

[54] **WRAP-AROUND ARTICLE CARRIER WITH SECONDARY RETENTION END PANELS**

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[58] Field of Search 229/40, 52 BC;
220/112, 108; 206/65 R, 65 C

[56] **References Cited**

UNITED STATES PATENTS

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2,753,102 7/1956 Paige 206/65 R X

2,527,478 10/1950 Gray 220/108
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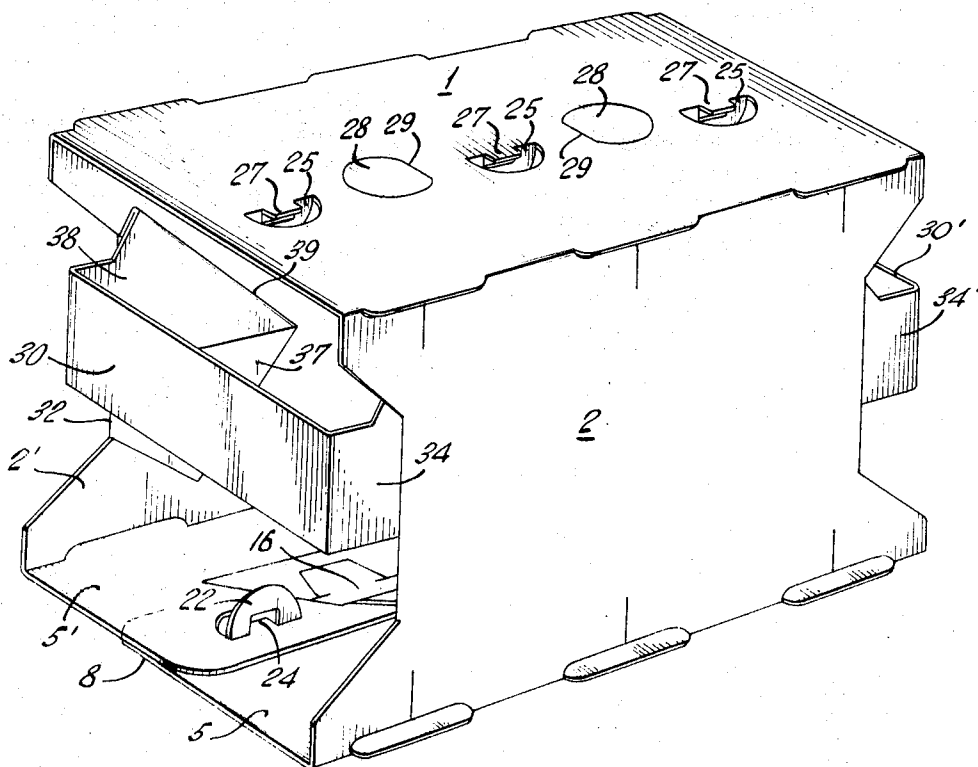
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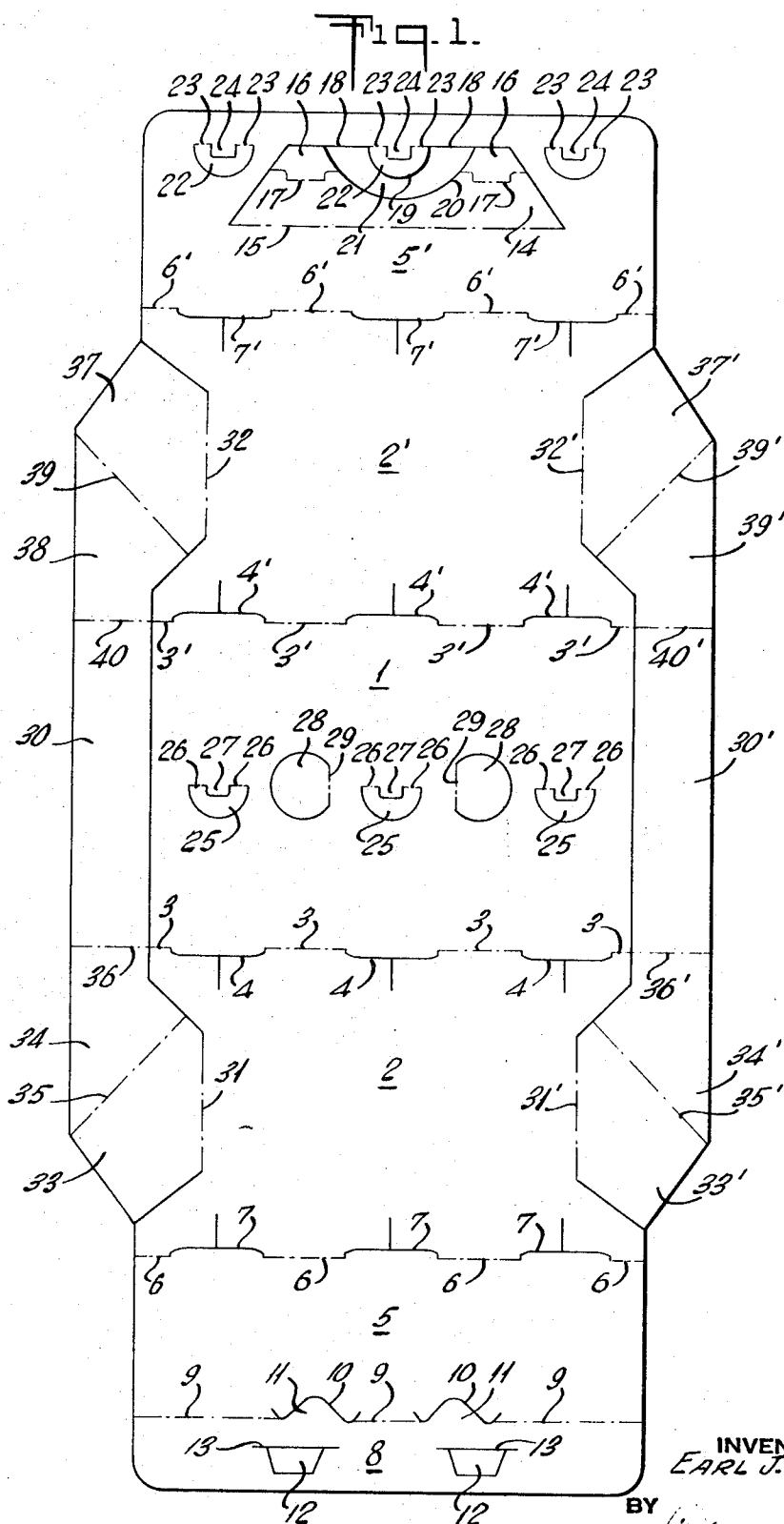
Attorney—Norvell E. Von Behren

