Feb. 15, 1955 H. W. FORRER 2,702,144

BOTTLE CARRIER

Filed May 15, 1950 3 Sheets-Sheet 1

Fig. 1

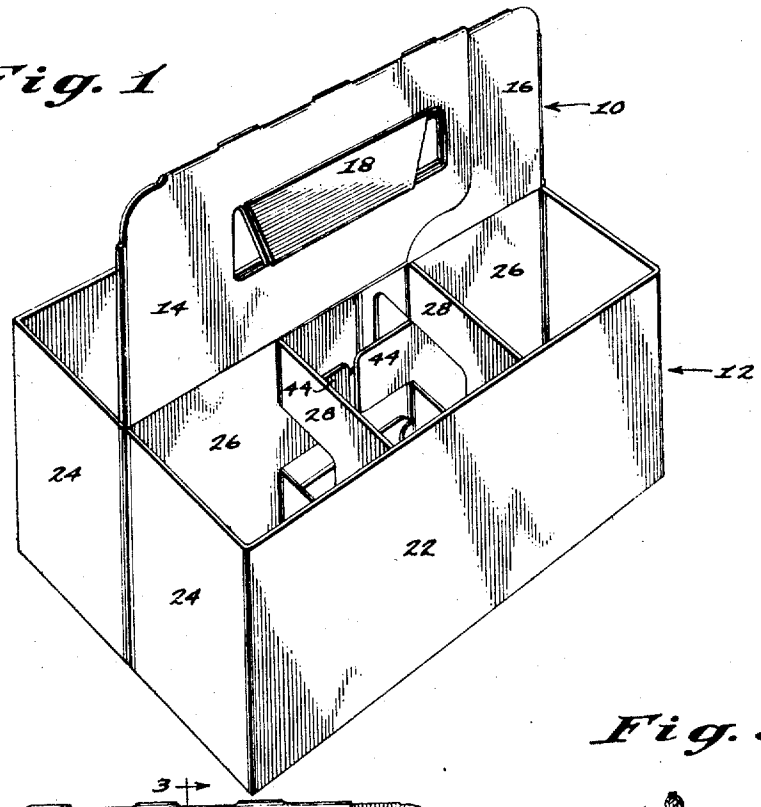
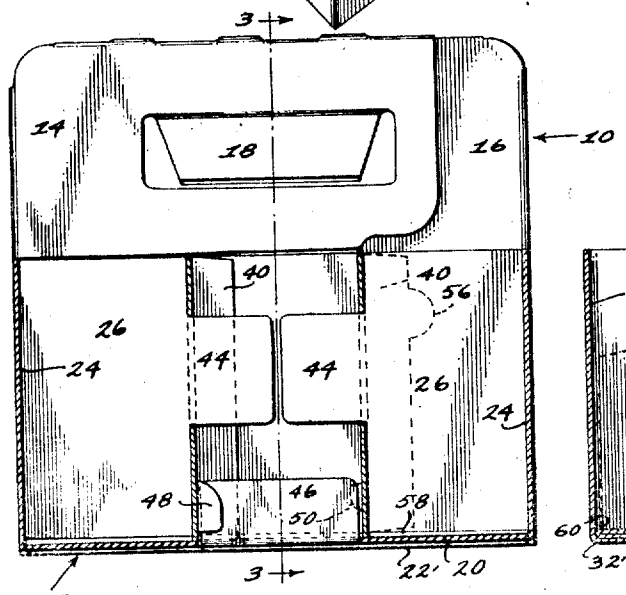


