July 22, 1952 F. A. CHIDSEY, JR 2,603,923

METHOD OF PACKAGING ARTICLES IN HANDLED CARRIERS

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Fig. 1

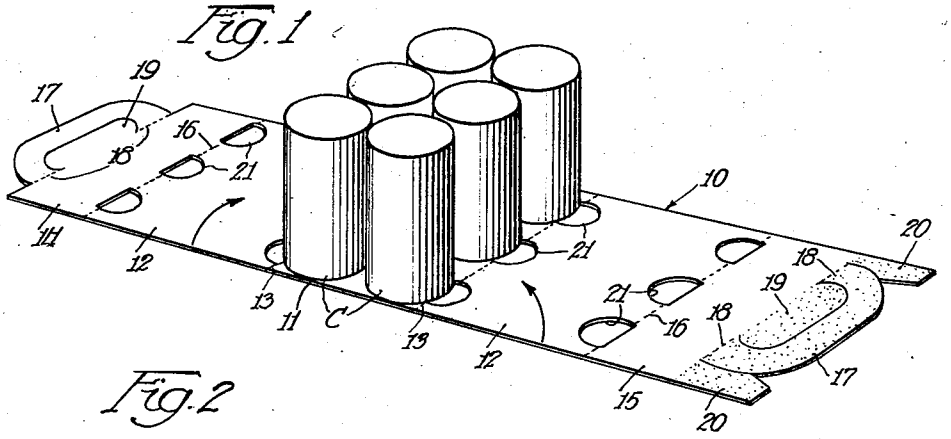


Fig. 2

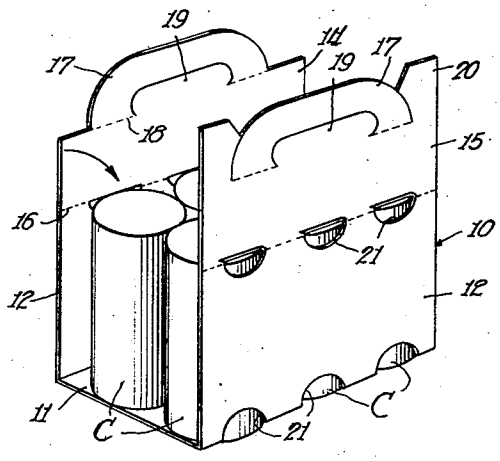


Fig. 3

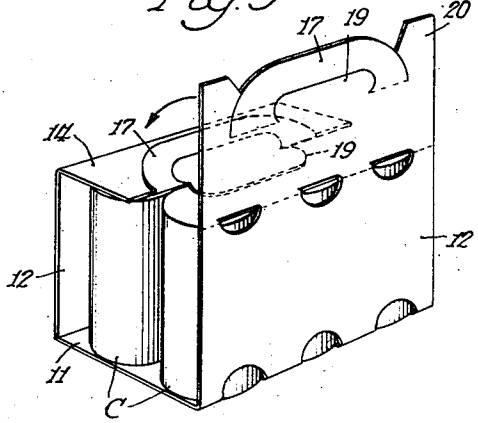
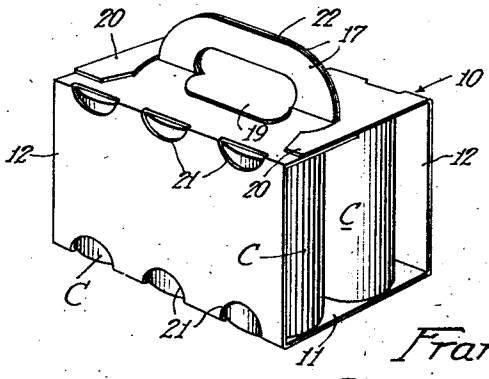


Fig. 4



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METHOD OF PACKAGING ARTICLES IN HANDLED CARRIERS

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1 Claim. (Cl. 53—3)

1

The present invention relates to a method of packaging articles in paperboard cartons or carriers, and more particularly to a method of packaging articles in handled carriers, in which the carrier is simultaneously formed and filled.

The method of this invention, briefly stated, comprises the disposing of a plurality of articles on the bottom panel of a flat paperboard carrier or carton blank, then folding side panels of the blank at opposite edges of the bottom panel upwardly about the articles, folding over the articles a pair of top panels carried by the side panels, bringing into overlying or face-to-face relation similar handle portions hingedly connected to the top panels, and securing the handle portions in such relation, as by adhesive, staples, or other suitable means to provide a composite handle. Preferably one of the top panels has extensions or projecting edge portions for overlapping the other top panel for securing the top panels together by adhesive or other means. The application of the securing means is preferably accomplished as part of this carrier forming operation. An important feature of the method is that it permits the handle portion of the one top panel to overlie the other handle portion, which is folded reversely to lie against its attached panel. By this method, the articles may be utilized to support the top panels and handle portions during the securing step, and the carrier handle is formed flat against the top of the carrier so as to permit ready stacking of the carriers in minimum space, while being easily swung to carrying position when desired.

