

March 7, 1939.

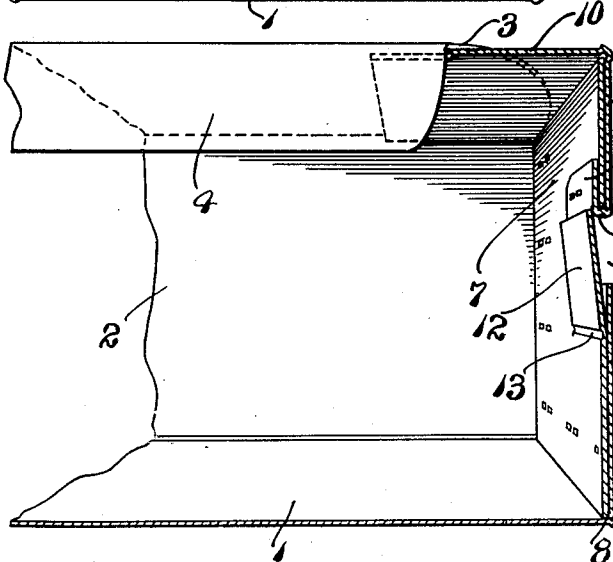
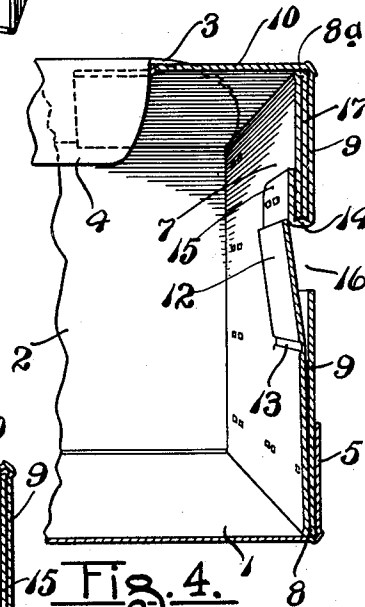
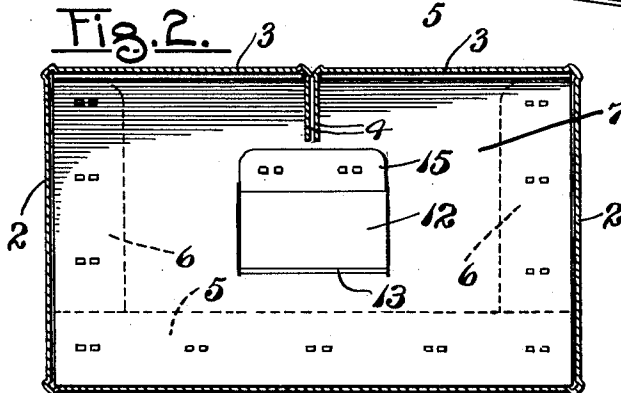
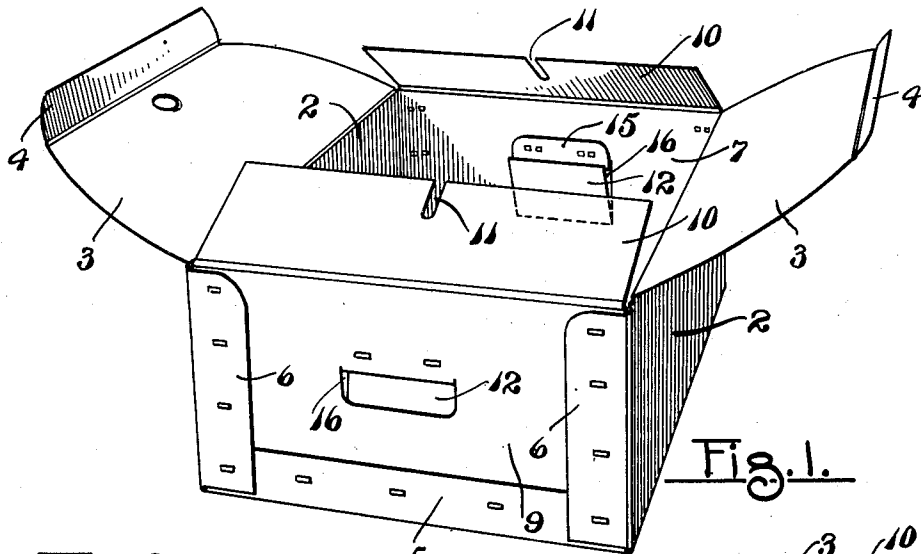
J. S. BURNS

