Oct. 12, 1965 A. J. WEISS 3,211,357

DOUBLE THICKNESS SEPARATOR FOR BOTTLE CARRIERS

Filed Nov. 6, 1961

FIG. 1

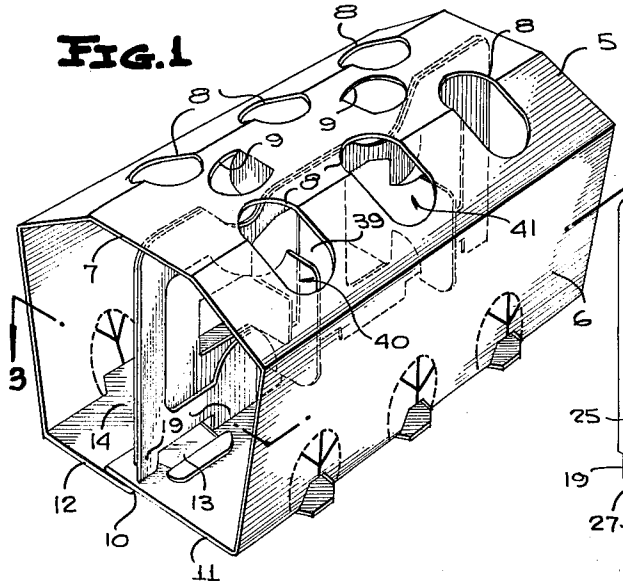


FIG. 2

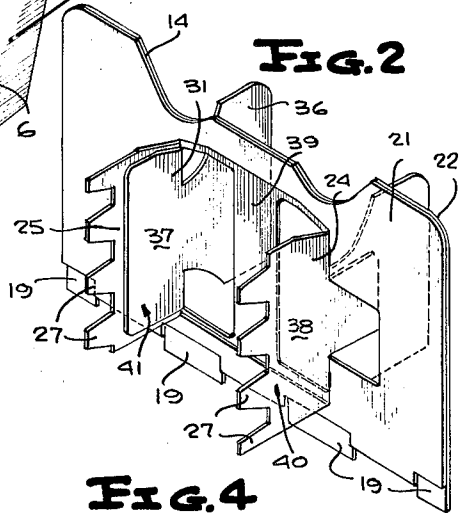


FIG. 3

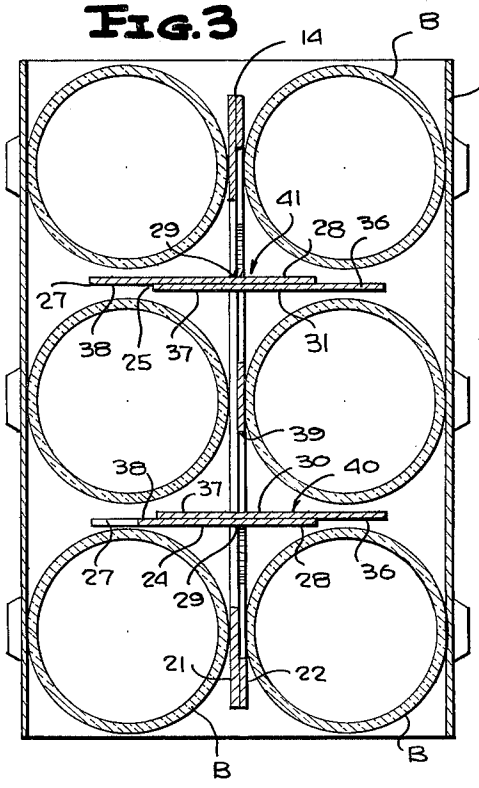
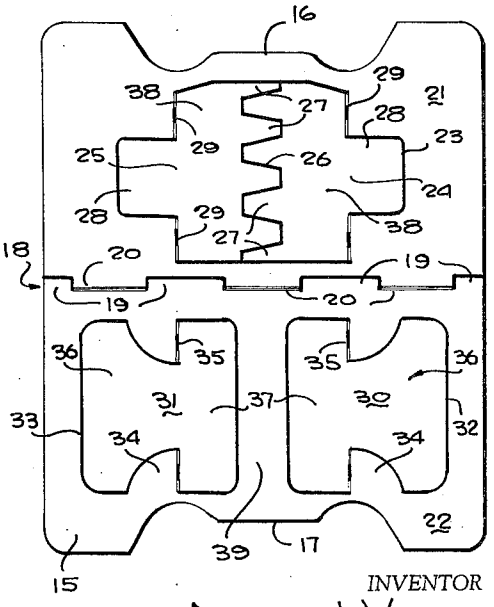


FIG. 4



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DOUBLE THICKNESS SEPARATOR FOR BOTTLE CARRIERS

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7 Claims. (Cl. 229—28)

This application is a continuation-in-part of my co-pending application Serial No. 2,225, filed January 13, 1960, for Separator for Bottle Carrier now Patent No. 3,166,228.

