Aug. 17, 1943. R. C. HURREY ET AL 2,326,947

SHIPPING CONTAINER

Filed Aug. 4, 1940

Fig. 1.

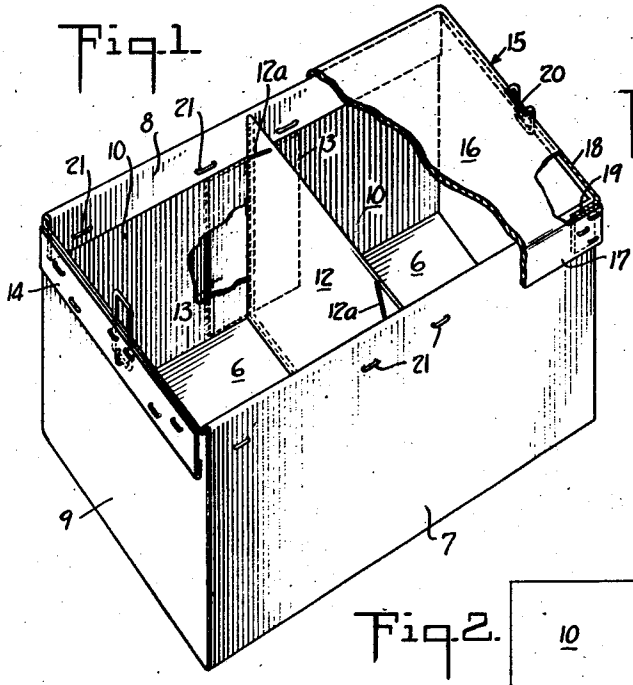


Fig. 4.

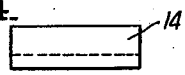


Fig. 5.

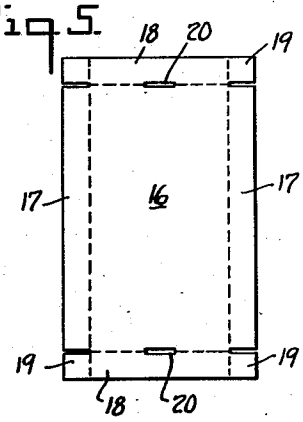


Fig. 2.

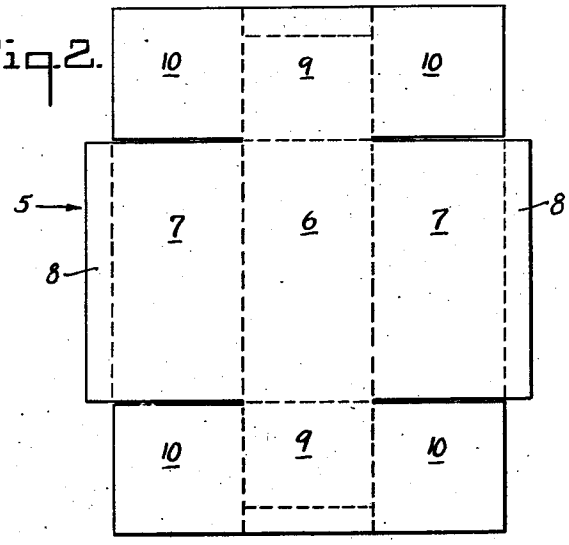


Fig. 3.

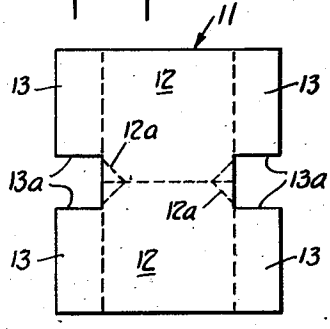


Fig. 6.

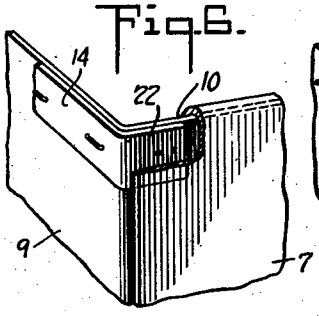


Fig. 7.

