June 26, 1962 P. L. SALMON 3,040,954

CONTAINER

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FIG. 1.

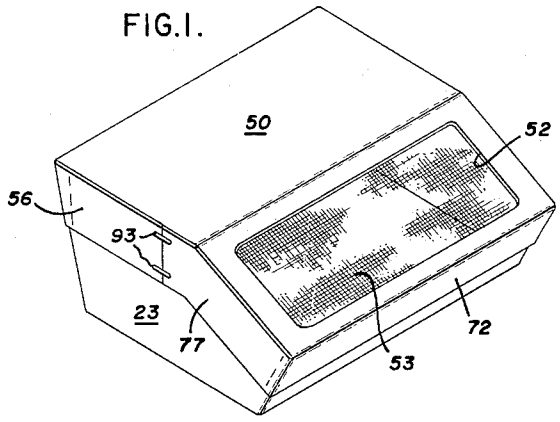


FIG. 5.

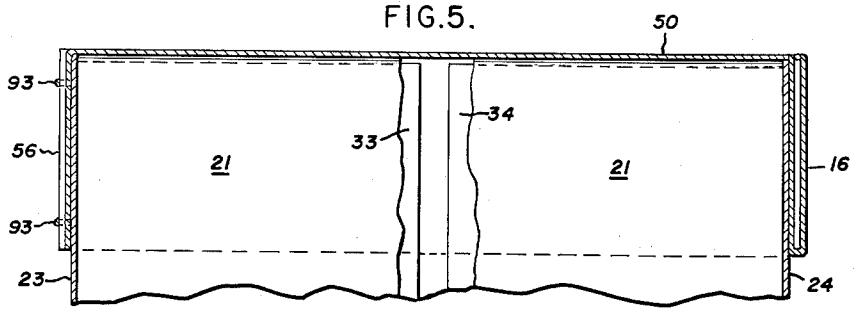
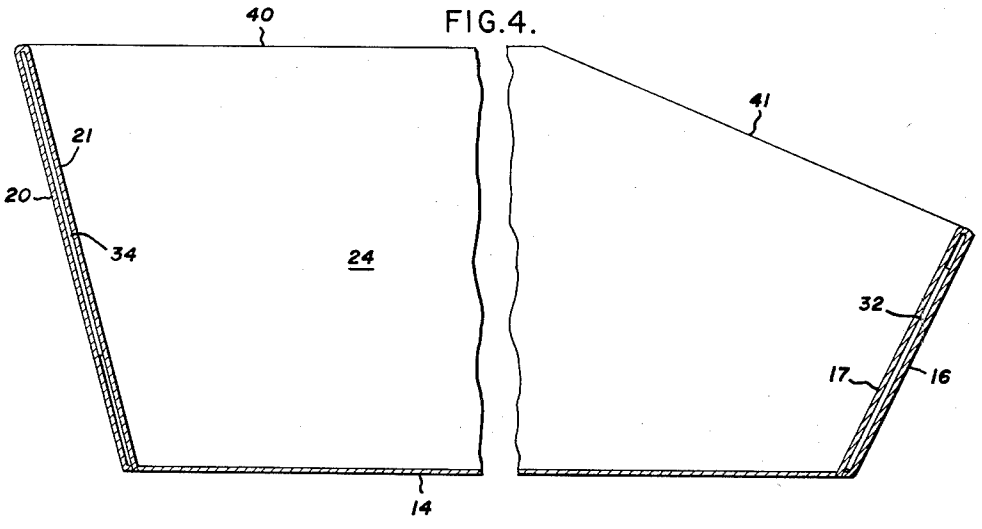


FIG. 4.



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CONTAINER

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FIG.6.

