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P. G. STEPHAN

3,214,016

HEAT-TREATED PACKAGE

Filed Sept. 18, 1963

FIG. 1

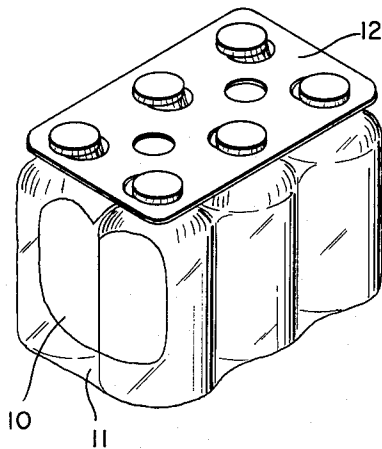


FIG. 2

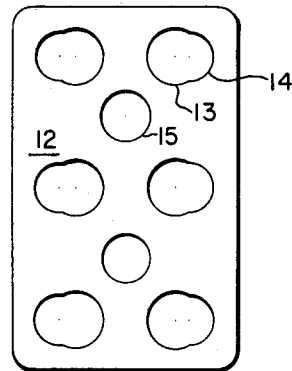


FIG. 3

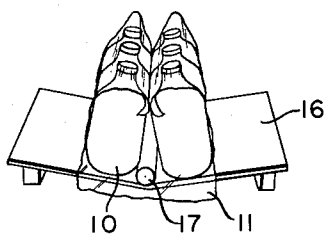


FIG. 4

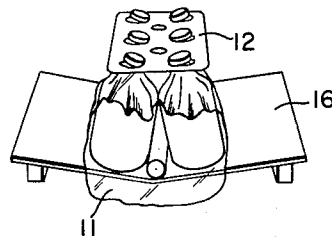


FIG. 5

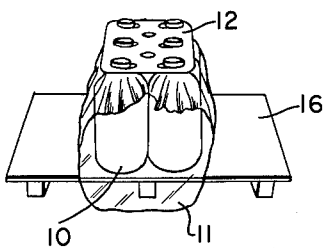
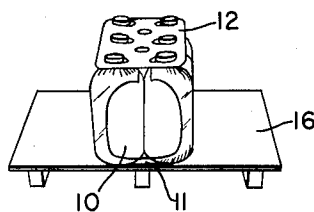


FIG. 6



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HEAT-TREATED PACKAGE

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3 Claims. (Cl. 206—65)

This invention relates to improved packages and processes for their manufacture and more particularly to packages of film-covered bottles and processes for their manufacture.

Numerous items are marketed in packages containing two or more items per package. This is done to speed up the handling of items, thus reducing labor-handling costs per item, and to try to induce the direct consumer to purchase more than one item at a time. In the past, the general practice has been to use paperboard cartons of various types and sizes to contain the desired number of items.

The beverage industry for both beer and soft drinks is making increasing use of the nonreturnable capped bottle for packaging purposes; however, one of the major problems is an economical, multiple-unit carrier package which accentuates the nonreturnable feature. A neat, rigid, transparent package which can be easily carried is very desirable. However, transparency is not possible when a paperboard carton is used.

It is, therefore, an object of this invention to provide packages of film-covered capped bottles and processes for their manufacture.

It is a further object of this invention to provide neat, rigid, transparent packages of heat-shrinkable film-covered capped bottles which are economically produced.

A still further object of this invention is to provide economical non-returnable packages for non-returnable capped bottles which accentuates the non-returnable feature. These and other objects will appear hereinafter.

These and other objects of the invention will be further described particularly in connection with the accompanying drawings wherein:

FIGURE 1 illustrates a perspective view of the package of this invention;

FIGURE 2 is a plan view of a rigid top sheet showing six keyhole slots and two finger holes; and

FIGURES 3 to 6 show a simplified series of steps for the manufacture of a package of the present invention.

