

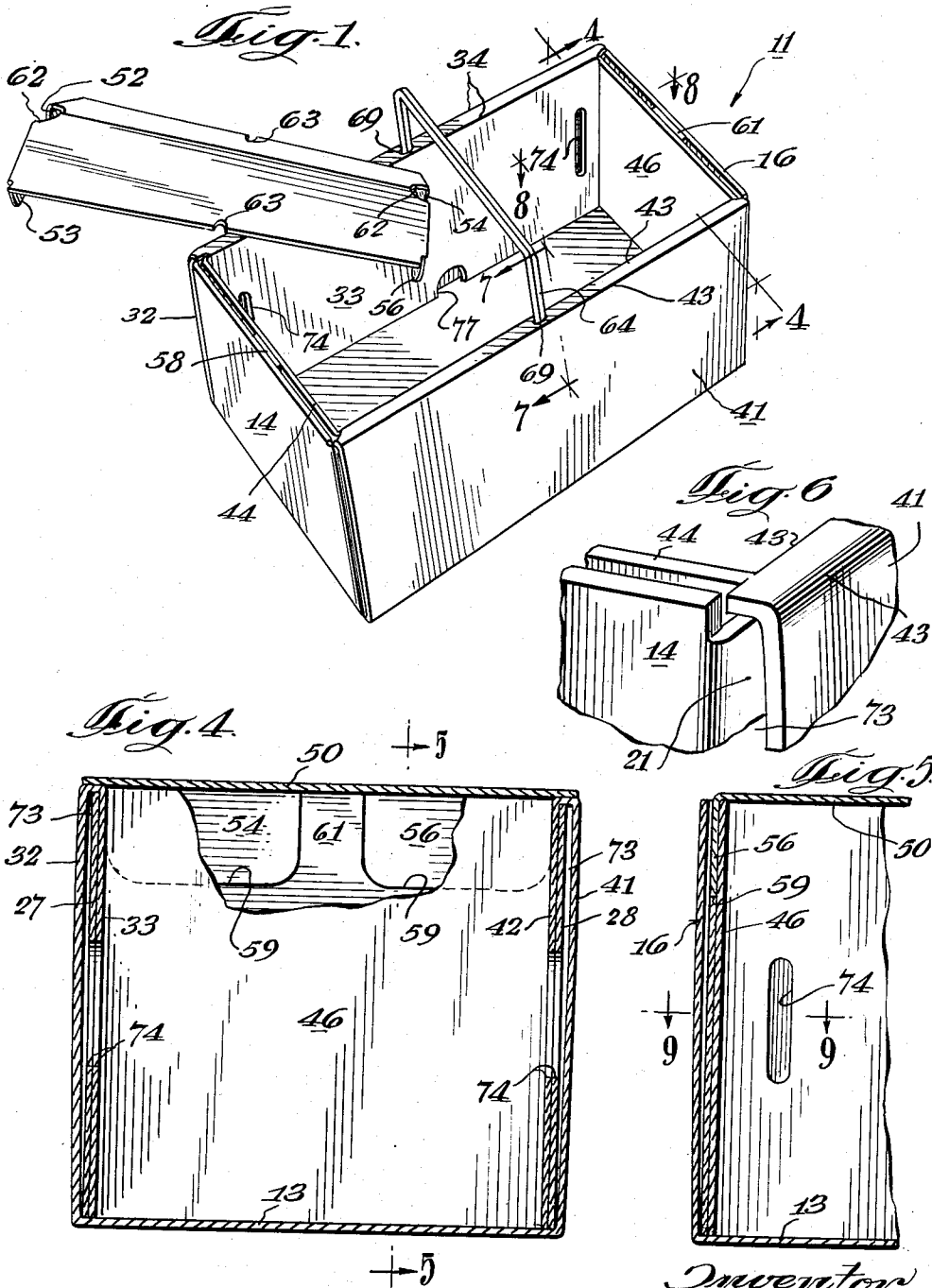
April 27, 1954

J. ARGODALE
PAPERBOARD CONTAINER

2,676,749

Filed May 26, 1951

3 Sheets-Sheet 1



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