[57] **ABSTRACT**

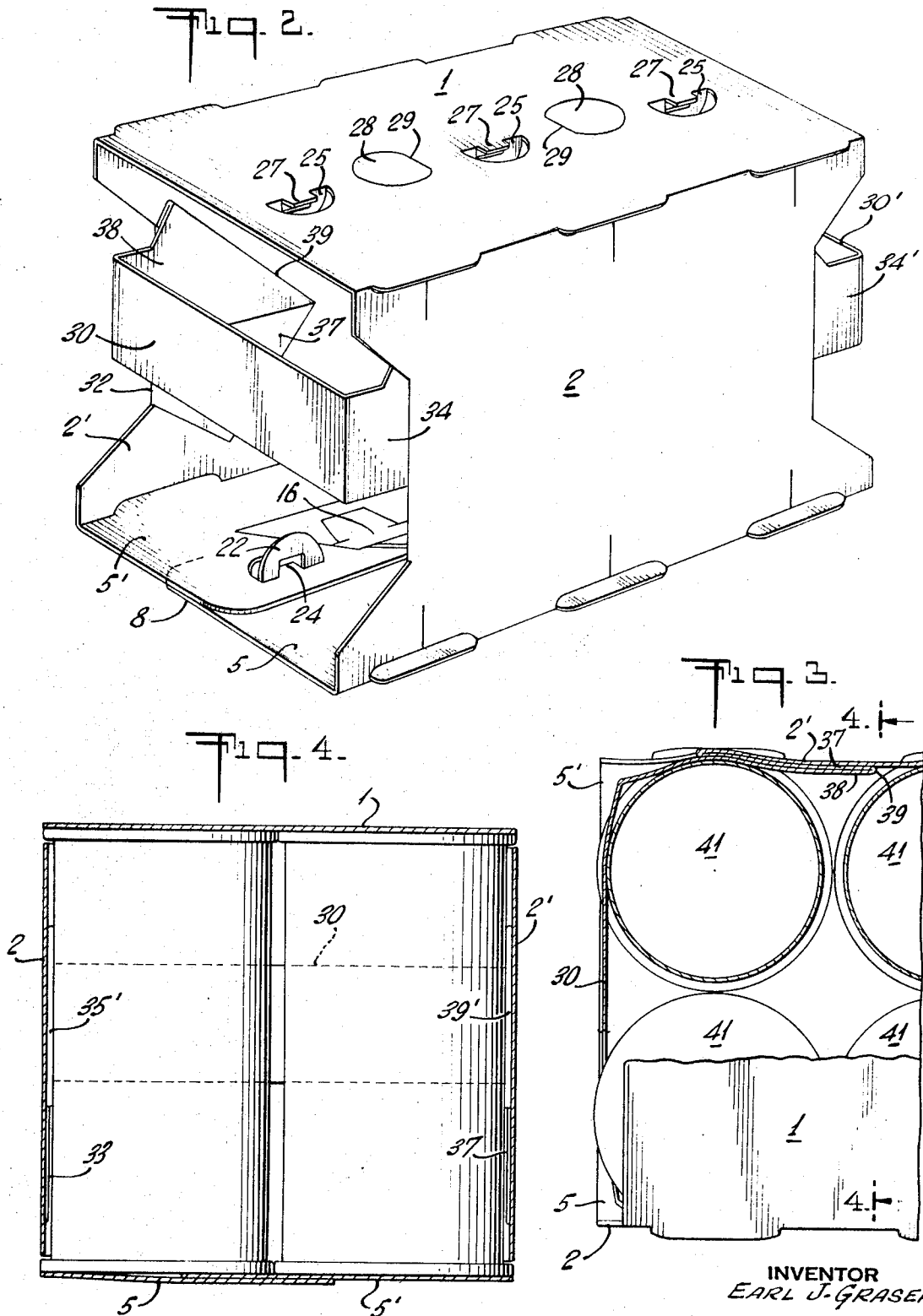
An improved wrap-around article carrier comprising a top panel; side panels; a bottom panel; primary retention means and secondary end retention panels. The end retention panels are formed in part from the side panels and in part from the top panel and are suitably secured to the side walls. The elevation of the secondary end retention panel may be varied by varying the size and fold angle of the securing means. The secondary end retention panel serves as a secondary means of retaining the articles in the carrier when the primary retention means fails.

6 Claims, 4 Drawing Figures





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CROSS REFERENCES TO RELATED APPLICATIONS

This is a continuation-in-part of an earlier filed application Ser. No. 15,408, filed Mar. 2, 1970 and abandoned concurrently with the filing of this application.

BACKGROUND OF THE INVENTION

This invention relates to a multiple-article carrier in general and more particularly, to a multiple-article carrier of the wrap-around variety and having a novel end panel retention means which serves as a secondary means of retaining the article in the package.

As is well known in the prior art, the use of one-way, disposable containers such as bottles and cans has increased rapidly in recent years. The increased use of these containers has led to an increased demand for less expensive carriers which might be discarded after a single use. As is also well known in the prior art, this demand for less expensive carriers led to the development of the wrap-around style carriers which require a reduced amount of blank material, and hence, which can be produced at a reduced cost.

For the most part, the prior art wrap-around carriers have proven quite satisfactory; however, under certain circumstances it has been possible for the articles in the end positions of the package to slip therefrom. For this reason, several attempts have been made to securely fix the end articles in position. For example, it is known to utilize various cutouts, flaps and tabs, either singly or in combination to improve the retention characteristic of the wrap-around carrier.