Fig. 3



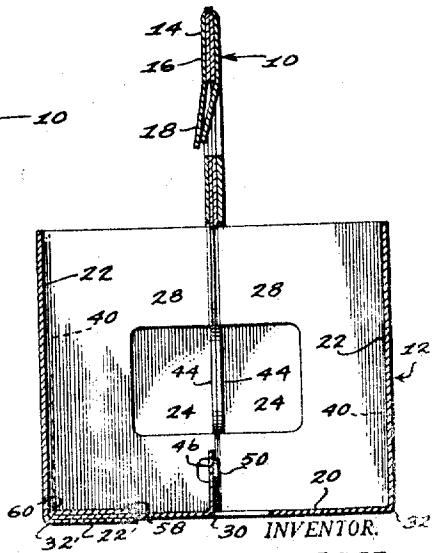


Fig. 2

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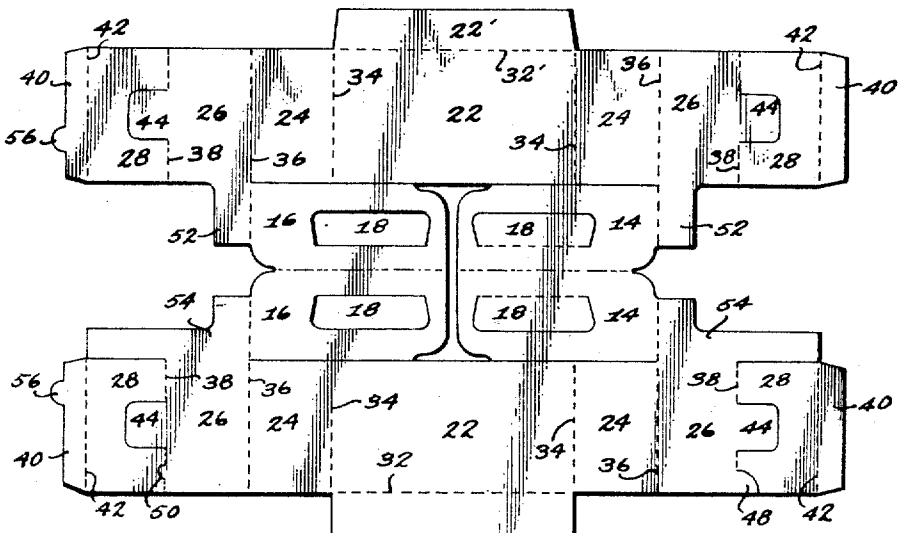


