

Aug. 4, 1964

J. J. HEYDON

3,143,210

CAN PACKAGE

Filed Nov. 16, 1959

2 Sheets-Sheet 1

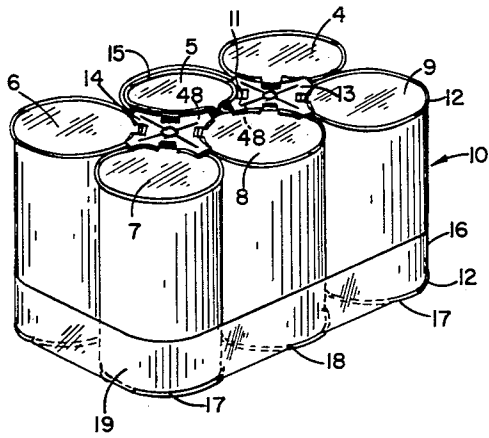


FIG. 1

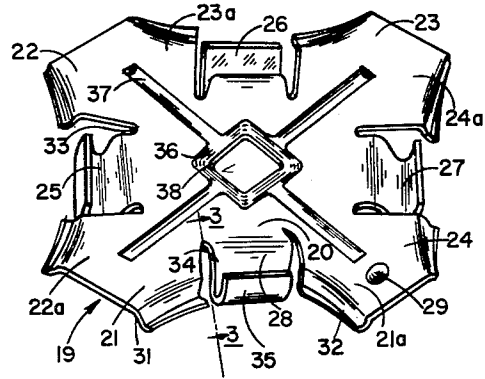


FIG. 2

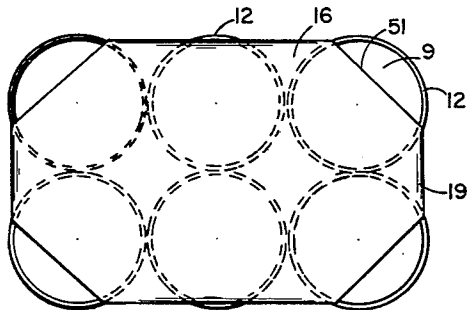


FIG. 7

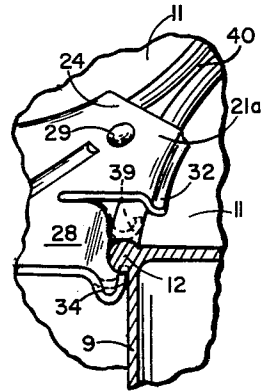


FIG. 3

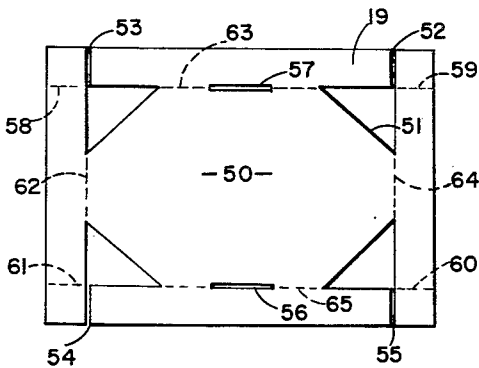


FIG. 8

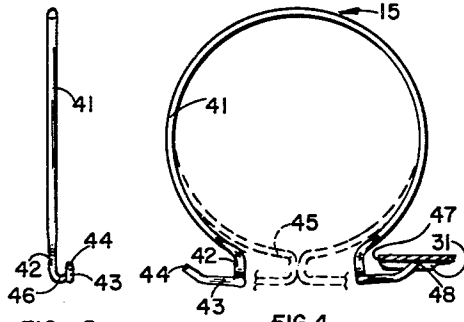


FIG. 5

FIG. 4

INVENTOR
JOHN J. HEYDON

BY *Thomas S. Macdonald*

ATTORNEY

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2 Sheets-Sheet 2

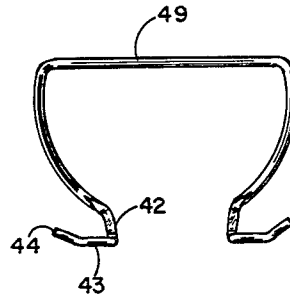


FIG. 6

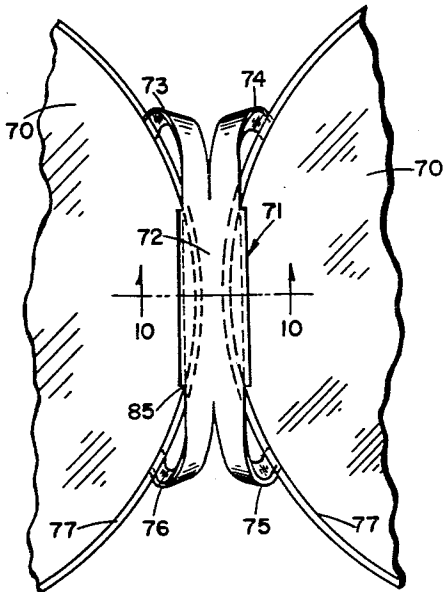


FIG. 9

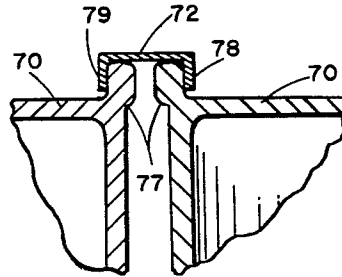


FIG. 10

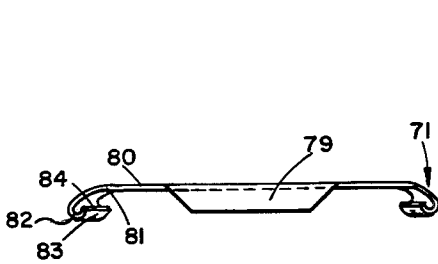


FIG. 11

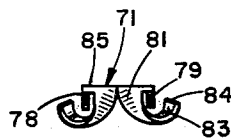


FIG. 12

INVENTOR
JOHN J. HEYDON

BY

Thomas S. MacDonald

ATTORNEY

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3,143,210

CAN PACKAGE

John J. Heydon, 611 W. Hill, Fullerton, Calif.

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14 Claims. (Cl. 206-65)

This invention is directed to a carrier for displaying and carrying a series of beaded cans. More particularly the invention concerns a carrier package for rows of cylindrical cans which are held by at least one spring clip and includes means to further confine a series of cans and handle means to facilitate carrying the package.

As is known the usual six-pack package has been of the paperboard variety and has been constructed in various shapes and forms. Because of the inherent expense and other disadvantages hereinafter discussed of such prior art packages, they have not come into universal use for other than beer and certain other beverages. The paperboard packs are prone to tearing, deterioration under moisture conditions, difficulty in opening and excessive can movement within the package itself. Various types of clips for holding multiple cans have been proposed, constructed and tested for use in the beer canning industry. Basically, these clips have been unable to meet (1) the usual industry drop tests, (2) a minimal standard of ease of use by the consumer, and (3) a competitive cost standard.