One such attempt is shown in the patent to Wesselman, U.S. Pat. No. 2,276,129, issued on Mar. 10, 1942 wherein a pair of retention end panels 16 are formed by cutting the panels out of the side panels 3 and 13 thereby considerably weakening the carrier. A similar type end panel is formed in the patent to Gray, U.S. Pat. No. 2,527,478, issued Oct. 24, 1950 with the panel being formed mostly from the bottom panel 10, also structurally weakening the carrier. Carriers of these types have the disadvantage of being expensive to form and use and also are not readily adapted to handle both bottles and cans.

Other retention means in the form of corner panels have been tried as illustrated by the patent to Hickin, U.S. Pat. No. 3,429,496 issued Feb. 25, 1969 and the patent to Fielding U.S. Pat. No. RE. 24,667, issued July 14, 1959. These carriers have the disadvantage of not having the secondary retention means formed at the central portion of the article to be carried to give maximum protection from bottle dropout if the primary retention means fails. For example the Hickin retention panel 30 will serve to retain only the upper portion of the bottle 11 if the bottom primary retention means 25 fails thereby possibly allowing the bottle to drop out of the carrier. In a similar manner the Fielding carrier may not be able to prevent a bottle dropout in the event either the upper or lower corners 18 fail, since this carrier contains no secondary retention means for double protection.

A similar situation may be encountered in the Chidsey patent, U.S. Pat. No. 2,687,247, issued Aug. 24, 1954 wherein no secondary retention means is provided for bottle dropout. In addition, this carrier failed

to provide adequate primary retention means which would allow the carrier to be completely turned over without having a bottle or can drop from the carrier.

BRIEF DESCRIPTION OF THE INVENTION

In order to overcome the problems encountered in these prior art devices, there has been provided, by the subject invention, a new and improved wrap-around article carrier having a secondary retention means in the form of adjustable end panels which may be located near the central portion of the end bottles or cans. The secondary retention means thus formed and located provides maximum protection from bottle dropout in the event the primary retention means fails for reasons known in the art. With the adjustable end panel, the carrier is more readily adapted to handle the large variety of bottles and cans on the market today.

Accordingly, it is an object of this invention to provide an improved wrap-around style carrier having an improved secondary retention end panel which serves as a secondary means of retaining the articles in the carrier in the event the primary retention means fails. Still another object of this invention is to provide a wrap-around article carrier having a secondary retention end panel which can be easily erected to a finished package and which provides maximum protection against bottle dropout. Yet another object of this invention is to provide a retention end panel which may be conveniently used in wrap-around carriers for both bottles and cans. These and other objects and advantages will be apparent from the description hereinafter set forth and the accompanying drawings.

In accordance with the present invention, the foregoing and other objects, are accomplished with a carrier, of the wrap-around variety which may be formed from a single sheet of blank material, which blank is cut and scored to form said carrier. The carrier will comprise top, side and bottom panels and secondary retention end panels suitably secured to said side panels. The end panel or strap will be conveniently positioned in the central portion of the package ends and serves as a secondary means of retention in the event of failure of the standard primary retention means.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a plan view of a blank from which a carrier within the scope of the present invention may be formed;

FIG. 2 is a perspective view of a carrier within the scope of the present invention and erected from the blank shown in FIG. 1;

FIG. 3 is a partial top view of a carrier as shown in FIG. 2 as it would appear with chimed cans therein and with a portion of the top cut away;

FIG. 4 is a sectional view of a carrier within the scope of the present invention having chimed cans packaged therein, said section being taken along lines 4-4 as shown in FIG. 3.

PREFERRED EMBODIMENT OF THE INVENTION

The essence of the present invention resides in the secondary means employed in combination with a conventional wrap-around carrier having a standard primary retention means to prevent articles from slipping or dropping out of such carriers through the open or substantially open ends thereof whenever the primary retention means fails. More particularly, the essence of

the present invention resides in the use of a secondary retention means in the form of a retention end panels or straps which panels or straps are (1) suitably secured to the side panels of such a carrier through a gusset-like arrangement of panels, and (2) are separated from both the top and bottom panels and are located in the central portion of the bottle or can to provide maximum protection from bottle or can dropout. As will become more apparent from the disclosure set forth hereinafter, the separation of the secondary retention panel from both the top and bottom panel of the carrier affords protection in the central portion of the open end area with a minimum amount of blank material and a maximum amount of protection. In turn, the central positioning of the secondary retention panel permits its use in combination with carriers designed for either bottles or cans of all types and shapes since the protection afforded is independent of the article's shape at either the top or bottom thereof.