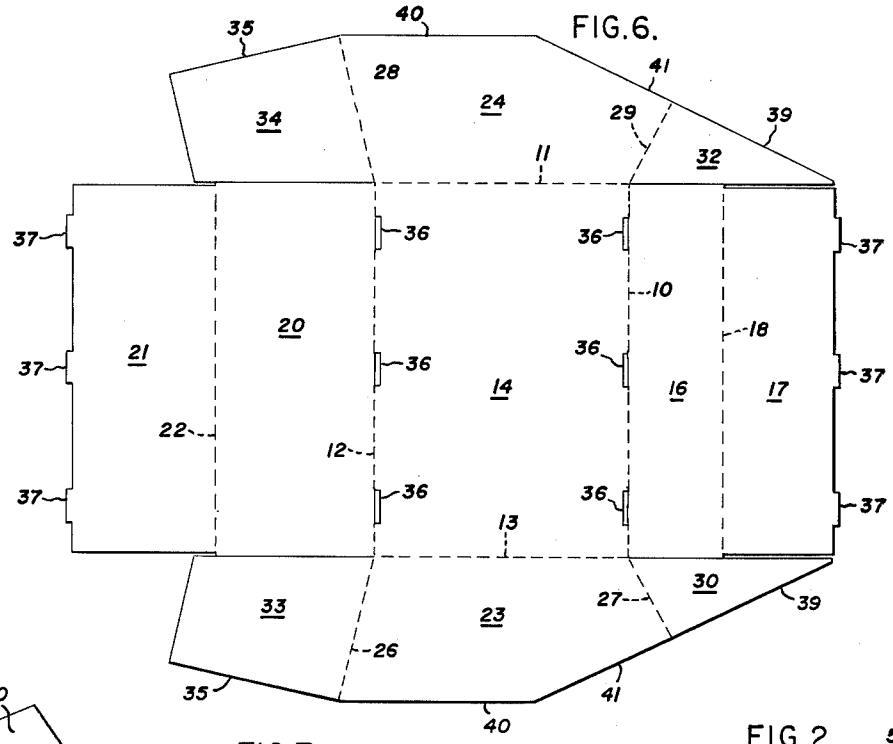


FIG.7.

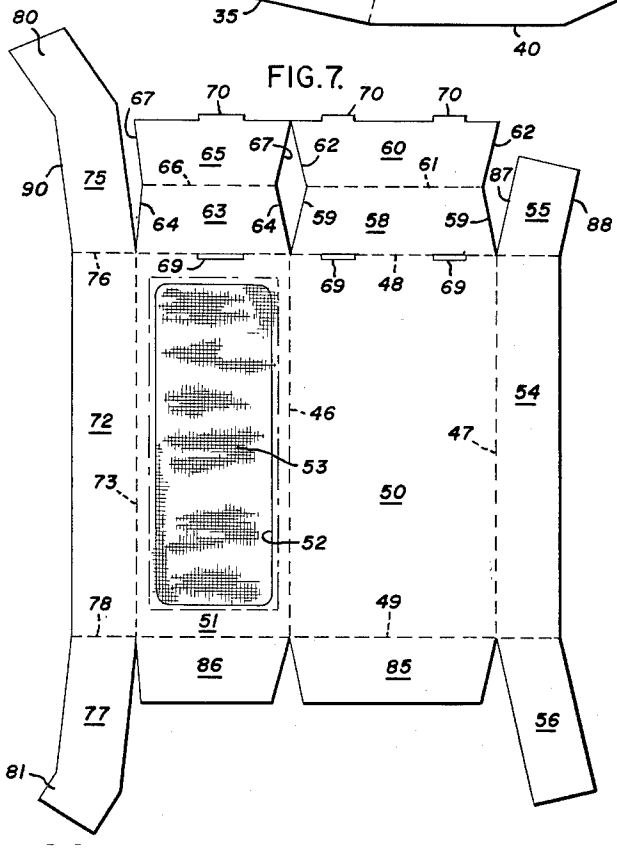
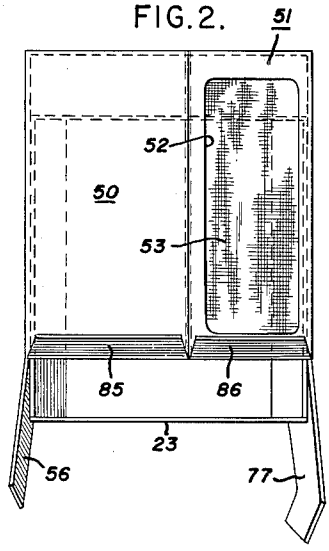


FIG.2.



