Nov. 3, 1959 O. W. STONE 2,911,136

REINFORCED HANDLE CONSTRUCTION FOR PAPERBOARD CARTONS

Filed Feb. 20, 1958 2 Sheets-Sheet 1

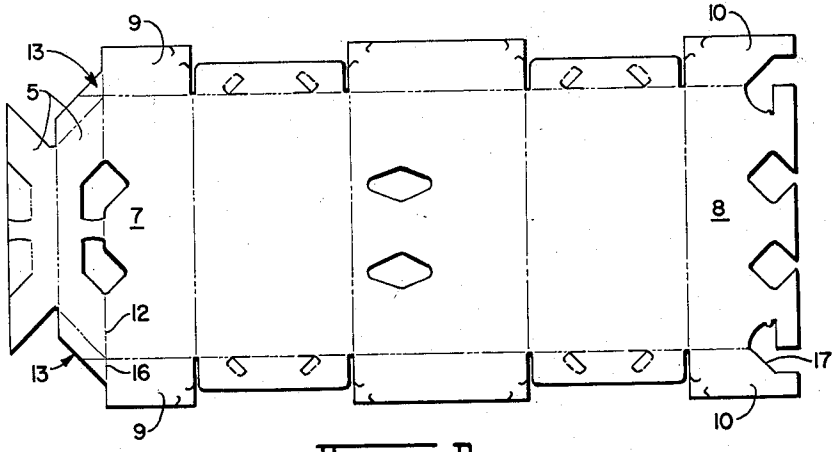


FIG. 1

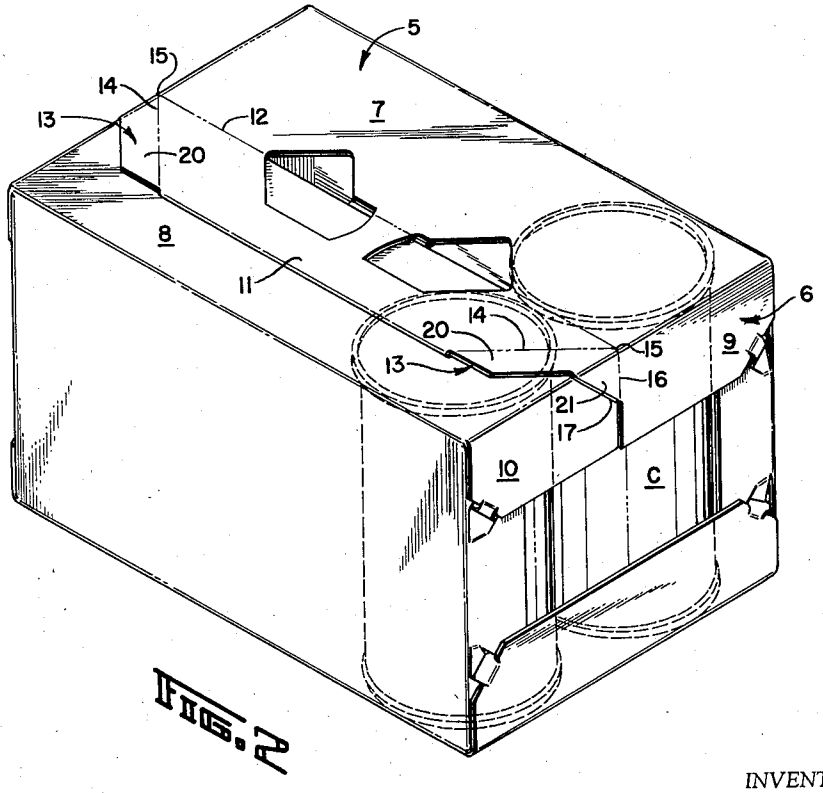


FIG. 2

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REINFORCED HANDLE CONSTRUCTION FOR PAPERBOARD CARTONS

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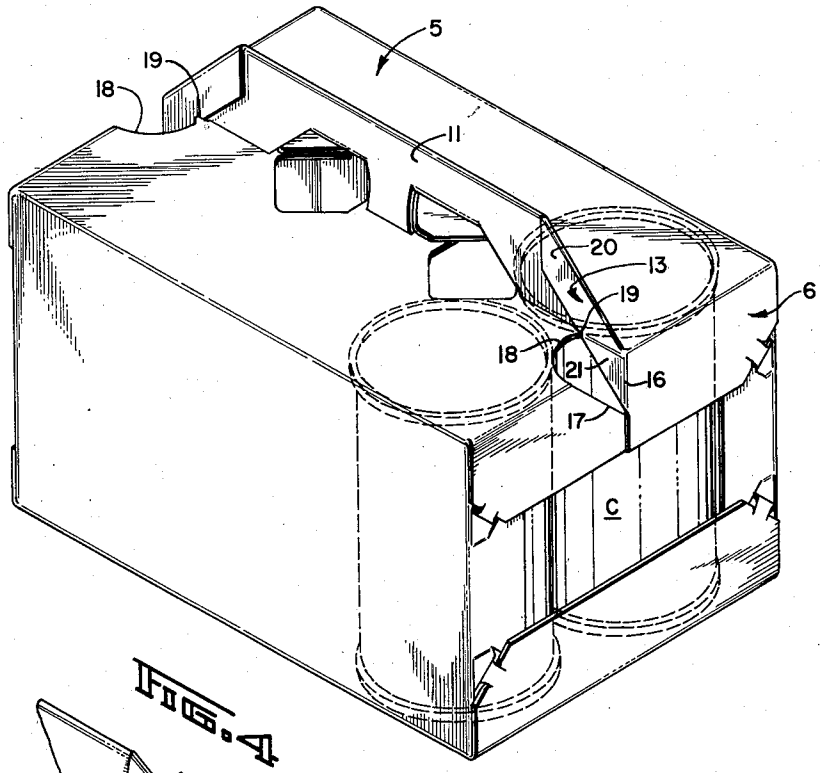


FIG. 4

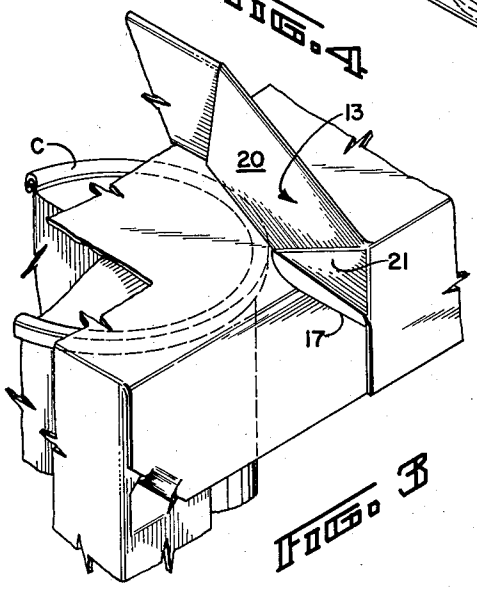


FIG. 3

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REINFORCED HANDLE CONSTRUCTION FOR PAPERBOARD CARTONS

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Application February 20, 1958, Serial No. 716,421

4 Claims. (Cl. 229—52)

The invention relates to an improved handle construction for paperboard cartons. It is especially adapted to wrap-around cartons for cans as exemplified by the well known "six pack" in which there are six cans arranged in two rows of three. However, my invention may also be utilized in the construction of other varieties of cartons.

My handle comes flat against the top of the carton and it has diagonal flaps at its ends which extend down over the sides or ends of the carton where they join the side or end walls at vertical fold lines. When the handle is lifted erect for carrying, these flaps swing through openings in the upper edges of the carton at the ends of the handle, folding back against the handle and extending down through the openings to their connection with the walls. By reason of this construction, carrying stresses are distributed through the center of the top panel of the carton and down into the walls. This strengthens the construction to better resist tendency of the handle to tear away along the top panel during use. The diagonal flaps are self-erecting. All that is required is to lift the handle. The improvement is obtained without the need for any additional apparatus, or method steps, to form the carton blank or to do the packing.

Referring to the drawings, I shall now described the best mode contemplated by me for carrying out my invention.

Fig. 1 is a face view of the paperboard blank from which the carton is made.

Fig. 2 is a perspective view of the carton pack, handle flat for shipment and stacking in stores.

Fig. 3 is a detail perspective view showing the handle being lifted to its carrying position.

Fig. 4 is a perspective view of the carton pack, handle fully erected for carrying.

Fig. 1 provides a pattern for cutting and scoring the blank. Full lines are trim or cut lines; broken lines are score lines. Usual manufacturing techniques may be followed. The two handle sections shown at the left of the view double together to make a double thickness handle in a usual manner. The blank is wrapped around the cans or whatever is to be packed, and the ends are glued together where they overlap at what is to be the top of the carton. The rows of flaps seen along the top and bottom of Fig. 1 fold inwardly and lock together or are glued according to whatever general carton construction may be desired. Interlocking tabs for partial end flaps are shown but need not be described in detail since they are not a part of my present invention.