Fig. 4

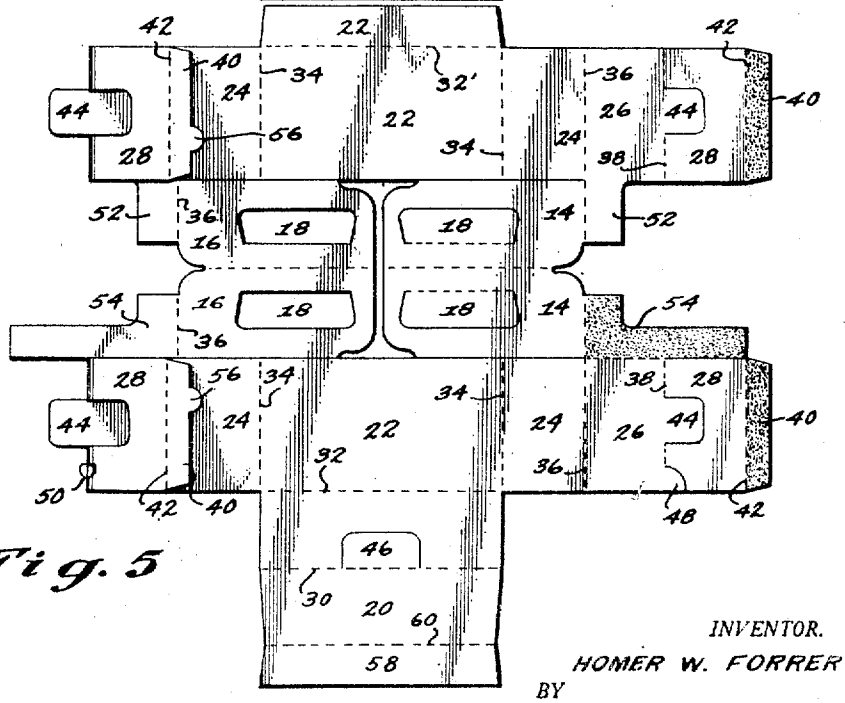


Fig. 5

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BOTTLE CARRIER

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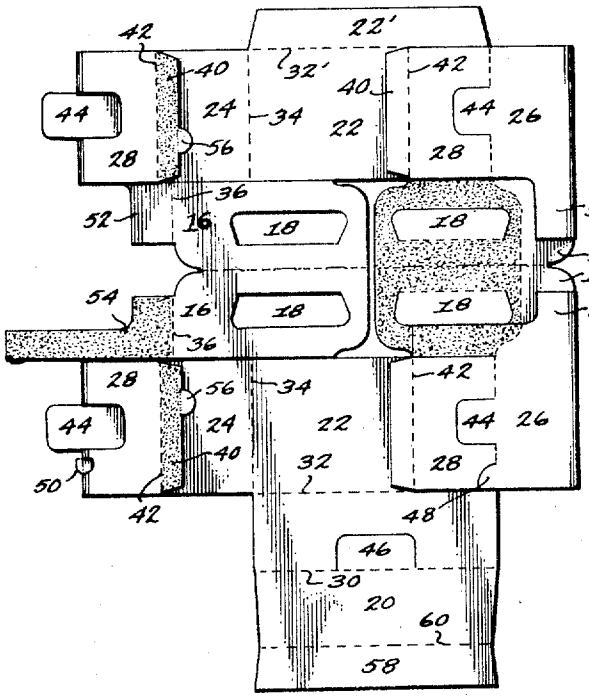


Fig. 6

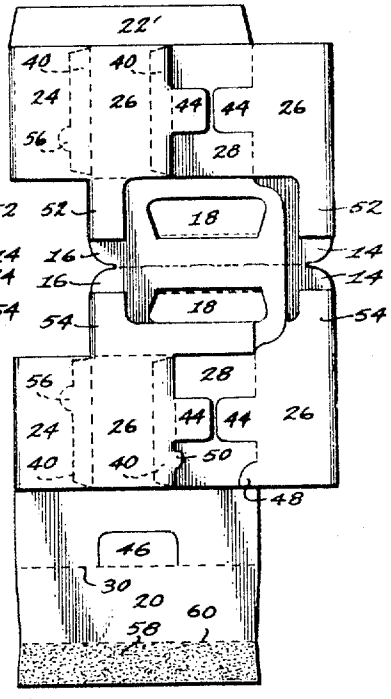


Fig. 7

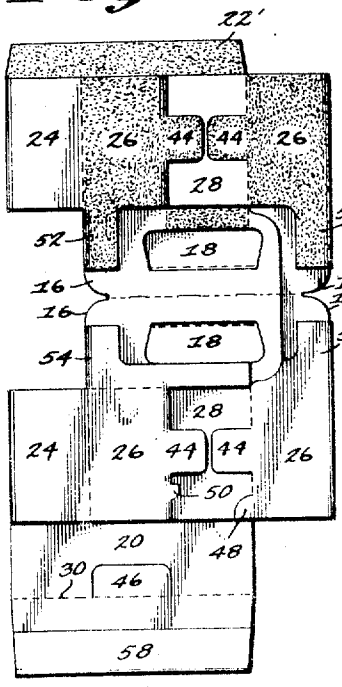


Fig. 8

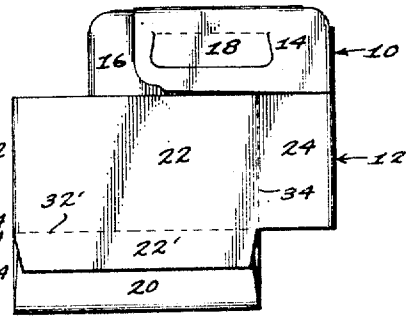


Fig. 9

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United States Patent Office 2,702,144 Patented Feb. 15, 1955

2,702,144

BOTTLE CARRIER

Homer W. Forrer, Atlanta, Ga., assignor to Atlanta Paper Company, a corporation of Georgia

Application May 15, 1950, Serial No. 162,001

7 Claims. (Cl. 220—111)

This invention relates to carriers for bottles and other similar containers, and more particularly to a collapsible paper carrier of this type having a unitary construction formed from a single piece of boxboard or the like, and in which partition means are uniquely arranged so that bottles loaded in the carrier are separated completely from contact with one another.

