July 3, 1956 H. F. ZIMMERMAN 2,753,101

SHIPPING CONTAINER

Filed Sept. 29, 1954 3 Sheets-Sheet 1

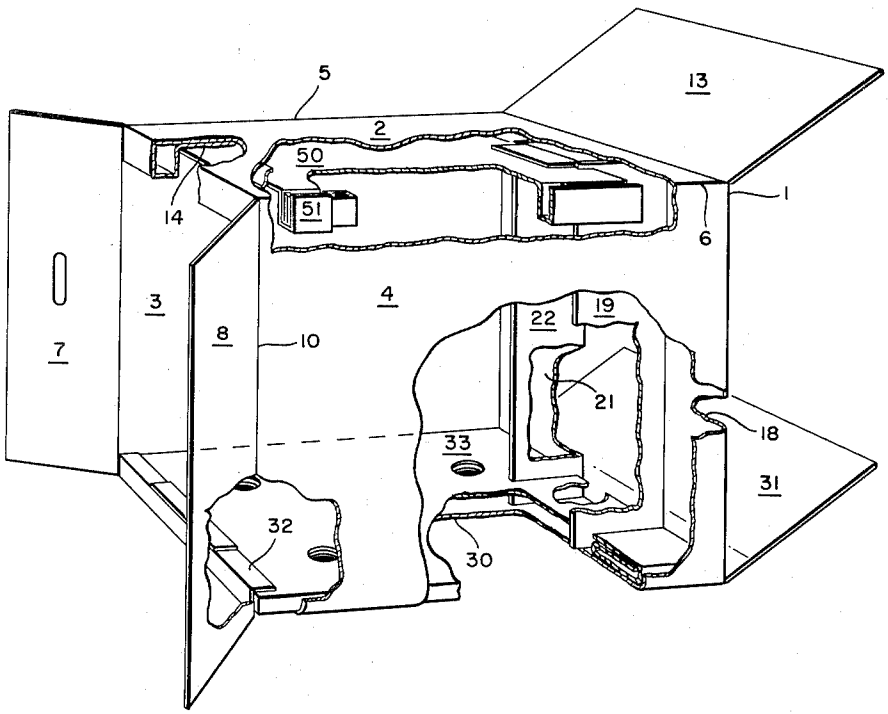


FIG. 1

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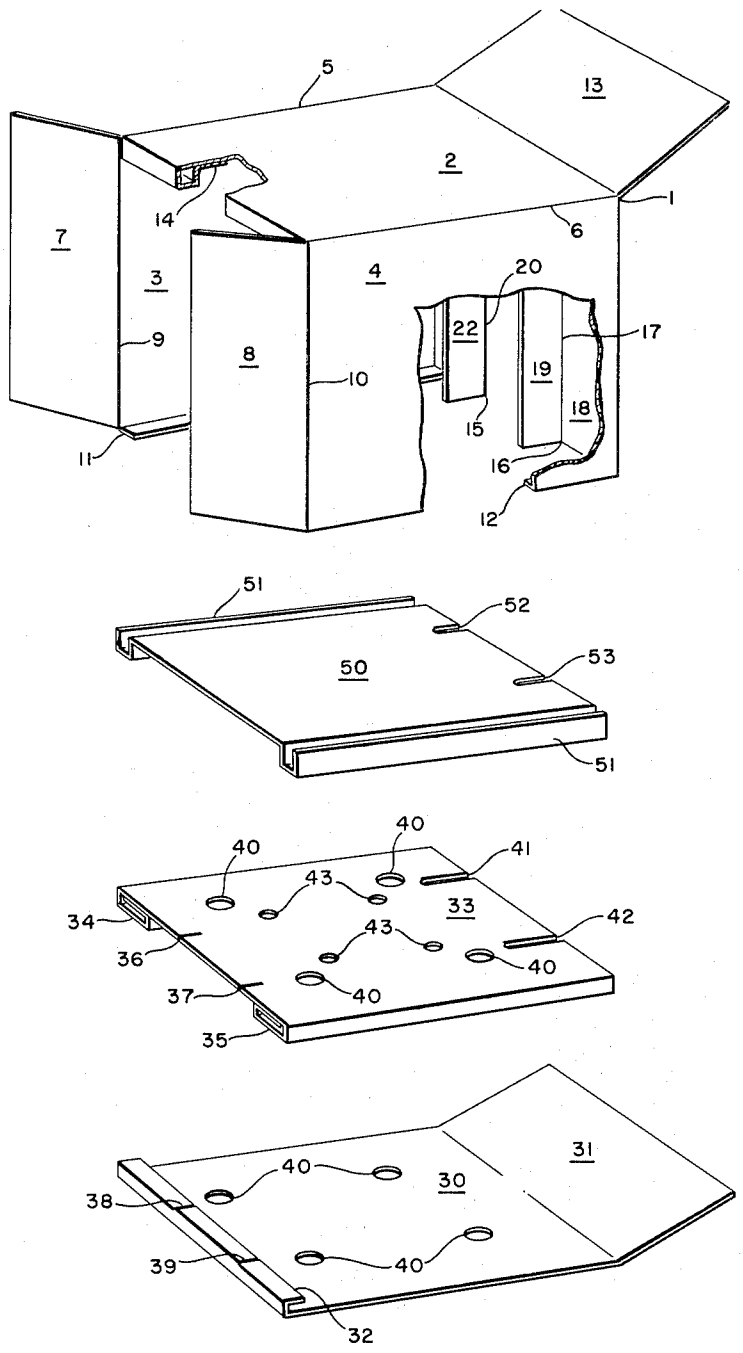
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FIG. 2



