

Sept. 29, 1970

J. J. ROHDE
CARTON

3,531,041

Filed Jan. 31, 1968

7 Sheets-Sheet 1

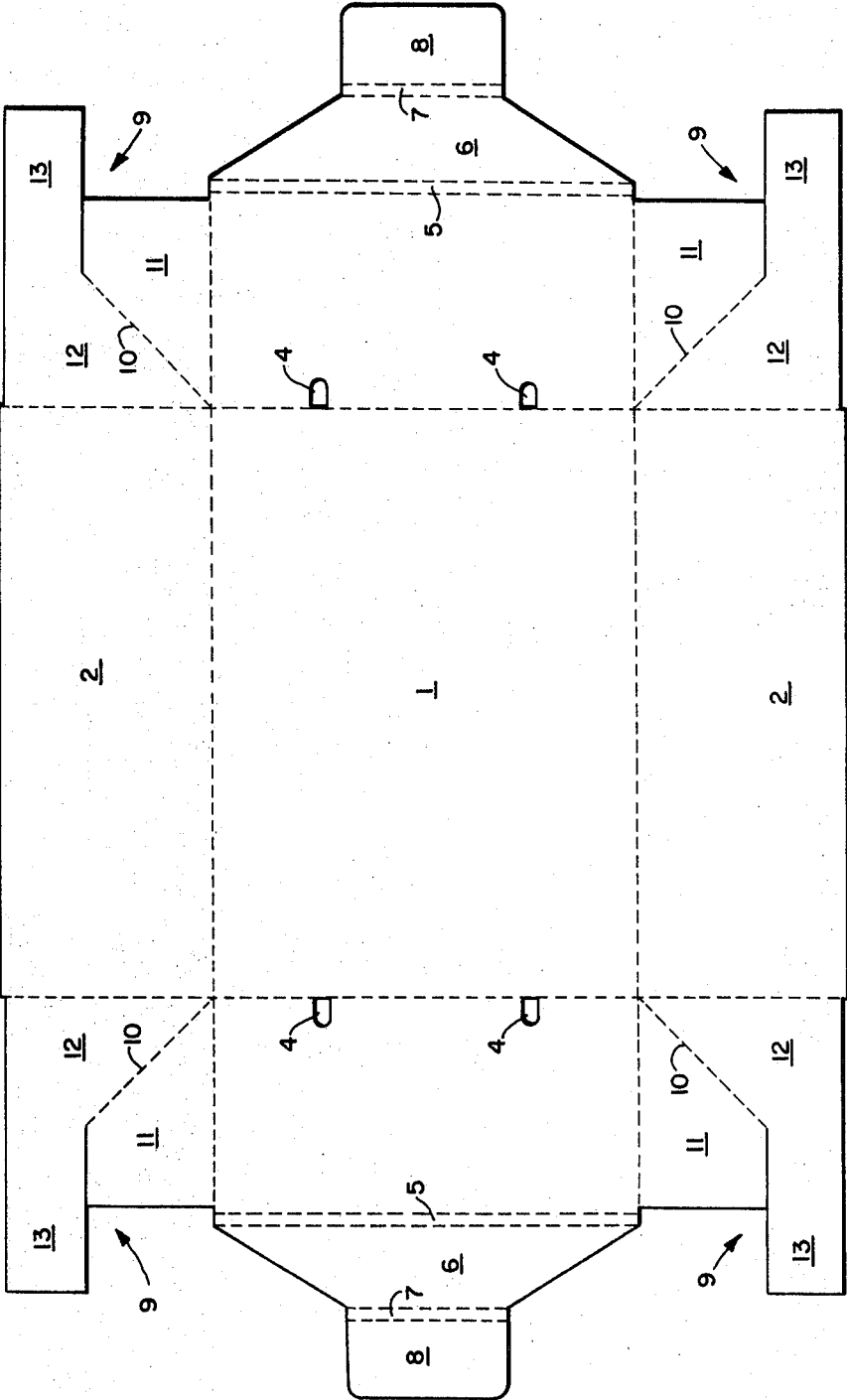


FIG. 1.

