

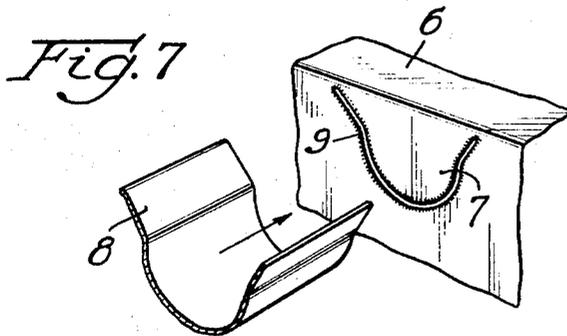
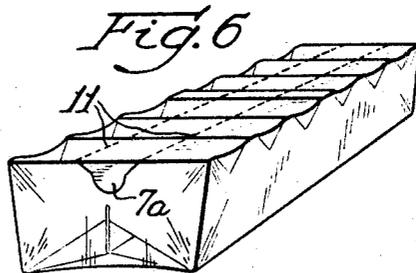
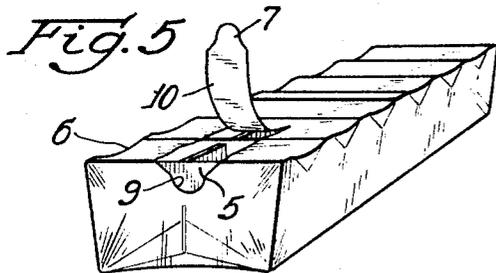
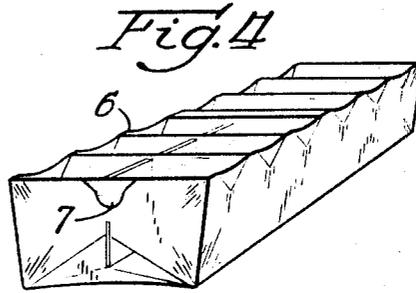
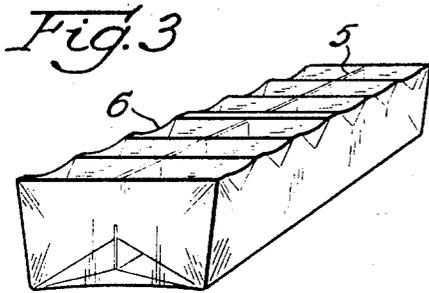
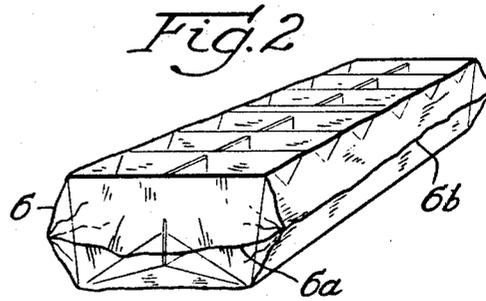
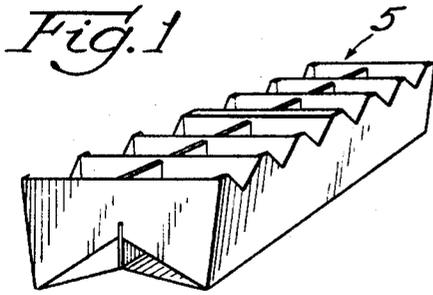
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R. T. WALTER

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METHOD OF FORMING SHRINK FILM PACKAGE

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Inventor:
Richard T. Walter
By: Richard W. Carpenter *Att.*

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METHOD OF FORMING SHRINK FILM PACKAGE
 Richard T. Walter, Norristown, Pa., assignor to Container Corporation of America, Chicago, Ill., a corporation of Delaware

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The present invention relates to a method of forming packages which include an outer wrapping of shrinkable film and more particularly to the production of packages of this type formed with an easy opening feature.

Among the important objects of the invention are to provide a package of relatively simple construction, which is easy to produce, and which includes a thin, snugly engaging, enclosing film or wrapper having provision by which such film may be readily torn away along well defined lines to afford ready access to the contents.

Additional and more specific objects and advantages of the present invention will become apparent as the description proceeds.

In the drawings:

FIGURE 1 is a perspective view of a carton which is to be wrapped;

FIGURE 2 is a perspective view of the carton after being wrapped with a sheet of shrinkable film the edges of which have been brought together and sealed;

FIGURE 3 is a perspective view of the carton after the film wrapping has been subjected to conditions, such as heat, causing the film to shrink and enclose the carton closely on all sides;

FIGURE 4 is a view similar to FIGURE 3 showing the end portion of the wrapper treated by creating a cut or severance in the form of a pull tab which may be grasped by the fingers;

FIGURE 5 is a view similar to FIGURE 6 showing the tab after it has been lifted and pulled to disrupt the film at the top of the carton preparatory to obtaining access to the contents of the carton;

FIGURE 6 is a perspective view of a modified form of film wrapper showing the provision of weakened or partially severed lines in the film covering the top of the carton to give more exact control of the tear produced when the pull tab is lifted; and

FIGURE 7 is a fragmentary perspective view showing the use of a heated tool to be employed in cutting the film at the end of the carton.

