United States Patent

[11] **3,554,431**

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[54] **CARTON HAVING ARTICLE CUSHIONING STRUCTURE**
6 Claims, 5 Drawing Figs.

[52] **U.S. Cl.** **229/28,** 206/46, 206/65, 229/14
[51] **Int. Cl.** **B65d 5/04,** B65d 25/12, B65d 71/00
[50] **Field of Search** ..... 206/46(Fragile), 45.14, 45.19, 65, 65(C); 229/39(B), 28, 40, 29(F), 14(C)

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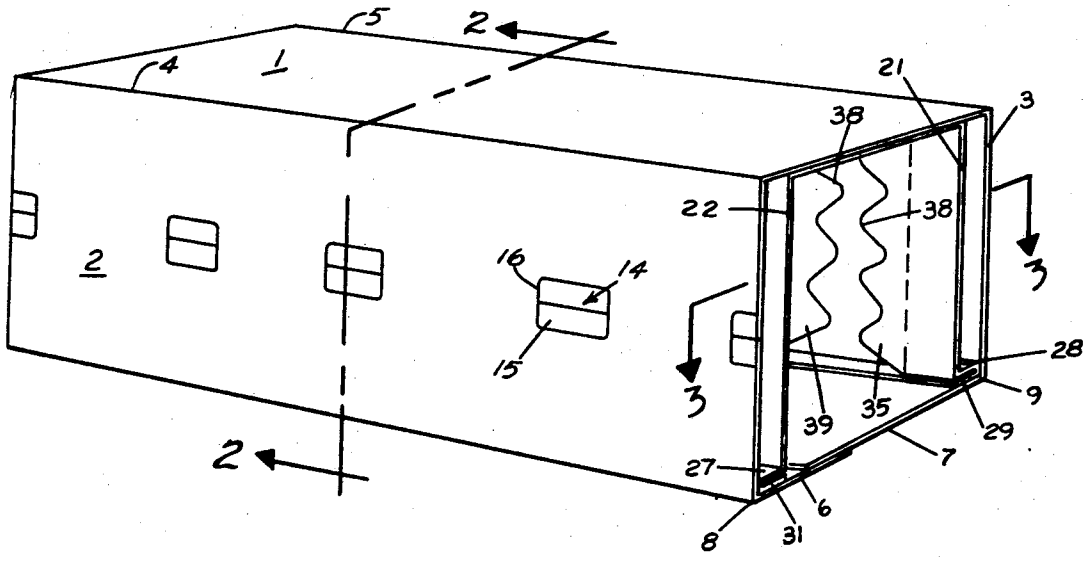
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ABSTRACT: An open ended tubular wraparound carton structure is provided with internal article-cushioning and holding means secured to the top and bottom panels of the tubular structure and including inner wall structure spaced inwardly from the sidewalls of the tubular structure and provided with pairs of cushioning flaps struck from the inner wall structure to define article receiving pockets.



