

Nov. 3, 1959

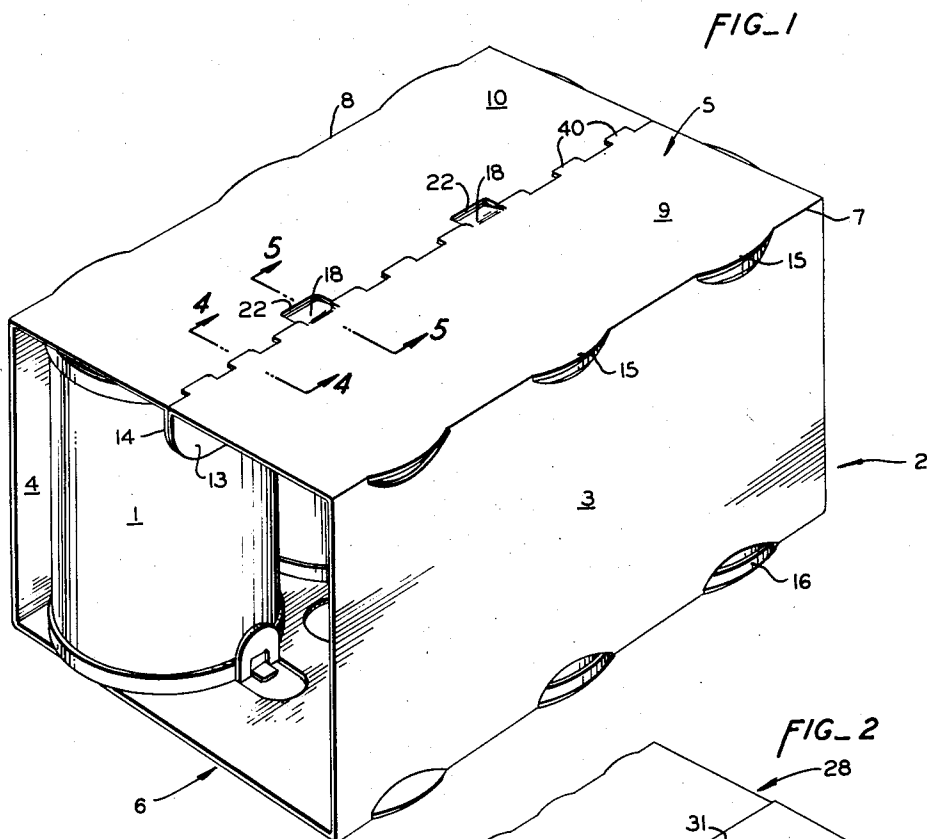
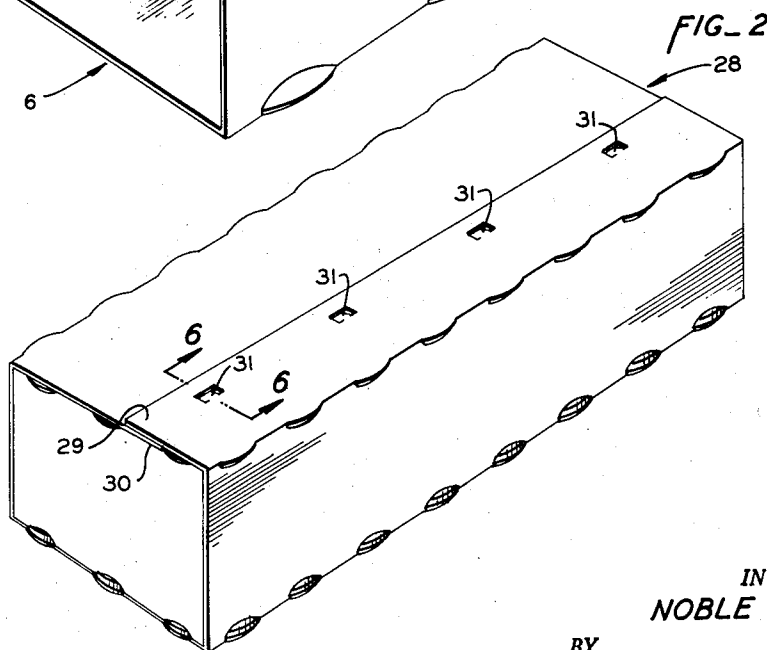
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2,911,096

