# United States Patent [19]

**Brown**

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[54] **SHRINK PACK WITH EASY OPENING DEVICE**


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[52] **U.S. Cl.** ..... **206/65 C**, 206/65 S

[51] **Int. Cl.** ..... **B65d 71/04**

[58] **Field of Search** ..... 206/65 S, 65 C



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[57] **ABSTRACT**

This invention relates to a package of containers which are secured together by means of a plastic sleeve which is wrapped around the containers with the containers being normally arranged in two rows. The sleeve is open at its opposite ends. The package is provided with a cover, formed of paperboard, which overlies the upper ends of the containers and has finger openings therein alignable between four adjacent containers. The plastic sleeve also has finger openings aligned with the cover openings and the package is opened by tearing both the plastic sleeve and the cover toward the open ends of the sleeve. The cover is provided with diverging weakening lines extending from each of the openings to an adjacent end with the weakening lines defining a tear strip extending from each opening and which, when pulled toward the end of the package, functions as a lever and a guide with respect to the plastic material of the sleeve so as to rip away a portion of the sleeve and expose the containers of the package for easy removal.


**3 Claims, 4 Drawing Figures**

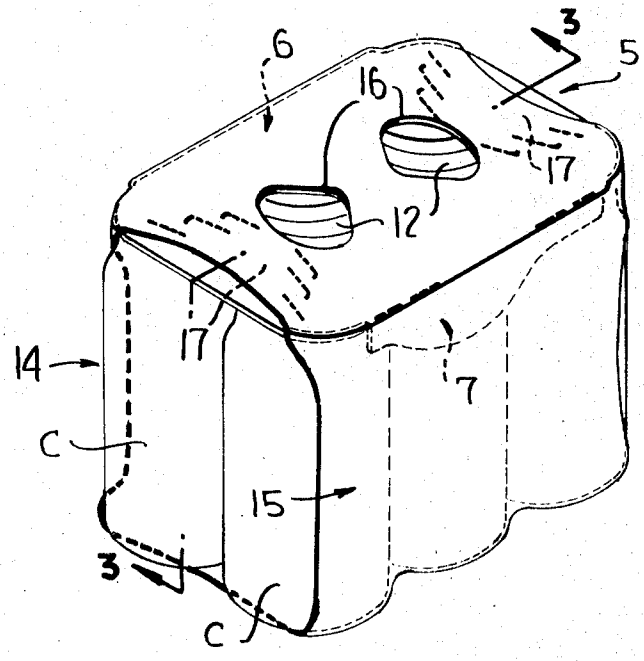


FIG. 1

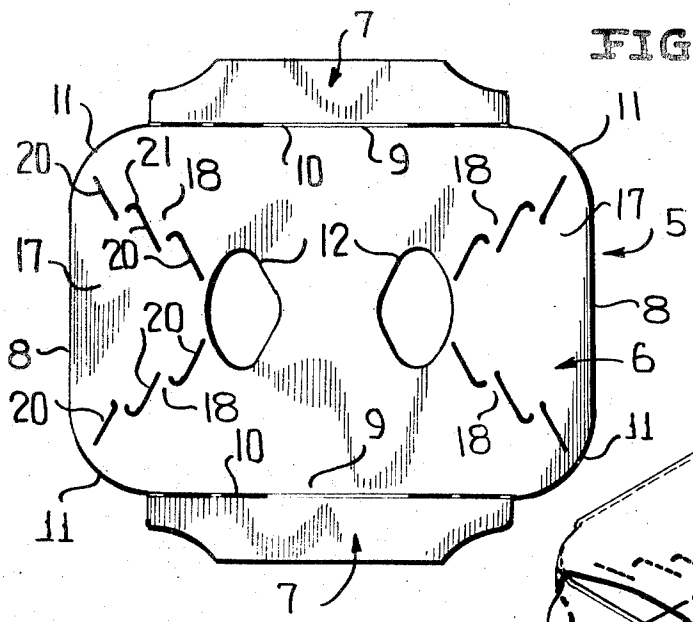



FIG. 2

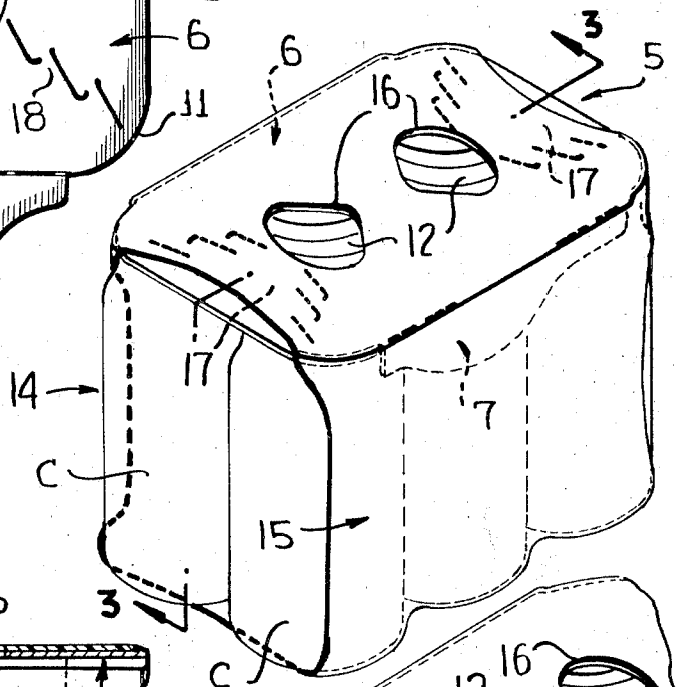



FIG. 3

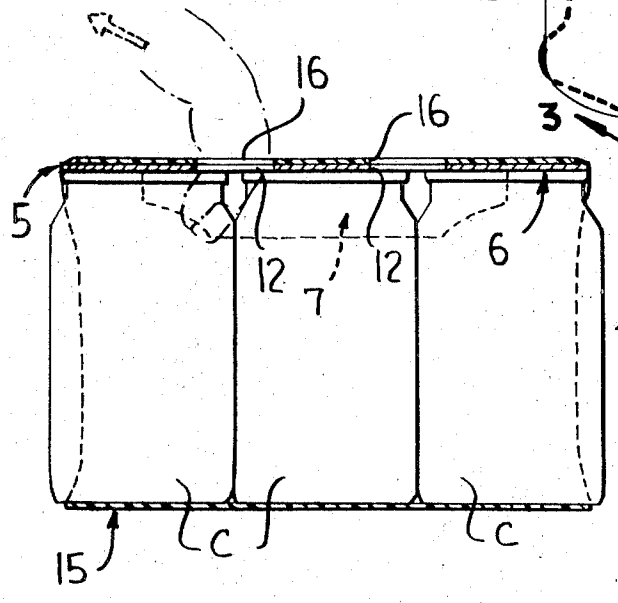
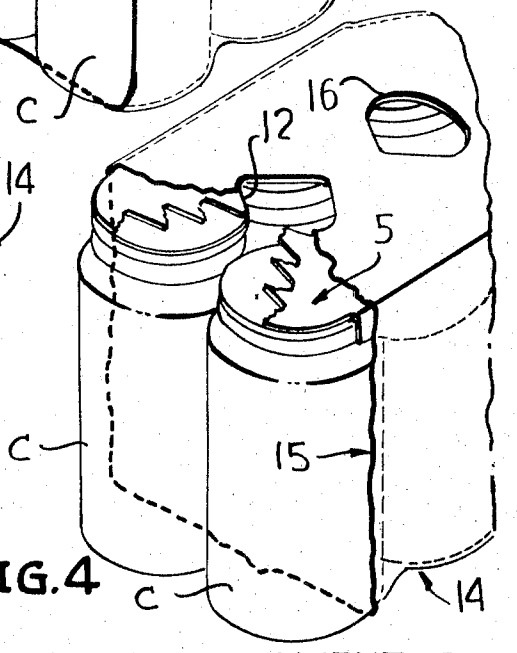



FIG. 4




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# SHRINK PACK WITH EASY OPENING DEVICE

This invention relates in general to new and useful improvements in container packages, and more specifically to improvements in the well known shrink pack.

