March 26, 1968 C. J. PIERCE, JR 3,374,938

CONSTRUCTION OF INTERLOCKING BOTTOM PANELS FOR WRAPAROUND TYPE BOTTLE OR CAN CARRIERS

Filed May 5, 1967 3 Sheets-Sheet 1

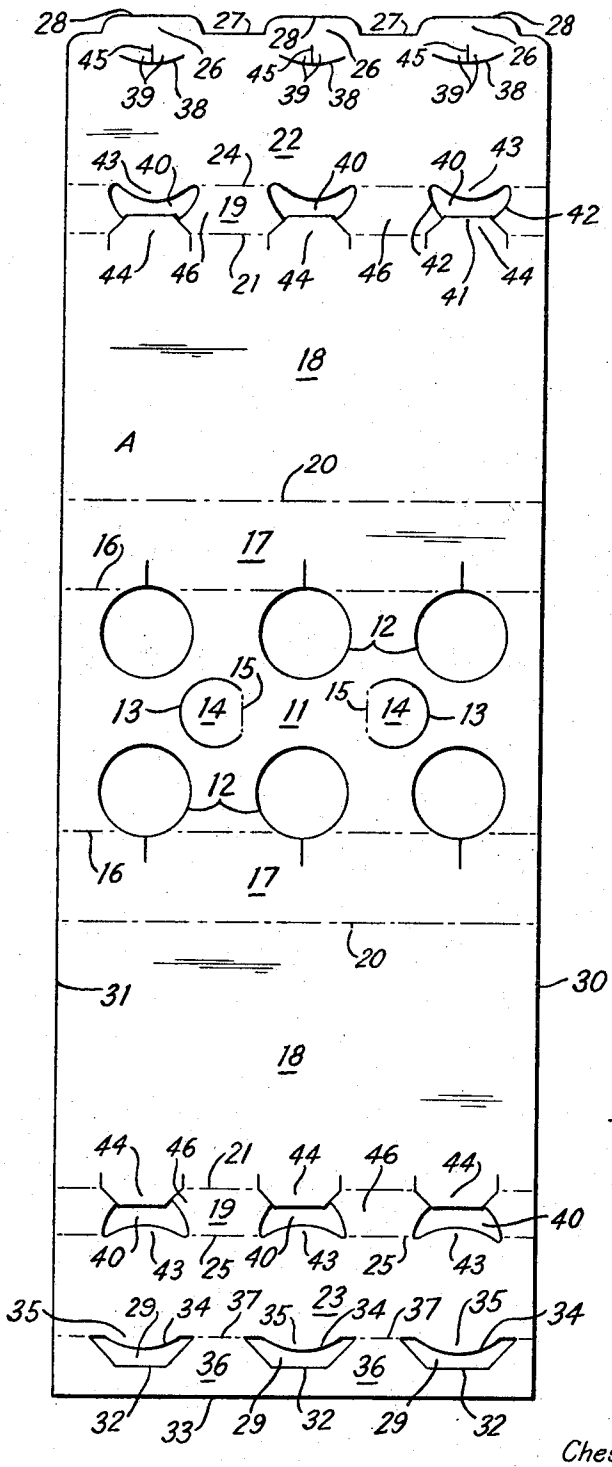


Fig. 1

INVENTOR.
Chester J. Pierce, Jr.

