April 21, 1964 A. J. WEISS 3,129,843

CARTON

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FIG. 1

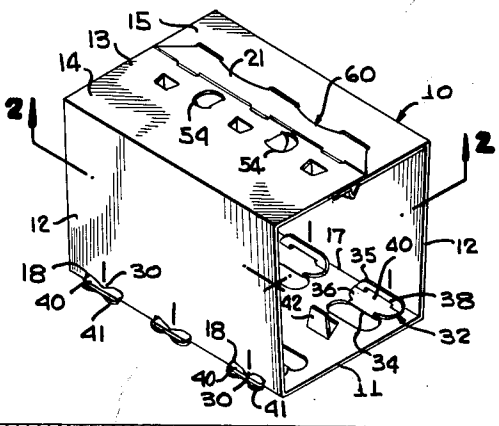
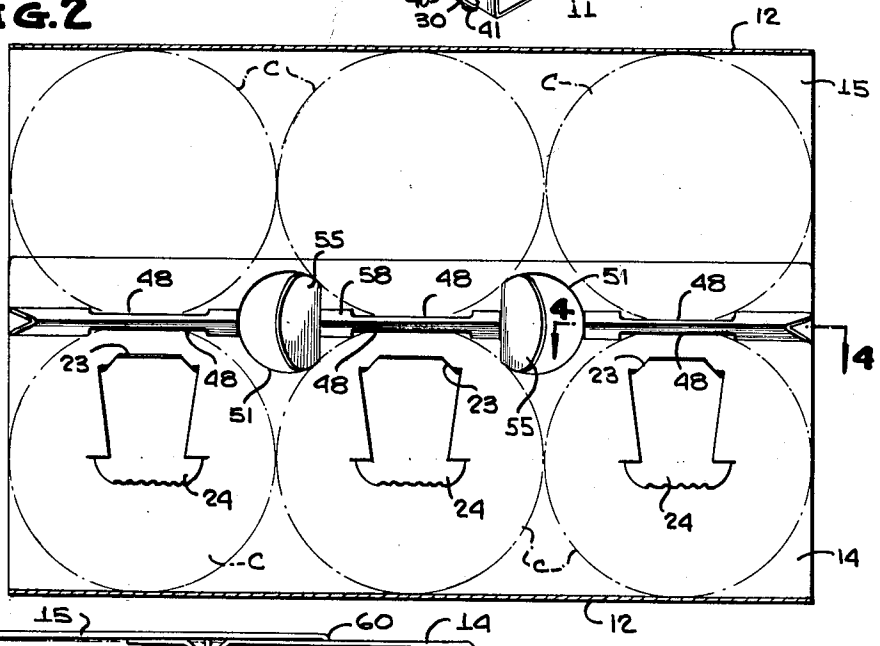


