United States Patent

Boylan

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[54] **DISPLAY RACK**

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[52] **U.S. Cl.** **108/60,** 108/101, 108/111

[51] **Int. Cl.** **A47b 43/02**

[58] **Field of Search**.....108/60, 111, 101, 99, 109, 108/107; 248/174; 211/135, 248, 153

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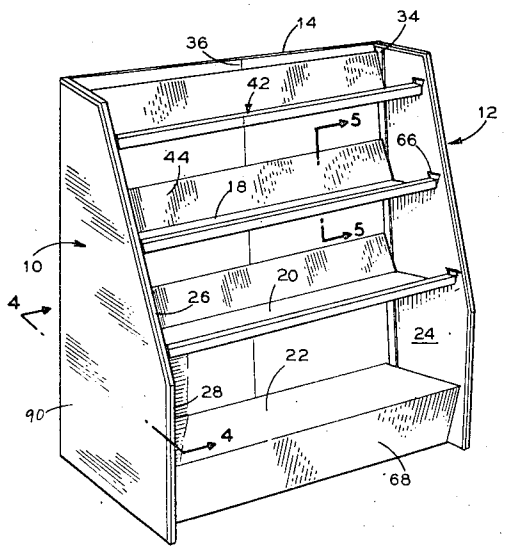
[57] **ABSTRACT**

A display case composed of paper in the form of corrugated cardboard fabricated to form relatively thick sections in appearance and treated to provide a wood grained appearance, the assemblage being light in weight, easy to assemble at the site of use and sturdy in construction. the frame is one piece and folds flat.

