinal extensions of fold lines **23**, beyond their points of intersection with cuts **31**, form flap extensions **34** projecting above their associated end panels **15**. When the carton is erected, these flap extensions **34** fall between the handle panels, as explained below, so as to present a multi-ply lamination forming a beam-like handle of plastic which is penetrated by the staples **28**.

The composite handle, indicated earlier at **26**, extends from the side wall panel **12** in the form of three handle

sections in order to provide the required strength. Thus, as shown in FIGURE 9, the handle **26** is formed by a first section **35**, a return section **36**, and an intermediate section **37**. The first section **35** is joined to the side panel **12** by the separators **14—14**. The return section **36** is joined to the first section **35** along the score line **38**. The intermediate section **37** is joined to the end of the return section **36** along the score line **40**. As best shown in FIGURE 2, the handle **26**, extends upwardly from the carrier with the fold line **38** forming the upper edge of the handle **26**.

It will be noted in FIGURE 9, that the first handle section **35** includes a hand-grip opening **41** having a flap **42** joined along the score line **43**. The return flap **36** includes a similar hand-grip opening **44** having a flap **45** joined along the handle section by a score line **46**. The intermediate handle section **37** includes a hand-grip opening **47** having a flap **48** joined along the edge of the opening by a score line **50**. In order to further reinforce the composite beam-like handle **26**, the opposite edges of the blank include a strip **51** (FIGURE 9) delineated by the cuts **52** and **31—31**. In the erected carrier, the strap **51** resides between the first handle section **35** and the intermediate handle section **37**. As explained later, the second handle section **36** overlies the strap **51** when the return handle section **36** and the intermediate handle section **37** are doubled over upon the first handle section **35** (FIGURES 12 and 13).

The flap extension **34** at the upper left corner of the blank (FIGURE 9) includes a tab **53** delineated by a score line **54**. The intermediate handle section **37** includes a slot **55** to receive the tab **53** which, upon erection (FIGURE 10), is inserted through the slot **55** formed in the strap **51**.

One of the straps **51** includes a reinforcement tab **56** which is joined to the strap **51** along a score line **57**. The several laminations thus provided, including the intermediate handle section **37** and the overlapping handle sections **35** and **36**, are secured by the series of staples **28** noted earlier, as best shown in FIGURES 1, 2 and 12 to form the composite beam-like handle **26**.

In erecting the carrier, the side wall panels **12—12** are bent upwardly along their fold lines **18—18**, thus forming the bottom **11** and side walls **12** of the carrier (FIGURES 6, 12 and 13). The end wall panels **15**, which form the composite end walls **13**, are then folded inwardly (FIGURES 1 and 3) to a common plane, with the flaps **22** folded to the interior of the carrier in face-to-face contact. The tabs **27** of the end wall panels **15** are then folded inwardly to facial engagement with their associated flaps **22** and are secured by the staples **28**, as best shown in FIGURES 1 and 8. The same procedure is followed with reference to the end wall panels **15** at the opposite end of the carrier.

After the tabs **27** are secured by the staples **28**, the composite bottom **11** is pushed upwardly so that the spurs **25** can be snapped into engagement with the notches **21**, thereby to support the composite bottom at opposite ends of the carrier. Between the preformed cuts and folds shown in FIGURE 9, the separators **14** span the lateral width of the carton; the handle **26** can then be folded along line **38** so that the handle openings **41**, **44** and **47** are in registry (FIGURE 13). The handle sections **35**, **36** and **37** are spaced from one another by the extensions **34**, which, combined with the overlapping handle sections **35** and **36** and intermediate section **37** provide a multi-ply plastic lamination of beam-like construction penetrated by the staples **28**, as can best be seen in FIGURE 13. After the handle sections **35**, **36** and **37** are folded, their flaps **42**, **45** and **48** are bent to project through the hand-grip openings **41**, **44** and **47** to provide a comfortable hand bearing surface.

