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3,285,405

PACKAGE FOR STORING AND DISPENSING ARTICLES

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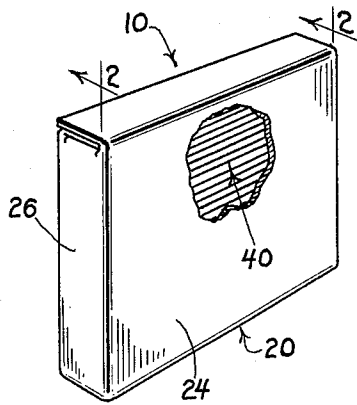


Fig. 1

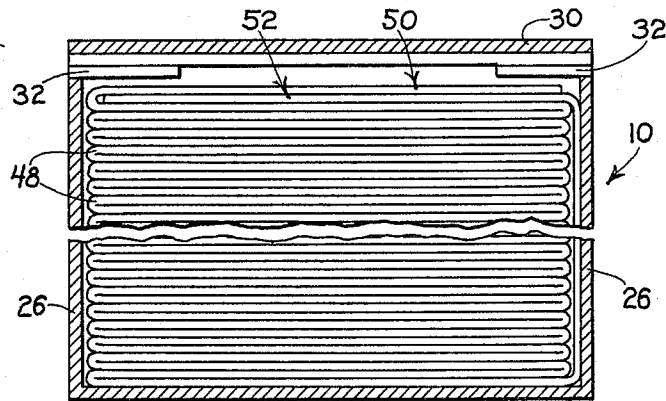


Fig. 2

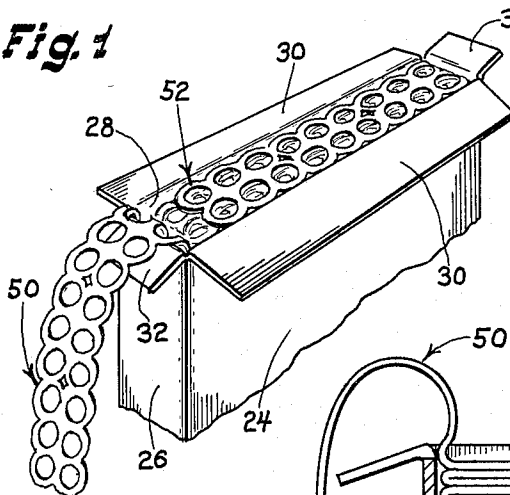


Fig. 4

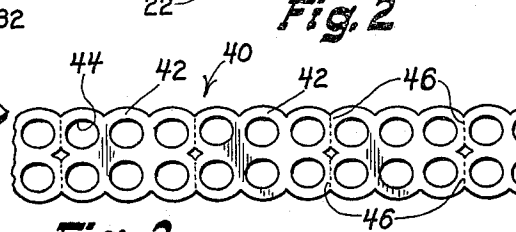


Fig. 3

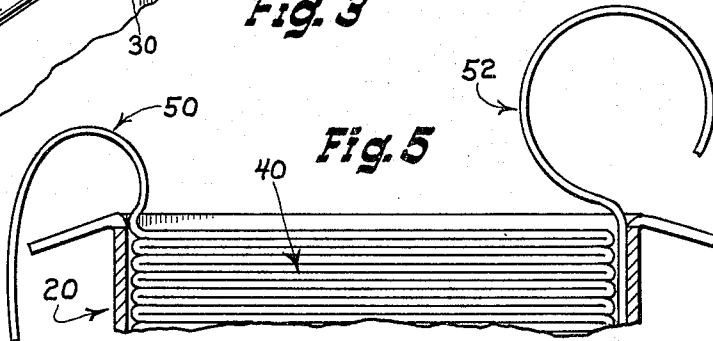


Fig. 5

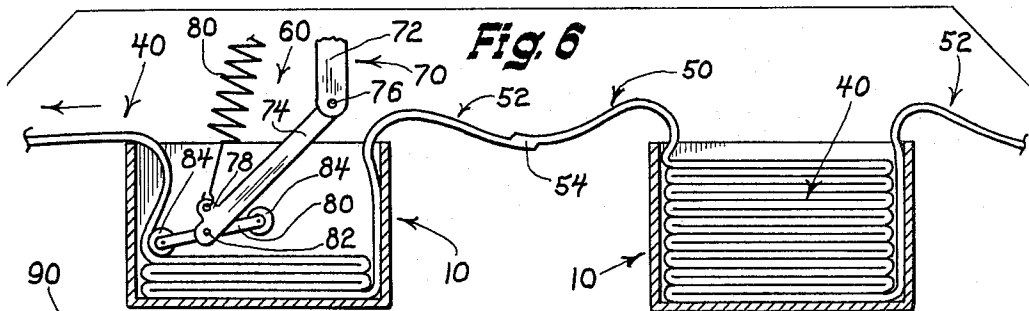


Fig. 6

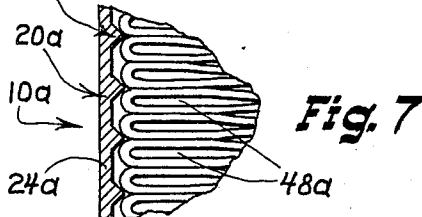


Fig. 7

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3,285,405 PACKAGE FOR STORING AND DISPENSING ARTICLES

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The present invention relates to a method and package for storing articles, and more particularly, to a method and package for storing an elongated strip of interconnected articles to permit uninterrupted dispensing of the strip and splicing to a second strip.

