

Aug. 27, 1957

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2,804,204

EASY OPENING CAN CARTON

Filed May 4, 1955.

4 Sheets-Sheet 1

Fig. 1.

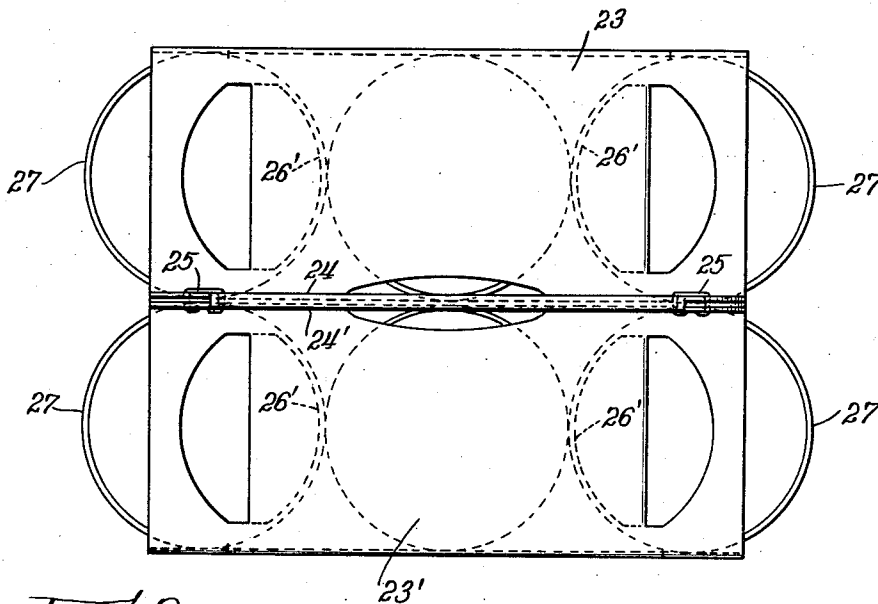
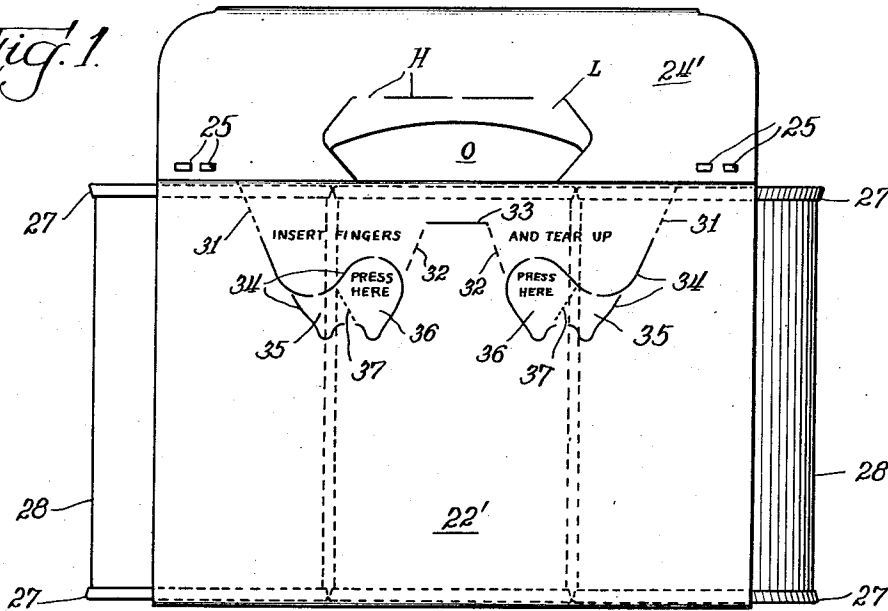


Fig. 2.