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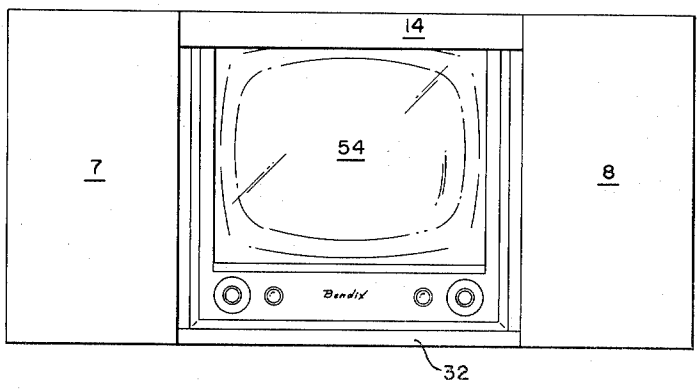
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SHIPPING CONTAINER

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FIG. 3



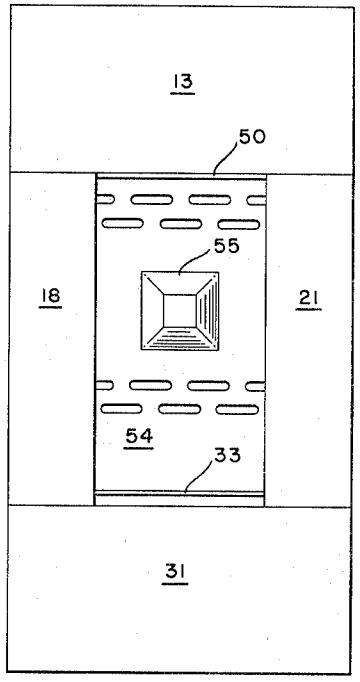


FIG. 4

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2,753,101

SHIPPING CONTAINER

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Application September 29, 1954, Serial No. 459,098

1 Claim. (Cl. 229—14)

This invention relates to cartons or containers for the shipment of merchandise and more particularly to a container which lends itself to the housing of an article which must be accessible subsequent to its original packaging, but is intended for ultimate sale or delivery in the packaged state.

Such a container, while finding application for the packaging of a wide variety of articles in the above category, may be considered by way of example, as applied to the packaging of television receivers.

In the manufacture of such receivers it is customary to manufacture the cabinet in one plant and the electrical portions of the receiver in another. The electrical apparatus including the picture tube, is all mounted on a unitary base or chassis. The finished cabinet, having been completed at a remote plant is shipped to the point of manufacture of the electrical apparatus in the container intended to ultimately house the completed receiver. Upon arrival the cabinet is removed from the container, the container being stored temporarily, and the cabinet, after inspection for blemishes, is fed into the receiver assembly line at the point where the electrical apparatus is complete except for the control knobs.

