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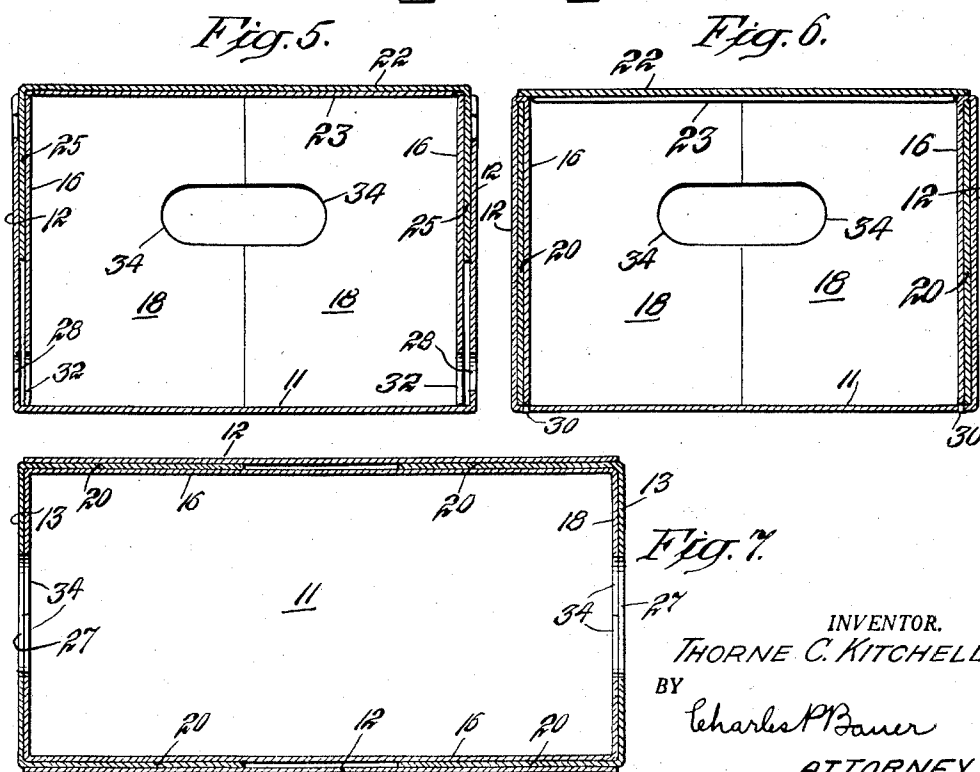
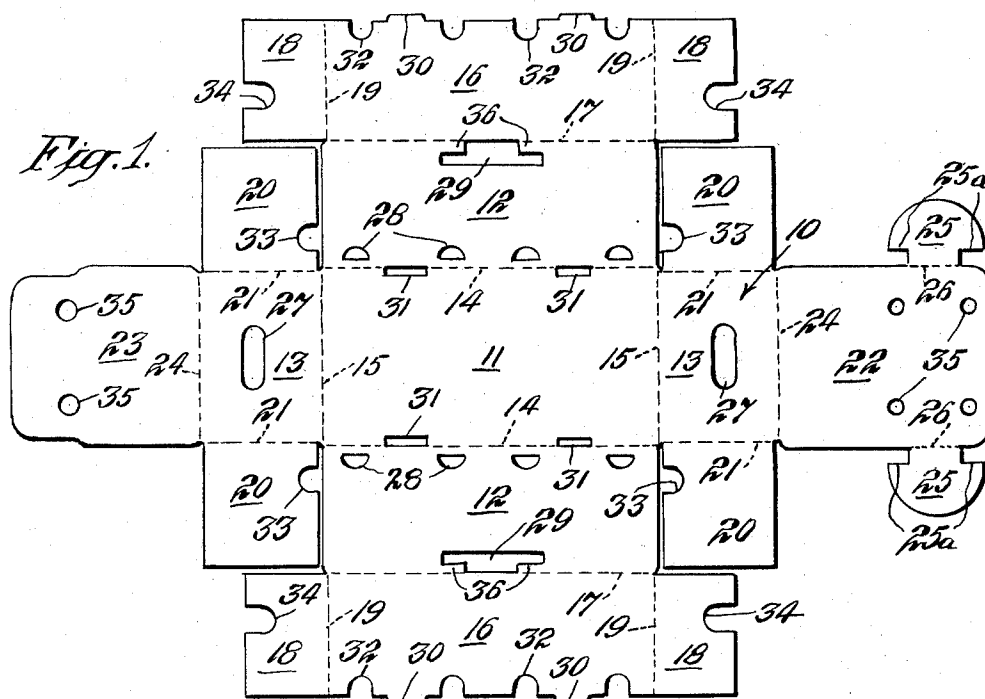
T. C. KITCHELL

