Sept. 26, 1950 T. W. FOSTER 2,523,986

CARRIER FOR TAPERED TOP CANS

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Fig. 1

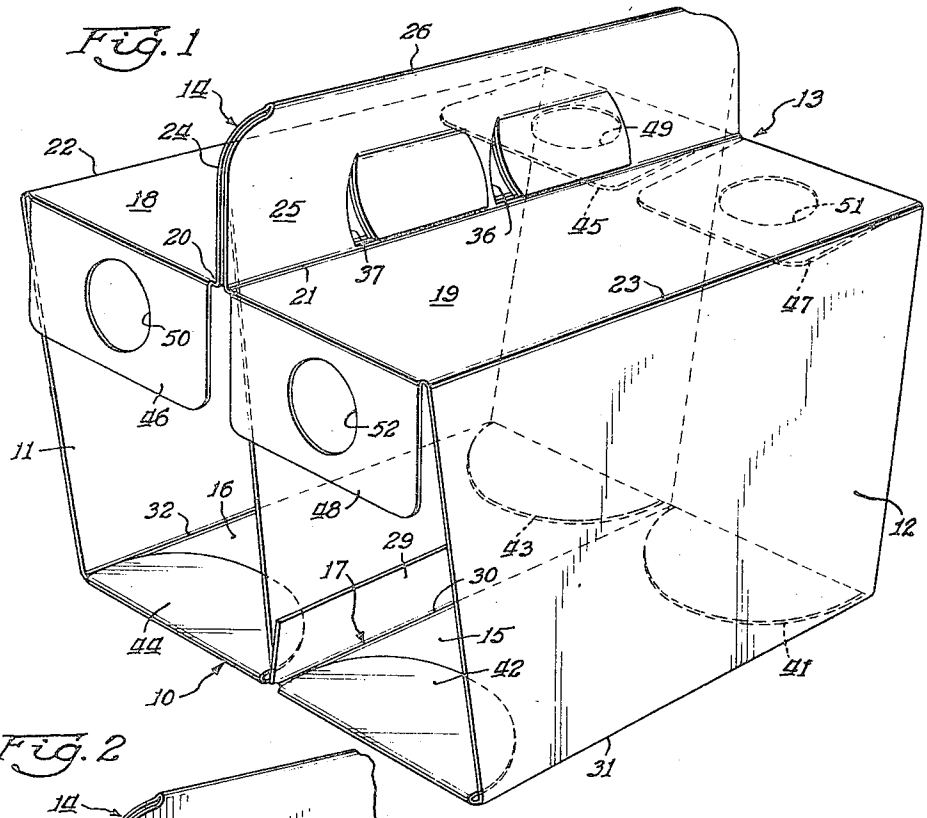
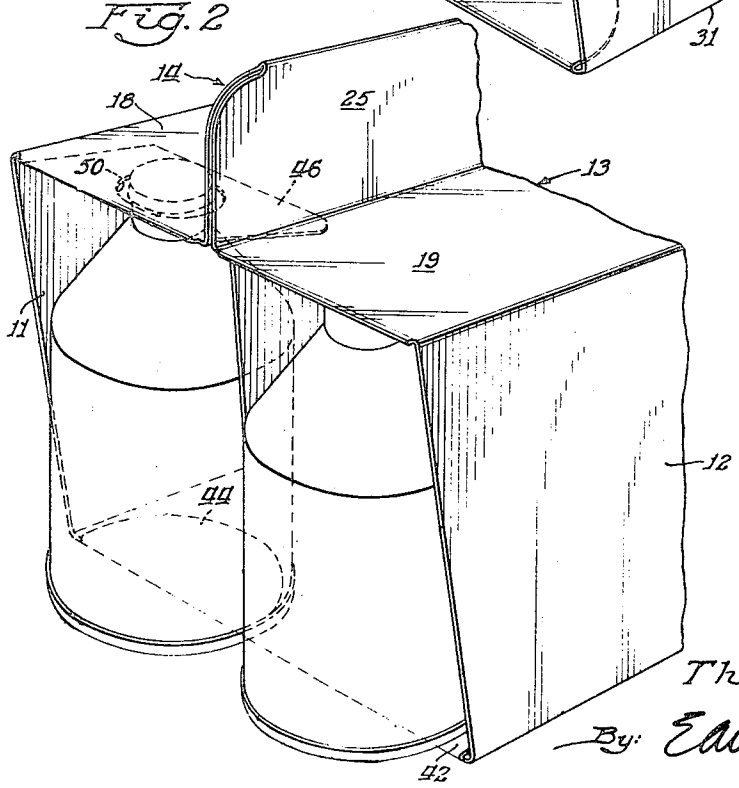