This is a continuation-in-part of my copending applications Serial No. 35,389, now Patent No. 2,537,452, filed June 26, 1948, and Serial No. 118,770, now Patent No. 2,646,918, filed September 30, 1949. These prior applications disclose a bottle carrier having a novel handle arrangement by which the carrier structure is rendered particularly strong and sturdy, and which allows the carrier to be formed in a symmetrical pattern so that it presents a neat, balanced appearance. Another feature of the bottle carriers disclosed in these prior applications is that the bottom wall panel is arranged to fold inwardly between the side wall panels for collapsing which conditions the bottom wall panel with an inward springing tendency even when erect that has the particularly advantageous result of disposing the carrier structure to stand alone when erected for automatic loading, and in the second of these prior applications the carrier is provided with end wall panels which completely close the ends of the carrier but in a manner which still allows the inward folding of the bottom wall panel in collapsing.

According to the present invention, a bottle carrier is provided which incorporates a handle portion having the same general arrangement as disclosed in the above prior applications, but which also incorporates a further improved arrangement of the end wall panels in association with the other partition means employed in the carrier so that the ends of the carrier are not only completely closed by the end panels but intermediate partition panels are likewise provided to extend completely to the bottom of the carrier so as to space each bottle separately in an individual compartment free from direct contact with any other bottle in the carrier, as previously mentioned. This arrangement of the end panels and intermediate partition panels makes it necessary to fold the bottom wall panel outwardly in collapsing the carrier, so that it is not possible to obtain the above noted advantage of an inwardly folding bottom wall panel with this arrangement, and the bottle carrier structure of the present invention is accordingly further provided with a locking arrangement by which it may be fixed in erect position when set up to stand uprightly by itself for use in automatic loading operations.

These and other features of the present invention are described in further detail below in connection with the acompanying drawings, in which:

Fig. 1 is a perspective view of a bottle carrier, in erect position, embodying the present invention;

Fig. 2 is a central longitudinal section of the bottle carrier shown in Fig. 1;

Fig. 3 is a transverse section taken substantially on the line 3—3 in Fig. 2;

Fig. 4 is a plan view of the blank used for forming the bottle carrier illustrated in Figs. 1 to 3, inclusive; and

Figs. 5 to 9, inclusive, are corresponding plan views illustrating the successive steps by which the blank shown in Fig. 4 is progressively folded and glued to form a bottle carrier structure as illustrated in Figs. 1 to 3, inclusive.

Referring now in detail to the drawings, and more especially at first to Figs. 1 to 3, the bottle carrier of the present invention comprises generally a handle portion 10 and a bottle supporting portion 12. The handle portion 10 is formed by overlapping pairs of panels 14 and 16 which are secured in overlapping relation and arranged to provide a hand grip as at 18, all as described more particularly in the above noted prior applications, to which reference is made for further details. The bottle supporting portion 12 comprises a medially foldable bottom wall panel 20 and opposed side wall panels 22 foldably associated with the bottom wall panel 20, as also generally described in the above prior applications, together with opposed pairs of end panels 24 foldably associated with each of said side wall panels 22 and arranged in accordance with the present invention in association with medial partition panels 26 and transverse partition panels 28, as will be described more in detail presently.

The bottom wall panel 20 is rendered medially foldable by a score line as at 30 about which it may be doubled to a collapsed position, and the opposed side wall panels 22 are foldably joined at each side of the bottom wall panel along score lines as at 32 and 32', the fold line 32' defining a glue flap 22' carried by one of the side wall panels 22 for securing to the bottom wall panel 20. The opposed pairs of end panels 24 are foldably joined along score lines 34 in extending relation at each end of the side wall panels 22 with the extending ends of the end panels 24 of each pair foldably disposed in adjacent relation for collapsing medially of the carrier.