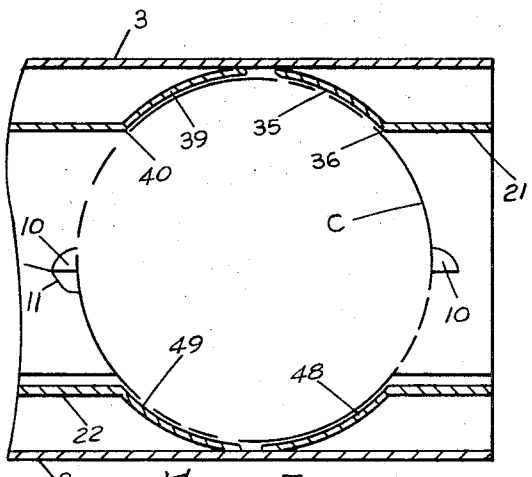


Fig. 3

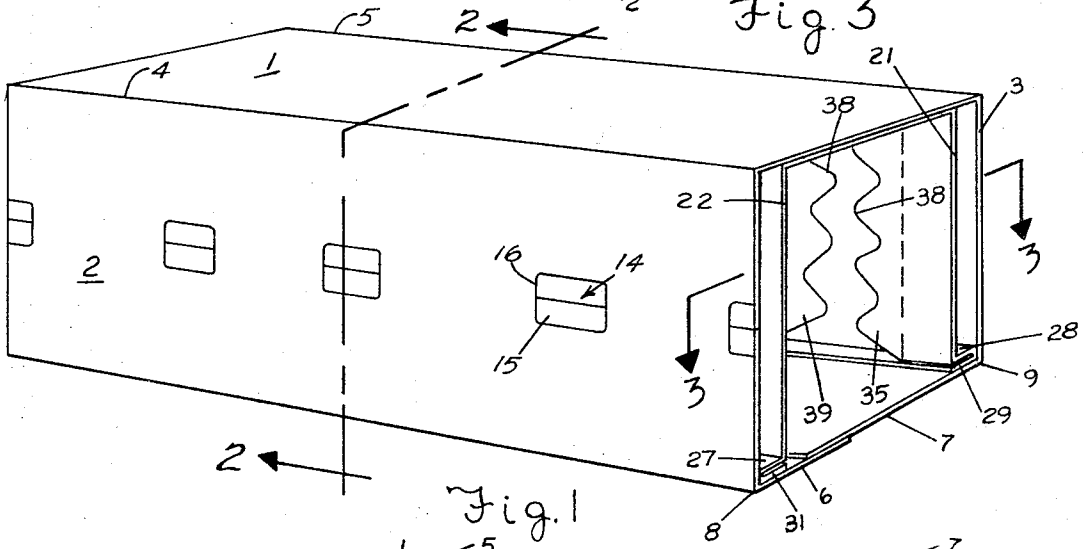


Fig. 1

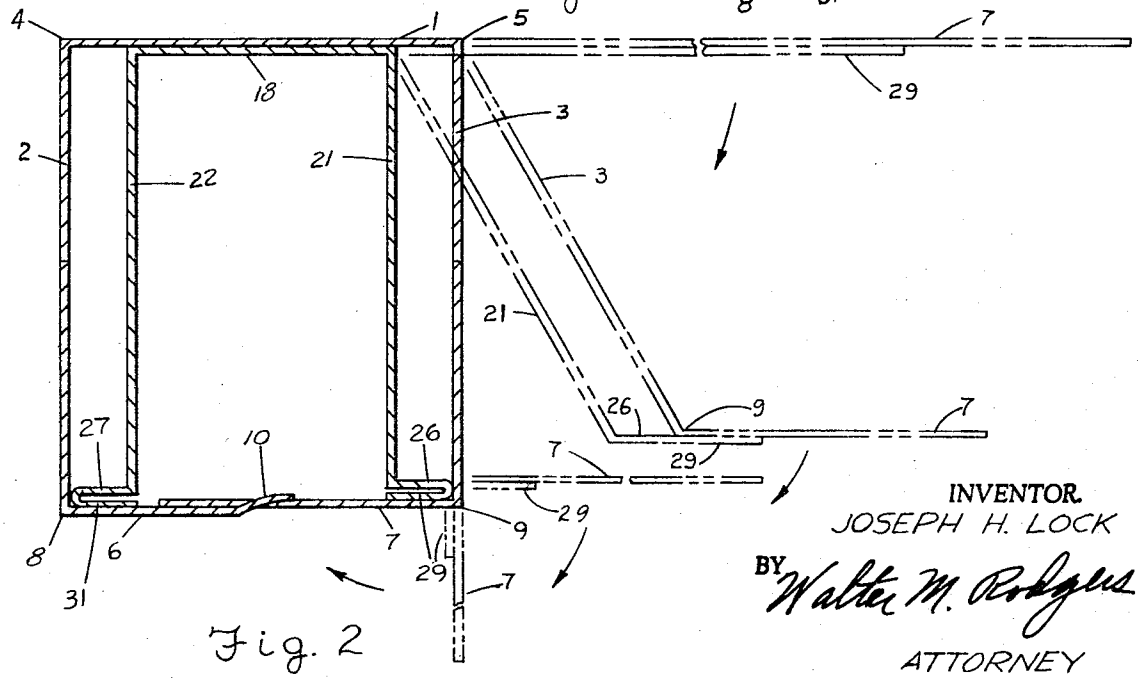


Fig. 2

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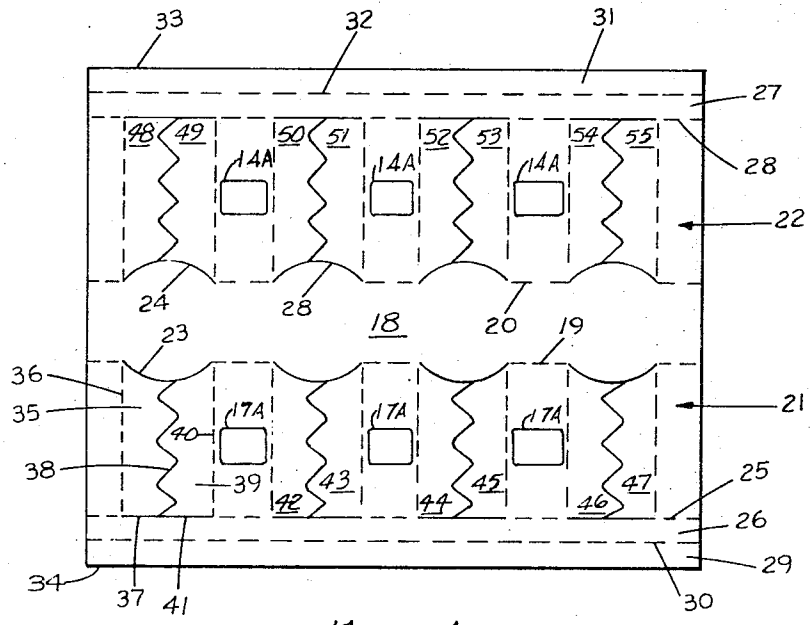


Fig. 4

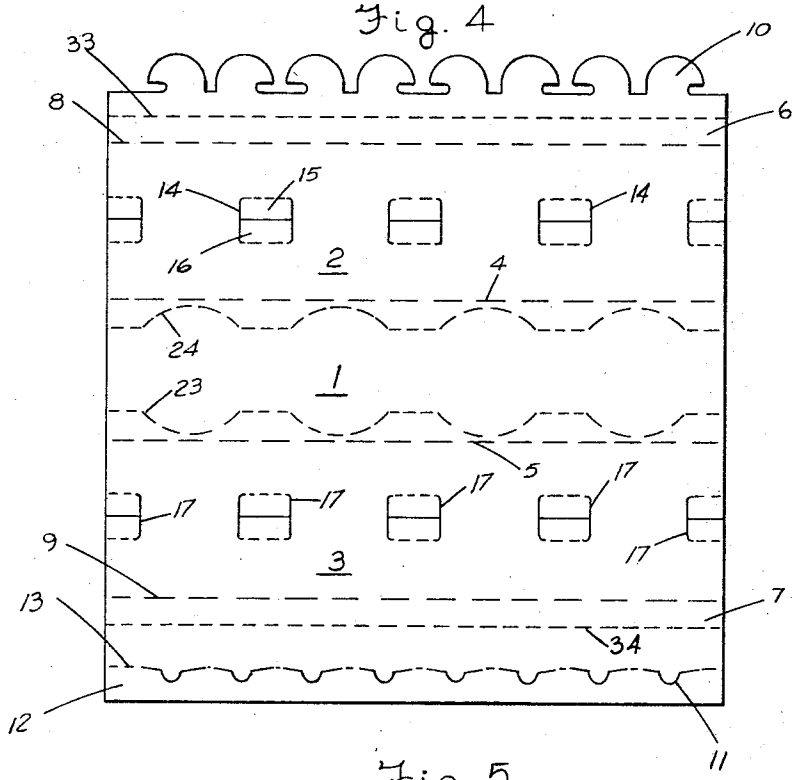


Fig. 5

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CARTON HAVING ARTICLE CUSHIONING STRUCTURE

Primary packages such as two-piece aluminum cans are difficult to secure and to cushion within conventional tubular carton structures due in part to the fact that such primary packages do not incorporate chimes at their bottoms. Instead such primary packages incorporate a relatively smooth lower portion. At the top of the primary package there is little if any radially disposed flange structure.

According to the present invention a wraparound carton including an outer blank having top, bottom and spaced sidewalls foldably joined together along their edges is folded to form an open ended tubular structure and incorporates article cushioning and holding means secured to the inner surfaces of the top and bottom walls and including inner wall structure spaced inwardly from the outer sidewall structure and including at least one pair of cushioning flaps struck from the inner wall structure and folded outwardly to define at least one article-receiving pocket. The inner cushion is formed and setup as the carton is wrapped about the contents.

For a better understanding of the invention reference may be had to the following detailed description taken in conjunction with the accompanying drawings in which FIG. 1 is a perspective view of an open end carton constructed according to the invention and from which the packaged primary articles have been removed for the sake of clarity; FIG. 2 is a fragmentary cross-sectional view taken along the line designated 2–2 in FIG. 1; FIG. 3 is a fragmentary cross-sectional view taken along the line designated 3–3 in FIG. 1; FIG. 4 is a plan view of the inner blank constructed according to this invention and in which FIG. 5 is a plan view of the outer blank depicted in FIGS. 1—3 and which is of generally conventional configuration.