While reel mechanisms are normally employed to store and dispense an elongated or continuous strip of material, there are situations where it may not be advantageous to use them. In certain instances, the elongated strip must be maintained dirt free in storage, and subsequently dispensed and spliced to a second strip without interrupting the feeding operation. A particular example is where an elongated strip, having a plurality of interconnected container carriers, is fed through an assembly machine which first positions the container carriers over adjacently positioned containers to secure the containers together as a unit, and then separates the carriers and containers so assembled from the remainder of the strip to form discrete package units. Continuous strips of this type and the apparatus for assembling individual carriers to containers are shown in U.S. Patent Nos. 3,032,943 and 3,032,944 dated May 8, 1962.

If reel mechanisms are used to accomplish the aforementioned functions, a cover element for the reels must be provided, and it is necessary to include reel changing mechanisms for loading successive storage reels in position for dispensing. This makes for rather complex apparatus which, as will be appreciated, is quite expensive and subject to breakdowns.

Accordingly, it is an object of the present invention to provide a method and package for storing and dispensing an elongated or continuous strip of material.

More particularly, it is an object of the present invention to provide a novel method and package for storing and dispensing an elongated strip of interconnected articles which does not employ a reel mechanism, and thereby eliminates its inherent moment of inertia and resulting backlash problems.

Another object of the present invention is the provision of a package which stores an elongated or continuous strip of material in a sanitary and dirt free condition.

Still another object of the present invention is the provision of a novel package which facilitates dispensing of an elongated or continuous strip and splicing to a second strip without interrupting the feeding operation.

A still further object of the present invention is the provision of a novel package unit which is maintenance free, and thus avoids breakdowns in supplying material to an assembly machine or the like.

Yet another object of the present invention is the provision of a package of simple construction which is quite inexpensive, facilitates storage and stacking of a plurality of such packages, and is otherwise designed for optimum results.

Other objects and advantages will become apparent from the following description when taken in connection with the accompanying drawing wherein:

FIG. 1 is a perspective view of a package constructed in accordance with the principles of the present invention;

FIG. 2 is a fragmentary sectional view of the novel package incorporating features of the present invention;

FIG. 3 is a fragmentary top plan view of a continuous strip of interconnected articles;

FIG. 4 is a fragmentary perspective view of the package shown in FIG. 1 with the cover flaps displaced away from the open upper end of the container to permit removal of the elongated strip of articles;

FIG. 5 is a fragmentary front elevational view, partly in section, of the elongated strip of articles with the opposite ends thereof removed from the container;

FIG. 6 is a fragmentary elevational view, partly in section, showing the removal of an elongated strip from one container with one of the strip extremities being attached to a second strip; and

FIG. 7 is a fragmentary elevational view, partly in section, showing means incorporated within the container to limit undesirable upward movement of the strip.

Referring now in greater detail to the drawing, and first to FIG. 1, there is shown a package 10 which comprises a container 20 into which an elongated or continuous strip of material 40 is positioned. While the shape of the container 20 may be varied to accommodate various strips of different size and configuration, it is preferably rectangular in form as shown in the drawing. For the purposes of the present discussion, the elongated or continuous strip 40 is preferably of the type shown in the above mentioned patents, and thus consists of a plurality of separably connected articles as will be discussed hereinafter. It is to be understood, however, that the elongated or continuous strip of material may be uninterrupted throughout its entire length or provided with protuberances or interruptions as desired depending upon the ultimate usage of the strip. The strip 40 is preferably used in connection with the container 20, but it will be appreciated from the discussion that follows that the strip has utility by itself.

As illustrated in FIGS. 1-2 and 4, the container 20 is provided with a bottom wall 22 and side and end walls 24, 26 respectively, which extend upwardly therefrom and terminate in an open upper end 28. Adjacent this open upper end of the container, a series of overlapping side and end flaps 30, 32 respectively, operate as removable cover elements in opening and closing the container interior. Preferably the container or storage member 20 is made from cardboard or paperboard, but other materials may be used as desired.

As readily depicted in FIG. 3 of the drawing, the elongated or continuous strip 40 comprises a series of interconnected container carrier members 42 having constrictive apertures 44 formed in each carrier unit for receiving and retaining containers as is well known in the art, specific reference being made to U.S. Patent No. 2,874,835 dated February 24, 1959 for a complete description of the operation and function of such carrier members. Adjacent carrier members 42 are separably connected to one another by weakened areas 46 which also aid to facilitate the folding of the strip 40 within the container 20 as will be apparent.