Fig. 2



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Fig. 3

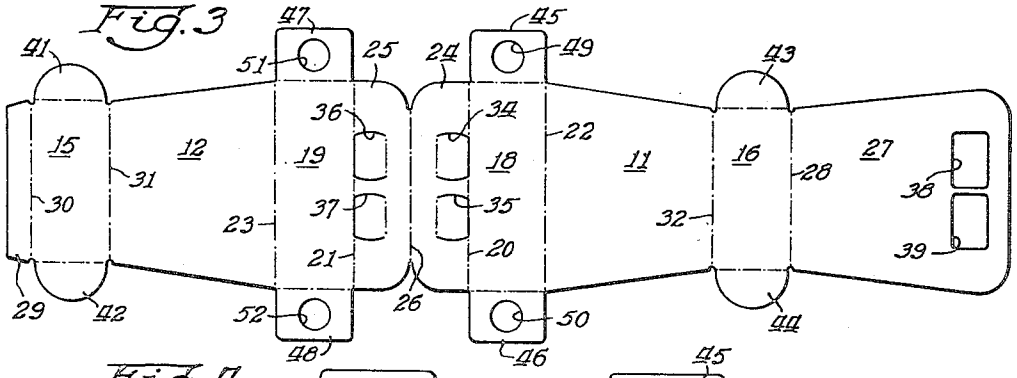


Fig. 4

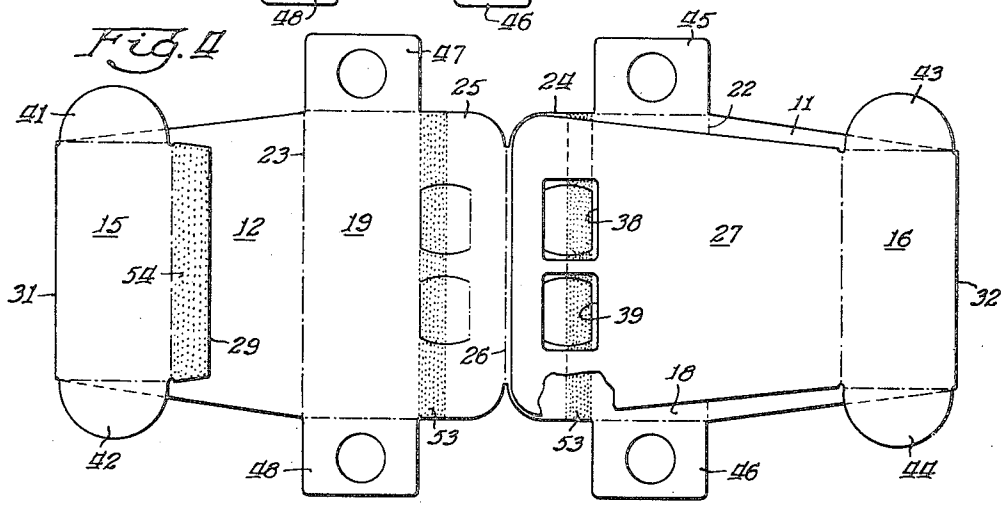
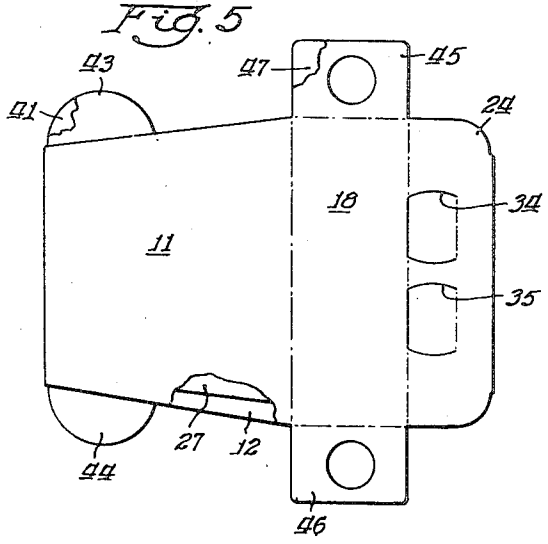


Fig. 5



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CARRIER FOR TAPERED TOP CANS

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Application June 29, 1949, Serial No. 102,022

7 Claims. (Cl. 224—45)

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The present invention relates to carriers or holders for tapered top articles such as cap-top cans and more particularly relates to collapsible carriers or holders adapted to be constructed of foldable paperboard or other foldable sheet material.