BY
Howard B Russell
his ATTORNEY

March 26, 1968 C. J. PIERCE, JR 3,374,938

CONSTRUCTION OF INTERLOCKING BOTTOM PANELS FOR WRAPAROUND TYPE BOTTLE OR CAN CARRIERS

Filed May 5, 1967 3 Sheets-Sheet 2

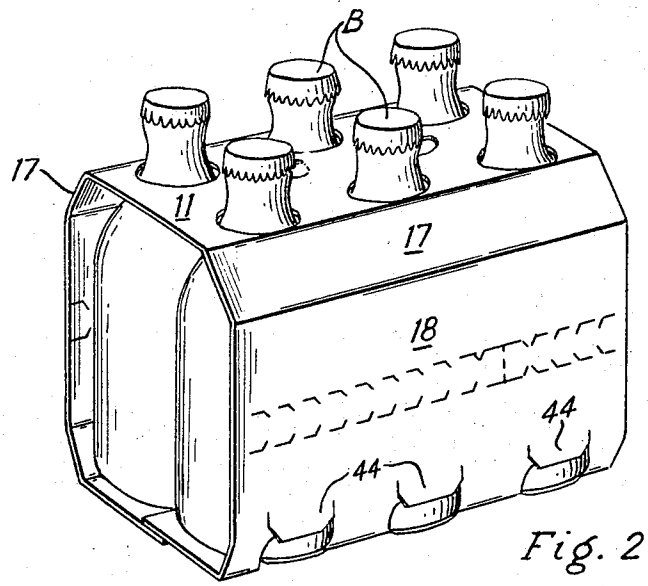


Fig. 2

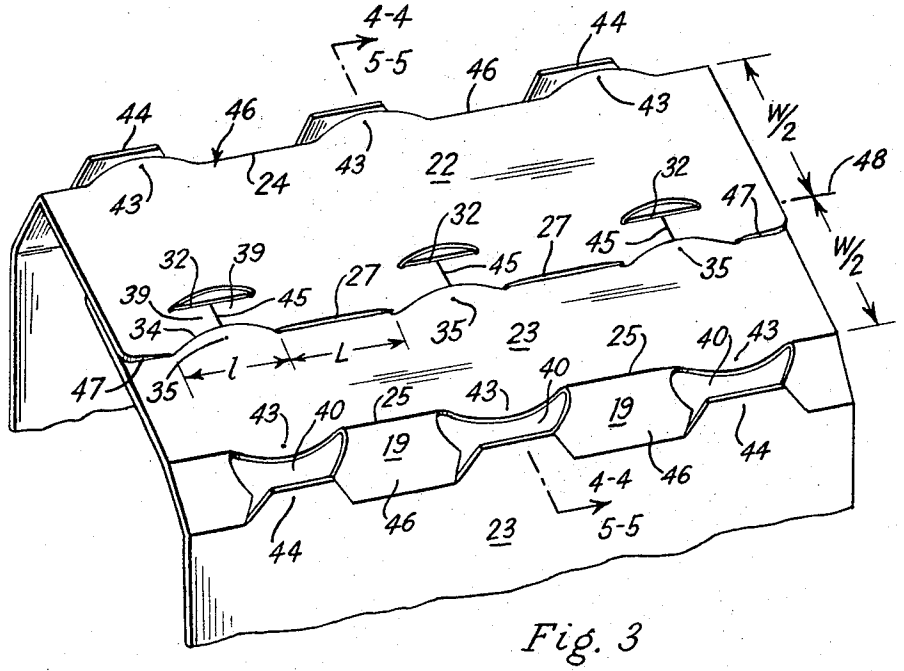


Fig. 3

INVENTOR.
Chester J. Pierce, Jr.

BY
Howard S. Russell
his ATTORNEY

March 26, 1968 C. J. PIERCE, JR 3,374,938

CONSTRUCTION OF INTERLOCKING BOTTOM PANELS FOR WRAPAROUND TYPE BOTTLE OR CAN CARRIERS

Filed May 5, 1967 3 Sheets-Sheet 3

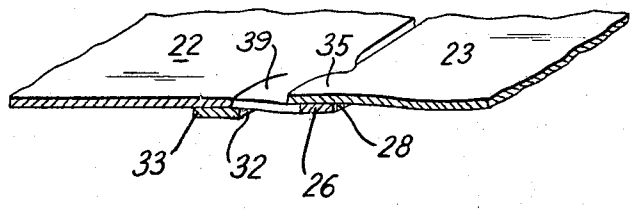


Fig. 4

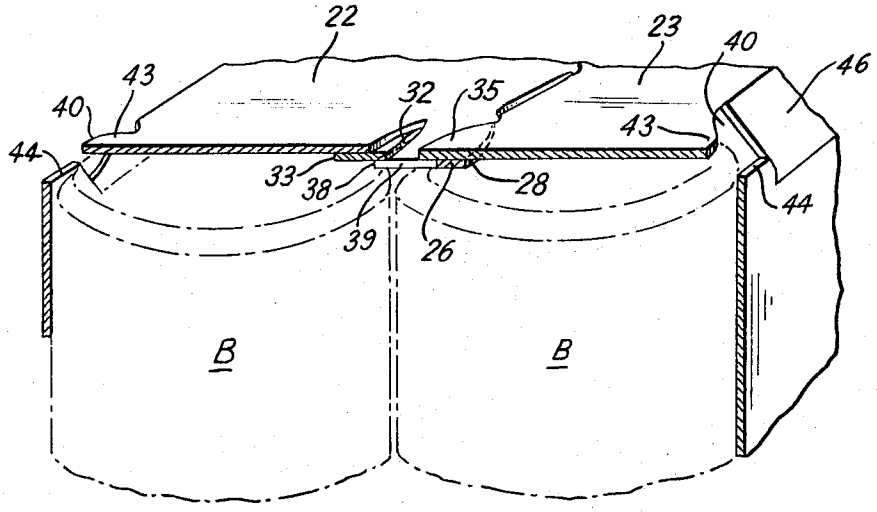


Fig. 5

INVENTOR.
Chester J. Pierce, Jr.

