

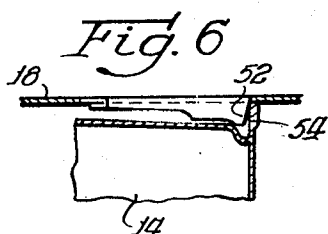
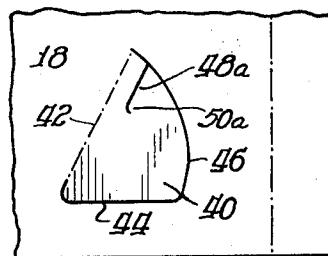
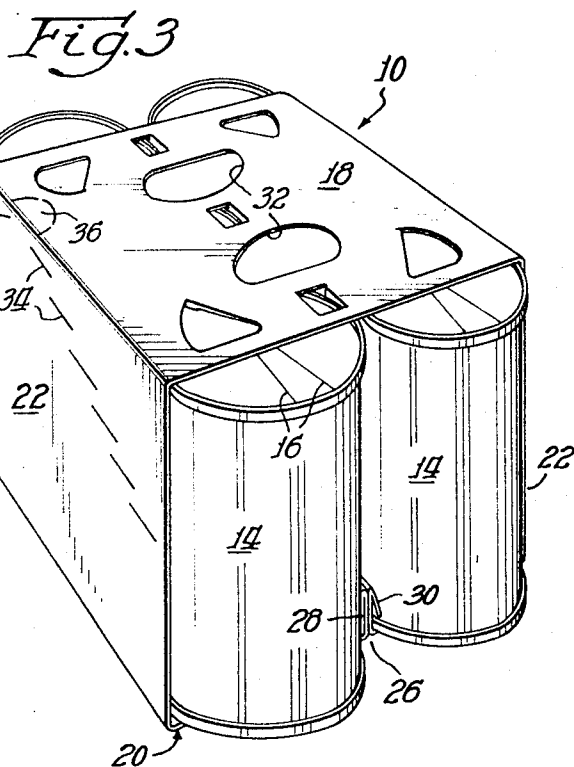
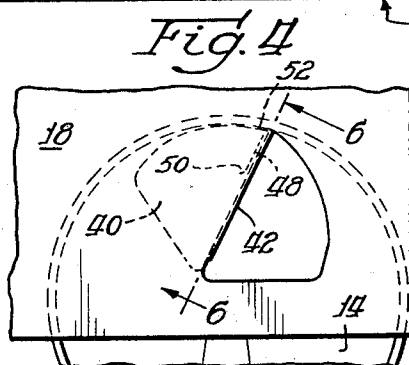
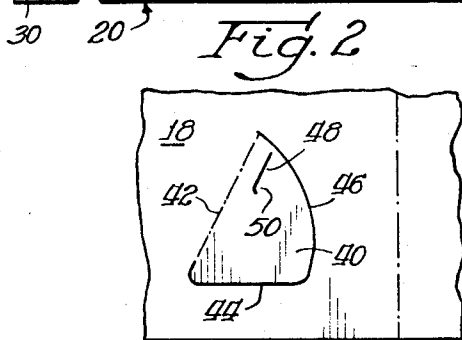
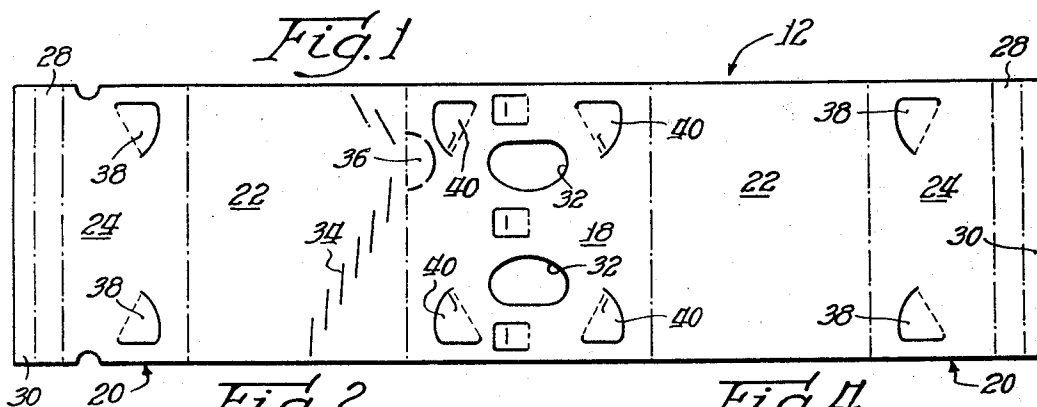
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3,450,332