FIG. 2



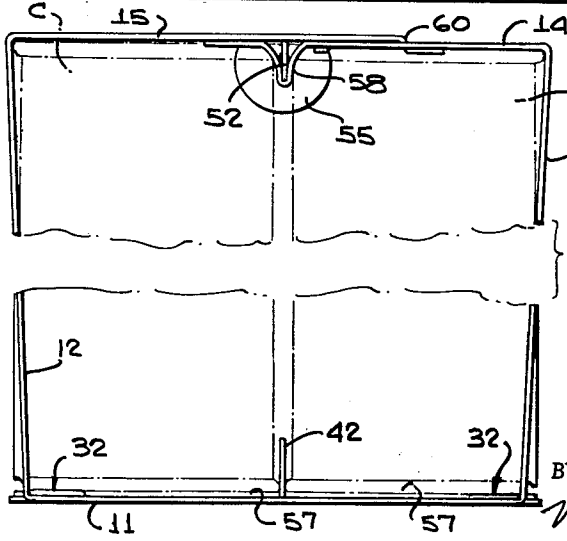


FIG. 3

INVENTOR
ARTHUR J. WEISS

BY Mason, Porter, Miller & Stewart
ATTORNEYS

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FIG.4

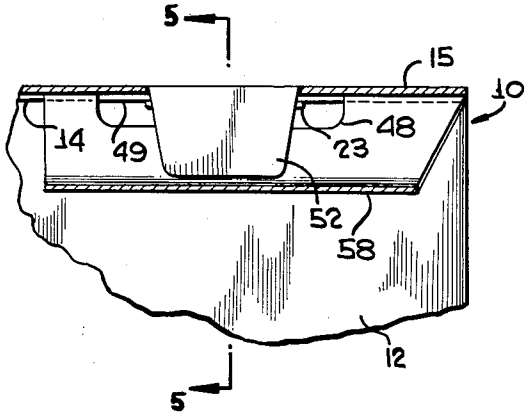


FIG.5

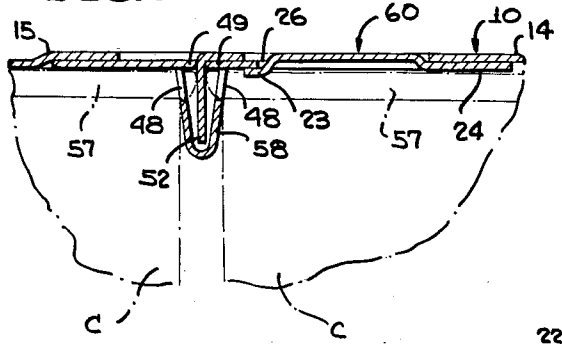
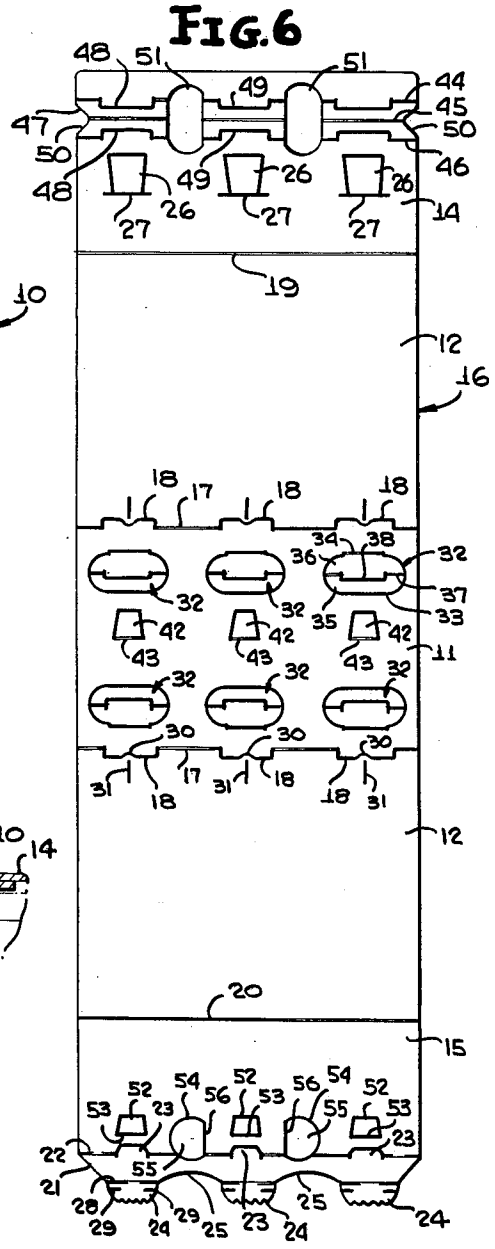


FIG.6



INVENTOR

ARTHUR J. WEISS

BY Mason, Porter, Diller & Stewart

ATTORNEYS

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3,129,843
CARTON

Arthur J. Weiss, Bergenfield, N.J., assignor to Continental Can Company, Inc., New York, N.Y., a corporation of New York

Filed May 9, 1963, Ser. No. 279,169
16 Claims. (Cl. 220—112)

This invention relates in general to new and useful improvements in container packages and more particularly to a novel carton of the wrap-around type and the blank from which the carton is formed.