BY
Howard B. Russell
his ATTORNEY

United States Patent Office 3,374,938
Patented Mar. 26, 1968

3,374,938

CONSTRUCTION OF INTERLOCKING BOTTOM PANELS FOR WRAPAROUND TYPE BOTTLE OR CAN CARRIERS

Chester J. Pierce, Jr., Palo Alto, Calif., assignor to Certipak Corporation, New York, N.Y., a corporation of Delaware

Filed May 5, 1967, Ser. No. 636,435
7 Claims. (Cl. 229—40)

ABSTRACT OF THE DISCLOSURE

The present improvements provide a construction of interlocked bottom panels of a bottle or can carrier of the wraparound type. The improved construction results in a tightly interwoven disposition of the exposed bottom panel edges in the sense that the edge of one panel alternately overlies and underlies exposed edge portions of the other panel producing a seam which will not catch on rough or irregular surfaces over which the carrier is placed or slid.

BACKGROUND OF THE INVENTION

1. *Field of the invention*

In the packaging of bottles or cans in a carrier of the type in which a blank of paperboard is wrapped around the top, sides and bottom of a group of bottles or cans, it is the preferred practice to connect the terminal blank panels together at the bottom of the resuling open-ended package.

Among the advantages resulting from a bottom interlock are improved appearance and the relative simplicity with which the packaging machine may be changed over from bottles to cans, or vice versa. Although the top construction of the carrier changes in such a case, the bottom construction, and hence the locking mechanism, may remain the same.

2. *Description of the prior art*

A bottom locking carrier comprises, of necessity, two bottom panels which must be interconnected. If such interconnection produces a seam at which the edge of one panel is exposed, as is generally the case in known carriers, difficulties are experienced with the exposed edge catching on rough or uneven surfaces on which the carrier is moved or placed. This, in turn, may lead to damage of the carrier bottom and even disengagement of the bottom panels.

SUMMARY OF THE INVENTION

The present improvements are directed towards elimination of this hazard by providing a type of bottom seam which may be termed an interweaving of the two bottom panels such that, in the course of the entire seam, relatively short seam portions of one panel alternately overlie and underlie portions of the other panel.

Thus, there may be a total of seven alternating interwoven portions in a carrier for six receptacles in two rows, or for three receptacles in a single row. Downward curling of the exposed seam edge of the board is also eliminated, and it is practically impossible for the short alternating panel edges to catch on any irregularity of the supporting surface.

As will appear from the following detailed description the interlock is completed by pushing certain lock elements upwardly toward the inside of the carrier, so as to snap them past engagement edges so disposed as to utilize the weight of the packaged receptacles in order to hold the engagement edges in place.

The various objects, features and advantages of this invention will appear more fully from the detailed description which follows accompanied by drawings showing,

for the purpose of illustration, a preferred embodiment of the invention. The invention also resides in certain new and original features of construction and combination of elements as hereinafter set forth and claimed.

Although the characteristic features of the invention which are believed to be novel will be particularly pointed out in the claims appended hereto, the invention itself, its objects and advantages, and the manner in which it may be carried out may be better understood by referring to the following description, taken in connection with the accompanying drawings forming a part of it in which:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a plan view of a representative form of blank for the packaging of six bottles;

FIG. 2 is a perspective view of the complete package comprising six bottles enclosed in the carrier blank of FIG. 1;

FIG. 3 is a perspective view of the bottom panel structure of the carrier, as it appears if the carrier of FIG. 2 is inverted; and

FIGS. 4 and 5 are a section taken on line 4—4, 5—5 of FIG. 3 showing a detail of the relative disposition of certain elements before and after locking.

In the following description and in the claims various details will be identified by specific names for convenience. The names, however, are intended to be generic in their application. Corresponding reference characters refer to corresponding parts in the several figures of the drawings.

The drawings accompanying, and forming part of, this specification disclose certain specific details of construction of the invention for the purpose of explanation of broader aspects of the invention, but it is understood that structural details may be modified in various respects without departure from the principles of the invention, and that the invention may be incorporated in other structural details than shown.