This invention relates to new and useful improvements in bottle carriers, and more particularly relates to a new and useful separator for use in conjunction with bottle carriers.

The essential requirements of a carrier for bottles, such as soft drink bottles, include a carton which may be wrapped around a plurality of bottles and engaged beneath the bottoms thereof, the bottles passing through suitable openings in the top portion of the carton. The carton is usually provided with uppermost grip means and a separator intermediate the bottles to prevent the bottles from striking each other and the resultant chipping or breaking of such bottles.

The present invention relates to a separator for bottle carriers of the type having cartons which are wrapped around a series of bottles, for example, six bottles, and secures together the bottles as a unit. This carton is an elongated blank which is placed over the necks of bottles, wrapped beneath the bottoms of the bottles and connected together. In order to maintain the simplicity of the carton, it is desirable that the separator for the bottles be separate and independent from the carton in its initial state. It is to this type of separator that the present invention relates.

Separators of this type are known and generally consist of a rectangular panel of paperboard material having a central portion partially struck therefrom to provide lateral partition elements which are hingedly connected to portions of the panel and swingable from the plane of the panel to laterally extending positions on each side of the panel. It is also known that a more substantial and stronger separator of this type may be formed by providing a double panel thickness, each panel having the beforementioned hingedly connected partition elements struck from the body portions of the panels. In such a double panel arrangement the individual panels are placed or folded into back-to-back relationship and present individual hinge connections which are adjacent but slightly displaced so that the hingedly connected partition elements of each panel may be swung out of the plane of the panels to laterally extending positions on each side of said panel. The individual partition elements of each panel, being in back-to-back relationship, compositely form partition members. It is apparent that when such separators are placed between two rows of bottles with their partition members extending laterally therefrom and between adjacent bottles in such rows, each bottle will be generally separated from the other bottles contained within the carton.

In a great many uses to which these cartons and separators are put, the protection between adjacent bottles is found to be entirely adequate. However, when the bottle carriers utilizing such separators are subjected to a great deal of jarring around, movement, and vibration such as normally occurs during railroad shipment, portions of the bottles therein carried have been found to come into contact with each other and chippage, cracking, or breaking of the bottles has occurred. The main causes of these

shortcomings have been located and it is to their elimination that the herein disclosed invention is directed.

When the partition elements of previous separators were swung from their position in the plane of their panel member to their extended positions, they exposed central openings located within the body of each panel. This was caused by the displacement of the lateral partition elements from their generally centrally located positions to their laterally extended ones. The central openings located within the panel member bodies enabled adjacent bottles to contact each other. The panel body portions that enclosed such central openings were not, in all cases, extensive enough to prevent such bottle contact.

Another area which has been found to cause problems when previous bottle carriers were subjected to vigorous forces such as applied thereto by railroad shipment, has been located between adjacent bottles in a single row. On occasion, it has been found that the length to which a partition member or element extends to each side of its panel body has not been adequately long enough to prevent portions of the bottles from extending past the protective lengths of such partitions and thus coming in contact with each other. This also presents problems of chipping, breaking and cracking as hitherto mentioned.

It is therefore an object of the present invention to provide a separator for use in a bottle carrier, which separator adequately provides protection for adjacent bottles between two rows of bottles and between adjacent bottles in each row of bottles.

Another object of the present invention is to provide a separator for use in a bottle carrier, which separator comprises two longitudinally disposed panels and provides for separation between both laterally and longitudinally adjacent bottles when placed between two rows of bottles.

Another object of the present invention is to provide a very simple and inexpensively formed separator for use in conjunction with bottle carriers of the carton type, which separator is formed from first and second panel members, each panel member providing partially struck out partition elements hingedly connected to the body of their respective panel members which partition elements may be swung out of the plane of their respective panel member to a position laterally extending on each side thereof, the partition elements of one panel being in general back-to-back relationship to the partition elements of the other panel and hinge connections of the partition elements being adjacent and slightly offset so as to permit the partition elements of respective panels to remain in back-to-back relationship when swung out of the plane of their respective panels to thus form laterally extending partition members which are greater in length than either of the partition elements that comprise them.