After the electrical apparatus is installed in the cabinet, and the control knobs attached, the completed receiver is tested and inspected and then repacked in its container and shipped to a dealer.

There are several disadvantages involved in this procedure. The labor required to remove the empty cabinet from its container, store the container and insert the completed receiver into the container adds to the cost of manufacture. Furthermore, the finished cabinet is exposed to the hazards of the assembly line during insertion of the electrical portion of the receiver thereinto, the testing of the completed receiver and its packaging. Many cabinets become marred or fingerprinted and this necessitates a final inspection of the cabinet and the touching up of any blemishes before final packaging.

It is an object of the invention to provide a container for merchandise into which said merchandise may be placed in an unfinished state, which will house and protect said merchandise during completion while rendering said merchandise accessible for the operations essential to completion, and which may, upon completion of the merchandise, be arranged to completely house and protect said merchandise during shipment.

It is a further object of the invention to provide such a container to which said merchandise may be secured and released from outside the container.

It is a still further object of the invention to provide such a container in which vertical components of the container are folded to provide columns to greatly increase the vertical strength thereof and to permit stacking of the filled containers without damage to the containers or their contents.

These and other objects and advantages of the invention are realized by a rectangular carton having the top and two opposite sides formed of an integral sheet of material such as corrugated paper board with vertically hinged flaps extending from the edges of the side pieces which will be at the front of the container and a horizontally hinged flap extending from the edge of the top portion which will be at the rear of the container. The bottom of the container is formed by a separate piece of corrugated paper board having a foldable front flap and a rear flap similar to that extending from the top of the carton and foldable, thereby to close the back of the carton. The bottom piece is secured along its lateral edges to the lower edges of the side pieces. Hinged to the rear vertical edges of the side pieces and integral therewith are two foldable flaps for a purpose which will be indicated later.

A bottom skid member is formed of a separate sheet of corrugated board having its lateral edges folded underneath to form protective padding and support for the merchandise during assembly operations. The bottom member of the carton and the skid member are secured to the bottom of the merchandise by bolts or screws. The skid member has formed in its rear portion slots extending fore and aft with respect to the carton and receiving the above mentioned foldable portions of the rear flaps of the side members of the container, whereby these flaps when so secured form columns for the vertical support of the container and its contents when containers are stacked.

A separate top insert of corrugated board with its side portions folded into abutments is also provided. The rear portion of this insert is also provided with slots to receive the column forming flaps.

The instant invention is an improvement in the shipping container disclosed in application Serial No. 396,425, filed December 7, 1953, in the name of the present applicant and entitled "Shipping Container." The present invention is similar in many respects to the disclosure of that application but provides vertical strengthening means in the structure of the carton to enable cartons containing merchandise to be stacked without deformation of the carton or injury to its contents.

Referring now to the drawing:

Fig. 1 is an assembly view of a carton embodying the invention, shown in perspective with portions thereof cut away;

Fig. 2 is an exploded view, in perspective, of the carton of Fig. 1;

Fig. 3 is a front view of the carton of Fig. 1 with the side flaps open showing a television set housed therein; and

Fig. 4 is an elevational view of the rear of the assembly of Fig. 3 showing the column forming flaps in place for that purpose and the top and bottom flaps of the rear of the carton open.

Referring now more particularly to the figures in the drawing, there is shown in Figs. 1 and 2 a sheet 1 of cardboard or corrugated paper board of which the top and sides of the carton are formed. The rectangular top panel 2 occupies the central portion of the sheet, being separated from the rectangular side panels 3 and 4 by fold lines 5 and 6. The front edges of panels 3 and 4 terminate in flaps 7 and 8, respectively, which are joined to their respective side panels by way of creased or hinged lines as indicated at 9 and 10. These flaps, when closed against the forward edge of the top panel, completely close the forward side of the carton.

Hinged to the bottom edges of side panels 3 and 4 are narrow flaps 11 and 12, respectively. These are normally turned inwardly to extend at right angles to their respective panels and furnish attaching strips to which the bottom member of the carton is secured by conventional means. Hinged to the rearward edge of the top panel 2 is a rectangular flap 13, which when closed

against the rear of the carton will cover a portion of it. The forward edge of the top panel 2 terminates in a rectangular flap 14, which is provided with three parallel crease lines by means of which it may be folded inwardly and upwardly to form a hollow rectangular abutment beneath the forward edge of the top panel with its terminating portion lying in contact with the under surface of the top panel, as shown in the cut away portions of both Figs. 1 and 2.