DESCRIPTION OF A PREFERRED EMBODIMENT

The carrier blank A (FIG. 1) consists of suitable foldable sheet material, such as paperboard, and comprises a centrally disposed single top panel **11** which has apertures **12** cut therein to accommodate the necks of bottles, and finger holes formed by incomplete circle cuts **13** leaving circular tabs **14** attached to the remainder of the top panel along fold lines **15**.

Side panel structure is articulated to opposite sides of the top panel **11** along top fold lines **16** and comprises, in the illustrated example, an upper side panel **17**, a central side panel **18**, and a lower side panel **19**. The central side panel **18** is designed to be substantially vertical in the completed carrier or package (FIG. 2), the upper side panel to assume an inward slant towards the top panel, and the lower side panel **19** to assume an inward slant towards the bottom structure. The angular disposition of the several side panels is facilitated by transverse fold lines **20** and **21**.

Bottom panels **22** and **23** are articulated to the respective side panel structures along fold lines **24** and **25**.

The one bottom panel has a plurality of tongues **26** formed thereon, there being preferably one for each receptacle, i.e., three tongues for a carrier designed to hold three single or three pairs of bottles or cans, four tongues in the case of four single or pairs of receptacles, and so forth.

The tongues **26** are spaced from one another by recessed edge portions **27** between the tongues **26** proper. The edge **28** of the tongues and the recessed edge portions constitute the terminal edge of the one bottom panel **22**.

The other bottom panel 23 has a plurality of apertures 29 cut therein which are elongated with respect to the transverse dimension of the blank, this being the dimension from side edge 30 to side edge 31. The tongues 26 are insertable into these apertures, there being an aperture for each tongue. Each aperture is bordered by an engagement edge 32 on that side of the aperture which is nearest the terminal edge 33 of the end panel 23 and is bordered by a bent tab edge 34 on the opposite side. The edge 34 borders an internal tab 35 which extends into the aperture in a direction towards the engagement edge 32.

The apertures 29 are separated from one another by bridge portions 36 traversed by an optional fold line 37.

Returning to the one bottom panel 22, there is further formed therein an internally disposed locking edge 38 which is curved in order to form a locking tab 39 pointing in a direction opposite to the respective tongue 26 with respect to which the tab 39 is approximately centered. Each tab 39 is preferably slit centrally at 45.

The locking edge 38 is located within the body proper of the bottom panel 22, exclusive of the tongues which project beyond the edge 27 of the body of the panel 22, and is placed sufficiently far inwardly of the body of the panel, or spaced from the edge 27, to cross or intersect the engagement edge 32 twice in the position in which the blank is wrapped around its contents, both bottom panels 22, 23 lying in the same plane and the tongues 26 being fully inserted into the apertures 29.

In this position, as will later be shown, the locking tabs 39 may be snapped from a position underlying the other panel 23 adjacent the engagement edge 32 past the engagement edge into a position overlying the other panel 23 on the inside of the carrier, thus preventing separation of the bottom panels 22, 23 by withdrawal of the tongues 26 from the apertures.

The lower side panels 19 which are defined between fold lines 21 and 24 have relief apertures 40 substantially in line with the tongues 26. The relief aperture cuts interrupt the fold lines and are of a shape to provide a narrow central aperture portion 41 and wider end portions 42 resulting in the formation of oppositely pointing internal tongues 43 and 44 which are not traversed by the fold lines 21 and 24, 25.

The portions of the panel 19 which are traversed by the fold lines become straps 46 connecting the bottom panels 22, 23 with the side panels 18.

In forming the package a blank A is placed over the necks of the bottles of one group, for example six, so that the top panel 11 is horizontal. The side panel structures are then folded down the sides of the group of bottles. The bottom panels are folded under the bottoms of the bottles and the tongues 26 are inserted into the apertures which is facilitated by bending the panel 23 slightly at the fold line 37.

FIG. 4 shows the tongue 26 inserted under the internal tab 35 in which position the lock tab 39 still overlies the engagement edge (viewing the carrier upside down). As a next operation, the locking tab 39—which is shown without cross hatching at this point because it is split—is forced past the engagement edge 32 to underlie the engagement edge 32 and panel 23 (FIG. 5). The tab thus forms a barb or safety catch preventing subsequent withdrawal of the tongues 26.

It is seen that the locking operation is facilitated by the aperture which extends from the edge of the tab 35 to the engagement edge. The space of the aperture accommodates the material of the locking tab 39 without causing a deflection towards the inside of the carrier of the panel 23 which, incidentally, would move the engagement edge 32 with it making it difficult to engage the lock.