This invention particularly relates to a carton wherein one of the walls which opposes the ends of containers disposed therein is formed of two panels having overlapping portions and wherein one of the panels has a keel or rib extending therefrom in between two rows of containers disposed within the carton, and the other of the panels is provided with a stabilizing tab disposed within the confines of the keel.

Another object of this invention is to provide a novel carton for receiving a plurality of cans or like containers having projections at at least one end thereof, the carton being of the wrap-around type and including one wall defined by a pair of closure panels secured together, an innermost one of the closure panels being provided with an inwardly projecting keel disposed between the ends of the containers intermediate the two rows thereof, the keel being provided with suitable notches or cutouts for receiving the projections of the containers whereby interlocking of the containers with the keel is accomplished, and the outermost one of the closure panels being provided with a stabilizing tab which is received within the keel.

Another object of this invention is to provide a carton in accordance with the foregoing, wherein the stabilizing tab is in the form of a plurality of individual tabs and each tab is generally centered with respect to the notches or cutouts in the keel.

Yet another object of this invention is to provide a novel carton of the wrap-around type particularly adapted for carrying cans disposed in rows, the carton including two closure panels which have overlapping portions and which closure panels are secured together, the closure panels combining to define a top wall of the carton and a lowermost of the closure panels being provided with a centrally located depending keel received between and interlocked with the upper end portions of the containers of the two rows, and a plurality of stabilizing tabs spaced along the keel and aligned with the openings for engagement by the cans, the upper one of the closure panels being provided with a plurality of finger receiving openings which are aligned with like openings in the keel, whereby a package including the carton and a plurality of cans may be lifted by placing one's fingers through the openings with a majority of the weight of the cans being directly transferred through the keel to the carrier's fingers.

A further object of this invention is to provide a novel carton of the wrap-around type for the packaging of a plurality of cans disposed in two rows, the carton including a keel for interlocking engagement with the two rows of cans, and there being associated with the keel stabilizing tabs projecting into the interior of the keel, the carton being of a generally conventional type whereby the carton may be automatically applied to cans utilizing existing equipment particularly modified for forming the keel and placing the stabilizing tabs therein.

A still further object of this invention is to provide a novel blank for forming a carton of the wrap-around type, the blank being generally rectangular in outline and having transverse fold lines dividing the same into

a central panel, two side panels and two closure panels, one of the closure panels being provided with a keel forming portion defined by three transverse fold lines, and the other closure panel being provided with a locking flap which carries catches and tongues for interlocking engagement within lockings openings formed in the one closure panel.

Another object of this invention is to provide a carton blank in accordance with the foregoing wherein the central panel is provided with means for interlocking engagement with opposite ends of containers from the ends engaged by the keel.

With the above, and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claims and the several views illustrated in the accompanying drawings:

In the drawings:

FIGURE 1 is a perspective view of the carton and shows the general details thereof.

FIGURE 2 is an enlarged horizontal sectional view taken generally along the line 2—2 of FIGURE 1 and shows the details of construction of the top wall of the carton and the relationship thereof with respect to cans disposed within the carton, the cans being shown by phantom lines.

FIGURE 3 is an end view of the carton of FIGURE 1 on a larger scale with an intermediate portion of the carton and cans being broken away.

FIGURE 4 is an enlarged fragmentary vertical sectional view taken longitudinally through the carton along the line 4—4 of FIGURE 2 and shows the specific details of construction of a portion of the keel and the associated stabilizing tab.

FIGURE 5 is an enlarged fragmentary transverse vertical sectional view taken generally along the line 5—5 of FIGURE 4 and shows further the details of the keel, the stabilizing tab and the means interlocking together the two closure panels forming the top wall of the carton.

FIGURE 6 is an enlarged plan view of a blank from which the carton is formed.

Referring now to the drawings in detail, it will be seen that there is illustrated in FIGURE 1 a wrap-around carton formed in accordance with this invention, the carton being generally referred to by the numeral **10**. The carton is of the open ended sleeve type and includes a bottom panel **11** having extending upwardly therefrom along opposite edges thereof side walls or panels **12**. The carton **10** also includes a top wall **13** which is formed by a pair of closure panels **14** and **15**. Since the construction of the carton **10** may be best understood by reference to the blank from which it is formed, the blank will be described in detail at this time.

