Aug. 19, 1969 J. P. HAMILTON ET AL 3,462,010

CONNECTOR FOR CONTAINERS AND PACKAGE

Filed Sept. 15, 1967 3 Sheets-Sheet 1

FIG_1

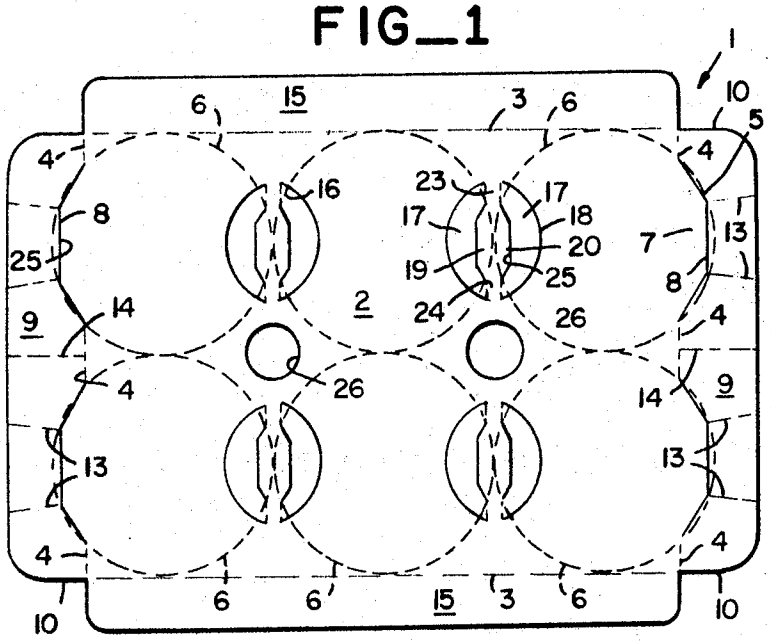


FIG_3

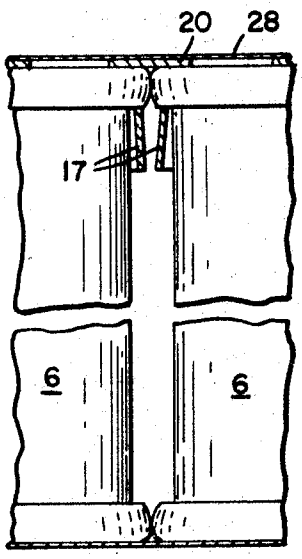


FIG_2

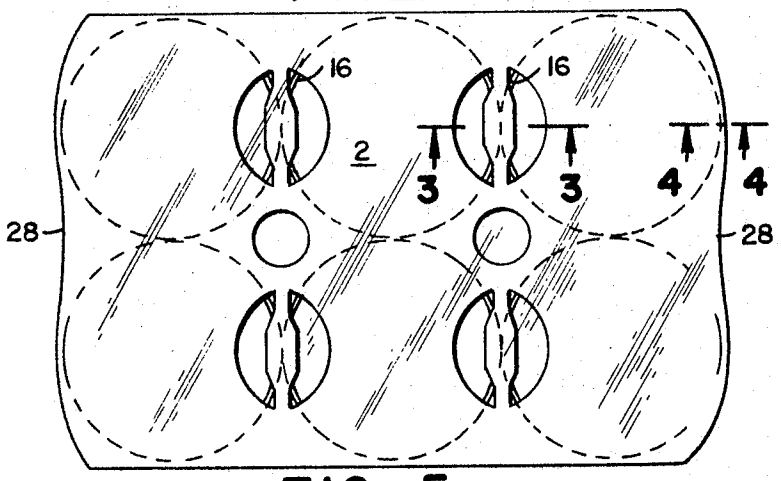


FIG_4

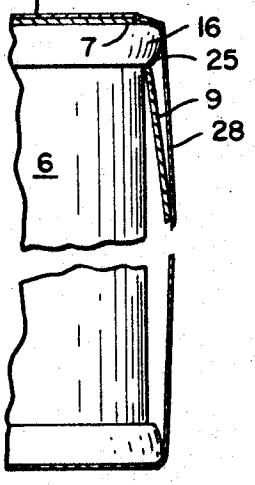
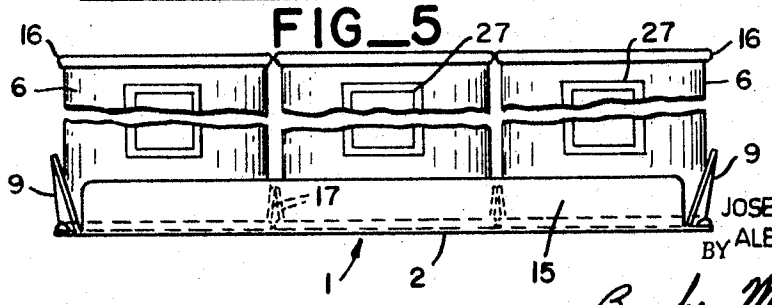


FIG_5



