

July 1, 1958

H. W. FORRER

2,841,279

PAPERBOARD WRAPPER HAVING AN UPSTANDING HANDLE

Filed Feb. 20, 1957

4 Sheets-Sheet 1

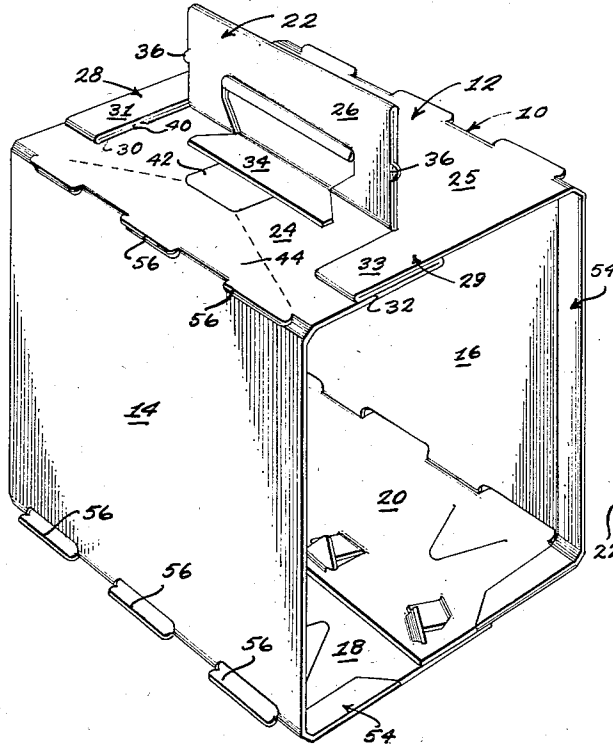


Fig. 1

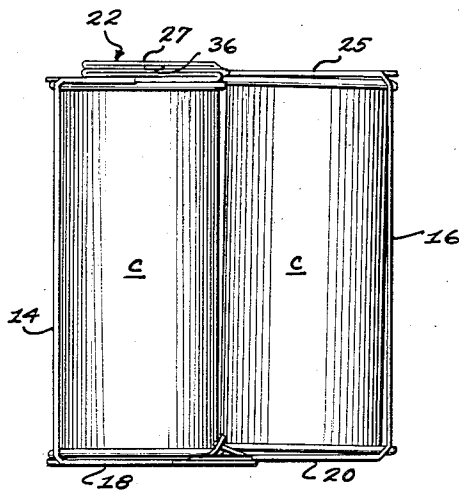
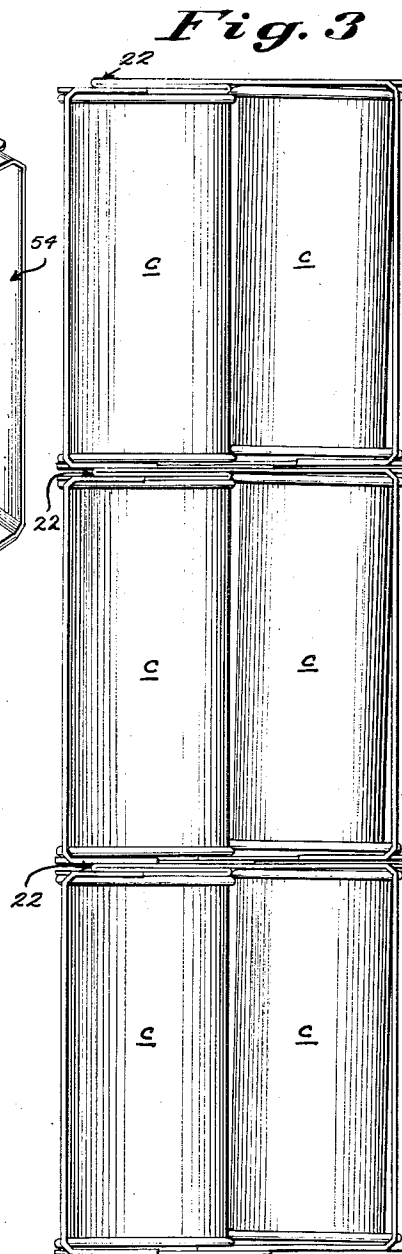


