Dec. 14, 1965 A. J. WEISS 3,223,308

CAN CARRIER WITH REINFORCING MEANS

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FIG. 1

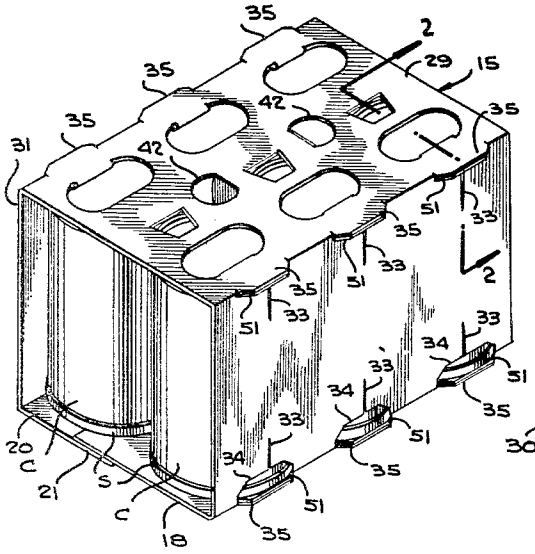


FIG. 2

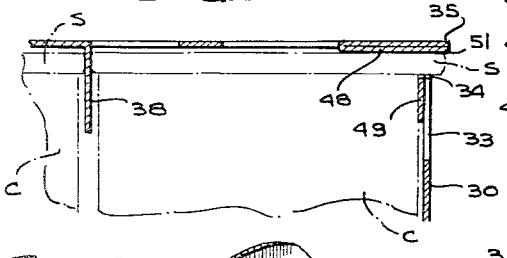


FIG. 3

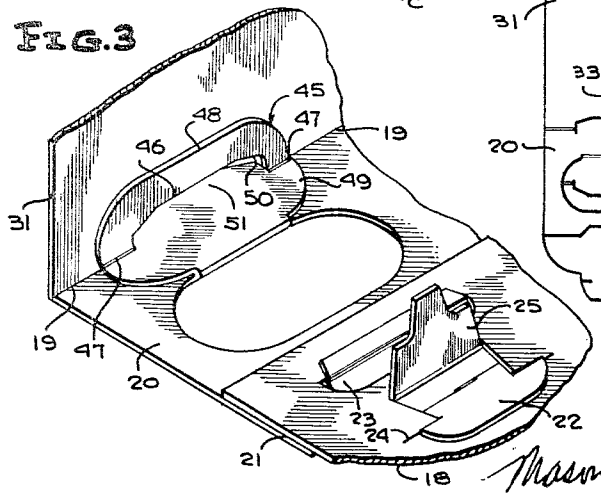
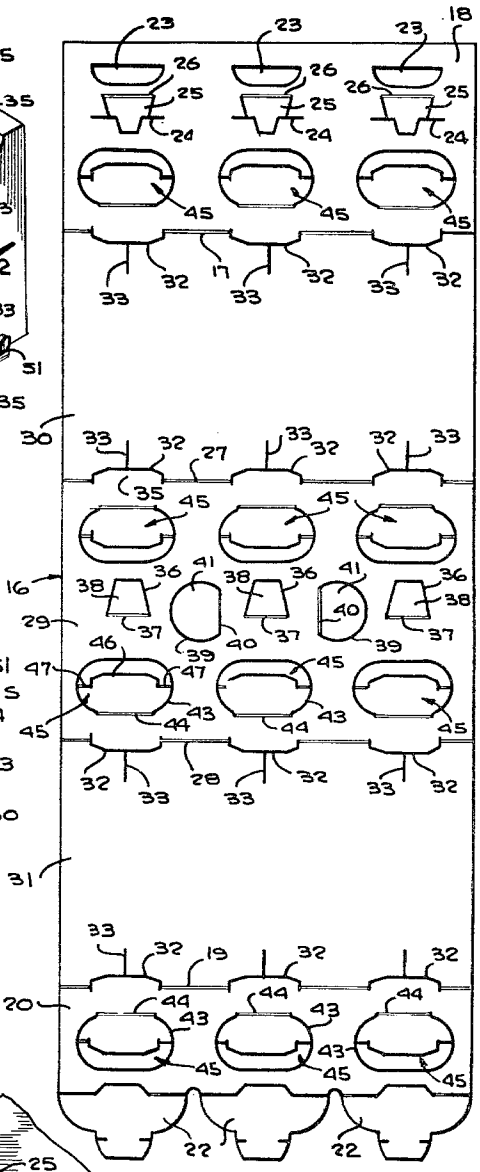


