Feb. 27, 1962 R. L. BRUNSING 3,022,888

MULTI-CAN PACKAGE

Filed Feb. 11, 1960 2 Sheets-Sheet 1

FIG_1

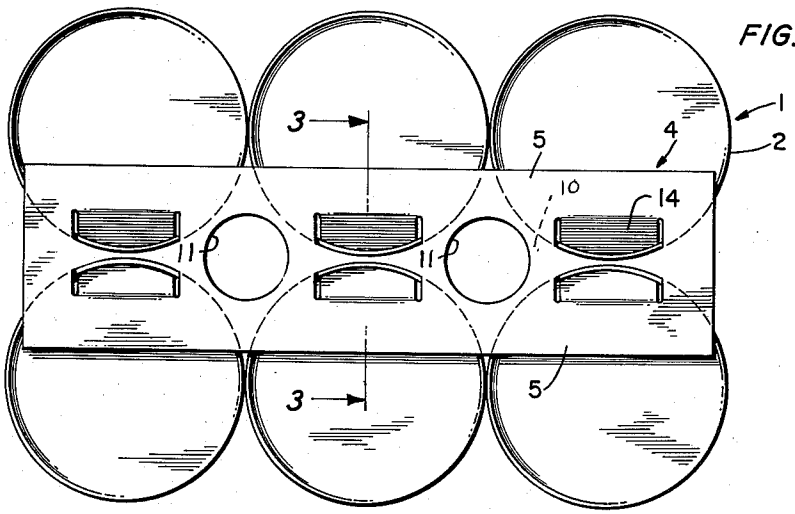


FIG_2

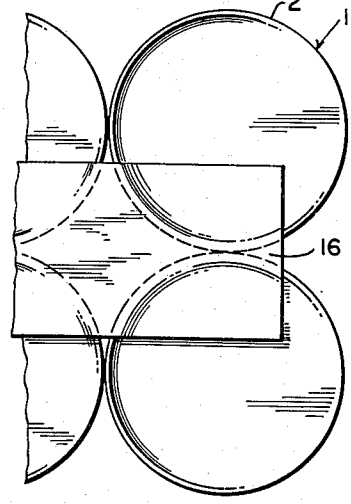


FIG_3

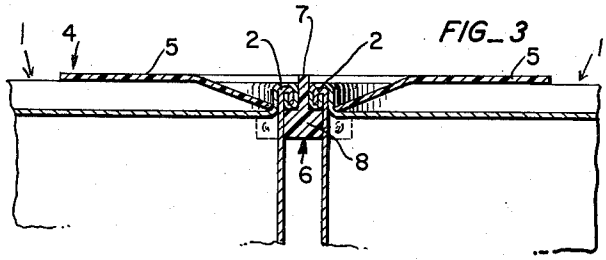


FIG_4

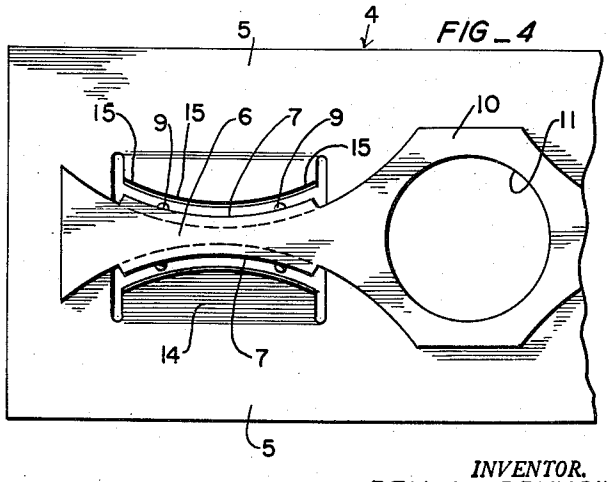
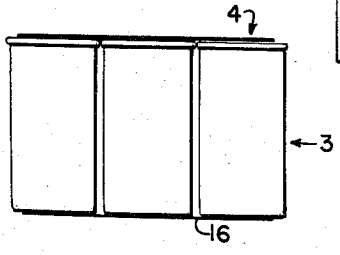


