

Aug. 11, 1964

B. G. COPPING

3,144,130

PACKAGE ASSEMBLY

Filed Oct. 5, 1962

2 Sheets-Sheet 1

FIG. 1

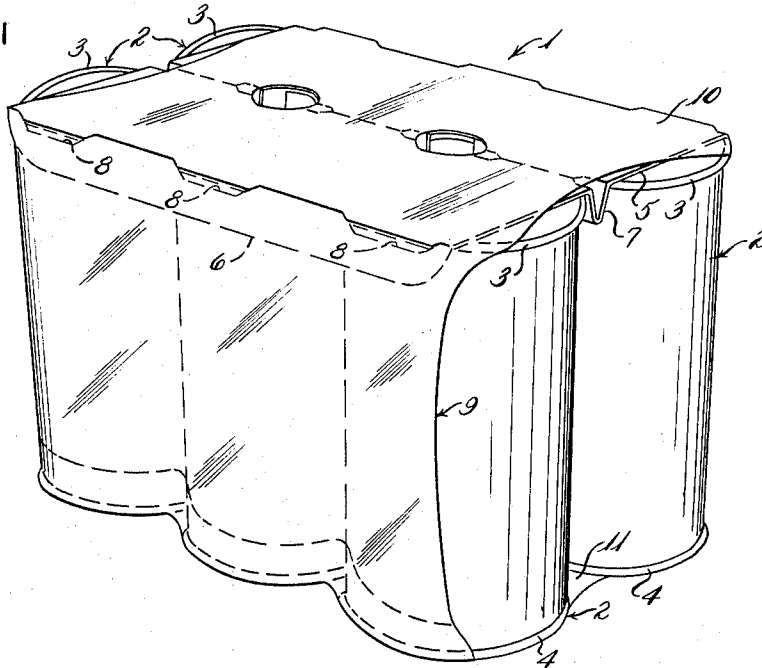
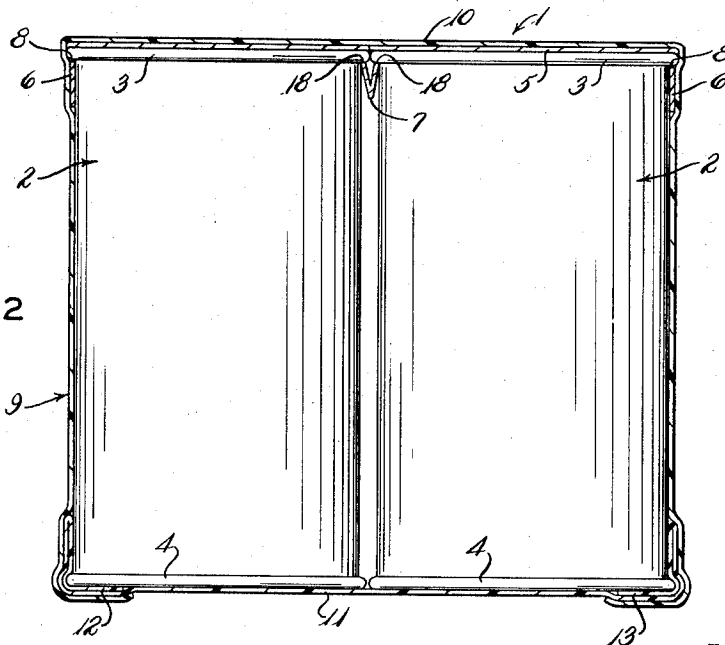