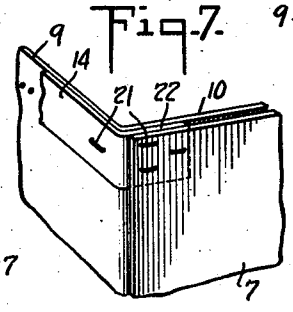
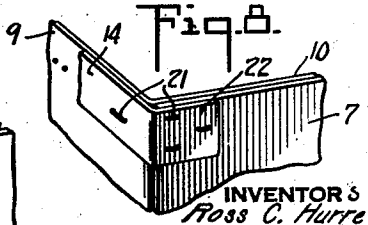


Fig. 8.



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UNITED STATES PATENT OFFICE

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SHIPPING CONTAINER

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Application August 4, 1940, Serial No. 351,418

4 Claims. (Cl. 229—15)

This invention relates to new and useful improvements in containers and particularly seeks to provide a novel box formed from cheap material and provided with reinforced top corner portions.

An object of this invention is to provide a box formed from double face corrugated board or the like which includes interengaging flap portions in the sidewalls thereof and reinforcing strips secured to the upper edges of the ends thereof to thereby provide a receptacle having characteristics of great rigidity.

Another object of the invention is to provide a box of the character stated which includes a double walled partition extending transversely of the box and disposed intermediate the ends thereof and which is retained in position by interengaging flap portions forming the side walls of the box.

Another object of the invention is to provide a box of the character stated in which the partition is provided with angularly disposed scores located adjacent the top corners to thereby provide triangularly shaped tabs which can be bent to one side to facilitate the assembly of the box.

Another object of the invention is to provide a box of the character stated, the body of which is formed from a single blank of sheet material.

Another object of the invention is to provide a box of the character stated which is readily adaptable for shipment in blank form and which can be readily assembled at a packaging plant without the use of special assembly jigs.

Another object of the invention is to provide a box of the character stated which is simple in design, rugged in construction and economical to manufacture.

With these and other objects in view, the nature of which will become more apparent, the invention will be more fully understood by reference to the drawing, the accompanying detailed description, and the appended claims.

In the drawing:

Fig. 1 is a perspective view of a box constructed in accordance with this invention;

Fig. 2 is a plan view of a blank from which the body of the box is formed;

Fig. 3 is a plan view of the blank from which the transversely disposed partition is formed;

Fig. 4 is a plan view of the blank forming the end reinforcing strip;

Fig. 5 is a plan view of the blank from which the lid is formed;

Fig. 6 is an enlarged detail perspective view of a modified form of corner structure;

Fig. 7 is a similar view of another modified form of corner structure; and

Fig. 8 is a view similar to Fig. 7, but showing the end tabs of the reinforcing strip disposed outside of the side wall panel.

Referring to the drawing in detail the invention as illustrated is embodied in a box which is preferably formed from double faced corrugated board or the like. In Fig. 2 of the drawing there is illustrated a preferred form of blank from which the body of the box is formed and which includes a bottom panel 6, side wall panels 7—7, each of which includes a relatively narrow extension flap 8 extending the full length thereof, and panels 9, and inner panels 10 extending laterally from each side of each end panel.

In assembling the box body from the above described blank, the inner panels 10 are bent upwardly until they are disposed at right angles to the general plane of the blank and then the end panels 9 are bent upwardly thereby swinging the inner panels inwardly to a position where they overlie the edge portions of the bottom panel 6. It should be noted that the length of the inner panels 10 is such that the opposed ends thereof in the assembled position substantially meet, and the heights thereof are substantially equal to the height of the side panels 7. Then the side panels 7 are bent upwardly so that the inner faces thereof are disposed in substantial surface contact with the outer faces of the panels 10, thereby defining a box body including a bottom, side and end walls.

At this stage of assembly a transversely extending partition may be inserted. The partition is preferably formed from a blank 11 including adjacent panel portions 12—12 each of which is provided with laterally extending locking flaps 13. The opposing edges 13a of the locking flaps are spaced a distance substantially equal to twice the width of the sidewall flap extensions 8 for a purpose which will be made more fully apparent. The panels 12—12 of the partition are brought into mutual proximity by folding along the junction line between the two, and the locking flaps 13 are then respectively bent outwardly at right angles from the general plane of the partition thus formed. The partition may then be inserted into the box body undergoing assembly in such a manner that the adjacent panel portions 12 thereof are disposed intermediate the opposed ends of the respective inner panels 10 and the outwardly extending flaps 13 of the partition are disposed interme-

diate the inner panels 10 and the respective side walls 7.