The strip 40 is folded back and forth upon itself in alternating opposite directions within container 20 to provide a plurality of generally horizontally extending rows of articles in a generally vertically extending stack. Each of the folded portions 48 of the strip, except for the bottommost portion, is supported by a next adjacent folded portion positioned therebelow to compactly store the strip within the container. Preferably, each row of the stack has three article members 42, but this can be reduced or increased depending upon the length of the container 20. One of the important features of the present invention is that the ends or extremities 50, 52 of the strip are positioned in overlapping relationship adjacent the open upper end of the container. As will be apparent, the ends or extremities 50, 52 of the strip 40 extend from opposite ends of the stack of folded portions 48. The end or extremity 50 of the strip overlies the end or extremity 52,

and then proceeds downwardly from the open upper end of the container towards and along the bottom wall, the strip then proceeding upwardly along side wall 24 at one end of the package and forming the end or extremity 52. If desired, the end or extremity 52 may overlie the end or extremity 50. By disposing the strip 40 within the container 20 in this manner, the opposite ends 50, 52 will be exposed when the side and end flaps 30, 32 of the container are displaced from the position shown in FIG. 1 to that shown in FIG. 4.

FIG. 4 shows the front end or extremity 50 positioned outside of the container 20 after it has been moved from a position of overlapping engagement with the tail or rear end 52 of the strip, and FIG. 5 illustrates both the head and tail ends 50, 52 of the strip disposed outside of the container 20. When the package has thus been opened, the head or front end 50 of the strip can be threaded through a feeding mechanism for subsequent transfer to an assembly machine or other apparatus. The tail or rear end 52 of the strip can then be spliced to the front end 50 of an adjacent strip for continuous, uninterrupted feeding thereof. This is readily depicted in FIG. 6 wherein the strip 40 from the package at the left side of the drawing is shown as being withdrawn from the package in the direction of the arrow. The tail end 52 of this strip is shown as being attached to the leading or front end 50 of the strip disposed within the package at the right of the drawing. The packages 10 may be left unopened until it becomes necessary to splice adjacent strips, thus protecting them from dirt, oil and other foreign material.

To prevent undesired upward movement of the strip as it is withdrawn from each package unit, a hold-down mechanism as shown in FIG. 6 may be employed. This hold-down mechanism comprises a support arm 72 which is attached to a frame member (not shown), one end of the support arm 72 being pivotally secured to the rocking arm 74 at 76. The arm 74 is in turn attached at 78 to a spring member 80 for resiliently biasing the arm 74 downwardly against the folded portions of the strip. A rod 80 is pivotally attached at 82 to the arm 74 and rotatably supports hold-down members 84 at each end thereof. As an elongated strip is withdrawn from a container, the rotatable hold-down members 84 will engage the folded portions and prevent undesirable upward deflection of the strip. The hold-down mechanism 70 will also respond to various positions of the strip as it is withdrawn from the container and prevent undesirable material bulges.

In certain instances, it may be desirable to incorporate a hold-down feature within the package itself. One type of such hold-down feature is shown by the package 10a in FIG. 7 wherein like numerals are employed to designate the same parts shown in the other figures with the suffix "a" added. The only essential difference between this package and the one shown in FIGS. 1-6 is the fact that retarding elements 90 are associated with one end wall 24 of the package and extend between pairs of folded portions 48a for a predetermined distance. These retarding elements 90 bear down against the folded portions and aid in preventing undesirable upward movement of the strip. These retarding elements may be provided for each folded portion or may be spaced from each other as shown in the drawing or in any other suitable manner. Other

types of hold-down features may be either integrally or otherwise associated with the container as will be apparent.

From the foregoing, it will now be appreciated that the present invention contemplates a unique method and package for storing and dispensing an elongated or continuous strip of interconnected articles, while facilitating splicing of adjacent strips without interrupting continuous feeding of the strips. It will also be appreciated that the packages are relatively inexpensive and are maintenance free in their operation as well as prevent the entry of foreign particles until the container is opened.

While the preferred embodiments of the present invention have been shown and described herein, it is obvious that many structural details may be changed without departing from the spirit and scope of the appended claims.

What is claimed is:

1. A package comprising, in combination, a container having a bottom wall, side and end walls extending upwardly therefrom and terminating in an open upper end, and a removable cover associated with said container adjacent to its open upper end, said container having an elongated flexible strip of interconnected articles folded back and forth in alternating opposite directions there-within in stacked relation, the opposite ends of said strip positioned in overlapping relationship adjacent the open upper end of said container and being supported by said stack of articles whereby to permit disposition of said opposite ends above the open upper end of said container for subsequent dispensing of said strip from one end while said other end is disposed for attachment to a second strip, and means within said container positioned between the inner wall surface of the container and the folded portions of said strip for restraining upward movement of said strip as it is withdrawn from said container.

2. The package as defined in claim 1 wherein said elongated strip is made of a flexible thermoplastic material.

3. The package as defined in claim 1 wherein said elongated articles each comprise a container carrier having a plurality of constrictive apertures formed therein.

4. The package as defined in claim 1 wherein each elongated article is separably connected to an adjacent article.

5. The package as defined in claim 1 wherein a plurality of said articles are positioned in juxtaposed rows within said container, and weakened areas are provided in said strip intermediate said juxtaposed rows for compactly storing said strip.

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