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CONNECTOR FOR CONTAINERS AND PACKAGE

Filed Sept. 15, 1967 3 Sheets-Sheet 2

FIG_6

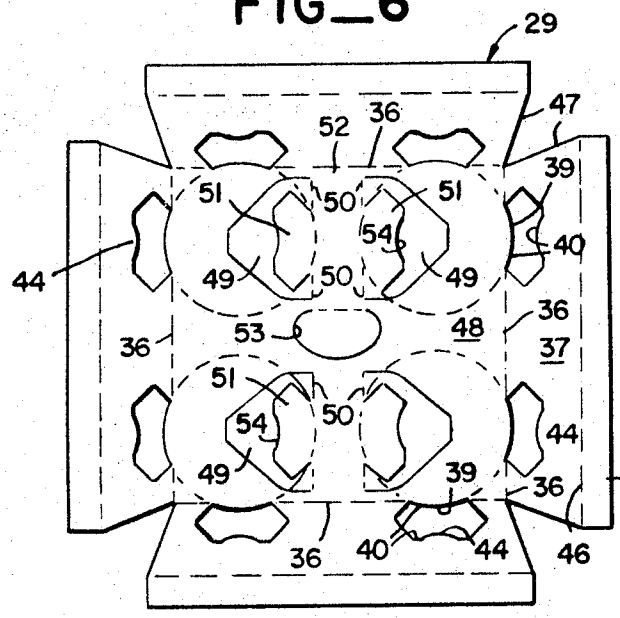


FIG_9

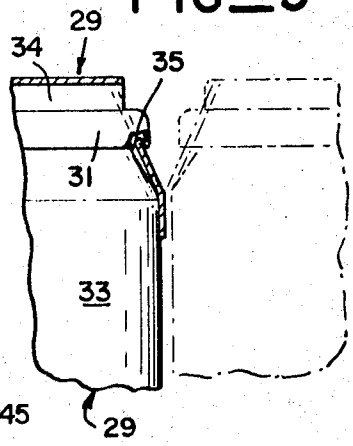


FIG_7

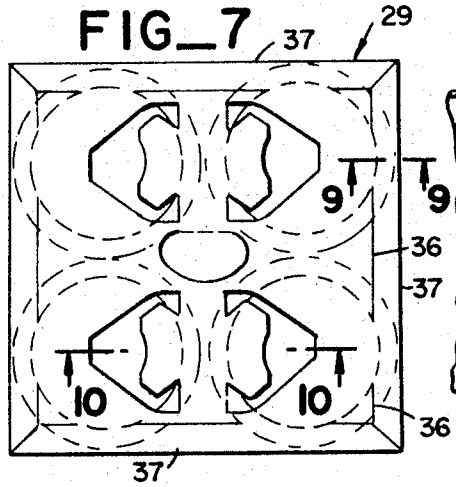


FIG_10

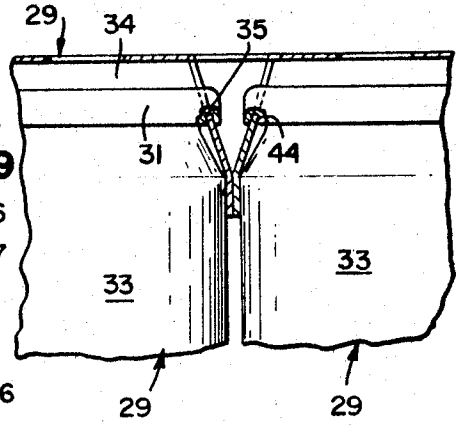
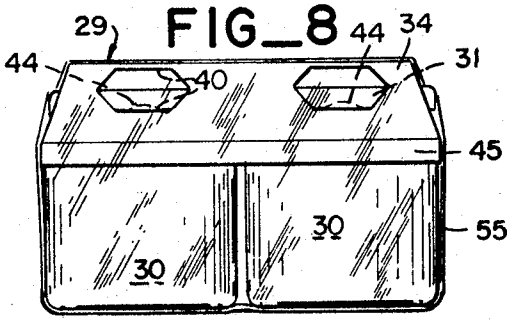