10 Claims, 9 Drawing Figures



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SHEET 1 OF 2

FIG. 1

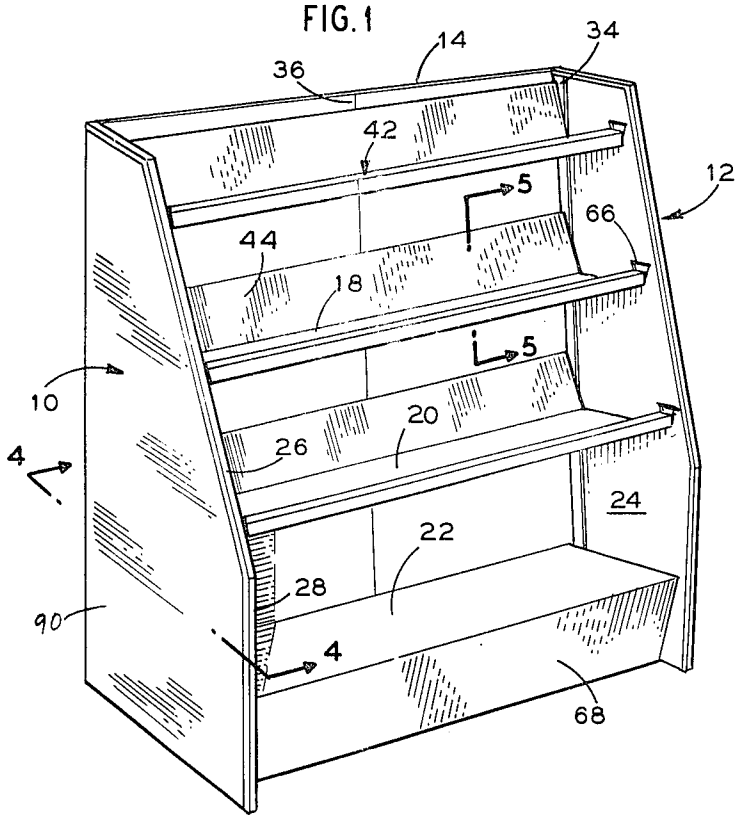

FIG. 4

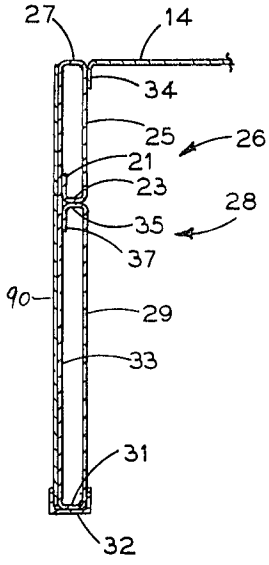

FIG. 2

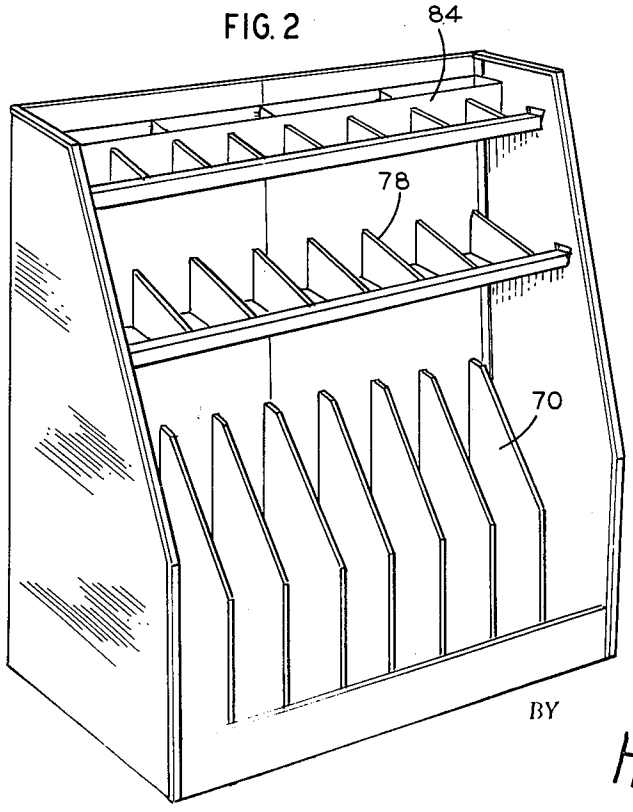

FIG. 7

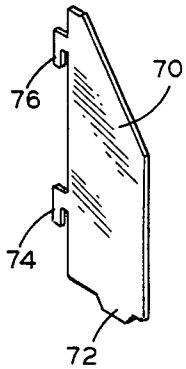

FIG. 6

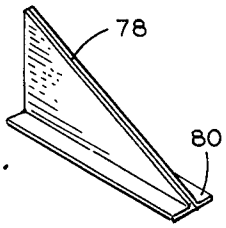

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FIG. 3

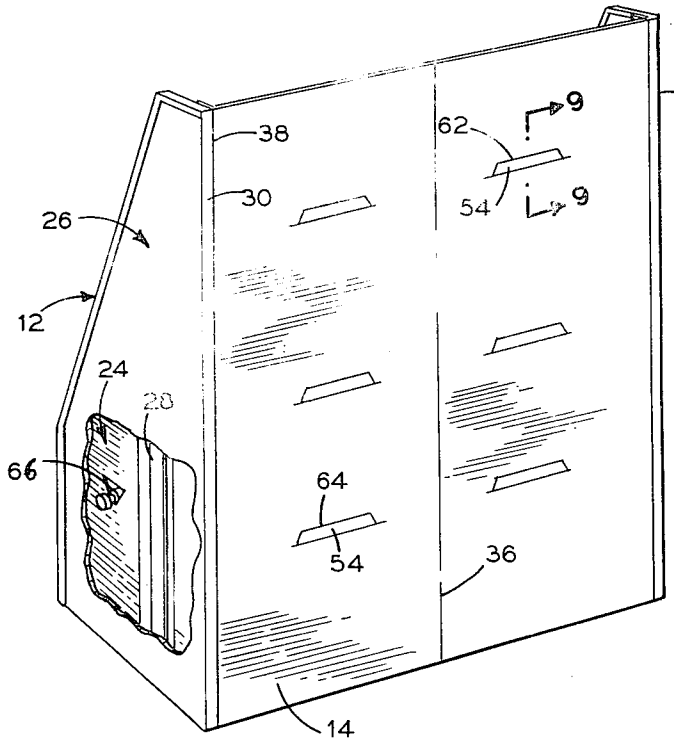


FIG. 5

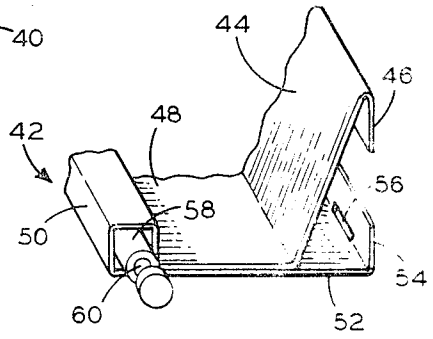


FIG. 8

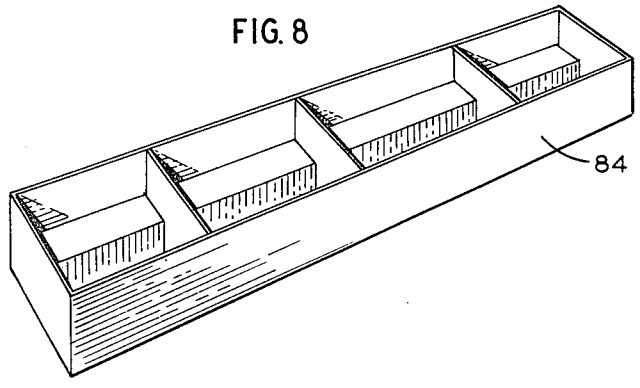
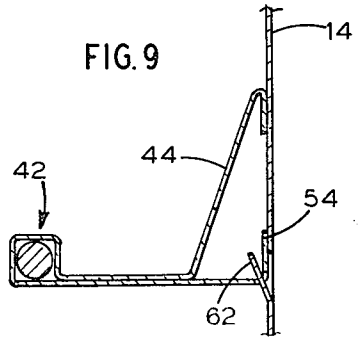


FIG. 9



DISPLAY RACK

This invention relates generally to a lightweight fixture or display case for utilization in a commercial establishment and more particularly to a prefabricated case constructed of paper for use in a wholesale establishment, a retail store, a public facility or a private home and being light in weight, strong and solid construction, and having a pleasing appearance.

Display cases or fixtures that are presently available for use in commercial establishments for the display on an annual, semi-annual, or seasonal basis of wares and merchandise, such as articles for sale during Christmas, Easter, or the like, are quite frequently metal cabinets or make-shift shelves. In many instances, articles which are in every day demand are moved to a less desirable area of display of a commercial establishment to provide temporary prime display space for the display of the seasonable items. Ordinarily, the display cases or fixtures for these seasonal wares must be dismantled and stored for the rest of the season.

It is an object of this invention to provide an inexpensive, disposable fixture or display case which can be used as a display of seasonal items.

It is another object of this invention to provide an aesthetically pleasing, one-piece display case for use in commercial establishments, which is prefabricated.

It is also an object of this invention to provide a display case which can be assembled and disassembled quickly and easily by the user at the location of its use.

It is an additional object of this invention to provide a display case which is light in weight and can be shipped economically, in a flat, knocked down condition.