FIG. 4



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FIG. 5

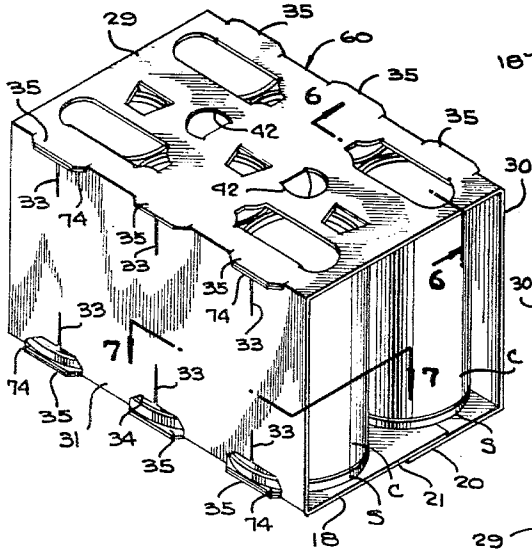


FIG. 6

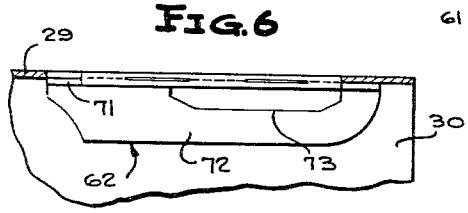


FIG. 7

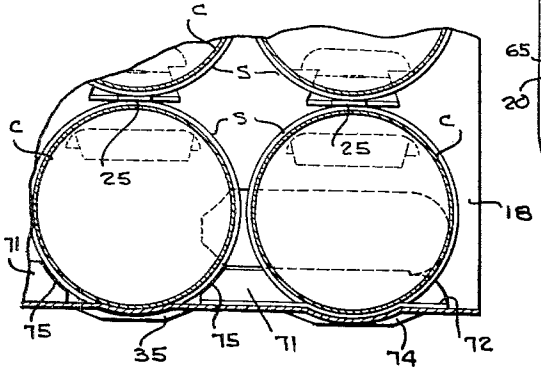
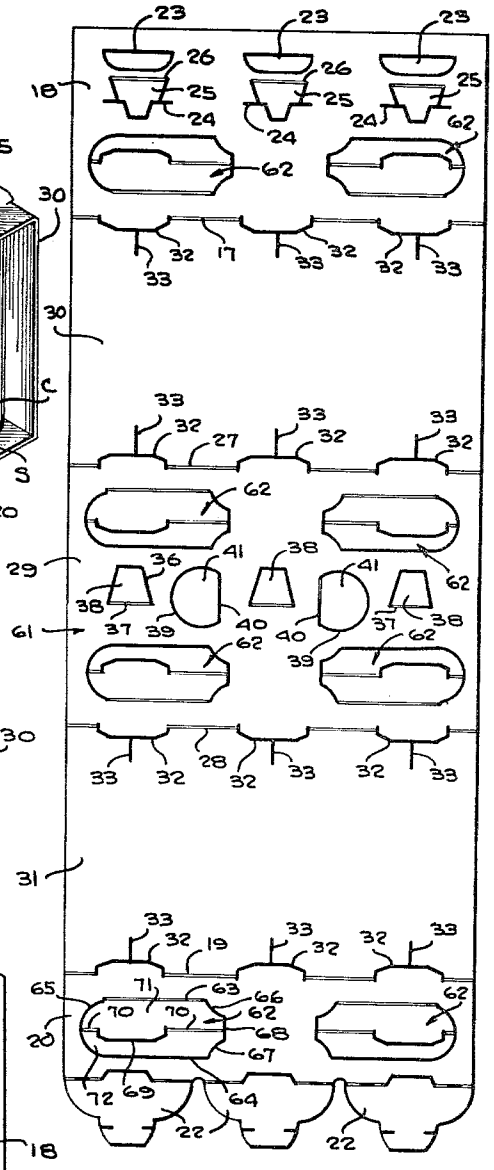


FIG. 8



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FIG. 9

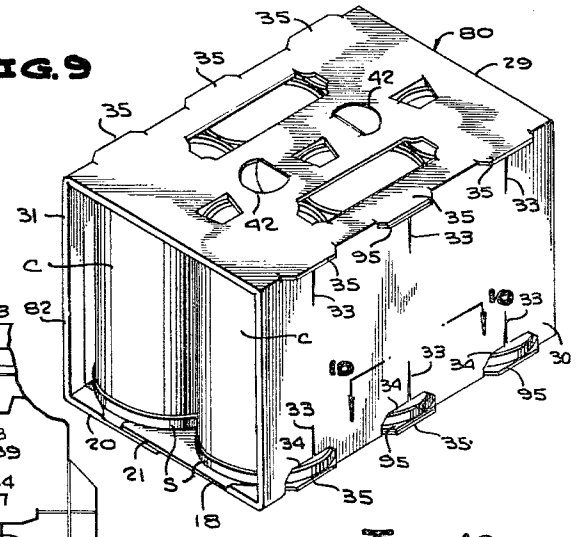


FIG. 12

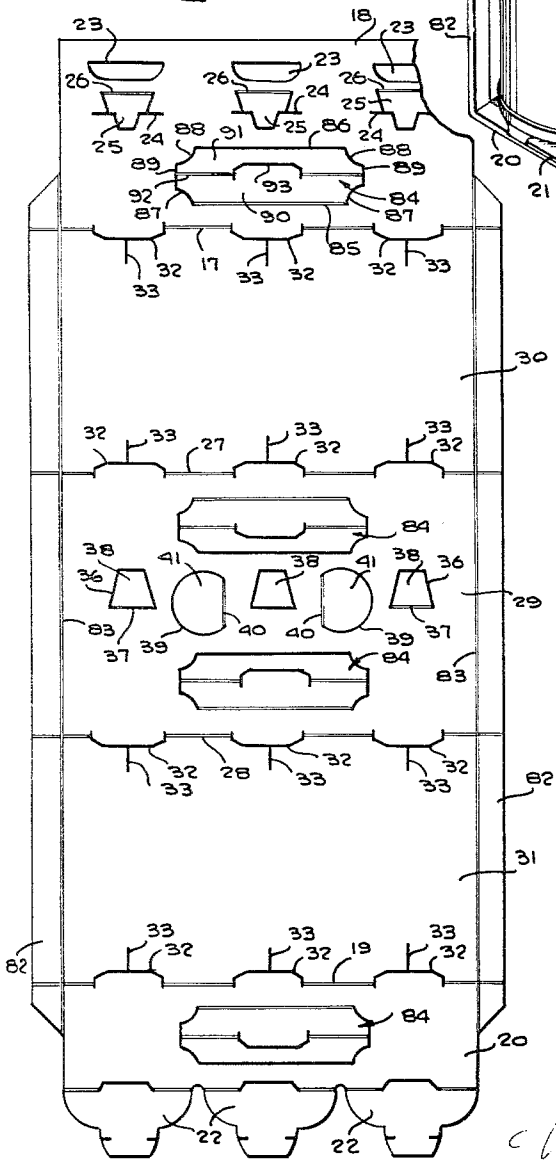


FIG. 10

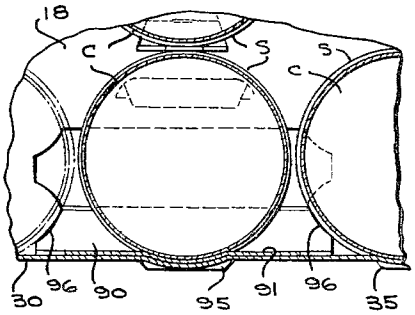
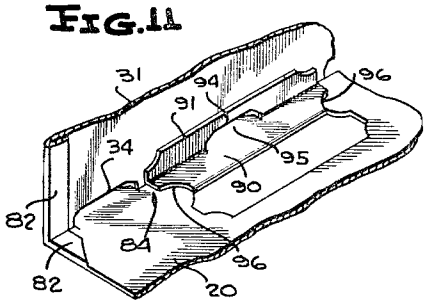