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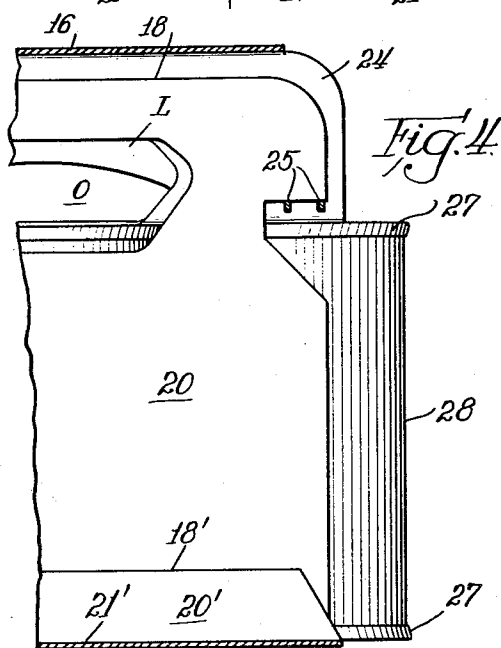
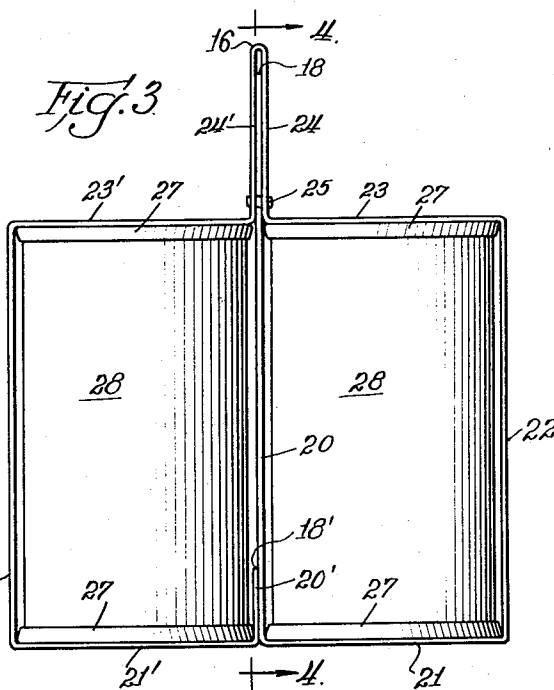
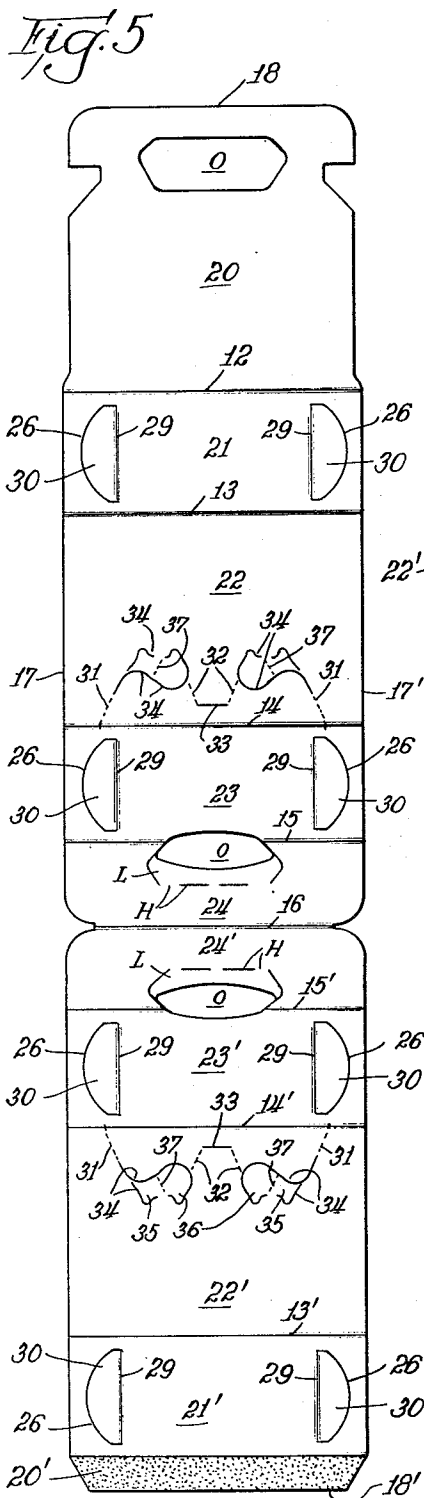
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4 Sheets-Sheet 2