FIG_8



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CONNECTOR FOR CONTAINERS AND PACKAGE

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FIG_11

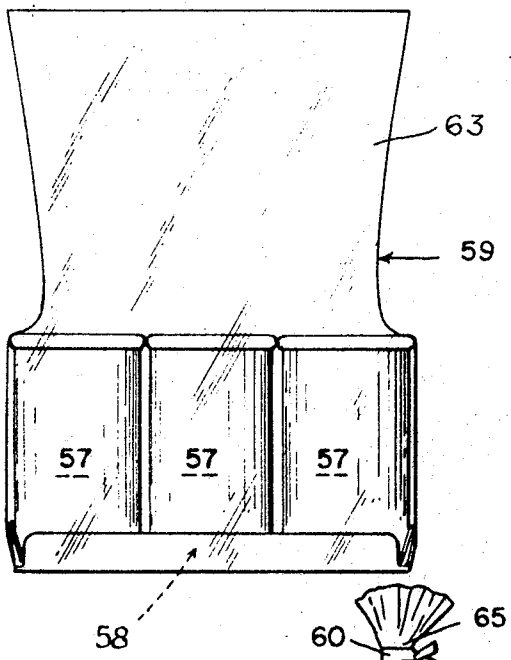


FIG_12

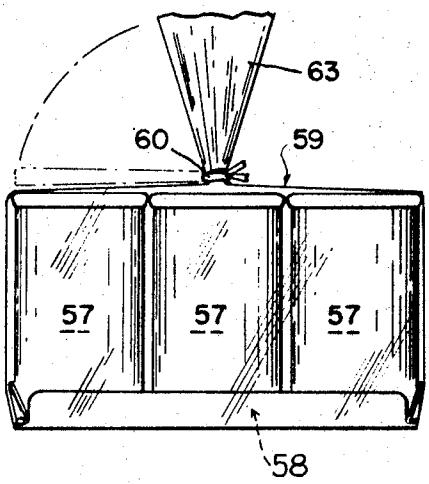
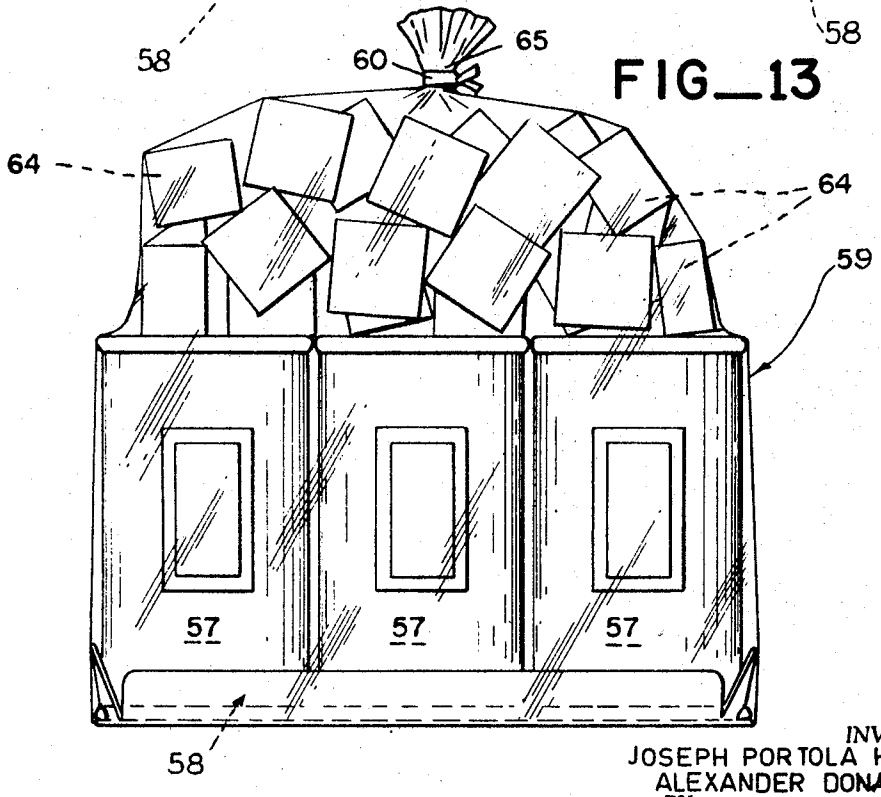