FIG. 11



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FIG. 13

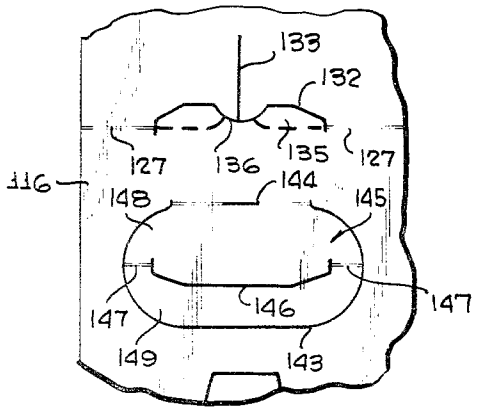


FIG. 14

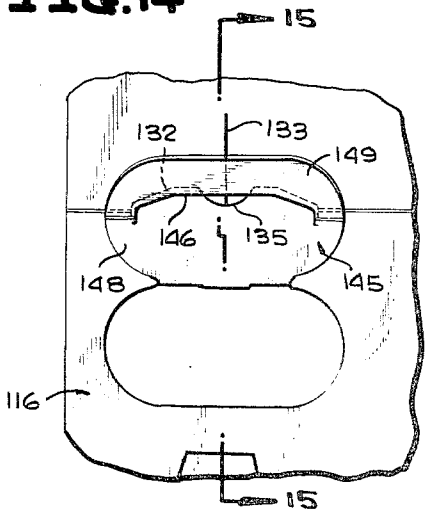


FIG. 16

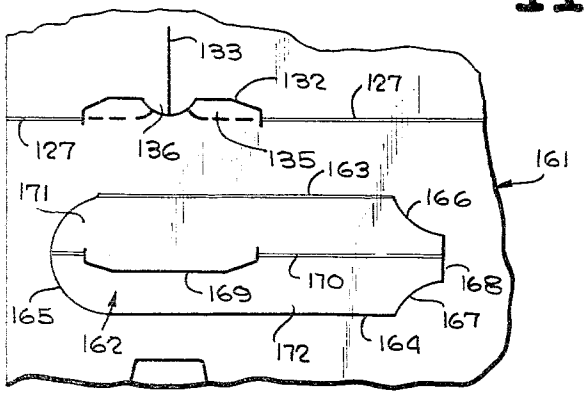


FIG. 15

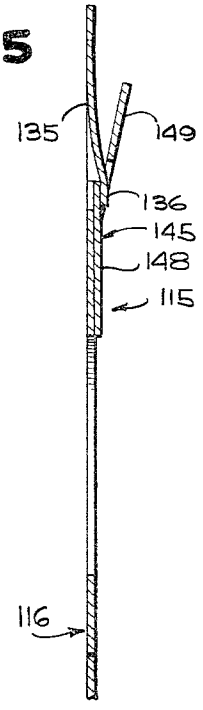
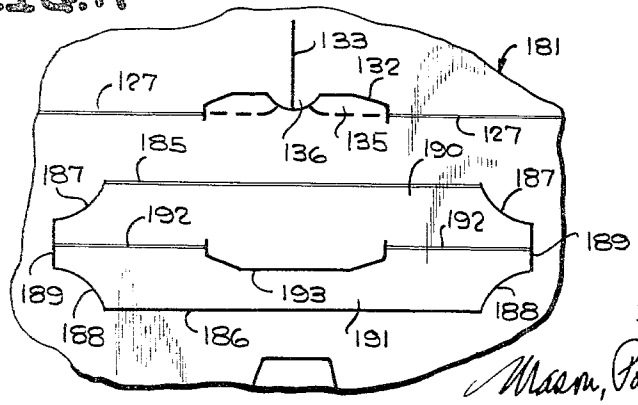


FIG. 17



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3,223,308

CAN CARRIER WITH REINFORCING MEANS

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Filed Sept. 27, 1962, Ser. No. 226,704
12 Claims. (Cl. 229—40)

This application is a continuation-in-part of my application, Serial No. 91,529, entitled Can Carrier With Reinforcing Means, filed February 21, 1961, and now Patent No. 3,128,034, granted April 7, 1964.

This invention relates in general to new and useful improvements in the construction of can carriers, and more specifically relates to a novel can carrier of the wrap-around paperboard type.

At the present time, there are in use can carriers of the wrap-around paperboard type wherein the side walls of the can carrier are provided with openings along the fold lines along which the side walls are connected to top and bottom walls of the can carrier, the openings being for the purpose of receiving the seams of cans to locate the cans within the can carrier, and the material struck from the side walls in the formation of the openings therein remaining integral with the top and bottom walls and projecting outwardly beyond the side walls to provide supports for the seams of the cans. Since the openings are disposed along the fold lines of the can carrier, the can carrier is subject to rupture along the fold lines due to the outward directed pressure on the fold lines by the seams of the cans. As a result, in instances rupture occurs along the fold lines to the extent that the endmost cans in particular are dislodged accidentally from the can carrier.

In view of the foregoing, it is the primary object of this invention to provide a novel can carrier of the wrap-around paperboard type wherein the openings in side walls thereof for receiving the seams of the cans are provided with suitable reinforcing means to prevent the accidental rupture of the can carrier along the fold lines thereof.

Another object of this invention is to provide a conventional type of can carrier with flaps struck from the walls thereof and folded into a partial overlying relation to the side, top and bottom walls of the can carrier surrounding the openings formed in the side walls of the can carrier so as to reinforce the fold lines of the can carrier at opsite ends of the openings formed in the side walls thereof.

Still another object of this invention is to provide in a conventional can carrier of the paperboard type, flaps which are struck from the top and bottom walls of the can carrier and folded towards the side walls of the can carrier, the flaps being provided with fold lines which, when the flaps are in position, are disposed coextensive with the fold lines of the can carrier and which flaps are aligned with openings in the side walls of the can carrier so that the flaps engage the seams of the can carrier and serve to reinforce the can carrier in the areas of the openings in the side walls.