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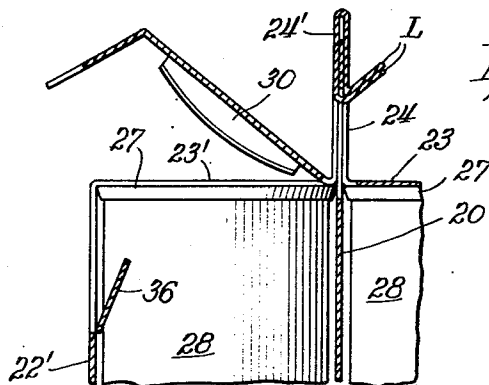
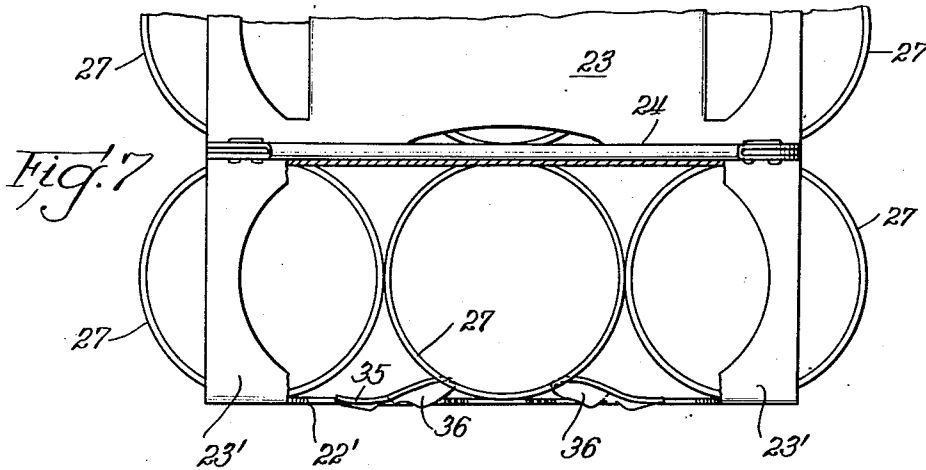
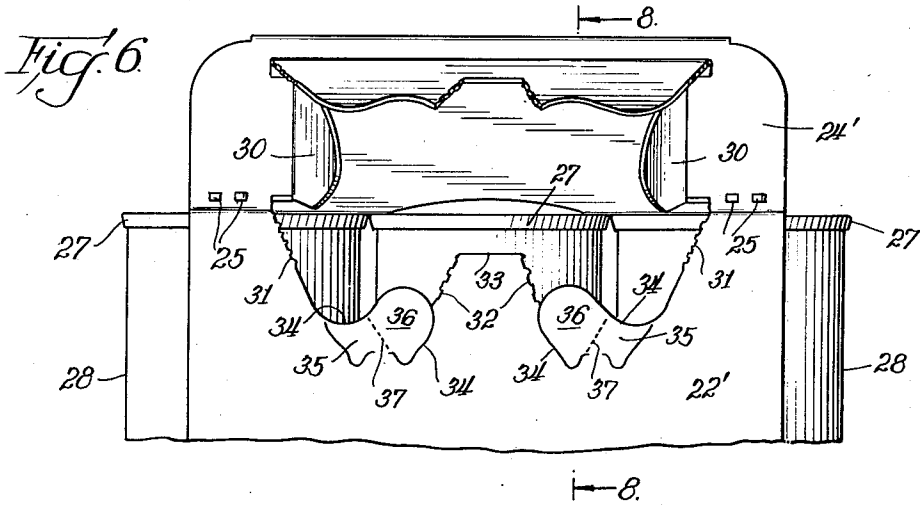
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Fig. 9.