Referring now to FIGURE 6 in particular, it will be seen that there is illustrated a carton blank which is generally referred to by the numeral **16**. The carton blank is formed of an elongated substantially rectangular sheet of paperboard, heavy paper, plastic material or other suitable flexible and foldable sheet material. It will be seen that the bottom panel **11** is centrally located along the length of the blank **16** and may be considered a central panel. The side panels **12** are disposed on opposite sides of the central panel **11**, and the closure panel **14** is connected to one of the side panels while the closure panel **15** is connected to the other of the side panels.

The central panel **11** is separated from the side panels by means of interrupted, transversely extending fold lines **17**, each fold line **17** being interrupted by a plurality of chime-cuts **18**. Each of the fold lines **17** has incorporated therein a chime-cut **18** for each can in the

rows of cans for which the carton 10 is intended. The details of the chime-cuts 18 will be set forth hereinafter.

The closure panel 14 is separated from its associated side panel 12 by means of a transverse fold line 19. A similar fold line 20 separates the closure panel 15 from its associated side panel 12. The closure panel 15 is provided with a locking flap 21 which is connected thereto along an interrupted transversely extending fold line 22. The blank 16 is provided with a plurality of C-shaped cuts which extend primarily in the closure panel 15 and which define pivotal catches 23 which are utilized in the locking of the closure panel 15 to the closure panel 14 in a manner to be described hereinafter. The locking flap 21 has a plurality of locking tongues 24 extending longitudinally therefrom in transversely spaced relation. It is to be noted that the locking flap 21 is recessed, as at 25, by the adjacent tongues 24.

In order to cooperate with the locking flap 21 and the pivotal catches 23 and the tongues 24 carried thereby, the closure panel 14 is provided with a plurality of locking openings 26. Each opening 26 is generally trapezoidal in outline and has a narrow side disposed adjacent to and parallel the fold line 19. The closure panel 14 is provided with a cut line 27 which extends along the narrow side of each opening 26 so as to provide for the interlocking of the tongues 24 with the closure panel 14. To this end, each tongue 24, which is hingedly connected to the locking flap 21 along a fold line 28, is provided with a pair of transversely aligned cuts 29.

Referring once again to the chime-cuts 18, it will be seen that each chime-cut 18 is C-shaped in outline, but is so configurated as to define a small locking tab 30. Also, each of the side panels 12 is provided with a longitudinal cut line 31 which is centered relative to the locking tab 30 and which extends substantially from the locking tab 30.

For each of the chime-cuts 18 there is a cushion tab 32. All of the cushion tabs 32 are identical, except for being left and right, and accordingly, only one of the cushion tabs 32 will be described in detail here. Each cushion tab 32 is generally oval in outline and is defined by a C-shaped cut 33 and a fold line 34 which extends between the ends of the C-shaped cut 33. The fold line 34 is disposed parallel to the fold line 17. Each cushion tab 32 is divided into two halves 35 and 36 by the combination of an interrupted fold line 37, which extends parallel to the fold line 34, and a C-shaped cut or slit 38 which opposes the chime-cut 18. The half 36 of the cushion tab 32 is directly connected to the associated portion of the central panel 11 along the fold line 34 while the half 35 of the cushion tab 32 is carried by the cushion tab half 36.

Referring now to FIGURE 1 in particular, it will be seen that each cushion tab 32 is reversely folded along the fold line 34 thereof so that the cushion tab half 36 directly overlies the central or bottom panel 11 while the cushion tab half 35 extends vertically along the associated side panel 12. It is also to be noted that the cut line 38 is aligned with the chime-cut 18 and a projecting tab 40 resulting from the cut line 38 overlies a tab 41 which results from the associated chime-cut 18. The tab 30 defined by the chime-cut 18 engages and holds the tab 40 in overlying relation to the tab 41 so as to maintain the cushion tab 32 in the position shown in FIGURE 1 during the placement of the carton blank 16 over a plurality of cans.