FIG_5



INVENTOR.
REX L. BRUNSING

BY

Boyken, Mohler & Wood

ATTORNEYS

Feb. 27, 1962 R. L. BRUNSING 3,022,888

MULTI-CAN PACKAGE

Filed Feb. 11, 1960

2 Sheets-Sheet 2

FIG_7

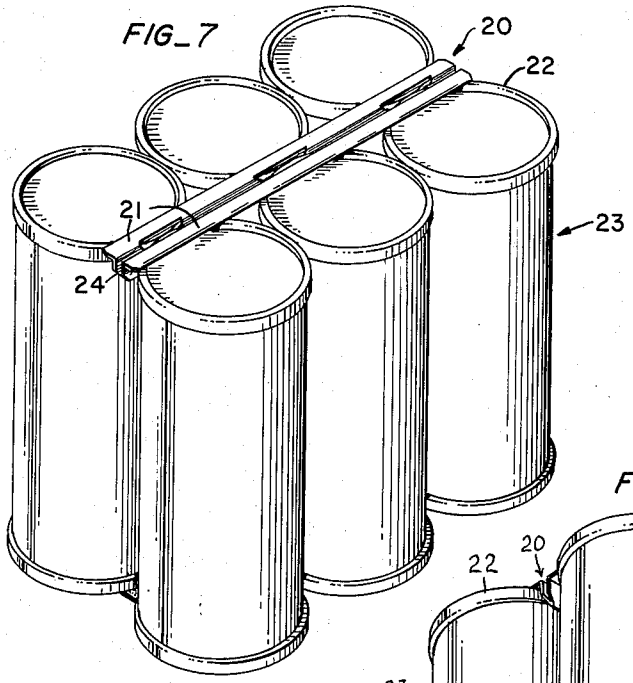


FIG_6

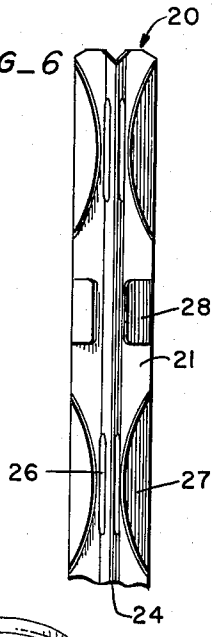


FIG_9

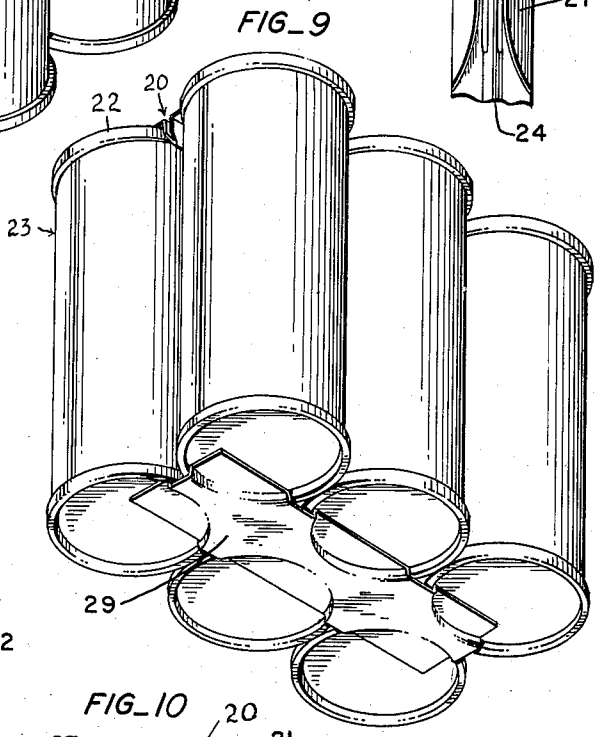


FIG_8

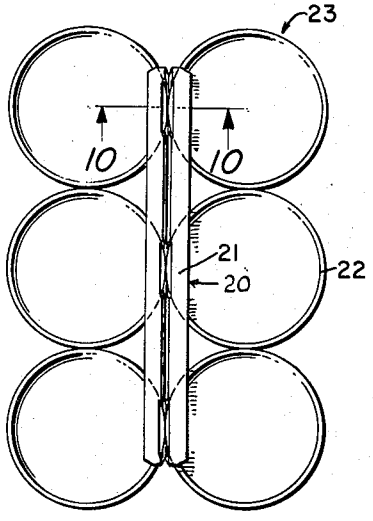
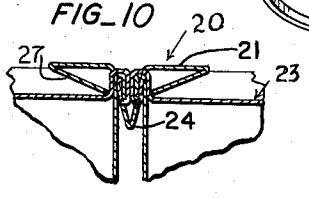


FIG_10



INVENTOR.
REX L. BRUNSING

BY
Boyken, Molden & Wood
ATTORNEYS

United States Patent Office 3,022,888 Patented Feb. 27, 1962

3,022,888

MULTI-CAN PACKAGE

Rex L. Brunsing, 260 California St., San Francisco, Calif.

Filed Feb. 11, 1960, Ser. No. 8,018
8 Claims. (Cl. 206—65)

This invention relates to a multi-can package and has for one of its objects the provision of a multi-can package that is more economical to make than heretofore, both with respect to materials and to the cost of apparatus required to form the package, and which package is stronger than heretofore, and displays the cans more fully and attractively.

One of the main deterrents to the adoption of multi-can packages in the display and marketing of canned products, apart from certain canned beverages, has been the cost of making the packages. The desirability of packaging a number of cans, to form a convenient unit for carrying, has been well established. Carton held cans of beverages are common, and few purchasers buy less than a package or carton of cans containing the beverages.

This invention is an improvement over the package shown in my United States Letters Patent No. 2,903,128 of September 8, 1959, in which each package consisted of two rows of cans held together in said rows by strips of tape extending over their opposite ends, and a rigid strip engaging the chimes of the cans of the rows at one of the corresponding ends of the cans for holding the cans against axial movement relatively. The tape at one of the ends of the cans also functions to hold the rigid strip in position, and the cans were readily released upon removal of the two tapes.