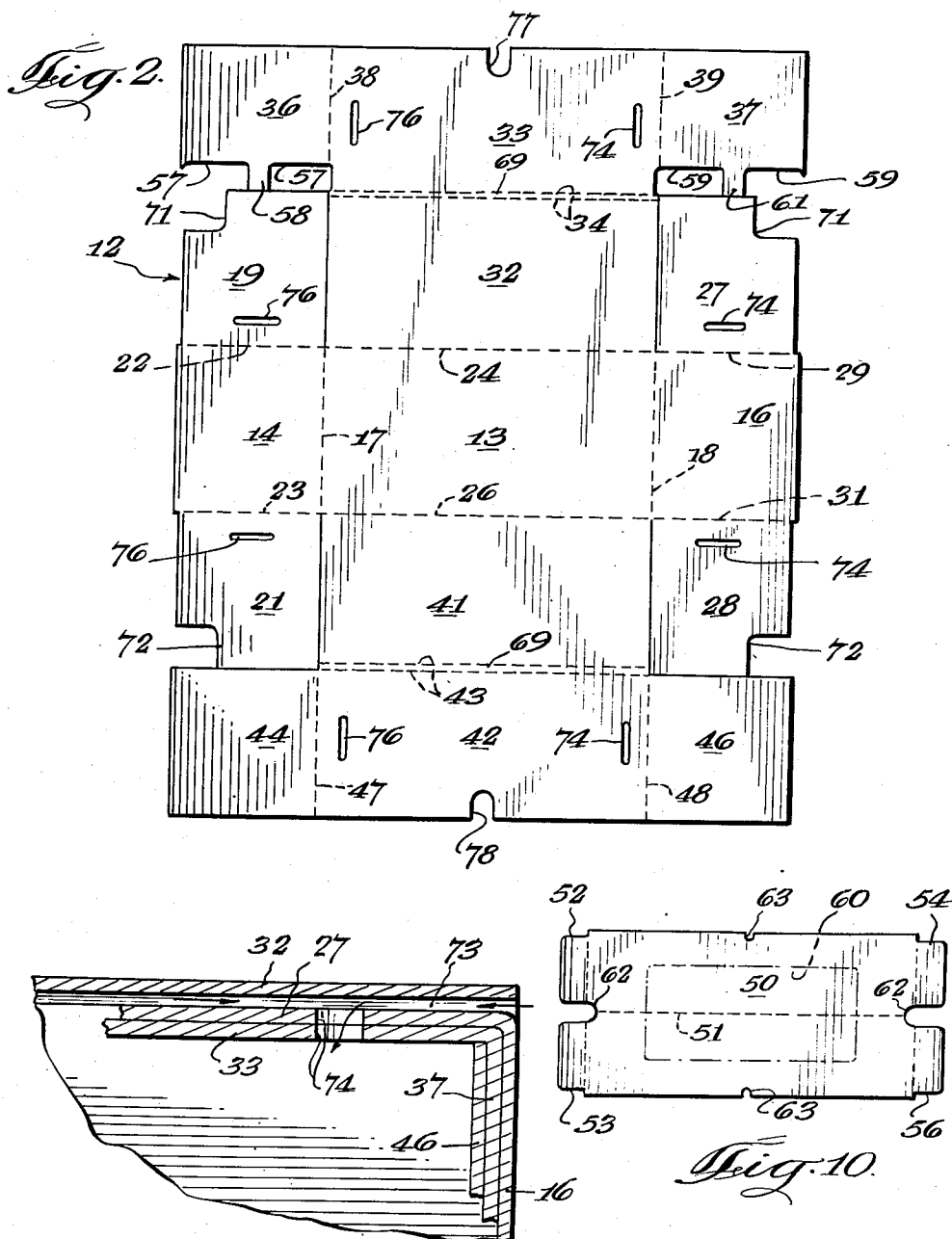
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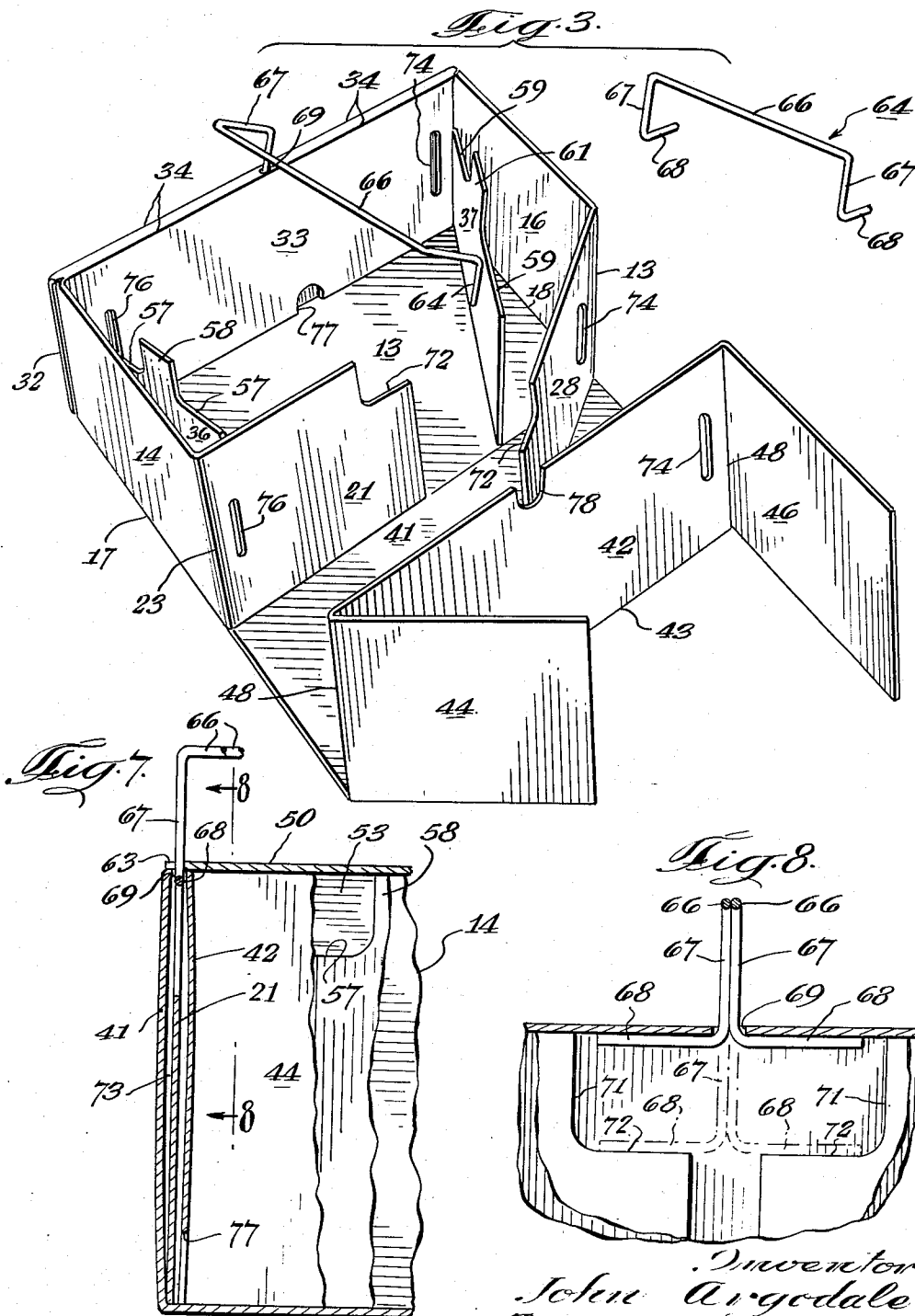
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PAPERBOARD CONTAINER