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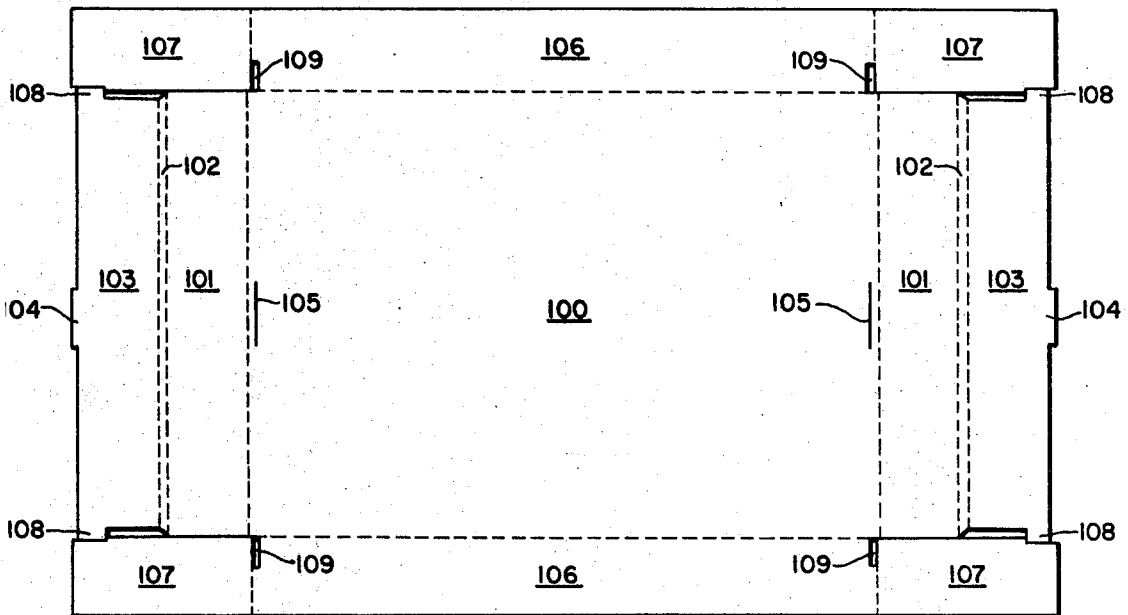


FIG. 2.

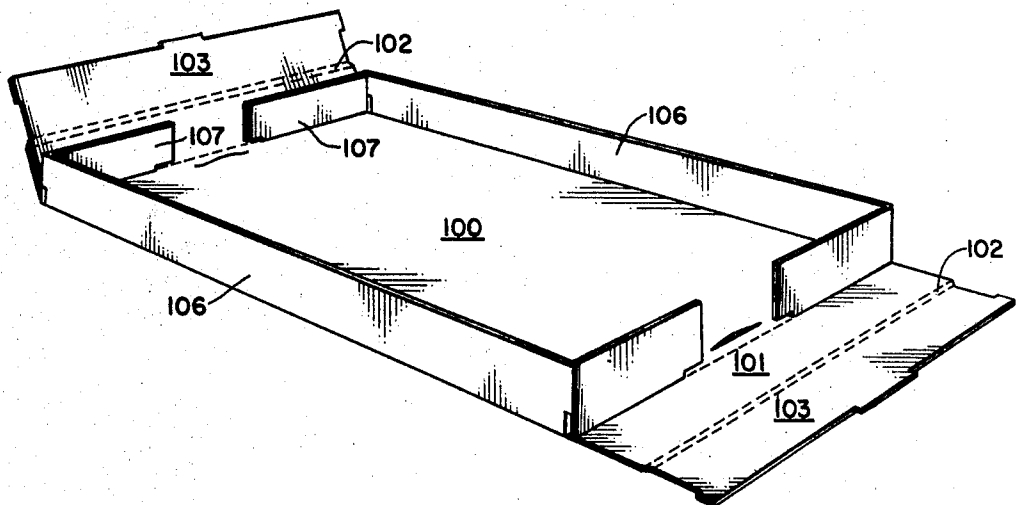


FIG. 3.

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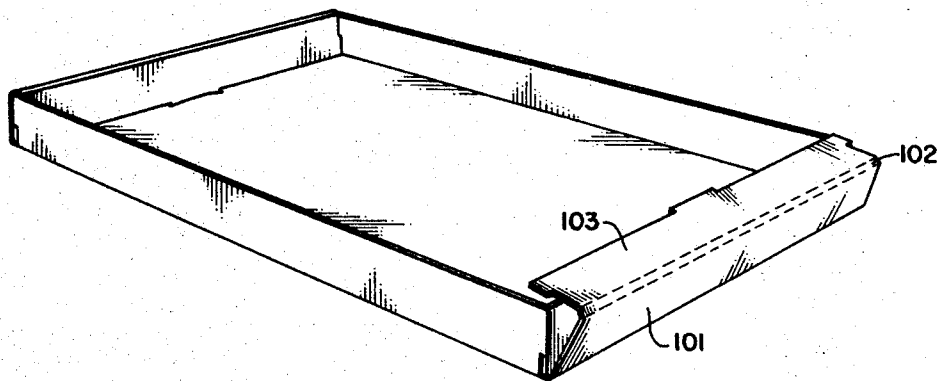


FIG. 4.

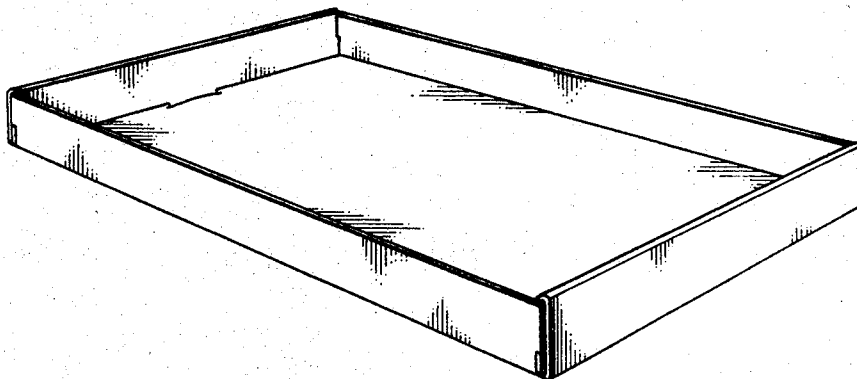


FIG. 5.

