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CARTON FOR CYLINDRICAL OBJECTS

Grover C. Currie, Charlotte, N. C., assignor to
Dacam Corporation, Charlotte, N. C.

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This invention relates to a portable and collapsible cardboard carrier for holding a plurality of cans of soup, fruit juice, vegetable juice, beer and the like, and more especially to a carrier which can be formed from a single sheet of stock having a pair of bottom flaps, a pair of side walls, and having a pair of top panels, the top panels having disposed therebetween a pair of handle forming sections to provide a means for carrying the carton.

It is an object of this invention to provide a carrier of the type described, which is especially adapted for use in a packaging machine such as is shown in the application of Grover C. Currie, et al., Serial Number 788,602, filed November 28, 1947, entitled Apparatus and Method for Placing Articles in Cartons, wherein the carrier is inserted in said packaging machine with its bottom flaps extending downwardly in a vertical plane and wherein relative movement is effected between the carrier and the cans to be packaged, whereby the carrier assumes a hood-like position over the articles to be packaged, after which the bottom flaps may be folded to a position where their proximate edges overlap each other, at which time the bottom flaps are adhesively secured to each other to complete the packaging operation.

It is a further object to provide, in a carrier of the type described, a plurality of substantially semi-circular cut away portions at the junction of the top panels and bottom flaps with the side portions, whereby upon insertion of a plurality of flat-ended cylindrical articles therein, the carrier will bulge outwardly at each cut away portion to thereby cause the side walls of the carrier to frictionally engage the articles in such a manner as to prevent their being accidentally dislodged from the carrier.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds, when taken in connection with the accompanying drawings in which—

Figure 1 is an elevation of the blank from which the carrier is formed, showing the same cut and scored and ready for erection;

Figure 2 is an isometric view showing the carrier in fully erected condition and is taken looking at the top of the carrier;

Figure 3 is a top plan view of the carrier in erected position and showing a plurality of cylindrical articles therein;

Figure 4 is an isometric view showing the reverse of Figure 2 and showing the bottom of the carrier;

Figure 5 is a vertical sectional fragmentary view taken along the line 5-5 in Figure 3.

Referring more specifically to the drawings, the numeral 10 indicates broadly a suitable blank of cardboard from which the carrier is formed. The blank is cut and scored in such a manner as to provide a pair of bottom flaps 11 and 12 which are hingedly connected to side panels 13 and 14 as by score lines 15 and 16, respectively. A pair

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of score lines 17 and 18 hingedly connect the side panels 13 and 14 to top panels 20 and 21, respectively, and the top panels 20 and 21 are hingedly connected to suitable handle forming portions 22 and 23 as by score lines 24 and 25, respectively. These handle forming portions 22 and 23 are folded along a suitable score line 30 and suitable lines of cut 31 and 32 appear in the handle forming members 22 and 23 which provide flaps 35 and 36 which are adapted to be folded to the position shown in Figure 2 when the carrier is erected to provide finger openings 37 and 38.

At the top and bottom edges of the side wall 13 substantially semi-circular cut-outs 40 and 41 are provided whose bases extend slightly into the top panel 20 and the bottom flap 11. Likewise side wall 14 has similar cut-outs 42 and 43.

Although in the drawings the cut-outs 40, 41, 42 and 43 are shown as substantially semi-circular, they would work equally as well, or probably better, if they were V-shaped or even rectangular, but for manufacturing purposes the semi-circular cut-outs are preferable, for the reason that in any dye where there are sharp corners, there is a possibility of the cut-out portions being not entirely severed, and thus the fewer sharp corners present in the cut-outs, the better.

The carrier as shown in Figure 1 is in the position it would assume when being stored or shipped, in order to conserve space, but when the carrier is ready to be erected, the handle forming members 22 and 23 are brought into face to face relation and are preferably adhesively secured together. The side panels 13 and 14 are then moved away from each other to assume positions in spaced, parallel vertically disposed planes as shown in Figures 2, 3 and 4, which will cause the top panels 20 and 21 to assume a substantially horizontal position as shown.

With the bottom flaps 11 and 12 disposed in the same vertically disposed planes as those which the side portions 13 and 14 occupy, respectively, the carrier is ready to be moved in hood-like fashion over the upper ends of a plurality of cylindrical articles, such as cans, which are indicated at 44 in Figure 3. As will be noted in Figure 3, the diameter of each of the cans 44 is slightly greater than one-half the width of the panels 20 and 21, which will cause the side panels 13 and 14 to bulge outwardly as shown in Figure 3, which is made possible by the cut-outs 40, 41, 42 and 43 which allow the side panels to be distended at the points where they are engaged by the peripheries of the cans 44.

