United States Patent [19]

Kuns et al.

[11] **3,863,575**

[45] **Feb. 4, 1975**

[54] **DISPLAY STAND**

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[52] **U.S. Cl.** **108/111**, 248/174, 108/6, 211/135

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

[58] **Field of Search** 108/111, 109, 6; 211/135, 211/148; 248/174

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Primary Examiner—Francis K. Zugel

[57] **ABSTRACT**

The display stand of the present invention is formed from a plurality of blanks of semi-rigid material such as corrugated paperboard which are folded, arranged and secured to one another to result in a one-piece display stand construction that is shipped in a knocked down condition for set-up at the point of use. The details of construction include a double thick back panel flanked by quadruple thick side panels to yield a display stand having an open frontal portion, with a plurality of shelf structures hingedly attached to the back panel and supported in use by support bars which lie beneath the shelves and which extend between the two side panels.

1 Claim, 11 Drawing Figures

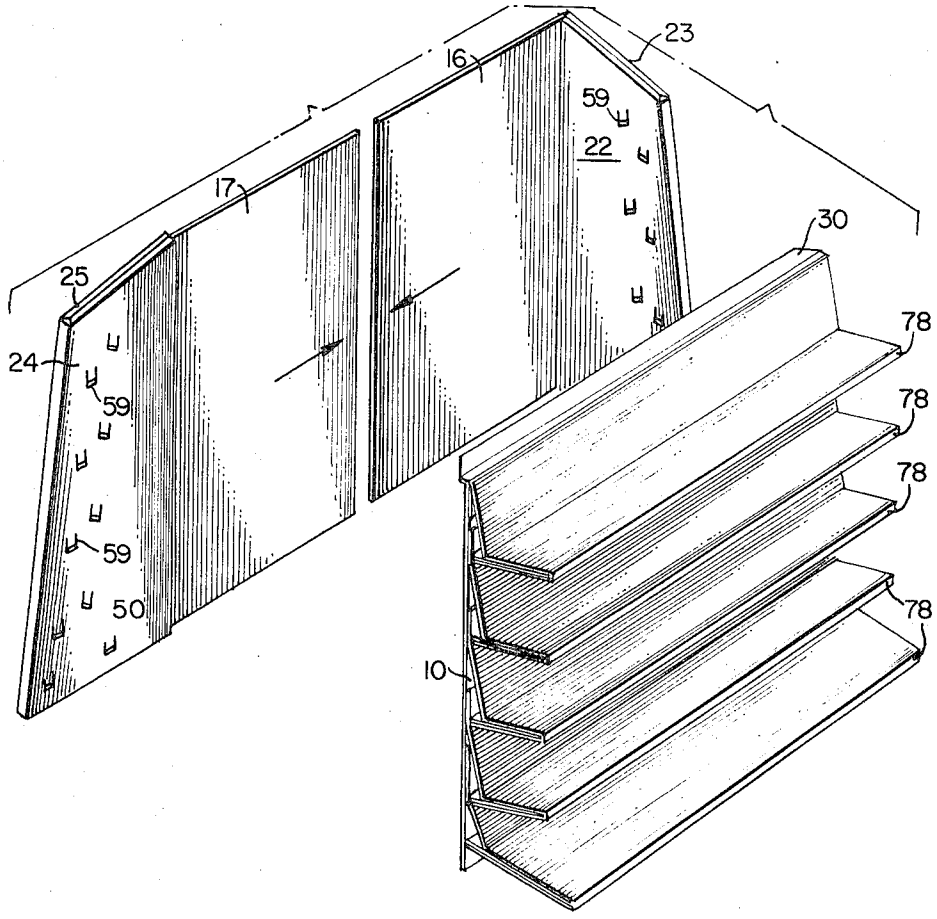

Fig 1.

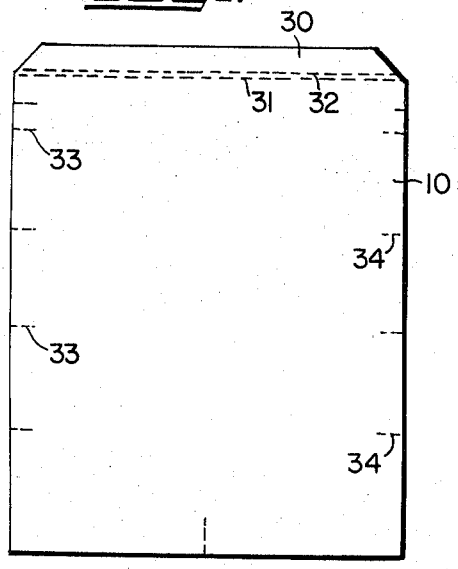

Fig 3.