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2 Claims. (Cl. 229—34)

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This invention relates generally to paperboard containers made from a single cut and scored sheet.

In carrying out the invention a single sheet of paper or corrugated board is cut and scored to provide a bottom panel formed integrally with side panels which are folded upon themselves, and in such a fashion as to embrace flap extensions formed on end panels which are integral with the bottom panel, thereby providing side walls of the container formed from three thicknesses of the folded cut and scored sheet. The inside facing panel of one of the folded side panels is provided with flap extensions folded along the inside of the end panels, and the inside facing panel of the other folded side panels is provided with flap extensions folded along the inside of the end panels and between the other flap extension and the end panel, thereby providing three thicknesses of sheet material for each end of the container. Each of said latter flap extensions are cut to a dimension so that the top edges thereof lie below the top edge of the end panel and the top edge of the other flap extension except for a central tongue having a top edge lying flush with the top edge of the end panel and the other flap extension. The under cut top edges of the so intermediate placed flap extensions provide bearing support for a top closure resting on the top folded edges of the side panels and having turned down end flaps resting on the intermediately placed flap extensions, so that the loads on the top closure incident to stacking the packed containers may be transmitted in part by the turned down end flaps into the intermediate placed flap extensions. By so providing the tuck-in feature, the top closure is held in place without the use of tape, and the stacking strength of the container is enhanced as compared to a container having a loose, flat cover.