The complete preferred can package of this invention basically comprises clip portions adapted to grip the top beading of cylindrical cans, a paperboard retainer surrounding the cans and held by the bottom beading of the cans and a handle portion pivotable in adjacent clips and recessible in a can top.

An object of this invention is to provide a novel carrier for a group of cans.

A further object of this invention is to provide a new clip means for clipping together beaded cans.

A still further object of this invention is to provide an improved multipack can package.

An additional object is to provide an improved handle for a multican carrier.

A further object is to provide a new disposable tray for holding beaded cans in a convenient carrier.

A still further object is to provide a novel package for a group of six beaded cans, including spring clips, a handle pivotable therein and a paper board retaining tray.

The above objects, as well as other objects of the invention will be apparent from the following description of the accompanying drawings, in which:

FIG. 1 is a perspective view of the overall package;

FIG. 2 is a perspective view of a clip means per se;

FIG. 3 is a partial cross-sectional detailed view showing the can clamping action of the clip means taken on the line 3-3 of FIG. 2;

FIG. 4 is a handle front view in the carrying position with an end projection pivotable on a cross-sectioned portion of a clip member;

FIG. 5 is a side view of the handle of FIG. 4;

FIG. 6 is a modified handle portion;

FIG. 7 is a bottom view of a six-pack tray in position;

FIG. 8 is a plan view of a cut blank from which the tray is constructed;

FIG. 9 is a modified clip in position on a two-pack;

FIG. 10 is a cross-view taken on line 1-1 of FIG. 9; and

FIGS. 11 and 12 are side and end views of such modified clip.