2,858,058

PRODUCE BOX

Filed Dec. 10, 1954

2 Sheets-Sheet 1



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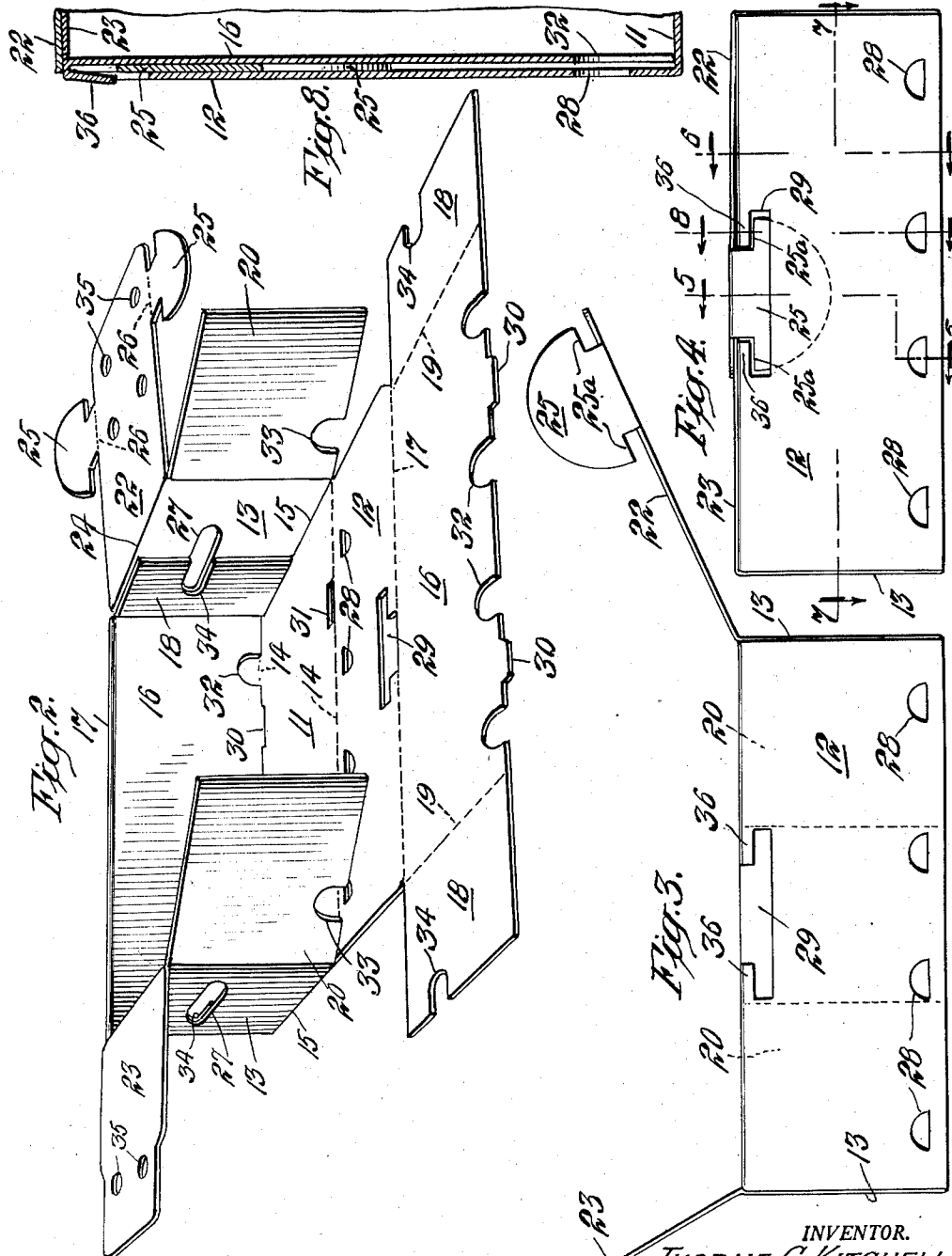
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5 Claims. (Cl. 229—33)

The present invention relates to improvements in packing and shipping containers. More particularly it pertains to an improved container adapted for packing and shipping fresh fruits and vegetables such as cucumbers, tangerines, apples, peaches and the like.

In packing and shipping fresh fruits and vegetables, it is necessary to provide containers which are strong enough to adequately protect the contents of the container from compression, crushing and damage, which will allow for bulge packing so that the fruits and vegetables can be packed higher than the walls of the container and still settle after vibration encountered in transportation, and which can be easily opened and again closed. In co-pending application, Serial No. 400,469, now abandoned, applicant has described a container of this type provided with a detachable cover. The present container is a modification of the container described in the aforementioned application.

It is an object of the invention to provide a container having at least double wall thickness on all vertical faces, which gives it exceptional strength when subjected to load pressures.