The embodiment according to the present invention is further characterized by the provision of handle elements capable of proportioning the weight of the loaded basket, the handle elements each being formed with bent wire members underlying the folded over side panels. The intermediate flap extensions of the end panels are cut so as to provide for pivotal movement of each handle element into a flat position atop the cover for stacking, or for a telescoping movement of the ends of each handle element into a space between the folded over side panels of the container.

The container according to the present invention is further characterized by the provision of ventilating passageways formed between the folded over side panels, the flap extensions of the end panels and the inside facing panels being formed with apertures in register with respect to each other, thereby forming ventilating openings from said passageways to the interior of the container. The center of the lower

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edge of the inside facing panel may also be formed with a cutout portion in register with a gap between the contiguous ends of the flap extensions of the end panels, thus providing a further ventilating opening from said passageway to the interior of the container. Such ventilating openings to the interior of the container are thus provided while at all times protecting the contents of the container against contact with objects outside of the carton.

With the foregoing objects in mind it is a principal object of this invention to provide a container made from a cut and scored sheet and having a triple thickness wall for effective stacking of the loaded container.

Another object is to provide a tuck-in cover so that the stacking loads on the cover may be transmitted completely into the end and side walls of the container thereby adding to the ability of the packed container to be stacked one on top of the other.

Another object is to provide a double handle support having offset portions adapted to enter an aperture formed midway of the top fold of the sides and to extend on each side of the aperture between and under the top fold, and to employ such a handle construction without interfering with an intermediate wall extending between the folded side wall of the container.

Yet another object comprehends the provision of a ventilating passageway between the outer and inner side walls of the container and the provision of register openings in the inner side wall and an intermediate side wall for conducting ventilating air to the interior of the container.

Still another object of the invention is to provide a ventilating opening in the inner side wall in register with the space between the end wall flap extensions and intersecting the passageway between the outer and inner side walls to provide for additional ventilating air to the interior of the container.

Other objects and important features of the invention herein will be apparent from a study of the specification following taken with the several drawings which together illustrate a preferred embodiment of the invention and what is now considered to be the best mode practicing the principles thereof. Other embodiments of the invention will be apparent to those having the teachings of the within specification and it is not intended that the invention be limited by the precise embodiment herein shown and described, nor otherwise than by the terms and scope of the appended claims.

In the drawings:

Fig. 1 is a perspective view of a paperboard container constructed in accordance with the teachings of the present invention;

Fig. 2 is a plan view of a cut and scored sheet employed in constructing the container shown in Fig. 1;

Fig. 3 is a perspective view showing the steps in folding the cut and scored sheet of Fig. 2, together with a perspective view of the handle support elements, to obtain the container shown in Fig. 1;

Fig. 4 is a section taken on the plane 4—4 of Fig. 1 showing the construction of the inner and outer side walls and the end wall flap extensions forming the intermediate side walls;

Fig. 5 is a section taken along the line 5—5 of Fig. 4 showing details of construction of the top closure and the manner in which the end tabs thereof bear against the top of the flap extensions of one of the inner side walls;

Fig. 6 is an enlarged fragmentary perspective view of the nearest corner of the container shown in Fig. 1;

Fig. 7 is a section taken through the side wall of the container of Fig. 1 along the line 7—7 looking in the direction of the arrows;

Fig. 8 is a longitudinal section along the line 8—8 of Fig. 7 looking in the direction of the arrows;

Fig. 9 is a horizontal section taken through a portion of the side and the end walls of the container according to the present invention looking in the direction of the arrows 9—9 of Fig. 5; and

Fig. 10 is a plan view of a top closure for the container of Fig. 1.

Referring now to the several drawings, the improved container according to the present invention is indicated by the reference number 11, and is formed from a cut and scored sheet 12 as seen in Fig. 2. The cut and scored sheet 12 defines a bottom panel 13 and end panels 14 and 16 which are folded up into position along score lines 17 and 18 to provide outer end walls of the container 11. The end panel 14 is provided with flap extensions 19 and 21 which are folded respectively along score lines 22 and 23 and to extend along score lines 24 and 26 of the bottom panel 13. The end panel 16 is likewise provided with flap extensions 27 and 28 folded along score lines 29 and 31 to extend inwardly along score lines 24 and 26, respectively, of the bottom panel 13.