Among the objects of the invention are to provide a carrier or holder of the type referred to which can be manufactured from foldable paperboard and which will have a rugged and sturdy construction and at the same time is produced from a minimum amount of material. Another object is to provide a carrier or holder of this type which is provided with an upwardly extending carrying portion and which can be formed from a single blank of paperboard suitably creased and cut so that the parts may be secured by adhesive or other securing means to produce the finished carriers in flat, collapsed form ready for delivery to a user and capable of being conditioned for use by him without requiring tools or special skill, whereby the carriers may be quickly set up and filled with cans or similar articles ready for delivery to a retail store customer.

In the drawings illustrating a preferred embodiment of the invention—

Fig. 1 is a perspective view of a carrier embodying the present invention illustrating the members for retaining cans in place therein;

Fig. 2 is a fragmentary view, similar to Fig. 1, showing one end of a carrier filled with cans and illustrating the manner of retaining cans within the carrier;

Fig. 3 is a view illustrating a preferred form of blank from which the carrier can be manufactured;

Fig. 4 is a somewhat enlarged view illustrating the blank of the carrier in partially assembled condition as it appears after passing through the first step in the gluing operation; and

Fig. 5 is a plan view illustrating the carrier as it appears in collapsed condition ready for shipment to the user.

The carrier of the present invention is preferably formed to provide a convenient carryout for a retail store customer to take home six cans of beverage, and the carrier is particularly designed for cans that have a recessed or chime-type bottom and a tapered upper portion terminating in a neck arranged to accommodate a conventional crimped friction-type closure cap. The carrier preferably is made with a handle portion and partition portion disposed centrally between two side walls, the partition portion being connected with a foldable bottom portion and there being

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top portions which extend between the partition and handle portions and the side walls and are in hinged relation thereto whereby the carrier is adapted to be collapsed and retained in collapsed condition until it is ready to be filled with cans. The longitudinal dimension of the bottom of the carrier is less than the longitudinal dimenson of the top whereby the end cans of a row of cans inserted within the carrier will project partially outside of the carrier. The bottom portion is provided with inwardly bendable tabs over which the cans are adapted to slide and such tabs, due to the resilience of the paperboard of which the carrier is made will tend to rise as soon as the advancing portion of the chime edge of the can is moved out of contact with it. The free end of the tab will then move upward a small distance above the lower edge of the chime and engage the inner surface portion of the chime and serve as a retaining element tending to prevent outward movement of the lower portion of the can.

Referring more particularly to Fig. 1 of the drawings, the carrier as herein disclosed comprises a bottom portion, indicated generally at 10, side walls 11 and 12, a top portion indicated generally at 13, and a central panel and handle portion indicated generally at 14. The bottom portion 10 comprises two sections 15 and 16 hingedly related to each other and to the central panel along a fold line indicated generally at 17. The top portion 13 comprises two parts 18 and 19 hingedly connected along fold lines 20 and 21 respectively to the central panel portion.

The top portions 18 and 19 are in the present instance formed integrally with the side walls along hinge lines 22 and 23 and are formed integrally with carrying panels 24 and 25 connected thereto along the fold lines 20 and 21. These carrying panels are preferably integrally connected along their upper edges at fold line 26.

The lower portion of the central panel and handle portion comprises a panel 27, preferably formed integrally with one of the bottom sections, herein illustrated as bottom section 16, along fold line 28.

For the purpose of joining and hingedly relating the two bottom sections 15 and 16 the bottom section 15 is preferably formed with an attaching flap 29, defined from section 15 by a fold line 30. The flap 29 is suitably secured to the lower portion of the panel 27 preferably by adhesive. The outer edges of the bottom sections 15 and 16 are preferably integrally joined to the respective sides 11 and 12 along fold lines 31 and 32.

In order to strengthen the handle section and at the same time connect the central panel and handle portion to the top portion 13, the upper part of the panel 27 is extended to lie between the carrying sections 24 and 25 and is suitably secured thereto in any desired manner as by means of adhesive or staples.