Another object of the present invention is to provide a very simple and inexpensively formed separator for use in conjunction with bottle carriers of the carton type, which separator is comprised of two hingedly connected panel members, the first of the panel members having separate generally centrally located partition elements partially struck from the panel body and the second panel member having a single generally central partially struck out portion also defining partition elements, each partition element having hinge connections to the body portion of their respective panels, the hinge connections of one panel being adjacent and slightly offset to the hinge connections of the other panel so that the partition elements may be laterally swung out of the plane of their respective panels to thus form laterally extending partition members, the centrally separated partition elements of the first panel thereby providing a transverse panel body portion for separating centrally adjacent bottles in opposed rows.

Another object of this invention is to provide a novel separator for use in a bottle carrier for separating the individual bottles within a carrier to prevent the engagement of the bottles with each other, the separator being formed from a folded blank comprising first and second panel members, the first panel member being provided with a partially struck out central portion defining two partition elements hingedly connected to the body of the first panel and centrally separated along a zig-zag line providing each partition element with opposed edges having extending fingers thereon, a second panel member having two spaced cut-outs each defining a separator element which is hingedly connected to the body of the second panel and in adjacent and slightly offset relationship to the hinge connections of the first panel partition elements so that the partition elements may be swung out of the planes of their respective panels to a laterally extended position whereby adjacent bottles in rows are separated by composite laterally extending partition members which are of greater lateral extent than either of the partition elements comprising them and the centrally adjacent bottles between rows separated by a transverse body portion of the second panel.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claims and the several views illustrated in the accompanying drawings.

In the drawings:

FIGURE 1 is a perspective view of a bottle carrier in which the separator is operatively placed, the bottles being omitted from the carrier for purposes of clarity.

FIGURE 2 is a perspective view of the separator of FIGURE 1, and shows the specific details thereof.

FIGURE 3 is a horizontal sectional view taken along the section line 3—3 of FIGURE 1, and shows the specific details of the relationship between the separator and the bottles disposed within the bottle carrier.

FIGURE 4 is a plan view of the blank from which the separator is formed.

The bottle carrier illustrated in FIGURE 1 is generally referred to by the numeral **5**, and is designed for carrying six bottles B. The bottles have been omitted from FIGURE 1 for purposes of clarity, although they are illustrated in FIGURE 3. The bottle carrier **5** is formed of two basic components.

The bottle carrier **5** includes a carton **6** which extends above the lower portions of the bottles B. The carton **6** is not a part of this invention as such, and therefore will not be fully described. This carton is formed from a single elongated blank which is formed to define an upper portion **7** having two rows of openings **8** formed therein for the reception of necks of bottles B. The upper portion **7** is provided with two or more holes **9** through which the carrier with bottles B contained therein may be grasped for ease in transport. The carton **6** also includes a bottom portion **10** which is formed by overlapping flaps **11** and **12**, the flaps **11** and **12** being secured together by means of a plurality of tabs **13**, each of the tabs **13** underlying and being in alignment with a pair of bottles B.

The bottle carrier **5** also includes a bottle separator, which is generally designated by the numeral **14**. The bottle separator **14** is vertically disposed within the confines of the carton **6** and serves to prevent contact of the bottles B with each other, thus preventing damage to the individual bottles.

As is best illustrated in FIGURE 4, the separator **14** is formed from a blank **15** which is generally rectangular in outline and which is formed of a suitable economical material such as paperboard or the like. The blank **15** is provided with top and bottom cut-out portions, as at **16, 17**, which enable the ultimate user of the carrier structure to slip his or her fingers through the holes **9** and not be confronted with the annoyance of a flush separator member. The blank **15** is provided with a longitudinal hinge line **18** which is formed by fold lines **20** and cuts, which cuts define tab members **19**. This allows the blank to be folded upon itself and thus present a double panel separator of added structural strength and containing the novel features of the invention which will hereinafter be explained. The thus formed hinge line **18** divides the blank into upper and lower panels **21, 22**. The body of the upper panel is provided with a centrally located cut-out **23** which defines a pair of partition elements **24** and **25**. The partition elements **24, 25** are separated centrally along a transversely directed zig-zag line **26** which defines complementary fingers **27** on the opposed ends of partition elements **24, 25**. The ends of the partition elements **24, 25** that are remote from the centrally disposed zig-zag line **26** are provided with small generally rectangular integral extending sectors **28** which are struck from the upper panel **21**. The partition elements **24, 25** are integrally connected to the upper panel **21** along transversely disposed hinge lines **29** which may have slits cut therein for ease in folding. The hinge lines **29** of each of the partition elements **24, 25** are also transversely aligned.