The foldable disposition of the adjacent extending ends of the pairs of end panels 24 is provided for by the previously mentioned medial partition panels 26, one of which is foldably joined along a score line as at 36 at the extending end of each end panel 24 and arranged inwardly of the carrier, with the medial partition panels 26 secured in face to face relation in corresponding pairs. The transverse partition panels 28, also noted above, are in turn foldably joined along score lines 38 at the inwardly extending ends of the medial partition panels 26, and are foldably secured to the inner faces of the side wall panels 22 at glue flaps 40 defined by score lines 42.

It has previously been noted that the end wall panels 24 are arranged, according to the present invention, so that they close the ends of the carrier completely, and for this purpose the end panels 24 are formed coextensive in height with the side wall panels 22. The medial partition panels 26 and the transverse partition panels 28 are likewise formed, according to the present invention, in a height coextensive with the side wall panels 22, and the manner in which these partition panels 26 and 28 are arranged as just described above results in forming bottle compartments on each side of the handle portion 10 and adjacent each end of the carrier, with a central bottle compartment provided on each side of the handle portion 10 between these end compartments.

For medially separating these central bottle compartments, flaps 44 are cut from the transverse partition panels 28 to remain unfolded in relation to the medial partition panels 26 and to extend inwardly from the medial partition panels 26 with their free ends contiguous (compare Figs. 1 and 2). In addition, a flap member 46 is cut from the bottom wall panel 20 to remain hinged to the bottom wall panel 20 at the score line 30 on which it is medially foldable, and this flap member 46 is proportioned for folding to a vertical position between the transverse partition panels 28 upon erection of the carrier. At this vertically folded position, provision is made for engaging the flap member 46 and retaining it in place by means of tabs as at 48 and 50 cut from one transverse partition panel 28 of each pair to remain unfolded in extending relation from the corresponding medial panel 26. As shown in the drawings, one of these tabs 48 may suitably be a relatively large tab providing a positioning abutment for the flap member 46 in vertical position, while the other tab 50 may be relatively smaller for flexing to allow the adjacent end of the flap member 46 to be pushed beyond it in folding to vertical position to be caught and releasably retained in place by this small tab 50. As a result, the flap member 46 serves to lock the carrier in erect position, and in addition provides further medial partition means at the bottom of the carrier between the central bottle compartments.

The handle portion 10 is arranged in the bottle carrier structure of the present invention so that one pair of

handle panels **14** is integral with one pair of the medial partition panels **26**, while the second pair of handle panels **16** is integral with the other pair of medial partition panels **26**. This is arranged by forming the medial partition panels **26** with upwardly extending portions as at **52** and **54** which allow the score lines **36** to be extended sufficiently for hinging the pairs of handle panels **14** or **16** to the medial partition panels **26**. The upwardly extending portions **54** on certain of the medial partition panels **26** are formed differently from the extending portions **52**, as shown in the drawings, to serve as glue flaps in assembling the carrier as will be pointed out further below.

The blank from which the carrier of the present invention is formed as just described above, is illustrated in Fig. 4 of the drawings, and as shown is arranged with the side wall panels **22** spaced for erection in opposed relation on either side of the pairs of handle panels **14** and **16** forming the handle portion **10**. The side wall panels **22**, as previously mentioned, are defined at each end by score lines **34** at which the end panels **24** are foldably joined for disposition in opposed pairs with the extending ends of the end panels **24** proportioned for contiguous arrangement midway between the side wall panels **22**. The blank is cut so that the pairs of handle panels **14** and **16** are not directly connected to either the side wall panels **22** or the end panels **24**, but instead are joined along the score lines **36** at which the medial partition panels **26** are foldably joined to the end panels **24**, each medial partition panel **26** being formed with an upwardly extending portion **52** or **54**, as previously mentioned, providing for extension of the score lines **36** sufficiently to allow joining of the pairs of handle panels **14** and **16** in this manner.