With reference to the drawings, the numeral 1 designates the top wall of the outer blank to which sidewalls 2 and 3 are foldably joined along fold lines 4 and 5 respectively. The bottom wall of the outer blank is a composite wall comprising a pair of lap panels 6 and 7 which are foldably joined to the bottom edges of sidewalls 2 and 3 along fold lines 8 and 9 respectively.

For the purpose of securing the lap panels 6 and 7 together, a plurality of hook-shaped locking tabs 10 cooperate with a plurality of arcuate slits 11 formed in lap panel 7. Locking tabs 10 are simply inserted into the locking slits 11 and panel 12 which is foldably joined to lap panel 7 along fold line 13 facilitates the formation of the locks in a manner well known in the art.

For the purpose of receiving transversely disposed feeder lugs which extend through sidewalls 2 and 3 and serve to space the primary packages disposed within the carton from each other and to impart movement to the package and its contents, a plurality of apertures 14 are formed in sidewall 2 and each may comprise flaps 15 and 16. Similarly such apertures may be formed in sidewall 3 and in the drawings are designated generally by the numeral 17.

In order to secure the primary packages within the carton and to provide a cushioning action, article cushioning and holding means in the form of the blank depicted in FIG. 4 is provided according to this invention.

This cushioning and holding means comprises a top-anchoring panel generally designated by the numeral 18 to the side edges 19 and 20 of which inner wall structures generally designated by the numerals 21 and 22 are foldably joined along the fold lines 19 and 20 respectively. Formed along the side edges of the anchoring panel 18 is a plurality of outwardly extending protrusions 23 and 24 which generally coincide with the outer peripheries of the packaged primary articles disposed within the wrapper one of which is indicated at C in FIG. 3. In addition apertures 14A and 17A are formed within inner wall structures 21 and 22 which coincide with apertures 14 and 17 in sidewalls 2 and 3 respectively and receive the machine feeder lugs.

Foldably joined to the bottom edge 25 of inner wall structure 21 is a spacer panel 26 while a similar spacer panel 27 is foldably joined to the bottom edge 28 of inner wall structure 22.

For the purpose of anchoring the article cushioning and holding means to the bottom of the carrier a bottom-anchoring panel 29 is foldably joined along fold line 30 to an edge of spacer panel 26 and a similar bottom-anchoring panel 31 is foldably joined along the fold line 32 to an edge of spacer panel 27.

In order to form the completed carton as depicted in FIGS. 1,2 and 3 from the blanks depicted in FIGS. 4 and 5, it is simply necessary to secure the top-anchoring panel 18 in face-contacting relation to the inner surface of the top wall 1 of the outer blank and to secure the bottom-anchoring panels 29 and 31 to the bottom lap panels 7 and 6 respectively in such manner that the fold lines 30 and 32 correspond approximately with the fold lines 9 and 8 respectively. When so arranged the outer edge 33 of the bottom-anchoring panel 31 occupies the position depicted by the dotted line 33 in FIG. 5 and the outer edge 34 of the bottom-anchoring panel 29 occupies the position designated by the dotted line 34 in FIG. 5. The top panel 18 occupies a position along the inner surface of the top wall 1 and the outwardly extending protrusions 24 and 23 are indicated in dotted lines at 24 and 23 in FIG. 5.

With the inner blank of FIG. 4 secured to the outer blank of FIG. 5 as described, the outer and inner blanks are folded simultaneously about the primary packages. Thus as indicated in phantom lines in FIG. 2 in connection with sidewalls 3 and 21 a spaced parallelogram is formed to provide the cushion structure. Spacer panel 27 is disposed atop and in flat face contacting relation to the bottom-anchoring panel 31 as shown in FIGS. 1 and 2. In like fashion spacer panel 26 is disposed atop and in face contacting relation with the bottom-anchoring panel 29. This cooperation between the spacer panels and the bottom-anchoring panels together with the fact that fold lines 19 and 20 are spaced inwardly relative to fold lines 5 and 4 results in an inner wall structure 21 and 22 which is spaced inwardly from the outer wall as is clearly evident in FIGS. 1, 2 and 3.

