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L. WYNNE ET AL

2,339,445

CARTON

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2 Sheets-Sheet 1

Fig. 1

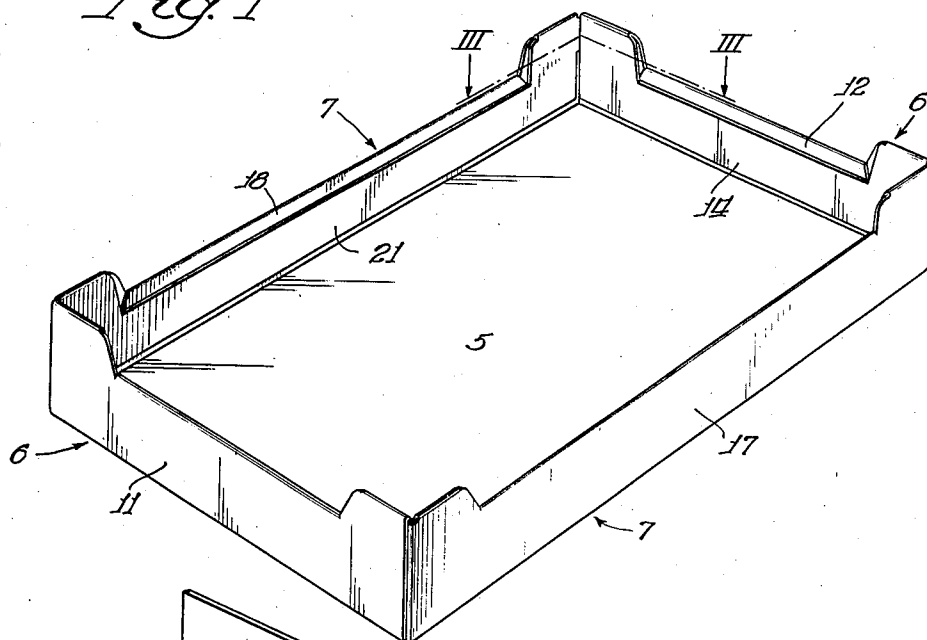
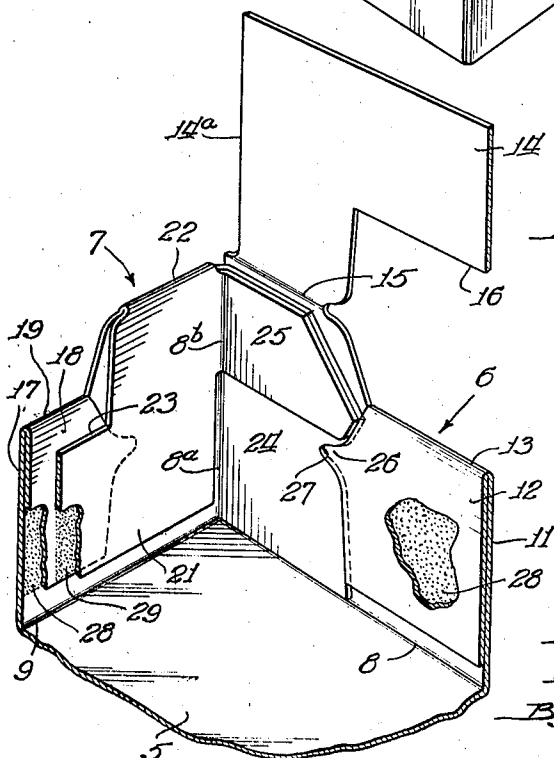


Fig. 2



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Att.

UNITED STATES PATENT OFFICE

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CARTON

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Application March 3, 1941, Serial No. 381,504

2 Claims. (Cl. 229—34)

This invention relates to cartons, boxes or trays constructed from paperboard, cardboard, fibreboard and other materials of a like or similar nature and is adapted for various and sundry uses as, for example, the packaging, shipping and display of merchandises including candy, chewing gum, and so forth.

One of the objects of the invention is to provide an improved form of tray or box of light and inexpensive yet strong and relatively rigid construction so that it may offer relatively long resistance to injury or destruction of itself and contents even though it be roughly handled in use.