The present invention has substantially all of the advantages of the disclosure in said patent and eliminates tape at one of the ends of the cans, and it has the further advantage of providing finger openings in a relatively rigid chime-holding strip at one of the ends of the cans for lifting the package by two fingers of the hand in the same manner as is employed in carton type packages.

One of the objects of the present invention is the provision of a novel chime holding strip that may be readily connected with the chimes on adjacent cans in an adjacent pair of rows so as to provide a secure yet easily removable means, for holding one of the ends of the cans together.

It may be noted that rigid strips have been used before, but special tilting of the cans was required to connect the cans with the strip and the latter projected above the cans to preclude stacking packages of the cans one on the other, and a costly and inconvenient movable handle was required in order to lift the cans. Furthermore, the prior rigid connectors that have been employed, except as shown in the patent hereinbefore designated, have made can separation or disassembly of the cans so difficult as to be impractical, and they have also included features that are likely to cause injury to the hands of a person when on a partly disassembled package.

In explanation of the above, in cans that have radially and axially projecting chimes at one or both of their ends and in which the cans are in side by side relation with the chimes coplanar, it is essential that the chimes be held in coplanar relationship. If the chimes on adjacent cans should slide to position in which one is over the other, the package will be distorted, and the cans will be loosened. If rigid connectors connect the chimes at both ends of the cans, it is only with extreme difficulty that each is removed from the others, and the package is broken up for use. The same difficulty, only to a slightly less degree, occurs where relatively rigid connectors are tightly crimped to the chimes at only one of the ends of the cans.