Finger openings are provided in the carrying section by forming openings 34 and 35 in the part 24, openings 36 and 37 in the part 25, and openings 38 and 39 in the upper end of panel 27. The respective openings 34, 36 and 38 and the openings 35, 37 and 39 are arranged so as to be in substantial registration when the carrier is completely assembled.

The stock within the openings 34, 35, 36 and 37 is preferably left attached to the upper edges of the openings whereby tab elements are provided that can be swung laterally of the carrying section to provide for greater comfort to the fingers of the person holding the carrier.

As thus far described, a carrier or holder is provided which will hold two rows of cans or other articles side by side, one row being disposed between the central panel and side wall 11 and the other row between the central panel and side wall 12. The articles are introduced into the carrier through the open ends. While the carrier can be used for four, six, eight or more cans, the carrier as herein illustrated is designed for six cans in two rows of three cans each and, for convenience, will be so described.

According to the present invention means are provided on the top sections for engaging the cap ends of cans and means are provided on the bottom sections for engaging the inner chime portion on the bottoms of the outer cans of each row. Depending on the diameter of the can the bottom sections are designed to be substantially two can diameters in length and the top sections will be three can diameters in length. Stated another way, the bottom sections will have a length equal to one less than the number of cans in a row times the can diameter; and the top sections will have a length substantially equal to the can diameter times the number of cans in a row.

The bottom of the carrier is symmetrically arranged with respect to the top. Thus the top will project lengthwise out beyond the ends of the bottom a distance substantially equal to one-half the diameter of a can of the type for which the carrier is intended.

The means for engaging a portion of the chime of a can comprises tabs 41 and 42 at the ends of bottom section 15 and tabs 43 and 44 at the ends of bottom section 16. The tabs are each foldable inward relative to the bottom section to which it is attached along the fold lines indicated so that each tab may be swung over to assume a position flat against its attached bottom section. Each of the tabs is made semicircular and on a radius substantially equal to the radius of the circle described by the inside surface of the chime of the can for which the carrier is intended.

In order to engage and retain the cap end portion of a tapered top cap-end can each end of the top sections will be provided with flap elements indicated at 45 and 46 on section 18 and at 47 and 48 on section 19. These flaps are each foldable with respect to their attached sections along fold lines indicated whereby the flaps may readily be folded inwardly. Each of the top engaging flaps 45, 46, 47 and 48 is formed

with an opening indicated at 49, 50, 51 and 52 respectively. These openings are formed of such size as to snap down over the cap end of a can when inserted within the carrier. The resiliency of foldable paperboard enables the internal flap to be displaced upwardly as the can is moved inwardly and as soon as the cap part passes inwardly beyond the edge of the opening the flap will snap downward with the edge of the opening engaging the outer edge portion of the tapered can end or neck, tending to prevent outward withdrawal.

In the use of the carrier a collapsed carrier such as shown in Fig. 5 will be grasped by the carrying portion with one hand while the user's other hand is employed to expand the side wall portions away from the central panel. The handle portion will then be forced down which will cause the bottom sections as well as the top sections to be brought into alignment after which the bottom tabs and top flaps will be turned inwardly. The carrier is now ready to receive cans.

A convenient packing procedure is to insert two cans at the end of each of the compartments and insert the third can in each compartment from the other end. As the first can of the two cans being inserted passes the top flap the operator should hold such top flap sufficiently high so that its opening will not engage the can top. As soon as the leading can has passed under the flap the operator will release the flap so that it may snap over the neck of the trailing can. After two cans have been inserted into one end of one compartment the third can will be inserted from the other end and will be engaged by the top flap snapping down over the can neck.

Engagement of the bottoms of the cans is effected substantially simultaneously with engagement of the can tops. The bottom tabs are arranged in an inwardly directed position but these tabs will not lie flat due to the resiliency of the paperboard. When the middle can is in place and the outer can at each end is moved over the bottom tabs each tab will spring upward against the recessed bottom of the can and will engage endwise against the inner surface of the chime and lock the can bottom against outward displacement.

When it is desired to remove a can from the carrier this can readily be done by pressing upwardly on the top flap to withdraw its opening from engagement with the can neck. The can may then be removed by tilting it outwardly until the upper portion is brought out from under the top section whereupon the can may be lifted free of the chime engaging tab.