Fig. 2



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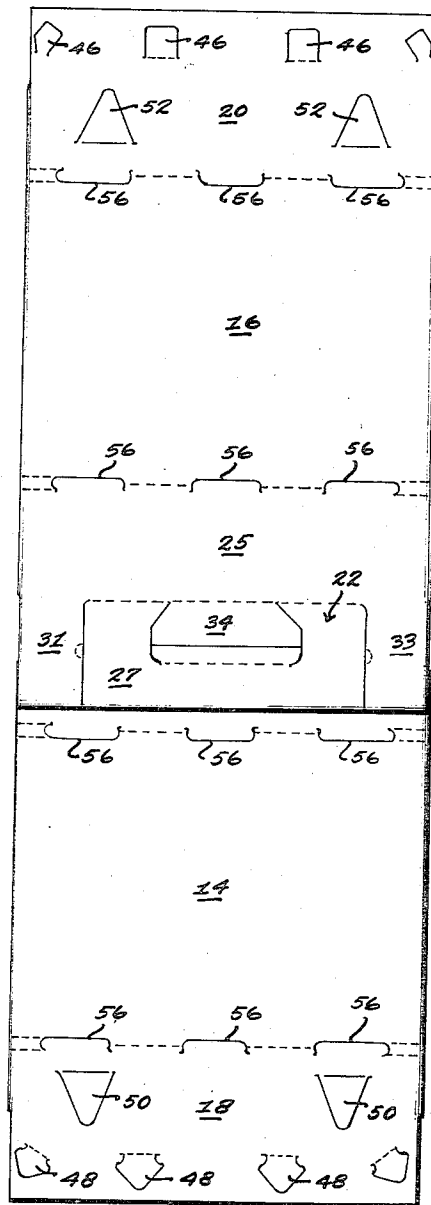
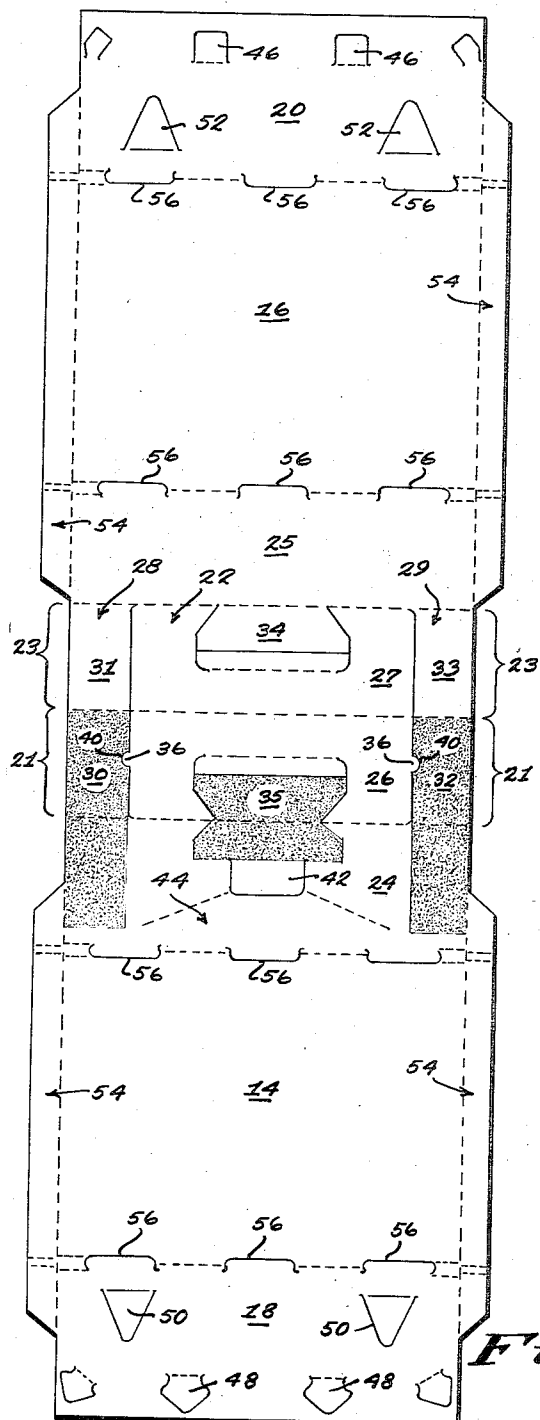


