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A. A. ABRAMS
SELF-LOCKING CARTON
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2,511,523

FIG. 1

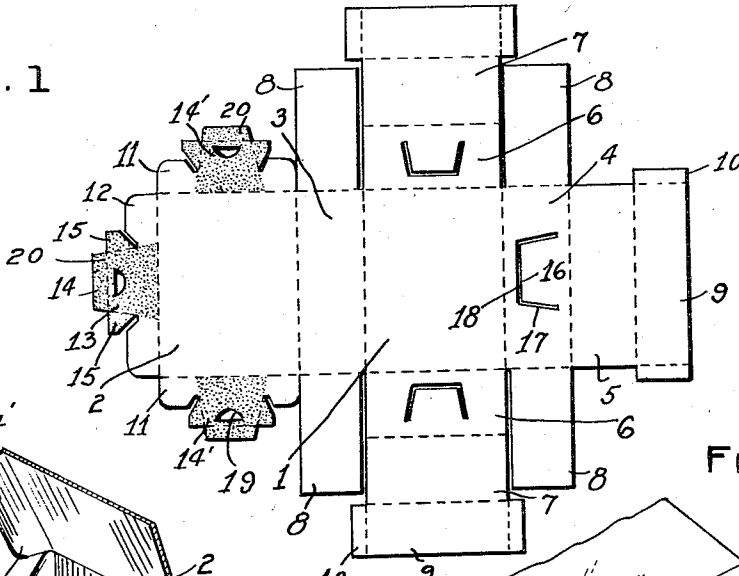


FIG. 3

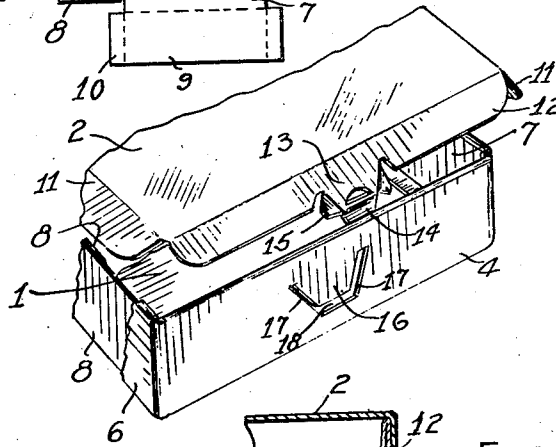


FIG. 2

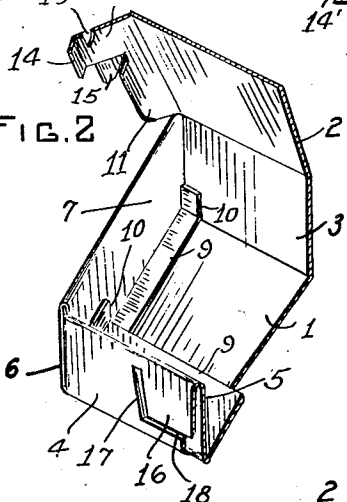


FIG. 4

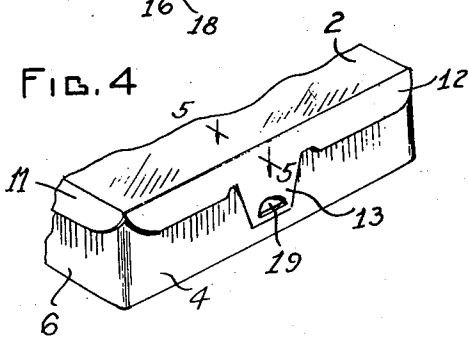


FIG. 5

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SELF-LOCKING CARTON

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4 Claims. (Cl. 229—45)

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This invention relates to cartons generally, and more especially to paperboard self-locking and sealable cartons that are adapted for the packaging and distribution of any and all kinds of commodities and merchandise in dry form that require such packaging forms, and has among its objects the production of such a carton that is neat and simple in form, of a minimum number of parts, low in cost, sturdy, will retain the contents safely packaged therein without undue danger of loss or displacement, and which will be otherwise reliable, efficient and satisfactory for use wherever deemed applicable.

One of the principal objects of this invention is to so construct such a carton, that the top member thereof will have one or more tongues projecting therefrom, to releasably interlock with corresponding slots or recesses in the side walls of the carton, and will hold such interlocking relationship until manually disengaged therefrom.

Another object of the invention is to form such a device so that the aforesaid locking tongue will lie substantially flush with the side of the carton with which it cooperates and whereby adjacent packed cartons will not tend to engage one another and become damaged when one carton is lifted or shifted relatively of another carton.