CARRIER CARTON

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3,450,332

CARRIER CARTON

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6 Claims

ABSTRACT OF THE DISCLOSURE

A carrier carton for enclosing articles such as cans having recessed ends, and having opposed pairs of top and bottom end walls, and side walls hingedly connected to form a sleeve-like structure open at the ends, at least one tab cut from at least one of the end walls and foldable under the end wall, the tab being connected to the wall by a hinge line and having a configuration defined by the hinge line and a continuous cut line extending from one end of the hinge line around the free edge of the tab to the opposite end of the hinge line, the tab having a cut therein and being spaced a short distance from the hinge line for permitting the portion of the tab lying between the hinge line and the cut to be deflected out of the plane of the remaining portion of the tab, when the tab is folded under the end wall thereby forming a shoulder for engaging the inside edge of the recess of the can positioned adjacent the tab.

BACKGROUND OF THE INVENTION

Field of the invention

This invention relates to a carrier carton for enclosing cylindrical articles having recessed ends and, more particularly, to improved means for retaining said articles within said carrier carton.

The prior art

It is well known in the art that a common way to package articles such as cans, is to wrap them in a tubular carrier carton having open ends with the cans being arranged in the carton in one or more rows extending longitudinally thereof. In order to prevent accidental movement of the cans out of the open ends of the carton, it is necessary to provide some means for retaining the cans within the container. Heretofore, retaining tabs had been cut from the top or bottom end walls of the carton and folded inwardly into engagement with the recessed ends of the cans to engage the inside edges thereof and thereby prevent movement of the cans out of the open ends of the carton.

With the introduction of the pop-top metal cans a problem was presented for insuring a relatively tight engagement between the can retaining tab and the end wall of the packaged article due to the fact that such cans had their end walls recessed a greater distance than the conventional cans used heretofore. To overcome this problem, a web panel, such as disclosed in a patent to Francis A. Chidsey, Jr., 3,273,782, was interposed between the end wall of the carton and a portion of the tab structure to force the free edge of the tab away from the wall of the carton and against the recessed end of the can. It was discovered however, that the wedge shaped panel is subjected to rather large loads in maintaining the cans within the carrier carton. This has caused some failures of the tabs by ripping of the hinged connection. Furthermore, there have been problems observed in the manufacture of the tab with the wedge shaped web due to the critical dimensions required, particularly, since the equipment used for forming the carriers and for automatically tucking the tabs in place operates at high speeds.

2

Also, variations of board resilient caused by humidity changes, and dulling or shifting of the score rules can cause a change in the tab sufficient to create tie ups or binding of the tab in the automatic manufacturing equipment, or cause failure of the tab in the field.

Accordingly, it was discovered that provision of a gusset or a web is not necessary to maintain cans, having recessed ends, within a carrier carton. Therefore, the web or gusset can be eliminated. As taught by the present invention, a cut is made in the tab for deflecting a portion of the tab lying between the cut and the line hinging the tab to the end wall, to form a shoulder which engages the inside edge of the recess of the can when the tab is folded under the end wall and prevents accidental movement of the can out of the open end of the carton.

SUMMARY OF THE INVENTION

The present invention overcomes the disadvantages of the prior art and provides effective means for retaining cans having recessed ends within an open ended carrier carton. Generally, the carrier carton is formed with opposed pairs of top and bottom end walls and side walls hingedly connected to form a tubular structure having open ends. At least one tab foldable under the end wall, is cut from either the top or the bottom or both end walls. The tab is hinged to the end wall by a single hinge line and its periphery is defined by that hinge line and a continuous cut line extending from one end of the hinge line around the free edge of the tab to the opposite end of the hinge line. A relatively short cut is made in the tab and spaced a short distance from the hinge line. When the tab is folded under the end wall, the portion of the tab lying between the hinge line and the cut is deflected out of the plane of the tab thereby forming a shoulder which is to engage the inside edge of the recess of the article, such as a can, positioned under the tab.