Although the secondary retention panel of the present invention, as has been previously noted, is equally adaptable for use with carriers designed for either bottles or cans, the invention will be described herein, for convenience, by reference to a preferred embodiment thereof; i.e. by reference to a carrier specifically designed for chimed cans. The modifications which would be necessary to convert the can carrier, as illustrated, so as to facilitate the packaging of bottles therein, will, of course, be obvious to those of ordinary skill in the art.

Referring then to FIG. 1, there is shown a unitary sheet of blank material which is cut and scored so as to define the bounds of the various panels and other elements of a carrier within the scope of the present invention. The blank may be prepared from paper, paperboard, polymeric sheet material, etc. As can be seen in the Figure, the blank comprises a top panel, 1, which is pivotally connected to side panels, 2 and 2' along scored fold lines, 3—3 and 3'—3'. In the embodiment illustrated, the top panel, 1, is separated from the side panels, 2 and 2', along cut lines, 4—4 and 4'—4'. As will be more readily apparent from the disclosure as set forth hereinafter, the cut lines, 4—4 and 4'—4', define slits in the upper portion of the side panels, 2 and 2', respectively, which serve as a portion of the primary means of retaining the articles in the carrier by holding the upper chimes of cans when such containers are placed in the carrier.

Margins, 5 and 5', are pivotally attached to side panels, 2 and 2', respectively, along scored fold lines, 6—6 and 6'—6' and separated therefrom by cut lines 7—7 and 7'—7'. The cut lines, 7—7 and 7'—7', are fashioned so as to provide slots in the lower portions of side panels, 2 and 2', respectively, for receiving the outer portions of the bottom chimes of cans placed in said carrier. The slots formed by the cut lines 7—7 and 7'—7' form the remaining portion of the primary retention means for retaining the articles in the carrier. The primary retention means just described is well known in the art and forms no part of the subject invention except as used in combination with the new secondary retention means hereinafter described.

Flap, 8, is pivotally attached to margin, 5, along scored fold lines, 9—9, and separated therefrom along irregular cut lines, 10—10, which cut lines define locking tabs, 11—11. Flap, 8, is formed with cutouts, 12—12, which, in part, define locking bars, 13—13. A

locking flap, 14, is cut from margin, 5', and pivoted thereto along scored fold line, 15. The locking flap, 14, carries locking tabs, 16—16, which are pivotally connected thereto along scored fold lines, 17—17. Locking bars, 18—18, are formed, in part, by the cut lines which define the terminal boundaries of the locking tabs, 16—16, and, in part, by a continuation of this line which cooperates with curved cut lines, 19, and 20, to define a cutout, 21. Separating tabs, 22—22, are also cut from margin, 5', and pivoted thereto along scored fold lines, 23—23. Tabs, 24—24, are fashioned so as to provide a slit in the separating tabs, 22—22, to facilitate a portion of the can chimes when such containers are packaged in the carrier.

The top panel, 1, is also cut so as to define separating tabs, 25—25, which are pivotally attached thereto along scored fold lines, 26—26. Tabs, 27—27, are fashioned so as to provide slits in the separating tabs, 25—25, which will facilitate a portion of the upper chimes of cans which are packaged in the carrier. The top panel is also provided with tabs, 28—28, which are pivotally attached thereto along scored fold lines, 29—29. These tabs may be rotated downwardly so as to provide means for lifting the carrier when erected.