The bottom panel **22**, which is identical in outline to the upper panel **21** except along its hinged portion, is provided with two centrally cut out but separate partition elements **30** and **31** which are struck from the body of bottom panel **22** along lines **32** and **33**. The partition elements **30** and **31** are hingedly connected to inwardly projecting portions **34** along hinge lines **35** which may have slits cut therein for ease in folding. The hinge lines **35**, which for respective partition elements **30, 31** are transversely aligned, separate each partition element **30, 31** generally into two portions or sectors **36** and **37**. It can be seen that the longitudinal extent from the hinge line **35** to the outer extremity of sector **36** is greater in extent than that of sector **37** and that accordingly, sectors **36** are greater in longitudinal extent than their corresponding sectors **28** in upper panel **21**. Furthermore, central sectors **38** of upper partition elements **24, 25** are greater in longitudinal extent than the corresponding bottom sectors **37** of partition elements **30, 31**. Thus, as hereinafter will become more clear, it can be seen that when the panel members **21** and **22** are folded upon each other in back-to-back relationship to thus present partition members **40, 41** each formed of one partition element from each panel, each partition member will be of greater longitudinal extent than the longitudinal extent of either of its comprising partition elements. As is obvious from the drawings, the partition elements **30, 31** are separated by a body portion or web **39** that centrally traverses panel **22**.

The separator **14** is normally stored and shipped in its blank state, as shown in FIGURE 4. When it is desired to use the separator **14**, it is folded upon itself so as to present the upper and lower panels in back-to-back relationship. The panels **21, 22** may be conveniently secured together, as by gluing. The now back-to-back pairs of partition elements **24, 30** and **25, 31** which compositely form partition members **40, 41**, respectively, are swung about the hinge lines **29, 35** to their laterally extending positions, as shown in FIGURE 2. It will be noted that to enable one each of the partition elements of respective panels **21, 22** to be swung out of the general plane of the separator, the respective hinge lines **29, 35** are slightly longitudinally offset from one another. Movement of the partition members **40, 41** from their position generally within the plane of the back-to-back panels **21, 22** may be with ease accomplished by applying force in a generally perpendicular direction to separator **14** against sectors **28** when the separator is in its flat back-to-back folded position, and thus push the compositely formed partition members **40, 41** into a plane which extends substantially at right angles to the general plane of the separator **14**.

After the separator **14** has been thus formed and appears as shown in FIGURE 2, the separator is dropped into position between a group of six bottles B. The carton **6** is then positioned over the tops of the bottles, with the neck portions of the bottles B passing through the openings **8** and the flaps **11** and **12** then wrapped beneath the bottoms of the bottles and the tabs **13** subsequently interlocked to form the complete package.

Reference is now made to FIGURE 3 in particular, wherein the relationship between the separator, the carrier and the bottles contained therein and the reasons for the particular structure of separator **14** are more explicitly shown than in any other figure of the drawings. It can be seen in FIGURE 3 that the separator comprised of back-to-back panels **21, 22** extends longitudinally between two adjacent rows of bottles. The laterally extending partition members **40, 41** are comprised of partition elements **24, 30** and **25, 31**, respectively, and extend between adjacent bottles in the aligned rows of bottles. From this view, the particular advantages that stem from the herein described novel structure of the separator can be clearly envisioned. From the central portion of FIGURE 3, it can be seen that the therein located adjacent bottles are completely separated from each other in a direction perpendicular to the general plane of the separator **14** by the vertically extending body portion **39** of panel **22**. Hitherto known separators formed of back-to-back panels and having identically shaped partition elements struck from similarly shaped and aligned cut-out portions do not provide for this added separation between the centrally adjacent bottles. This is an extremely important aspect of the present invention and through its provision and use, bottles may be shipped in the instant type carriers in railroad cars and other forms of transport that would subject the carriers and the bottles located therein to violent jarring and other such forces that would cause chipping or breakage of the centrally adjacent bottles if it were not for the vertically disposed body portion or web **39** of panel **22** that provides for more complete separation of the centrally disposed bottles.