FIG. 2



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2 Sheets-Sheet 2

FIG. 3

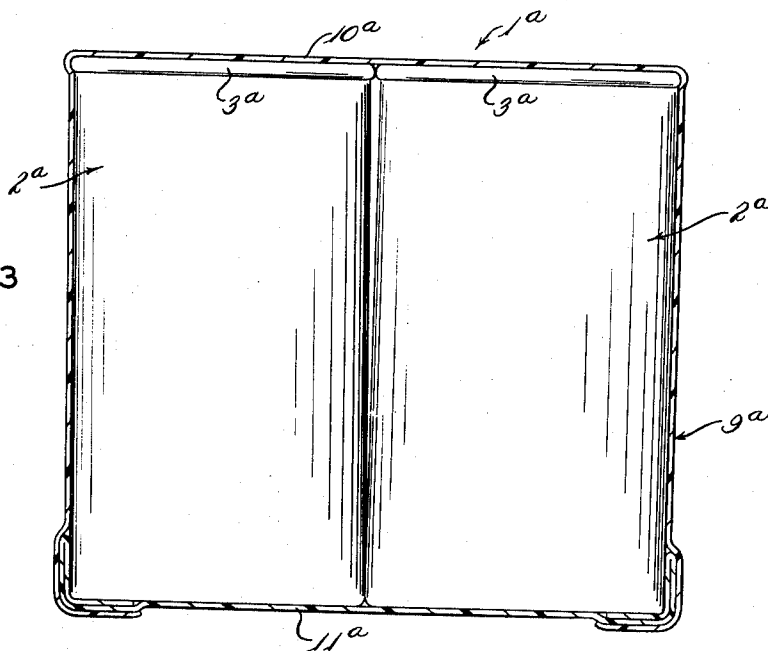
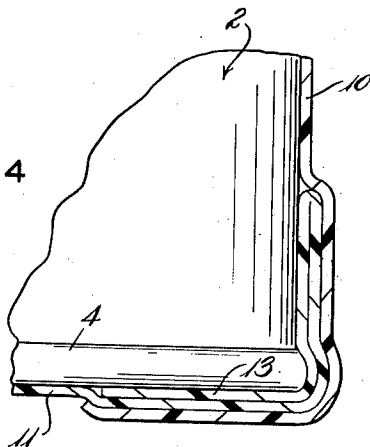


FIG. 4



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3,144,130

PACKAGE ASSEMBLY

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Akron, Ohio, a corporation of Ohio
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9 Claims. (Cl. 206—65)

The present invention relates to package assemblies, and particularly to package assemblies for a plurality of articles that usually are of cylindrical shape and which have top chines, or beads provided thereon and extending laterally therefrom.

Heretofore there have been many different types of articles provided as packaged assemblies, and many thousands of such package assemblies are sold commercially today. A lot of beverages currently are sold in so-called "six-pack" assemblies that include two longitudinally extending rows of three cans each. The three cans in each individual row are longitudinally abutted on each other, and corresponding cans in the different rows are transversely abutted. Different styles of such six-packs are provided and sold and have wide commercial acceptance. These package assemblies usually include cardboard carriers or cartons that extend transversely around the rows of articles as an endless band for securing them together, or that otherwise engage the articles to provide convenient transport thereof.

In nearly all of the package assemblies as made today, the cardboard carriers made use relatively heavy or tough cardboard therein and it is difficult for the average housewife to tear such cardboard apart so as to permit the individual articles to be taken from the container assembly. Furthermore, the cardboard cartons or carriers require some type of advertisement to be placed thereon as the contents of the articles usually are not readily apparent from the outside of the package. Hence some printing on the cardboard carriers is required to identify the products in the package, or assembly.

Inasmuch as beverages alone are sold in extremely large quantities in six-packs, and other products may also be sold in packages of the type described, the cost for the carriers, or assemblies formed therefrom, is a major factor in the price at which the package or article assemblies can be retailed.

Accordingly, it is a general object of the present invention to provide a novel and improved relatively inexpensive package assembly adapted to present a plurality of cylindrical containers as a packaged unit for convenient transport, storage, sale and use of the individual articles in the assembly.

Another object of the invention is to provide an improved package assembly of the general type indicated and where the articles are held in the assembly by a pair of plastic strips or sheets formed into a band that encompasses the packaged articles, which band has a pair of laterally spaced, parallel overlapped zones therein at the portion of the band encompassing the carriers in the lower lateral margins of the contained, or packaged articles.

Another object of the invention is to provide a novel and improved package assembly wherein a top carrier member is held in place with the packaged units by an encompassing band made from plastic strips and where lighter gage plastic films or sheets can be used in one por-

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tion of the encompassing band than in another portion thereof.

Yet another important object of the invention is to provide a maximum strength portion in a packaged assembly at the lower lateral margins of the assembly produced, which margins may include lower beads or chines on the cylindrical articles which chines or lower outer corners of the package subject the cover material to the maximum amount of wear and abrasion in the assembly during transport and storage of the assembly prior to ultimate use of the containers or articles in the package.

A further object of the invention is to double back a pair of opposed edge portions of a plastic film sheet or strip engaging the margins of a group of containers and secure such doubled edge portions of one strip against the lateral margins of the containers by a second plastic film strip engaging the remainder of the containers and being bonded to and reinforcing such doubled portions of the bottom strip to provide an enclosure band engaging the containers.

The above and other objects and advantages of the present invention will be made more apparent as the specification proceeds.

Attention now is particularly directed to the accompanying drawings, where:

FIG. 1 is a perspective view of a package assembly embodying the principles of the invention;

FIG. 2 is a transverse section through the package assembly of FIG. 1;

FIG. 3 is a vertical section, similar to FIG. 2, of a modified construction of a package assembly of the invention; and

FIG. 4 is an enlarged fragmentary vertical section of a lower laterally outer corner of the assembly of FIG. 1 and FIG. 2.