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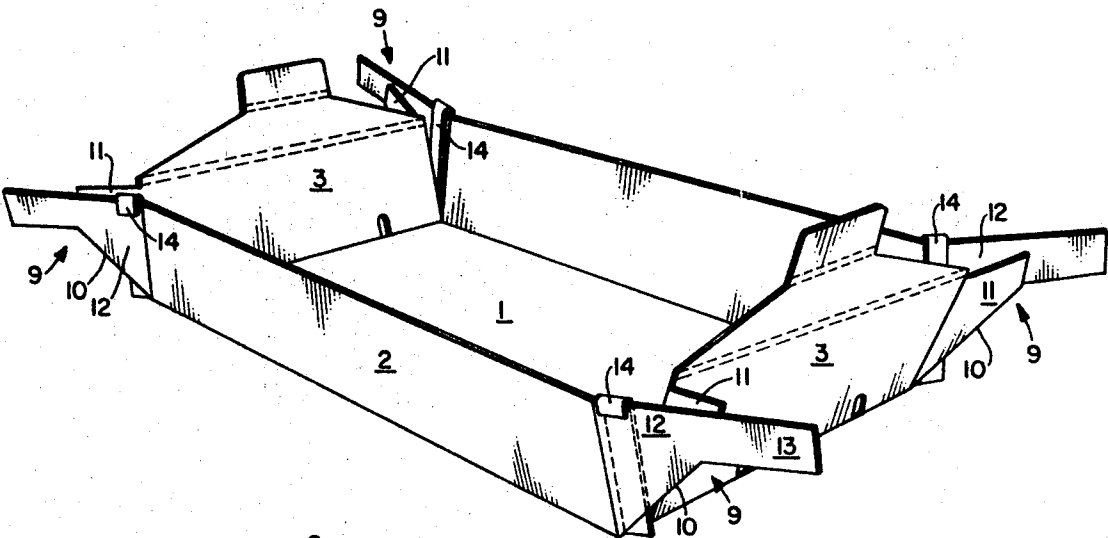


FIG. 6.

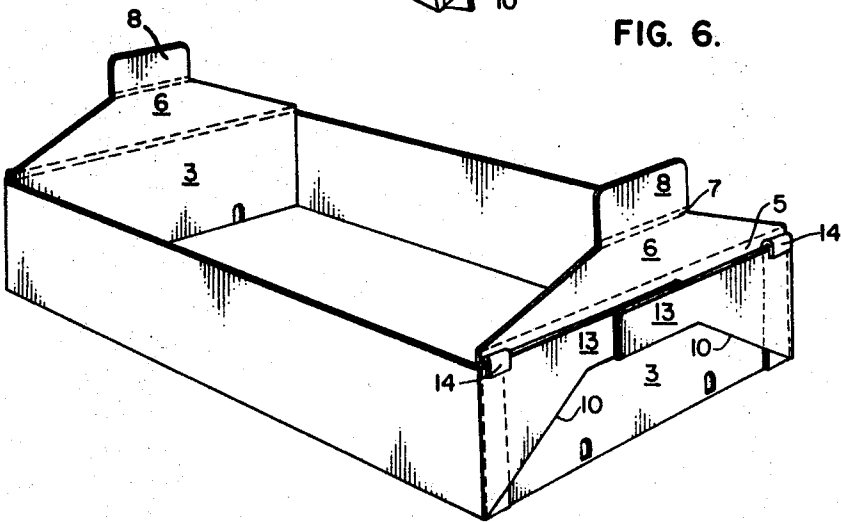


FIG. 7.

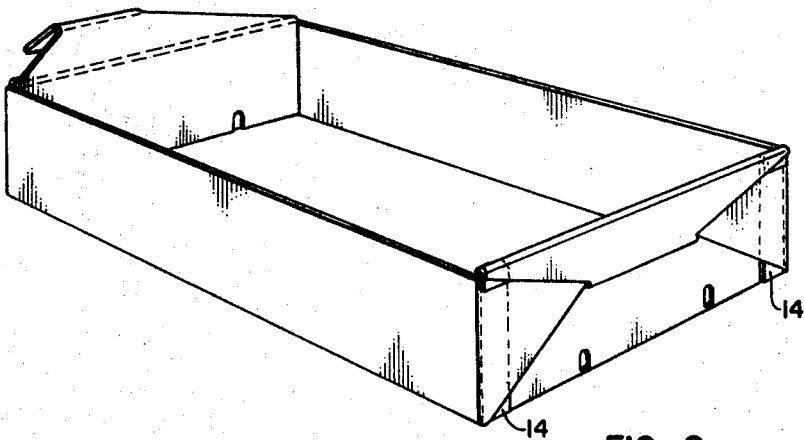


FIG. 8.