Fig. 5

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4 Sheets-Sheet 3

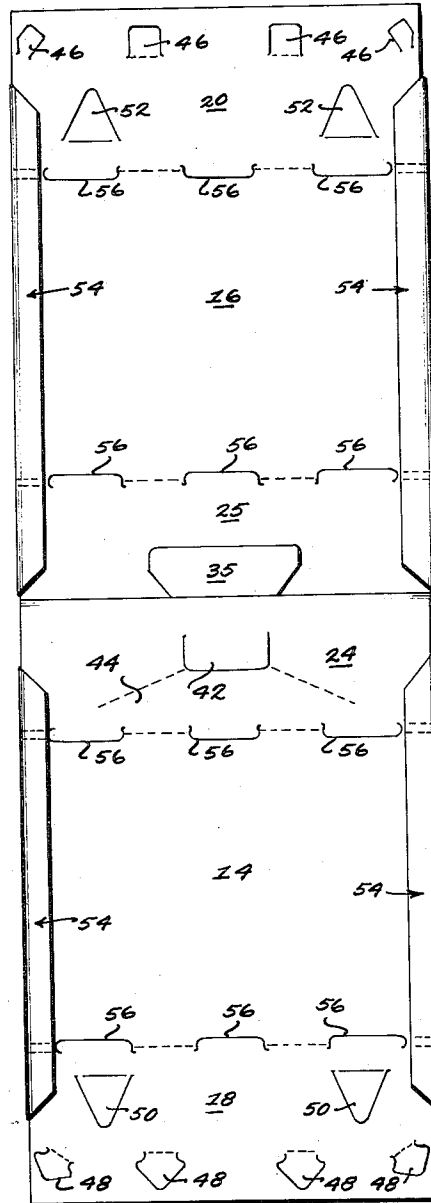
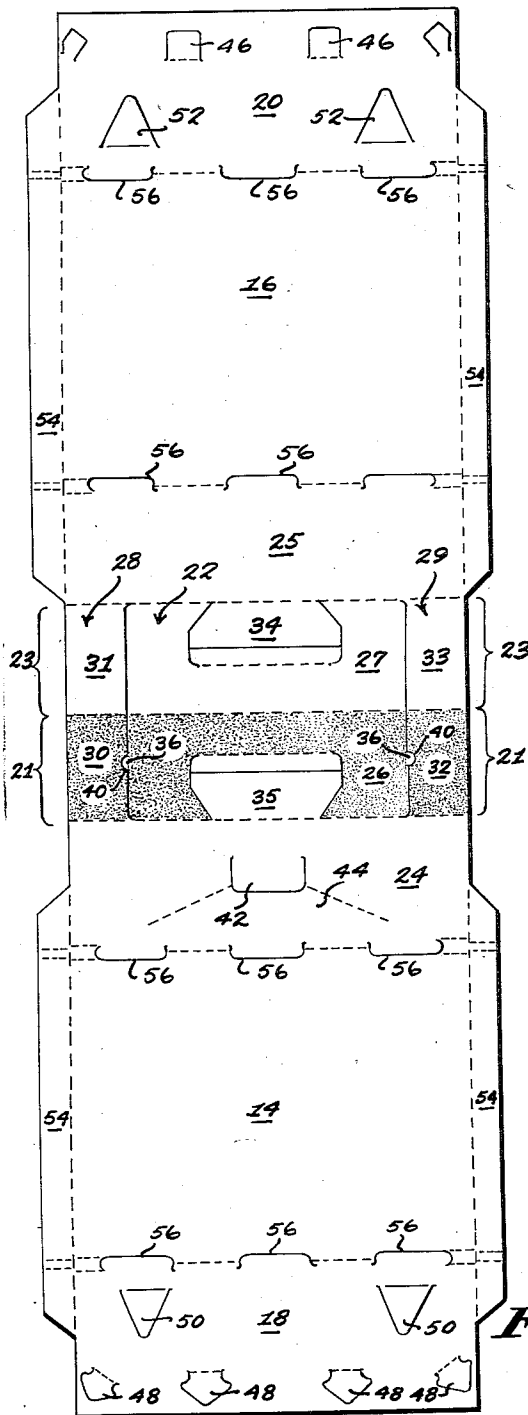