When referring to corresponding members shown in the drawings and referred to in the specification, corresponding numerals are used to facilitate comparison therebetween.

Considering specifically now the details of the embodiment of the invention shown in FIG. 1, a package assembly is shown and is indicated as a whole by the numeral 1. This package assembly particularly is shown as including six cylindrical articles 2 that may have any conventional contents therein, such as beverages or foods, and these containers or articles 2 have top chines or beads 3 thereon that extend laterally slightly from the main cylindrical portion of the article 2. Likewise, each of the articles has a bottom chine 4 provided thereon and likewise extending slightly laterally outwardly of the cylindrical container. These articles 2 are shown arranged in a pair of longitudinally extending rows with each of the three articles in each of the rows being longitudinally abutted and being transversely aligned with a similar article in an adjacent row.

In this embodiment of the invention, a generally rectangular cardboard top 5 is shown that has a pair of dependent flanges, or sections 6 provided thereon at the lateral margins thereof. This cardboard top 5 may be of the type shown in detail in my co-pending application Serial No. 176,029, filed Feb. 27, 1962, now Patent No. 3,118,537, in the United States Patent Office. The top 5 also has a center section 7 of generally V-shape positioned between the longitudinal rows of the articles 2,

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and extending the length of the top. It will be seen that both of the flanges 6 and the center section 7 of the top unit have longitudinally spaced slots 8 and 18, respectively, provided therein, which slots are of such size and are so positioned in the package assembly 1 as to engage the top chines 3 of each of the articles 2, and in this specific construction, with diametrically opposed portions of each top chine being engaged with a pair of the dependent portions of the top 5, such as by being engaged by a slot 8 in one of the flanges 6 and with the companion slot 18 provided in a wall of the center section 7. The center section 7 has two laterally spaced walls whereby adjacent containers have sections of their top chines engaged in the slots 18 of the two walls in this center section to extend therethrough for lateral abutment in the package assembly 1 of the invention, as best shown in FIG. 2.

It is an important feature of the package assembly 1, that an open end plastic band 9 encompasses the articles 2 and retains the flanges 6 tightly against the lateral margins of the articles 2. Likewise, the band 9 retains the rows of the articles 2 in transversely compressed relationship to position the center section 7 in the manner shown in FIG. 2 and abut top chines 4 of the articles in the adjacent rows through the slots 18 in the center section 7 of the top unit. This enclosure band 9 is made from a pair of plastic strips 10 and 11. It will be seen that the strip 10 extends over the lateral portions of the articles 2 and over the tops thereof, as well as enclosing the top 5 to retain such top in snug engagement with the upper portions of the articles 2 and retain the flanges 6 snugly against the sides of the articles below the top chines 3 thereon. The other strip of plastic material 11 forms the bottom portion of the encompassing band 9 and the strips 10 and 11 are overlapped at a pair of parallel, spaced portions of the strips that engage the lower, laterally outer corners or marginal portions of the articles 2.

It is an important feature of the invention that the lateral margins 12 and 13 of the bottom sheet 11 be folded inwardly or doubled over to extend along the adjacent portions of the strip or sheet. Furthermore, the strips 10 and 11 are overlapped at the laterally outer corners of the bottom chines 4 of the articles 2, as shown in FIGS. 2 and 4, to reenforce the package assembly 1 at these laterally outer portions of the bottom chines 4. Hence three layers of the plastic film are provided at the areas of maximum stress. By the construction of the invention, it is possible to form the strip 10 from thinner plastic sheets than the bottom portion of the enclosure band, or both strips or sheets of film may be quite thin. For example, the top strip 10 may be made from a plastic film having a thickness of approximately .00075 inch in thickness, whereas the bottom strip 11 may, for example, be made from the same material as the strip 10 but be made from films having a thickness of from about .00075 inch to about .0015 inch, as desired.

It has been determined that even very thin films of about .00075 inch in thickness provide very satisfactory package assemblies by use of the construction of the invention. The lower corners of the articles 2 are supported by films totaling about .00225 inch thickness. What may appear to be a slight savings in material on any one package assembly rapidly accumulates as a substantial savings in cost where may thousands of the articles 2 must be grouped together in secure assemblies for transport and sale purposes. The lateral margins 12 and 13 of the strip 11 may be of any suitable length but normally only need to extend over the lower corner areas of the packaged articles.