DRAWING

FIGURE 1 is a plan view of a blank from which a carrier carton of this invention is formed;

FIGURE 2 is an enlarged plan view of a portion of FIGURE 1 showing the improved tab construction;

FIGURE 3 is a perspective view of a carrier carton of this invention;

FIGURE 4 is a top plan view of the tab construction, shown folded in place in a carrier carton having a can located therein;

FIGURE 5 is an enlarged plan view of the tab similar to FIGURE 2, but showing another embodiment of this invention; and

FIGURE 6 is a sectional view taken generally along the line 6—6 of FIGURE 4.

SPECIFICATION

While this invention is susceptible of embodiments in many different forms, there are shown in the drawing and will herein be described in detail, embodiments of the invention with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the embodiments illustrated. The scope of the invention will be pointed out in the appended claims.

Referring now to the drawing, more specifically to FIGURE 3, there is shown an open end sleeve-type wrap-around carrier carton, generally designated 10, which may be formed from a unitary blank, designated 12 in FIGURE 1, of suitable sheet material, such as foldable paperboard. The carton may hold a plurality of cylindrical objects, such as cans 14, arranged in one or more rows extending longitudinally of the carton. In the carton illustrated in FIGURE 3, the cans are arranged in two parallel rows disposed in a side-by-side relationship. It will be

noted from the examination of FIGURES 3, 4 and 6, that the cans illustrated therein are provided with recessed end portions and are of the so-called "pop-top" type having built-in opening devices provided with weakening score lines 16 formed integrally with the ends of the cans.

Still referring to FIGURE 3, it will be seen that the carrier carton includes a pair of parallel, transversely extending, vertically spaced top and bottom walls 18 and 20, respectively, which are interconnected by a pair of opposed parallel, transversely spaced, vertical side walls 22 to form a tubular structure open at the ends. Referring also to FIGURE 1, it will be seen that, while the top wall 18 is formed from a single panel, the bottom wall 20 includes a pair of coplanar bottom wall panels 24 having their outer side edges hingedly attached to the adjacent lower edges of the related side wall 22 and having their inner edges attached to a central can retaining member 26 which extends longitudinally of the carton and projects into the carton between the adjacent rows of cans. The retaining member 26 is formed from cooperating pairs of first and second strips 28 and 30, respectively. First strips 28 are hinged to the inner edges of the bottom panel 24 and extend into the carton at right angles to the bottom wall in back-to-back relation where they are secured to each other by adhesive means. The second strips 30 are hinged to the inner, or upper, edges of the first strips 28 and extend downwardly and outwardly towards the bottom wall for engagement with the related edges of the can chimes to maintain the cans in firm engagement with the bottom wall 20 of the carton 10. The central retaining member 26 previously described, is not an essential feature of the present invention and, therefore, can be replaced by other suitable means.

The one piece top wall of the carton may be provided with a pair of hand grip holds, or openings 32 to facilitate grasping and lifting of the carrier carton. Further, in order to facilitate opening of the package, one of the side walls 22 may be provided with a series of weakening lines of tear 34, while the top wall may have a cut score punched out section 36 which affords access to the top of the side wall of the carton adjacent the weakening lines 34, so that the carton can be easily ripped open along the weakened lines of tear.

In order to prevent the cans from accidentally moving out of the open ends of the carton there are provided in the top and/or bottom walls of the carton, adjacent the ends of the cans, can retaining tabs 38 and 40 disposed under and over, respectively, the end can of each row. The tabs 38 in the bottom wall of the carton are of the same general type as those disclosed in United States Patent No. 2,980,249. It is self-evident, that where cans having recesses at only one end are packaged, only that end of the carton need be provided with can retaining tabs.

As best seen in FIGURE 2, tab 40 is hinged on the top end wall 18 by a single hinge line 42. The tab 40 has a generally triangular configuration with its free edge defined by a continuous cut line consisting of a straight line 44 extending from one end of the hinge line and being generally parallel to the adjacent edge of the carton top wall and a curved line 46 which extends inwardly from one end of the line 44 about an angle slightly less than 90° to the other end of the hinge line 42.

A cut 48 is formed in the tab 40 in such a manner that one end of the cut is spaced a short distance from the free edge of the tab defined by the line 46. The cut continues inwardly into the tab substantially paralleling the hinge line 42 and being situated a relatively short distance therefrom. An inner end 50 of the cut 48 curves away from the hinge line 42 to prevent continuation of the cut 48 paralleling the hinge line 42 and thereby possibly causing tearing of the tab 40.