The overall can package 10 shown in FIG. 1 is described herein in terms of a six-pack, made up of six juxtaposed cans 4, 5, 6, 7, 8 and 9 beaded as in conventional at the top and bottom thereof. It is to be understood that the invention contemplates the use of the hereinafter described clips in packages including two or more

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juxtaposed cans. While the beverage industry favors the former, the present invention has utility in clipping together, for example, four soup or sauce cans which can be sold as an integral unit in its own package. In the typical complete six-pack shown clips 13 and 14 are provided at the point of juxtaposition of cans 4, 5, 8 and 9 and 5, 6, 7 and 8, respectively. Each of these clips have portions, shown in detail in FIGS. 2 and 3, which clip together the adjacent cans at the top beading thereof. To facilitate carrying of the package a handle 15 is provided which when used is pivoted as at 11 in a portion of the clips to an upstanding position at right angles to the plane including the tops of the juxtaposed cans. When the package is in storage or on display the handle 15 will be recessed into the top of one of the central cans 5 or 8 as shown so that the handle does not interfere with the stacking or the sliding from a stack of the overall package. When the handle bail is recessed below the top of the can beading it presents no obstacle to these functions. In order to prevent accidental disengagement of the cans from the clip and to afford additional space for advertising, etc., a paperboard or metal foil tray retainer 16 is provided at the bottom of the can package. This tray is supported on the cans by the cans themselves, namely by the bottom beading 12. The tray 16 comprising an annular band 19 having slots 17 and 18 therein which extend upwards from the plane of the tray bottom a distance slightly greater than the height of the can beading on the exterior can surface so that the upper edge of the slots rest on the top exterior edge of the bottom can beading. In operation the clips are pressed into position on two parallel juxtaposed rows of beaded cans, the handle projections inserted under the clips and the retainer tray mounted on the cans. Following sale, the ultimate consumer at the time of first use removes the tray by tearing or prying it off the beading, and then rotates a held can about an axis at the juncture of the clip and that can. Once the can has been rotated upwardly about 45° the can will slip out of the clip and be ready for the usual can opening procedures. After one can has been removed the clips or clip continue to hold the remaining cans. When only one can remains on the clip the clip can be held and that can pivoted to disengage the clip therefrom.

FIG. 2 shows in detail a preferred form of clip 19 which is formed from a one-piece metal blank 20 having various coined and bent portions. The blank has four pairs of fingers (21, 21a; 22, 22a; 23, 23a; 24, 24a) extending generally from each side of the blank. Each pair of fingers may be described as a bifurcated finger extending outwardly and eventually downward in the case of a can top clip. These fingers function to grip the top side of the can beading and provide a downward and inward force on that beading. Each of the fingers has a downwardly extending portion 31 of a lateral radius to fit the rim of the can, a bent radii approximately the same as the can beading and a flat tip portion 32 adapted to seat on the top of the can inwardly of the beading thereon. The tip portion 32 is shown in FIG. 2 as being flared into the bent portion 31 at the tips of the fingers but may be of constant width as seen in FIG. 3. Between each of the pairs of fingers is a cantilevered bent beam 25, 26, 27 and 28 which spring grips the underside of the can beading. These bent beams have root portions peripherally inward from the lips of fingers and are separated therefrom by cut-out portions 33 having a curved inner radius preventing the tearing of metal. Each of the bent beams has a downwardly extending portion 34 at an angular relation of approximately 60° to the plane of the metal blank 20 and of a distance greater than the downwardly extending portions 31 of the bifurcated fingers. The bent beams have a free end portion 35 extending in a substantially vertical direction whose tip end presses on

the underside of the can beading with an upward and outward force and extends to a plane below the plane of the metal blank 20. The blank is provided with a coined square aperture 38 permitting indexing of the clip which is surrounded by an inwardly extending stiffening rib 36. A circular aperture is seen in the FIG. 1 clips. Additional stiffening ribs 37 are provided extending between the bifurcated fingers. This allows the fingers to have sufficient stiffness while allowing the bent beams or spring sections to satisfactorily grip the can beading. The combination of a pair of fingers and a spring section act as a three-fingered claw which grips the described portions of the beading in the manner discussed.