It will be seen that the marginal portions of the top sheet 10 also may be folded in to further reenforce the bottom of the packaged articles as long as a suitable bond is formed between the overlapped portions of the

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sheets. Or only the top sheet 10 may have its edges folded back and in such case the top sheet 10 should be the inner layer or layers at the overlapped portions of the sheets.

Formation of a bond between the outer layers of the overlapped portions of the sheets can be facilitated by providing apertures in the outer sheet so that solvent for the sheets can be applied, usually by spraying, onto the sheets to obtain a bond at the apertured, overlapped portions thereof.

The overlapped portions of the strips, or sheets 10 and 11, it will be seen, extend longitudinally of the package assembly 1, and are suitably secured or sealed together, as by a heat sealing action, or by solvent, or adhesive action obtained in any known manner between the overlapped portions of the strips 10 and 11. One of such sealing methods is described in my companion copending application Serial No. 228,612, filed Oct. 5, 1962.

FIG. 3 of the drawings shows a package assembly 1a of the invention wherein articles 2a of slightly modified form are shown. In this instance, the articles 2a have top chines 3a thereon, but the lower portions of the articles 2a are of substantially straight cylindrical form. These articles 2a are of the type that can be made from aluminum or other metals for containing beverages or other materials, as desired. An encompassing, open ended band 9a is provided to extend completely around the articles 2a and retain them in a snugly packaged assembly. Again, two plastic film strips or sheets 10a and 11a are used to form the band 9a and overlapped portions are provided in this band 9a in the same manner as in the band 9 to extend along the laterally outer margins of the lower portions of the containers or articles 2a. The package assembly 1a does not use a top unit therein.

It should be appreciated that the invention can be used for packaging any desired number of substantially cylindrical articles in a package assembly. Thus one longitudinally extending row of three of such articles, for example, could be made as a package assembly of the invention, and a top unit may be secured to the articles, or not, as desired, by the enclosure band provided in all embodiments of the invention. Usually these enclosure bands 9 and 9a are made from known types of heat shrinkable plastic materials, such as polyvinyl chloride, polyethylene, polyolefin, or other plastic materials that can be formed into thin, transparent sheets of at least substantially uniform gage. The plastic sheets or films usually are heat shrunk into engagement with the articles after the two strips used in forming the enclosure band have been suitably secured together. The films may be processed, or oriented so that they have greater heat shrink properties in the direction extending around the group of articles than in the direction extending longitudinally thereof. It will be realized that two or three longitudinally extending rows of abutted articles can be secured together by package means of the invention with or without the top units being provided thereon, as desired. Any suitable handle means or finger holes may be formed on or in the tops to aid in carrying the assemblies. Naturally any number of articles may be provided in the longitudinally extending rows in the package assemblies.

Since the plastic bands 9 and 9a are usually made from transparent materials, they naturally display the contents of the goods in the articles 2 or 2a so that an attractive package is formed that exposes the units being offered for sale. The plastic bands 9 and 9a can be made of suitable strength to provide a relatively sturdy unit that can be transported, stored and be conveniently handled until it is desired to use the contents of the articles in the package assembly. At that time, one can readily tear or cut an end portion of the enclosure bands 9 and 9a so as to release end articles from the package assembly when the contents of the articles are to be used

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or consumed. The package assemblies of the invention are attractive and can be made in large quantities at relatively low cost by automatic processing machines. Hence it is believed that the objects of the invention have been achieved.

While two complete embodiments of the invention have been disclosed herein, it will be appreciated that modification of these particular embodiments of the invention may be resorted to without departing from the scope of the invention as defined in the appended claims. 10

What I claim is:

1. A package assembly for a plurality of cylindrical articles having top chines or beads formed thereon and comprising

a cardboard top unit having a pair of dependent slotted flanges thereon, which unit overlies a row of abutted articles with the top chines thereof received in said slots of said flanges, and

an open end heat shrunk plastic band extending tightly around said articles and retaining said flanges tightly against the sides of said articles with said top chines in said slots,

said plastic band being made from a pair of plastic film strips overlapped and secured together at a pair of parallel spaced portions thereof engaging the lower laterally outer corners of said articles. 25

2. A package assembly for a plurality of cylindrical articles having top and bottom chines or beads formed thereon and comprising

a top unit having a pair of dependent slotted flanges thereon, which unit overlies a row of abutted articles with the top chines thereof received in said slots of said flanges, and

a plastic band extending tightly around said articles and top unit from top to bottom of the assembly to retain said flanges and slots in engagement and to retain said articles in abutted relation, 35

said plastic band being made from a pair of plastic film strips overlapped and continuously secured together at a pair of parallel spaced portions thereof engaging the lower chines and the lower laterally outer corners of said articles to reenforce the assembly at a highly stressed section thereof, which plastic band is heat shrunk into engagement with the articles and top unit. 45