Another object of the invention is to provide a container in which the cover and body are integral and formed from a single blank. Such blank can be assembled into a container without the manufacturer or customer employing any fastening means.

Another object of the invention is to provide a container with a novel locking arrangement for holding the cover in place, which arrangement secures the cover quickly and without fastening means or special tools. This locking means consists of a projecting tongue on the cover, so shaped that it easily slips between the two panels of the wall and engages locking tabs on the outside panel. The edges of such tongue butt or slip in behind the locking tabs so that the cover can only rise a limited amount. This is especially important for bulge packing where fruits or vegetables are packed higher than the walls of the container, but settle after the vibration encountered in transportation. Except for such limited movement of the cover, it is held in place and will not open. Nevertheless, it is possible by the application of pressure against such locking tabs to open the cover easily.

Another object of this invention is to provide a container of the character stated, which is simple in design, rugged in construction, economical to manufacture, and can be shipped and stored in unassembled form in flat condition but can be easily and quickly set up.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises an article of manufacture possessing the features, properties and the relation of elements which will be exemplified in the article hereinafter described and the scope of the application of which will be indicated in the claims.

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For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawing, in which:

Figure 1 is a view of the blank for the container of the present invention;

Figure 2 is a perspective view of the container prior to folding in certain of the panels;

Figure 3 is a side elevation with the cover flaps open;

Figure 4 is a side elevation with the cover flaps closed;

Figure 5 is a sectional view taken substantially along the line 5—5 of Figure 4;

Figure 6 is a sectional view taken substantially along the line 6—6 of Figure 4;

Figure 7 is a sectional view taken substantially along the line 7—7 of Figure 4;

Figure 8 is a sectional view of the side of the container, taken substantially along the line 8—8 of Figure 4.

Referring more particularly to the drawings, there is shown in Figure 1 a blank from which the body and cover of the container are formed. This is of one-piece construction substantially rectangular in shape and may be made of corrugated board or other suitable fibrous folding board. It is suitably cut and scored or creased along certain lines to facilitate formation of the container of the present invention and is supplied to the customer in flat condition.

The blank 10 has been scored to define a bottom 11, outer side panels 12, and outer end panels 13, said panels being flexibly connected to the bottom along score lines 14 and 15, respectively. Inner side panels 16 are flexibly connected to the panels 12 along the score lines 17. At the ends of the panels 16 there are inner end panels 18 flexibly connected along the score lines 19. Similarly, at the ends of the panels 13 there are side flaps 20 flexibly connected along score lines 21. Cover flaps 22 and 23 are flexibly connected or hinged to the panels 13 along score lines 24. Extending outwardly from the free side edges of the cover flap 22 are T-shaped locking tongues 25 flexibly connected thereto along score lines 26.

Each of the outer end panels 13 is die cut to provide a hand hole 27 and each of the outer side panels 12 is die cut to provide ventilating openings 28 and a locking tongue opening 29. The locking tongue opening is shaped to cooperate with the locking tongue on the cover, as will be explained hereinafter. Each of the inner side panels 16 is provided with locking tabs 30 which, when the side panels are folded in place, will slip into the slots 31 die cut in the bottom 11. In addition, such inner side panels are die cut to provide ventilating openings 32 which are so positioned that they will coincide with the openings 28 in the interconnected outer panel when the container is assembled. Likewise, each of the side flaps 20 is die cut to provide ventilating openings 33 which are so positioned that they will coincide with the ventilating openings in the inner and outer side panels of the assembled container. Each of the inner end panels 18 is die cut to provide half of a hand hole 34 which is so positioned that it will coincide with the hand hole 27 in the outer end panel when the container is assembled. The cover flaps 22 and 23 are also provided with ventilating holes 35.

Referring to Figure 2, the container is assembled by bending the blank 10 along the score lines 15 and turning up the outer end panels 13 at right angles to the bottom 11. The side flaps 20 on one side are folded along the score lines 21 so that the flaps are at right angles to the outer end panels and the bottom. Thereafter the outer side panels 12 on that same side is turned up

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along the score line 14 into a position at a right angle to the bottom and against the two flaps 20. The inner end panels 18 connected to the inner side panel 16 on that same side are then turned outwardly along the score lines 19 and the inner side panel 16 is folded along the score line 17 downwardly against the inner faces of the flaps 20. The locking tabs 30 on such inner side panel are then slipped into the slots 31 in the bottom, thereby locking the side panels 12 and 16 into place with the side flaps 20 in between, as shown in Figures 6 and 7. The inner end panels 18 will then fall into position against the outer end panels 13, as shown in Figure 2. To complete the assembly of the container the other side is folded into place in a similar manner. It will be noted that the hand holes 27 and 34 coincide at each end and that the various ventilating openings 28, 32, and 33 likewise coincide (see Figures 5, 7, and 8). Such blank has been completely assembled into a container ready for filling without any separate fastening means. This container has end walls of double thickness and side walls of triple thickness except in the center section where space has been left for the locking tongues.