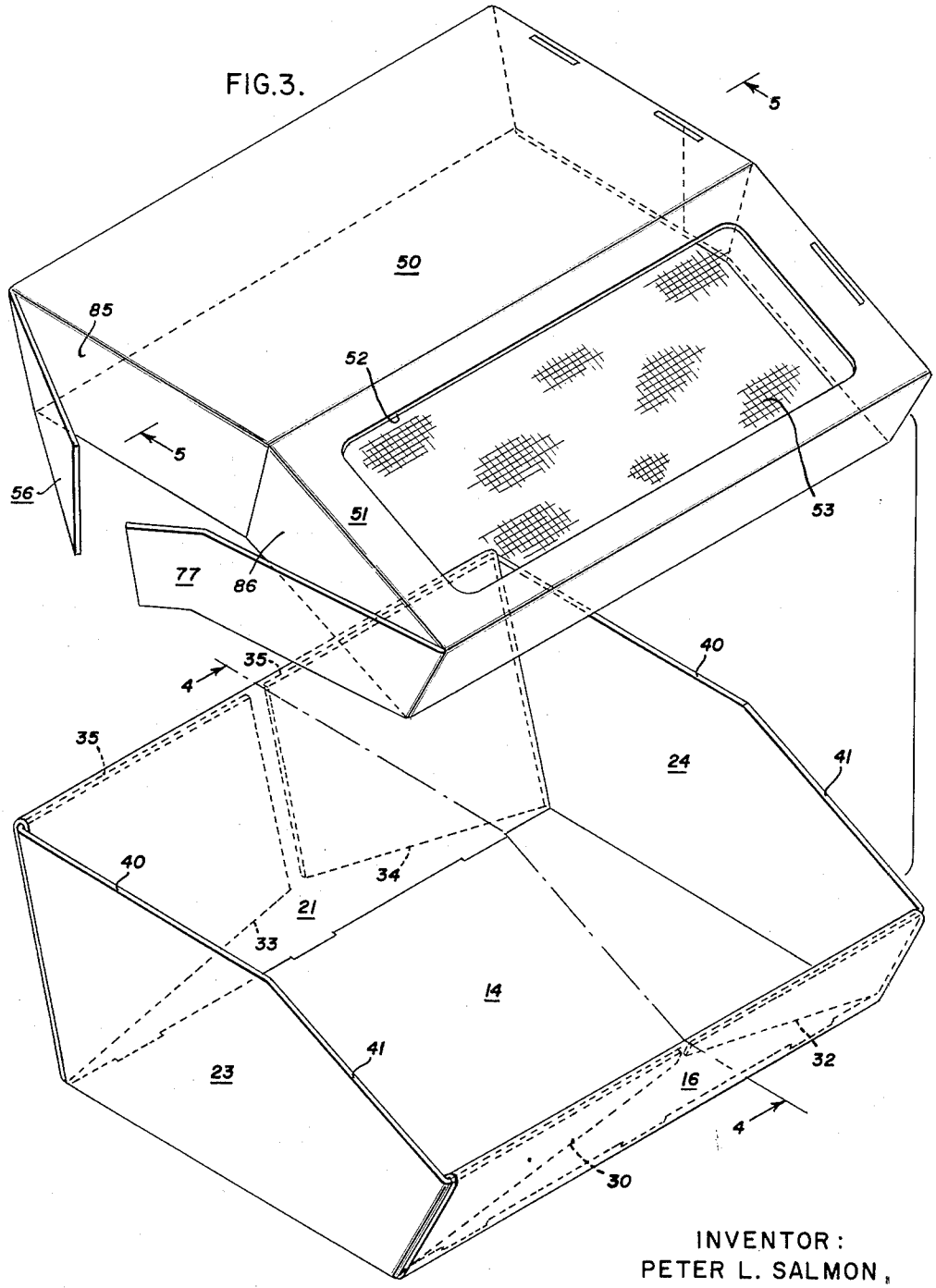
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CONTAINER

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FIG.3.



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CONTAINER

Peter L. Salmon, Landing, N.J., assignor to Binghamton Container Co., Inc., Binghamton, N.Y., a corporation of New York

Filed July 5, 1961, Ser. No. 121,962
3 Claims. (Cl. 229—23)

This invention relates to containers in which small live animals are shipped, such as mice, hamsters, guinea pigs, etc. At the present time, these animals are shipped in containers formed of heavy paperboard comprising a box and top. The box and top members are formed from blanks having a multiplicity of tabs or flaps which are folded to provide the box and top formations, and are secured together by the application of a multiplicity of metal staples. The tops are applied to the boxes after the animals have been placed therein, and are usually secured to the box by the application of more staples.