By forming the carrier from a single blank in which all the panels are in line a very economical carrier is provided. This form of blank also is economical to assemble as assembly can be effected on standard carton folding and gluing machines.

In the gluing operation the blanks as illustrated in Fig. 3 are fed into a suitably adjusted folding and gluing machine. As the blank advances adhesive will be applied either to the opposite surfaces of the end of the central panel 27 or to the under surfaces of the carrying sections 24 and 25. Adhesive is preferably applied to these latter surfaces, as indicated at 53, 53 in Fig. 4. Adhesive is also applied to attaching flap 29, as indicated at 54, preferably at the same time it is applied to the carrying sections 24 and 25. After

application of the adhesive the blank will be moved past the folding station which will cause the panels 16 and 27 to fold upwardly and over along the fold line 32 so that these panels will lie flat against panels 11, 18 and 24. Preferably at the same time panel 15 with its attaching flap 29 will be folded along fold line 31. The blank will then have the appearance as illustrated in Fig. 4.

The next step in the gluing operation is to fold the partially assembled blank along fold line 26 so that the parts 25, 19 and 12, with the parts 15 and 29 lying thereagainst will be folded over so that the lower edge of the panel 27 will come into contact with the freshly glued attaching flap 29 whereupon the carrier will be brought to its collapsed condition ready for shipment to a user, as illustrated in Fig. 5.

While the present description sets forth a preferred embodiment of the invention, certain changes may be made in the construction without departing from the spirit of the invention, and it is therefore desired that the present embodiment be considered in all respects as illustrative and not descriptive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

I claim:

1. A collapsible holder adapted for use with tapered top cans of predetermined height and diameter having chime-type bottoms, such holder being formed of foldable paperboard comprising a bottom wall portion adapted to hold two rows of cans side by side, a top wall portion, side wall portions hingedly connected to the lateral edges of the top and bottom wall portions, a partition element hingedly connected to the top and bottom along their mid portions to separate the rows of cans within the holder, the bottom wall portion having a length less than the length of the rows of cans for which the holder is designed whereby the end cans of each row will project beyond the ends of the bottom, chime engaging flaps extending from the ends of the bottom and arranged to be turned inwardly to assume a position substantially flat against the bottom whereby a can inserted so as to rest upright upon the bottom will have the inwardly disposed portion of its chime edge engaged by the inturned flap to retain the lower end of a can against outward displacement, the top portion of the holder being disposed symmetrically with respect to the bottom but having a length greater than the bottom and substantially equal to the length of a row of cans to be inserted in the holder, the top portion having tabs at each end thereof adapted to be folded inwardly to assume a position against the under side of the top portion, each of such tabs being formed with an opening spaced inwardly from the ends of the top portion and being of sufficient size to receive the upper end of a can and retain it from outward displacement due to the resilience of the paperboard tending to move the tabs down below the upper ends of the cans after the cans have been inserted within the holder.

2. A collapsible holder adapted for use with tapered top cans of predetermined height and diameter having chime-type bottoms, such holder being formed of foldable paperboard comprising a bottom wall portion adapted to hold a row of cans, a top wall portion, side wall portions hingedly connected to the lateral edges of the top and bottom wall portions, the bottom wall portion having a length less than the length of the row of cans for which the holder is designed whereby the end cans of the row will project beyond the ends of the bottom, a chime engaging flap extending from each end of the bottom and arranged to be turned inwardly to assume a position substantially flat against the bottom whereby a can inserted so as to rest upright upon the bottom will have the inwardly disposed portion of its chime edge engaged by the inturned flap to retain the lower end of a can against outward displacement, the top portion of the holder being disposed symmetrically with respect to the bottom but having a length greater than the bottom and substantially equal to the length of a row of cans to be inserted in the holder, the top portion having a tab at each end thereof adapted to be folded inwardly to assume a position adjacent the under side of the top portion, each of such tabs having an opening formed therein spaced inwardly from the ends of the top portion and being of sufficient size to receive the upper end of a can and retain it from outward displacement due to the resilience of the paperboard tending to move the tab down below the upper ends of the outer cans after a row of cans has been inserted within the holder.