The central panel 11 is also provided with a plurality of trapezoidal cushion or spacer tabs 42 which are connected to the central panel 11 along fold lines 43. The fold lines 43 are disposed substantially along the fold line of the central panel 11. The closure panel 14 is provided with three fold lines 44, 45 and 46 which are disposed in parallel relation transversely of the carton blank 16. The fold lines 44 and 46 define the general boundaries of a keel forming portion 47 and each of the fold lines 44 and 45 is of an interrupted construction.

Each fold line 44 and 46 is interrupted by a plurality of C-shaped cuts 48 which are disposed in back-to-back relation and which are spaced in accordance with the spacing of cans within the carton 10. The C-shaped cuts 48 define tabs or flaps 49.

The ends of the keel forming portion 47 are recessed as at 50. Further, the keel forming portion 47 is interrupted by a pair of generally oval cutouts 51 which extend transversely of the fold lines 44, 45 and 46 and project into adjacent portions of the closure panel 14. The purpose of the cutouts or openings 51 will be described hereinafter.

The closure panel 15 is provided with a plurality of stabilizing tabs 52 which are hingedly connected to the closure panel 15 along fold lines 53 which are in transverse alignment. The fold lines 53 are disposed along the center line of the top wall 13 of the resultant carton 10. At this time it is also pointed out that the fold line 45 is disposed along the center of the top wall 13 of the resultant carton.

The closure panel 15 is also provided with a pair of finger receiving openings 54 which define flaps 55 connected to the closure panel 15 along fold lines 56.

When the carton blank 16 is applied to a plurality of cans C, the center panel 11 is applied first with the result that the spacing tabs 42 pass between the ends of the cans C and are engaged by opposed chimes 57 at the ends of the cans. At the same time, the outer portions of the chimes pass through the C-shaped cuts 38 of the cushion tabs 32 and the chime-cuts 18. Thus, the lower ends of the cans C are interlocked with the side panels 12 and the bottom panel 11. The cushion tab 32 strengthens the intersections of the side panels with the bottom panel 11 and prevents tearing thereof along the fold lines 17.

Reference is now made to FIGURES 4 and 5 in particular wherein it will be seen that the keel forming portion 47 has been folded along the fold lines 44, 45 and 46 to define a generally V-shaped keel 58 which extends into the interior of the carton 10 between the ends of the cans. The cutouts 48 provide clearance for the chimes 57 of the cans C and thus the cans C are interlocked with the keel 58. At the same time, when the keel 58 is formed, the tabs 49 remain in the plane of the closure panel 14 and bear against the ends of the cans, as is clearly shown in FIGURE 5.

The keel 58 is stabilized by the stabilizing tabs 52 which project into the interior of the keel 58 in alignment with the cutouts 48. As is clearly shown in FIGURE 5, the stabilizing tabs 52 are engaged by the chimes 57 of the cans, which chimes project through the cutouts 48.

After the keel 58 has been formed and the stabilizing tabs 52 inserted thereinto, the closure panels 14 and 15 are locked together by engaging the pivotal catches 23 into the wide ends of the openings 26 and then passing the tongues 24 through the slits at the narrow ends of the openings 26. The resultant interlock between the closure panel 14 and the closure panel 15 is clearly shown in FIGURE 5 and is generally referred to by the numeral 60.

Reference is now made to FIGURE 2 in particular wherein it will be seen that when it is desired to carry a package comprising the carton 10 and a plurality of cans C, for example the six cans shown in FIGURE 2, the flaps 55 are depressed so as to open the finger openings 54. The flaps 55 are brought into engagement with the ends of a central portion of the keel 58 and when one lifts the package formed of the carton 10 and the cans C, pressure is exerted on the ends of the keel central section through the flaps 55 and the keel central section serves to prevent the collapsing and tearing of the central portion of the top wall 13.