An added object of my invention is to so construct a box of the kind described, that the interlocking tongue and slot fastening will not be visible from the interior of the box, so that the latter will be clear thereat without any opening through the inner wall surface of the box through which the contents could spill or be otherwise lost or become damaged.

Still another object of my invention is to construct a carton of the kind described, in which an adhesive coating may be provided on the opposed surfaces of the tongues and the side walls of the carton, so that the latter may be sealed at these areas as well as being interlocked thereat.

Another added object of this invention is to so construct a box of the kind described, wherein the side walls are formed of a double ply or thickness of material, with the tongue engaging slot provided in the outermost ply only, so that when the tongue is inserted through said slot to interlock the parts thereat, said tongue will pressingly engage the innermost ply and be spread laterally outwardly of the bounding edges of the slot.

Many other objects and advantages of the construction herein shown and described, will be obvious to those skilled in the art to which this invention appertains, from the disclosures herein given.

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To this end, my invention consists in the novel form, arrangement, and combination of parts herein shown and described, and more particularly pointed out in the claims hereunto appended.

In the drawings, wherein like reference characters represent corresponding parts throughout the views,

Figure 1 is a plan view of the died-out blank of the one-piece paperboard box, with the adhesive applied to the one face of the top member adjacent its tongues;

Figure 2 is a fragmentary portion of the box, ready for closing;

Figure 3 is a fragmentary view of the box, in a more advanced closed position, and viewed from adjacent the front of the box;

Figure 4 is a similar view, except that the box is fully closed; and

Figure 5 is a vertical cross-sectional view, taken substantially along the line 5—5 of Fig. 4.

Referring more particularly to the drawings, wherein I have illustrated a preferred embodiment of my invention, there is shown a paperboard box or carton that may be used for the packaging and distribution of any and all kinds of merchandise and commodities, either as the box now stands, or with suitable partitions or spacers inserted in place, as desired and found most suitable for the purpose.

Although such a carton could be made of several pieces of paperboard, I have found it best to make the same out of a single sheet of material, cut with a die or otherwise formed, substantially into the form or shape shown in Fig. 1, so that after this blank has been folded along the score lines, the box will appear as shown in the other figures of the drawing.

The bottom wall of the box is indicated at 1, the top member 2 being spaced therefrom by the element 3 whose width determines the height of the box and forms the rear side wall, and as it is desired to make the front side wall of two plies or double thickness, the elements 4—5 are arranged to extend in sequence along the front edge of the bottom element 1.

The end walls of the box are also formed of two plies of paperboard, for the substantially same purpose as said front wall, and as will be more clearly pointed out hereinafter, each of said end walls having a pair of like portions or sections 6 and 7 arranged in sequence at the end of the bottom element 1, so that two plies of the end or of the side walls can be formed by folding

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said sections along the lines of fold indicated, between the sections 6 and 7 of the pair.

The pair of strips 8, 8 may project from the front and the rear upright walls, with one such strip to each side of the end walls just described, so the box may be set up with the strips overlapped to reinforce the box and form a strut between the front and back, and if deemed advisable such cooperating strips may be arranged to interlock. It is to be noted that, due to the double thickness of the wall ends, the strips will be concealed from view when the box is set up.

In order to further reinforce the carton, and to frictionally retain it in set up form, the outermost ones of the front and end wall sections are provided with strips 9 substantially coextensive therewith and provided with end tabs 10 at their ends, so that after the strips 8, 8 are arranged to overlap, the end wall sections 6, 6 are folded upright so that the sections 7, 7 conceal the said strips, and then the strips 9 are folded to lie superimposed on the floor of the box with the tabs pressing against the opposed wall surface of the box, as seen more clearly in Figs. 2, 3 and 5. These tabs frictionally engage said opposed wall surfaces and hold the parts in the assembled relation shown.

Flaps 11—11 are foldably connected to the sides of the top member of the box, and a corresponding flap 12 is arranged to be foldably connected along the front edge of the box, so that when the box is closed, the flaps will be upright and be superimposed on the upright surfaces of the sides of the box.

The flap 12 has a tongue 13 projecting therefrom, while the flaps 11—11 each have a similar tongue 14' projecting therefrom, each tongue adapted to interlock with a side wall of the box as will now be seen, and as these tongues are substantially alike, only one of them need be described.

Such a tongue 13 projects beyond the longitudinal edge of its flap 12 at about its mid-length, this tongue decreasingly tapered toward its bottom. A bottom tab extends along the bottom edge of said tongue, as at 14, being foldably joined to said tongue, and a pair of side tabs 15—15 are carried foldably along the sides of said tongue, along the tapered side edges of the latter, and the outermost edges or tips of said side tabs are reduced in length as compared with their line of foldable attachment to the tongue.