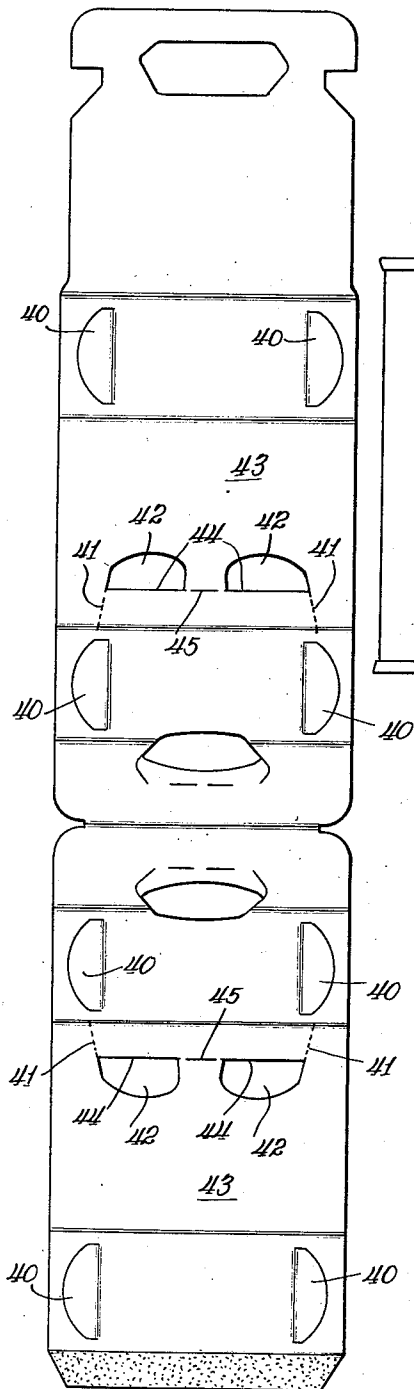


Fig. 10.

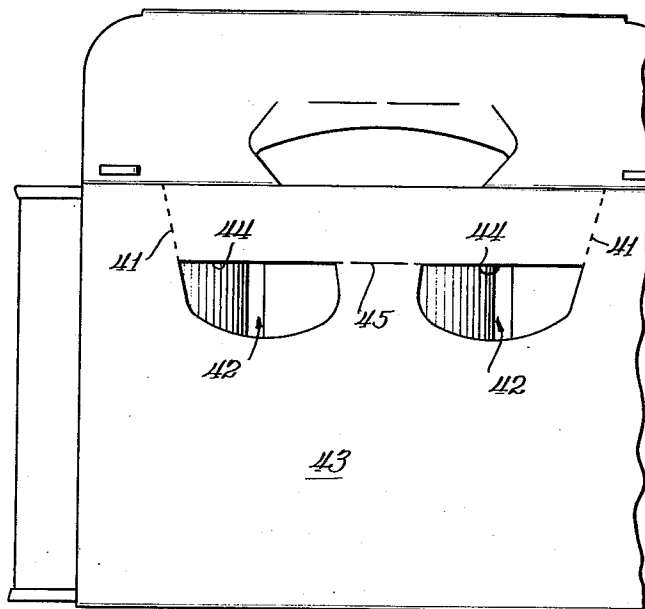
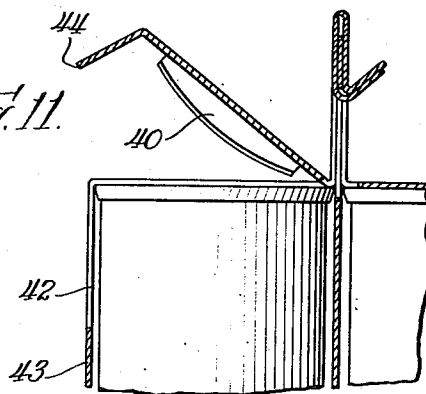


Fig. 11.



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2,804,204

EASY OPENING CAN CARTON

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Application May 4, 1955, Serial No. 505,895

2 Claims. (Cl. 206—65)

The invention herein disclosed pertains to cartons or containers composed from fibrous sheet material such as paperboard and especially to those of a type or character to be employed in unit packaging of plural numbers of chimed cans containing a beverage or other product. Unit packages of one of the types with which the invention is concerned are disclosed in Chidsey Patent No. 2,571,833 dated October 16, 1951. The invention, however, is applicable to cartons having handles for convenience of carrying such packages of a plural number of cans such as that of Parker Patent No. 2,614,737, of October 21, 1952, as well as to cartons of the tube or wrap-around type as, for instance, those shown in the Chidsey patent above mentioned. More particularly, the invention is concerned with an arrangement facilitating access to and the removal of the can contents from cartons or wrappers of the character mentioned.

In order that the paperboard or other fibrous material of which such carton is composed will have a structural strength necessary to secure the canned goods against accidental displacement or pilferage from the package in handling, storage and shipment as well as that requisite to security during the time that a purchaser may be carrying the package, the material is so made or chosen as to have a substantial degree of tensile strength and toughness. Where the carton or wrapper employs a can retaining construction of the character of that of the Chidsey patent mentioned above, the security provided by the inherent strength of the material is greatly enhanced. However, to the extent that the strength characteristics of the material and the design or construction arrangements of the package or carton serve their security purposes, to the same or proportionate extent does the package or carton become difficult to open when one desires to have access to the cans for removal of them.