In the embodiment illustrated in FIGURE 5, the cut 48A extends inwardly into the tab from the free edge thereof rather than being spaced therefrom, as is the case

in the embodiment described heretofore. The cut 48A has an inner end 50A disposed of and serving the same function as end 50 of cut 48.

While the cut in either embodiment performs the same function, spacing of the cut from the free edge of the tab may insure a better formation of a shoulder 52 described hereinafter.

In the operation of the device, when the tab 40 is bent inwardly into the carton for traversing an angle of approximately 180°, the portion of the tab lying between the hinge line 42 and the cut 48 (or cut 48A) is deflected out of the plane of the tab. In being so deflected, the portion forms a shoulder 52, best seen in FIGURE 6, which engages the inside edge of a recess, or chime, 54 of the can 14 situated under and adjacent the folded tab 40.

The engagement of the shoulder 52 with the recess 54 prevents movement of the can 14 out of the open end of the carrier carton 10.

I claim:

1. In a carrier carton for enclosing a plurality of articles having recessed ends, the combination comprising:

- (a) opposed pairs of top and bottom end walls and side walls hingedly interconnected to form a tubular structure having open ends;
- (b) at least one tab cut from at least one of said end walls and foldable inwardly therefrom;
- (c) said tab being connected to said end wall by a single hinge line and having a periphery defined by said hinge line and a continuous cut line extending from one end of said hinge line around the free edge of said tab to the opposite end of said hinge line;
- (d) said tab having a relatively short cut therein spaced from the free edge thereof and having a major portion substantially parallel to and located a short distance from said hinge line for permitting the portion of the tab lying between said hinge line and said cut to be deflected to a position substantially normal to said end wall, when said tab is folded approximately 180° under said end wall and urged into engagement with the recessed end of said article, thereby forming a shoulder for engaging the inside edge of the recess of the articles positioned adjacent said tab.

2. In a carrier carton for enclosing a plurality of articles having recessed ends, the combination comprising:

- (a) opposed pairs of top and bottom end walls and side walls hingedly interconnected to form a tubular structure having open ends;
- (b) at least one tab cut from at least one of said end walls and foldable inwardly therefrom;
- (c) said tab being connected to said end wall by a single hinge line and having a periphery defined by said hinge line and a continuous cut line extending from one end of said hinge line around the free edge of said tab to the opposite end of said hinge line;
- (d) said tab having a relatively short cut therein extending inwardly from the free edge thereof and being substantially parallel to and spaced a short distance from said hinge line for permitting the portion of the tab lying between said hinge line and said cut to be deflected to a position substantially normal to said end wall, when said tab is folded approximately 180° under said end wall and urged into engagement with the recessed end of said article, thereby forming a shoulder for engaging the inside edge of the recess of the article positioned adjacent said tab.

3. In a carrier carton for enclosing a plurality of articles having recessed ends, the combination comprising:

- (a) opposed pairs of top and bottom end walls and side walls hingedly interconnected to form a tubular structure having open ends;
- (b) at least one tab cut from at least one of said end walls and foldable inwardly therefrom;
- (c) said tab being connected to said end wall by a hinge line and having a periphery defined by said hinge line

5

and a continuous cut line extending from one end of said hinge line around the free edge of said tab to the opposite end of said hinge line;

- (d) said tab having a cut therein adjacent the free edge thereof and being spaced from said hinge line for permitting the portion of the tab lying between said hinge line and said cut to be deflected out of the plane of the major portion of said tab, when said tab is folded under said end wall, thereby forming a shoulder for engaging the inside edge of the recess of the article positioned adjacent said tab.

4. A carrier carton as defined in claim 3, wherein the inner end of said cut in each of said tabs curves away from said hinge line.

5. A carrier carton as defined in claim 3, wherein the

6

length of said cut in each of said tabs is less than half of the length of said hinge line.

6. A carrier carton as defined in claim 3, wherein said cut extends entirely through the thickness of the tab.

References Cited

UNITED STATES PATENTS

3,273,782 9/1966 Chidsey.

3,347,366 10/1967 De Paul.

DAVID M. BOCKENEK, *Primary Examiner*.

U.S. Cl. X.R.

229—65