FIG_13



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CONNECTOR FOR CONTAINERS AND PACKAGE

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Int. Cl. B65d 85/62
U.S. Cl. 206—65 6 Claims

ABSTRACT OF THE DISCLOSURE

A connector for securing together one of the ends of a plurality of containers such as are commonly used for beverages, to provide a unitary package for shipment, display, and for manual carrying.

BACKGROUND OF INVENTION

Heretofore containers for beverages have been connected by wrap-around cardboard blanks to form packages, each having a plurality of containers. Such blanks are costly and highly expensive apparatus has been required to make up the packages.

It has been customary for packages including the wrap-around blanks or carrier, to be cooled in a refrigerator, and their construction precludes any other type of cooling, such as by ice, hence persons taking the packages of beverages on picnics, to games, or hunting or fishing trips either tolerate the beverages at higher temperatures than is desired, or carry relatively bulky equipment or do without.

In the packaging of cans, jars, etc., it is highly desirable that the containers be oriented where the labels on the containers are exposed, so that the labels on the containers will uniformly face in directions for making the best display. It is therefore highly desirable that in any handling of the cans or containers between the time they are oriented and finally packaged the containers maintain their oriented position.

Heretofore the employment of heat shrinkable plastic film of various types have been used in packaging cans, such as in United States Letters Patent No. 3,087,610, issued Apr. 30, 1963 to W. C. Kirkpatrick, and the term "heat shrinkable plastic film" or "film" may apply to one or more of the types disclosed therein.

SUMMARY

The present invention provides a package that includes a group of containers such as cans, jars and the like in predetermined oriented positions relative to their labels, with the labels fully visible and which package includes an economical connector for connecting the containers and for holding the group together in oriented position during handling and packaging and an outer enclosure in the form of a transparent film-like bag, sleeve or wrapper for securing the containers against shifting relative to each other or about their respective axes after the package is formed.

A combination is also provided in which containers having chimes, or the equivalent, are locked together within a shrink-type plastic film having an expandable portion adapted to be opened and closed for insertion of ice in said portion in direct heat exchange relation with the containers and which combination includes a connector for holding the containers in a compact group during and after packaging with their chimes in a common plane free from chime-lock.

DESCRIPTION OF DRAWINGS

In the drawings, FIG. 1 is a plan view of a connector-blank for a plurality of containers, such as cans, in a position overlying the cans to be connected thereby, the cans being indicated in dotted lines except where visible;

FIG. 2 is a top plan view of a package that includes said connector, the latter being in a position connecting the group of cans indicated in FIG. 1;

FIG. 3 is an enlarged fragmentary cross-sectional view taken along line 3—3 of FIG. 2;

FIG. 4 is an enlarged fragmentary cross-sectional view taken along line 4—4 of FIG. 2;

FIG. 5 is a side-elevational view of the blank of FIG. 1 in container-connecting position with the package in inverted position and the blank below the containers, the containers themselves being broken in length.

FIG. 6 is a view of a modified blank, similar to that of FIG. 1, but for glass jars, the jars being indicated in dotted lines, and the blank in open position unsecured to the jars;

FIG. 7 is a plan view of a package of jars connected by the blank of FIG. 6;

FIG. 8 is a side-elevational view of the package of FIG. 7;

FIG. 9 is an enlarged fragmentary sectional view along line 9—9 of FIG. 7, and the dot-dash lines indicate the position of a similar portion of an adjacent package;

FIG. 10 is an enlarged fragmentary cross-sectional view taken along line 10—10 of FIG. 7;

FIG. 11 is a side elevational view of a modification form of package, and partly in cross-section, the package including an expandable chamber for a refrigerant, the latter being shown in open position;

FIG. 12 is a side elevational view of the package of FIG. 11 sealed in closed position by a releasable and reusable seal.