Fig. 7

Fig. 6

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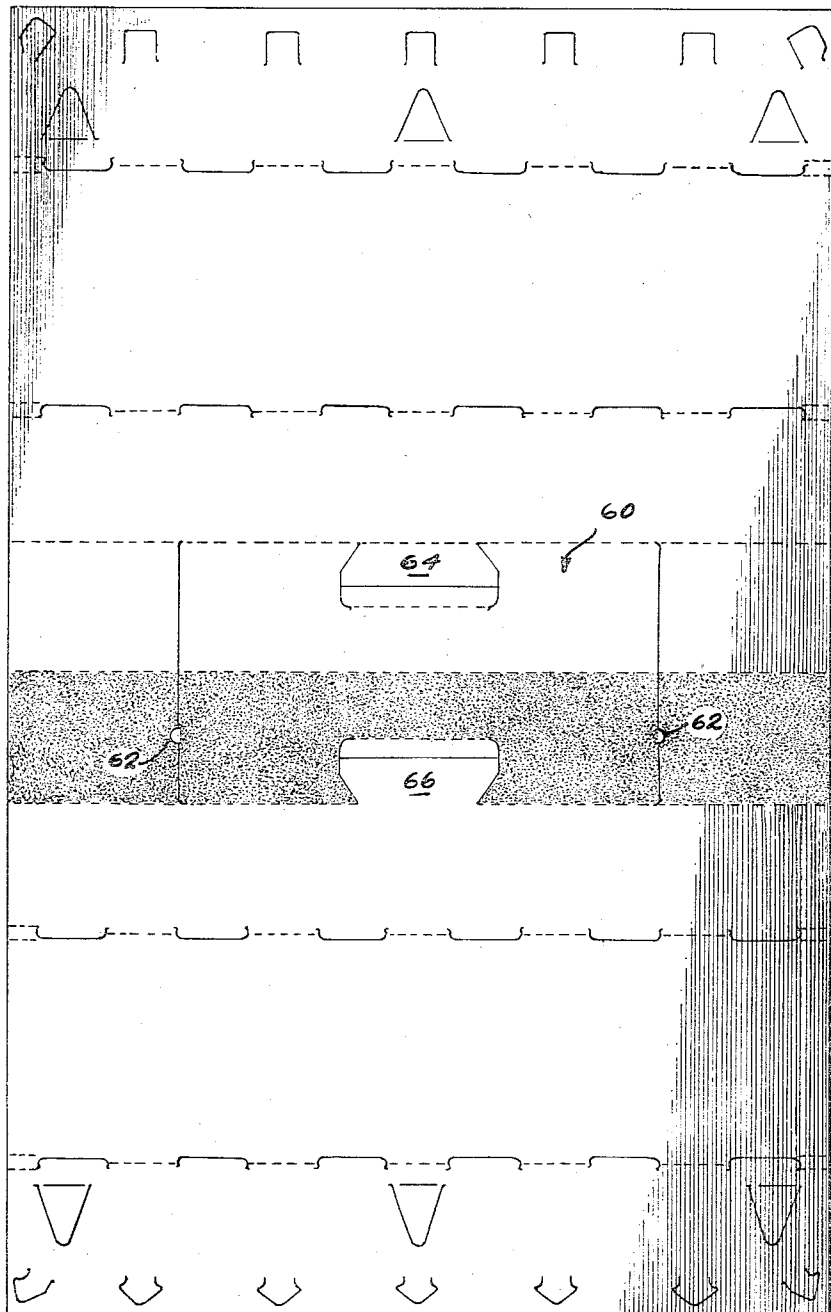


Fig. 8

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PAPERBOARD WRAPPER HAVING AN UPSTANDING HANDLE

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Application February 20, 1957, Serial No. 641,374

9 Claims. (Cl. 206—65)

This invention relates to carriers for cans and more particularly to a wrapper type form of paperboard carrier having an improved downwardly folding handle structure initially secured to the top surface of the paperboard carrier and being easily accessible upon subsequent downward folding thereof.

The handle structure of the present invention is arranged with laterally extending tab portions; the handle structure being initially secured in nested relation by the engagement of the tab portions, but upon the initial raising of the handle structure the tabs are disengaged and do not return to engaged relation upon a subsequent downward folding of the handle structure thereby facilitating access to the handle structure for any subsequent raising.

In many cases, when cans having end edges or rims are arranged in paperboard carriers of the wrapper type having no partition members therein between the cans, the end edges of one row of cans tend to ride on the top surface of the other row of cans and thereby present an uneven surface between adjacent rows of cans. This results in an uneven top surface on the paperboard carrier and when additional carriers loaded with cans are stacked on top of the paperboard carrier, the stack is not aligned due to this uneven top surface formed on the carriers, and the stacking of carriers is thereby rendered difficult.

According to the present invention, an even, top surface on wrapper type paperboard carriers is provided even when the end edges of one row of cans ride on the top surface of the end edges of an adjacent row of cans. This is made possible by the use of a downwardly folding handle structure arranged medially of the top panel and adapted to be folded downwardly on the top side of the carrier adjacent the lower row of cans. The handle structure is of a double ply and compensates in folded position for the unevenness formed by the raised row of cans. Thus, the stacking of loaded carriers on one another is facilitated by the present invention.

Also, the handle structure has aligned hand hold apertures extending therethrough that are formed by cut out flaps folded downwardly and secured to each surface of the top panel on each side of the handle structure. This is a considerable improvement over the type of carrier in which only a single flap was secured to one side of a handle structure, as the present invention allows the weight to be uniformly distributed to the top panel and thereby provides a strengthening for the top panel.