The medial partition panels **26** are further defined at their extending ends by score lines **38** at which the transverse partition panels **28** are foldably joined, these score lines **38** being interrupted at the flaps **44** and the tabs **48** and **50**, which are cut from the transverse partition panels **28** to remain unfolded in relation to the medial partition panels **26**. Each transverse partition panel **28** also has the glue flaps **40** foldably arranged at its extending end along score lines **42**, and the glue flaps **40** on the left hand transverse partition panels **28**, as seen in Fig. 4, may be further formed with ears **56** to facilitate the folding and gluing of the blank in forming the carrier as will be explained further presently.

The blank is completed by the medially foldable bottom wall panel **20** which is formed with the flap member **46** at its medial score line **30**, and is foldably joined along the score line **32** to one of the side wall panels **22** for securing to the other side wall panel **22** on which the glue flap **22'** is foldably joined for this purpose along score line **32'**. The bottom wall panel **20** is further formed at its free side with an auxiliary glue flap **58** joined along a score line **60** for further facilitating the folding and gluing of the blank as will also be explained more in detail presently.

Starting with the blank laid out flat, as shown in Fig. 4, the first step (see Fig. 5) in the process of folding and gluing the blank to form the assembled carrier is to apply glue as indicated by stippling on the glue flaps **40** of the right hand transverse partition panels **28** and the upwardly extending portion **54** of the medial partition panel **26** of the right hand pair, and to double inwardly the left hand transverse partition panels **28** about the score lines **38**.

Next (see Fig. 6) the right hand medial panels **26** and transverse partition panels **28** are folded together about the score lines **36** so that the glue coated flaps **40** on the right hand transverse partition panels **28** are secured to the inner faces of the side wall panels **22** and the glue coated medial partition portion **54** is secured to the adjacent handle panel of the pair **16**, and then glue is applied to the interior face of the pair of handle panels **14** and to the left hand medial partition portion **54** and the glue flaps **40** of the left hand transverse partition panels **28**, but with no glue applied to the extending ears **56**.

Next (see Fig. 7), the entire left hand portion of the blank is folded over about the score lines **34**. As this is done, the pair of handle panels **16** is held to fold about the score lines **36** for shifting into overlapping relation with respect to the handle panels **14** at which

position the panels **16** are secured by the glue coating previously applied to the panels **14**. The remaining left hand portion of the blank is folded to a doubled-over position so that the left hand medial partition portion **54** that has been glue coated, as noted above, is secured to the adjacent handle panel **16**, and the glue coated flaps **40** of the left hand transverse partition panels **28** are secured to the interior faces of the side walls **22**, the ears **56** serving as spacing means to maintain these glue flaps **40** out of contact with the side walls **22** until these flaps **40** have reached the point at which they are to be secured and stand in substantially face to face relation with the side walls **22**.

After this has been done, a further glue coating is applied to the auxiliary flap **58** attached to the bottom wall **20** (as shown in Fig. 7), and then this auxiliary glue flap **58** is doubled over for securing to the interior face of the bottom wall panel **20** (see Fig. 8). This auxiliary flap **58** is provided to build up an aggregate thickness at the bottom wall **20** when it is medially folded that will approximate sufficiently the aggregate thickness of the two opposed side walls **22**, and the interposed end panels **24**, medial panels **26** and transverse panels **28**, so that the side wall glue flap **22'** may be secured readily to the bottom wall panel **20** when the blank is doubled at the handle panels **14** and **16** to complete the assembly of the carrier as shown in Fig. 9. In order to prepare the blank for this final doubling step, the side wall glue flap **22'**, the adjacent medial partition panels **26** and the corresponding flaps **44**, as well as a suitable portion of the adjacent handle panel **16** if desired, are coated with glue, and the bottom wall panel **20** is folded medially upon itself about the score line **30** so that it is in position for securing to the glue flap **22'** as the final doubling step is carried out.