Another object is to provide a tray or box which may be manufactured from a single sheet of material and wherein all of the parts are integrally formed thereby to reduce the quantity of material needed, the time involved and the operations to be performed in the construction, the construction and arrangement of parts being such that the amount of wastage of material is minimized.

Another object is to provide an improved container construction and a corner construction of such character that they lend relatively great strength and rigidity to the box or tray even if the same be composed of thin sheet material, thereby offering protection to the box or tray against damage or distortion as well as protecting the contents.

Still another feature of importance resides in the arrangement of the reinforced sides having relatively smooth edges with a minimum of exposed raw edges of the material.

A further object is to provide an improved manner of effecting such reinforcement whereby to obtain the strength and rigidity desired in the construction, to provide smooth interior corner surfaces, to provide an attractive as well as useful article of the character mentioned, and to provide a container within which commodities may be packed for shipment, in which they may be displayed effectively, and from which they may be dispensed directly.

Many other objects as well as the advantages and numerous uses of the invention will be apparent from the following description and claims read in conjunction with the drawings, in which:

Fig. 1 is a perspective view of a present preferred form of the invention as embodied in a tray for the shipment, storage, counter display and dispensing of commodities such as chewing gum and candy in small packages.

Fig. 2 is a view of a fragment of the tray shown in Fig. 1 but on a larger scale and with portions

broken away and other portions displaced from their normal positions the better to illustrate certain details of construction.

Fig. 3 is a sectional view taken transversely of a corner of the tray on the line III—III of Fig. 1, and

Fig. 4 is a plan view of the tray in blank form, one portion being broken away and some portions being folded to an intermediate stage of construction, the better to illustrate the construction and forming.

The invention may be described conveniently by referring initially to Fig. 4 and the blanked-out rectangular tray it shows. Struck from a single sheet of material the blank is cut and scored to provide a rectangular bottom panel or wall 5 to each of the marginal edges of which are integrally attached side walls or panels of which two are generally and as a whole designated 6 and the other two similarly designated 7, these side walls or panels being differentiated from wall 5 by score or fold lines 8 and 9 respectively. Each side wall 6 is composed of three portions namely, a first portion 11 which is to provide the outside wall surface at that end of the tray and which portion is directly connected to and coextensive with the edge of the bottom wall 5, a second portion 12 which is to form a reinforcing flap and which is directly attached to the portion 11 along a score or fold line 13, and a third portion 14 which is to form a part at least of the inner surface of the wall and which is also directly connected to the first portion along aligned score lines 15, second portion 12 being cut free from both portions 11 and 14 along the full line designated 16. It should be noted that while the portion 14 is substantially coextensive with portion 11, its end margins 14a are cut back slightly from the corresponding margins of the portion 11 for a purpose that will appear.

The side walls or panels 7 are similarly constructed in that each has a first portion 17 corresponding to portion 11, a second portion 18 corresponding to portion 12 and joined to portion 17 along a score line 19, and a third portion 21 corresponding to the portion 14 and joined to portion 17 along aligned score lines 22, the portion 18 being cut free from portions 17 and 21 along the solid or full line 23. Also the ends of portion 21 are cut back as are the ends of portions 14. However, side walls 7 differ from side walls 6 in that each at each of its ends is provided with a pair of end flaps designated 24 and 25, flaps 24 being cut free from side walls 6 and being attached to portion 17 along score line 8a

and flaps 25 being attached to portion 21 along score line 8b, score lines 8a and 8b being continuations of or substantially in alignment with score lines 8.

At each end of each of the portions 12 is a projection 26 and in each end of each flap 24 is a recess or notch 27, these projections and notches being complementary in configuration, along with the adjacent edges of the ends of portions 12 and edges of the ends of flaps 24, so that when the tray or box is "set-up" into tray or box shape, the entire end edge including the projection 26 of each end of a portion 12 will conform to, interlock or inter-fit with and substantially abut against the complementary end edge including the notch 27 of the adjacent flap 24. This arrangement is particularly well illustrated in Fig. 2, from which it is apparent that the interlocking abutment of these parts adds materially to the strength and other features of the construction.