These and other features of the present invention are described in further detail below in connection with the accompanying drawings, in which:

Fig. 1 is a perspective view of the paperboard carrier embodying the present invention and showing the upstanding handle structure thereon;

Fig. 2 is an end view of the carrier shown in Fig. 1 loaded with cans with the end edges of one row of cans riding on the top surface of the end edges of an adjacent

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row of cans thereby presenting an uneven surface between adjacent rows of cans;

Fig. 3 is a stack of three loaded paperboard carriers embodying the present invention and showing an even top surface thereon;

Fig. 4 is a bottom plan view of the blank from which the carrier in Fig. 1 is formed and showing the glue application for the first folding step in stippling;

Fig. 5 is a bottom plan view of the blank shown in Fig. 4 after the first folding step in which the edge portions of the blank are folded inwardly and the handle panels are aligned in face-to-face contact;

Fig. 6 is a top plan view of the blank shown in Fig. 1 with the glue application for the first folding step being shown in stippling;

Fig. 7 is a top plan view of the blank shown in Fig. 6 after the first folding step; and

Fig. 8 is a top plan view of a modified blank used in forming a carrier adapted for carrying a load of twelve cans.

Referring now in detail to the drawings, the illustrated paperboard carrier embodying the present invention, as indicated generally by the numeral 10, comprises a top wall panel 12, a pair of side wall panels 14 and 16 foldably hinged at opposite edges of top wall panel 12, and a pair of bottom wall lap panels 18 and 20 foldably hinged at the respective bottom edges of the side wall panels 14, 16 and proportioned to overlap at their extending edge portions to form a rectangular four-sided wrapper 10, enclosing at least two rows of cans C and having open ends as shown in Figs. 1-3.

The paperboard carrier 10 is further arranged according to the present invention with an integral handle structure 22 foldably hinged to the top wall panel 12 for disposition in either a flat position at which it is depressed against the top wall panel 12, or extended to an erect position for carrying as illustrated in Fig. 1.

The top wall panel 12 is formed from a pair of component half panels 24, 25 proportioned to meet substantially midway of the reach of top wall panel 12.

Central panels 21, 23 are foldably hinged to each other and to the component half panels 24, 25, respectively, and are slit transversely to define a pair of handle panels 26, 27 and side retaining portions 28, 29. Handle structure 22 comprises handle panels 26, 27 foldably connected to each other at one side thereof and foldably connected at the opposite sides to one of the component half panels 24, 25. Side retaining portions 28, 29 are arranged adjacent the ends of handle structure 22 and are each foldably connected to both component half panels 24, 25 at opposite sides. The side retaining portions 28, 29 are each intermediately foldable to define side flaps 30, 31 and 32, 33, respectively; the side flaps 30, 31 and 32, 33 being secured in face-to-face relation and being folded to overlies component half panel 24 in an extent equal to that of the handle structure 22.

Handle panels 26, 27 are secured in face-to-face relation and are formed with securing flaps 34, 35, respectively, providing hand hold apertures. Flap 35 is secured by a suitable glue application to the bottom face of half panel 25 on one side of handle structure 22 and flap 34 is secured by a suitable glue application to the top face of half panel 24 on the other side of handle structure 22. The arrangement of flaps 34, 35 on either side of handle structure 22 allows the weight of the loaded carrier to be equally distributed between half panels 24, 25 that form the top wall panel 12 and thus results in a strengthened carrier.

The handle structure 22 is formed with tabs 36 extending from each side of handle panel 26; the tabs 36 being arranged substantially medially of the end edges of han-

dle panel 26. The inner side flaps 30, 32 are provided with notches 40 in alignment with tabs 36 on handle panel 26. The outer side flaps 31, 33 are arranged in covering relation to notches 40 and handle structure 22 is initially secured in flat relation to top wall panel 12 by the disposition of tabs 36 in notches 40; tabs 36 being secured in notches 40 by the outer side flaps 31, 33 arranged thereover. Upon the initial raising of handle structure 22 from nested relation with top wall panel 12, the tabs 36 are disengaged from notches 40 and upon any subsequent downward folding of handle structure 22, tabs 36 will engage the outer face of side flaps 31, 33 which will prevent handle structure 22 from returning to securing relation with side retaining portions 28, 29 thereby facilitating access to handle structure 22 for subsequent raising thereof. It should be noted that the engagement of tabs 36 with the outer face of side flaps 31, 33 does not prevent the handle structure 22 from returning to nesting relation with top panel 12, but it does prevent the securing thereof.

The tabs 36 by which the handle structure is disposed in this manner to obtain the above-noted advantages, and by which the handle structure is made readily accessible for easy raising to a carrying position, may be lifted from their initial position in the carton structure as originally formed, either by hand or automatically, during or after wrapping of a package group of cans in the carrier, as disclosed in copending application Serial No. 648,042, filed March 25, 1957.