It is still another object of this invention to provide a display case, which is sturdy in construction and appears to be composed of wood.

It is still another object of this invention to provide a versatile display case which is economical to build and assemble, and easy to move.

These and further objects and advantages of the present invention are achieved, in general, through the use of a display case composed of paper, in the form of corrugated cardboard, fabricated to form relatively thick sections in appearance and treated to provide a wood grained appearance.

The novel features that are considered characteristic of this invention are set forth with particularity in the appended claims. The invention itself, however, both as to its organization and method of operation, as well as additional objects and advantages thereof, will best be understood from the following description when read in connection with the accompanying drawings wherein:

FIG. 1 illustrates a front perspective view of a display case for use with boxed cards and the like in accordance with the principles of this invention;

FIG. 2 illustrates a front perspective view of a portion of a display case for use with gift wrappings and the like in accordance with the principles of this invention;

FIG. 3 is a back perspective view of the display case of FIGS. 1 and 2 with a portion of a side wall cut away;

FIG. 4 is a view along the line 4—4 of FIG. 1;

FIG. 5 is a view in perspective of a portion of a shelf;

FIG. 6 is a view, in perspective, of a shelf divider;

FIG. 7 is a side view of a bottom divider;

FIG. 8 is a view, in perspective, of a compartmented trough; and

FIG. 9 is a cross-sectional view along lines 9—9 of FIG. 3.

Referring specifically to FIG. 1, there is illustrated a front perspective view of a portion of a display case for use with boxed cards and the like in accordance with the principles of this invention.

The display case, as viewed, is composed of a left side section 10, a right side section 12, a back section 14 interposed between and connected to the rear edges of the left and right side sections 10, 12, and a plurality of shelves positioned within the enclosure formed by the back section 14 and the two side sections 10, 12. Back section 14 and side sections 10 and 12 are integrally connected.