The novel secondary retention means in the form of retention end panels, 30 and 30', are secured at their respective ends along scored fold lines, 31 and 32 and 31' and 32', to side panels, 2 and 2'. As can be seen in the Figure, the secondary retention end panel, 30, is secured to side wall panel, 2, through a combination of triangular folding panels, 33 and 34, which are pivotally attached to each other along scored fold lines, 35, and to the secondary retention end panel along scored fold line, 36. Similarly, the secondary retention end panel, 30', is secured to side panel, 2', through a combination of triangular folding panels, 33' and 34', which are pivotally attached to each other along scored fold line, 35', and to the secondary retention end wall along scored fold line, 36'. The secondary retention end panel, 30, is attached to side panel, 2', through triangular folding panels, 37 and 38, which are foldably attached to each other along scored fold line, 39, and to secondary retention end panel, 30, along scored fold line, 40. In the same manner, the secondary retention end panel, 30', is secured to side panel, 2', with triangular folding panels, 37' and 38', which are hinged along scored fold line, 39', to each other and to the secondary retention end panel, 30', along scored fold line, 40'.

In order to better understand the present invention, reference is now made to FIG. 2, which is a perspective view of a package embracing said invention. As can be seen in the Figure, the secondary retention end panels, 30 and 30', assume a position along the ends of the erected carrier and extend substantially perpendicular to and between side panels, 2 and 2'. As before mentioned the slots formed by the cut lines 7—7, 7'—7', 4—4 and 4'—4' form the primary means of retaining the articles in the carrier. The secondary retention end panels, 30 and 30', are moved into place by folding the triangular folding panels into an overlapping relationship and moving the overlapping panels into a juxtaposition with respect to the side panels, 2 and 2'. This is best seen by reference to triangular folding panels, 37 and 38, in the Figure. As can be seen, triangular folding panel, 37, is rotated about scored fold line, 32, and extended inwardly therefrom. At the same time, triangu-

lar folding panel, 38, is pivoted about scored fold line, 39, and extends outwardly therefrom when panels, 37 and 38, become adjacent. As can also be seen in the Figure, panels, 37 and 38, assume a juxtaposition with respect to side panel, 2'. It will be appreciated that triangular folding panels, 33 and 34, 33' and 34', and 37' and 38', assume similar positions although not clearly shown in the Figure. In general, the elevation of the secondary retention end panels, 30 and 30', can be varied over the entire height of the carrier; however, it is preferred that the secondary retention end panels be positioned so as to contact the carried articles at or near the central portion thereof since in that position the maximum protection against bottle dropout is attained and the carrier is able then to accommodate various sizes and shapes of bottles or cans. It will be appreciated that the elevation of the secondary retention end panels can be varied by varying the size and angle of the triangular folds. Moreover, the width of the secondary retention end panels may be varied over a wide range; however, a panel of about one (1 inch) inch height is adequate for most applications.

As can also be seen in the Figure, margins, 5 and 5', overlap so as to enable the engagement of the various locking elements. The locking mechanism as illustrated is identical with that disclosed and claimed in U. S. Pat. No. 3,098,583 which was granted in July 23, 1963 to Earle C. Sherman and Raymond A. Cote. As illustrated, locking tabs, 11—11, engage locking bars, 18—18. This is accomplished by rotating flap, 8, about scored fold lines, 9—9, so as to move the locking tabs out of the plane of the margin, 5, and then rotating the flap, 8, back to its original position and below margin, 5'. It will be appreciated that the locking bars, 18—18, were rendered accessible by rotating the locking flap, 14, out of the plane of margin, 5', prior to engagement. After the locking elements are engaged, the locking flap is margin, then rotated back into a position below flap, 8, and the locking tabs, 16—16, pushed into engagement with locking bars, 13—13. The operation of this locking mechanism is clear from the disclosure of U. S. Pat. No. 3,098,583, and the disclosure of which is incorporated herein by reference to the extent necessary. As can also be seen in the Figure, separating tabs, 22—22, are rotated so as to extend upwardly, thereby preventing direct contact between the parallel rows of articles packaged in said carrier. Similarly, separating tabs, 25—25, are rotated out of top panel, 1, and extend downwardly from the top of said carrier, thereby affording separation between the parallel rows of carried articles at the top thereof.