Those containers are of complicated structure and require considerable time in the assembly by use of the metal staples. Difficulty is incurred by the escape of the animals from the boxes prior to the application of the covers thereto.

This invention has as an object a container of the type referred to shipped to the animal raiser in the form of flat blanks from which both the boxes and the covers are fabricated, the blanks being of unique formation including foldable flaps that become self-locking in the formation of the box, not requiring the use of staples, or other fastening members. When assembled, the front and rear side walls of the box converge downwardly toward the bottom wall and the cover member, which when assembled, has its front and rear side walls or flanges converging downwardly on angles complemental to the front and rear side walls of the box, whereby the cover is retained on the box without the use of staples, wires, or other fastening members.

The invention further embodies a unique cover structure which, like the box, is fabricated simply by the folding of flaps which, at one end of the cover, become self-locking to thereby permit the cover to be sleeved onto the top of the box to any desired extent and thereby readily preventing the escape of animals from the box during the boxing operation. The arrangement is such that when the cover is sleeved all of the way on the box, the end flaps at the opposite end of the cover are readily foldable into place and secured in position by adhesive tape, or one or two staples which penetrate only the cover flaps.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

In the drawings:

FIGURE 1 is a perspective view of a container embodying my invention.

FIGURE 2 is a perspective view of the box and cover, with the cover partially sleeved onto the box.

FIGURE 3 is a perspective view of the box and cover with the flaps at one end of the cover partially folded.

FIGURE 4 is a view taken on line 4—4, FIGURE 3.

FIGURE 5 is a view taken on line 5—5, FIGURE 3, and including the contiguous top portion of the box.

FIGURE 6 is a plan view of the blank from which the box member is formed.

FIGURE 7 is a plan view of the blank from which the cover member is formed.

The body blank, shown in FIGURE 6, is provided with score lines 10, 11, 12 and 13, to define a central flat rectangular panel 14 forming the bottom wall of the box. A flap 16 is attached to one side edge of the panel 14 at the score line 10, and an outer flap 17 is attached to the flap 16 at the score line 18.

A flap 20 is attached to the opposite side edge of the panel 14 at the score line 12, and an outer panel 21 is attached to the panel 20 at the score line 22.

Panels 23, 24, are attached to the end edges of the panel 14 at the score line 13 and 11 respectively. The panel 23 is formed with divergent score lines 26, 27, and the panel 24 with similar score lines 28, 29. A triangular shaped panel 30 is attached to the panel 23 at the score line 27 and is severed from the contiguous end edges of the panels 16, 17. A panel 32, similar to the panel 30, is attached to the panel 24 at the score line 29, and is also severed from the continguous ends of the panels 16, 17. A panel 33 is attached to the panel 23 at the score line 26, and is severed from the contiguous ends of the panels 20, 21. A similar panel 34 is attached to the panel 24 at score line 28 and is also severed from the contiguous ends of the panels 20, 21.

The box is formed by first bending the panels 23, 24, perpendicular to the panel 14, the panels 23, 24, forming the ends of the box. The panels 30, 32, and the panels 33, 34, are then bent inwardly perpendicular to the panel 14. The panel 20 is then folded upwardly about the score line 12 overlying the infolded panels 33, 34. The outer flap 21 is then folded over the upper edges 35 of the infolded panels 33, 34, and inwardly overlying the inner surface of those panels. The blank is formed with notches 36 along the score lines 10, 12, and the panels 17, 21, are provided at their outer edges with short tabs 37. When the flap 21 is folded inwardly over the flaps 33, 34, the projecting tabs 37 are inserted into the slots 36, whereby the end flaps 23, 24, and the flaps 20, 21, constituting the rear wall of the box, become permanently interlocked.

In the same manner, the flaps 30, 32, are folded inwardly over the score line 10, the flap 16 folded upwardly, and the flap 17 folded over the upper edges 39 of the infolded flaps 30, 32, and downwardly over the inner surface of these flaps, and the tabs 37 inserted in the slots 36. It will be apparent by this arrangement that the box is assembled or formed from the blank and because of the interlocking of the end and side wall forming flaps, the box is self-sustaining without the use of staples, tape, or other fastening means.