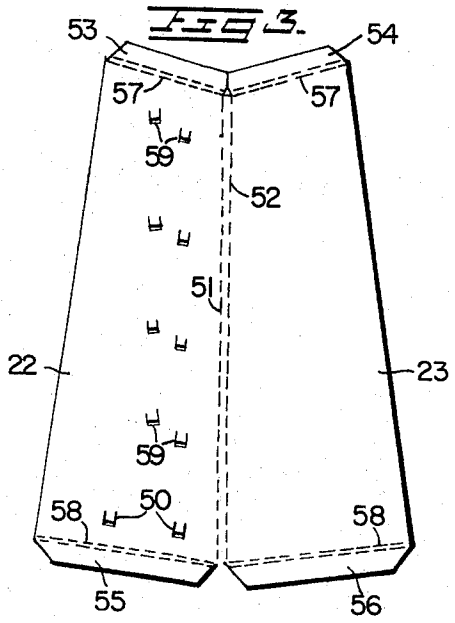

Fig 2

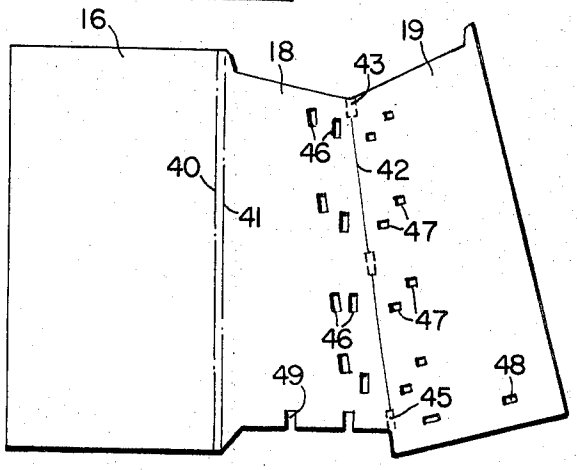

Fig 4.

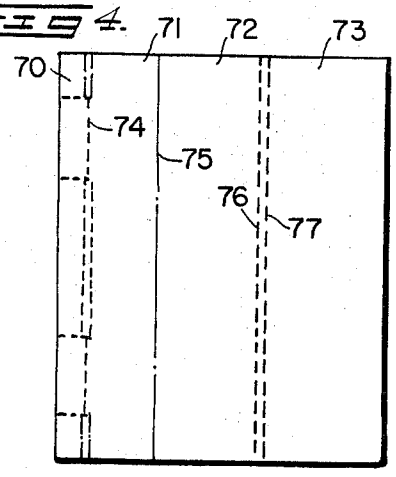

Fig 5.

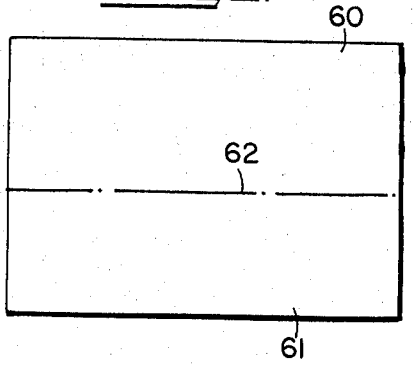

FIG 6.

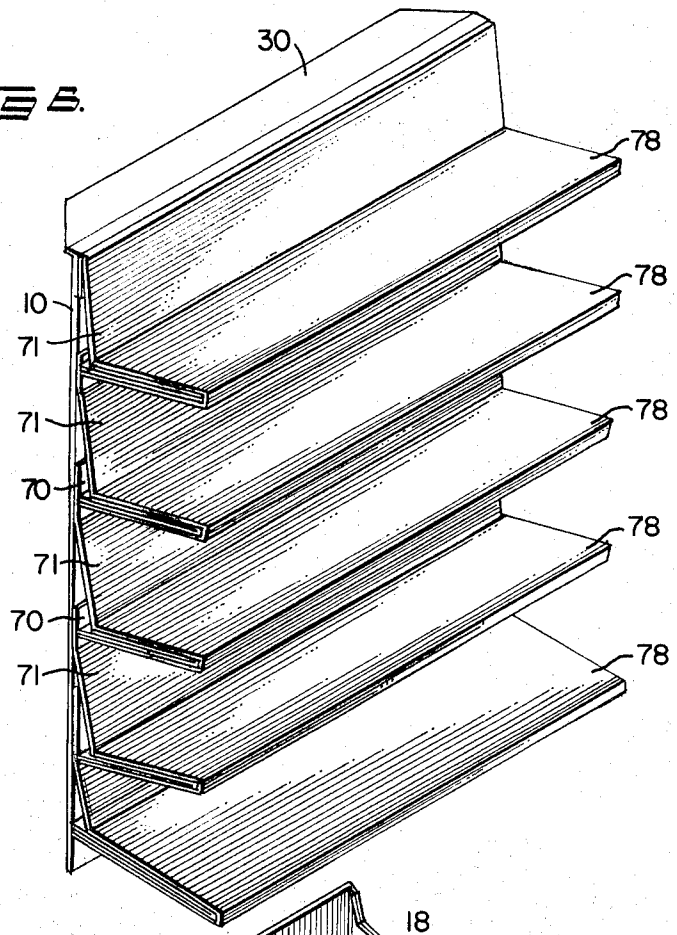
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FIG 7