2,149,955

CONTAINER CONSTRUCTION

Filed June 14, 1937

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2 Sheets-Sheet 2

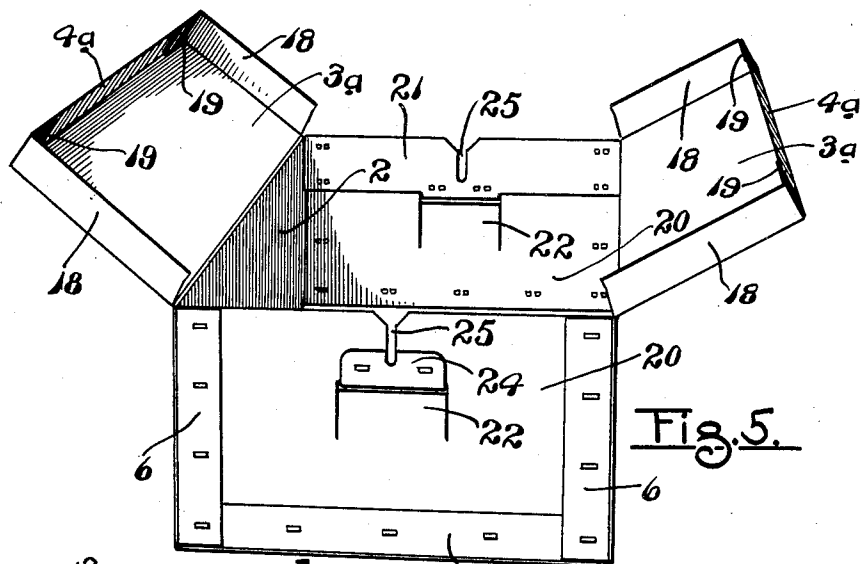


Fig. 5.

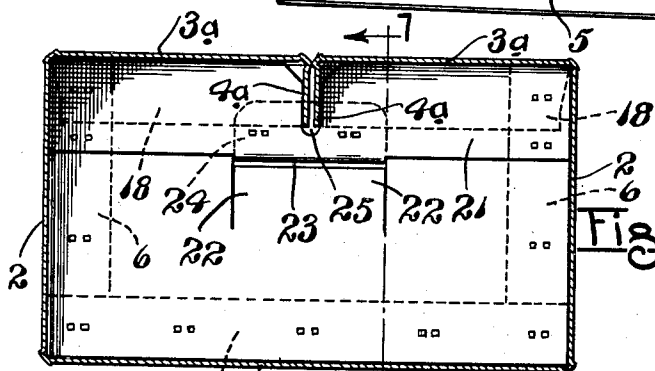


Fig. 6.

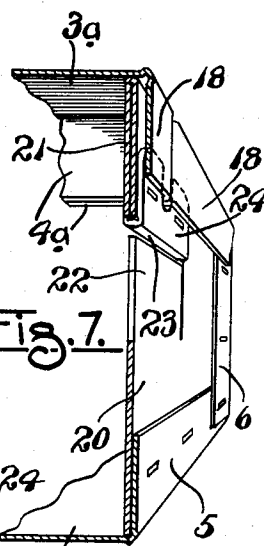


Fig. 7.