As seen also in Fig. 3, the cut and scored sheet 12 is formed with an outer side panel 32 and an inner side panel 33. The outer side panel 32 is folded into a vertical position along the score line 24, and the inner panel 33 is folded back upon the outer side panel 32 along a double score line 34 to embrace the end wall flap extensions 19 and 27 therebetween. The inner side panel 33 is formed with flaps 36 and 37 which are folded respectively along score lines 38 and 39, so that the flaps 36 and 37 are in position along the inner faces of the end panels 14 and 16 respectively.

The cut and scored sheet 12 is likewise formed with an opposite outer side panel 41 and an opposite inner side panel 42. The outer side panel 41 is folded into a vertical position along the score line 26, and the inner side panel is folded back upon the outer side panel 41 along a double score line 43 to embrace the end wall flap extensions 21 and 28 therebetween. The inner side panel 42 is also formed with flaps 44 and 46 which are folded respectively along score lines 47 and 48 so that the flaps 44 and 46 are in position along the inner faces of the flaps 36 and 37 respectively.

From the description thus far it will be seen that there has been provided a container formed from a single cut and scored sheet having side and end walls of three thicknesses of the sheet material, thus affording greatly increased

strength of the container particularly as respects the ability to withstand the loads incident to stacking loaded containers one on top of another.

Referring now particularly to Figs. 1, 4 and 10 of the drawings, the container according to the present invention is adapted to be fitted with a closure so constructed and arranged with the container that the load incident to stacking the loaded containers one on top of another may be transmitted in part by the closure into the end walls of the container. As seen in Fig. 10, there is provided a top closure indicated generally by the reference numeral 50 formed from a sheet of paperboard and scored lengthwise thereof along a score line 51 for a purpose as will appear. The closure is formed with end ears or tabs 52, 53, 54 and 56, tabs 52 and 53 being adapted to be bent down between the end panel 14 and the inside flap 44, and tabs 54 and 56 being adapted to be bent down between end panel 16 and the inside flap 46.

In order that the tabs 52 and 53 may be enabled to transmit the loads incident upon the closure 50 into the intermediate flap 36, the flap 36 is undercut to an edge 59 below the top edge of the container 11 and with a central tongue 58, the dimensions being so chosen that the closure 50 may rest upon the top edge of container 11 with the turned down tabs 52 and 53 in firm bearing engagement with the edge 59 of flap 46. The flap 37 is likewise undercut to an edge 59 with a central tongue 61, so that the turned down tabs 54 and 56 are in firm bearing contact with the edges 59.

As seen in Figs. 1 and 10 the closure 50 is provided with cutouts 62 so that the closure may be removed from the container 11, and side cutouts 63 to provide clearance for a double handle or lifting bail 64. It will be seen that the closure 50 may be placed in position by first bending along the score line 51 and then inserting the tabs 54 and 56 in position on each side of the central tongue 61, and between the end panel 16 and the flap 46, the operation being completed by inserting the tabs 52 and 53 between the end panel 14 and the flap 44 and then forcing the closure into a flat position contacting the top edges of the container all around the edges thereof.

The cutouts 62 also afford a means of ventilation of the contents of the container 11, and the closure 50 may further be provided with a central window 60 as shown in dotted outline if desired, for further ventilation of the contents. The central window 60 also affords a means of visual inspection of the contents of the container.

The container 11 is adapted to be carried by a simple handle formed from a pair of lifting bails 64. Each bail 64 has a horizontal handle section 66 and a vertical leg 67 and an offset foot 68 adapted to be introduced through apertures 69 formed midway of the length of the double score lines 34 and 43 and to bear against the underside of the score lines 34 and 43 between panels 32 and 33 and panels 41 and 42 respectively. By the provision of a pair of bails the loaded container is supported upon four offset feet bearing against the top folds, the provision of the pair of side by side bails also insuring against twisting out of position as would be the case in providing a single bail with feet in opposite direction.

The lifting bails 64 are enabled to be retracted against the closure 50 for shipping or stacking

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purposes if necessary, and to this end the flaps 19 and 27 extending between the folded over side panels 32 and 33 are relieved as at 71. The flaps 21 and 28 extending between the folded over side panels 41 and 42 are likewise relieved as at 72. The laterally extending feet 68 of the bail 64 are thus enabled to be moved to the dotted line position shown in Fig. 8 with the horizontal handle section 66 in position retracted against the closure 50.