In setting up the box or tray from its blank form the portions 12 and 18 may be folded inwardly and downwardly and secured, as by adhesive 28, in face to face relation against and to the inner faces of the respectively adjacent portions 11 and 17 as clearly shown in Figs. 2 and 4. The free longitudinal edge of each portion 12 is arranged, in the illustrated embodiment, to lie substantially parallel to and along or closely adjacent to the adjacent score or fold line 8, and, similarly, the free edges of portions 18 are arranged to lie along or close to the score or fold lines 9. The next step in the operations may then be the inward and downward folding of portions 21 on score lines 22 to overlap and lie upon the upper (inner) faces of portions 18 to which they may be secured as by adhesive 29. At this time the several side walls may be swung upwardly about fold or score lines 8 and 9 and the flaps 24 and 25 (each flap 25 will then be overlying and against a part of its adjacent flap 24) may be folded along score lines 8a and 8b to extend at right angles to the walls to which they are attached and to lie inside of the portions 11 of the other side walls and to positions where the outer end edges of flaps 24 abut against the complementarily formed end edges of portions 12. The flaps 24 and 25 may be secured to one another by adhesive and, similarly, the flaps 24 may be secured to the inner faces of portions 11. Thereafter the portions 14 may be folded about score lines 15 and inwardly and downwardly to overlie the inwardly facing surfaces of portions 12 and flaps 24 and 25, adhesive being applied appropriately to secure these parts in their folded positions.

It will be appreciated that the cutting away or notching out of the ends of portions 14 and 21 to reduce their overall lengths at each end of each is for the purpose of permitting these ends to clear one another when the tray is folded into its final shape, that is, so that the adjacent ends of portions 14 and 21 at the tray corners will not bind or be distorted in the folded form. While in the illustrated embodiment of the invention both ends of both portions 14 and 21 have been shown as cut back or notched, it is to be understood that this may not be wholly necessary as the purpose may be served if only one of a pair of portions 14 and 21 (one end of a portion 14 or one end of a portion 21) at a corner is notched

or cut back to provide the required clearance. Since the flaps 24 and 25 are to be tucked under the fold or score lines 15 and between portions 11 and 14 they are spaced from one another by a distance substantially equal to twice the thickness of the material so that when they are folded upon one another they will underlie the scores 15 without distortion or buckling either of themselves or the material of the wall in which they lie.

The construction described produces a box or tray of unusual strength for the degree of strength of the material employed and a product that will retain its shape and protect its contents even under particularly heavy or intense abuse. Besides these resulting features the box or tray is neat and attractive in appearance for the edges and corners are smooth and all raw edges are concealed or fall in the least conspicuous places and where there is the least chance of their becoming frayed and unsightly in use. In addition the "castellated" or raised corner construction makes a very effective counter display design for a box or tray for candy and chewing gum and the like and permits the contents to be observed yet easily dispensed. Other advantages are easily appreciable. It is of course relatively immaterial whether the box or tray be rectangular or that its sides be equal or unequal for the invention is applicable to boxes having a greater or lesser number of sides and whether the sides are equal or unequal in length. Furthermore the flaps 24 and 25 may be arranged so that each wall has but one pair of such flaps, the flaps being disposed at the corresponding end of each wall, and, if desired the flaps 25 may be entirely omitted.

The invention being applicable to other types and forms of boxes and trays, and not being of such character as to confine its use to the box or tray chosen for illustration and description herein, we desire to be limited only by the invention spirit as embraced within the scope of the appended claims.

We claim:

1. In a tray having a bottom panel and at least one upright side wall, the improvement which comprises, in combination, a side wall having its maximum height adjacent its ends and a portion intermediate its ends having a depressed upper edge, a finishing reinforcing flap integrally joined to said side wall folded inwardly and downwardly upon score lines determining said maximum height, said reinforcing finishing flap having a portion cut from the material thereof whereby no part thereof extends beyond the bounds of its associated side wall, and a second finishing flap integrally joined to said side wall along a score line defining said depressed edge and including all of said portion cut from said first-named finishing flap, said second finishing flap being engaged between said side wall and said first-named finishing flap and secured thereto by means of adhesive.
2. A rectangular tray having a bottom panel and four upright side walls as defined by claim 1, one pair of oppositely disposed side walls having longitudinal extensions secured by adhesive between the others of said side walls and their associated reinforcing finishing flaps.

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