One of the principal objects of the invention, therefore, is to provide a carton or wrapper for and a unit package of a plurality of chimed cans whereby the cans, although they may be securely held or locked within the package as by interengagement of special securing flaps on the carton or wrapper with the can end chimes as shown, for instance, in the Chidsey patent, may be made easily and quickly accessible for removal from the package.

Another of the principal objectives is to provide a carton or wrapper construction embodying a readily engageable panel or area which has been pre-weakened relative to or partially severed from the remainder of one or more walls of the package but wherein the weakening or severance of the panel will not materially reduce the strength required for security of the can contents prior to such time as access is to be had to them. Still another important object is to provide a pre-weakened wall panel or area so located and disposed with respect to the carton or package as a whole and

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with respect to one or more cans within the package as to effect the maximum of convenience of access to the package for removal of the contents thereof.

Other objectives include the provision of one or more weakened "pilot" panels or openings for initial insertion of one, two or more fingers of the hand into the package to permit the user to grasp an edge of the weakened panel or "tear out" wall area and to tear or rip open the wall for access to the cans, and, also, the provision of an arrangement of the character described which may be applied to single row cartons or wrappers of the type of the Chidsey patent as well as to each of the opposite sides of the well known double row handle equipped can carriers such as those shown and described herein in exemplification of the invention.

In the drawings:

Fig. 1 is a view in side elevation of a can-carrier carton equipped with a handle and of a size and type to package a total of six (6) cans, i. e., three (3) cans in each of two rows one of which is indicated in the view and the other of which is disposed behind the first row at the other side of the handle, the carton side and top walls being provided with weakened panel or wall areas and otherwise being so constructed that they may be broken open for access to the can contents.

Fig. 2 is a top plan view of the can carrier package of Fig. 1;

Fig. 3 is a view in end elevation of the package shown in Fig. 1;

Fig. 4 is a sectional view of a fragment of the package, the view being taken along the section line 4—4 of Fig. 3;

Fig. 5 is a plan view of a typical paperboard blank as cut and scored ready for folding and securing into final erected or into a folded but flattened pre-erection state;

Fig. 6 is a view in side elevation of the upper portion of the package of Fig. 1 showing the side and top walls as they appear after being broken open by tearing loose those panels or portions which have been pre-weakened;

Fig. 7 is a top plan view of part of the package after one side has been opened following the procedure illustrated in Fig. 6, the lifted or torn panel having been removed entirely for the sake of convenience of illustration;

Fig. 8 is an end view of an upper part of one side of the package after that side has been opened, the view being taken substantially along the section line 8—8 of Fig. 6;

Fig. 9 illustrates, in plan view, a typical blank for a modified form of the invention as applied to a two-compartment handle equipped can carrier package or carton;

Fig. 10 is a view in front elevation of the modified form of can carrier, portions being broken away at one end for convenience of illustration; and

Fig. 11 is a view corresponding to that of Fig. 8, illustrating the appearance of the modified construction of Figs. 9 and 10.

The can carrier of that form of the invention of Figs. 1 to 8 inclusive, is constructed in a manner very similar to that disclosed in the Parker patent, supra, especially as respects formation of the can receiving tubes or compartments, the center or partition wall panel, the handle panel, and the flaps which project inwardly of each end portion of each of the two can receiving tubes or compartments into locking engagement with the chimes of end cans in the can rows to retain the cans against endwise displacement from the tubes. It is preferred that such handle equipped carrier cartons be constructed from relatively strong and tough paperboard cut and scored in the

one-piece blank form of Fig. 5 although other constructions may be employed as will be appreciated.