A tongue 16 depends from the wall overlain by the tongue 13, the tongue 16 being formed by cutting a channel-shaped slot or slit through the exterior wall section of the double ply wall member, the inclined sides of said slot being indicated at 17—17 and the connecting bottom slot being indicated at 18. The tongue 16 thus formed, and bound on its bottom and sides by said channel-shaped slot is flexible on the side wall to which it is attached, so that it can be flexed inwardly of the carton toward the mating ply of the two-ply wall. Further, said tongue is approximately of the same size and shape as the tongue 13 and so positioned that when the top of the box rests on the top of the front of the box, the pair of tongues will be in superimposed relation, so that the bottom and side tabs may be folded inwardly to enter the channel-shaped slot.

Now, as the pressure on the outermost tongue is continued, said tongue will move to substantially flush with the outerface of the outer wall element, and the side and bottom tabs will engage

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against the opposed face of the inner wall element, to thereby cause the said tabs to be deflected outwardly and flattened out in substantially a plane, the inner ply of the two-ply wall being movable to the extent necessary to permit this entry of the tabs into flattened position. The reduced ends of the side tabs permit easy entry into the slots, and when the outer tongue is fully pressed home against the outer ply of the wall the inclined upper edge of said side tabs will resist vertical shift of the tongue by engaging against the upper or closed end of the side slots, while the lower straight edge of the inner tongue will resist similar lift of the lower tab therepast.

A thumb nail opening 19 may be provided through the outer tongue 13 whereby said lower tongue may be manually depressed relatively of the outermost tongue so that the latter tongue may be withdrawn outwardly of the box to release the tongues from locking engagement.

Any suitable adhesive 20 may be placed on the under side of the tongues that are superimposed on the box, so that these portions may be sealed thereat as well as being releasably interlocked.

Having thus described my invention, it is obvious that various immaterial modifications may be made in the same without departing from the spirit of my invention; hence I do not wish to be understood as limiting myself to the exact form, arrangement, construction and combination except as limited by the state of the art to which this invention appertains, and the claims hereunto appended.

What I claim as new and desire to secure by Letters Patent is:

1. In a foldable box including pairs of upstanding opposed side walls, a top wall foldable across the opening defined by said side walls, and means for releasably interlocking said top wall to one of said side walls and comprising a tongue extending downwardly from said top wall to overlie the exterior of said last-mentioned side wall and having a pair of laterally projecting side tabs and a bottom tab, all of said tabs being foldable rearwardly of said tongue, and said cooperating side wall provided with a pair of spaced upright narrow slots interconnected by a narrow transverse slot whose length is substantially equal to the width of said tongue so that the upright and transverse slots together define substantially the configuration of said downwardly extending tongue, to thereby receive the entire body of said side and bottom tabs of said tongue there-through.

2. In a paperboard box including pairs of upstanding opposed side walls, a top wall transversely across said side walls, a flap on said top wall to overlie one of said side walls to close the box, a tongue depending from said flap, and provided with side and bottom tabs foldably connected to said tongue, and a tongue on the side wall so overlain and of approximately the same size and shape of said first tongue and arranged to underlie the latter when the box is closed, the tongue on said side wall that has said first-mentioned tongue having a continuous slot limited in shape and extent to define said second tongue for separating the second tongue from said side wall along its bottom and sides and for removable insertion of said bottom and side tabs of said superimposed tongue.

3. In a foldable box including pairs of upstanding opposed side walls a top wall provided with a flap to overlie one of said wall members when in box-closing position, a channel-

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shaped opening through said side wall member to define a dependent tongue, a second tongue carried by said flap and substantially co-extensive in size and shape with said first tongue to be superimposed on the first tongue, and a bottom tab and a pair of side tabs foldably carried along the bounding edges by the second tongue and removably insertable through said channel opening to interlock therealong, whereby said opening and the underneath tongue will act as a stop to hinder release of said interlock when the upper tongue is shifted slidably toward the top of the box, and an opening through said second tongue and whereby the latter may be withdrawn from superimposition on the first tongue to release said tongues from interlocked position.

4. In a paperboard box including pairs of up-standing opposed side walls, a top wall transversely thereacross, and means to releasably interlock the top wall to one of said side walls and comprising a pair of substantially like-sized and shaped tongues depending from both said side wall and the top wall to overlie one another when the top is in closed position, the side edges

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of the tongues diverging upwardly from their lowermost edges, and a bottom tab and a pair of side tabs foldably carried by and along the bottom and sides of said outermost tongue and insertable through the side wall immediately thereunder until said outermost tongue is substantially flush with the exterior of the side wall to either side of its tongue.

ALBERT A. ABRAMS.

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