Extending from the rearward edges of the side panels 3 and 4 and hinged thereto are flaps 15 and 16. Each of these panels is divided into two vertically extending portions by a crease line which allows its terminating portion to be folded inwardly of the carton to extend parallel to the side panels thereof. Such a crease line is shown at 17 for the flap 16, dividing that flap into vertically extending portions 18 and 19. A similar crease line 20 is shown for the flap 15, dividing it into vertically extending portions 21 and 22.

The bottom of the carton is formed from a separate rectangular blank 30, the lateral edges of which are secured in superimposed relationship to the narrow flaps 11 and 12. Formed at the rear of this member is a flap 31 foldable to lie against the rear face of the carton and to cooperate with the flap 13 to completely close that face. The forward edge of the blank is provided with two parallel crease lines defining a foldable flap 32 which can be folded as shown in Fig. 2 to lie above and extend toward the rear of the bottom of the carton.

Resting on the bottom member 30 of the carton is a skid member 33 which is formed from a rectangular blank having its lateral edges folded underneath, along parallel fold lines to form pads or abutments 34 and 35 of rectangular cross-section. The forward edge of this member is provided with two slots 36 and 37 extending before and aft thereof and matching similar slots 38 and 39 formed in the terminating portion of the flap 32 of the bottom member of the carton. By means of these slots the central portions of the forward edges of the member 30 and the skid 33 can be interleaved as shown in Fig. 1. The skid member 33 is provided with holes 43 through which bolts or screws are passed to secure merchandise thereto for shipping purposes. The members 30 and 33 are provided with matching holes 40 to provide access to enclosed merchandise. The rearward edge of the skid 33 is provided with a pair of slots 41 and 42 extending fore and aft and receiving the flaps 22 and 19, respectively, when the carton is assembled. A top pad 50 is also provided. This pad is formed of a rectangular blank having its lateral edges folded along parallel crease lines to form abutments 51 which, when the carton is assembled, lie along the side panels thereof to provide lateral cushioning for the contained merchandise and to space it from the side panels. Formed in the rearward edge of this pad are a pair of slots 52 and 53 extending fore and aft with respect to the carton and receiving the flaps 22 and 19, respectively.

The carton is shown fully assembled in Fig. 1 with all the elements thereof positioned as they are when merchandise is housed within it. It will be noted that the top pad 50 lies under and in contacting relationship with the terminating portion of the front flap 14 and holds it against the top of the carton, thus maintaining the hollow rectangular abutment which is a part of this flap. This abutment provides cushioning and spacing means for the merchandise with respect to the flaps 7 and 8 forming the front of the carton. The skid member rests on the bottom member 30 and the forward edges thereof are interleaved. The flaps 22 and 19 are received in slots 41, 42, 52 and 53 of the members 33 and 50 to define, with the flap portions 18 and 21 and the side panels 4 and 5 of the carton, vertical hollow columns which act to greatly strengthen the carton against thrust applied in a vertical direction, thus enabling cartons filled with merchandise to be stacked in pairs containing several layers without damage to the carton or its contained merchandise.

Figs. 3 and 4 show the carton of Figs. 1 and 2 in use for the housing and shipping of television sets. Fig. 3 shows the front flaps 7 and 8 open to reveal the entire forward face of the enclosed television set 54, except for the upper portion thereof which is behind the abutment 14. The television set is secured to the skid member 33 by bolts or screws, not shown, which extend through the holes 43 as indicated above.

Fig. 4 shows the rear of the carton with the flaps 13 and 31 open to expose the intermediate portion of the rear of the enclosed television set. In such sets as now made the rear end of the picture tube extends beyond the cabinet, this extension being housed in a protective protruding covering secured to the rear panel of the cabinet, such enclosure being indicated here as a truncated pyramid 55. The flap members 18 and 21 are shown, the members 19 and 22 being invisible from this point of view when they are housed within the slots of the members 33 and 50. When so housed and when the flaps 13 and 31 are closed and secured, these flap portions not only furnish vertical strength but also act as spacing means and padding against any movement of the cabinet to the rear of the carton or against blows from the outside. These portions are preferably proportioned so as to space the member 55 from the rear face of the carton.