FIG. 13 is an enlarged side elevational view of the package of FIG. 11, in which the refrigerant-chamber is expanded and with ice therein.

DETAILED DESCRIPTION

The blank of FIGS. 1–5 comprises a generally rectangular sheet 1 of cardboard having a central, generally rectangular portion 2. The outline of said central portion is defined by a pair of parallel folding creases 3 equally spaced from and parallel with two of the opposite edges of the blank 1, and a pair of longitudinally aligned folding creases 4 respectively extending perpendicularly to and between the ends of folding creases 3.

End creases 4 are equally spaced from the end edges of the sheet 1 distances greater than the spacing between creases 3 and the side edges of the sheet that are respectively adjacent thereto.

The end creases 4 at each end of sheet 1 are interrupted by a pair of corresponding cuts 5 that are spaced apart and equally spaced from the ends of creases 3 that are adjacent thereto. The cut of each pair extends arcuately outwardly along lines substantially coincidental with the curvature of a can 6 for a distance to provide an extension 7 projecting outwardly from and coplanar with the central portion 2, the outermost portion of each extension 7 being cut off along a line 8 that is parallel with crease 4.

The portion of blank 1 between the interrupted aligned folding creases 4 and the end edges of the blank 1, provides marginal portions 9, each terminating in end edges 10 that are in continuation of the folding creases 3, the corners of each portion 9 being curved.

A pair of folding creases 13 extend divergently relative to each other across each folding flap 9 from the ends of each cut 8. A central folding crease 14 is centrally between the pairs of creases 13.

The portions between folding creases 3 and the side edges of blank 1 provide marginal portions 15 of equal width.

In FIG. 1 the blank **1** is in a position with its central portion overlying two parallel rows of cans **6**, with three cans in each row, and which cans have radially outwardly projecting chimes **16** that are in engagement with each along a medial line intermediate folding creases **3**. At each of the opposite sides of such medial line, and positioned midway between said line, and each crease **3** are two pairs of spaced tabs **17**.

The tabs **17** of each pair are spaced apart extending away from each other and from a web portion **19** that is elongated in a direction perpendicular to creases **3**. Web **19** extends between the ends of each pair of adjacent cuts **18**, and is integral with the sheet **1** and with the tabs at its ends. The central portion **20** of each web **19** is of greater width than the end portions **23** of the web, and said end portions are connected with said tabs along parallel spaced folding creases **24**.

In forming the package, the tabs **17** may be folded to generally opposed relation to one side of the blank or sheet **1**, and each pair of said tabs is positioned between adjacent pairs of the cans or containers **6** in each of the two rows, so that the chimes on the cans of each such adjacent pair will project into the openings in said tabs that occur below the thickened portion of each web due to the cuts defining said thickened portion (FIG. 3).

The end marginal portions **9** are then folded against the end surfaces of the end portions of the end cans of the rows thereof and the chimes **16** of said end cans will then snap into the openings formed below each extension **7** so that the edges **25** of the marginal portions **9** along lines **8** (FIG. 1) will engage the axially facing surfaces of the chimes opposite to the extensions **7** (FIG. 4). The folding creases **13, 14** (FIG. 1) in said marginal portions will facilitate the edges **25** following the circumferential curvature of the sides of the end cans of said rows when the marginal portions are folded so edges **25** engage the axially facing surfaces of the chimes.

The marginal portions **15** are then folded to extend over the outer sides of the end portions of the pair of rows of cans.

Finger openings **26** may be formed in the central portion **2** of the blank in the space between each of the two multiples of cans.

The connector may be secured to the cans in a position extending over a group of vertically disposed cans or it may be positioned below the cans, as seen in FIG. 5. In the latter instance the cans may be fed onto each horizontally disposed blank, and in either instance, it is preferable that the cans be oriented when so positioned onto the blank so that the labels **27** (FIG. 5) be in uniformly outwardly facing relation in the package. In this position the group of cans can be conveyed as a unit, particularly for further manipulation without disturbing the orientation, or "chime-lock," but in any situation a minimum of cardboard is employed, and the blank may not only extend horizontally over the group of cans with no projections, such as a handle or ridges to preclude stacking of the packages, but each package is also protected on each of all four lateral sides by a depending flange such as marginal portions **9, 15**, and means is provided for connecting each of the cans at two opposite sides thereof with the blank or connector. including means extending between the adjacent pairs of cans in one direction, all without noticeably adding to the lateral overall width and length and height of the package except for the negligible thickness of the flanges or marginal portions **15**.