CARTON AND LOCKING MEANS THEREFOR

Filed Sept. 13, 1956

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

FIG-3

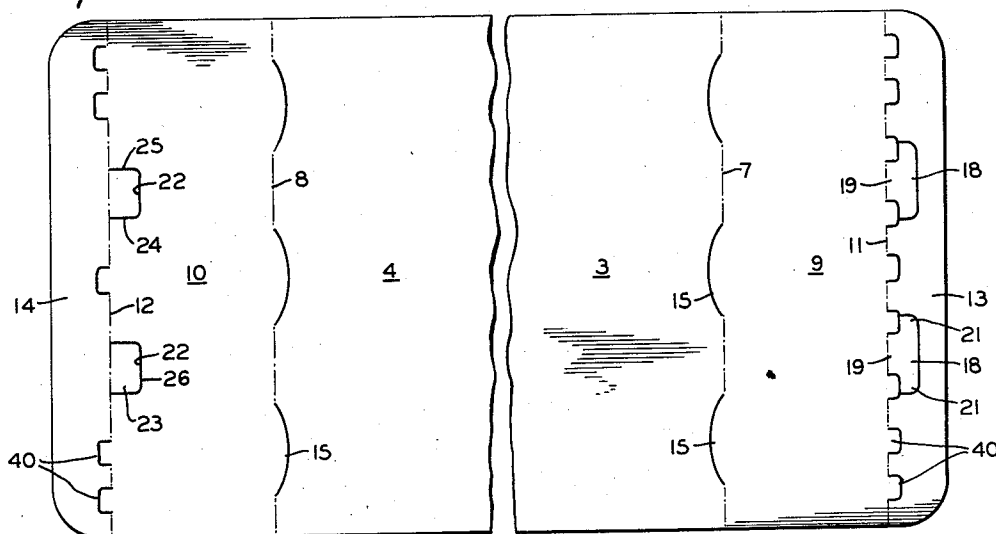


FIG-4

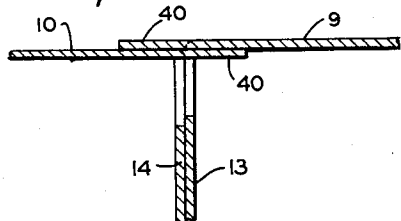


FIG-5

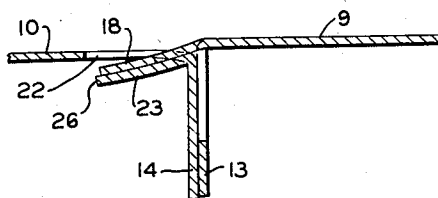
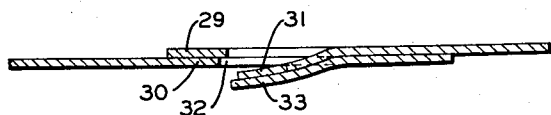


FIG-6



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2,911,096

CARTON AND LOCKING MEANS THEREFOR

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Application September 13, 1956, Serial No. 609,617

3 Claims. (Cl. 206—65)

This invention relates to a carton and locking means therefor, and has for one of its objects the provision of an improved means formed integral with a pair of walls of a carton for locking the said walls together and for holding the carton closed about the articles to be held therein.

Another object of the invention is the provision of an open ended carton formed from a single sheet of cardboard and having two opposite end portions of said sheet secured together to form said carton with means integral with said sheet for holding said end portions against relative movement in different directions during handling of the carton when the latter is filled.

The carton illustrated in the drawings is similar to the one shown in my copending application Serial No. 400,675 filed December 28, 1953, now Patent No. 2,867,320, and to the one shown in my copending application Serial No. 557,885, filed Jan. 9, 1956.