Referring to Figs. 2–4, my invention is shown in its application to a carton having a top panel 5 and extensions thereof folded downwardly at edges of the top panel to form wall members 6. In the particular construction chosen for purposes of illustration, the invention is applied to a wrap-around carton for cans, and the end closures for the carton are of the type comprising partial end flaps with means for interlocking them where they overlap at the corners. Further, the top panel 5 comprises two overlapping sections 7 and 8 glued together at the overlap, and wall members 6 comprise overlapping extensions 9 and 10 of top panel sections 7 and 8, glued together at the overlap. A handle 11 adjoins the top panel at a fold line 12 extending across the top panel, and flaps 13 adjoin the handle at diagonal fold lines 14. These fold lines have an intersection 15 with the fold line 12 of the handle at the top edges of the carton. The flaps 13 extend beyond the edges of the top panel and adjoin the respective wall members 6 at fold lines 16 extending downwardly from intersection 15. The meeting edges of the top panel 5 and wall members 6 are notched out at 17 adjacent the ends of the handle to provide room for the flaps 13 to swing into edge portions of the interior of the carton (see Figs. 3 and 4) when the handle is erected. That part of each notch 17 which lies within the top panel may be arcuate in form (see 18, Fig. 4) to conform with the arc of swing of the edge of the respective flap 13, and this arcuate portion preferably terminates in a projection 19 which slightly intersects the arc of swing so that after the respective flap snaps beyond projection 19, the projection provides means for holding the handle in its erected position. Notice that as the flaps swing through the notches 17, the lower ends of the flaps pass into the spaces between the cans C, thus in effect bringing part of the handle structure between the rows of cans.

With reference to Fig. 2, in which the handle is flat against the top panel, notice that part 20 of each flap lies flat against the top panel and that another part 21 lies in the plane of the respective wall member 6. With the handle lifted erect as in Fig. 4, both parts 20 and 21 of the flap are folded approximately parallel to the handle. This change in position of the flaps occurs without any attention on the part of the user, who merely lifts the handle, the flaps erecting themselves into the position in which they are stretched out to form stressed members which distribute loads from the handle directly into the walls of the carton. Thus, carrying stresses are distributed not only through the center of the top panel but also directly into the walls, the flaps forming what might be described as gussets which assist importantly in preventing the handle from tearing away along the top of the carton.

The terms and expressions which I have employed are used in a descriptive and not a limiting sense, and I have no intention of excluding such equivalents of the invention described, or of portions thereof, as fall within the scope of the claims.

I claim:

1. A carton comprising a top panel having extensions folded downwardly at edges of the top panel to form wall members, a handle adjoining the top panel at a fold line extending across the top panel, and flaps adjoining the handle at diagonal fold lines having an intersection with the fold line of the handle at said top edges and said flaps adjoining the respective wall members at fold lines extending downwardly from said intersection, the meeting edges of the top panel and wall members being notched out adjacent the end of the handle to provide room for the flaps to swing into edge portions of the interior of the carton when the handle is erected, the arrangement of the flaps being further defined as follows: with the handle flat against the top panel, part of the flap lies flat against the top panel and another part lies in the plane of the respective wall member, and, with the handle lifted erect, both parts are folded approximately parallel to the handle.

2. A carton according to claim 1 in which the notches are provided with means for locking the flaps to hold the handle erect.

3. A carton comprising a top panel having extensions

folded downwardly at edges of the top panel to form wall members, a handle adjoining the top panel at a fold line extending across the top panel, and diagonal flaps folded back against the ends of the handle and extending downwardly through notches in the top panel and adjoining said wall members at vertical fold lines the meeting edges of the top panel and wall members being notched out adjacent the end of the handle to provide room for the flaps to swing into edge portions of the interior of the carton when the handle is erected.

4. A carton comprising a top panel having extensions folded downwardly at edges of the top panel to form wall

members, a handle adjoining the top panel at a fold line extending across the top panel, and diagonal flaps at the ends of the handle and lying flat against the top panel along with the handle, the flaps also having portions folded downwardly in the plane of the respective end members the meeting edges of the top panel and wall members being notched out adjacent the end of the handle to provide room for the flaps to swing into edge portions of the interior of the carton when the handle is erected.

No references cited.