A further object of this invention is to provide a novel blank for forming a can carrier, the blank having portions thereof which are cut out and are ready to be struck therefrom to define flaps which will serve as reinforcements for openings formed in the side walls of the can carrier which is formed from the blank.

Still another object of the invention is to provide a can carrier of the customary warp-around paperboard type with reinforcing flaps which are struck from the top and bottom walls thereof, the reinforcing flaps being foldable out of the planes of the top and bottom walls to positions generally surrounding the openings formed in the side walls of the can carrier to serve as reinforcements for

the can carrier in the vicinity of the side wall openings, the flaps being disposed in alignment with only the endmost ones of the side wall openings, and each of the flaps being provided with an edge portion for engaging the seam of a central can to restrict the outward movement of the central can and thereby resist the tearing force of a central can on the can carrier along a fold line thereof.

A still further object of this invention is to provide a novel can carrier of the customary wrap-around paperboard type wherein the can carrier is provided with suitable reinforcing means to prevent the rupture of the can carrier along the fold lines thereof, the can carrier being of the type having openings in the side walls thereof for the reception of seams of cans, and the reinforcing means being in the form of a centrally located flap aligned with each central opening of the can carrier, and the flap being provided with edge portions for engaging the seams of next adjacent cans to prevent inward movement of the cans, and the can carrier being further provided with edge flaps for engaging the seams of the outermost cans to resist outward movement thereof, whereby the can carrier is reinforced against tearing along the fold lines thereof due to pressures exerted thereon by cans disposed therein and projecting through the side wall openings.

Yet another object of this invention is to provide in a novel can carrier of the wrap-around paperboard type wherein the openings in side walls thereof for receiving the seams or chimes of cans are provided with suitable reinforcing means in the form of cushion tabs to prevent the accidental rupture of the can carrier along the fold line, the can carrier including projections on the side walls at the openings therein for overlying portions of the cushion tabs to initially retain the cushion tabs in overlying relation to the openings in the side walls prior to the wrapping of the carrier around a plurality of cans.

Still another object of this invention is to provide a novel can carrier which has chime cuts formed in the side walls thereof for the reception of chimes of cans and wherein top and bottom walls of the can carrier are provided with cushion tabs for overlying the chime cuts and reinforcing the fold lines between the side walls and the top and bottom walls, and the side walls being provided with ears for interlocking with the cushion tabs to retain the cushion tabs in folded positions at the time the can carrier is being applied to a set of cans.

Another object of this invention is to provide a can carrier of the wrap-around type with cushion tabs for overlying chime cuts formed in side walls thereof and wherein the side walls are provided with ears defined by the chime cuts for interlocking with the cushion tabs to retain the cushion tabs in position during the application of the can carrier to a plurality of cans.

A still further object of this invention is to provide a novel can carrier blank having fold and cut lines therein defining means for receiving chimes of cans when the blank is folded to a carrier and cushion tabs for reinforcing the blank, the cushion tabs being of a nature wherein they may be readily swung from the plane of the blank to positions overlying adjacent portions of the blank and locked in such position prior to the application of the blank to a plurality of cans.

Still another object of this invention is to provide a novel can carrier of the wrap-around paperboard type which is provided with chime cuts in side walls thereof for receiving chimes of cans and cushion tabs which are suitable for overlying the chime cuts to reinforce the carrier and the cushion tabs being of a type which may be automatically interlocked in position for receiving cans by machinery which is part of a carrier applying machine.

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 drawing.

In the drawing:

FIGURE 1 is a perspective view of a can carrier formed in accordance with the invention, the can carrier having cans therein.

FIGURE 2 is an enlarged fragmentary vertical sectional view taken along the line **2—2** of FIGURE 1, and shows the specific construction of the can carrier including the reinforcing thereof, the cans therein being shown in phantom lines.

FIGURE 3 is an enlarged fragmentary perspective view of a portion of the bottom wall and side wall of of the can carrier with the cans removed and shows the specific details of the reinforcing which is the subject of this invention.

FIGURE 4 is a plan view of the blank from which the can carrier is formed.

FIGURE 5 is a perspective view of another form of can carrier and shows the same with cans therein.

FIGURE 6 is a fragmentary longitudinal vertical sectional view taken along the line **6—6** of FIGURE 5, and shows the specific details of the reinforcing for the can carrier, the cans being omitted for purposes of clarity.

FIGURE 7 is an enlarged fragmentary horizontal sectional view, taken along the line **7—7** of FIGURE 5, and shows further the details of the can carrier including the reinforcing therefor.

FIGURE 8 is a plan view of the blank from which the can carrier of FIGURE 5 is formed.

FIGURE 9 is a perspective view of still another form of can carrier having cans therein.

FIGURE 10 is an enlarged fragmentary horizontal sectional view, taken along the line **10—10** of FIGURE 9, and shows the specific details of the reinforcing for the can carrier.

FIGURE 11 is an enlarged fragmentary internal perspective view showing a portion of the bottom wall and a side wall of the can carrier of FIGURE 9, and the specific details of the reinforcing for the can carrier.

FIGURE 12 is a plan view of the blank from which the can carrier of FIGURE 9 is formed.

FIGURE 13 is an enlarged fragmentary plan view of a modified form of blank similar to that of FIGURE 4 wherein the side wall panels of the blank are provided with ears for interlocking with the flaps or cushion tabs to retain the same in position.

FIGURE 14 is an enlarged fragmentary plan view of the blank of FIGURE 13, with the cushion tabs folded and interlocked in place.

FIGURE 15 is an enlarged fragmentary sectional view taken along the line **15—15** of FIGURE 14, and shows the specific manner in which a cushion tab is locked in place.

FIGURE 16 is an enlarged fragmentary plan view of a blank which is a modification of the blank of FIGURE 8 incorporating the cushion tab locking means.

FIGURE 17 is an enlarged fragmentary plan view of a modified form of the blank of FIGURE 12, wherein the blank is provided with locking means for the cushion tabs thereof.