It is to be understood that the upper ends of the cans C are interlocked with the keel 58. Thus, it will be readily apparent that when the carton 10 is lifted by its top wall, the cans C will be at least in part suspended from the keel 58 and portions of the weights of the cans will be directly transferred through the keel 58 to the hand of the

person carrying the carton. Thus, the previous customary strain on the interlock **60** is greatly reduced. At the same time, the previous strain on the side panels **12** and the fold lines connecting the same to the remainder of the carton is greatly reduced.

The stabilizing tabs **52** serve the dual function of stabilizing the keel **58** and functioning as spacer means for the chimes **57** of the cans C. Thus the provision of the stabilizing tabs **52** is a very desirable feature.

Although only a single preferred embodiment of the invention has been specifically illustrated and described herein, it is to be understood that minor modifications may be made in the carton and blank disclosed herein within the spirit and scope of the invention, as defined in the appended claims.

I claim:

1. An open ended carton for containers, said carton having a pair of side walls and a second pair of walls for engaging opposite end portions of containers disposed in two rows, one wall of said second pair of walls having overlapped secured together portions, an inner one of said overlapped portions being inwardly folded to define an inwardly projecting keel for interlocking engagement by containers, and the outer one of said overlapped portions having a stabilizing tab projecting into said keel.

2. An open ended carton for containers, said carton having a pair of side walls and a second pair of walls for engaging opposite end portions of containers disposed in two rows, one wall of said second pair of walls having overlapped secured together portions, an inner one of said overlapped portions being inwardly folded to define an inwardly projecting keel for interlocking engagement by containers, and the outer one of said overlapped portions having a stabilizing tab projecting into said keel, said keel being V-shaped in section and having an apex, and said stabilizing tab opposing said keel at said apex.

3. An open ended carton for containers, said carton having a pair of side walls and a second pair of walls for engaging opposite end portions of containers disposed in two rows, one wall of said second pair of walls having overlapped secured together portions, an inner one of said overlapped portions being inwardly folded to define an inwardly projecting keel for interlocking engagement by containers, and the outer one of said overlapped portions having a stabilizing tab projecting into said keel, said keel being provided with spaced pairs of container receiving openings for interlockingly receiving container end portions.

4. An open ended carton for containers, said carton having a pair of side walls and a second pair of walls for engaging opposite end portions of containers disposed in two rows, one wall of said second pair of walls having overlapped secured together portions, an inner one of said overlapped portions being inwardly folded to define an inwardly projecting keel for interlocking engagement by containers, and the outer one of said overlapped portions having a stabilizing tab projecting into said keel, said keel being provided with spaced pairs of container receiving openings for interlockingly receiving container end portions, and said stabilizing tab being engageable by containers through said container receiving openings.

5. An open ended carton for containers, said carton having a pair of side walls and a second pair of walls for engaging opposite end portions of containers disposed in two rows, one wall of said second pair of walls having overlapped secured together portions, an inner one of said overlapped portions being inwardly folded to define an inwardly projecting keel for interlocking engagement by containers, and the outer one of said overlapped portions having a stabilizing tab projecting into said keel, said keel being provided with spaced pairs of container receiving openings for interlockingly receiving container end portions, said stabilizing tab being of an interrupted construction and including spaced portions aligned with said container receiving openings.

6. The carton of claim 1 wherein said overlapped portions are secured together by a tongue and opening type of connection.

7. The carton of claim 3 wherein said one wall is a top wall, and said overlapped portions have finger openings therethrough whereby containers with the carton are directly suspended from said keel.

8. The carton of claim 3 wherein said one wall is a top wall, and said overlapped portions have finger openings therethrough whereby containers with the carton are directly suspended from said keel, said openings being through said keel and said outer overlapped portion having tabs passable through said keel and into endwise engagement with a central portion of said keel.

9. An open ended carton for containers, said carton having a pair of side walls and a second pair of walls for engaging opposite end portions of containers disposed in two rows, one wall of said second pair of walls having overlapped secured together portions, an inner one of said overlapped portions being inwardly folded to define an inwardly projecting keel for interlocking engagement by containers, the outer one of said overlapped portions having a stabilizing tab projecting into said keel, and means on the other wall of said pair of walls for interlocking engagement with opposite ends of containers.