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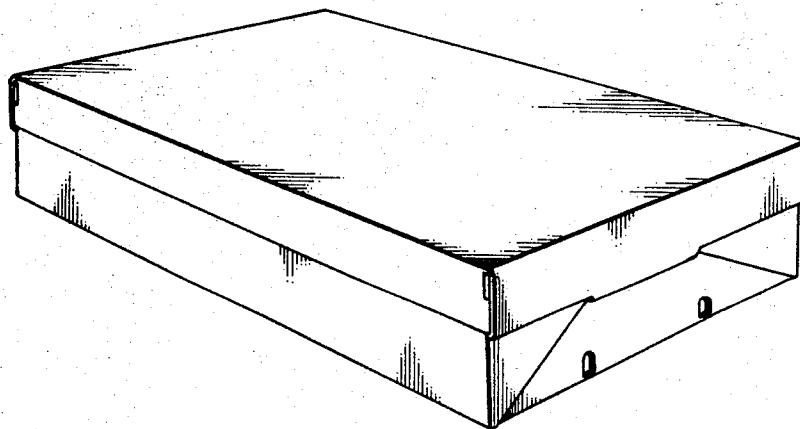


FIG. 9.

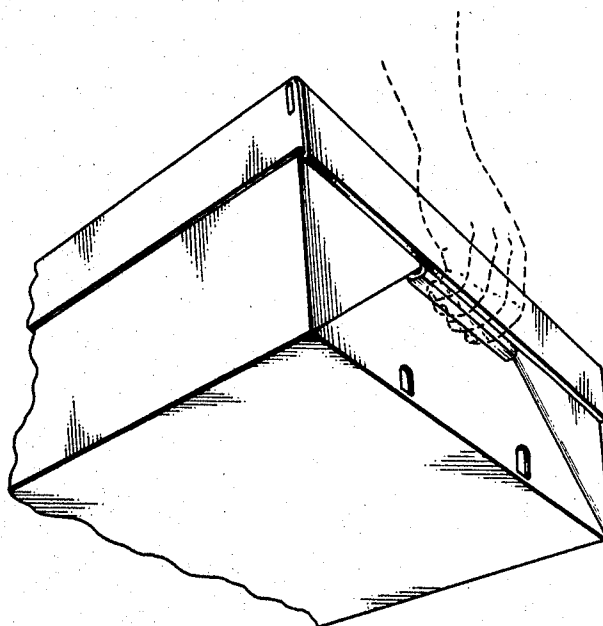


FIG. 10.

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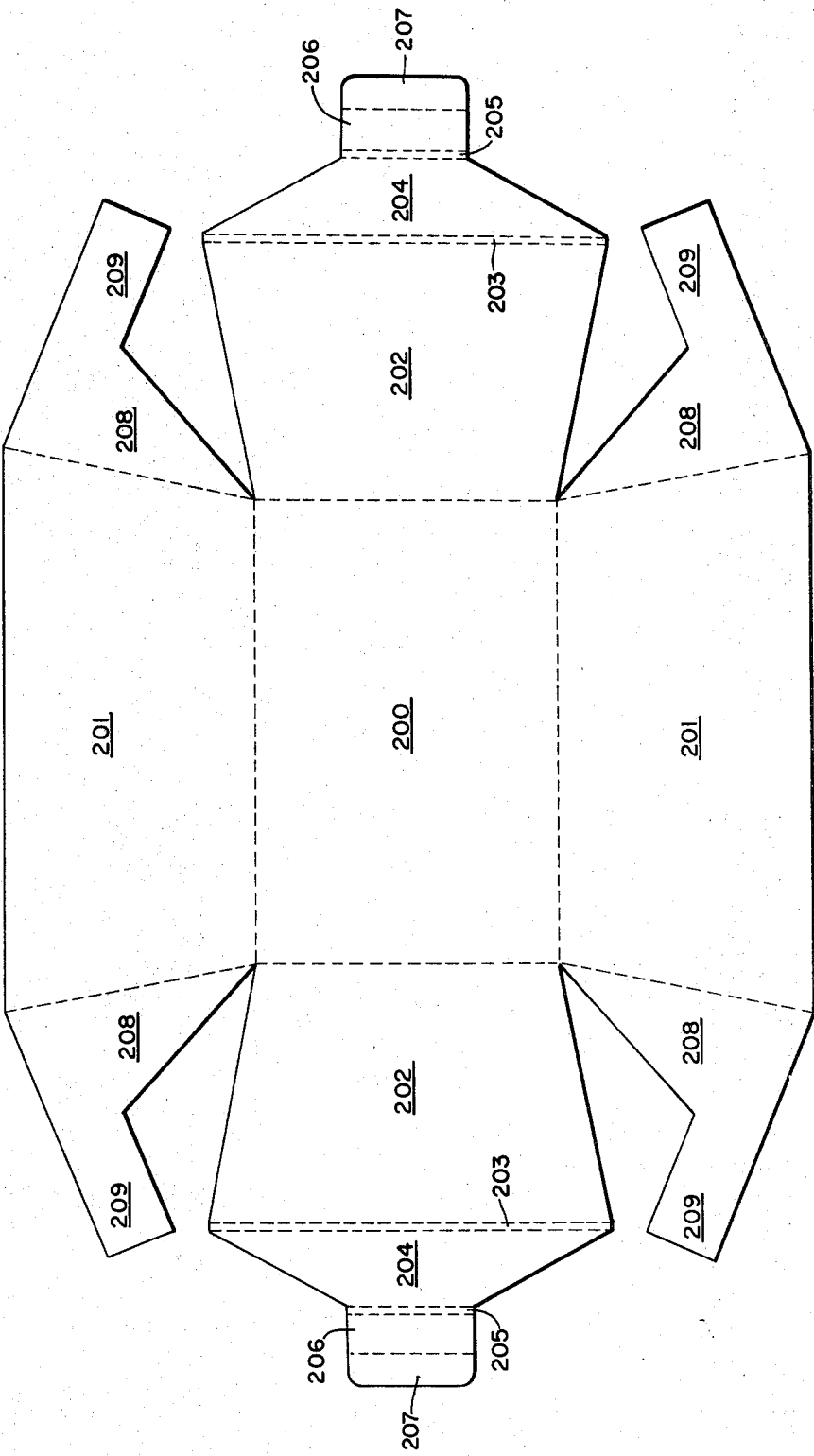