While solving the problem of ease of separation of the cans, the invention as disclosed in the hereinabove mentioned patent still left unsolved the matter of excessive use of tape and the inability of the rigid element at one of the ends of the cans to stay in position and yet be readily separable from the cans, without the use of tape. In said patent the rigid element merely performed the function of a device to prevent "rim lock" and in assembling the package, the element would remain loose until tape connected it to the cans.

One of the objects of the present invention is the provision of a package that overcomes all of the aforesaid problems, and that employs a rigid or semi-rigid connector at only one of the ends of the cans, and which connector automatically connects the cans therewith merely upon moving the cans against the connector.

One of the objects of the present invention is the provision of means for securing a plurality of cans together to form a multi-can package that is adapted to be stacked on another similar package in substantially the same manner as the conventional carton type packages may be stacked, and which package includes a fairly rigid, yet resilient strip that is adapted to snap over the chimes on adjacent pairs of cans of said rows without tilting the cans or manipulating them in an unusual manner, and without crimping them to the chimes.

A still further object of the invention is the provision of a multi-can package that is easier to make than heretofore and that particularly lends itself to being formed by simple, economical apparatus.

Other objects and advantages will appear in the description and in the drawings.

FIG. 1 is a top plan view of a multi-can package illustrative of the present invention;

FIG. 2 is a fragmentary bottom plan view of the package of FIG. 1;

FIG. 3 is an enlarged fragmentary, cross sectional view taken along line 3—3 of FIG. 1;

FIG. 4 is an enlarged fragmentary, bottom plan view of part of the can-connecting strip, the upper side of which is seen in FIG. 1;

FIG. 5 is a reduced size elevational view of a package of cans of the type having chimes at one of their ends only;

FIG. 6 is a bottom plan view of a connector strip of slightly different structure than is shown in FIG. 4;

FIG. 7 is an isometric view of a multi-can package using the strip of FIG. 6;

FIG. 8 is a top plan view of a multi-can package showing the upper side of the strip of FIG. 6;

FIG. 9 is an isometric view showing the under side of the can package of FIG. 7; and

FIG. 10 is an enlarged fragmentary sectional view taken along line 10—10 of FIG. 8.

In detail, the package illustrated in FIGS. 1 to 3 comprises a pair of rows of upright, cylindrical-sided cans generally designated 1, each of said cans having annular radially and axially outwardly projecting chimes 2 at their opposite ends.

Whether said chimes are at both ends of the cans or at one of their ends only, as in the case of the cans 3 in FIG. 5 is not particularly important. The invention is applicable to both types of cans.

The rows of cans 1 are parallel and in side by side relation, and their upper ends are held together by an elongated member generally designated 4, which member has a pair of flat, coplanar marginal portions 5 extending longitudinally thereof positioned over the axially facing surfaces of chimes 2 that face axially outwardly of the cans at one of their corresponding ends.

A rib 6 extending longitudinally of said member 4, and centrally between its longitudinally extending edges

integrally connects said marginal portions and projects downwardly between the rows of cans.

The rib 6 preferably terminates slightly short of the opposite ends of member 4, and the ends of member 4 preferably terminate slightly short of the maximum distance between the end cans of the rows (FIG. 1). The said marginal portions 5 may be of any desired width and the longitudinally extending edges of the marginal portions may be straight, as illustrated, or they may be curved to follow a sinuous outline, or of any other desired outline. Some packers prefer the marginal portions to cover more of the ends of the cans than others. This invention is not affected by variations in the widths of the marginal portions provided they have such portions and provided nothing projects upwardly from the upper face of the member 4 to prevent or to impair the proper stacking of one package on the other. The marginal portions 5 are relatively thin and are preferably fairly wide.

As seen in FIG. 3, the rib 6 is quite thin at 7 where it extends between the chimes 2, so that the chimes 2 will substantially come together, and part 8 of the rib below the part 7 and below chimes 2 is thicker so as to engage the opposed sides of the cans below the chimes.