Having described my invention I claim:

1. In a collapsible one-piece bottle carrier having a carrier body comprising a composite bottom, a pair of side wall panels, a pair of composite end walls each having a pair of end wall panels connected to the opposite ends of said side wall panels, and a beam-like handle connected to said carrier body, the handle having a first section and a second section doubled over upon the first section, the improvement comprising:

an end wall flap projecting from the free edge of each of said end wall panels;

said end wall flaps delineated by fold lines extending vertically along said end wall panels in the erected condition of the carrier;

the end wall flaps of each pair of end wall panels being disposed in facial engagement with one another and being folded into the interior of said carrier body;

each of said end wall panels including an attachment tab delineated by lines of severance;

each of said attachment tabs hingedly connected to its associated end wall panel along the vertical fold line which delineates the end wall flap relative to the end wall panel;

each of said attachment tabs delineating an opening in its associated end wall panel and being folded inwardly at right angles to its end wall panel and disposed in facial engagement with its associated end wall flap, whereby said inwardly folded end wall flaps and related end wall tabs are disposed in facial relationship with one another in the erected condition of the carrier;

a staple extending through said folded end wall flaps and related end wall attachment tabs and clinched thereover and securing said end wall flaps and end wall tabs in facial engagement with one another, thereby to lock the carrier in erected condition;

said end wall flaps each having a flap extension projecting upwardly beyond the upper edge of the carrier body;

said flap extensions being disposed between the said first and second handle sections which are doubled over upon one another;

and respective staples passing through each of said flap extensions and through said first and second handle sections and clinched thereover, thereby securing said flap extensions to said beam-like handle, whereby the weight load of the carrier body, at least in part, is transmitted from said carrier body through the said flap extensions to said beam-like handle.

2. In a collapsible one-piece bottle carrier having a carrier body comprising a composite bottom, a pair of side wall panels, a pair of composite end walls each having a pair of end wall panels connected to the opposite ends of said side wall panels, and a beam-like handle connected to said carrier body, the handle having a first section and a second section doubled over upon the first section, the improvement comprising:

an end wall flap projecting from the free edge of each of said end wall panels;

said end wall flaps delineated by fold lines extending vertically along said end wall panels in the erected condition of the carrier;

the end wall flaps of each pair of end wall panels being disposed in facial engagement with one another and being folded into the interior of said carrier body;

each of said end wall panels including a pair of attachment tabs disposed one above the other and delineated by lines of severance;

each of said attachment tabs hingedly connected to its associated end wall panel along the vertical fold line which delineates the end wall flap relative to the end wall panel;

each of said attachment tabs delineating an opening in its associated end wall panel and being folded inwardly at right angles to its end wall panel and disposed in facial engagement with its associated end wall flap, whereby said inwardly folded end wall

flaps and related end wall tabs are disposed in facial relationship with one another in the erected condition of the carrier;

a plurality of staples penetrating said end wall flaps and said end wall tabs which reside in facial engagement with one another and clinched thereover, thereby to lock the carrier in erected condition;

each of said end wall flaps having a flap extension projecting upwardly beyond the upper edge of the carrier body;

said flap extensions being disposed between the said first and second handle sections which are doubled over upon one another;

and a plurality of staples penetrating said first and second handle sections and the flap extensions which are disposed therebetween and clinched thereover, whereby the weight load of the carrier body, at least in part, is transmitted from said carrier body

through the said flap extension to said beam-like handle.

References Cited

UNITED STATES PATENTS

2,285,399	6/1942	Arneson	229—52
2,322,396	6/1943	Slevin	220—113
2,418,350	4/1947	Holy	229—52
3,130,861	4/1964	Arneson	220—113
3,184,102	5/1965	Arneson	220—113

FOREIGN PATENTS

529,557	6/1957	Belgium.

JOSEPH R. LECLAIR, *Primary Examiner.*

G. O. RALSTON, D. T. MOORHEAD,
Assistant Examiners.