FIG. II.

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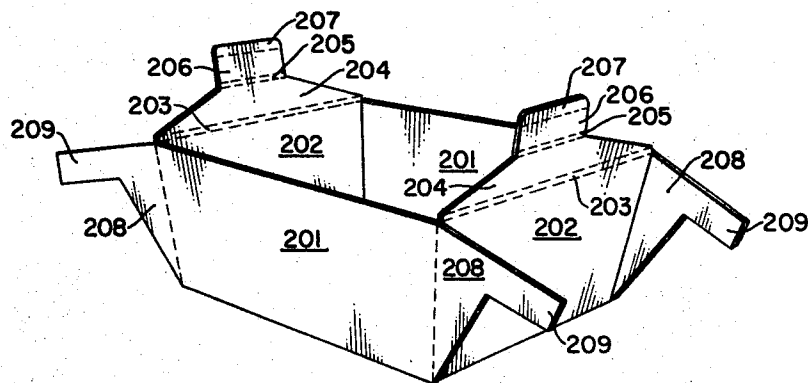


FIG. 12.

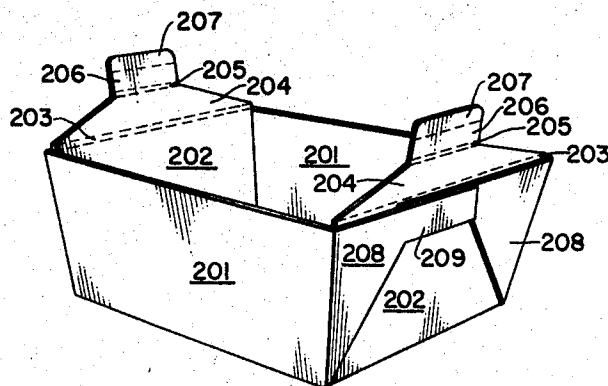


FIG. 13.

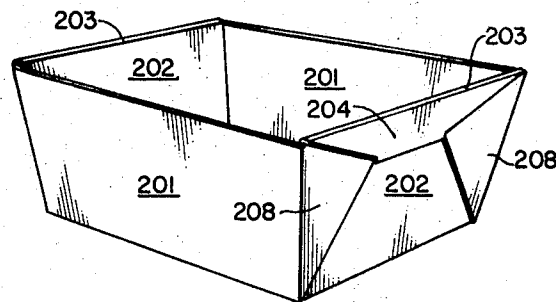


FIG. 14.

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1 Claim

ABSTRACT OF THE DISCLOSURE

A carton formed from a unitary blank and having end flaps articulated to the top edges of the end walls which fold about and interlock with folded integral corner extensions of the side walls. In an additional embodiment the corner extensions are also integral with the end walls.

BACKGROUND OF THE INVENTION

The present invention concerns two embodiments—poultry cartons and tote boxes. With respect to the first of these two embodiments—poultry cartons—the present invention has overcome many complex problems in designing a corrugated box which will hold roughly 65 pounds of poultry and 20 pounds of ice during rough intra and interstate transit. One of the greatest difficulties has been combining materials and design into cartons which provide high stacking strength even though water from the melting ice in cartons above is cascading over them for days during shipment. This difficulty has been overcome by providing paperboard cartons of unique and simplified construction having optional novel reinforcing posts for added strength.

The corrugated containers of the present invention offer several advantages over wire bound boxes. They are lighter and their insulation qualities permit shipment with slightly less ice resulting in a weight saving during shipment of packed cartons of over 8 percent. Also, because of smaller outside dimensions, both shippers and stores experience as much as 30 percent space savings.

Packing is easier with the cartons of the present invention because no interliner is necessary and handling is simplified with the elimination of cuts and torn clothing from wire and splinters from the boxes. Unloading is faster as the corrugated poultry packs of the present invention are designed with a deep tray top so that they are emptied by turning them over and exposing what during shipment was the bottom. Other considerations are that the corrugated cartons may be shipped flat, thus taking less space in the processor's warehouse. Also, when the poultry has reached the retail store, it is much easier and less expensive to dispose of the corrugated carton of the present invention than one made of wood.