Another important feature of the present invention is further obvious from FIGURE 3 wherein it can be seen that the over-all lateral extent of the partition members **40, 41** is greater than that of either of the partition elements **24, 30** and **25, 31** that make up such partition members **40, 41**. This is accomplished by the provision of two complementary features which include the zig-zag line **26** that separates opposed partition elements **24, 25** of panel **21** which permits the combined lateral extent of partition elements **24, 25** to be greater than the lateral extent of the cut-out portion **23**, and the provision of partition elements **24, 25** having sectors **38** extending centrally of their hinges and of greater extent than sectors **28** which extend apart from their hinges and partition elements **30, 31** having sectors **36** extending centrally of their hinges and of greater extent than sectors **37** which extend apart from their hinges. The lateral extent of partition members **40, 41** will thus be greater than the lateral extent of any one of the partition elements **24, 25, 30** or **31**. In this way, improved separation between the adjacent bottles in any one row is obtained.

Another important feature of the present invention which also is apparent from FIGURE 3 is that of providing for more adequate and complete separation between the non-centrally disposed bottles located adjacent each other and in the outermost positions of the carrier. This is accomplished by providing partition elements **24, 25** with a relatively small integrally extending sector **28** which thus leaves a relatively great amount of material in the body of panel **22** available for separating the outermost disposed adjacent bottles.

Still another important features of the present invention becomes apparent from a consideration of FIGURES 1 and 2 wherein the reasons for blanking the separator so as to provide tabs **19** are clearly shown. As shown in

both FIGURES 1 and 2, the tabs **19**, cut as they are from separator blank, raise the separator from the bottom portion **10** of the carton **6** and thus require less material such as paperboard or the like to be used in the formation of the separator. Also, the inverted U-shaped cuts that are formed between tab members **19** allow for the locking tabs **13** to extend therethrough and thus add to the rigidity of the bottle carrier **5** while locking bottom flaps **11** and **12** together.

It is thus apparent that applicant herein has provided a novel separator of relatively simple construction which affords more complete separation between bottles in a carrier of the herein disclosed character than was heretofore thought possible. More complete separation is accomplished between bottles adjacent each other in respective rows both in outermost and centrally located positions as well as between bottles adjacent each other in any one row of bottles. The importance of such complete separation of the bottles by the longitudinal panel body portions and the lateral partition members of such separators cannot be overemphasized. Not only does this novel separator provide the added protection from breakage and chippage desirable from both the shipper's and the receiver's standpoint, but further affords increased bottle protection which is insisted upon by the railroads controlling the shipment of such products. The present novel separator provides more adequate and complete separation between all the bottles located in a carrier of the herein disclosed type and thereby allows bottles to be shipped in railway cars with increased safety.

I claim:

1. A separator for use in a bottle carrier adapted to separate rows of bottles and adjacent bottles in each row comprising an elongated body adapted to extend between two rows of bottles, said elongated body comprising first and second panels disposed in back-to-back relationship and integrally connected together along a pair of cooperating edges, said first panel having partition elements partially struck from the central portion thereof and being hingedly connected to said first panel along spaced aligned lines, opposed edges of said first panel partition elements being separated along a zig-zag line whereby the combined length of said first panel partition elements is greater than the length of the space from which said first panel partition elements are struck, said second panel having partition elements partially struck from central portions thereof and being hingedly connected to said second panel along spaced aligned lines, the partition elements of said first panel being in back-to-back relationship to the partition elements of said second panel to thus form composite partition members, the hinge connections of said first and second panel partition elements of each partition member being cooperatively adjacent each other for movement of the composite partition members out of the plane of said elongated body to positions extending laterally to each side of said elongated body, and the over-all length of each of said partition members being greater than the length of either of the partition elements forming said partition member.

2. A separator for use in a bottle carrier adapted to separate rows of bottles and adjacent bottles in each row comprising an elongated body adapted to extend between two rows of bottles, said elongated body comprising first and second panels disposed in back-to-back re'ationship, said first panel having partition elements partially struck from the central portion thereof and being hingedly connected to said first panel along spaced aligned lines, said second panel having partition elements partially struck from central portions thereof and being hingedly connected to said second panel along spaced aligned lines, the partition elements of said first panel being in back-to-back relationship to the partition elements of said second panel to thus form composite double thickness partition members, the hinge connections of said first and second panel partition elements of each partition member being

cooperatively adjacent each other and along lines widely spaced from the ends of said partition elements for movement of the composite partition members as units out of the plane of said elongated body to positions extending laterally to each side of said elongated body, and the over-all length of each of said partition members being greater than the length of either of the partition elements forming said partition member.