In both of the above applications a similar locking means is disclosed, and in each a generally T shaped tab in one wall extends through an opening in another wall of the carton with the ears forming the head of the T in lapping relation to two opposite marginal portions along two opposite edges of the opening through which the tab extends. Since the head of the T cannot be pulled back through the opening, once the ears have been sprung through it, unless said ears are distorted, the lock is effected. However, under certain conditions, either climatic or due to the contents, the locking tabs may tend to curl or become distorted, thereby lessening the security of the lock effected. Attempts to overcome this difficulty have taken the form shown in my copending application in which a retainer tab is left along one side of the opening through which the T-tab extends, and which retainer tab is bent to one side when the T-tab is sprung through the opening. This retainer tab has a free outer edge that is intended to spring back after the T-tab has been sprung through the opening so that its free outer edge will engage the T-tab near the base of the latter, or the end of the leg that is integrally connected with the wall carrying said T-tab.

The foregoing solution, while effective to a degree, is insecure since the nearer the T-tab can be held in the same plane as the wall carrying it, so that its ears are flat against the side of the other wall, the more secure will be the lock, and in the form shown in my copending application the retainer tabs hold the T-tab at a substantial angle to the wall carrying it.

This difficulty has been solved in the present invention by making, forming and positioning the retainer tab for each T-tab so that it functions similar to a leaf spring and constantly holds the locking ears on the T-tab flat against the marginal portion around the opening through which each T-tab is sprung.

The provision of structure adapted to accomplish the above result and to overcome the heretofore existing difficulty, is an object of this invention.

Other objects and advantages will appear in the description and in the drawings.

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In the drawings, Fig. 1 is a perspective view of a package, the carton of which incorporates and discloses the present invention.

Fig. 2 is a perspective view of another carton showing the locking means of the present invention.

Fig. 3 is a plan view of the blank from which the carton of Fig. 1 is formed, the central part of the blank being omitted to accommodate the view to the sheet, the present invention being shown in the end portions that are disclosed.

Fig. 4 is an enlarged sectional view taken along line 4—4 of Fig. 1.

Fig. 5 is an enlarged sectional view taken along line 5—5 of Fig. 1.

Fig. 6 is an enlarged sectional view taken along line 6—6 of Fig. 2.

In detail, the package shown in Fig. 1 comprises a pair of parallel rows of cylindrical upright cans 1 in side by side relation within an open ended carrier or carton 2. The can at the near corner is omitted to show the structure of the carton.

This carton comprises a substantially oblong blank creased along spaced parallel lines extending transversely across the blank for folding to provide an open ended carton having opposed side walls 3, 4, and opposed end walls generally designated 5, 6.

The folding creases 7, 8 shown in Fig. 3 are in the opposite end portions of the blank and define the junctures between end portions 9, 10 and the side walls 3, 4. These end portions, together form the end wall 5 that extends over one of the ends of the cans, one portion extending over the corresponding ends of the cans of each row.

The end portions, in turn, are formed with folding creases 11, 12 (Fig. 3) that define the junctures between terminating end sections 13, 14 and the portions inwardly thereof.

Arcuate cuts 15 are formed along the crease lines 7, 8 and the creases that define the junctures between the end wall 6. The present carton is for six cans, three in a row, and when the cans of the two rows are in the carton, the chimes at their ends will project through the slits formed at the arcuate cuts 15. Fig. 1 shows the position of the slits and the chimes 16 projecting through the slits at the juncture between side wall 3 and end wall 6.

Stamped from the end section 13 are a pair of T-tabs 18, that are integrally connected with the blank at the base end of each T, which base end is along crease line 11.

The leg 19 of each T-tab is very short, being substantially shorter than the width of the leg, and the head of each T projects oppositely outwardly from each leg providing ears 21. The overall width of the T-tab at the head is preferably greater than the overall length including the head.

The portion 10 of the blank inwardly of the end section 14 is formed with rectangular openings 22 (Fig. 3). However the portion stamped out of each opening is not completely cut away, but remains integral with the blank along one edge of the opening, and which edge is in alignment with the crease 12. Said crease may extend along the edge of said opening to define the juncture between each retainer tab 23 and section 14, although it preferably only extends to the ends of said edge.