The present invention presents not only improvements in the poultry container art but even further improvements in the corrugated carton art. For example, raw edges inside the carton which might trap poultry juices with resulting sanitation problems are eliminated through unique construction of the carton. Also, side corrugations in the carton run lengthwise, rather than up and down, thus eliminating another problem area at the upper edges of the carton which traps poultry juices.

A further advantage in the cartons of the present invention is that they require no stapling equipment in the packing plant. Thus, the boxes may be assembled from a single, integral blank by simple folding operations. This not only reduces set up time for the carton but likewise substantially reduces labor costs. And, the simple folding operations result in cartons of unique construction having built-in handles which facilitate loading and unloading prior and subsequent to shipment.

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The second embodiment of the present invention—a tote box—has many of the above discussed advantages of the poultry carton. Accordingly, it has the advantages of using no staples, glue or tape and a minimum amount of corrugated board. This is largely made possible by a construction including angular flaps outside the main body of the end walls and handle flaps which fold over and tuck under the angular flaps to lock the carton together. Additionally, since all sides of the tote boxes are tapered, or flared, these cartons can be nested for easy storage once they are set up.

SUMMARY OF THE INVENTION

The present invention provides a unitary paperboard blank for a carton comprising a central rectangular bottom wall, side walls hingedly connected to opposite ends of the bottom wall, end walls hingedly connected to opposite ends of said bottom wall, first double-hinge sections comprising narrow intervening panels lying adjacent the outer end of each end wall, exterior handle flaps lying adjacent the outer hinge of each double hinge section; second double-hinge sections comprising narrow intervening panels lying adjacent the outer end of each exterior handle flap, interior handle flaps lying adjacent the outer hinge of each second double-hinge section, exterior end flaps hingedly connected to opposite ends of each side wall and adjacent opposite ends of each end wall, and handle reinforcing flaps extending away from opposite ends of each side wall and integral with each exterior end flap.

The present invention further provides a reducible carton formed from a unitary foldable paperboard blank comprising a horizontally disposed bottom wall, two side walls articulated to the bottom wall along bottom side fold lines, two end walls articulated to the bottom wall along bottom end fold lines, two mirror image end flap sections abutting the outer side of each end wall and individually comprising a substantially triangular exterior end flap articulated along one edge with an end of a corresponding side wall and having a substantially rectangular extension integral with an edge opposite to said corresponding side wall, and two handle flap sections articulated along top end wall fold lines and folded about the rectangular extensions.

A unitary blank for a carton top is provided by the present invention which comprises a central rectangular top wall; end walls hingedly connected to opposite ends of the top wall; double-hinge sections comprising narrow intervening panels, lying adjacent the outer edge of each end wall; interior reinforcing panels lying adjacent the outer hinge of each double-hinge section; at least one locking tongue on the outer edge of each reinforcing panel; at least one slot in said top wall adjacent each end wall; side walls hingedly connected to opposite ends of said top wall; and intermediate reinforcing flaps attached to opposite ends of each side wall and abutting opposite ends of each end wall.

Also a carton top is provided comprising a top wall; upstanding side walls attached to opposite ends of and substantially perpendicular to said top wall; intermediate reinforcing flaps attached to opposite ends of and substantially perpendicular to each side wall and abutting said top wall; upstanding end walls attached to opposite ends of and substantially perpendicular to said top wall and abutting the outer side of each intermediate reinforcing flap; double-hinge sections comprising narrow intervening panels attached to said upstanding end walls and abutting the top edge of said intermediate reinforcing flaps; interior reinforcing panels attached to said double-hinge sections and abutting the inner side of each intermediate reinforcing flap and said top wall; and at least one locking tongue on an outer edge of each reinforcing panel engaging at least one slot in said top wall.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 discloses a top plan view of a blank for forming the poultry carton of the present invention.

FIG. 2 discloses a top plan view of a blank for forming the cover lid for the poultry carton of the present invention.

FIG. 3 discloses a front perspective view of the cover lid during folding from the blank of FIG. 2.

FIG. 4 discloses a front perspective view of the cover lid during further folding from the blank of FIG. 2.

FIG. 5 discloses a front perspective view of the cover lid completely folded from the blank of FIG. 2.

FIG. 6 discloses a front perspective view of the poultry carton during initial folding from the blank of FIG. 1.

FIG. 7 discloses a front perspective view of the poultry carton during further folding from the blank of FIG. 1.

FIG. 8 discloses a front perspective view of the poultry carton during completion of the folding from the blank of FIG. 1.

FIG. 9 discloses a front perspective view of the assembled poultry carton and cover lid.

FIG. 10 discloses a perspective view of the handle formed by the assembled poultry carton and cover lid.

FIG. 11 discloses a top plan view of another embodiment of a blank for forming the tote box of the present invention.

FIG. 12 discloses a front perspective view of the tote box during initial folding from the blank of FIG. 11.

FIG. 13 discloses a front perspective view of the tote box during further folding from the blank of FIG. 11.