The blank shown in Fig. 5 is a generally rectangular strip scored transversely of its length along crease scores or score lines 12, 13, 14, 15, 16, 15', 14', 13' and 12' which extend normal to the longitudinal edges 17, 17' of the blank and parallel to one another and the major portions of end edges 18, 18'. The score lines mentioned provide lines of fold in setting up or erecting the carton and delineate, in the order named and reading from top to bottom in Fig. 5, a partition or common sidewall panel 20, a bottom wall panel 21, an outside wall panel 22, a top wall panel 23, one ply or panel of a handle 24, a second handle panel or ply 24', a second top wall panel 23', a second outside wall panel 22', a second bottom wall panel 21', and a glue flap 20' which is to be attached to the partition wall panel 20. Figs. 1 to 4, inclusive, fully and clearly illustrate the manner and result effected by folding the several panels and the glue flap along the designated score lines and after the glue flap 20' has been secured to the partition panel 20 by adhesive indicated by the stippling and after the handle plies 24, 24' have been secured together at suitable places as by staples 25. The handle plies 24, 24' and the partition panel 20 have registering hand or finger hold openings O therethrough and plies 24, 24' also have load spreading flaps L hingedly connected therewith along partially slit and partially scored lines H.

A more detailed description of this character of construction may be found in the above noted Parker patent which also discloses a type of combined handle and partition panel similar to that employed herein. Adjacent to each end of each of the top and bottom wall panels the paperboard or other material is cut, as indicated at 26 on an arc the radius of which corresponds, substantially, to the radius of the inner surface of a can chime such as those designated 27 on the cans 28. Spaced farther inward of the wall panel ends are crease scores represented by the chordal lines 29 which, preferably, are normal to the scores 12, 13, 14, 15 and 15', 14', 13' and 12', and which serve as hinges about which locking flaps 30 formed between the arcs 26 and chordal lines 29, are adapted to be swung inward of the carton tube or compartment through angles of nearly 180° to engage their arcuate edges 26' with the inner surfaces of the chimes of the end cans of the can row in the tube.

The interengagement of the arcuate edges of the locking flaps with the inner surfaces of the chimes of opposite ends of the end cans in combination with a snug fit of the top, bottom and side walls of the tube or compartment about the cans will serve to secure the end cans firmly against removal endwise of the tube. In fact, if the carton or tube is properly made and the material is of the tensile strength and other characteristics usually required for some canned commodities, it is almost impossible for one to remove a can endwise of the carton except by employing some tool to effect release of a locking flap or by tearing away some part of the carton material. However, if the material is strong and not easily torn, considerable difficulty may be expected before the cans may be made accessible for removal. The invention, of which two forms or embodiments are disclosed herein, eliminates the difficulty without materially weakening the carton for its normal functions and without affecting the security provided by the locking flaps.

During the formation of the blank each of the side wall panels 22 and 22' is weakened about an area located adjacent to the score line 14 or 14', as the case may be, forming the juncture with the adjacent top wall panel and intermediate of the side edges of such side wall panel. Preferably this weakening is effected by perforating or cutting through the material at intervals along predetermined lines along which rupture is to be effected. In this instance where the lines of weakening follow an outline which may be described as W-shape, there are two long

lines 31 of fairly closely spaced perforations each of which, preferably, extends from a point adjacent to but spaced from an edge formed by one of the cuts or slits 26, diagonally toward the opposite side edge of the side wall panel, the two lines 31 converging as they extend away from the score line 14 or 14' as the case may be. It is preferable but not always necessary that there be one cut or perforation of each line 31 either on or across each of scores 14 and 14' to "lead" or guide the eventual tear. There are also two short lines 32 of similarly closely spaced perforations diverging from one another as they extend away from the adjacent one of the score lines 14 and 14' and an uninterrupted cut or slit 33 joining their closest ends. Between and joining the adjacent converging ends of lines of perforations 31 and 32 there are cuts or slits 34 which define "push-in" tabs or areas 35 and 36 each of irregular shape in the instant embodiment and delineated from one another by a line of perforations 37.

The slits 34 preferably are not continuous but are interrupted at widely spaced intervals by narrow bridges of intact material so that the areas 35 and 36 will remain in the planes of the side wall panels until the package is to be opened. As may be observed by viewing Figs. 6, 7 and 8, the areas 35 and 36 are located approximately midway between adjacent cans or, in a carrier for six cans as shown, between each end can and the middle can where there is space to receive these areas or portions of them.