3. A package assembly for a plurality of articles comprising

a top unit overlying and engaging a row of abutted articles, and

an open end plastic band extending tightly around said articles from top to bottom thereof and retaining said top unit tightly engaged with said articles, said articles being retained in abutted relation by said plastic band, 50

said plastic band being made from a pair of plastic film strips overlapped and continuously secured together at a pair of substantially parallel spaced portions thereof that engage the lower laterally outer corners of said articles. 55

4. A package assembly for a plurality of generally cylindrical articles comprising

a plastic band extending tightly around a longitudinally abutted row of said articles and retaining them in abutted aligned positions,

said plastic band being made from a pair of plastic film strips overlapped and secured together at a pair of parallel spaced portions thereof engaging the lower laterally outer corners of said articles whereby a thicker film can be used to form the bottom of said band than to form the top thereof and whereby the assembly is reenforced at the lower corners of the articles. 60 65

5. A package assembly for a plurality of cylindrical articles having top and bottom chines or beads formed thereon and comprising

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a cardboard top unit having a plurality of dependent slotted sections thereon, which unit overlies a row of abutted articles with the top chines thereof received in said slots of said sections, at least one of said sections being positioned between said articles to divide them into two longitudinally extending rows, and

a plastic band tightly encompassing said articles from top to bottom thereof and retaining said sections tightly against the sides of said articles,

said plastic band being made from a pair of plastic film strips overlapped and secured together at a pair of parallel spaced portions thereof engaging the lower chines of the lower laterally outer corners of said articles whereby a thicker film can be used to form the bottom of said band than to form the top thereof and whereby the assembly is reenforced at the lower corners of the articles.

6. A package assembly for a plurality of cylindrical articles having top chines or beads formed thereon and comprising

a cardboard top unit having a plurality of dependent slotted sections thereon, which unit overlies a row of abutted articles with the top chines thereof received in said slots of said sections, and

an open end plastic band extending tightly around said articles and retaining said sections tightly against the sides of said articles,

said plastic band being made from a pair of plastic film strips overlapped and secured together at a pair of parallel spaced portions thereof engaging the lower laterally outer corners of said articles, one of said film strips forming the bottom of said band.

7. A package assembly for a plurality of articles of generally cylindrical shape comprising

a top unit overlying and engaging a row of abutted articles, and

an open end plastic band extending tightly around said articles from top to bottom thereof and retaining said top unit tightly engaged with said articles, said articles being retained in abutted relation by said plastic band,

said plastic band being made from top and bottom plastic film strips overlapped and secured together at a pair of substantially parallel longitudinally extending spaced portions thereof that engage the lower laterally outer corners of said articles, the bottom plastic film strip having its lateral marginal portions folded back inside the remainder of the strip to form at least three layers of film at the overlapped portions of the strips.

8. A package assembly for a plurality of generally cylindrical articles comprising

a plastic band extending tightly around a pair of rows of said articles to retain them in lateral abutted aligned positions,

said plastic band being made from top and bottom plastic film strips overlapped and secured together at a pair of parallel spaced portions thereof engaging the lower laterally outer corners of said articles, one of said strips having its lateral marginal portions folded inside the remainder of the strip at the said portions thereof engaging the lower laterally outer corners of said articles whereby at least three layers of film are provided to reenforce the lower corners of the articles in the package assembly.

9. A package assembly for a plurality of cylindrical articles having top chines or beads formed thereon and comprising

a cardboard top having a plurality of dependent slotted sections therein and extending the length thereof, which unit overlies a group of abutted articles with the top chines thereof received in said slots of said sections, at least one of said sections being positioned between said articles to divide them into two longitudinally extending rows, and

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a plastic band tightly encompassing said articles and retaining said sections against the sides of said articles,

said plastic band being made from a pair of plastic film strips overlapped and secured together at a pair of parallel spaced portions thereof engaging the lower laterally outer corners of said articles, at least one of said strips having its marginal portions doubled back on adjacent portions of the strip to aid in reinforcing the assembly at the lower corners of the articles.

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References Cited in the file of this patent

UNITED STATES PATENTS

2,142,142	Newsom	Jan. 3, 1939
2,965,410	Hughes	Dec. 20, 1960
2,980,245	Stoker	Apr. 18, 1961
2,996,180	Bruce	Aug. 15, 1961
3,027,997	Reifers	Apr. 3, 1962
3,046,711	Harrison	July 31, 1962
3,062,373	Reynolds	Nov. 6, 1962