FIG. 14 discloses a front perspective view of the assembled tote box.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

As shown in FIG. 1, the poultry carton of the present invention is made from a single integral blank of rigid paperboard, i.e., corrugated board or heavy cardboard. This blank is cut from paperboard stock. The blank is then pressed and printed to show fold lines and the user's name printed on it. Likewise, the carton top of the present invention is made from a single integral blank of rigid paperboard. Both carton and carton top are easily assembled by simple folding steps as will be apparent from the following description.

The poultry carton blank of the present invention includes a central rectangular portion 1 which forms the bottom of the folded carton. Side walls 2 are hingedly connected to opposite ends of the bottom wall 1, and end walls 3 are likewise hingedly connected to opposite ends of the bottom wall. Four small holes 4 (the exact number is not critical) are shown in the end walls adjacent the hinge connecting the end walls with the bottom wall. These holes may be cut out or punched out and serve as weep holes, which are especially necessary when the carton of the present invention is packed with poultry and ice.

First double hinge sections 5 including narrow intervening panels lie adjacent the outer end of each end wall. Exterior handle flaps 6 lie adjacent the outer hinge of each double hinge section 5, and second double hinge sections 7 including narrow intervening panels lie adjacent the outer edge of each exterior handle flaps 6. Interior handle flaps 8 lie adjacent the outer hinge of each second double hinge section 7.

Two-panel end flaps sections 9 hingedly connect one end of each end wall to the corresponding end of a side wall. Central diagonal hinges 10, desirable at 45° angles to the ends of the side walls and end walls, divide each two panel end flap section into an interior end flap 11 adjacent one end of each end wall and an exterior end flap 12 adjacent one end of each side wall. Handle reinforcing flaps 13 extend away from each side wall and are integral with each exterior end flap. The outer ends of the central hinges 10 are terminated by severance lines extending away from

one end of each end wall and separating abutting edges of the handle reinforcing flaps and the interior end flaps. The handle reinforcing flaps extend laterally beyond the interior end flaps and double hinge sections.

A diagrammatic view of the blank from which the poultry carton top is folded is shown in FIG. 2. Central rectangular top wall 100 has end walls 101 hingedly connected to opposite ends of the top wall. Double hinge sections 102 including narrow intervening panels lie adjacent the outer edge of each end wall 101; interior reinforcing panels 103 lie adjacent the outer hinge of each double hinge section 102. There is additionally provided at least one locking tongue 104 on the outer edge of each reinforcing panel 103. And at least one corresponding slot 105 is provided in the top wall adjacent each end wall 101. Side walls 106 are also hingedly connected to opposite ends of the top wall 100. And, intermediate reinforcing flaps 107 are hingedly attached to opposite ends of each side wall 106. These flaps abut opposite ends of each end wall 101 and are slightly spaced from the inset ends of reinforcing panels 103 except for locking tongues 108 which are integral with the ends of panel 103. Corresponding slots 109 are provided in side walls 106 which interlock with tongues 108 during the assembly of the carton top. While the carton top as thus described is preferably used with the carton of the present invention, it is evident that other carton tops of other construction may likewise be successfully used. Also, the carton top of the present invention may be used with cartons not of this invention.

Front perspective views of the poultry carton top revealing the assembly thereof are shown in FIGS. 3, 4 and 5. Accordingly, side walls 106 are folded into an upstanding position which is perpendicular to top wall 100. Reinforcing flaps 107, attached to opposite ends of side walls 106, are folded into a position perpendicular to each side wall and abutting the top wall. End wall 101 and interior reinforcing panels 103 are folded over and about intermediate reinforcing flaps 107. Accordingly, the upstanding end walls 101 are positioned substantially perpendicular to the top wall 100 and facingly about the outer side of each intermediate reinforcing flap 107. Double hinge sections 102 including narrow intervening panels then abut the top edge of the intermediate reinforcing flaps 107. Finally, the intermediate reinforcing panels 103 attached to the double hinge sections 102 are positioned to abut the inner side of each intermediate reinforcing flap 107 in the top wall. The locking tongues 104 and 108 on the outer edges of each reinforcing panel 103 are aligned to engage at least one slot 105 and one slot 109, respectively, in the completely assembled carton top.

Front perspective views of the poultry carton of the present invention revealing the assembly thereof are shown in FIGS. 6, 7 and 8. The carton includes a horizontally disposed bottom wall 1, two vertically disposed side walls 2 articulated to the bottom wall along bottom side fold lines and two vertically disposed end walls 3 articulated to the bottom wall along bottom end fold lines.

FIG. 6 particularly discloses the formation of end flap sections 9 which abut the outer side of each end wall 3 and individually include two sections 11 and 12 articulated along a common hinge 10 which intersects a corner of the bottom wall 1, with trapezoidal section 11 being articulated along its longer base edge with a vertical edge of one of the end walls 3 and substantially triangular section 12 being articulated along one leg with a vertical edge of a corresponding side wall 2, and with the other leg of triangular section 12 having an integrally attached rectangular extension 13.