When two rows of cans having end edge portions are arranged within paperboard carrier 10, the end edge portions of one row of cans normally tend to ride on the top surface of the end edge portions of the adjacent row of cans thereby providing an uneven surface between the adjacent rows of cans. This results in an uneven top surface being formed on the paperboard carrier, and thus hinders the stacking of additional loaded carriers thereon since the stack will be unaligned vertically. By arranging a triple paperboard thickness adjacent the top of the row of cans having lowered end edges, and the single paperboard thickness adjacent the end edges of the raised row of cans, the triple paperboard thickness will tend to compensate for the unevenness between adjacent rows of cans and will provide an even top surface on the paperboard carrier thereby facilitating the stacking of additional paperboard carriers thereon.

A depressible tab 42 is provided in half panel 24 and a tear tab 44 extends from the extending free edge of depressible tab 42; tear tab 44 having perforations extending from the free corners of depressible tab 42. When handle structure 22 is arranged in flat folded relation on top wall panel 12, depressible tab 42 is covered and protected by the handle structure 22. Upon the raising of handle structure 22, depressible tab 42 is exposed so that upon inward pressure being exerted on depressible tab 42, the edge of tear tab 44 is accessible whereby an upward pressure exerted on tear tab 44 will result in the tearing thereof along the perforations therein, allowing access to the cans C within the paperboard carrier.

Paperboard carrier 10 is adapted to be folded and secured about a load of cans C during a packaging operation, the bottom wall lap panels 18, 20 being formed with aligned retaining and locking tabs 46 and 48, respectively, to secure the wrapper forming the paperboard carrier in the manner disclosed in copending application Serial No. 459,918, filed October 4, 1954, now Patent No. 2,786,572, granted March 26, 1957. In this connection, reference should also be made to copending application Serial No. 593,604, filed June 25, 1956, now Patent No. 2,809,486, for further details of the packaging operation and of the manner in which aligned retaining and locking tabs 46 and 48 are interlocked to secure the wrapper. The bottom wall lap panels 18, 20 may be further formed with gripping apertures 50, 52

so that they can be gripped to draw the wrapper tightly about the cans C and hold the lap panels 18, 20 in overlapping relation for securing locking tabs 48 in the manner disclosed in the above mentioned copending application Serial No. 593,604.

The blank for the paperboard carrier may be formed, according to the present invention, with edge flaps 54 arranged for doubling at the blank edges adjacent positioning slots 56 provided along the foldably hinged edges of bottom wall lap panels 18, 20 and side wall panels 14, 16 in the manner disclosed in copending application Serial No. 602,114, filed August 6, 1956.

The first step in forming the paperboard carrier from the blank disclosed in Fig. 4 of the drawings consists in folding the end flaps 54 inwardly along the edges of the adjacent panels and in folding the handle panels 26, 27 along the hinge line formed therebetween, thereby disposing handle panels 26, 27 in face-to-face relation to form handle structure 22. The folding of handle panels 26, 27 also results in the folding of side flaps 30, 31 and 32, 33, respectively, in face-to-face relation along hinge lines aligned with the hinge line between handle panels 26, 27. Inner side flaps 30, 32 are secured to the top surface of half panel 24 by a suitable glue application, as indicated by stippling in Fig. 1. During the first folding step the tabs 36 are secured in notches 40 as the outer side flaps 31, 33 are arranged in covering relation to tabs 36, as shown in Fig. 5 of the drawings.

Figs. 6 and 7 also show the first folding step in forming the paperboard carrier 10 from the blank, but the blank in these figures is shown in a top plan view whereas the blank in Figs. 4 and 5 is shown in a bottom plan view. The flaps 34, 35 provided in handle structure 22 to provide hand hold apertures and to evenly distribute the weight along the top wall panel 12, are secured on either side of handle structure 22 in this first folding step as mentioned previously. Flap 35 is arranged on the bottom surface of half panel 25 and is secured thereto by a suitable glue application; flap 35 being shown in position after the first folding step in Fig. 7. Flap 34 is inserted through the hand hold aperture provided by flap 35 and is secured to the top surface of half panel 24 by a suitable glue application, as indicated by stippling in Fig. 4. It is thus observed that any weight transmitted to handle structure 22 will be distributed equally between half panels 24, 25 as a result of flaps 34, 35 being secured to top wall panel 12 on either side of handle structure 22. The blank after the first folding step is ready for folding and securing about a group of cans. The handle structure 22 will remain in its flat relation with top wall panel 12 until an upward pressure is applied thereto since the tabs 36 are held in securing relation with notches 40 by outer side flaps 31, 33.

Figure 8 shows a blank used in forming a modified carrier adapted for carrying a load of 12 cans. A handle structure 60 is arranged with tabs 62 and flaps 64, 66 in the same manner as the carrier shown in Figs. 1-7, and the remaining elements shown in Fig. 8 are similar to corresponding elements shown by the embodiment of Figs. 1-7 except in dimensions. The carrier formed from the blank shown in Figure 8 is particularly useful for heavy can loads.