Reference is now made to the drawings in detail, wherein the specific features of embodiments of the invention are illustrated. In FIGURES 1 through 4, inclusive, there are illustrated the details of a can carrier, generally referred to by the numeral **15**. The can carrier **15** carries six conventional cans C which are provided at the opposite ends thereof with chimes or seams S. The details of the construction of the can carrier **15** are best understood by reference to the details of a blank from which the can carrier **15** is formed, the blank being generally referred to by the numeral **16**.

The blank **16** is best illustrated in FIGURE 4, and is generally of an elongated rectangular outline. For the most part, the blank **16** is of a conventional construction, but incorporates the novel details of the present invention. Accordingly, all of the specific details of the blank will not be specifically described here.

The blank **16** is provided with a first terminal fold line **17** which sets off at one end of the blank **16** a bottom forming panel **18**. A similar fold line **19** is disposed adjacent the opposite end of the blank **16** and sets off a terminal bottom forming panel **20**. The panels **18** and **20** combine to define a bottom wall **21** of the can carrier **15**. In order to connect together the bottom forming panels **18** and **20**, the panel **20** has projecting therefrom a plurality of locking tabs **22** which are hingedly connected to the edge of the panel **20** and which are engageable in openings **23** formed in the panel **18**. The locking tabs **22** also pass through slits **24** in the panel **18**, the slits **24** being formed in the outlining of tabs **25** which are hingedly connected to the panel **18** along fold lines **26**. The tabs **25** project upwardly from the bottom wall **21** for engagement between the cans of the two rows of cans C in the manner best illustrated in FIGURE 3.

The blank **16** is provided with a second set of transverse fold lines **27** and **28** which correspond to the fold lines **17** and **19**. The area of the blank **16** between the fold lines **27** and **28** is in the form of a top wall **29** of the can carrier **15** while the area of the blank between the fold lines **17** and **27** is in the form of a side wall **30** and the portion of the blank **16** between the fold lines **19** and **28** is in the form of a side wall **31**.

Each of the fold lines **17**, **19**, **27** and **28** is interrupted by a generally C-shaped cut **32** which is formed within the associated side wall **30**, **31**. A slit **33** intersects each of the C-shaped cuts **32** and extends along the respective side wall **30**, **31** in a direction lengthwise of the blank **16**. In the completed can carrier, each C-shaped cut **32** results in the formation of an opening **34** in the respective side walls **30**, **31**, and a projection **35** on either the bottom wall **21** or the top wall **29**. This is best shown in FIGURES 1 and 2. The purpose of the openings **34** is to permit the seams S of the cans C to project through the side walls **30**, **31** and to interlock the cans C with the can carrier **15** so as to prevent movement of the cans C relative to the can carrier **15**. The slits **33** provide for the outward expansion of the side walls **30**, **31** wherever necessary.

The top wall **29** of the blank **16** is provided with a plurality of cut lines **36** which, together with associated fold lines **37**, define tabs **38** which, in the formation of the can carrier **15**, depend into the interior of the can carrier **15** and extend between adjacent upper seams S of adjacent cans, as is best shown in FIGURE 2.

The top wall **29** of the blank **16** is also provided with a pair of oppositely facing, generally C-shaped cut lines **39** which, together with fold lines **40**, define push-outs **41** which may be pushed downwardly into the interior of the can carrier **15** to define finger-receiving openings **42** (FIGURE 1) whereby one's fingers may be placed through the top wall **29** of the can carrier **15** to facilitate the lifting and carrying of the filled can carrier **15**.

The foregoing features of the blank **16** and the can carrier **15** which is formed from the blank **16**, are known in other blank constructions invented by me. However, the can carrier **15** has a tendency to tear or rupture along the fold lines **17**, **19**, **27** and **28** due to the pressures exerted on the portions of these fold lines by the cams C therein. This pressure is not a static pressure, but is one which is developed during the carrying and handling of the filled can carriers **15**. The cans C, when the carriers **15** are moved, have a tendency to shaft relative to the can carrier **15**. This resistance against shifting is prevented only by the interlocking of the cans with respect to the can carrier **15**, with the result that the pressure is exerted on the can carrier **15** principally along the fold lines **17**, **19**, **27** and **28** with a tendency to rupture

the fold lines at the openings 34. The present invention has to do with the reinforcing of these fold lines.

The top wall 29 of the blank 16 is provided with a plurality of generally C-shaped cuts 43 which face respective ones of the C-shaped cuts 32. Each of the C-shaped cuts 43 terminates in a fold line 44 which is disposed parallel to a respective one of the fold lines 27 and 28. The bottom forming panels 18 and 20 are provided with like C-shaped cut 43 which terminate in fold lines 44 which are disposed parallel to the fold lines 17 and 19. Each C-shaped cut 43, together with each fold line 44, defines a flap, generally referred to by the numeral 45.

Each flap 45 is provided with a C-shaped cut 46 which is disposed in part concentric with its associated C-shaped cut 43. The ends of the C-shaped cut 46 terminate in fold lines 47 which, in turn, terminate at the C-shaped cut 43. Thus, each C-shaped cut 46 and the fold lines 44 associated therewith divides each flap 45 into two flap portions 48 and 49, as is best shown in FIGURE 3. The flap portion 49 is connected to the respective portion of the can carrier 15 while the flap portion 48 is carried by the flap portion 49.

Considering now FIGURE 3 in detail, it will be seen that when the flap 45 illustrated therein is folded to its can carrier reinforcing position, the fold lines 47 thereof are disposed coextensive with the fold line 19 in the illustration. The flap portion 49 overlies the bottom forming panel 20 and the flap portion 48 is disposed in opposed relation to the inner surface of the side wall 31. As a result of the C-shaped cut 46 in the flap 45, an opening 50 is formed in the flap portion 48, the opening 50 being aligned with a respective one of the openings 34. Also, a projection 51 is formed on the flap portion 49, which projection 51 projects through aligned openings 50 and 34, and overlies the associated projection 35, as is best shown in FIGURE 1. It is to be understood that the others of the flaps 45 are likewise so positioned with respect to the can carrier 15.