An intermediate step in the folding of the handle flap sections of the poultry carton may be noted in FIG. 7. Handle flap sections are articulated along the top edge of each end wall 3 and are folded about rectangular extensions 13 which overlap in a preferred embodiment.

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Each handle flap section includes an exterior handle flap 6 of trapezoidal shape which is articulated by its longer base edge to a top edge of an end wall 3 and an interior handle flap 8 of rectangular shape which is articulated to the shorter base edge of exterior handle flap 6 and located between the rectangular extension 13 and the end wall 3.

The final position of the end flap is particularly shown in FIG. 8. The side edges of the trapezoidally shaped exterior handle flaps 6 individually run from the top corner of an end wall 3 to the upper end of one of the hinges 10. The two double hinge sections 5 and 7 are disposed horizontally and substantially parallel and connect an exterior handle flap 6 to an end wall 3 and an interior handle flap 8 to an exterior handle flap 6.

As shown in all of FIGS. 6, 7 and 8, the poultry carton may be optionally reinforced with vertically disposed reinforcing strips 14 which are attached at the corners of the reducible carton. Since these strips pierce the carton, holes in the carton are provided when reinforcing strips are utilized.

The poultry carton is shipped and stored in its flat factory prefolded form until ready to use. When fully assembled it has the disposition shown in FIG. 9. An especially unique feature of the present invention is shown in FIG. 10 which reveals the integral hand grip formed by the end assembly of the box in combination with the carton top. After use, the carton may be re-flattened by pulling out the handle flaps and pushing the sides and ends of the carton outwardly and into a flattened position.

Manifestly, the poultry carton of the present invention solves the dilemma of the user who desires a carton which is strong and easily assembled and does not wish to bear the expense of handling and storing empty wooden boxes.

The tote box embodiment of the present invention is shown in FIGS. 11 to 14. With an end locking feature similar to the poultry carton, this box likewise has the advantages of using no staples, glue or tape, and a minimum of corrugated board.

As shown in FIG. 11, the tote box is made from a single integral blank of rigid paperboard. This blank is die cut, pressed to show fold lines, and printed, if desired, to show the user's name, etc.

The tote box blank of the present invention includes a central rectangular portion 200 which forms the bottom of the folded carton. Side walls 201 are hingedly connected to opposite sides of bottom wall 200, and end walls 202 are likewise connected to opposite ends of the bottom wall. Inasmuch as the walls of the box will be outwardly tapered or flared, enabling the user to nest the cartons for storage after they have been set up, both the side walls and end walls are trapezoidal in configuration, with the shorter base sides of the trapezoids being connected to the bottom wall. If desired, the walls can be inwardly tapered or flared by connecting the longer base sides of the trapezoidal end and side walls to the bottom wall.

First double hinge sections 203 including narrow intervening panels lie adjacent the outer end of each end wall. Exterior handle flaps 204 lie adjacent the outer hinge of each double hinge section 203, and second double hinge section 205 including narrow intervening panels lie adjacent the outer edge of each exterior handle flap 204. Interior handle flaps 206 lie adjacent the outer hinge of each double hinge section 205. For ease

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of assembly, interior handle flaps 206 may be composed of dual sections joined by hinges 207. Exterior end flaps 208 are hingedly connected to opposite sides of each side wall 201. Handle reinforcing flaps 209 extend away from each side wall 201 and are integral with each exterior end flap.

Front perspective views of the tote box of the present invention revealing the assembly thereof are shown in FIGS. 12 to 14. The box includes horizontally disposed bottom wall 200, two flared or tapered side walls 201 articulated to the bottom wall along bottom side fold lines, and two flared or tapered end walls 202 articulated to the bottom wall along bottom end fold lines. FIG. 12 particularly discloses how the exterior end flaps 208 and integral handle reinforcing flaps 209 fold outside the main body of the end wall.

As evident from FIGS. 13 and 14, once the exterior end flaps 208 and integral handle reinforcing flaps 209 are brought into an abutting position with end walls 202, the exterior handle flaps 204 and interior handle flaps 206 can be folded over and tucked under handle reinforcing flaps 209 by means of double hinge sections 203 and 205 and hinge 207. FIG. 14 discloses the tote box of the present invention in its fully assembled form.

What is claimed is:

1. An open topped carton including:

a bottom wall,

two side walls hingedly connected to said bottom wall along parallel side fold lines,

two end walls hingedly connected to said bottom wall along parallel end fold lines,

two mirror image end flap sections abutting the outer side of each end wall and individually comprising a substantially triangular exterior end flap articulated along one edge with an end of a corresponding side wall and having a substantially rectangular extension integral with an edge opposite to said corresponding side wall, said rectangular extensions overlapping at the central portion of said end wall,

said mirror image end flap sections individually include a trapezoidal interior end flap articulated along a non-base edge to said substantially triangular exterior end flap and articulated along a longer base end to an end of a corresponding end wall,

exterior handle flap sections articulated along top end wall fold lines and folded outwardly of the rectangular extensions, and

inner handle flap sections foldably connected to the lower edges of said exterior handle sections and folded beneath and inwardly of said rectangular extension.

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DAVIS T. MOORHEAD, Primary Examiner

U.S. Cl. X.R.

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