This method simplifies the packaging of articles in paperboard cartons or carriers, by combining into a single operation the forming of the carrier and the insertion of articles therein, which usually are separate activities performed at different places and times. It is thus unnecessary to form the carrier by folding and gluing a blank into collapsed tubular form, ship the collapsed carrier to the place of use, and then set it up into final form and insert the articles it is to carry. Instead, the carrier blanks are shipped and handled in flat form and folded into the final carrier form at the place of use with the articles already enclosed therein. The articles are held more snugly in the carrier when the present method is employed than when the carrier is first completely formed and then loaded with the articles, for in the latter case the carrier must be of somewhat greater dimensions to permit the articles to enter without undue difficulty. The articles therefore may

2

shift and rattle, and possibly damage each other.

It is an object of the invention to provide a method of packaging articles which is efficient, rapid, and economical. Another object is the provision of a method of packaging articles in handled paperboard carriers, in which the carriers and handles are unformed until the packaging operation. A further object is the provision of a method of packaging articles in paperboard carriers which comprises forming a flat, unfolded blank into a handled carrier about the articles. Still another object is to provide a method which enables a producer of goods effectively to package groups of articles of predetermined size and number within handled containers formed from individual unfolded blanks of paperboard previously cut and creased to form enclosing panels of desired size and shape. It is also an object to provide a packaging method in which a suitably cut and creased unfolded blank of paperboard is loaded by disposing a group of articles on one of the panels of the blank, then assembling the parts of the blank around the group of articles and securing the blank parts in assembled relation so as to hold the group of articles firmly within the carrier, thus to simplify the steps of packing and forming the carton by performing the various operations of loading the carrier and gluing the same in close sequence. An additional object is generally to improve packaging methods where an unformed but cut and creased carrier is folded around the goods and its parts secured in formed relation.

Other and further objects, advantages, and features of the invention will be apparent from the following description, taken with the accompanying drawing, in which:

Fig. 1 is a perspective view of a flat carrier blank with a group of articles to be packaged disposed thereon, in preparation for the carrier-forming steps to follow;

Fig. 2 is a perspective view of the blank and articles after the first folding step;

Fig. 3 is a view similar to Fig. 2, but with the articles and blank just prior to the last folding step; and

Fig. 4 is a perspective view of the completed package.

In carrying out the method of the present invention, I first provide a paperboard carton or carrier 10 in the form of a flat blank which includes a central panel 11, forming the bottom panel of the carrier, a pair of side wall panels 12 hingedly connected to opposite edges of the

bottom panel 11 along crease lines 13, and top wall panels 14 and 15 each hingedly connected to the outer edge of one of the side wall panels 12 along a crease line 16. Each top panel has a generally U-shaped handle portion 17 hinged on its outer edge along crease lines 18. A tongue portion 19 extends from the outer edge of each top panel between the legs of the handle portion connected thereto. The top panel 15 also has projecting portions 20 extending from its outer edge at the ends of the handle portion. Each side panel 12 is provided with a plurality of apertures 21 spaced along the crease lines 13 and 16. The apertures extend across the respective crease lines into the bottom and top panels, and are of generally semi-circular shape, with a substantially straight edge portion parallel to and spaced slightly from the crease line within the top or bottom panel. In other words, the apertures are located at the top and bottom edges of the side panels and extend slightly into the top and bottom walls of the carrier when it is set up from the blank.

In the present instance, the articles to be packaged are substantially similar cylindrical cans C, six of which are to be contained in each carrier 10. The six cans C are disposed on the bottom panel 11 of the flat blank in two rows of three each. The bottom panel is formed with dimensions substantially corresponding to the width and length of the group of cans, but its width is preferably slightly less than the width of the can group. The top panels are each of substantially half the width of the bottom panel. The side panels have a width, or height, substantially equal to the height of the cans. Three apertures 21 are provided along each of the crease lines 13 and 16, so located that upon folding of the panels edge portions of the cans will engage in the apertures. The handle portions 17 and projecting portions 20 extend from the respective top panels a distance no more than half the width of the bottom panel.

Fig. 1 shows the group of cans disposed on the bottom panel 11 of the carrier blank in the manner described. The side panels 12 are then folded upwardly, as indicated by the arrow, about the crease lines 13 and against the sides of the cans to the position shown in Fig. 2, top and bottom edge portions of the cans extending slightly through the apertures 21. This engagement is enhanced by having the bottom panel 11 slightly narrower than the width of the group of cans, as indicated above. The top panel 14 is then folded, as indicated by the arrow, about its crease line 16 down over the tops of the cans, and its handle portion 17 is folded back upon it along the crease lines 18, leaving the tongue portion 19 in the plane of the panel 14. The positions of the parts are then as shown in Fig. 3.