It will be readily apparent that when the flaps 45 are folded to the position of the flap illustrated in FIGURE 3, there is an interlocking between each flap and the can carrier 15 to retain the flap is place. Furthermore, the flaps 45 are held in place by the cans C after the can carrier 15 has been wrapped therearound in the conventional manner. Each flap 45 extends entirely about its associated opening 34 and provides a double thickness of material along its associated one of the fold lines 17, 19, 27 and 28. Therefore, the flaps 45 serve to suitably reinforce the can carrier 15. All of this is done without the requirement of additional material in the formation of the blank 16.

Reference is now made to FIGURE 5 in particular, wherein a can carrier, generally referred to by the numeral 60, is illustrated. The can carrier 60 holds six cans C, the cans C being of a conventional type, such as a conventional beer can, and having chimes or seams S at opposite ends thereof. The can carrier 60 is formed from a blank 61.

The blank 61 is illustrated in FIGURE 8, and is formed of a paper product, such as paperboard. The blank 61 has an elongated outline and the outline of the blank 61 is identical with that of the blank 16. Further, the basic details of the blank 61 are the same as those of the blank 16 and will therefore be identified by like numerals. Therefore, the can carrier 60 has a bottom wall 21 which is formed of overlapped and interlocked bottom wall forming panels 18 and 20, side walls 30 and 31, and a top wall 29.

The cam carrier 60 differs from the can carrier 15 in the means provided for reinforcing the same along the various fold lines between the top and bottom walls and the side walls. The top panel 29 and the bottom forming panels 18 and 20 are each provided with flaps, generally referred to by the numeral 62. Each flap 62 is bounded by a fold line 63 and a cut line 64 which are disposed in parallel relation and are parallel to the fold lines 17, 19, 27 and 28, with the fold lines 63 being disposed adjacent to the respective one of these fold lines. The outer ends of the fold lines 63 and the cuts 64 are connected together by a C-shaped cut 65. A concave cut 66 is disposed at the inner end of the fold line 63 and a similar concave cut 67 is disposed at the inner end of the cut 64. The adjacent portions of the cuts 66 and 67 are connected together by a cut line 68. Thus, each flap 62 may be folded out of the plane of its respective portion of the can carrier 60.

Each flap 62 is provided with a C-shaped cut 69 which is aligned with and opposes the associated one of the C-shaped cuts 32. The ends of the C-shaped cut 69 are connected to the ends of the flap 62 by an interrupted fold line 70.

It is to be noted that the flaps 62 are aligned only with the outermost ones of the openings 34. Thus, the flaps 62 serve only to directly reinforce the outermost openings 34. This is accomplished by folding each flap 62 so that a portion 71 thereof overlies or underlies its respective top or bottom wall of the can carrier 60, and a second portion 72 thereof is disposed in face-to-face relation with respect to the respective one of the side walls 30, 31. This is best shown in FIGURE 6, for example. In the folding of the flap 62 to define the two flap portions 71, an opening 73 is formed in the flap portion 72 in alignment with a respective one of the openings 34. In a like manner, a projection 74 is formed on the flap portion 71 in alignment with a respective one of the projections 35. The flap 74 extends through the aligned openings 34 and 73 and is aligned with its respective projection 35.

The flaps 62, being aligned with only the outermost ones of the openings 34, serve to directly reinforce the can body 62 in the vicinity of these outermost openings. However, the flaps 62 also serve to indirectly reinforce the can carrier 60 in the vicinity of the central openings 34.

In the formation of each flap 62, the cut 66 forms a curved edge 75 at the inner end of the flap portions 71. The position and curvature of this curved edge corresponds to the position and curvature of the seam S of an associated central can C, as is best shown in FIGURE 7. Since the two flaps 62 along each line of cans C combine to engage the seam S on opposite sides of the center can C, it will be apparent that the centermost cans are restrained against movement by the flaps 62. Thus, in effect, the can carrier 60 is reinforced in the vicinity of the center openings 34.

Reference is now made to FIGURES 9 through 12, inclusive, and to FIGURE 9 in particular, wherein there is illustrated another form of can carrier, generally referred to by the numeral 80. The can carrier 80 is very similar to the can carriers 15 and 60, but differs therefrom only in the means for reinforcing the same. The can carrier 80 is also intended for holding six cans C having chimes or seams S at the opposite ends thereof. The can carrier 80 is formed from a blank which is generally referred to by the numeral 81.

The basic construction of the blank 81 is the same as that of the blanks 16 and 61. Accordingly, only the differences between the blank 16 and blank 81 will be described in detail, and like parts of the two blanks will be provided with like numerals.

A noticeable difference between the blanks 16 and 81 is that the blank 81 is provided with a pair of extension strips 82 which extend along the opposite sides thereof and which overlap small portions of the bottom forming panels 18 and 20 and extend alongside the ends of the top wall 29 and the side walls 30 and 31. These strips 82 are connected to the main portion of the blank 81 along elongated fold lines 83. It is to be noted that the fold lines 17, 19, 27 and 28 extend to the outer edges of the blank 81, that is, these fold lines extend across the strips 82. In the forming of the carrier 80 from the blank 81,

the strips 32 are folded into overlying relation with the inner surface of the blank 81 and are adhesively secured thereto in a known manner.

The strips 82 form reinforcing for the can carrier 80 in a manner to be described in detail hereinafter. The can carrier 80 also has other reinforcing which is different from the reinforcing of the can carriers 15 and 60.

Each of the bottom forming panels 18 and 20 is provided with a single flap, generally referred to by the numeral 84, and the top panel 29 is provided with a pair of the flaps 84. Each flap 84 is aligned with a central one of the openings 34 in the final can carrier 80. Each flap 84 is defined by a fold line 85 and a cut line 86 which are in parallel relation and are parallel to the fold lines 17, 19, 27 and 28, with the fold line 85 being closest to these fold lines. At each end of each fold line 85 is a concave cut 87, and a similar concave cut 88 is formed at each end of the cut line 86. The concave cuts 87 and 88 adjacent each other have their adjacent ends connected together by a straight cut 89.

Each flap 84 is divided into a pair of flap portions 90 and 91 by a generally centrally located fold line 92 which extends the full length thereof. The fold line 92 is interrupted by a C-shaped cut 93 which is aligned with and opposes a respective one of the C-shaped cuts 32.