## BACKGROUND OF THE INVENTION

It is customary to form a readily handleable package of containers, normally six containers arranged in two rows of three containers each, by placing the containers within a plastic sleeve and shrinking the sleeve around the containers. In order to maintain the shape of the package and also to identify the contents thereof, it is also conventional to provide a cover which overlies the upper ends of the containers. The cover is first placed on a group of containers, and then the containers and cover are encased within the sleeve, followed by the shrinking of the sleeve about the containers.

In the past, the containers have been packaged within the sleeve in several different manners. First, while it is more difficult to do so, the group of containers may be inserted into a length of tubing. An alternate form of applying the sleeve is to wrap a strip of plastic about the group of containers to form a sleeve.

At this time it is pointed out that tubing and plastic stripping or sheets are formed by extruding a very thin wall tubing and if strips or sheets are desired, the tubing is opened longitudinally of its length. The conventionally extruded plastic material has a much greater shrink factor along its line of extrusion as opposed to a line transversely of the line of extrusion. Thus, for example, if a group of containers were placed within a short length of untreated tubing and then heat applied thereto, the tubing would have a tendency to shrink much greater in an axial direction as opposed to shrinking in a circumferential direction. Thus, in order to effectively shrink tubing onto the containers, it is necessary that it be treated after it is formed so as to have biaxial shrinkage.

When the sleeve is formed from an elongated strip of plastic, the containers have been fed in two rows and either the plastic strip has been wrapped around the containers in the three container direction so that proper shrinkage will occur, or the plastic has been specially treated so as to have biaxial shrinkage and thus wrapped around the containers in the two container direction.

## SUMMARY OF THE INVENTION

It will be readily apparent that a much tighter package is obtained by wrapping the plastic material about the group of containers in the two container direction. It will also be readily apparent that it is desirable to utilize the most inexpensive plastic material. It has been found by altering the packaging equipment that an efficient automatic wrapping of the plastic material around a group of containers in the two container direction can be accomplished with untreated plastic material. This places the shrink axis in the proper direction, that is, circumferentially of the package.

When the package is formed in accordance with the foregoing, it has also been found that the plastic material, which has not been treated prior to the package wrapping operation, has exhibited a tendency to tear in the circumferential direction. Therefore, if one merely places one's finger in one of the finger openings in the plastic sleeve and pulls toward the open end of the sleeve, there is a tendency for the sleeve to tear about the package and not toward the end as desired.



In accordance with this invention, the cover is constructed to utilize this tendency of the plastic material to tear circumferentially to effect the tearing out of a triangular portion of the sleeve toward the open end.

A cover in accordance with this invention is provided with finger openings which align with the openings between four adjacent containers of the package. Similar finger openings are formed in the plastic sleeve. In addition, the cover is provided in at least one end portion thereof with a tear strip which is defined by a pair of weakening lines extending divergently from an associated finger opening to an adjacent end of the cover, the tear strip being generally triangular in outline and being readily removable by placing one's finger in the associated opening and pulling toward the end of the package. Since the cover is disposed inwardly of the plastic sleeve and since the tearing of the cover is outwardly, it will be seen that as the tear strip is torn from the cover, the tear strip functions as a lever to initiate the tearing of the plastic material from the associated finger opening toward the end of the plastic material. While the plastic material has the tendency to tear circumferentially, the tear strip continuously functions as a guide to effect the tearing away of a predetermined portion of the plastic material, generally of a triagnular outline, so that tearing of the plastic material to the open end of the sleeve is automatically effected.