In FIG. 1, the display case illustrated has four shelves, a top shelf 42, a second shelf 18, a third shelf 20, and a bottom shelf 22.

Referring specifically to FIGS. 3 and 4, there is illustrated in detail the construction of the side sections 10 and 12. Each of the side sections 10, 12 are similar in design and construction and, therefore, a detail description of the right side section 12 will also be applicable as a description of the design and construction of the left side section 10.

Side section 12 is composed of an inside wall member 24 positioned parallel to and spaced from an outside wall member 26 by a distance sufficient to provide the side section 12 with a thickness substantially equal to that of a panel of wood normally used in the construction of a display case. A rib member 28 composed of two strips of corrugated paper or the like joined with adhesive can be positioned between the inside surfaces of the wall members 24, 26 to act as a supporting and reinforcing member. The side section 12 can be formed of a single sheet of corrugated cardboard shaped as illustrated in FIG. 4. Starting at one end of the sheet of corrugated cardboard, a plurality of bends are made to form the surfaces 21, 23, 25, 27, 29, 31, 33, 35 and 37. The surface 23 is secured by means of adhesive or the like to surface 35. Surface 21 and surface 37 are each secured to surface 33 by means of adhesive. The surfaces 23, 35, when joined with adhesive form the rib member 28. The joining of the surfaces 21 and 37 to the surface 33 with adhesive locks the rib member to the surface 24 to provide a sturdy structure.

The rib member is dimensioned to provide a spacing of ½ inch between the inside surfaces of the wall members 24, 26. While it is understood that the rib members can be positioned at any desired position within the side section 12, in practice the rib member was positioned to extend for the full length of the side section 12 from the very top edge to the bottom edge, somewhat closer to the back section 14 than the forward edges.

The outside surface of the wall member 26 can be either painted or treated or covered with a plastic overlay or a paper overlay having a wood grain finish contained thereon to create the impression that the side section 12, when viewed from the side 26, is composed of wood.

An edge strip 32 which can be composed of a shaped strip of plastic or metal colored in dark brown, white, black or the like, is positioned around the front side and top edges of the side section 12 to conceal the edge surface 31 between the wall members 24, 26 and to

provide a hard-wearing surface to the edge portions of the wall members 24, 26. The edge strip 32 can be "U" shaped or "C" shaped and secured by friction or by adhesive to the wall members 24, 26. In those instances where a "C" shape edge strip 32 is used, the edge strip 32 should be resiliant in nature and designed to require that the edges of the "C" or "U" must be spread apart to fit around the edge surface 31 of side section 12. In this manner the "C" shaped edge strip 32 will form a tight fit with the side edge of the wall members 24, 26 and the use of an adhesive can be eliminated.

While the use of an edge strip 32 is not required, in practice, the use of a "C" shaped edge strip 32 functioned well as a protection for the edge surface 31.

Thus, the right side member 12 can be considered to be a sheet of corrugated paper to form the walls positioned parallel to and spaced apart from each other to provide a hollow side member. The wall members 24, 26 are separated by and secured to the rib member 28, and coupled to the edge strip 32 to form a unitary member that is light in weight and relatively rigid in construction.

Naturally, if desired, the edge strip 32 can be positioned around the front side and top edge of the side member 12, or it can be positioned more completely or fully around the periphery of the side member 12.

The right side member 12 can be fabricated to any specific shape or configuration, the shape illustrated in FIGS. 1 and 3 being commonly used for display cases as it provides ready access, both physically and visually, to all of the shelves and/or compartments with ease.

As noted previously, the left side member 10 is similar in design, construction and shape to the right side member 12 and, therefore, a detail explanation of the construction of the left side member 10 will not here be presented.

It is to be understood that the side sections can be constructed to present the exposed edge of the seam between the surfaces 23, 25 to either the outside surface of the display case or the inside surface of the display case.

Interposed between the right side section 12 and the left side section 10 is a back section 14 composed of a single sheet of corrugated cardboard.

The side edges of the back section 14 are folded to provide two side flaps, one at each end, which extend from the top edge of the back section 14 to the bottom edge. The left side section 10 is secured by adhesive or the like to one of the side flaps, and the right side section 12 is secured by adhesive or the like to the other side flap 34. Each side flap of the back section is secured to the inside wall member of each of its corresponding sections to provide a seam which is not detectable on the outside of the display case. Thus a one-piece structure is provided.