FIGS. 2, 3 and 4 show the group of cans or containers fully enclosed within a thin, transparent film of heat shrinkable plastic material **28** that functions to securely hold the package as a rigid unit. The connector formed from blank **1** holds the cans against chime-locking, and once the film is shrunk the cans cannot rotate about their respective axes.

It may be noted that the end flanges or marginal portions **9** flare outwardly away from the package, while the outer cover or enclosure **28** holds said portions closer to the end cans, and when two packages are in a case in end-to-end engaging relation the flanges **9** form a yieldable cushion between the packages. Thus, when chimes **16** are substantially in engagement, except for the negligible thickness of each enclosure **28**, the flanges or marginal portions **9** will be under yieldable engagement with each other, and said outer enclosure **28** will prevent any snagging of flanges or marginal portions **9, 15** with each other or any other object, and the cans will be frictionally held in their oriented positions against shifting so as to disturb the predetermined uniformity in the positions of the labels. Also, the chimes **16**, at opposite ends of the cans are enclosed in the plastic enclosure **28** so as to prevent snagging of the chimes with any outside objects, and to prevent the offsetting or locking of the chimes on one package with the chimes on an adjacent package or packages. In this case the film is preferably biaxially oriented.

The form of the invention in FIGS. 6–10 incorporates the desirable features of the invention as shown in FIGS. 1–5. While the blank, generally designated **29** in FIGS. 6–10, shows the invention as applied to four containers instead of six, it will be obvious to anyone skilled in the art that the blank may be modified to connect two or three containers, or groups larger than four having equal numbers of containers, and this observation applies to FIGS. 1–5 as well.

The blank **29** is rectangular, and is for glass jars **33**, or the like, having a radially outwardly projecting cap **31** (FIGS. 8–10) at one end, although the body **33** of each jar is of greater diameter than the maximum diameter of the cap. The cap itself may have a reduced diameter upper end portion **34**. In jars of this type, the cap is secured over the reduced diameter upper end portion of the neck or mouth so that the flange that depends from the upper end of the cap cooperates with the neck to provide a downwardly opening annular shallow recess **35** (FIGS. 9, 10) around the neck.

Blank **29** is formed with a plurality of pairs of spaced folding creases **36** at right angles to each other defining the junctures between equal width marginal portions **37** along the four edges of the blank.

Said creases **36** along each of the edges of the blank are interrupted by arcuate cuts **39** (FIG. 6) that curve outwardly from their ends, and said ends are at the line of each of the folding creases **36**.

Each cut **39** defines an arcuate edge of one side of a slot **40** that extends longitudinally of each marginal portion **37**, and the opposite edge **43** of each slot is formed with a projection **44** extending into the slot. These slots are relatively wide where caps **31** of the type described are used, so that each projection or tab **44** will snap into recess **35** (FIG. 9) when the flanges or marginal portions are folded along creases **36** to overlie the outer sides of the group of jars adjacent to said caps. These tabs **44** spring past the lower edges of the caps **30** to spring into recesses **36**, and the maximum diameter portion **31** of each cap projects through each slot **40**.

Preferably each of the marginal portions **37** includes an outer border strip **45** and a folding crease **46** parallel with and alongside each outer edge of each flange or marginal portion **37** defines one of the edges of each border strip.

When the connector or blank **29** is on the caps of a group of jars and the caps **31** project through slots **40**, the border portions **45** will extend partially over the upper portions of the bodies of the group of jars so that the jars **31, 33** of one package cannot engage the jars of an adjacent package. FIG. 9 indicates in dot-dash line the jars of one package adjacent to the jars of another package, an end jar of said one package being shown in full line.

The end edges **47** of each marginal portion **37** between the creases **36, 46**, are inclined so that said edges may

approximately come together when the connector or blank 28 is secured to the jars.

The central portion 48 of each blank, inwardly of creases 36, is formed with pairs of aligned tabs 40 projecting oppositely outwardly from parallel spaced folding creases 50 which creases are along parallel spaced lines extending across the central portion 48 of the blank.