In accordance with this invention, the weakening lines in the cover are preferably in the form of a plurality of cut lines disposed in spaced overlapping relation along the respective weakening line with the cut lines extending diagonally of the weakening line.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claims and the several views illustrated in the accompanying drawing:

In the drawing:

FIG. 1 is a plan view of a cover for a container package formed in accordance with this invention.

FIG. 2 is a top perspective view of a container package formed in accordance with this invention utilizing the cover of FIG. 1.

FIG. 3 is a longitudinal vertical sectional view taken along the line 3—3 of FIG. 2 and shows the manner in which one's finger may be utilized to effect the opening of the package.

FIG. 4 is a fragmentary top perspective view similar to FIG. 2 and shows one end of the package opened in accordance with this invention.

Referring now to the drawings in detail, it will be seen that there is illustrated in FIG. 1 a cover which is formed in accordance with this invention, the cover being generally identified by the numeral 5. The cover is preferably inexpensively formed of paperboard and the upper surface thereof may be suitably decorated.

The cover 5 includes a main panel 6 and a pair of side panels 7. The main panel 6 is generally rectangular in outline and includes ends 8 and sides 9. The side panels 7 are joined to the main panel 6 along the sides 9 by means of longitudinal fold lines 10 which are disposed coextensive with the side edges of the main panel 6.

The outline of the main panel 6 is of a configuration to match the general outline of the plurality of containers which are to be packaged. As a result, the side

edges 9 are joined to the end edges 8 by rounded corners 11 which correspond to the curvature of the underlying portion of each respective container.

The main panel 6 is provided with a pair of generally oval outline finger openings 12 which are positioned generally at the third point longitudinally of the main panel 6. When it is desired to form a container package, such as the package 14 of FIG. 2, the cover 5 is positioned in overlying relation with respect to the plurality of containers C with the finger openings 12 being aligned with the opening formed between four adjacent containers, there being at least six containers arranged in two rows. The side panels 7 are then brought down around the upper portions of the containers C along the opposite sides thereof, after which a sleeve 15 is applied to the containers C and the cover 5. The sleeve 15 may be furnished either as a short length of tubing, or may be provided in strip form and wrapped about the containers C and the cover 5 with end portions of the strip being suitably bonded together. Thereafter, the loosely assembled package is passed through a heating zone in a known manner, and the plastic material of the sleeve 15 is heated with respect to shrinking thereof. The shrunk sleeve or wrapper 15 tightly engages about the containers C and the cover 5 to form the package 14 which is readily handleable and in which the containers C are fixedly retained.

It is understood that the plastic sleeve or wrapper 15 will be provided with suitable finger openings 16 which preferably match the finger openings of the cover 5. The completed package 14 is now ready to be carried by inserting a thumb and one finger into the aligned openings 12 and 16 and grasping the central portion of the package 14.

In accordance with this invention, the cover 5 is provided with an easy opening feature for the package 14. The easy opening feature is in the form of a tear strip 17 which is positioned between one of the finger openings 12 and the adjacent end 8 and the cover 5 is preferably provided with a tear strip 17 at each end thereof. Each tear strip 17 is defined by a pair of weakening lines 18 which extend from the one finger opening 12 to the respective side edge 8 of the main panel 6. Inasmuch as the weakening lines 18 diverge towards the end edge 8, it will be seen that the tear strip 17 is generally triangular in outline.

It is to be understood that the tear strip 17 is to be torn from the main panel 6 by inserting one or two fingers within the finger opening 12 and exerting a pressure upon the material of the cover 5 towards the respective end edge 8. Accordingly, it is desirable that the weakening lines 18 intersect the finger opening 12 in transversely spaced relation so that there is ample bearing surface for one's finger or fingers to facilitate the initial rupture of the main panel 6 along the weakening lines 18. Once rupture is initiated, the tear strip 17 may be readily torn from the main panel 6.