The operation or use of the release is substantially obvious. When it is desired to have access to the cans in either tube or compartment of the carrier, two fingers of one hand may be employed to punch or push in both of the areas 36 in one side panel more or less simultaneously so as to permit the fingers to engage and grip or hook behind the lower marginal edges of the releasable panel delineated by the lines of perforations 31 and 32, the cuts or slits 33 and 34 and the openings provided in the top wall panels by the formation of the flaps 30. An upward pull upon the release panel will effect rupture of such panel from the side and top wall panels to permit it to assume the positions indicated in Figs. 6, 7 and 8 at which time all three cans become readily removable, the middle can because it is no longer blocked from upward removal and the end cans by reason of removal of the center can. In some instances it is also possible to remove the end cans directly from the tube ends without first removing the center can since the release panel carries with it the top locking flaps 30 thereby releasing the upper ends of the end cans. The location of the "push-in" tabs 36 at places intermediate of cans within their tubes or compartments permits the tabs to be broken free and pushed inward more or less freely and instantly, the construction of the adjacent tabs 35 and the hinge or break line created by the perforation lines 37, permitting both tabs to yield and facilitating the operation.

The modified embodiment of Figs. 9, 10 and 11 varies from that above described in only one major respect, namely, the construction and arrangement of the lower or gripping edges of the release panels. In this form while the locking flaps 30 in construction and function are like the locking flaps 30 and the perforation lines 41 correspond in every material respect with the lines of perforations 31, the "push-in" tabs are omitted and, instead, openings 42 are provided by removal of the material of the side wall panels 43. This construction provides free edges 44 ready to be gripped or hooked by one's fingers whereby to rip open the release panel after the manner of that previously described and as indicated in Fig. 11. Between the free edges 44 and in alignment therewith the material is cut or slit at intervals as shown at 45 to facilitate rupture when desired but to maintain the release panel in its normal position until it is to be released. The operations of releasing the release panels for access to and removal of the can contents of

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the package will correspond with such operations of the first described form.

While the invention has been illustrated and described in two embodiments, it is susceptible of other embodiments and of substantial variation without departure from its essentials. Accordingly, I desire to be limited only by the invention spirit within the scope of the appended claims.

I claim:

1. In a can package, an open ended tube formed of material such as paperboard and comprising an inner side wall panel and an outer side wall panel and top and bottom wall panels connected along fold lines and together defining an open ended tube of substantially rectangular cross section, and a row of three chimed end cylindrical cans within said tube fitting snugly between said panels, said top wall panel having adjacent the ends thereof locking flaps cut therefrom and attached thereto along transverse fold lines, said flaps being folded toward the under face of said top wall panel and engaging the inner portions of the chimes of the end cans of the row effective for restraining said end cans against movement outward of said tube, the outer ends of the openings corresponding to said flaps being spaced inward from said outer side wall panel, said cans of said row being disposed substantially in contacting relation providing between adjacent cans spaces substantially V shape in plan flaring outward to the respective side wall panels, said outer side wall panel including a tear out panel attached thereto along preweakened tear lines terminating at the fold line between said outer side wall panel and the corresponding top wall panel at points aligned with the openings in said top wall panel corresponding to said locking flaps, said outer side wall panel having means providing finger openings at the lower edge of said tear out panel and located within the areas of said outer side wall panel corresponding to said spaces between said cans.

2. In a can package, an open ended tube formed of material such as paperboard and comprising an inner side wall panel and an outer side wall panel and top and

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bottom wall panels connected along fold lines and together defining an open ended tube of substantially rectangular cross section, and a row of three chimed end cylindrical cans within said tube fitting snugly between said panels, said top wall panel having adjacent the ends thereof locking flaps cut therefrom and attached thereto along transverse fold lines, said flaps being folded toward the under face of said top wall panel and engaging the inner portions of the chimes of the end cans of the row effective for restraining said end cans against movement outward of said tube, the outer ends of the openings corresponding to said flaps being spaced inward from said outer side wall panel, said cans of said row being disposed substantially in contacting relation providing between adjacent cans spaces substantially V shape in plan flaring outward to the respective side wall panels, said outer side wall panel including a tear out panel attached thereto along upwardly diverging preweakened tear lines terminating at the fold line between said outer side wall panel and the corresponding top wall panel at points aligned with the openings in said top wall panel corresponding to said locking flaps, said outer side wall panel having means providing finger openings at the lower edge of said tear out panel and located within the areas of said outer side wall panel corresponding to said spaces between said cans.

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