The container, prior to closing the cover flaps, is shown in Figure 3. The cover flaps can be folded inwardly and locked to the body by first laying down flap 23 and then laying flap 22 over it in overlapping relationship with the tongues 25 on each side of flap 22 inserted into the openings 29 between the inner and outer side panels forming the side walls of the container. It will be seen from Figure 4 that the cut out or opening 29 in the outer side panel conforms generally to the shape of the tongue 25 and that the back ends 25a of the tongue either butt against the tabs 36 resulting from the cut outs 29 or slide under such tabs (see Figure 8). In either case it securely locks the cover flaps to the body. It should be further noted that there is sufficient play between the tongue and the corresponding cut out so that the cover flap can rise a small distance and still be locked to the body. This permits bulge packing without danger of the cover flaps opening up. Normally, in packing fruits and vegetables, they are piled higher than the walls of the container and the cover is then forced down on the body. In the container of the present invention, the locking arrangement permits the cover flaps to be locked in place even though such cover flaps are raised above the walls of the container. Later, as the commodities settle during shipment, the cover flaps assume their normal position on the body. In any case, the cover flaps are prevented from being forced off the body of the container. Nevertheless, the cover flaps may be easily released by applying pressure against the tabs 36, thereby permitting the back ends of the tongue to be released from the tabs and raised upwardly. In this connection, the location of the ventilating holes 35 in the cover flaps is important since they permit a person to grip the cover flaps while applying pressure to the tabs. Although the tongues and cut outs are shown generally as T-shaped, it will be understood that they may take different shapes which will provide for shoulders or stops on the tongue which can butt against or slide under the tabs on the body of the container. For example the cut outs 29 can be made rectangular in which case the top edge of each cut out will run straight across and the tabs 36 will be connected to form a single strip extending above the cut out 29. In such case the ends of such strip will butt against the back ends 25a of the tongue 25 and serve as locking tabs in the same manner as the tabs 36. It will be further understood that the cover may consist of a single flap extending completely across the body, in which case the locking means can be located to secure the cover to the wall opposite the wall to which the cover is hinged or to the two walls adjacent the wall to which the cover is hinged. Such locking means can be placed in any positions where they will most satisfactorily secure the cover to the body.

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Thus it will be apparent that the herein disclosed invention provides a new and useful container, which is particularly adapted for the packing and shipping of fresh fruits and vegetables and which embodies the features heretofore set forth. Since certain changes may be made in the above article, and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description (or shown in the accompanying drawings) shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A shipping container of corrugated board comprising a bottom, side and end walls, a cover hinged to a wall and adapted to be folded inwardly over the walls, and locking means for securing the cover to a wall not hinged to the cover, which latter wall has integral inner and outer panels in face to face relationship hinged together at the upper edge of the wall, said locking means comprising an inverted T-shaped cut out in the said outer panel, locking tabs on each side of the vertical portion of the cut out, and a tongue projecting from the edge of the cover overlying the said cut out and substantially normal to the plane of the cover when the cover is folded over the walls, said tongue comprising a vertical member and shoulders projecting laterally from the member and spaced from the said edge of the cover, the width of the horizontal portion of the cut out being greater than the thickness of said tongue, the width of the said member being less than the width of the vertical portion of the cut out, the horizontal dimension of the member and shoulders being less than the length of the horizontal portion of the cut out and the vertical extent of said tongue from said edge of the cover being greater than the vertical distance between the top edge of said wall and the bottom of said cut out whereby, said cut out is adapted to receive the tongue for insertion between the inner and outer panels with the shoulders engaging the tabs for locking the cover to the wall, corner flaps extending between said inner and outer panels, said corner flaps being secured to adjacent walls and terminated short of said cut out whereby said outer panel and the tabs are spaced from the inner panel to permit insertion and removal of the tongue in a substantially vertical plane and to allow said tongue to slide up and down against the inner panel while the shoulders are locked behind the tabs, thereby permitting the cover to be raised above the walls without unlocking, said tabs being depressible to permit unlocking of the cover by disengagement of the shoulders from the tabs without edge to edge engagement of the shoulders and tabs, said tabs being freely exposed with the tongue in locked position and thereby capable of being readily depressed.

2. The container of claim 1 in which the locking means is positioned to secure the cover to a wall opposite the wall to which the cover is hinged.

3. The container of claim 1 in which the cover comprises flaps hinged to two opposite walls and adapted to be folded inwardly over the walls in overlapping relationship.

4. The container of claim 1 in which said cover is formed with openings therein adjacent said tongue to permit a person to grip said cover while applying pressure to said tabs.

5. The container of claim 3 in which the flaps are hinged to the end walls and the locking means are positioned to secure the overlapping flap to the side walls.

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