This clamping action is seen in greater detail in FIG. 3 wherein a portion of the clip is shown attached to a can 9. The spring portion or bent beam 28 is deflected from a released position 39 (shown dotted) during assembly so that it tightly grips the underside of beading 12 as it attempts to return to the relaxed or unstressed position. The clips are placed on a group of cans by pressing them on the can tops while the beam has been compressed sufficiently to clear the top beading. The spring 28 is thus a cantilever beam fixed at one end and loaded at the other end by the underside of the rim of the can. The action of the finger tips 32 on the top surface 11 of adjoining cans can be seen. Preferably the clips hold the cans in such a manner that the beading on adjacent cans do not touch as at 40 thus avoiding chaffing, denting or bumping of cans. The cans are individually suspended or floated by the clamping action of the described clips. In order to develop the proper spring tension a preferred clip is made from SAE 1040 carbon spring steel which is heat treated to a hardness corresponding to a Rockwell "C" measure of 43. The preferred range of hardness is from 40-44 on the Rockwell "C" scale. The clips are normally made from sheet stock having a thickness of 0.012-0.020 depending on the size of cans which are to be clipped together.

The cans, though held tightly by the clips, are not held rigidly. Thus if the package is distorted by impact or twisting movement, the clips are not broken nor do they lose their grip. When the distorting or twisting force is removed, the clips return the package to its original shape. This feature makes it possible for the present invention to survive the normal rigors encountered in handling and shipping.

When it is desired to use the clips described on the bottom of the can package the top surface of the clips may have raised dimples 29 in the position indicated in FIG. 3 between the fingers of the clip. These dimples facilitate the sliding of one clip over another clip when removing a package from a stack. In the preferred form of can carrier dimples 29 are unnecessary since when the can packages are stacked the bottom tray seen in FIG. 1 easily slides over the clips holding the package below.

FIG. 4 shows a novel can carrier handle and its pivotable connection with a portion of a central can clip as seen broadly in FIG. 1. The handle 15 comprises an open, cylindrical bail portion 45 generally made of stiff wire, a flattened portion 42 extending peripherally outward from the bail, and oppositely directed end projections 43 extending from an offset portion 46 (FIG. 5), generally also flattened, at right angles to the portions 42 and 43. The offset portion 46 seen in FIG. 5 extends a distance slightly greater than the distance between the underside of an attached clip to the top of the can beading. The offset portion 46 allows the flattened portion 42 to overlap the top of the can beading and the bail portion 41 to recess in the can top within the can beading. The projections 43 terminate in an angular sharp end section 44 which functions to load the handle in the up position inwardly of the exterior periphery 47 of the clip fingers as at 48. This prevents the handle from pulling out from between the clips. For purposes of amplification the pivot points 48 are also seen in FIG. 1. The dotted lines 45 in FIG. 4

show the handle in a compressed position which enables it to be fitted under the end portions 47 of juxtaposed can clips.

FIG. 6 shows a modified handle portion which has a hemispherical bail section which has an upper cross-bar 49 which is easily grippable for raising into a vertical position for carrying and facilitates the carrying of the overall package.

FIG. 7 is a bottom view of the paperboard retainer tray of this invention which co-acts with the beading of the juxtaposed cans to hold itself and the cans in position and which is easily removed without tools or mechanical aid permitting pivoting of the cans from the clips as heretofore discussed. The tray 16 comprises a flat bottom portion in engagement with the exterior of the beading 12 on all the cans 9. A triangular or other shaped cut-out portions 51 internally of each of the corners of the blank which allows an annular band 19 to circumferentially confine the grouping of cans with its bottom corner edges sitting on the inner periphery of the beading along the exterior of the cans. This prevents the tray from falling off the cans when the can unit is picked up.

The preferred paperboard retainer tray seen in FIG. 8 comprises a generally rectangular blank having a central plane portion 50, cut-out portions 51, parallel slits 52, 53, 54 and 55 leading from the peripheral edges of the blank to a parallel edge of each of cut-outs 51, and slots 56 and 57, in the case of a six-pack tray, centrally on one side of the blank. The edges of the blank are folded on dotted fold lines 62, 63, 64 and 65 at right angles to bottom 50. The ends of the short sided ends of the blanks are then folded at 58, 59, 60 and 61, overlapped with an adjacent edge portion and firmly secured as by glue or staple. This final operation is done by automatic machinery which places the tray upon the can bottoms.