3. A collapsible holder adapted for use with tapered top cans of predetermined height and diameter having chime-type bottoms, such holder being formed of foldable paperboard comprising a bottom wall portion adapted to support a row of cans, a top wall portion, side wall portions hingedly connected to the lateral edges of the top and bottom wall portion having a length less than the length of the row of cans for which the holder is designed whereby the end cans of the row will project beyond the ends of the bottom, a chime engaging flap extending from at least one end of the bottom and arranged to be turned inwardly to assume a position substantially flat against the bottom whereby a can inserted so as to rest upright upon the bottom will have the inwardly disposed portion of its chime edge engaged by the inturned flap to retain the lower end of a can against outward displacement, the top portion of the holder being disposed symmetrically with respect to the bottom but having a length greater than the bottom and substantially equal to the length of a row of cans to be inserted in the holder, the top portion having a tab extending from at least one end thereof adapted to be folded inwardly to assume a position adjacent the under side of the top portion, and having an opening formed therein spaced inwardly from the end of the top portion, such opening being of sufficient size to receive the tapered upper end of a can and retain it from outward displacement due to the resilience of the paperboard tending to move the tab down below the upper end of the outer can in a row after a row of cans has been inserted within the holder.

4. A collapsible holder adapted for use with tapered top cans of predetermined height and diameter, such holder being formed of foldable paperboard comprising a bottom wall portion adapted to hold a row of cans, a top wall portion, side wall portions hingedly connected to the lateral edges of the top and bottom wall portions, the bottom wall portion having a length less than the length of the row of cans for which the holder is designed whereby the end cans of the row will project beyond the ends of the bottom, means for holding the bottom portions of a can at each end of the row against

outward displacement with respect to the bottom, the top portion of the holder being disposed symmetrically with respect to the bottom but having a length greater than the bottom and substantially equal to the length of a row of cans to be inserted in the holder, the top portion having a tab at each end thereof adapted to be folded inwardly to assume a position adjacent the under side of the top portion, each of such tabs having an opening formed therein spaced inwardly from the ends of the top portion and being of sufficient size to receive the upper end of a can and retain it from outward displacement due to the resilience of the paperboard tending to move the tab down below the upper ends of the outer cans after a row of cans has been inserted within the holder.

5. A collapsible holder adapted for use with tapered top cans of predetermined height and diameter having chime-type bottoms, said holder being formed of foldable paperboard comprising a bottom wall portion adapted to hold two rows of cans side by side, a top wall portion, side wall portions hingedly connected to the lateral edges of the top and bottom wall portions, a partition element hingedly connected to the top and bottom along their mid-portions to separate the rows of cans within the holder, chime-engaging flaps on the bottom portion adjacent the ends thereof each adapted to be folded to extend slightly upwardly therefrom in a direction away from the adjacent end, whereby a can inserted so as to rest upright upon the bottom will have the inwardly disposed portion of its chime edge engaged by the flap to retain the lower end of the can against outward displacement, tabs at the ends of the top portion adapted to be folded inwardly to assume a position against the under side of the top portion, and an opening formed in each tab spaced from the end of the top portion and of sufficient size to receive the upper end of a can and retain it from outward displacement.

6. A collapsible holder adapted for use with tapered top cans of predetermined height and diameter having chime-type bottoms, said holder being formed of foldable paperboard comprising a bottom wall portion adapted to support a row of cans, a top wall portion, side wall portions hingedly connected to the lateral edges of the top and bottom wall portions, a chime-engaging

flap on the bottom adjacent an end thereof and arranged to extend slightly upwardly and in a direction away from said end whereby a can inserted so as to rest upright on the bottom will have the inwardly disposed portion of its chime edge engaged by the flap to retain the lower end of the can against outward displacement, the top portion having a tab extending from an end thereof adapted to be folded inwardly to assume a position adjacent the under side of the top portion and having an opening therein spaced from the end of the top portion, said opening being of sufficient size to receive the tapered upper end of a can and retain it against outward displacement.

7. A collapsible holder adapted for use with tapered top cans of predetermined height and diameter, said holder being formed of foldable paperboard comprising a bottom wall portion adapted to hold a row of cans, a top wall portion, side wall portions hingedly connected to the lateral edges of the top and bottom wall portions, means for holding the bottom portions of cans at the ends of the row against outward displacement with respect to the bottom, and a tab at each end of the top portion adapted to be folded inwardly to assume a position adjacent the under side of the top portion, each of the tabs having an opening therein spaced from the adjacent end of the top portion and of sufficient size to receive the upper end of a can and retain it against outward displacement.

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