The oppositely outwardly facing sides of the rib 6 at part 7 curve concavely to follow the curvature of the chimes while the oppositely outwardly facing sides of the part 8 of the rib are concavely curved to follow the curvature of the cylindrical sides of the cans just below the chimes.

A pair of spaced slight projections 9 (FIG. 4) is formed on the curved surfaces of the parts 8 of the rib, which projections function to form slight recesses or dimples in the sides of the cans just below the chimes when the cans of the rows are urged toward each other to seat the chimes against part 7. In this manner the cans are held against rotation relatve to the strip during formation of the package, and afterward.

The rib 6 materially widens at the portions 10 thereof that extend across the upper ends of the spaces between each multiple of four cans (FIG. 4), there being two such spaces in a package having three cans to each row of the pair thereof.

These widened portions 10 are each formed with a circular finger opening 11.

Over each pair of opposed cans from the two rows, the marginal portions 5 have flat, yieldable elements 14 that extend slantingly downwardly from their connections with said marginal portions toward each part 8 of the rib 6.

These elements are integral with the said marginal portions along parallel lines spaced equally outwardly of the parts 8 of the rib 6. Said elements are elongated longitudinally of the member 4 and the adjacent edges 15 of the pair thereof at opposite sides of each part 8 of rib 6 are arcuately curved to generally conform to the curvature of the radially inwardly facing sides of the chimes 2. The ends of each element 14 terminate in free edges, and the curved edges 15 are spaced from the parts 7, 8 of the rib 6 a sufficient distance to enable the elements 14 to snap over the chimes 2 when the cans are moved to positions with the chimes against the parts 7 of rib 6. Once the spring elements 14 snap over the chimes it will be seen that the parts 8 of the ribs will cooperate with the marginal portions 5 and with elements 14 to hold the cans against withdrawal as long as the opposite ends of the cans are not swung apart.

A strip 16, preferably of pressure sensitive adhesive tape or any other suitable carrier, extends over the said opposite ends of the cans opposite to element 14 along the juncture between the rows thereof to hold said opposite ends together.

One method of forming the package is to position the member 4 upside down so the side shown in FIG. 4 is uppermost, and the cans 1 are then slid across the upper surfaces of the marginal portions 5 to seat their chimes against the curved parts 7 of the rib 6. The spring elements 14 project slantingly upwardly, but the cans readily slide over these elements, urging them downwardly and as soon as the chimes seat against the parts 7, the elements 14 are released and will spring up against the radially inwardly facing sides of the chimes.

The arcuate surfaces of rib 6 will function to make the cans self aligning when the cans are moved from opposite sides of the ribs into the arcuately curved portions. In a normal operation the cans at opposite sides of the strip 1 may be supported on surfaces that are flush with the near surfaces seen in FIG. 4, the strip of FIG. 1 being inverted in FIG. 4 to facilitate sliding the cans over the elements 14, and no tilting of the cans is necessary for locking the cans to the strip. Since the bottoms of the cans will be uppermost during sliding of the cans onto the strip, as described, the adhering of the tape or similar flexible securing means onto the uppermost surfaces of the cans is a simple operation.

Immediately upon the elements 14 springing against the inner sides of the chimes, the tape 16 may be applied to the upper ends of the inverted cans for holding said ends together. The package may now be turned over and may be carried by inserting two fingers of a hand into openings 11.

A method of forming the package of cans can easily be visualized, independently of apparatus, as the steps of sliding the chime bearing ends of the cans of adjacent pairs thereof toward each other and over depressible spring elements on a strip of material until the adjacent sides of the cans of each pair adjacent to said chimes engage a stop on said strip; holding said elements depressed by said chimes with the axes of said cans parallel during said movement, and releasing said spring elements to engage the radially inwardly facing sides of side chimes upon said sides of said cans engaging said stop, and then securing the opposite ends of said cans together by adhesive carrying means.

This is explained to illustrate the adaptability of the package to being formed economically by simple apparatus.