In order to provide pockets in the inner wall structures 21 and 22 for receiving portions of the opposite sides of the primary packages, a plurality of pairs of cushioning flaps are provided in each of the wall structures 21 and 22. For example cushioning flap 35 is struck from inner wall structure 21 and is foldably joined thereto along fold line 36. The upper edge of cushioning flap 35 is defined by outwardly extending protrusion 23 and the lower edge of cushioning flap 35 is defined by slit 37 which is disposed in alignment with fold line 25 which defines the bottom edge of cushion structure 21. The right-hand edge of cushioning flap 35 preferably is serrated as indicated at 38, such serrations being complementary to and defining the left-hand edge of cushioning flap 39 which is foldably joined to inner wall structure 21 along fold line 40. Of course the upper edge of cushioning flap 39 is defined by the outwardly extending protrusion 23 and the bottom edge of cushioning flap 39 is defined by slit 41 which in reality is a continuation of slit 37.

Since each of the wall structures 21 and 22 preferably though not necessarily includes at least one pair of cushioning flaps and since each pair of cushioning flaps is identical in construction and configuration to the other pairs of cushioning flaps, a detailed description of these flaps is not deemed necessary. In the drawings the remaining flaps formed in inner wall structure 21 are designated by the numerals 42—47 inclusive. The cushioning flaps formed in the inner wall structure 22 are designated by the numerals 48—55 inclusive. The the cushioning and holding action of the cushioning flaps is apparent from FIGS. 1 and 3. In FIG. 3 the position of a primary package is shown in dotted lines and is designated at C. In FIG. 3, it is apparent that the cushioning flaps 35 and 39 are pushed outwardly toward the outer wall 3 and serve to envelop the side of the can C. In like fashion on the other side of the carton, the cushioning flaps 48 and 49 are pushed outwardly toward the sidewall 2 and envelop the other side of the can C.

As is best seen in FIG. 1, the serrations 38 which define the edges of the cushioning flaps 35 and 39 engage the inner surface of the outer wall 3 and due to the serrated construction are yieldable to provide a cushioning action to protect and hold the primary package C securely.

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

I claim:

1. A carton comprising an outer blank having top, bottom, and spaced sidewalls foldably joined along their edges to form an open ended tubular structure, article-cushioning and holding means disposed within said tubular structure and including an inner wall structure disposed in spaced generally parallel relation to at least one of said sidewalls, said inner wall structure including at least one pocket formed therein for receiving a portion of a side of an article packaged in the carton, a spacer panel foldably joined to the bottom edge of said inner wall structure, and a bottom anchoring panel secured in flat face contacting relation to the inner surface of said bottom wall and foldably joined along one edge thereof to an edge of said spacer panel.

2. A carton according to claim 1 wherein said cushioning and holding means comprises a top-anchoring panel secured in flat face-contacting relation to the inner surface of said top wall and foldably joined to the top edge of said inner wall structure, said top-anchoring panel having an outward protrusion formed on a side edge thereof and overlying said pocket.

3. A carton according to claim 2 wherein the outer edge of said protrusion is of a configuration which is complementary to the upper edges of said cushioning flaps.

4. A carton according to claim 1 wherein said spacer and said bottom-anchoring panels are disposed in parallel face contacting relation to each other.

5. An inner wall structure blank of generally rectangular configuration and comprising a top-anchoring panel disposed in transverse relation to the blank and forming the central portion thereof, inner wall structure foldably joined to opposite side edges of said top-anchoring panel, spacer panels foldably joined to the bottom edges of said inner wall structures respectively, bottom-anchoring panels foldably joined to said spacer panels respectively along the edges thereof remote from said inner wall structures, and a plurality of pairs of cushioning flaps struck from each of said inner wall structures and foldably joined thereto along fold lines which are generally normal to the top and bottom edges of said inner wall structures respectively, the flaps of each pair of cushioning flaps extending toward each other and their ends being defined by common slits respectively.

6. A wraparound carton comprising an outer blank having a top wall, sidewalls foldably joined to said top wall along the side edges thereof, a pair of lap panels foldably joined to the bottom edges of said sidewalls respectively, means for securing said lap panels together to form a composite bottom wall of the carton, an inner blank having a top-anchoring panel secured to the inner surface of said top wall with at least one side edge spaced inwardly from the corresponding side edge of said top wall, an inner wall structure foldably joined to said one side edge of said top anchoring panel, a spacer panel foldably joined to the bottom edge of said inner wall structure, and a bottom-anchoring panel foldably joined to said spacer panel along an edge thereof remote from said bottom edge of said inner wall structure, the fold line between said spacer panel and said anchoring panel being in approximate coincidence with the fold line between the adjacent lap panel and sidewall, and means securing said anchoring panel to said lap panel whereby said outer and said inner blanks are simultaneously wrapped about one or more articles to be packaged.