In forming the package of Fig. 1, the end sections 13, 14 are folded to positions at right angles to the remainders of portions 9, 10 and to abutting relation between the upper ends of the cans of the two rows, and when this occurs, the T-tabs 18 will register with the openings and the two opposite edges 24, 25 of each opening will be substantially aligned with the opposite edges of the leg of each T-tab and said edges will extend across one side of the T-tab at the inner ends of ears 21. Hence the ears 21 will lap the marginal portions of the blank along

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edges 24, 25. The other tab 23 that projects across each opening 22 will, of course, be between the T-tab and the opening that is in registration therewith.

Heretofore the integrally connected edges of the tabs 23 has been along the outer edge 26 of each opening, which is the exact opposite of the present relationship.

In order to lock the portions 9, 10 of the end wall 5 together with the end sections 13, 14 in abutting relation, it is only necessary to spring the ears 21 of each T-tab through each opening 22, by pushing the T-tab into the space between the end cans of the rows and the center cans. As soon as the ears 21 clear the edges of the openings they will spring out again, and as the retainer tabs are resilient, they will yieldably urge the T-tabs against the inner surface of the portion 10 and will hold the T-tab in said position to prevent any curling of the tabs or distortion tending to permit them to move out of the openings 22.

This same structure is suitable for use in a carton of the type shown in Fig. 2 in which the top wall, generally designated 28 is formed by the end portions of a blank in which one end portion 29 overlaps the opposite end portion 30.

As seen in Fig. 6, the T-tab 31 in end portion 29 extends through opening 32 in the end portion 30, and the retainer tab 33 that normally projects across opening 32 yieldably holds the ears of the T-tab against the under surface of the underlying end portion 30.

Fig. 5 shows the structure of the locking tabs of Fig. 1.

In both of these cartons, the retainer tabs function like leaf springs, maintaining a snug engagement between the ears of the T-tabs and the surface of the wall having the opening through which the T-tab is sprung.

This locking means also tends to hold the parts that they secure together, against relative movement between said parts. However, an added improvement in this respect is shown in Fig. 3 in which a plurality of tabs 40 are stamped out of the sections 13, 14 along the crease lines 11, 12. These tabs are integral with the blank along the lines of said creases, but the creases do not extend across the tabs. Hence, when the end sections 13, 14 are bent for positioning them in the abutting relation of Fig. 1 and Fig. 4, the tabs 40 will remain coplanar with the portions 9, 10 that adjoin the creases 11, 12.

The tabs 40 are positioned opposite each other so that the tabs along the one crease line will extend into the openings from which the tabs along the other crease have been displaced, and said other tabs will overlie the portion adjoining the opposite end section, as seen in Fig. 4. Since the tabs are of the same size along the two creases, the tabs that enter the openings left by the other tabs will exactly fit in said openings thus preventing any movement of the portions 9, 10 in a direction longitudinally of the creases 11, 12. The lapping of the tabs locks the portions 9, 10 against any movement between them transversely of their planes.

The foregoing features provide a more rigid and secure package than heretofore.

I claim:

1. A package comprising: a pair of parallel rows of upright cylindrical cans in side by side relation, an oblong cardboard blank having spaced, parallel folding creases extending transversely thereacross relative to the length of said blank, said blank being folded along said creases to form an open ended carton having a pair of opposed vertical side walls extending across the oppositely outwardly facing sides of said rows and a pair of opposed end walls extending across the opposite ends of said cans, one of said end walls being the two end portions of said blank each extending horizontally over one only of said rows of cans, a terminal end section integral with at least one of said end portions extending vertically between said rows of cans in opposed relation to the cans of the row of cans below said one of said end portions, means for holding said blank tightly about said rows of cans