3. A blank for forming a separator for use in a bottle carrier, said blank being composed of paperboard and being generally rectangular in outline, said blank comprising first and second panels integrally connected along a centrally disposed longitudinal hinge line, said first panel having a single central cut-out portion defining two panel partition elements adapted to be swung out of the plane of said blank with each first panel partition element projecting to opposite sides of said blank, each of said first panel partition elements being integrally connected to said first panel along spaced aligned transverse hinge lines, opposed edges of said first panel partition elements being separated by a generally zig-zag line to form opposed zig-zag edges, said first panel partition elements other than the opposed zig-zag edges being symmetrical about a transverse center of said first panel, said second panel having two longitudinally disposed cut-out portions separated from each other by a transverse portion of said second panel and defining two identically outlined second panel partition elements adapted to be swung out of the plane of said blank with each second panel partition element projecting to oppoiste sides of said blank, said second panel having a pair of portions projecting into each of said second panel partition elements in generally opposed relation and being integrally connected to a respective one of said second panel partition elements along spaced aligned transverse hinge lines and the hinge lines of said first panel partition elements and said second panel partition elements being slightly longitudinally offset from each other.

4. A blank for forming a separator for use in a bottle carrier, said blank being rectangular in outline and comprising first and second panels integrally and hingedly connected along a line disposed longitudinally of said blank, said first panel having a single central cut-out portion defining two partition elements, each of said partition elements being hingedly connected along a line widely spaced from the ends of said partition elements to said first panel and adapted to be swung out of the plane of said blank with each partition element projecting to opposite sides of said blank, said second panel having two separate cut-out portions each defining a partition element, each of said partition elements being hingedly connected along a line widely spaced from the ends of said partition elements to said second panel and adapted to be swung out of the plane of said blank with each partition element projecting to opposite sides of said blank and the hinge connections of said first and second panel partition elements being slightly longitudinally offset from each other.

5. A separator for use in a bottle carrier comprising an elongated body including two opposed contiguous panels adapted to extend between two rows of bottles, partition members each including a partition element from each of said panels extending transversely from opposite sides of said body a material distance for extending between adjacent bottles of rows of bottles, the partition elements of each panel being initially disposed in the respective panel in opposed relation, first ones of said partition elements being formed from a single opening in a first one of said panels, and second ones of said partition elements being formed from two openings disposed in spaced, longitudinal relation in the second one of said panels with said second panel having a vertically extending body portion disposed intermediate said spaced openings and forming a bottle separating element centrally of said partition members.

6. A separator for use in separating six units disposed in two rows of three units each, said separator comprising an elongated body adapted to extend between rows of units, said body including interconnected panels disposed in back-to-back relationship, partition members extending transversely to opposite sides of said body for extending between adjacent units in rows of units, each partition member including a partition element from each of said panels, first ones of said partition elements being formed from a single opening in a first one of said panels, and second ones of said partition elements being formed from two openings disposed in spaced, longitudinal relation in the second one of said panels with said second panel having a centrally disposed vertically extending body portion disposed intermediate said spaced openings and forming a unit separating element centrally of said partition members and said single opening, and said first panel having body portions at the opposite end of said single opening overlapping said second openings.

7. A bottle carrier assembly comprising a carrier and a separator, said carrier including a bottom wall for supporting two rows of bottles, a pair of side walls connected to said bottom wall for confining bottles along opposite sides of the rows of bottles, and bottle positioning means connected to said side walls, said bottom wall being formed of two panels connected together by inwardly directed locking tabs, said separator including an elongated body defined by two opposed contiguous panels integrally connected at the bottom edge portions thereof along spaced aligned fold lines separated by downwardly spaced extending tabs, said tabs being seated on said bottom wall and being spaced in accordance with the spacing of said locking tabs to provide recesses in said body receiving said locking tabs, said body being located along a longitudinal center of said carrier for positioning between two rows of bottles, said separator also including partition members formed from said panels for positioning between adjacent bottles of rows of bottles, each of said partition members including a partition element formed from each of said panels and projecting a material distance to both sides said body.

References Cited by the Examiner

UNITED STATES PATENTS

2,135,678	11/38	Scotcher	229—29
2,304,683	12/42	Finn	220—113
2,346,788	4/44	Rice.	
3,031,813	5/62	Ganz.	
3,098,583	7/63	Sherman	220—113

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