The resulting assembled carrier is shown in Fig. 9 ready to be set up for loading with bottles. The collapsible carrier structure formed in this manner is completely unitary as has already been mentioned, and it provides the further advantage of being adapted for assembly entirely with glue without requiring the use of any wire staples or other auxiliary fastening means.

I claim:

1. A blank of boxboard or the like for forming a collapsible paper carrier for bottles and other similar containers, said blank being cut and scored to define side wall panels spaced for erection in opposed relation, end panels foldably joined at each end of each of said side wall panels for disposition in opposed pairs with the extending ends of said end panels arranged contiguously midway between said side wall panels, medial partition panels foldably joined at the extending end of each of said end panels for disposition face to face in corresponding pairs inwardly between said side wall panels, said medial partition panels being formed at their inner edges with laterally projecting portions, transverse partition panels foldably joined at the extending end of each of said medial partition panels and adapted at their extending ends for securing in folding relation to said side wall panels, a handle portion arranged between said spaced side wall panels and foldably joined to the laterally projecting portions of both medial partition panels of at least one of said pairs for securing to the laterally projecting portions of the other pair of said medial partitions panels, and a medially foldable bottom wall panel foldably joined to one of said side wall panels for securing to the other of said side wall panels.

2. In a collapsible paper carrier for bottles and other similar containers, of the type formed from a single piece of boxboard or the like and including a medially foldable bottom wall, opposed side walls foldably associated with said bottom wall, and spaced end walls and intermediate transverse partition panels foldably associated with each of said side walls and extending oppositely in pairs from said side walls to a medially disposed handle portion, the improvement which comprises a flap member cut from said bottom wall panel but remaining hinged to said bottom wall panel at the axis on which it is medially foldable, said flap member being proportioned for folding to a vertical partition between said transverse partition panels upon erection of said carrier for locking said carrier in erect position.

3. In a collapsible paper carrier for bottles and other similar containers, of the type formed from a single

piece of boxboard or the like and including a medially foldable bottom wall, opposed side walls foldably associated with said bottom wall, and spaced end walls and intermediate transverse partition panels foldably associated with each of said side walls and extending oppositely in pairs from said side walls to a medially disposed handle portion, the improvement which comprises a flap member cut from said bottom wall panel but remaining hinged to said bottom wall panel at the axis on which it is medially foldable, said flap member being proportioned for folding to a vertical position between said transverse partition panels upon erection of said carrier for locking said carrier in erect position, and tabs cut from one transverse partition panel of each of said pairs and remaining unfolded in medially extending relation upon erection of said carrier for releasably engaging said flap member and thereby provide for retaining it in vertical position.

4. A collapsible paper carrier for bottles and other similar containers, said carrier having a unitary construction formed from a single piece of boxboard or the like and comprising a bottom wall panel having a medial fold line adapting it for doubling to a collapsed position, opposed side wall panels foldably associated with said bottom wall panel in parallel relation with respect to said medial fold line, opposed pairs of end panels extending foldably from said side wall panels, said end panels being coextensive in height with said side wall panels for completely closing the ends of said carrier in erect position and the extending ends of the end panels of each pair being foldably disposed in adjacent relation medially of said carrier for collapsing, the foldable disposition of the adjacent extending ends of said pairs of end panels being provided for by medial partition panels foldably joined at the extending end of each end panel and arranged inwardly of said carrier, the medial partition panels joined to the end panels of each pair being secured in face to face relation, transverse partition panels foldably joined at the inwardly extending ends of said medial partition panels and foldably secured oppositely in pairs to said side wall panels, said medial partition panels and transverse partition panels being likewise coextensive in height with said side wall panels, flaps cut from said transverse partition panels intermediately of their height to remain unfolded in extending relation from said medial partition panels with contiguous free ends and thereby form further medial partition means, a flap member cut from said bottom wall panel but remaining hinged to said bottom wall panel at the axis on which it is medially foldable, said flap member being proportioned for folding to a vertical position between said transverse partition members upon erection of said carrier for locking said carrier in erect position and for providing additional medial partition means at the bottom of said carrier, tabs cut from one transverse partition panel of each of said pairs and remaining unfolded in extending relation from the corresponding medial partition panels for releasably engaging said flap member when it is folded to a vertical position, and a pair of handle panels integral with one pair of said medial partition panels and a second pair of handle panels integral with the other pair of said medial partition panels, one pair of said handle panels being disposed to overlap and being secured to the other pair of handle panels and thereby forming a handle portion for said carrier.