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comprising a flat horizontally extending and generally horizontally disposed tab projecting from the other end portion of said two than the one having said end section, said tab being generally T-shape having a leg integral with said other end portion at one end thereof and a cross head at the other end of said leg, said leg extending across the upper edge of said terminal end section and said head being disposed between said one end portion and the ends of the row of cans below said one end portion and having horizontally directed edges in substantially opposed relation to said terminal end section whereby tension placed on said tab in a direction for separating said end portions will be transmitted to the said terminal end section one side of which is opposed to said horizontally directed edges of the head of said tab, a pair of tabs on said other end portion coplanar therewith and at opposite sides of said T-shaped tab and positioned over said one end portion and extending across the upper edge of said end section thereby holding said one end portion against movement past said other end portion in a direction outwardly of said cans.

2. A package comprising; a pair of parallel rows of upright cylindrical cans in side by side relation, an oblong cardboard blank having spaced, parallel folding creases extending transversely thereacross relative to the length of said blank, said blank being folded along said creases to form an open ended carton having a pair of opposed vertical side walls extending across the oppositely outwardly facing sides of said rows and a pair of opposed end walls extending across the opposite ends of said cans, one of said end walls being the two end portions of said blank each extending horizontally over one only of said rows of cans, a terminal end section integral with at least one of said end portions extending vertically between said rows of cans in opposed relation to the cans of the row of cans below said one of said end portions, means for holding said blank tightly about said rows of cans comprising a flat horizontally extending and generally horizontally disposed tab projecting from the other end portion of said two than the one having said end section, said tab being generally T-shape having a leg integral with said other end portion at one end thereof and a cross head at the other end of said leg, said leg extending across the upper edge of said terminal end section and said head being disposed between said one end portion and the ends of the row of cans below said one end portion and having horizontally directed edges in substantially opposed relation to said terminal end section whereby tension placed on said tab in a direction for separating said end portions will be transmitted to the said terminal end section one side of which is opposed to said horizontally directed edges of the head of said tab, a pair of tabs on said other end portion coplanar therewith and at opposite sides of said T-shaped tab and positioned over said one end portion and extending across the upper edge of said end section thereby holding said one end portion against movement past said other end portion in a direction outwardly of said cans, the opposite edges of said leg and the said horizontally directed edges of said head adjoining each other at opposite sides of said T-shaped tab and being substantially coincidental with two of the adjoining edges of each of the tabs of said pair thereof.

3. A package comprising; a pair of parallel rows of upright cylindrical cans in side by side relation, an oblong cardboard blank having spaced, parallel folding creases extending transversely thereacross relative to the length of said blank, said blank being folded along said creases to form an open ended carton having a pair of opposed vertical side walls extending across the oppositely outwardly facing sides of said rows and a pair of opposed end walls extending across the opposite ends of said cans, one of said end walls being the two end portions of said blank each extending horizontally over one only of said rows of cans, a terminal end section integral with at

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least one of said end portions extending vertically between said rows of cans in opposed relation to the cans of the row of cans below said one of said end portions, means for holding said blank tightly about said rows of cans comprising a flat horizontally extending and generally horizontally disposed tab projecting from the other end portion of said two than the one having said end section, said tab being generally T-shape having a leg integral with said other end portion at one end thereof and a cross head at the other end of said leg, said leg extending across the upper edge of said terminal end section and said head being disposed between said one end portion and the ends of the row of cans below said one end portion and having horizontally directed edges in substantially opposed relation to said terminal end section whereby tension placed on said tab in a direction for separating said end portions will be transmitted to the said terminal end section one side of which is opposed to said horizontally directed edges of the head of said tab, a terminal end section integral with said other end portion extending between said rows of cans in abutting relation to said first mentioned terminal end section, a

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pair of tabs on said one end portion coplanar therewith extending across the upper edge of the terminal end section on said other end portion and below the said other end portion in engagement with the latter, and openings formed in said last mentioned terminal end section at the juncture between the latter and said other end portion through which said pair of tabs extend, the width of each tab in direction transversely of said blank being substantially equal to the width of each of said openings in the same direction thereby holding said end sections against relative movement transversely of said blank.

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