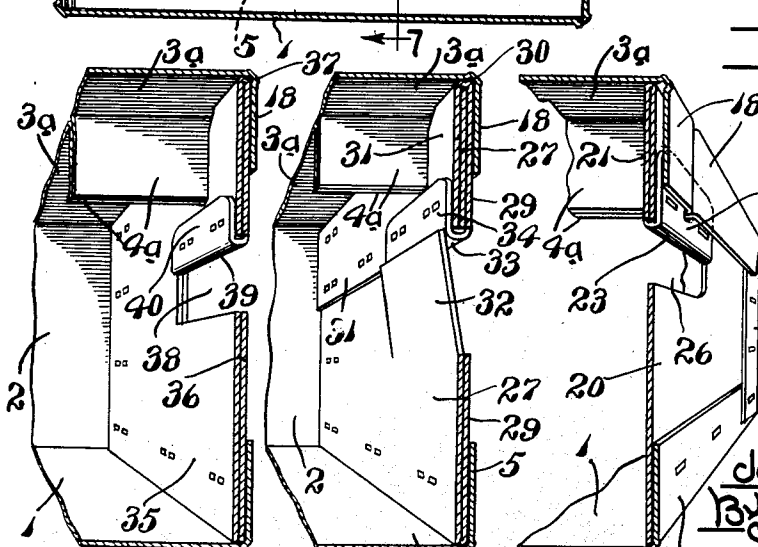


Fig. 10.

Fig. 9.

Fig. 8.

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2,149,955

CONTAINER CONSTRUCTION

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Application June 14, 1937, Serial No. 148,064

12 Claims. (Cl. 229—23)

This invention relates to receptacles or containers manufactured preferably from paper stock such as relatively heavy paperboard, and a primary object and purpose of the present invention is to provide a strong container readily manufactured from three pieces of paperboard stock, one of the pieces being used to provide the bottom, two sides and the cover sections, and each of the other pieces an end of the complete container. With this structure the ends may be strongly reinforced, if necessary, and supplied with hand hole openings, the material of which is cut on three sides from one of the sections of an end and bent about on its other connected side upwardly thereby making a rounded and widened surface to bear against the hand for lifting the box and its contents; and at the same time another end movable cover section may be used to normally cover such opening for the exclusion of light from the contents held within the container.

An understanding of the invention and the several objects and purposes which it serves may be had from the following description, taken in connection with the accompanying drawings, in which,

Fig. 1 is a perspective view of a paperboard container made in accordance with my invention, the upper side thereof being open.

Fig. 2 is a transverse section through the container in closed position.

Fig. 3 is a fragmentary vertical longitudinal section and perspective through one end portion of the closed container.

Fig. 4 is a view similar to Fig. 3 showing a slightly modified form of end construction.

Fig. 5 is a perspective view of a still further form, the upper side of the container being open.

Fig. 6 is a vertical transverse section there-through with the container closed.

Fig. 7 is a fragmentary transverse longitudinal section and perspective of one end of the container, and

Figs. 8, 9 and 10 are views similar to Fig. 7 of different forms of end members which may be used.

Like reference characters refer to like parts in the different figures of the drawings.

In the construction of the receptacle or container, a length of paperboard stock is provided to make a bottom 1, vertical sides 2, cover sections 3, flaps 4 adjacent the free edges of the cover sections and attaching flaps 5, one at each end of the bottom and similar attaching flaps 6 at each end of each side. The piece of paper-

board stock is scored at proper positions, so that the various sections and flaps may be readily bent in the proper directions from the next adjacent parts to which attached.

The two ends of the box are identical in structure and each is made from a single piece of stock. In the form shown in Fig. 3, a length of the stock provides an inner end section 7 which extends from the bottom to the upper edge of the container. The piece used is bent back upon itself to make a lower folded edge at 8, and an outer section 9 extending therefrom lies alongside of the inner section 7 to its upper edge where it is scored so as to be bent to provide an intumed flap 10. Each of said flaps 10 is notched in its free edge, as at 11, preferably midway between its ends.