Once the tape is removed, the cans may readily be separated from the member 4, since the said member is not crimped to the chimes, and the elements 14 are yieldable to release the cans when the previously tape-held ends of the cans can be moved relative to the strip and to each other.

It has been found that the increased thickness of the portions 10 having the openings 11 therein naturally adds to the comfort of the fingers in carrying the package, and these portions 10 also reinforce the member 4.

The member 4 is preferably of plastic material molded to the desired form. Any suitable plastic having the necessary strength, resiliency and resistance to breakage under conditions of use and refrigeration may be used. High impact styrene has been found to be suitable.

One of the advantages of the use of plastic is the substantial elimination of any likelihood of the member 4 injuring the hand if it should be accidentally struck, or in manipulating the cans. However, metal may, in certain circumstances, be used as will hereinafter appear.

In FIGS. 6 to 10 a member 20, corresponding in most of its functions to member 4, is of sheet metal stamped to the form shown. Such members are even more economical to make than elements made of plastic, but the latter is preferable.

In the form of invention shown in FIGS. 6 to 10, coplanar marginal portions 21 are provided, which portions are adapted to be flat on the chimes 22 of cans 23.

These marginal portions 21 are connected by a V-shaped rib 24, which rib, in turn, is adapted to be disposed between the row of cans.

The sides of the V-rib are slotted at 26 (FIG. 6) to

receive the chimes 22 of the cans, and the lower edge of each slot will engage under the chimes. The upper side of each slot is defined by the flat marginal portion 20, inasmuch as the latter is flat against the axially outwardly facing surfaces of the chimes, as has been mentioned.

Elements 27 integral with marginal portions 21 project from the outer edges of the pair of marginal portions 21, and these elements are bent back below said marginal portions to extend slantingly downwardly toward the rib 24. The said elements 27 function in the same manner as elements 14, and spring against the radially inwardly facing surfaces of the chimes when the chimes enter slots 26.

The method of assembly by use of the invention as disclosed in FIGS. 6 to 10 is the same as where strip 4 is employed.

Preferably other extensions 28 on marginal portions 21, located between the elements 27, are bent back against the undersides of the marginal portions. These last extensions 28 perform two functions. They help to reinforce the member 20 and they provide smooth rounded exposed edges for the marginal portions at points where otherwise the edges of the marginal portions would be sharp and likely to injure the hand of a person accidentally striking the edge.

A tape 29 secures together the ends of the cans opposite to the ends connected by member 20.

The member 20 does not lend itself to the provision of finger openings, and the marginal portions must of necessity be of limited width. However, in other respects the member 20 functions to accomplish the results of member 4.

The package that is produced by the use of the tape at one of the ends of the cans and the member 4 (or 20) at the outer ends of the cans, is extremely rigid. The package may be safely handled by picking it up by one of the end cans only, and this is usually the manner in which purchasers remove a package from a refrigerator or shelf before the finger openings are accessible.

It should be understood that while the use of pressure sensitive tape is preferable, other flexible carrier means for the adhesive tape may be used, but in any instance, the carrier means should preferably be such that will cleanly strip away from the cans without separation of the carrier, as normally occurs where cheap chipboard is used, or other paper or cardboard that is in separable plies. Also the tape or carrier should be resistant to impairment from moisture, such as occurs in refrigerators, and the moisture of condensation.

The invention is not to be necessarily limited to the exact devices shown, which are merely by way of illustration and not limitation, as other forms of the device will be apparent to those skilled in the art without departing from the spirit of the invention or the scope of the claims.