5. A collapsible paper carrier for bottles and other similar containers, said carrier having a unitary construction formed from a single piece of boxboard or the like and comprising a medially foldable bottom wall panel, opposed side wall panels foldably associated with said bottom wall panel, opposed pairs of end panels foldably extending from said side wall panels, said end panels being coextensive in height with said side wall panels for completely closing the ends of said carrier and the extending ends of the end panels of each pair beig foldably disposed in adjacent relation medially of said carrier, the foldable disposition of the extending ends of said pairs of end panels being provided for by medial partition panels foldably joined at the extending end of each end panel and arranged inwardly of said carrier, said medial partition panels being secured in face to face relation in corresponding pairs and having individual transverse partition panels foldably joined at their inwardly extending ends that are foldably secured oppositely in pairs to said side wall panels, said medial and transverse partition panels also being coextensive in height with said side walls and said medial partition panels being further formed with upwardly extending portions, a first pair of handle panels integral with the upwardly extending portions of one pair of said medial partitions panels, and a second pair of handle panels integral with the upwardly extending portions of the other pair of said medial partition panels, one pair of said handle panels being disposed to overlap and being secured to the other pair of handle panels and thereby forming a handle portion for said carrier.

6. A collapsible paper carrier for bottles and other similar containers, said carrier having a unitary construction formed from a single piece of boxboard or the like and comprising a medially foldable bottom wall panel, opposed side wall panels foldably associated with said bottom wall panel, opposed pairs of end panels foldably extending from said side wall panels, said end panels being coextensive in height with said side wall panels for completely closing the ends of said carrier and the extending ends of the end panels of each pair being foldably disposed in adjacent relation medially of said carrier, the foldable disposition of the extending ends of said pairs of end panels being provided for by medial partition panels foldably joined at the extending end of each end panel and arranged inwardly of said carrier, said medial partition panels being secured in face to face relation in corresponding pairs and having transverse partition panels foldably joined at their inwardly extending ends that are foldably secured oppositely in pairs to said side wall panels, a handle portion integral with at least one pair of said medial partition panels and secured to the other pair of said medial partition panels, said medial partition panels and transverse partition panels being likewise coextensive in height with said side wall panels, tabs cut from one transverse partition panel of each pair adjacent their lower edges to remain unfolded in extending relation from the corresponding medial partition panels, and a flap member cut from said bottom wall panel to remain hinged to said bottom wall panel at the axis on which it is medially foldable, said flap member being proportioned for engagement by said tabs upon folding to a vertical position, whereby said flap member serves to lock said carrier in erect position and provides further medial partition means at the bottom of said carrier.

7. A blank of boxboard or the like for forming a collapsible paper carrier for bottles and other similar containers, said blank being cut and scored to define side wall panels spaced for erection in opposed relation, end panels foldably joined at each end of each of said side wall panels for disposition in opposed pairs with the extending ends of said end panels arranged contiguously midway between said side wall panels, medial partition panels at the extending end of each of said end panels for disposition face to face in corresponding pairs inwardly between said side wall panels, said medial partition panels being formed with laterally extending portions at the inner edges thereof, first and second pairs of handle panels arranged between said spaced end walls and foldably joined respectively to the laterally extending portions of said medial partition panels, transverse partition panels foldably joined at the extending ends of each of said medial partition panels, and a medially foldable bottom wall panel foldably joined to one of said side wall panels for securing to the other of said side wall panels.

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