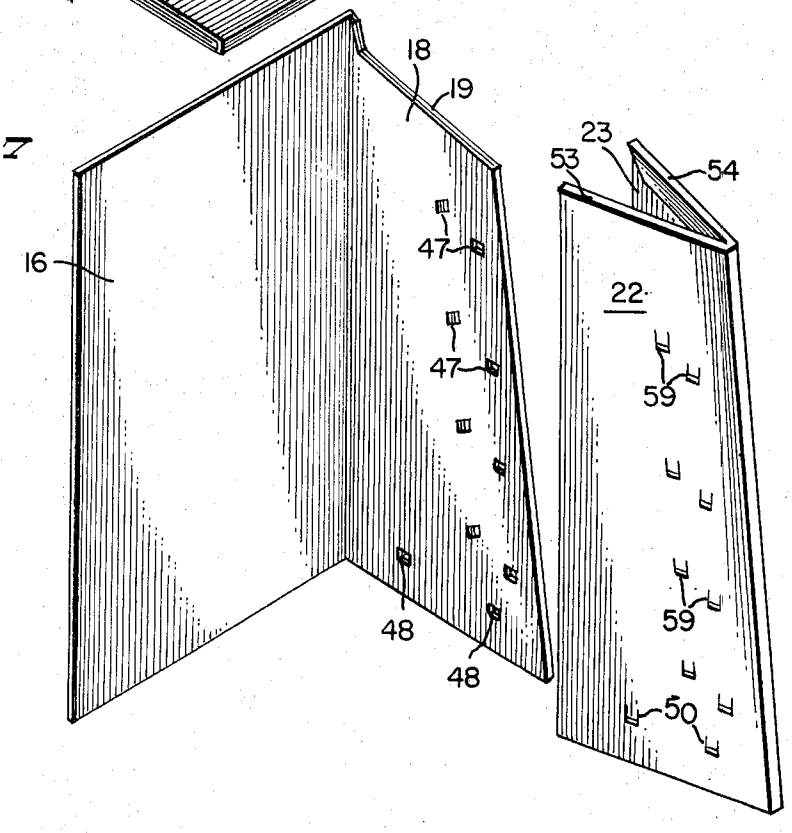
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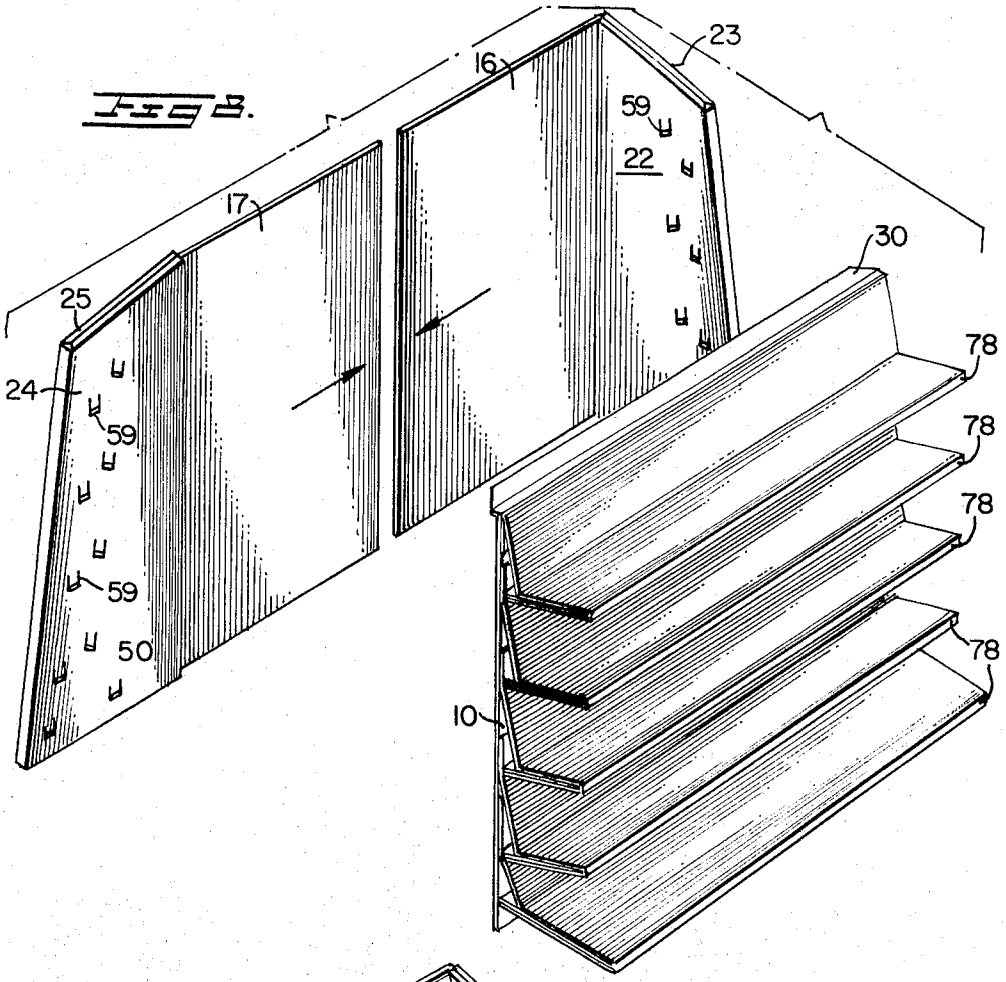
Fig 8.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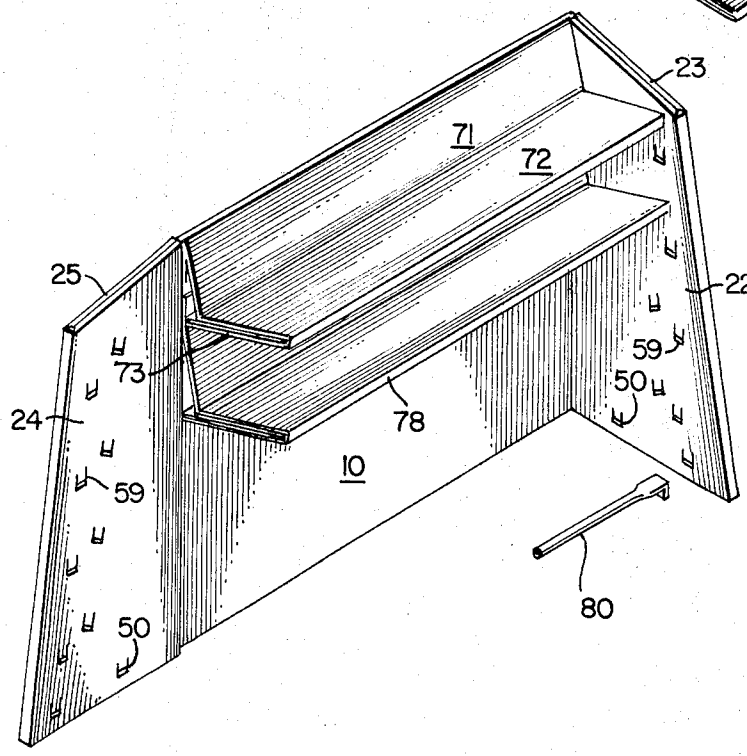
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Fig 9.