The end members as thus formed are inserted downwardly between the upwardly extending sides 2 and within the flaps 5 and 6 so that the upper free flaps 10, when turned inwardly toward each other, extend partly over the open upper end of the container. The flaps 5 at the ends of the bottom 1 are turned upwardly at the outer sides of the end members and staples are used to make a permanent connection as shown in Figs. 1, 3 and 4. The flaps 6 at the ends of the sides 2 are then turned inwardly toward each other overlapping the vertical edge portions of the container ends and also overlapping the end portions of the flaps 5 and are likewise secured by staples. The upper flaps 10 may be turned in to lie horizontally over the contents of the box and then the cover sections 3 turned inwardly toward each other and with their free edge flaps 4 bent downwardly to extend through the slots 11. In this form of structure the width of the cover sections 3 is decreased away from the sides 2 so that the length of the flaps 4 shall not be greater than the distance between the bottoms of the two slots 11 when the flaps 10 are turned inwardly toward each other to horizontal position.

Hand holes in the ends of the container thus made are preferably provided. A section 12 of rectangular form is cut at its vertical edges and at its upper horizontal edge from the inner side sections 7 at each end of the box, being integrally connected with the said section 7 at its lower edge along where it is scored, as at 13, so that it may have an inward hinging movement about a horizontal axis at such scoring. Another part is cut from the outer section 9 of the end at its vertical edges and lower horizontal edge and is then pressed inwardly and bent into U-shaped form

as indicated at 14, the section 15 extending vertically within the part 7 and being stapled thereto. This provides an opening 16 left in the outer part 9 which opening is normally closed at its inner side by the upwardly extending section 12 previously described, and as shown in Fig. 3. The hands may be inserted through these openings 16 and brought upwardly against the rounded and widened bend at 14, the hinged sections 12 readily yielding for the insertion of the hands.

Fig. 4 shows a slightly modified form of the structure shown in Fig. 3, above described. At the upper edge of the inside section 7 for each end the material is continued and bent back upon itself as indicated at 8a, providing a section 17 above the opening 16 between the parts 7 and 9. The section 17 terminates substantially flush with the upper edge of the section 12, and the bend at 14 is increased in width because it has to pass across the lower edges of the two thicknesses of the material in the parts 7 and 17 instead of one only as in Fig. 3. This makes greater bearing surfaces for the hands so that the weight of the container and its contents will press upon the hands over such larger surfaces.

In Fig. 5 the bottom, sides and top sections are made from a single length of paperboard stock as before. The top sections 3a are modified from what is shown in Fig. 1 in that said sections retain their full width from their points of connection to their outer edges and the flaps 4a turned inwardly at their free outer edges are connected with flaps 18 turned from the ends of the top sections 3a by means of sections 19 integral with the outer ends of the flaps 18 and bent at right-angles to lie inside the flaps 4a to which they are stapled or otherwise permanently secured.

The ends are each made from a single piece of paperboard stock and may take various forms. In Figs. 6 and 7 an end member 20 extends from the bottom 1 to the upper edge of the container and is then turned back upon itself for a distance as indicated at 21. A part 22 is cut from the end 20 at its upper horizontal edge and at its vertical edges. At the upper edge of the flap 22 a piece is removed sufficient to provide a slot through which a flap 24 may extend and be bent as at 23 around the lower edge of the material of the end 20 from which the upper edge of the section 22 is cut, said flap 24 extending vertically at the outer side of the end section 20 and being stapled in position. In the upper edge portions of the ends as thus formed vertical slots 25 are cut which extend into the parts 24 as shown in Fig. 7. When the cover sections are moved to closed position, as in Fig. 6, the flaps 4a enter said slots 25 and the outer flaps 18 extend at the outer sides of the end members 20. The end members are stapled in place in connection with the flaps 5 and 6 the same as previously described. The parts 22 will press inwardly on insertion of the hand and the lower sides of the U-shaped bends at 23 are what the hands engage against in lifting the container and its contents.