10. An open ended carton for containers, said carton having a pair of side walls and a second pair of walls for engaging opposite end portions of containers disposed in two rows, one wall of said second pair of walls having overlapped secured together portions, an inner one of said overlapped portions being inwardly folded to define an inwardly projecting keel for interlocking engagement by containers, the outer one of said overlapped portions having a stabilizing tab projecting into said keel, and means on the other wall of said pair of walls for interlocking engagement with opposite ends of containers, said last mentioned means including tabs opposing said stabilizing tab and aligned therewith.

11. An open ended carton for containers, said carton having a pair of side walls and a second pair of walls for engaging opposite end portions of containers disposed in two rows, one wall of said second pair of walls having overlapped secured together portions, an inner one of said overlapped portions being inwardly folded to define an inwardly projecting keel for interlocking engagement by containers, and the outer one of said overlapped portions having a stabilizing tab projecting into said keel, said keel being V-shaped in section and having an apex, and said stabilizing tab opposing said keel at said apex, said keel being provided with spaced pairs of container receiving openings for interlockingly receiving container end portions.

12. An open ended carton for containers, said carton having a pair of side walls and a second pair of walls for engaging opposite end portions of containers disposed in two rows, one wall of said second pair of walls having overlapped secured together portions, an inner one of said overlapped portions being inwardly folded to define an inwardly projecting keel for interlocking engagement by containers, and the outer one of said overlapped portions having a stabilizing tab projecting into said keel, said keel being V-shaped in section and having an apex, and said stabilizing tab opposing said keel at said apex, said keel being provided with spaced pairs of container receiving openings for interlockingly receiving container end portions, and said stabilizing tab being engageable by containers through said container receiving openings.

13. A carton blank comprising an elongated substantially rectangular sheet, a plurality of fold lines extending transversely of said sheet dividing said blank into a central panel, a pair of side panels, and a pair of closure panels, said closure panels having a cooperating tongue and openings for locking together said closure

panels, one of said closure panels having a plurality of fold lines extending thereacross transversely of said sheet and defining a keel forming portion, and a keel stabilizing tab in the other of said closure panels for reception in a keel formed from said keel forming portion.

14. A carton blank comprising an elongated substantially rectangular sheet, a plurality of fold lines extending transversely of said sheet dividing said blank into a central panel, a pair of side panels, and a pair of closure panels, said closure panels having a cooperating tongue and openings for locking together said closure panels, one of said closure panels having a plurality of fold lines extending thereacross transversely of said sheet and defining a keel forming portion, and a keel stabilizing tab in the other of said closure panels for reception in a keel formed from said keel forming portion, said keel forming portion having pairs of openings formed in opposite edges thereof and spaced transversely of said sheet for the reception of container end portions.

15. A carton blank comprising an elongated substantially rectangular sheet, a plurality of fold lines extending transversely of said sheet dividing said blank into a central panel, a pair of side panels, and a pair of closure panels, said closure panels having a cooperating tongue and openings for locking together said closure panels, one of said closure panels having a plurality of fold lines extending thereacross transversely of said sheet and defining a keel forming portion, a keel stabilizing tab in the other of said closure panels for reception in a keel formed from said keel forming portion, a locking flap hingedly connected to said other closure panel and having catches and tongues connected thereto, and locking openings in said one closure panel for receiving said catches and tongues.

16. A carton blank comprising an elongated substantially rectangular sheet, a plurality of fold lines extending transversely of said sheet dividing said blank into a central panel, a pair of side panels, and a pair of closure panels, said closure panels having a cooperating tongue and openings for locking together said closure panels, one of said closure panels having a plurality of fold lines extending thereacross transversely of said sheet and defining a keel forming portion, a keel stabilizing tab in the other of said closure panels for reception in a keel formed from said keel forming portion, and can retaining means carried by said central panel.

References Cited in the file of this patent

UNITED STATES PATENTS

2,839,235	Chidsey	June 17, 1958
3,120,903	Cote	Feb. 11, 1964