In the folding of the blank 81 to form the carton 80, each flap 84 is folded along its fold lines 92 so that the flap portion 90 thereof either underlies the top wall 29 or overlies the bottom wall 21 formed from the bottom wall forming panels 18 and 20. At the same time, the flap portion 91 of each flap 84 is disposed in opposed relation to a respective one of the side walls 30, 31. At this time, the fold line 92 of the flap 84 becomes aligned with a respective one of the fold lines 17, 19, 27 and 28. Also, in the folding of each flap 84, due to the provision of the C-shaped cut 93, an opening 94 is formed in the flap portion 91 in alignment with a respective one of the central openings 34 (see FIGURE 11). In the formation of the opening 94, a projection 95 on the flap portion 90 is formed in alignment with a respective one of the projections 35. Thus, the flaps 84 serve to directly reinforce the cam carrier 80 along the centermost ones of the openings 34 formed in the side walls thereof.

In the forming of the flap 84, the concave cuts 87 define curved edges 96 at opposite ends of the flap portion 90. The positions and curvature of the curved edges 96 correspond to the positions and curvatures of the seams S of the endmost ones of the cans C, as is best shown in FIGURE 10. Thus, each flap 84 serves to prevent the corresponding ends of the corresponding endmost ones of the cans from moving inwardly towards the center of the can carrier 80. In a like manner, the inner edges of the folded strips 82 serve as abutments for the seams of the outermost ones of the cans C. Thus, the strips 82 and the flaps 84 combine to prevent relative shifting of the outermost cans C with respect to the can carrier 80 and in this manner serve to reinforce the can carrier 80 to prevent tearing along the fold lines 17, 19, 27 and 28 at the ends of the outermost ones of the openings 34.

Reference is now made to FIGURES 13, 14 and 15, wherein there is illustrated a modified form of blank wherein there are shown the details of a modified form of can carrier, generally referred to by the numeral 115, which is formed from a blank 116. In view of the fact that only a minor portion of the blank 116 and the resultant carrier 115 differs from the construction of the blank 16 and the carrier 15, only the modified portion of the carrier and blank will be described hereinafter.

The blank 116 is provided with a plurality of cut lines or chime cuts 132 which correspond to the cut lines 32 and which interrupt the fold lines across the blank, for example, a fold line 127 which corresponds to the fold line 27. The cut line or chime cut 132 defines a projection 135 which corresponds to the projection 35. However, the shape of the projection 135 is slightly modified in that the shape of the cut line or chime cut 132 is modified to the extent that an ear 136 is defined. A slit 133, which extends substantially normal to the fold line 127, bisects the ear 136.

A flap or cushion tab 145, which corresponds to the flap 45 of the blank 16, is associated with each chime cut 132. Each flap 145 is defined by a generally C-shaped cut line 143 and a fold line 144. The cushion tab 145 is provided with an interrupted fold line 147, the fold line 147 being interrupted by a generally C-shaped cut 146 which is aligned with and opposes the chime cut 132. The C-shaped cut 146 and the fold line 147 combine to divide the cushion tab 145 into a first portion 148 and a second portion 149. The first portion 148 is directly hingedly connected to the remainder of the blank 116 along the fold line 144, and the second portion 149 is hingedly connected to the first portion 148 along the fold line 147.

In accordance with this invention, when the cushion tab 145 is folded along the fold line 144, the cut line 146 overlies the chime cut 132 so that chimes of cans may pass through the aligned openings defined by these cuts. While the cushion tabs 145 may be readily folded into overlying positions with respect to adjacent portions of the blank 116, they are not retained in this position by merely the folding operation. Accordingly, it is desired to interlock the cushion tabs 145 with other portions of the blank 116 to hold the cushion tabs in place during the positioning of the blank 116 with respect to a plurality of cans. This is the purpose of the ear 136 defined by each chime cut 132. As is clearly shown in FIGURES 14 and 15, the ear 136 may be moved to a position overlying the first half 148 of the respective cushion tab 145 while underlying the second half 149. In this manner, the cushion tabs 145 are held in place until the carrier 115 has been wrapped around the respective cans.

It is to be understood that the carriers 60 and 80 may be modified in the same manner as described above with respect to the modification of the carrier 15. In FIGURE 16, there is illustrated a modified form of the blank of FIGURE 8, and in FIGURE 17, there is illustrated a modified form of the blank of FIGURE 12.

Referring now to FIGURE 16, it will be seen that there is illustrated a portion of a carrier blank 161 incorporating the locking means for the flap or cushion tabs. The blank 161 is modified over the blank 61 to the extent that each of the cut lines or chime cuts 132 thereof defines an ear 136. The ear 136 is for the purpose of locking the associated flap or cushion tab 162 in position for the reception of a can. The flap 162 corresponds exactly to the flap 62, each flap or cushion tab 162 being bounded by a fold line 163 and a cut line 164. The fold line 163 and the cut line 164 are disposed in parallel relation and the outer ends of the associated fold line 163 and cut line 164 are connected together by a C-shaped cut 165. A concave cut 166 is disposed at the inner end of the fold line 163 and a similar concave cut 167 is disposed at the inner end of the cut line 164. The adjacent portions of the cuts 166 and 167 are connected together by a cut line 168. Thus, each flap or cushion tab 162 may be folded out of the plane of its respective portion of the blank 161.

Each cushion tab 162 is provided with a C-shaped cut 169 which is aligned with and opposes the chime cut 132. The ends of the C-shaped cut 169 are connected to the ends of the cushion tab 162 by an interrupted fold line 170. The C-shaped cut 169 and the fold line 170 combine to divide the cushion tab 162 into a first half 171 which is directly hingedly connected to the blank 161 along the fold line 163, and a second half 172 which is hingedly connected to the first half 171 along the fold line 170.

When the blank 161 is to be applied to a plurality

of cans, the cushion tabs **162** thereof are initially folded out of the plane of the blank in the manner described above with respect to the cushion tabs **145**. In the folded positions of the cushion tabs **162**, the ears **136** overlie the cushion tab halves **171** to lock the cushion tabs **162** in place until such time as the carrier blank **161** has been applied to the cans.