In Fig. 8 the structure is identical with that shown in Fig. 7 except the hand hole provided at 26 is made by removing the material and not leaving it as an inwardly movable covering part like 22 in Fig. 7.

In Fig. 9 the end is of double thickness, each end piece of paperboard stock used being bent to provide an inside section 27 which is bent back upon itself at 28 to provide a vertically extending outer section 29 which extends to the upper edge

of the first section 27 and is then inwardly bent over such edge, as at 30, and continued downwardly in a section 31 as shown. From the inner section 27 a hinged section 32 is cut at its two vertical edges and its upper horizontal edge, and from the outer part 29 an intumed flap 34 is bent as at 33 the flap 34 extending upwardly at the inner side of the section 31 and having a stapled connection thereto, this making a hand hole normally covered to exclude light by the part 32 and with the bearing surface at the bend 33 increased in area.

In Fig. 10 the end is of double thickness having an inner section 35, an outer section 36 lying against it, the two being integrally connected at their upper edge where the stock is bent as at 37. A hand hole opening 38 is made through both parts 35 and 36 and the material severed in making the hand hole from the outer part 36 is inserted through the opening and bent upwardly into U-shaped form as at 39 and continued upwardly at 40 at the inner side of the inside section 35 and the parts stapled in place. This makes a hand-receiving opening like the opening 26 in Fig. 8.

The invention in the various forms, which do not differ very materially from each other in structure, is very practical, useful and serviceable. Some containers require greater end strength and reinforcement than others, or in some cases the thickness of the paperboard may govern whether the ends shall be of double or single thickness of material. Reinforcement of the hand hole openings at their upper edges is provided in all cases without waste of material. The exclusion of light so that the contents enclosed with the container will not be affected thereby is desirable with certain kinds of contents enclosed, and such exclusion is provided in a simple and practical manner. The container is strong and durable and may be repeatedly used even in connection with the boxing, shipment and handling of relatively heavy merchandise.

The invention is defined in the appended claims and is to be considered comprehensive of all forms of structure coming within their scope.

I claim:

1. A receptacle or container of the class described comprising, a horizontal bottom, integral vertical sides and two cover sections one integral with and hinged connected at the upper edge of each of said sides and adapted to be turned inwardly over the open upper end of the container, said bottom and side sections at each end thereof having a projecting flap adapted to be turned upwardly and inwardly, respectively, at each end of the container, an end member for each end of the container comprising a continuous piece of material folded upon itself to form inner and outer sections lying against each other and within said flaps, and means permanently connecting the flaps to said end members, said end members having slots at their upper portions and said cover sections having flaps at their inner adjacent edge portions when the same are located over the open upper end of the container adapted to enter said slots as and for the purposes specified.

2. A construction containing the elements in combination defined in claim 1, each of said end members having a hand-passing opening therein between its upper and lower edges provided by cutting the material of one of said sections of each end member to provide the opening and extending a part of the material of the other of said sections of each end member through said

opening under the upper edge thereof and turning the same upwardly to lie against the end member and means for securing said upwardly turned portion to said end member.

5 3. A container or receptacle of the class described comprising, a horizontal bottom, vertical sides, cover sections, one integral with and hingedly connected at the upper edge of each side, and end flaps one at each end of the bottom and at each end of each of the sides, said cover sections at their outer edges having integrally connected hinged flaps and said cover sections being of less length adjacent their outer free edges than at their connection to the sides, end members one for each end of the box made up of a plurality of thicknesses located within the end flaps on said bottom and sides and located there-against and secured thereto, each of said end members having an integral inwardly turned section at its upper edge, said sections being adapted to be turned horizontally inward toward each other partly over the open upper end of the receptacle, and said cover sections overlapping the same when turned inwardly toward each other, each of said sections connected with the ends having a slot at its free edge through which the flaps on said cover sections are adapted to be passed.