The present invention has been described in detail above for purposes of illustration only and is not intended to be limited by this description or otherwise, except as defined in the appended claims.

I claim:

1. A handle structure for a four-sided paperboard carrier having open ends, said handle structure comprising a pair of handle panel elements arranged in face-to-face relation and having aligned hand hold apertures therethrough, said handle structure being initially disposed in a flat relation on the top side of said carrier and foldably hinged thereto, a double ply side retaining

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portion having a length equal to the height of said handle structure disposed in flat relation on the top side of said carrier adjacent each end of said handle structure, one of said handle panels having a tab extending from each end thereof, the inner ply of the side retaining portions having notches therein aligned with the tabs on said handle structure and the outer ply of said side portions being disposed in covering relation to said notches whereby said handle structure is initially secured in flat relation by the positioning of said handle structure tabs in said notches, and after the initial raising of said handle structure from said secured position said tabs engage the outer surface of said side retaining portions upon any subsequent downward folding of the handle structure thereby facilitating access thereto for subsequent raising.

2. In a paperboard carrier for cans comprising a four-sided wrapper having open ends and enclosing at least two rows of cans with the end portions of said wrapper overlapped, a handle structure for said carrier arranged integrally in a side of said wrapper, said handle structure having a pair of handle panels arranged in face-to-face relation with a tab extending from each end thereof, and aligned hand hold apertures extending therethrough, said wrapper side being formed by a pair of component panels and said pair of handle panels each being foldably connected to one of said pair of component panels, a side retaining portion of double paperboard thickness with notches therein aligned with the tabs on said handle structure, and of a length equal to the height of said handle structure, secured in flat relation on each side of said wrapper side adjacent the end edges of said handle structure by the positioning of said handle structure tabs in said notches, the space between the double thickness side retaining portions being adapted for receiving the handle structure in nested relation, said hand hold apertures being formed by a flap in each of the handle panels, and said flaps being secured to opposite faces of said wrapper side and on opposite sides of the handle structure, thereby distributing the weight transmitted to said wrapper side and strengthening the carrier.

3. In a paperboard carrier for cans comprising a four-sided wrapper having open ends and enclosing at least two rows of cans with end portions of said wrapper overlapped and secured together, a handle structure for said carrier arranged integrally in a side of said wrapper, said wrapper side being formed by a pair of component panels and said handle structure comprising a pair of foldably connected handle panels secured in face-to-face contact with each handle panel of said pair also foldably connected to one of said pair of component panels, said component panels extending to each side of the foldable connections with said handle panels and having side retaining portions foldably connected thereat, said side retaining portions each comprising a pair of side flaps secured in face-to-face contact and having a folding extent equal to that of said pair of handle panels, the pairs of said side flaps being folded to overlie one of said component panels and further secured thereat, the inner overlying side flap of each of said pairs having a notch formed in the edge thereof adjacent the related handle panel of said pair, and said related handle panel having tabs thereon shaped to fit within said notches, whereby said pair of handle panels, after initial folding with said pairs of retaining flaps in overlying relation at said one of the component panel portions, may be partially raised to lift the tabs thereon above the outer overlying side flaps of said pairs so as to maintain said handle panels readily accessible for fully raising to upright carrying position while remaining downwardly foldable to a substantially flat position between said pairs of side flaps.

4. A paperboard carrier for cans comprising a wrapper having open ends with the end portions of said wrapper overlapped and enclosing at least two rows of cans, said wrapper being scored transversely to define

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top, bottom, and side panels, positioning slots arranged along the transverse score lines and receiving the end edges of the cans, a handle structure having a pair of handle panels arranged in face-to-face relation and having aligned hand hold apertures therethrough, said handle structure being disposed initially in a flat relation on the top panel of said carrier, a double ply side retaining portion of a length equal to the height of said handle structure disposed in flat relation on each end edge of said top panel adjacent the end edges of said handle structure, the space between the double ply side portions being adapted for receiving the handle structure in nested relation, said handle structure having a tab extending from each end edge thereof, and the inner ply of said side retaining portions having notches therein aligned with the tabs on said handle structure, the tabs being initially disposed within the notches with the outer ply of said side portions disposed in covering relation to said notches whereby said handle structure is initially secured in said flat relation by the positioning of said tabs in said notches, and after the initial raising of said handle structure from said secured position, said tabs engage the outer surface of said side portions upon any subsequent folding of the handle structure thereby facilitating access thereto for subsequent raising.