Each of the creases 50 is interrupted by oppositely outwardly extending projections 51 on the web 52 that is between the portions of creases 50 at opposite ends of each projection 51, and which web, in turn, is interrupted by a finger opening 53.

The outline of each projection 49 substantially corresponds to the outline of each slot 40, and each projection 51 is formed in each tab 49 to provide a projection 54 on each tab 49 that corresponds to the projection 44 that projects into each slot 40.

In attaching the connector of FIGS. 6–10, the tabs 49 are bent to one side of the blank to generally opposed relation (FIG. 10) and as the extensions 51 of the web 52 are rigid with the web 52 they will not fold with tabs 49, therefore a pair of opposed slots corresponding to slots 40 will be provided below each extension 49 into which the cap 31 will project and the projections or tabs 54 on each main tab 49 will spring past the lower edge of each cap 30 and into recess 35 (FIG. 10). The slots 40 are in alignment with each pair of main tabs 49 transversely of the blank 28, hence each cap 31 will be held to the connector by the pairs of projections 44, 54 at opposite sides of each cap in the recess 35 below each cap and, of course, edges of the marginal portions 37 and tabs 49 will extend below the lower edges of the caps.

The tabs 49 themselves will project downwardly to extend between the adjacent pairs of jars to space them apart and to prevent contact between them in one direction, and the end edges of the slots through which the caps project are positioned to extend across the outer peripheral surfaces of the major diameter portions of caps 31 to resist movement of the jars relatively in a direction at a right angle to said one direction.

An outer thin but tough, flexible, heat shrinkable, waterproof plastic film 55 may surround or enclose the package, and this enclosure functions like the enclosure 28.

The use of the words "folding creases" herein is intended to include any form of line of weakness to facilitate bending along such line.

FIG. 11 shows a plurality of upright cans 57 connected by a connector generally designated 59 formed from a blank corresponding to blank 1 of FIG. 1. This unit of cans and connector would structurally correspond to the combination shown in FIG. 5 in which the cans are supported on a connector.

The combination of cans and connector are fitted within a rectangular outer casing or film generally designated 58, which film is preferably of thin, flexible, transparent, relatively tough, heat shrink plastic that is waterproof such as disclosed in the patent hereinbefore mentioned, and which film is adapted to be locally shrunk about the cans of containers therein.

The casing 58 is open at its upper end and is preferably of uniform horizontal cross-sectional contour that substantially corresponds to the horizontal outline of the group of cans 57 and the connector 58, so that the cans and connector may be inserted into the casing through its open end. However, the vertical length of the casing 58 is substantially greater than the height of the cans to provide an open chamber at one side only of the group of cans or containers. By localized shrinking of the film or casing 58 the latter is shrunk about the group of containers as indicated in FIG. 11, to thereby firmly hold the containers together, but the extension, which is designated 63 and is generally tubular, remains sufficiently open for insertion of ice 64 into the chamber, the one side of which is defined by the containers and the other sides by the extension 63, after which the chamber is adapted to be closed by a tie tape 60 and the latter tied or twisted together to seal or hold the chamber closed with the ice therein, which ice is in direct heat exchange relation to the walls of the containers 57.

The extension 63 may be initially closed by the tie element 60 as in FIG. 12, in which the surplus is readily folded against the containers to enable stacking of one package on the other if desired.

By the above structure, a rigid package of cans or the like is provided, and a purchaser may buy a package, such as shown in FIG. 12, then release the tie 60, expand the chamber provided by the extension 63, and place the refrigerant 64, such as ice, in the expanded chamber, close and reseal the latter by the tie 60, and a package, including the refrigerant in direct heat transfer relation to the containers, will be provided. The package is waterproof so that melting ice will not leak and until the cans are actually removed, the handling of the package will not disturb the relationship between the cans and their labels will be oriented so that a neat package will be maintained during the intended life of the package.

It may be here noted that, insofar as placing the group of containers into a bag-like casing 58 is concerned, the containers of the group may be upright or on their sides, and once the film is shrunk, as above described, the connector and containers are held together against any shifting of the cans relative to each other or about their respective axes.

The reference to "labels" is intended to cover printed matter and designs directly lithographed or printed on the cans or containers, particularly where ice or the like is used, which is the common practice in cans of beverages.