I claim:

1. A multi-can package comprising: a pair of parallel rows of upright, cylindrical cans having heads and radially and axially outwardly projecting chimes at one of their corresponding ends providing oppositely directed axially facing surfaces on said chimes, means for securing said cans together including an elongated member hava pair of flat, coplanar, horizontally disposed marginal portions extending longitudinally of said rows positioned over and against the axially facing surfaces of said chimes that face outwardly of said corresponding ends, can engaging means integral with said marginal portions connected therewith and extending longitudinally thereof between said rows and in engagement with the cylindrical opposed sides of the cans of said rows and against the axially facing surfaces of said chimes that are opposite said last mentioned axially facing surfaces, spring elements respectively positioned over each of said corresponding ends integrally connected with said marginal portions for springing along lines extending longitudinally of said portions past said axially facing surfaces that face outwardly of said corresponding ends, said elements extending angularly from said marginal portions along said lines toward each other from opposite sides of said can engaging means and into engagement with said heads and with the radially inwardly facing surfaces of said chimes when sprung past said last mentioned axially facing surfaces for holding said corresponding ends of said cans together and for holding said can engaging means in engagement with said sides of said cans and said chimes.

2. A multi-can package comprising; a pair of parallel rows of upright, cylindrical cans having heads and radially and axially outwardly projecting chimes at one of their corresponding ends providing oppositely directed axially facing surfaces on said chimes, means for securing said cans together including an elongated member having a pair of flat, coplanar, horizontally disposed marginal portions extending longitudinally of said rows positioned over and against the axially facing surfaces of said chimes that face outwardly of said corresponding ends, can engaging means integral with said marginal portions connected therewith and extending longitudinally thereof between said rows and in engagement with the cylindrical opposed sides of the cans of said rows and against the axially facing surfaces of said chimes that are opposite said last mentioned axially facing surfaces, spring elements respectively positioned over each of said corresponding ends integrally connected with said marginal portions for springing along lines extending longitudinally of said portions past said axially facing surface that face outwardly of said corresponding ends, said elements extending angularly from said marginal portions along said lines toward each other from opposite sides of said can engaging means and into engagement with said heads and with the radially inwardly facing surfaces of said chimes when sprung past said last mentioned axially facing surfaces for holding said corresponding ends of said cans together and for holding said can engaging means in engagement with said sides of said cans and said chimes, said elements terminating in free edges directed toward and in engagement with said radially inwardly facing surfaces of said chimes.

3. A can connecting element adapted to secure together the cans of a pair of parallel rows of cans in side by side relation, and which cans are of the type having radially and axially projecting chimes at one of their corresponding ends, comprising: an elongated strip of relatively resilient material having a pair of flat, coplanar marginal portions extending longitudinally of said strip and adapted to be positioned flat on the axially outwardly facing surfaces of the chimes on said cans, a rib integrally connecting said marginal portions extending longitudinally thereof adapted to extend between such rows of cans and substantially in engagement with the other axially facing surfaces of said chimes that are directed oppositely to said axially outwardly facing surfaces when said rib is between said rows, a plurality of pairs of relatively flat spring elements integral with said marginal portions with the elements of each pair spaced at opposite sides of said rib and extending toward each other and angularly from said marginal portions toward said rib, said pairs of elements terminating in free edges facing and adjacent to said rib adapted to engage the radially inwardly facing surfaces of the chimes on the adjacent cans in said rows when said rib engages the said other axially facing surfaces.

4. A can connecting element adapted to be releasably connected with the annular chimes on one of the corresponding ends of a pair of cans disposed in side by side relation comprising; a member of resilient, relatively rigid material having coplanar similarly extending marginal portions spaced apart and adapted to extend over and in engagement with one of the axially facing surfaces of such chimes, means integral with said member spaced between said marginal portions and disposed at one side

thereof and adapted to engage the opposite axially facing surfaces of said chimes opposite to said one of the axially facing suraces thereof when said marginal portions are on said last mentioned surfaces, and spring elements integral with said marginal portions adapted to yieldably move to positions engaging the radially inwardly facing sides of such chimes when said means are in engagement with said opposite axially facing surfaces of said chimes, said elements having arcuately extending free terminating edges adapted to substantially conform in curvature to the curvature of said radially inwardly facing sides of said chimes and to engage said sides when said spring elements are in said last-mentioned positions.