5. A paperboard carrier for cans comprising a wrapper having open ends and enclosing at least two rows of cans therein, said wrapper being scored transversely to define top, bottom, and side panels, a handle structure integrally hinged medially of said top panel and extending upwardly therefrom in erected position, said handle structure having a pair of handle panels arranged in face-to-face relation and aligned hand hold apertures extending therethrough, said handle structure being initially disposed in a flat relation on one side of said top panel, a depressible tab hinged to the top panel for allowing access to a tear tab, said tear tab being arranged adjacent said depressible tab and having perforated edge sections extending outwardly from the cut out portion formed by said depressible tab, the arrangement of said handle structure in flat folded relation covering and protecting the depressible tab and adjacent tear tab, a double paperboard thickness side retaining portion of an extent equal to that of said handle structure arranged on each side of the handle structure in flat relation to the top panel, the space between the double thickness side portions allowing the handle structure to be received in flat nesting relation, said handle structure having a tab extending from each end edge thereof and the inner thickness of the side retaining portions having notches arranged therein aligned with the tabs on said handle structure, the hand hold apertures of said handle structure being formed by a flap in each of the handle panels, and said flaps being secured to opposite faces of said top panel and on opposite sides of the handle structure thereby uniformly distributing the weight transmitted to the top panel.

6. A paperboard blank adapted for forming a four-sided wrapper with open ends for enclosing cans arranged in at least two rows, said blank having an elongated substantially rectangular form and being arranged for folding transversely to define a pair of central panels foldably hinged to each other and arranged centrally with respect to the length of the blank, a pair of half panels foldably hinged respectively at the edges of said pair of central panels opposite the common edge of said central panels, a pair of panels foldably hinged at the edges of said pair of half panels opposite said central panel edges, and a pair of lap panels foldably hinged respectively at the edges of said pair of panels opposite said half panel edges, said lap panels having aligned locking and retaining tabs cut out therein, each of said central panels having a flap hinged along the edge foldably hinged to the adjacent half panel, one of said half

panels having a tab cut out therein substantially medially of the width thereof and perforations leading from the corners of the cut out portion formed by said tab outwardly towards the edge of the blank, positioning slots arranged along the foldably hinged edges of said pair of panels for engaging end edge portions of the cans packaged in said blank, said central panels being slit transversely at the outer edges thereof to define a side portion adjacent each end and a pair of handle panel portion between said side portions, and one of said pair of handle panel portions having a laterally extending tab formed at each end thereof in nested relation with aligned notches in said adjacent side portions.

7. In a paperboard carrier comprising an open-ended wrapper folded and secured about at least two rows of cans or the like, a handle structure for said carrier arranged integrally at a side of said wrapper formed by a pair of component panels, said handle structure comprising a pair of foldably connected handle panels secured in face-to-face relation with each handle panel of said pair foldably connected to one of said paired component panels forming said wrapper side so that said handle panels may be disposed flat in overlying relation at said wrapper side or erected to an upstanding position with respect thereto, side retaining flaps connecting said component panel pairs to form said wrapper side, said side retaining flaps being secured in overlying relation to one of said component panels contiguously at each end of said handle panels, and the inner overlying handle panel at said flatly disposed position having lateral tabs thereon initially disposed beneath said side retaining flaps in the course of forming said wrapper side but shiftable to an overlying position with respect to said flaps by partially raising said handle panels to lift said tabs to said overlying position so as to maintain said handle panels readily accessible for fully raising to said upstanding position while remaining downwardly foldable substantially to said flat disposition.

8. A handle structure for a paperboard carrier, said handle structure comprising a pair of handle panels arranged in face-to-face relation and foldably hinged on a side of said carrier medially thereof, said pair of

handle panels being initially disposed flat in overlying relation at said carrier side, side retaining flaps secured in overlying relation on said carrier side contiguously at each end of said handle panels, and the inner overlying handle panel at said flatly disposed position having lateral tabs thereon initially disposed beneath said side retaining flaps, whereby said handle structure is initially retained at said flatly disposed position by the disposition of said tabs beneath said flaps, while upon partial raising of said handle structure to lift said tabs above said flaps in overlying relation thereto said handle structure is maintained readily accessible for fully raising to an upstanding position with respect to said carrier side and at the same time remains downwardly foldable substantially to said initial flat disposition.

9. A paperboard blank incorporating a foldable handle structure, said blank being slit and scored to define therein a pair of complementary component panel portions, and a pair of handle panels, said handle panels being secured in face-to-face relation and being foldably joined to at least one of said component panel portions and disposed flat in overlying relation with respect to the other of said component panel portions, said first mentioned component panel portion being formed with side retaining flaps extending therefrom in contiguous relation at each side of the outer overlying handle panel at said flatly disposed position and secured in overlying relation with respect to said other component panel portion, and the inner overlying handle panel having lateral tabs thereon disposed beneath said side retaining flaps at said flatly disposed position but shiftable to an overlying position with respect to said flaps by partially raising said handle panels to lift said tabs to said overlying position.

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