As a method, it may be said that the method of forming a package of cans in side-by-side relation having radially outwardly projecting chimes at one of their ends, and labels on one of their sides, as hereinbefore described, includes the steps of orienting the cans so said labels face in a predetermined direction, then connecting all of the ends of said cans by a connector for holding the cans of the group together in oriented positions in said side-by-side relation and for handling the cans as a group, then enclosing the said group and the connector within a transparent casing and drawing the casing into tight engagement with the group and the connector to hold the cans against rotation about their respective axes, and relative to each other for retaining the cans in oriented positions. Obviously such method may be amplified to include additional steps.

As for the package, it broadly comprises the group of oriented cans including the connector, and the casing of film enclosing the cans and connector holding the cans in oriented position relative to their labels, and against chime-lock, so that the cans of the group will be a rigid unit.

We claim:

1. A connector for a plurality of containers in side-by-side relation having parallel axes and radially outwardly projecting end portions at one of their ends;

(a) a generally rectangular blank having a central portion adapted to extend over said one of the ends of said containers and marginal portions along two opposite edges of said blank to project beyond said ends laterally thereof,

(b) a pair of parallel folding creases defining the junctures between said marginal portions and said central portion for folding said marginal portions over two oppositely outwardly facing sides of said plurality of containers when said central portion is over the latter,

(c) said folding creases being spaced within the upwardly projected outline of said containers and interrupted by cuts extending into said marginal portions to provide openings for receiving said radially projecting end portions adjoining said oppositely outwardly facing sides when said central portion is on said one of the ends of said containers with one of

the edges of each of said openings engaging the axially facing sides of said projecting end portions at the junction between said sides and said projections,

(d) tabs formed in said central portion integral therewith foldable to positions between adjacent containers and in engagement with said axially facing sides of said projecting end portions at points between said containers for cooperating with said marginal portions to hold said plurality of containers together,

(e) a second pair of parallel folding creases perpendicular to said first mentioned pair defining the junctures between the marginal portion of said blank along the two outer edges of said blank,

(f) said marginal portions on said blank being terminal parts thereof adapted to extend over all of the outwardly facing lateral sides of said plurality of containers along said radially outwardly projecting portions.

2. A package that includes a group of containers having parallel axes and opposite ends and disposed in side-by-side relation with labels on one of their sides;

(a) connecting means for connecting the containers of said group for holding them in an oriented position,

(b) support means extending around said group and said connecting means, holding said containers onto said connecting means and holding said containers against movement relative to said connecting means and relative to each other,

(c) said connector including a sheet of material having a central portion extending over one of the ends of said containers and having terminal marginal portions extending over the marginal portions of said group of containers adjoining said ends and sides and yieldably connected with said central portion, said support means comprising flexible plastic extending over said marginal portions of said sheet and said central portion holding the latter in overlying relation to the said marginal portions of said group, and providing a continuous wall extending across each of two opposite sides of said group.

3. In a package as defined in claim **2**;

(c) said connector including a sheet of material having a central portion extending over one of the ends of said containers and having terminal marginal portions extending over the marginal portions of said group of containers adjoining said ends and yieldably connected with said central portion,

(d) said support means comprising heat-shrinkable plastic extending over said marginal portions of said sheet and said central portion holding the latter in overlying relation to the said marginal portions of said group, and providing a continuous wall extending across each of two opposite sides of said group.

4. In a package as defined in claim **2**;

(c) said transparent means comprising a bag-like member of heat shrinkable, plastic, waterproof material having an open end and said group of containers and said connector being the end portion of said member opposite to said open end,

(d) said end portion of said bag being of heat shrinkable plastic tightly shrunk about the said group and over the marginal portions of the side of said group facing said open end thereby holding the containers of said group and said connector tightly together as a unit, and means for holding said member closed at the side thereof having said open end.

5. In a package as defined in claim **4**;

(e) the side of said member having said open end including a tubular extension of said member extending from said group to said open end providing a chamber for holding a refrigerant, such as ice, therein and in direct heat transfer relation to one of the walls of each of said containers,

(f) said containers being cans and said member being waterproof, and

(g) said means for holding said member closed being adapted to hold the outer end of said tubular extension closed for holding said ice therein and against said cans.

6. In a package as defined in claim **5**;

(h) a portion of said member at the juncture between said tubular extension and part of said member at said group extending over the marginal portion of said group that faces toward said open end, whereby said group will be held in said member against dislodgment during the time when ice is held in said extension.

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