It will be noted, referring to the blank shown in FIGURE 6, that the flaps 23, 24, are formed with a portion 40 of their outer edges extending parallel to the scores 11, 13, and the remainder of the outer edges of the flaps 23, 24, converge, as at 41, merging with the outer edges 39 of the panels 30, 32. This results in a substantial portion of the top edge of the box extending forwardly from the rear wall panels 20, 21, extending parallel to the bottom wall 14 and the remainder of the top edges of the ends 23, 24, inclining downwardly and merging with the upper edge of the front wall formed by the panels 16, 17.

The top for the box is formed from the blank shown in FIGURE 7. This blank is provided with score lines 46, 47, 48, 49, to define a flat rectangular panel 50 forming the flat top portion of the cover positioned on the upper edges 40 of the end panels 23, 24, and on the upper edge of the rear wall of the box. A panel 51 is attached to the panel 50 at the score line 46. This panel is of rectangular formation and forms the top portion of the cover positioned on the inclined edges 41 of the ends 23, 24, and on the upper edge of the front wall of the box. This panel is formed with a relatively large rectangular opening 52 in which is fastened a metallic screen 53 to provide ventilation for the animals. At the opposite side edge of the panel 50 there is a flap 54 affixed at the score

line 47 and provided at one end with a flap extension 55 attached at a continuation of the score line 48, and at the opposite end there is a flap extension 56 of substantial length attached at a continuation of the score line 49. A flap 58 is attached to the end edge of the panel 50 at the score line 48 and is formed with converging ends 59. A second flap 60 is attached to the outer edge of the flap 58 at the score line 61 and is formed with diverging end edges 62.

There is a flap 63 attached at the continuation of the score line 48 to the panel 51 and it has converging end edges 64. A flap 65 is attached to the flap 63 at the score line 66 and has diverging end edges 67. The panels 50, 51, are formed with notches 69, and the outer edges of the flaps 60, 65, are formed with tabs 70.

A flap 72 is attached to the outer edge of the panel 51 at the score line 73 and is dimensioned complemental to the flap 54. An extension flap 75 is attached to one end of the flap 72 at the score line 76, and an extension flap 77 is attached to the opposite end of the flap 72 at the score line 78.

Referring to the cover blank, FIGURE 7, it will be observed that the flaps 55, 56, 75, 77, extend outwardly in angular relation to the score lines 47, 73. The flap 75 is formed with an end portion 80 inclined outwardly at a greater angle than that of the flap 75, and the flap 77 is formed with an end portion 81 inclined outwardly at a greater angle than the flap 77. The purpose of the angular formation of these flaps is to arrange the rear and front flanges of the formed cover at angles complemental to the inclined rear and front walls of the box.

A flap 85 is attached to the panel 50 at the score line 49, and a flap 86 is attached to the panel 51 at the extension of the score line 49. The flaps 85, 86, correspond in form and dimension to the flaps 58, 63.

In forming the cover from the blank shown in FIGURE 7, the flaps 54, 72, are bent upwardly. The flaps 55, 75, are bent inwardly over the score line 48. The inclined edges 87 of the flaps 55, 75, being then positioned against the panels 50, 51, and because of the angularity of the edges 87, the flaps 54, 72, extend in angular relation to the panels 50, 51, complemental to the inclination of the front and rear walls of the box.

The flap 58 is then bent upwardly and the attached flap 60 bent inwardly over the edge 88 of the flap 55 and the tabs 70 inserted in the notches 69 of panel 50. The flap 63 is then bent upwardly and its attached flap 65 bent over the then upper edge 90 of flap 75 and downwardly, and its tab 70 inserted in the corresponding notch 69. The end portion 80 of the flap 75 is positioned between the flaps 58, 60.

This operation forms the end and side flanges of the cover, with the side flanges 54, 72, depending in angular relation complemental to the inclination of the front and rear walls of the box, whereby the cover may be sleeved on to the top of the box any desired distance, as shown in FIGURE 2.

After the animals have been placed in the box, the cover is pushed all the way across the top of the box and the flaps 85, 86, are folded downwardly against the end panel 23 of the box. The flap 56, 77, are then folded against the flaps 85, 86, and are secured thereto, as by staples 93, see FIGURES 1 and 5.