The carton of this invention is intended for use as a housing for items of furniture or other merchandise having external surfaces subject to injury and requiring handling having access to the interior. Its application to television receivers during manufacture has been referred to above by way of example and its use with respect to such merchandise will now be further explained without the intention of restricting the application of the invention to this particular item.

When used as a housing for television receivers the cartons would normally be shipped to the cabinet factory. There a cabinet is secured to the member 33 by the insertion of bolts or screws backed with washers through the holes 43 and is then slid into the carton, through the rear opening thereof with the member 33 acting as a skid. The portions 14 and 51 of the carton space and cushion the cabinet with respect to the front and side walls thereof, while the portions 34 and 35 cushion it at the bottom. The securing of the cabinet to the member 33 positions it away from the front and side walls at the bottom. Now the members 15 and 16 are folded shut at the rear of the container with the portions 19 and 22 received in the slots 53 and 52 at the top and in the slots 42 and 41 at the bottom. This completes the cushioning arrangements for the cabinet with respect to the walls of the carton. The door flaps 7 and 8 in front and 13 and 31 in the back are now folded shut and taped or stapled into place for shipment.

The carton and contents are now shipped to the receiver plant. At this point the door flaps 7, 8, 13 and 31 are opened and may be clipped or otherwise held back against the side walls 3 and 4 and the top and bottom, to allow complete access to the front and back of the cabinet. The packaged cabinet with the carton opened in this manner is fed into the receiver assembly line and the receiver is inserted and screwed or bolted into its proper position in the cabinet, through the access holes 40 left in the members 30 and 33. Now the receiver is moved along the assembly line for the final assembly of knobs and is tested in its assembled state. During this passage down the line to several stations the member 33 acts as a skid to cushion and protect the enclosed receiver. The carton protects the finish of the receiver from injury during this operation.

When testing is complete the door flaps 7, 8, 13 and 31 are retaped and the assembly shipped to the distributor. The receiver remains readily accessible for any

testing or inspection which may be necessary between shipment and ultimate delivery to the consumer, without the necessity of its removal from the carton.

The housed receivers may be stacked in storage rooms or in railroad cars during shipment without danger of damage to the merchandise from crushing due to the action of the back flaps 15 and 18 in strengthening the container against vertical thrust.

What is claimed is:

A rectangular shipping container comprising a first member constituting the top and sides of said container; said member comprising a central rectangular panel forming said top, a pair of rectangular panels hinged to opposite sides of said central panel and forming opposite sides of said container, a tab portion hinged to one of the remaining sides of said central panel, said tab portion being folded about parallel fold lines to form an abutment depending from said central panel between said opposite sides, a rectangular flap hinged to the remaining side of said central panel and closing a portion of the back of said container, a pair of rectangular flaps each hinged to the front edge of a respective one of said rectangular side panels and acting together to close the front of said container, and a pair of narrow rectangular flaps each hinged to the bottom edge of a respective one of said side panels and extending parallel to said central panel; a second member comprising a rectangular blank terminating on two opposing sides in multiply folded portions depending from said blank, said blank being located inside said container and in underlying contact with said central panel and being so dimensioned as to form said tap portion of said central panel into said

abutment and to maintain it so formed, said second member having formed in it a pair of slots extending in a fore and aft direction from the rear edge thereof a third member forming the bottom of said container, said third member comprising a rectangular blank terminating in its rearward edge in a rectangular flap hinged thereto and acting with the said rectangular flap hinged to the said remaining side of said central panel to completely close the back of said container; means securing said third member to said pair of narrow rectangular flaps hinged to the bottom edges of said side panels; a fourth member comprising a rectangular blank terminating in its lateral edges in tab portions folded into pads lying beneath said blank, said rectangular blank having formed in it a pair of slots extending parallel to the said slots formed in said second member and lying directly therebeneath; and a pair of rectangular flaps each hinged to the rear edge of a respective one of said side panels, each of the last named rectangular flaps having formed therein a fold line extending parallel to its hinge line and the terminating portion thereof being folded about said fold line to extend substantially parallel to the said opposite sides of said container and being received and held in one each of the said slots in said second and fourth members.

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