The invention above described can be used with various numbers of cans other than the six-pack illustrated in FIG. 1. For example, a triangular three-pack may be clipped together by one clip member having a general equilateral triangular shape with a pair of fingers and a bent beam spring portion therebetween extending from each of the three sides.

FIG. 9 shows a top view of a modified clip in position on a two-pack. This modification is particularly useful on large 40 oz. juice cans and the like of considerable weight. It comprises a clip 71 positioned on the beading 77 of cans 70. This clip has central portion 72, bifurcated spring fingers or bent beams 73, 74, 75 and 76 extending therefrom to grip the underside of the can beading and central depending fingers 78 and 79 which operably abut the top and inner periphery of the can beading 77 as shown in detail in FIG. 10, a cross-sectional view taken in FIG. 9.

FIG. 11 shows the depending finger means 79 on clip 71, the root 80 of a bifurcation forming a spring beam which has a downwardly and inwardly, i.e. facing the other beam of the bifurcation, curved portion 81 which is then curved outwardly as at 82. The bent beam terminates in an upwardly directed, substantially vertical free-end portion 83 having a tip 84 which sits under the outer beading of a can. Tip 84 is angularly disposed with respect to the longitudinal axis of the clip 50 so as to generally conform to the beading at the radial positions shown in FIG. 9. This cantilevered spring bent beam corresponds to the cantilevered bent beam 28 of FIG. 2. FIG. 12 shows an end view of the clip 71. Shoulder 85 facilitates the mounting of the clip on the can beading. The cans in the described two-pack are separated by pivoting them about the bent beams.

Although the invention has been described and illustrated in detail, it is to be clearly understood that the same is by way of illustration and example only and is not to be taken by way of limitation, the spirit and scope of this invention being limited only by the terms of the appended claims.

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I claim:

1. A carrier for two rows of cylindrical cans having cylindrical sides and beaded tops and bottoms, comprising at least one holding clip having a generally planar top surface operably connected to each of four juxtaposed cans, said clip having spring sections including portions compressively gripping the underside of the beading with an upward and outward force with respect to said top surface on one end of each of said juxtaposed cans, the portions of said spring sections engaging said beading underside in their normal position lying in a plane above said beading underside, and means gripping the top side of said beading, and a paperboard retainer surrounding and in contact with said juxtaposed cans and held thereon by the beading on the opposite ends of said juxtaposed cans, said spring sections gripping at least four cans at a position diametrically opposite the centers of the can portions contacted by said retainer.

2. A can package for six cylindrical cans in two parallel juxtaposed rows, said cans having beaded tops and bottoms, a first spring clip operably connecting four juxtaposed cans including two centrally located cans, a second spring clip operably connecting the other two of said cans with said centrally located cans, each of said spring clips having a relatively flat central portion and four cantilevered spring grips extending from peripheral edge portions of said central portion including portions operably gripping in upwardly and outwardly directed compression the underside of a portion of the top beading on each of the juxtaposed cans, the portions of said spring grips engaging said beading underside in their normal position lying in a plane above said beading underside, and finger means extending from said edge portions of said clips on each side of each of said grips operably abutting the top side of a portion of the top beading on each of the juxtaposed cans.

3. The invention as set out in claim 2 including a paperboard retainer peripherally holding said cans at the bottom thereof and in contact with portions of said cans preventing accidental pivoting of a can about an axis substantially through said spring grips and adjacent finger means, said spring grips gripping four end located cans at a position diametrically opposite the centers of the end can portions contacted by said retainer.

4. A clip for holding at least two juxtaposed cans each having a beaded top portion, comprising a relatively flat metal blank, at least two pairs of spaced fingers downwardly extending from said blank, each of said pairs adapted to operably abut spaced portions of the top and inner periphery of the can top beading on each of said cans, and a cantilevered spring grip downwardly extending from said blank between each of said pairs of spaced fingers, said spring grip adapted to operably abut and provide a compressive spring force against a portion of the underside of said can top beading on the exterior periphery thereof between the abutment of said pairs of fingers whereby each can is held in a three-point suspension.