The illustrated construction is easy to lock and requires relatively little displacement of the tab 39 in order to force it past the edge 32 into a position behind the panel 23.

The fully interengaged and locked panels are shown in FIG. 3.

Preferably the width 1 of the internal tabs 35 is made substantially equal to the length L of the recessed edge portion 27.

It is seen that the bottom panels 22 and 23 are interwoven in the sense that the panel 23 overlies the panel 22 within the portions 1, whereas the panel 22 overlies the panel 23 within the portion L. There are a total of five main portions L and 1 and, in addition, two end portions 47 which act in the same manner as the edges 27.

Preferably the engagement edge 32 is arranged to coincide with approximately the center line 48 of the bottom area. In this case the locking tabs 39 are easy to deflect into locking position and the weight of the receptacles (such as bottles B in FIG. 5) aids in preventing displacement of the edge portions 33 under the pressure of the locking tab 39.

The carrier construction also results in a certain degree of resiliency of the enclosing carrier by reason of the provision of the relief apertures 40. Inwardly directed pressure applied at the strap portions 46 tightens the assembly and aids in the interlocking of the tab-and-edge locks. Such pressure could not be applied effectively across the diameter of the non-yieldable receptacles B. When the tightening pressure is released after completion of the lock the carrier enclosure springs back slightly because of the resiliency of the board.

What is claimed is:

1. In a paperboard carrier of the wraparound type for packaging a plurality of receptacles arranged in line, said carrier comprising a single top panel disposed intermediate the ends of the blank for overlying the tops of the receptacles; side panel structures articulated to opposite sides of the top panel along top fold lines; and a bottom panel articulated to each of the side panel structures to form a carrier bottom for underlying the bottoms of the receptacles including means for connecting together the two bottom panels, the improvement in which the connecting means comprise a plurality of tongues on one bottom panel, said tongues being spaced from one another, there being recessed edge portions between spaced tongues, the edge of said tongues and said recessed edge portions constituting the terminal edge of the said one panel, there being in the other bottom panel a plurality of transversely elongated apertures into which the said tongues are insertable, each aperture being bordered by an engagement edge on the side of the aperture nearest the terminal edge of said other panel and being bordered by a bent tab edge on the opposite side, said bent tab edge defining an internal tab extending into the aperture towards the engagement edge, said apertures being separated from one another by bridge portions of the board, there being further formed in said one bottom panel an internal locking edge curved to form a locking tab pointing in a direction opposite to the respective tongue, and in line therewith, said locking edge being located within said one panel proper, exclusive of the tongue, and sufficiently far inwardly from the terminal edge of the one panel as to coincide at two spaced points with the respective engagement edge in the position of said bottom panels in which the tongues are fully inserted in said apertures, in which position the locking tabs may be snapped from a position underlying said other panel into a position overlying said other panel, there resulting interweaving of the bottom panels along a seam line defined by said internal tabs which overlie the tongues of the one panel and by said recessed edge portions of the one panel which overlie the bridge portions of the other panel.

2. A carrier according to claim 1 in which the tongue width substantially equals the length of each of said recessed edge portions.

3. A carrier according to claim 1 in which the internal

locking edge is shaped to extend substantially parallel to the edge of the internal tab.

4. A carrier according to claim 1 in which a folding score extends across said bridge portions, said folding score being interrupted so as to leave said internal tabs unscored.

5. A carrier according to claim 1 in which each bottom panel has articulated thereto on the wall panel structure side a slant panel defined by two spaced interrupted folding scores, within which slant panel relief apertures are formed in line with said tongues, at least some of the relief apertures being of a shape to provide a narrow central aperture portion and wider end portions so as to result in oppositely pointing internal tongues extending into the relief aperture, said interrupted folding score terminating at said internal tongues without extending across the internal tongues proper and then continuing at the far end of the respective aperture and terminating at the internal tongue of the next aperture, the board

portions between the relief apertures constituting straps of paperboard connecting the bottom panels to wall panels extending upwardly towards the top panel.

6. A carrier according to claim 1 in which the center line of the carrier bottom formed by the two interlocked bottom panels passes between the ends of said internal tabs and said engagement edges.

7. A carrier according to claim 1 in which the engagement edges substantially coincide with the center line of the carrier bottom.

References Cited

UNITED STATES PATENTS

2,950,854	8/1960	Ganz	229—40
2,990,997	7/1961	Weiss	229—40
3,248,004	4/1966	Weiss	220—115

DAVID M. BOCKENEK, *Primary Examiner.*