It is believed that the manner in which the secondary retention end panels, 30 and 31, are positioned and held in place will be clear by reference to FIG. 3, which is a partial top view of a carrier such as that shown in FIG. 2 with cans placed therein and with a portion of the top cut away. As can be seen in the Figure, the secondary retention end panel, 30, will contact the terminal articles, 41—41, packaged in said carrier at a point below the chimes thereof, and hence, in the central portion of said articles. At the same time the primary retention means will retain the chimes of the cans placed in the carrier. As can also be seen in the Figure, folding panel, 37, contacts side panel, 2', and is overlapped by triangular folding panel, 38, which is pivoted about scored fold line, 39. The end panel is thus held in place by the force exerted by the carried article, 41,

on triangular folding panels, 37 and 38, and side wall, 2'. It will be appreciated that the internal structure with respect to the other triangular folding panels is identical to that shown.

The elevation of the triangular folding panels is illustrated in FIG. 4 which is a sectional view of the carrier as shown in FIG. 3 taken along lines, 4—4, with certain irrelevant detail omitted. As can be seen in FIG. 4, triangular folding panels, 33 and 37, contact the side panels, 2 and 2', respectively, over the full height of said triangular panels. As can also be seen in the Figure, the triangular folding panels are held firmly in place by the carried articles in the area of overlap which is illustrated by the height of scored fold lines, 35 and 39.

From the foregoing it can be seen that there has been provided a new and improved wrap-around article carrier which has formed thereon secondary retention panels which are positioned at the central portion of the cans or bottles contained in the carrier. With the secondary retention panels thusly positioned the carrier is able to accommodate varying sizes and shapes of bottles or cans while offering maximum protection from bottle dropout. The secondary retention means acts in conjunction with the standard primary retention means to offer a positive two fold protection from bottle dropout.

Although the present invention has been described and illustrated by reference to a particular embodiment, it will be readily apparent that the present invention lends itself to various modifications which will be obvious to those skilled in the art. Accordingly, reference should be made solely to the appending claims to determine the scope of the invention.

Having described my invention, I claim:

1. In a wrap-around article carrier of the type having a top panel, a bottom panel, and a pair of side panels and having formed in the side panels, a primary retention means, the improvement comprising the carrier having formed thereon centrally located secondary retention means for secondarily retaining the articles in the carrier whenever the primary retention means fails; said secondary retention means being formed in part from a portion of the side panels and in part from a portion of the top panels and being hingedly attached to the side panels and folded in such a manner that a portion of each side of the secondary retention means is folded inwardly inside the carrier and is positioned between the side panel and the articles after the articles are packaged in the carrier.

2. The improvement as defined in claim 1 wherein the secondary retention means is hingedly attached to the side panels by means of a plurality of substantially vertical score lines and the portion of the secondary retention means that is folded inwardly inside the carrier is formed entirely from the side panels.

3. The improvement as defined in claim 1 further comprising the portion of the secondary retention means that is folded inwardly inside the carrier is folded inwardly along a substantially vertical fold line and is further folded back on itself outwardly along a substantially 45 degree fold line to thereby provide a double thickness between the article and the side walls.

4. A multiple article package comprising, in combination:

a. a plurality of articles;

b. a wrap-around carrier blank, formed around the articles, the blank being formed from a top panel,

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a pair of side panels, hingedly attached to the top panel, and a bottom panel, hingedly attached to the side panels;

- c. primary retention means, formed on the side panels, for primarily retaining the articles within the package and preventing article dropout from the ends of the package;
- d. secondary retention means, formed in part from the side panels and in part from the top panel, for secondarily retaining the articles in the package upon failure of the primary retention means, said secondary retention means being hingedly attached to the side panels and located in the central portion of the ends of the package; and
- e. said secondary retention means being folded in such a manner that a portion of each side of the secondary retention means is folded inwardly inside the carrier and is positioned between the side

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wall panel and the articles after the articles are packaged in the carrier.

5. The multiple article package as defined in claim 4 further comprising the secondary retention means being hingedly attached to the side panels by means of a plurality of substantially vertical score lines and the portion of the secondary retention means that is folded inwardly inside the carrier is formed entirely from the side panels.

6. The multiple article package as defined in claim 4 further comprising the portion of the secondary retention means that is folded inwardly inside the carrier is folded inwardly along a substantially vertical fold line and is further folded back on itself outwardly along a substantially 45 degree fold line to thereby provide a double thickness between the articles in the package and the side walls of the package.

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