5. A multiple can clip comprising a blank having a relatively flat top surface, depending can grasping fingers extending downwardly from the side of said blank, at least one cantilevered U-shaped bent beam extending from said blank between pairs of said fingers, said beam having a first portion extending downwardly and a free end portion extending upwardly toward said top surface and adapted to contact a can beading.

6. A multiple can clip comprising a metal blank having a relatively flat horizontal top surface, bifurcated fingers extending downwardly from each side of said blank, a cantilevered bent beam extending from said blank between each bifurcated finger, said beam having a first angular portion extending downwardly a distance greater than the downwardly extending extent of said fingers and a free end portion extending upwardly in a substantially vertical direction toward said top surface,

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the tip of said free end portion ending in a plane below the plane of said horizontal top surface.

7. A multiple can clip for cylindrical beaded cans comprising a metal blank having four cantilevered U-shaped bent beam gripping fingers extending equidistantly from a substantially horizontal portion of said blank at points 90° removed from each other, said gripping fingers having a first portion integral with said blank and extending downwardly therefrom and an integral free re-entrant end portion extending substantially vertically from said first portion toward said horizontal portion, four projections extending from said blank at a 45° angle between each of said fingers, each of said projections having two separate and distinct depending curved sidewalls in substantially spaced curved alignment with an adjacent free re-entrant end portion of said fingers whereby each of said gripping fingers and two adjacent curved separate sidewalls are adapted to grasp and hold a beaded can on the underside and top side, respectively, of the beading thereon.

8. In combination with a series of juxtaposed beaded cans, two longitudinally spaced spring clips holding said cans in fixed orientation at the beading thereon, said clips having aligned openings bisecting aligned rows of cans, and a pivotable carrier handle having oppositely directed end projections situated in said aligned openings, a bail portion having a curvature corresponding to the inner circular diameter of the beading on said cans, offset means between said projections and said bail portion adapted to overlay a can beading and recess said bail portion therein.

9. A clip for holding two juxtaposed cans each having a beaded top portion, comprising a metal blank having a relatively flat top surface, at least one pair of spaced fingers extending downwardly from the top surface of said blank and adapted to operably abut portions of the top and inner periphery of the can top beading, and at least one cantilevered spring grip extending downwardly from the top surface of said blank between said spaced fingers, said spring grip being in compression and adapted to operably abut a portion of the underside of said can top beading on the exterior periphery thereof the combination of said at least one grip and said fingers being in contact with each of said cans at three distinct points to provide a three-point suspension for each of said cans.

10. The invention as set out in claim 9 including two spring grips extending on both lateral sides of said spaced fingers and wherein said three distinct contact points on each said can are provided by two spaced coating spring grips having one of said spaced fingers therebetween.

11. The invention as set out in claim 9 wherein said three distinct contact points on each said can are provided by one spring grip between a pair of spaced fingers.

12. A can carrier handle comprising an open curved bail portion for recessing in a beaded can top, offset portions extending from the ends of said bail portion and oppositely directed end projections extending from each of said offset portions, said offset portions being flattened in the plane of said bail portion and said projections being in a plane spaced from and parallel to the plane of said bail portion.

13. A can carrier handle comprising an open cylindrical bail portion, offset portions extending from the ends of said bail portion and oppositely directed end projections extending from each of said offset portions, said bail portion being cylindrical in cross-section, said projections being in a plane parallel to the plane of said bail portion and having the tips thereof bent toward said bail portion.

14. A can package for six cylindrical cans in two parallel juxtaposed rows, said cans having beaded tops and bottoms, a first spring clip operably connecting four juxtaposed cans including two centrally located cans, a second spring clip operably connecting the other two of said cans with said centrally located cans, each of said spring clips having a relatively flat central portion and four cantilevered spring grips extending from peripheral edge

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portions of said central portion operably gripping in upwardly and outwardly directed compression the underside of a portion of the top beading on each of the juxtaposed cans, and a wire pivotable handle having a curved bail portion of smaller diameter than said cans and having end portions pivotably held between opposed pairs of finger means on each of said clips on the undersides thereof whereby said handle straddles the two centrally located cans and said curved bail portion is adapted to operably pivot into the recess formed by the top beading on either of said centrally located cans.

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