5. A multi-can package comprising: a pair of cylindrical cans in side by side relation each having heads closing the ends thereof and annular radially and axially outwardly projecting chimes around said heads at one of the corresponding ends of said pair of cans, said chimes having axially outwardly and axially inwardly facing surfaces facing in opposite directions, a relatively rigid connector extending across and in engagement with said axially outwardly facing surfaces on the portions of the chimes that are adjacent to each other, rigid means rigid with said connector in engagement with the axially inwardly facing surfaces of said portions of said chimes and with the radially outwardly facing cylindrical sides of said cans adjacent to said portions of said chimes, spring tongues integral with said connector along lines spaced from said rigid means at opposite sides thereof and extending slantingly toward each other from said lines into engagement with the radially inwardly facing sides of said portions of said chimes, said tongues being adapted to flex along said lines for springing past said portions from their axially outwardly facing surfaces to positions substantially in engagement with said heads and into yieldable engagement with the latter whereby said connector will hold said cans together at said one of their ends.

6. A connector for holding one of the corresponding ends of a pair of cylindrical cans together in side by side relation and which ends have heads closing said ends and annular chimes projecting radially and axially outwardly of said cans around said heads, said connector comprising; a chime and can engaging rib adapted to be positioned between said pair of cans and having curved surfaces adapted to engage and to follow the surfaces of the adjacent sides of said cans and the surfaces of said chimes along the junctures between said sides and said chimes, spring means connected with said rib adapted to similarly engage said head and said chimes adjacent to said rib for holding said rib against said chimes and said adjacent sides of said pair of cans, rigid means connecting said rib with said spring means adapted to engage the axially outwardly facing surfaces of said chimes for supporting said spring means outwardly and over said heads and in positions for engaging the radially inwardly facing sides of said chimes and said heads.

7. A connector adapted to hold a pair of cylindrical cans together in side by side relation and which cans have heads closing their ends and annular radially and outwardly projecting chimes around said heads at one of the corresponding ends of said pair of cans, said connector comprising; a member adapted to extend across and in engagement with the axaially outwardly facing surfaces of the adjacent portions of the chimes of such pair of cans, a central rib integral with said member adapted to be positioned between said portions when said member is on the said outwardly facing surfaces of said portions of said chimes, spring tongues integral with said member along lines spaced at opposite sides thereof and extending slantingly toward each other from said lines for engagement with the radially inwardly facing surfaces of said portions of said chimes for holding said pair of cans against said ribs and for holding said rib in engagement with the axially inwardly facing surfaces of said pair of chimes that faces oppositely to said outwardly facing surfaces, said spring tongues being adapted to flex along said lines for yieldably engaging said head at said one of the corresponding ends of said pair of cans.

8. A multi-can package comprising; a pair of parallel rows of upright cylindrical cans having radially and axially outwardly projecting chimes at their upper ends providing upper and lower axially facing and radially inwardly and outwardly facing surfaces on said chimes; said rows of cans being in side-by-side relation with at least three cans in each row to form at least two multiples of four cans with a space between the upper ends of each multiple of four cans, a relatively rigid connector strip extending longitudinally of said rows and over the cans thereof along the adjacent sides of said rows; aligned ribs extending longitudinally of said strip outwardly thereof and integral therewith engaging the axially lower surfaces of the chimes of said rows and the cylindrical sides of said cans adjacent to said chimes; a pair of circular finger openings formed in said strip in register with the spaces between each of the two adjacent multiples of four cans and spaced from the cans of said multiples to enable two fingers of the hand to engage said strip through said openings free from engagement with said cans; spring elements adapted to spring about spaced parallel lines extending longitudinally of said rows into engagement with said radially inwardly facing surfaces of said chimes for holding said chimes and the adjacent cylindrical sides of said cans against said ribs.

References Cited in the file of this patent

UNITED STATES PATENTS

2,571,833	Chidsey	Oct. 16, 1951
2,903,128	Brunsing	Sept. 8, 1959
2,949,183	Fisher	Aug. 16, 1960