The present invention is exemplified by the application of a film of thermoplastic material to an open top egg carton which is designed to afford adequate protection to the eggs packed therein and at the same time permit the eggs to be easily viewed by the purchaser. It is to be understood, however, that the invention may be applied to any form of filled carton or similar article.

As shown in FIGURE 1, the carton 5 is made ready for its wrapping by setting it up and filling it with desired contents. The carton may then be enclosed in a wrapper comprising a shrinkable film of thermoplastic material, indicated at 6, which may be in the form of a sheet, the edge portions of which are brought together at the ends and along one side of the filled carton and are heat sealed in a well known manner by applying heated elements to form seams indicated at 6a and 6b.

The loosely wrapped package may then be placed in or passed through a suitable heated area for a short period which will cause the film to shrink and form a tight or snug fitting wrapper around the entire carton, as illustrated in FIGURE 3. Any material having heat shrinking characteristics may be utilized for this purpose, such as heat-shrinkable polypropylene or poly-

vinylidene chloride film, the latter being commercially distributed under the trade name "Saran."

In order to provide easy opening means, one of the panels of the wrapper, held tensioned around the carton, is formed with a suitable cut by means of which tearing of the wrapper may readily be started. As shown in FIGURES 4 and 7 the portion of the wrapper at one end of the carton may be cut in the form of a pull-tab 7 by means of a U-shaped tool 8 which has been heated to a temperature which will cause the material of the film to fuse. Thus, there is produced a cut line 9 along which the film is separated and the fused material has gathered along the opposite edges of the cut. By forming a tab in this manner after a transparent thermoplastic wrapper has been applied to the carton and brought under tension by shrinking it, the tab thus can be formed in exact registration with suitable printing on the carton which shows through the transparent film.

When it is desired to remove the contents from the wrapped carton as shown in FIGURE 7, this may be done after first lifting the tab 7 and pulling it in a direction lengthwise of the package as shown in FIGURE 5 which will cause a strip 10 to be torn from the tensioned top panel of the wrapper.

In order to provide for a reasonably accurate tearing operation it is desirable to wrap the carton with the sheet of thermoplastic material so that the grain of the material will extend lengthwise of the top panel of the carton.

As shown in the modified form of wrapper, illustrated in FIGURE 6, a pair of weakened lines 11, 11 may be formed by passing a heated tool of proper configuration lengthwise of the top panel to produce a plurality of closely spaced small openings or slots. These weakened lines will be formed so as to terminate adjacent the ends of the U-shaped cut forming the pull tab indicated at 7a in FIGURE 6. By this construction a more accurate tear strip may be formed in the top panel of the wrapper and it is not important to arrange the wrapping sheet so that the grain of the sheet extends lengthwise of the top panel.

When a strip of material has been removed from the top of the wrapper, as illustrated, it is a simple matter to remove or tear the wrapper further to give ready access to the contents of the package.

While the present description sets forth preferred forms of the invention, various changes may be made in the constructions disclosed without departing from the spirit of the invention, and it is therefore desired that the present disclosure be considered in all respects as illustrative and not restrictive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

I claim:

1. A method for forming a package comprising a filled carton encased in a thermoplastic film element, which comprises:
 - (a) enclosing the filled carton relatively loosely within a thermoplastic film element;
 - (b) shrinking such film element to tighten it around the filled carton; and
 - (c) perforating the film element to provide tear strip openings.
2. A method for forming a package comprising a filled carton encased in a thermoplastic film element, which comprises:
 - (a) enclosing the filled carton relatively loosely within an element of heat-shrinkable thermoplastic film;
 - (b) shrinking such film element by means of heat to tighten it around the filled carton to produce tension in at least one area of the film; and
 - (c) applying a disrupting amount of heat to a re-

stricted pattern in the tensioned area to produce a cut in the form of a pull tab by which a portion of the wrapper may readily be torn.

3. A method for forming a package comprising a filled, rectangular shaped carton encased in a thermo-
plastic film element, which comprises: 5

- (a) enclosing the filled carton relatively loosely within an element of shrinkable film;
- (b) shrinking such film element to tighten it about the filled carton to produce tension in at least two adjoining panels of the enclosing film; 10
- (c) applying with a heated tool a disrupting amount of heat to form a cut in the shape of a pull tab in one tensioned panel near its line of connection with the second tensioned panel; and
- (d) applying with a heated tool a disrupting degree of heat to form in the second tensioned panel two approximately parallel lines of spaced cuts extending from points near the extremities of the pull tab 15

a substantial distance across said second tensioned panel.

References Cited by the Examiner

UNITED STATES PATENTS

2,261,875	11/1941	Dunn	215—38
2,322,594	6/1943	Russell	229—51
2,533,738	12/1950	Moore	206—45.33
2,554,841	5/1951	Rumsey	206—45.33
3,001,644	9/1961	Fourness et al.	229—51
3,041,802	7/1962	Cummings et al.	53—39
3,084,489	4/1963	Seefluth	53—39
3,111,221	11/1963	Chapman et al.	206—65

15 GRANVILLE Y. CUSTER, JR., *Primary Examiner.*

THERON E. CONDON, *Examiner.*

W. T. DIXSON, *Assistant Examiner.*