With the cans 44 in the position shown in Figure 3, the bottom flaps 11 and 12 are then bent inwardly along the score lines 15 and 16 and are adhesively secured to each other in the manner shown in Figures 2 and 4, and it is thus seen that with the flaps 11 and 12 forming a bottom for the carrier, and with the cans 44 tightly held by frictional contact with the side panels 13 and 14, it is practically impossible for the cans 44

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to escape accidentally through the open ends of the carrier.

By bringing the carton with the bottom flaps 11 and 12 open down over the cans and applying pressure to the opposed side walls 13 and 14, and then turning the bottom flaps 11 and 12 up into overlapping position and allowing the same to stand for a short period, the weight of the cans themselves in the carton will cause permanent adhesion between the bottom flaps and not only prevent the side walls from separating, but also such securing of the bottom flaps together is sufficient to support the weight of the goods for carrying purposes. After the pressure is released from the side walls 13 and 14, a bulge 51 is present between each pair of upper and lower cut-outs. This carton, therefore, is particularly adapted for machine packaging such as disclosed in the above referred to patent application, because whether it is done by such machine or by other means, the cans are imprisoned within the carton and cannot be removed except by mutilation of the carton.

Since cans have their tops and bottoms seamed thereon, there is at each end of the cans an outwardly projecting seam 52 which overshadows the bulges 51 in the side walls in Figure 3, but Figure 5 shows the relative position of parts in the packed carton.

When it is desired to ship a plurality of carriers which have been loaded with canned goods, the handle comprising portions 22 and 23 can be folded along score lines 24 and 25 to occupy a plane which is parallel to the plane occupied by the top panels 20 and 21, and it is seen that these loaded carriers could then be stacked one on top of the other.

When it is desired to carry a single carrier, the fingers of the operator can be inserted through the openings 37 and 38 in the handle member to bend the flaps 35 and 36 to the position shown in Figure 2, which provides an efficient means for transporting the carrier.

It is thus seen that I have provided a carrier formed from a single blank of stock, which is so cut as to result in practically no waste of stock, and which can be filled with a plurality of cans of food and the like, and which is extremely easy to construct and is relatively inexpensive.

In the drawings and specification there has been set forth a preferred embodiment of the invention, and although specific terms are employed, they are used in a generic and descriptive sense only, and not for purposes of limitation, the scope of the invention being defined in the claims.

I claim:

1. A carrier adapted to contain a plurality of cylindrical articles comprising a handle member having hingedly secured to one edge thereof a pair of top panels, each of said top panels having a side panel hingedly connected thereto at its edge remote from said handle member, each of said side panels having a bottom flap hingedly connected to its edge remote from said top panel, whereby said bottom flaps may be secured in overlapping relation to form a bottom for said carrier, said side panels having a plurality of cut away portions disposed at spaced intervals along the junction of the side panels and the respective top panel and bottom flap.

2. In a carrier for cylindrical objects having a top and a bottom and a pair of side panels, the side panels having a plurality of cut away portions disposed at spaced intervals along the junc-

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tion of the side panels and the respective top and bottom through which the upper and lower peripheral portions of a plurality of cylindrical objects may project.

3. An improvement for a carrier having a top and a bottom and a pair of oppositely disposed side panels, said improvement comprising the side panels having a plurality of openings disposed at spaced intervals along the junction of the side panels and the respective top and bottom of the carrier, whereby a plurality of cylindrical objects may be placed in said carrier and whereby the side panels will be distended outwardly at each of said openings, to thereby wedge the cylindrical objects in said carrier against endwise movement relative to the carrier.

4. An improvement for a carrier having a top and a bottom and a pair of side walls disposed opposite each other, said improvement comprising the side panels having a plurality of substantially semi-circular openings cut therein and disposed at spaced intervals along the junction of the top and bottom of the carrier, whereby a plurality of cylindrical objects may be placed in said carrier and whereby the side panels will be distended outwardly at each of the openings, to thereby wedge the cylindrical objects in said carrier against endwise movement relative to the carrier.

5. In a container for carrying a plurality of cylindrical objects and in which the objects are normally disposed in two longitudinal rows within the carton, the objects in one of said rows being disposed in alignment transversely of the container with the objects in the other of said rows, said container having a top and a bottom and a pair of side panels, each of the side panels being provided with a plurality of substantially semi-circular cut away portions disposed at spaced intervals along the junction of the side panels and the respective top and bottom for said container, the cut away portions in each of said side panels being disposed at the points of contact of said cylindrical objects with the side panels of the container, the overall width of the container being slightly less than the overall width of each of the transverse rows of objects adapted to be disposed within the container, whereby, when the objects are inserted into said container, the side panels of said container will bulge outwardly along arcuate lines at each of said cut away portions, and whereby the upper and lower portions of the periphery of each of said objects adjacent said cut away portions will project therethrough, whereby the side panels of said container will frictionally engage the peripheries of said objects to thereby prevent endwise movement of the objects relative to the side panels of the container.

GROVER C. CURRIE.

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