As shown in the drawings, six opposed capped bottles 10 are placed on a piece of transparent, heat-shrinkable film 11, preferably polyethylene, which is then draped over the capped tops of the bottles. The rigid top card 12 is forced down over the film-covered caps through the larger portion 13 of the keyhole slots. The bottle necks are then forced into the smaller portions 14 of the keyhole slots and the whole assembly is placed in an oven, shrinking the film and bringing the loosely positioned bottles into firm contact with each other. A snug, transparent, easily carried package results. The package does not require heat-sealing or elaborate machine control; a relatively simple machine can be used to do the packaging. Finger holes 15 allow the package to be easily carried.

In the preferred example of the manufacture of the package, a sheet of transparent, heat-shrinkable poly-

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ethylene film, cut to the proper dimensions, is placed on a gently-sloping, V-shaped trough 16, as shown in FIGURE 3. Two opposing rows of three capped bottles are placed on the center of the sheet, also as shown in FIGURE 3. Spacer rod 17 positions the bottoms of the bottles the proper distance from each other, and the gently-sloping sides of the V-shaped trough position the capped tops of the bottles the proper distance from each other. The left- and right-hand edges of the sheet of polyethylene film are then draped over the capped tops of the bottles and allowed to hang down between them, as shown in FIGURE 3.

The paperboard top card 12 comprising six keyhole slots and two finger holes 15 in the center is forced down over the film-draped caps onto the necks of the bottles, through the larger portion of the keyholes, as shown in FIGURE 4.

Spacer rod 17 between the opposed rows of bottle bottoms is then removed and the gently-sloping, V-shaped trough is changed to form a horizontal platform. The bottles are thus automatically straightened into their parallel, upright position, locking the film-draped bottle necks into the smaller portion of the keyholes in the top card under the skirts of the caps, and bringing the bottoms of the bottles closer together, thus forming a loose package. This is all seen in FIGURE 5.

The whole assembly is then placed in an oven maintained to give the desired film temperature, from 180° F.—230° F. for polyethylene films. The oven temperature is, of course, governed by the length of time the assembly is in the oven. The film shrinks and the entire package is locked into a firm unit which gives a snug, transparent, easily-carried package, as shown in FIGURE 6.

The preferred heat-shrinkable film is polyethylene. However, any heat-shrinkable film can be used, such as plasticized polyvinyl chloride film, irradiated polyethylene film, polystyrene film, polypropylene film, etc. It is also preferred to have the film transparent, thus making it unnecessary to print the film or use labels on it, since the labels or indicia on the bottles themselves will identify the contents of the package nicely. The top card can be made of any rigid material.

This invention results in a trim, snug, transparent, easily-carried package of two or more capped bottles. When the package is opened, the top card can be easily removed and thrown away, along with the film wrapper. No heat-sealing or elaborate packaging machinery is required.

What is claimed is:

1. A heat-treated package comprising: at least two contiguous capped bottles; a sheet of thermoplastic, heat-shrinkable film placed under said bottles, the edges of said sheet draping over the tops of said bottles and extending between them and completely enclosing said bottles; a top rigid sheet with keyhole slots positioned over the bottle tops with a portion of said bottles extending through said slots, and finger holes for carrying said package, said rigid sheet locking said film into place and the bottle tops in the small portions of said keyhole slots holding said rigid sheet in place.

2. The package of claim 1 wherein said thermoplastic, heat-shrinkable film is polyethylene.

3. A heat-treated package comprising: six capped bottles, each bottle being peripherally contiguous with at least

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two adjacent bottles; a sheet of polyethylene film placed under said bottles, the edges of said sheet draping over the tops of said bottles and extending between them and completely enclosing said bottles; a top paperboard sheet with six keyhole slots positioned over the bottle tops with a portion of said bottles extending through said slots, and two finger holes in the middle of said paperboard sheet for carrying the package, said paperboard sheet locking said film into place and the bottle tops in the small portions of said keyhole slots holding said paperboard sheet in place.

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