In order to provide ventilating air to the contents of the loaded container 11 the interior side panels are provided with apertures in register communicating with ventilating passageways formed between the outer side panels and the intermediate flap extensions of the end panels. As seen in Fig. 9, by way of example, the outer end wall 41 and the flap extension 28 of the end wall 16 are spaced slightly from each other to define a passageway 73 extending the length of the container 11. The inner side wall 42 and the flap extension 28 of the end wall 16 are provided with apertures 74 which may preferably be located near the end of the box 11 when in the assembled condition. The apertures 72 are in register and communicate with the ventilating channel 73 to provide for circulation of air from without the box 11 to the interior thereof.

As seen also with respect to Fig. 4 the inside wall 33 and the flap extension 27 of the end wall 16 are also provided with registering apertures 74 opening on to the ventilating passageway 73 formed between the outer side wall 32 and the flap extension 27. As seen also with respect to Fig. 2, the other end of the carton may be also so arranged with registering apertures 76 communicating with the ventilating passageway 73 formed between the outer side wall 33 and the flap extension 19 of the end wall panel 14, and also communicating with the ventilating passageway 73 formed between the outer side wall 41 and the flap extension 21 of the end wall panel 14.

Additional ventilation is provided for the interior of the container 11 by arcuate notches 77 and 78 cut in the lower edge of the inner side walls 33 and 42 respectively. Notch 77 is in register with the clearance provided between the contiguous ends of the flaps 19 and 27 therefor communicating with the ventilating passageway 73 formed inside of the outer wall 32. Notch 78 is also in register with the clearance provided between the contiguous ends of the flaps 21 and 28 so as to communicate with the other ventilating channel formed inside of the outer wall 41.

It will be seen from the foregoing that there has been provided a novel and useful container formed from a single cut and scored sheet and characterized by having side and end walls formed of three thicknesses of sheet material. The interior faces of said side and end walls are smooth and unbroken except for the apertures therein providing for ventilation of the contents thereof, such ventilation being accomplished without the necessity of exposing the contents of the container to the possibility of direct contact with objects outside of the container. The end walls include an intermediate thickness of sheet material providing bearing surfaces of tuck-in tabs of a top closure adapted to transmit the loads incident to stacking into the sides and ends of the container, the tuck-in tabs and the central tongues of the intermediate end wall serving both as a means for transmitting the stacking loads into the end walls as well as locking the top clo-

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sure in position, thereby making unnecessary the use of sealing tapes. The supporting handles for the container are adapted to be swiveled to be flat or to be retracted between the side walls to be flat in position on top of the container closure, so that the container and contents may be stacked in such position of the supporting handles, if desired.

While the invention has been described in terms of an embodiment found desirable as a commercial form thereof, it is not intended that the invention be limited by the form disclosed herein nor otherwise than by the terms of the claims here appended.

I claim:

1. A container comprising a bottom panel, a pair of outside end walls folded upward from said bottom panel, flap extensions from each side of said end walls folded into position along said bottom panel so as to provide intermediate side reinforcing walls, side panels extending from said bottom panel and folded upon themselves so as to provide inner and outer side walls embracing said intermediate side reinforcing walls, flaps extending from each end of said inner side walls and folded along the inner side of said outside end walls to provide intermediate and inside end reinforcing walls, said outer side walls and said intermediate side reinforcing walls being spaced slightly from each other to afford a passageway for ventilating air, apertures formed in said inner side walls and said intermediate side reinforcing walls in register with each other and communicating with said ventilating passageway for conducting ventilating air to the contents of said container, and a further aperture in said inner side wall and in register with a clearance space between contiguous ends of said intermediate side reinforcing walls to provide a passageway communicating with said ventilating passageway for additional ventilation of the contents of said container.

2. A container comprising a bottom panel, a pair of outside end walls folded upward from said bottom panel, flap extensions from each side of said end walls folded into position along said bottom panel so as to provide intermediate side-reinforcing walls, side panels extending from said bottom panel and folded upon themselves so as to provide inner and outer side walls embracing said intermediate side-reinforcing walls, flaps extending from each end of said inner side walls and folded along the inner side of said outside end walls to provide intermediate and inside end reinforcing walls, said outer side walls and said intermediate side reinforcing walls being spaced slightly from each other to afford a passageway for ventilating air, and apertures formed in said inner side walls and said intermediate side reinforcing walls in register with each other and communicating with said ventilating passageway for conducting ventilating air to the contents of said container.

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