What I claim is:

1. A container comprising a box formed from a one-piece blank of paperboard having a central flat rectangular panel forming the bottom wall of the box and having flaps integral with the edges of said panel and folded upwardly to form front and side walls and end walls, said side walls diverging upwardly from the bottom wall, the front side wall being of substantially less height than said rear wall, the upper edges of said end walls extending forwardly from the upper edge of said rear wall substantially parallel to said bottom wall for a substantial portion of the length of said end walls, the remaining portion of the upper edges of said end walls inclining downwardly and merging with the upper edge of said front wall, a cover formed from a one-piece blank comprising a flat top wall panel and an inclined top wall panel, side flanges depending from the outer side edges of said panels, said side flanges having extension flaps at like ends, said top wall panels having end flange flaps at their ends contiguous to said extension flaps, said flaps being folded in overlapping interlocked relation, said extension flaps being operable to maintain said cover side flanges inclined complemental to the inclined front and rear side walls of the box for sliding interlocking engagement therewith, end flange flaps at the opposite end of said cover panels and the opposite ends of said cover side flanges being formed with extension flaps, said last mentioned end flange flaps and flap extensions being folded in overlapping relation subsequent to the application of the cover to the box, and fastening means securing said last mentioned flaps and flap extensions in folded position and without contact with said box.

2. A container comprising a box formed from a one-piece paperboard blank, said box having a bottom wall, vertically extending end walls and front and rear side walls, said side walls diverging upwardly from the bottom wall of the box, said end walls having their upper edges extending parallel to the bottom wall for a distance from said rear wall and then inclining downwardly to said front wall, a cover for the box formed from a one-piece paperboard blank, said cover having a central rectangular panel positioned on the upper edge of the rear wall and contiguous upper edge portions of said end walls, an inclined top panel positioned on the inclined edges of said end walls and the front wall of the box, said cover being formed with flaps extending along the outer side edges of said top panels and folded downwardly to provide side flanges overlying said front and rear walls of the box, end flange flaps at the end edges of said top panels folded downwardly to provide cover end flanges, said cover side flanges having flaps at their ends folded inwardly normal to said side flanges and being operable when folded to maintain said side flanges inclined complemental to the front and rear walls of the box for sliding interlocking engagement therewith, the end flange flaps at one end of said cover being fixedly interlocked with the contiguous end flanges to maintain the same in folded postion, the said side flange flaps at the opposite end of the cover being folded over the contiguous cover end flanges subsequent to the application of the cover to the box, and being secured in folded position by fastening means applied externally of the cover.

3. A container comprising a box formed from a one-piece blank of paperboard having a central flat rectangular panel forming the bottom wall of the box and having flaps integral with the edges of said panel and folded upwardly to form front, side and end walls, said side walls diverging upwardly from the bottom wall, the front side wall being of substantially less height than said rear wall, said front, side and end walls having interlocking flaps for maintaining said walls in folded position, the upper edges of said end walls extending forwardly from the upper edge of said rear wall substantially parallel to said bottom wall for a substantial portion of the length of said end walls, the remaining portion of the upper edges of said end walls inclining downwardly and merging with the upper edge of said front wall, a cover for said box having a central rectangular panel positioned on the upper edge of said box rear wall and contiguous upper edge portions of said end walls, an inclined top panel positioned on the inclined edges of said end walls and the front wall of the box, said cover having side flaps extending along the outer side edges of said top panels and being folded downwardly to provide side flanges positioned exteriorly of said front and rear walls of the box, said side flaps having integral extension flaps

at their ends, said extension flaps diverging outwardly in angular relation to said side flaps and being folded inwardly normal to said folded side flanges and with the edges of said extension flaps positioned on said top panels, whereby said side flanges are inclined relative to said top panels complemental to the inclination of the front and rear walls of the box, said top panels being formed at like ends with inner and outer end flaps, said inner flaps being folded downwardly exteriorly of said folded extension flaps, and said outer flaps being folded upwardly against the inner surface of said extension flaps, said outer flaps having interlocking engagement with said top panels, the opposite ends of said top panels having end flaps folded downwardly, the side flange extension flaps at said opposite end being folded over said last mentioned end flaps, and fastening means for maintaining said extension flaps in folded position.

No references cited.