Reference is now made to FIGURE 17 wherein there is illustrated a blank **181** which corresponds to the blank **81** but which is modified in a manner described above with respect to the blanks **116** and **161**. The blank **181** differs from the blank **81** in that the central ones of the cut lines or chime cuts **32** of the blank **81** have been modified to define ears **136** and are referred to by the numeral **132**. The changed shape of the cut line or chime cut **132** also results in a slightly differently shaped projection **135**.

The carrier blank **181** also has flaps or cushion tabs, generally referred to by the numeral **184**, which correspond to the flaps **84** of the carrier blank **81**. Each flap or cushion tab **184** is defined by a fold line **185** and a straight cut line **186** which are in parallel relation. At each end of the fold line **185** there is a concave cut **187**. A similar concave cut **188** is disposed at each end of the cut line **186**. The concave cuts **187** and **188** adjacent each other have their adjacent ends connected together by straight cuts **189**.

Each flap or cushion tab **184** is divided into flap halves or portions **190** and **191** by a generally centrally located fold line **192** and a C-shaped cut **193** which interrupts the fold line **192**. The C-shaped cut **193** is disposed in opposed and aligned relation with the associated cut line or chime cut **132**.

In accordance with this invention, prior to the application of the carrier blank **181** to a plurality of cans in the forming of a package, each of the flaps or cushion tabs **184** is folded to a position overlying an adjacent portion of the blank **181**. Each cushion tab **184** is locked in its folded position by the snapping engagement of an associated ear **136** over the portion **190** of the cushion tab **184**. The ears **136** serve to hold the cushion tabs **184** in their folded positions until such time as the carrier blank **181** has been applied to cans.

The formation of the various reinforcements of the several forms of can carriers does not detract from the appearance of the can carriers since the materials primarily required for the reinforcing flaps are formed from the tops and bottoms of the can carriers. Further, the formation of the flaps does not remove critical material from the top and bottom walls of these can carriers and therefore does not weaken these portions of the can-carriers.

The specific examples of can carriers illustrated and described have can seam engaging projections aligned with the side wall openings. However, in other similar forms of can carriers these projections are not provided. When can carriers of this type are modified in accordance with the present invention, the reinforcing flaps will normally correspond to the construction of the can carrier and will not be provided with the projections illustrated and described herein.

From the foregoing, it will be seen that novel and advantageous provision has been made for carrying out the desired end. However, attention is again directed to the fact that variations may be made in the example apparatus disclosed herein without departing from the spirit and scope of the invention, as defined in the appended claims.

I claim:

1. A blank for a can carrier of the wrap-around type, said blank being of an elongated rectangular outline and being divided into panels by transverse fold lines, said panels including terminal bottom forming panels, side wall panels and a central top wall panel, cooperating tabs and slots on said bottom forming panels, each of said fold lines being interrupted by a plurality of opening defining cuts in a respective one of said side wall panels to define can receiving openings in said side wall panels, and cut and fold lines on at least one of said top wall panel and bottom forming panels in alignment with at least certain of said opening defining cuts defining flaps foldable to positions overlying said fold lines at the ends of certain of the side wall openings defined by said opening defining cuts to reinforce the erected can carrier along said fold lines, and flap locking means on said side walls for temporary interlocking engagement with said flaps to retain said flaps in folded overlying relation to the respective opening defining cuts during the application of the blank.

2. The blank of claim **1** wherein there is one flap for each opening defining cut.

3. The blank of claim **1** wherein said flaps are aligned only with the outermost ones of said opening defining cuts, and inner ends of said flaps have contoured edge portions for engaging centrally located cans.

4. The blank of claim **1** wherein said flaps are aligned only with the central ones of said opening defining cuts, ends of said flaps being contoured for engaging outermost cans, and strips extending longitudinally along opposite edges of said blank and normal to said fold lines, said strips being connected to the remainder of said blank by fold lines for folding into overlying relation to ends of said panels.

5. The blank of claim **1** wherein said flap locking means for each flap is in the form of a locking ear on an associated one of said side wall panels defined by said opening defining cut.

6. The blank of claim **1** wherein each of said certain opening defining cuts is generally C-shaped and opens towards an adjacent one of said fold lines, and each C-shaped cut has a central portion bulged towards said adjacent fold line and defining a locking ear which constitutes said flap locking means.

7. In a paperboard carrier of the type including a first wall in the form of a can end engaging wall and a second wall in the form of a can body engaging wall with said first and second walls being joined together along a fold line and wherein said second wall has openings therein spaced along said fold line for the reception of can seams; reinforcing means on said can carrier for preventing the tearing of said can carrier along said fold line starting at said openings, said reinforcing means being in the form of a flap struck from one of said walls and folded to overlie said fold line at the ends of one of said openings and portions of said second wall, and flap locking means on the other of said walls for temporary interlocking engagement with said flap to retain said flap in its folded position during the application of the carrier to cans.

8. The can carrier of claim **7** wherein said flap is divided into first and second flap portions by a fold line extending coextensive along said fold line between said first and second walls, and said first flap portion directly overlies said first wall and said second flap portion directly opposes said second wall, said flap locking means being engageable with said first flap portion in overlying relation.

9. The can carrier of claim **7** wherein said flap is divided into first and second flap portions by a fold line extending coextensive along said fold line between said first and second walls, and said first flap portion directly overlies said first wall and said second flap portion directly opposes said second wall, said flap locking means being in the form of an ear projecting into a respective one of said openings towards said first wall and being adapted to overlie the first flap portion to retain said flap in its folded position during the application of the carrier to cans.

10. The can carrier of claim 7 wherein said flap has an opening therein generally aligned with the associated one of said second wall openings, and two edge portions each terminating remote from its associated one of said openings and adjacent a next adjacent one of said openings, said flap edge portion being positioned for engagement with a seam of a can aligned with said next adjacent opening to resist movement of such can towards said one opening.

11. The can carrier of claim 7 wherein there is one flap for each opening.

12. The can carrier of claim 7 wherein there is a flap for each endmost of said openings and wherein each flap has an opening therein generally aligned with the associated one of said second wall openings, and an edge portion terminating remote from its associated one of said openings, said flap edge portion being positioned for engagement with a seam of a can aligned with said next adjacent opening to resist movement of such can towards said one opening.

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