In order that the said panel extension flaps 8 may be bent over the respective opposed inner panels 10 to lock the same into assembled position, it may be necessary to score the top corner portions of the partition along lines generally indicated at 12a, thereby forming triangularly shaped tabs which are displaceable to thereby provide clearance for movement of the flaps 8 into the securing position. Of course, after the flaps 8 have been bent into a position overlying the inner panels 10, the whole assembly may be rigidly secured through the medium of a plurality of spaced staples or other fastening devices generally indicated at 21. It should be noted that the edges 13a of the partition flaps 13 are disposed below the lower edges of the turned down side flaps extensions 8 and do not therefore interfere with the side flap extensions.

In order to provide means for facilitating the lifting of a filled box and to strengthen the ends thereof a reinforcing strip 14 is rigidly secured adjacent the top edge of each end. The reinforcing strip may be provided with a return fold portion along its lower edge to avoid having any rough, exposed edges. Thus it will be apparent that the return fold portion of the reinforcing strips 14 provide surfaces of increased area beneath which the fingers of a user may be more easily positioned. It should be noted that the reinforcing strips 14 are preferably affixed to the box blank at the factory in order that the box may be assembled in the packaging plant in a minimum length of time.

A box thus formed may be provided with the usual closure or lid constructed from a blank 15 and including a top panel portion 16, side panel portion 17 and end panels 18, each of which is provided with a pair of relatively short laterally extending flaps 19 which are utilized in securing the lid in the closure forming position. The lid is also provided with a pair of aligned slots 20 respectively located along the junction line between the top panel portion 16 and the respective end panels 18 which are adapted to receive the staple portion of a lid securing device.

In Fig. 6 of the drawing there is illustrated a modified use of the end reinforcing strip which, in this instance, serves to reinforce the corners of the box as well as the upper edges of the end walls. The reinforcing strips 14 are provided with end extensions 22 which are bent around the corners of the box and overlie the outer surfaces of the end panel flap extensions 10, thereby being disposed intermediate the flap extensions 10 and the associated side wall panels 7. The side wall extension flaps 8 are turned inwardly over the panels 10 as described in connection with the box disclosed in Fig. 1, and the entire corner structure is rigidly secured by fastening devices 21.

A further modification of corner structure is disclosed in Fig. 7 of the drawing and is generally similar to that disclosed in Fig. 6, except that the side flap extensions 8 have been eliminated. The end reinforcing strip extensions 22 are disposed intermediate the side wall panels 7 and the panels 10 in the manner described, and the corner structure is rigidly secured by the fastening devices 21.

An additional modification of corner structure is illustrated in Fig. 8 of the drawing and is generally similar to that disclosed in Fig. 7, except that the extensions 22 of the end reinforcing strips are carried around to the outside of the side wall panels 7 instead of being disposed intermediate the side wall panels and the inner panels 10.

It should be noted that in the forms of box structure employing the side wall flap extensions 8 the flap extensions 8 may be slotted to fit over the partition when being folded, instead of providing displaceable tab portions at the upper corners of the partition.

Thus it will be seen that the herein described invention provides a novel box formed from sheet material which includes inter-engaging flap portions in the side walls, reinforcing strips secured to the upper edges of the ends thereof, and novel corner structures, all combining to provide a receptacle having characteristics of great rigidity; which is simple in design, rugged in construction, and economical to manufacture.

It is, of course, to be understood that various details of arrangements and proportions of parts of this invention may be varied without exceeding the scope of the appended claims.