4. A receptacle or container comprising, a horizontal bottom, vertical sides and end flaps connected one at each end of the bottom and at each end of each side, said flaps connected with the bottom being adapted to be turned upwardly and those connected with the sides turned inwardly toward each other, and end members, one at each end of the receptacle formed from a single length of material bent back upon itself to provide inner and outer parts lying against each other, over the entire area of said bent back parts and securing means passing through said flaps and the said parts of the end members, as specified.

5. A construction containing the elements in combination defined in claim 4, the inner part of each end member being cut through on two spaced apart vertical lines and on a horizontal line connecting the upper ends of the vertical cuts, and the outer part of each member being cut vertically on two spaced-apart lines and on a horizontal line connecting the lower ends of said vertical cuts, said material bounded by the three cuts in the outer part of each end member being bent inwardly and then upwardly against the inner side of the inner part of the end member thereby providing an opening through which the hand may be inserted which is normally closed by a yielding cover, as and for the purposes described.

6. A container or receptacle comprising, a bottom and vertical sides integral with each other, said bottom and sides having integral projecting flaps at each end thereof, the bottom flaps being turned upwardly and the end flaps being turned inwardly toward each other, end members for the receptacle comprising a continuous piece of material folded upon itself a plurality of times to form a plurality of sections located against each other, and means passing through said flaps and all of said parts of the end members to permanently connect the end members in place.

7. A construction containing the elements in combination defined in claim 6, said parts of the end members having sections severed therefrom at three sides and integrally connected at a

fourth side for the provision of hand-hole openings through said end members, one of the parts thus partially severed being carried through the opening in each end member at the upper part thereof and return-bent upwardly and stapled to the end members thereby providing a relatively broad bearing surface at the lower edge of each of said openings.

8. A receptacle or container comprising, a horizontal bottom, vertical sides integral with and turned upwardly at the side edges of said bottom, each of said sides having a flap at each end thereof and the bottom having a flap at each end thereof, the bottom flaps being turned upwardly and the flaps at the ends of the sides being turned inwardly, end members comprising a plurality of thicknesses of material located inside one another and formed of a single length of material folded back upon itself, said end members being disposed within said flaps, means permanently securing the flaps and the end members together, each of said end members having a vertical downwardly extending slot therein at its upper edge, and cover members hingedly connected one to the upper edge of each side of the container adapted to be turned inwardly toward each other and at their meeting edges when thus turned toward each other having downwardly extending portions entering said slots, each of said end members having a hand-receiving opening therein and an integral reinforcement for the end members above each of said openings comprising, a part partially severed from one of the parts of each of said end members extending therefrom through the opening therein, and bent to extend vertically upward above the opening in contact with another of said thicknesses and secured to the end member in its vertically extending position.

9. A box structure having an end formed of a single length of material folded back upon itself to provide a plurality of thicknesses, said end having a hand hole opening spaced downwardly from its top edge, one thickness of the material of said end being folded downward upon itself and terminating substantially parallel with the upper edge of said hand hole opening.

10. The elements in combination defined in claim 9 combined with a flap formed integrally with one of said portions and extending through said hand hole opening and folded upwardly against the other of said portions.

11. A box structure having an end formed of foldable material comprising a first portion extending downwardly from the top edge of the end to the bottom edge of the end, a second integrally formed portion folded against said first portion and extending upwardly to the top edge of the end, said first and second portions having registering hand hole openings spaced downwardly from the top edge thereof and a third portion formed integrally with said second portion and folded over the top edge of said first portion and thence downwardly and terminating substantially parallel with the upper edge of said hand hole.

12. The elements in combination defined in claim 11 combined with a flap formed integrally with said second-named portion and extending through said hand hole opening and folded upwardly against said third-named portion.

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