At this point, it may be explained that various means may be employed for securing the carrier in its set-up or erected condition, adhesive being considered preferable in most cases. Accordingly, in the present example a suitable adhesive is shown as applied to the interior faces of the projecting portions 20, handle portion 17, and tongue portion 19 of the top panel 15, as indicated by the stippled area in Fig. 1. The adhesive may be of any suitable type, as for instance an adhesive which provides a non-tacky coating when dry, but becomes tacky upon subjection to moisture, or to heat and pressure. I believe it preferable, however, to employ a glue-like adhesive which is applied at the time of the packaging operation. The adhesive may then advantageously be applied to the uppermost, or interior, surface of the carrier blank while it is in the flat condition of Fig. 1, although it may also be applied at a later stage of the packaging operation, as when the top panel 15 and its attached parts are in the positions of Fig. 2 or 3. Of course, the adhesive may be applied to other areas of the carrier than those shown, as for example to the inner face of the handle portion of the top panel 14 and the outer face of the panel 14 adjacent the reversely folded handle portion.

The top panel 15 with adhesive applied to the parts extending from its outer edge as described is folded down over the tops of the cans as shown by the arrow in Fig. 3. Due to the proportions of the parts, the handle portion 17 of the panel 15 is brought into registering, face-to-face relation with the reversely folded handle portion 17 of the top panel 14, and the projecting portions 20 and tongue portion 19 overlap the top panel 14. The parts are held in this relation under appropriate pressure until the adhesive has set. If a dry, remoistenable adhesive is employed, it is moistened during the packaging operation, and if a heat-activatable adhesive is used, heat as well as pressure is applied after the last folding step. The cans C serve to support the top panels and handle portions during the folding and gluing thereof.

It will be seen that the handle portions 17 form a composite handle 22 (Fig. 4) which lies flat against the top panel 14, or substantially so, due to the folding of the top panel 15 with its handle portion 17 in the same plane and the folding of the other handle portion against its top panel 14. The handle 22 therefore remains substantially in the plane of the top of the carrier 10, to facilitate stacking of the packages, as in storage or shipment. When a package is to be carried individually, as after retail sale, the handle 22 is swung to a position substantially perpendicular to the top panels 14 and 15, as shown in Fig. 4. The cans C are retained in the carrier 10 by reason of the projection of their end edge portions through the apertures 21, as will be obvious. Of course, other means may be employed to hold the packaged articles in the carrier, as closure flaps or strap elements to extend across the open ends of the carrier, the blank being modified accordingly.

Other means, for example staples, may be employed instead of adhesive to secure the handle portions 17 and the projecting portions 20. If staples are used, suitable supporting blades or anvils may be provided to extend under the carrier parts during the stapling operation.

It may be pointed out that if it is not necessary or desired to have the handle 22 flat against the carrier top, it may be formed substantially perpendicular to the top by folding each handle portion 17 to substantially right angles with its top panel, so that the handle portions come into facing relation with each other in upstanding relation to the carrier top as the top panels are folded over the articles. The handle portions may then be secured together to form the handle 22.

The method of this invention is adapted to be carried out effectively either manually or mechanically, and does not require large-scale production for efficiency and economy.

It will be clear that many variations may be made in the method as specifically disclosed herein, without departing from the scope of the

invention, the disclosure being by way of illustration. Some of the possible changes have been pointed out or suggested above, and others will readily suggest themselves to those skilled in the art. It is therefore not intended that the invention be limited otherwise than as required by the scope of the appended claim, with due regard to the spirit as well as the literal wording thereof.

I claim:

A method of packaging cylindrical articles which comprises providing a flat carrier blank having a bottom panel with side panels on opposite edges thereof, a first top panel attached to the outer edge of one side panel, a second top panel attached to the outer edge of the other side panel, each top panel having a relatively foldable handle portion, the second top panel also having at least one projecting portion at its outer edge, disposing a plurality of articles on the bottom panel, folding the side panels upwardly, folding the first top panel over the articles, folding back the handle portion of the first top panel to overlie said panel, folding the second top panel over the articles with the projecting portion and the handle portion thereof overlying respectively the first top panel and the folded back handle portion thereof, applying adhesive to the inner faces of the handle portion and projecting portion of the second top panel before folding thereof, and applying pressure to the projecting portion and handle portion of the second top panel to cause adhesion of the handle portions to each other and of the projecting portion to said first top panel.

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