The back section 14 is arranged to fold flat against itself along a vertically positioned centrally located fold line 36, and to also fold flat against the inside wall member of each of the side sections along the lines 38, 40, as shown best in FIG. 3.

Referring now to FIG. 5, there is illustrated a view in perspective of an end portion of a shelf that can be positioned between and coupled securely to the left side section 10, the right side section 12, and the back section 14.

The shelf 42 has a length that is substantially equal to the distance between the two side sections 10, 12 when in their open position. The shelf 42 can be formed from a single sheet of corrugated cardboard shaped to have a configuration such as that illustrated in FIG. 5. The shelf is shaped to have an upwardly extending back surface 44 supporting a downwardly extending edge 46, a flat top surface 48, a hollow square shaped raised edge 50, a flat bottom surface 52, and an upwardly extending edge or flap 54. The bend positioned between the flat bottom surface 52 and the upwardly extending end 54 supports rectangular cutouts 56, the width of the cutouts 56 being substantially equal to the thickness of the back section 14. A wood dowel 58 is positioned within the hollow, generally square-shaped raised edge 50, with a notch, having a width equal to the thickness of the wall member 24 of the side member 10 being provided at each end of the wood dowel. The notch is positioned in from the very end of the dowel, a distance equal to or less than the width of the rib member 28 which is positioned between the wall members 24, 26. Specifically, each end of the dowel 58 contains a notch 60, having the thickness of the inner wall of its corresponding side panel, and the distance between the notches being substantially equal to the distance between the side members 10, 12.

To provide support for the back edge of the shelf 42, flap engaging means 62 and 64 are provided in the back section 14; and to provide support for the front edge of the shelf 42, cut-out engaging means 66 are incorporated within the side sections 10, 12.

Referring to the back section 14, the flap engaging means can take the form of two generally inverted "U" shaped cuts 62, 64 which are provided for each shelf. Each inverted "U" shaped cut has a length slightly less than the length of the rectangular cutout 56 positioned within the bend of shelf 42 between the flat bottom surface 52 and the upwardly extending end 54. It is to be understood that in those instances where the shelf that is to be supported is relatively short in length, then a single inverted "U" shaped cut centrally positioned between the sides of the back section can be used rather than two inverted "U" shaped cuts.

The cut out engaging means within the side members are in the form of a generally circular cutout positioned within the inside wall member only of each side section; the cutouts being aligned with each other and being sized to accommodate dowels 58.

To assemble a shelf to the side sections 10, 12 and the back section 14, the flaps in back section 14 formed by the inverted "U" shaped cuts 62, 64 are bent slightly inward, towards the front of the display case. The shelf 42 is then positioned between the side sections 10, 12 with rectangular cutouts 56 receiving the flaps formed by the inverted "U" shaped cuts 62, 64, as illustrated in FIG. 9. The ends of the dowel 58 are then positioned within corresponding cutout engaging means within the side sections, the notches at each end of the dowel engaging the inside wall member of the corresponding side sections.

The flaps formed by the inverted "U" shaped cuts 62, 64 engage and provide rigid support for the back of the shelf.

The notches at the ends of the dowel, when in engagement with the inside wall member of the side sec-

tions prevent the side sections from swinging about the fold lines 38, 40. The hollow square-shaped edge 50 in combination with the dowel 58 provides a relatively rigid and sturdy front edge to the shelf and prevent boxes mounted on the shelf from sliding off.

To permit the end of the dowel to be easily positioned within the circular cutout positioned in the inside wall member of each side section, a flap 66 formed by two converging vertically positioned cuts which extend upward from the cutout for the dowel, which can be circular shaped, and which terminates at a fold line, can be provided. The flap 66 provides a yieldable member which folds into the hollow center of the side sections to enable the end of the dowel 58 to be urged straight down into the circular cutout and, when the dowel is positioned within the cutouts, the flap 66 springs back to engage the top end of the dowel to prevent the dowel from being easily removed from the cutout.

Each of the shelves 18, 20, 22 are coupled to the side sections 10, 12 and the back section 14 in the same manner that shelf 42 was coupled to the side sections 10, 12 and the back section 14.

A kick panel can be provided for the lowermost shelf. If desired, the kick panel 68 can be one surface of a rectangular shaped box composed of corrugated cardboard and having an open top and bottom. This structure provides additional stability to the assembled structure.