It is also pointed out here that there has been provided a preferred form of weakening line. It is to be noted that each weakening line 18 is defined by a plurality of cut lines 20 which are disposed in spaced overlapping relation along a respective weakening line 18 and extend diagonally thereof. All of the cut lines 20, with the exception of the cut line disposed adjacent the end edge 8, is provided with a reversely turned end portion 21 which extends toward the next adjacent cut line so as to facilitate the continued rupture of the main panel 6 during the tearing out of the tear strip 17.

It is to be understood that the formation of the package 14, the plastic material which forms the sleeve of wrapper 15 is wrapped around the group of containers in the direction of extrusion. Thus, the plastic material has a major shrink factor which is circumferentially of the group of containers as opposed to being in the three container or can direction.

It has been experienced that with the specific orientation of the plastic material of the wrapper 15, if one places one's finger through the opening in the plastic film wrapper, and attempts to tear the wrapper in the three container direction, instead of the tear running out toward the open end of the wrapper, the film has the tendency to tear at an angle, thereby precluding the desired opening of the package. This deficiency of this specifically constructed shrink pack has been overcome by the specific construction of the cover 5 and the tear strip 17 formed therein.

When it is desired to open the package 14, one or two fingers are placed within a respective pair of finger openings 12 and 16, and a pull toward the end of the package 14 is exerted with the finger or fingers, as is diagrammatically shown in FIG. 3. The plastic material of the sleeve or wrapper 15 will distort sufficiently to permit the main panel 6 of the cover 5 to initiate tearing along the weakening lines 18. As the tearing progresses, the released portion of the tear strip 17 functions as a lever against the plastic material of the wrapper 15 and effects the divergent tearing thereof. As the removal of the tear strip 17 progresses, the tear strip 17, in addition to functioning as a lever to effect the tearing of the plastic material of the wrapper 15, also functions as a guide for the tearing of the plastic material. Thus, a controlled tearing of the plastic material, aided by the tendency of the plastic material to tear generally circumferentially, is effected. This results in the automatic removal of a sufficient portion of the wrapper 15 so as to open the end of the package 14 for the easy removal of containers C therefrom. The opened package is clearly shown in FIG. 4.

Although only a preferred embodiment of the invention has been specifically illustrated and described herein, it is to be understood that minor variations may be made in the package and cover construction without departing from the spirit and scope of the invention, as defined by the appended claims.

I claim:

1. A package comprising at least four containers arranged in at least two rows to define at least one opening between containers with each opening being defined by four adjacent containers, a cover overlying said containers, said cover having sides disposed parallel to said rows and ends disposed transverse to said rows, at least one finger receiving opening in said cover, said finger receiving opening being disposed between said cover sides and adjacent one of said cover ends in alignment with the opening between adjacent containers, a plastic wrapper encircling said containers and said cover in that direction generally defined by a line extending transversely of said container rows and generally parallel to said cover ends, said wrapper being in the form of a sleeve shrunk in place about the containers with the plastic of said wrapper having an orientation generally in the direction of said line and a tendency to tear only in a peripheral direction gener-

ally parallel to said line, said wrapper having remote edges generally at the ends of said rows, a finger receiving opening in said cover in alignment with said cover finger receiving opening, and said cover having easy opening means formed therein for tearing said wrapper generally longitudinally of said rows from the wrapper opening through an adjacent one of said wrapper edges to open said package, said easy opening means being in the form of diverging weakening lines formed in said cover and extending between said cover opening and an adjacent cover end and defining a combination lever and tear strip extending from said cover opening through said adjacent cover end in spaced relation to said cover sides with said tear strip being automatically operable as a lever and a guide to effect the tearing away of an end portion of that part of said wrapper overlying said cover from the associated wrapper opening generally transversely of said direction of plastic orientation to and through the adjacent wrapper edge to open said package and free containers therefrom.

2. The cover of claim 1 wherein said package is formed of paperboard.

3. The package of claim 1 wherein said weakening lines intersect said cover opening in transversely spaced relation to facilitate the removal of the tear strip in a tearing action with one's finger placed in said cover opening.

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