We claim:

1. A box formed from sheet material and including a bottom, end wall panels formed integral therewith, side wall panels formed integral with said bottom, said end wall panels each being provided with flap portions integrally formed therewith and disposed inwardly of and in substantial surface contact with the inner faces of said side wall panels, said end flap portions being of such length that the opposed edges thereof are disposed in close proximity thereby forming vertical slots, a transversely extending partition insertable in said slots and comprising a body portion of a height substantially equal to the height of the inner faces of said end and side panels, and locking tabs of less height than and formed integrally with the body of said partition, said locking tabs being disposed intermediate the respective side wall panels and associated end flap portions to secure said partition in said slots, said side wall panels each being provided with a relatively narrow flap portion extending the full length thereof and folded inwardly over said end panel flap portions to thereby lock said end panel flap portions and said partition in position, the upper corners of said partition being provided with angularly disposed scores defining triangularly shaped tab portions bendable out of the plane of the body of said partition to provide clearance for the inward folding of said narrow side flap portions and rebendable into the plane of the body of said partition to abut the inner surfaces of said infolded narrow side flap portions, and means for securing said narrow side flap portions in said folded position.

2. A box formed from sheet material and including a bottom, end wall panels formed integral therewith, side wall panels formed integral with said bottom, said end wall panels each being provided with flap portions integrally formed therewith and disposed inwardly of and in substantial surface contact with the inner faces of said side wall panels, said end flap portions being of such length that the opposed edges thereof are disposed in close proximity thereby forming vertical slots, a transversely extending partition insertable in said slots and comprising a body portion of a height substantially equal to the height of the inner faces of said end and side panels, and locking tabs of less height than and formed integrally with the body of said partition,

said locking tabs being disposed intermediate the respective side wall panels and associated end flap portions to secure said partition in said slots, said side wall panels each being provided with a relatively narrow flap portion extending the full length thereof and folded inwardly over said end panel flap portions to thereby lock said end panel flap portions and said partition in position, the upper corners of said partition being provided with angularly disposed scores defining triangularly shaped tab portions bendable out of the plane of the body of said partition to provide clearance for the inward folding of said narrow side flap portions and rebendable into the plane of the body of said partition to abut the inner surfaces of said infolded narrow side flap portions, means for securing said narrow side flap portions in said folded position, and reinforcing strips secured to said end wall panels and disposed adjacent the top edges thereof.

3. A box formed from sheet material and including a bottom, end wall panels formed integral therewith, side wall panels formed integral with said bottom, said end wall panels each being provided with flap portions integrally formed therewith and disposed inwardly of and in substantial surface contact with the inner faces of said side wall panels, said end flap portions being of such length that the opposed edges thereof are disposed in close proximity thereby forming vertical slots, a transversely extending partition insertable in said slots and comprising a body portion of a height substantially equal to the height of the inner faces of said end and side panels, and locking tabs of less height than and formed integrally with the body of said partition, said locking tabs being disposed intermediate the respective side wall panels and associated end flap portions to secure said partition in said slots, said side wall panels each being provided with a relatively narrow flap portion extending the full length thereof and folded inwardly over said end panel flap portions to thereby lock said end panel flap portions and said partition in position, the upper corners of said partition being provided with angularly disposed scores defining triangularly shaped tab portions bendable out of the plane of the body of said partition to provide clearance for the inward folding of said narrow side flap portions and rebendable into the plane of the body of said partition to abut the inner surfaces of said infolded narrow side flap portions, means for securing said narrow side flap portions in said folded position, and reinforcing strips secured to said end wall panels and disposed adjacent the top edges thereof, said reinforcing strips being provided with extension tabs disposed intermediate the respective side wall panels and the end panel flap portions associated therewith.

4. A box formed from sheet material and including a bottom, side wall panels, and end wall panels including flap portions formed integral therewith and disposed adjacent the inner surfaces of said side wall panels with the opposed ends thereof slightly spaced to form vertical slots, a transversely extending partition receivable by said slots, and comprising a body portion of a height substantially equal to the height of the inner faces of said end and side panels, and locking tabs of less height than and formed integrally with the body of said partition, said locking tabs being disposed intermediate the respective side wall panels and associated end flap portions to secure said partition in said slots, said side wall panels being each provided with a relatively narrow flap extending the full length thereof, said narrow flaps being folded inwardly over said end wall flap portions to thereby retain the same and said partition in position, the top corner portions of said partition being displaceable out of the plane of the body of said partition to provide clearance for the inward folding of said narrow flaps, and displaceable back into the plane of the body of said partition to abut the inner surfaces of said infolded narrow side flap portions and means for securing said narrow flaps in the folded-over position.

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