In some instances, compartments rather than straight shelves may be desired. Referring to FIG. 2, there is illustrated a display case having compartmented shelves, such as for small items like ribbons.

Referring to FIG. 7, there is illustrated a divider 70 that can be used to subdivide the bottom shelf 22 of FIG. 1. The divider 70 has a bottom projection 72 and two projections 74, 76 which extend toward the rear and which can be notched. The bottom projection of each divider engages a cutout located within the shelf 22; and, the projections which extend toward the rear engage mating cutouts located within the back section 14. To permit the positioning of relatively tall objects, such as wrapping paper, the bottom shelf, the shelf 22 can be eliminated.

Referring now to FIG. 6, there is illustrated a divider that can be used to subdivide the shelf 18. The divider 78, which can be triangular in shape, is secured to a rectangular base member 80. The base member 80 has a length substantially equal to the width of the flat top surface 48 of the shelf and wedged between the back surface 44 and the raised edge 50. Divider 78 is readily positioned along the shelf.

FIG. 8 illustrates a compartmented trough 84 which can be positioned on the top shelf 42, shelf dividers similar to but smaller than divider 78 being used to wedge the trough against the back surface 44.

The rear panel and side sections can be easily fabricated as a unit, with cutouts, and score lines located during fabrication. This part of the structure can be folded flat with the shelves and shipped, and stored in a small, light package. When assembled, the interaction of the shelves and the side panels form a strong integral structure which is stable when loaded with goods.

Obviously many modifications and variations of the present invention are possible in the light of the above teaching. It is, therefore, to be understood that the invention may be practiced otherwise than as specifically described herein.

What is claimed is:

1. A display case comprising transversely spaced vertically extending hollow side sections having spaced inner and outer walls, a rear section extending between and secured to the rear borders of said side sections, sad side section inner walls having horizontally transversely aligned coupling apertures formed therein, a transversely extending shelf located between said side sections and having a conduit extending along the front edge thereof, said shelf including superimposed top and bottom panels integrally formed with said conduit, a support rod extending through said conduit and having opposite ends engaging said coupling apertures, means coupling the rear of said shelf to said rear section, said coupling means connecting the rear of said bottom panel to said rear section, said top panel of said shelf extending along said bottom panel to a point short of the rear of said bottom panel and including an inclined panel integrally formed with said top panel and extending upwardly rearwardly thereof to said rear section.

2. The combination of claim 1 including divider means coupled to the shelf to provide shelf compartments.

3. The combination of claim 2 wherein said divider means is coupled to the back section and composed of corrugated cardboard.

4. The display case of claim 1 wherein said coupling apertures have downwardly converging side edges.

5. The display case of claim 1 wherein said rod has grooves formed therein proximate the outer ends of said rod, said grooves engaging peripheral edges of coupling apertures.

6. The display case of claim 1 wherein said rear coupling means comprises a coupling flap projecting inwardly and upwardly from said rear section, said shelf having a slot formed therein engaged by said coupling flap.

7. The display case of claim 1 wherein each of said side sections includes at least one vertical cross piece extending from one of said side section walls to the other wall thereof and disposed between said side section front and rear edges.

8. A display case comprising transversely spaced vertically extending hollow side sections having spaced inner and outer walls, each of said side sections including a least one vertical rib extending from one of said side section walls to the other wall thereof and disposed between said side section front and rear edges, said side sections being one piece and having their ends bent to form no less than three transverse flaps, two of said flaps being joined to each other and at least one being joined to the inner surface of said outer wall, whereby said vertical interior rib is formed, a rear section extending between and secured to the rear borders of said side sections, said side section inner walls having horizontally transversely aligned coupling apertures formed therein, a transversely extending shelf located between said side sections and having a conduit extending along the front edge thereof, a support rod extending through said conduit and having opposite ends en-

gaging said coupling apertures, and means coupling the rear of said shelf to said rear section.

9. The display case of claim 8 wherein said shelf includes superimposed top and bottom panels integrally formed with said conduit, said coupling means connecting the rear of said bottom panel to said rear section.

10. The display case of claim 9 wherein said top panel of said shelf extends along said bottom panel to a point short of the rear of said bottom panel and including an inclined panel integrally formed with said top panel and extending upwardly rearwardly thereof to said rear section.

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