Fig 10.

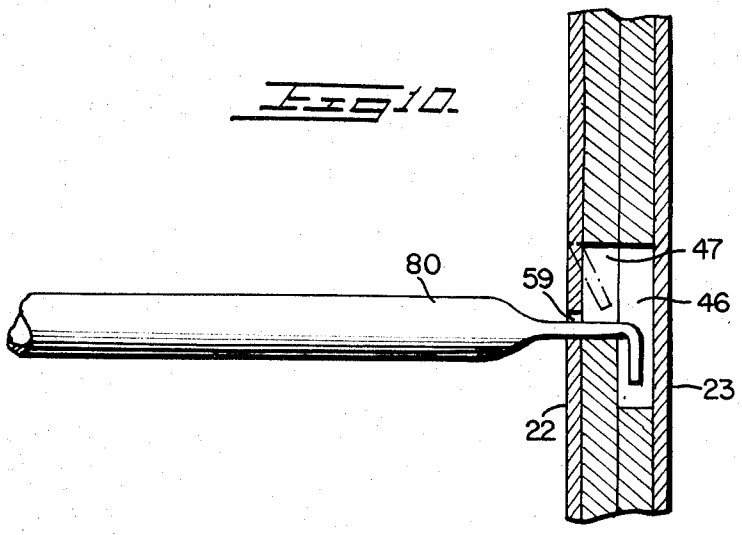
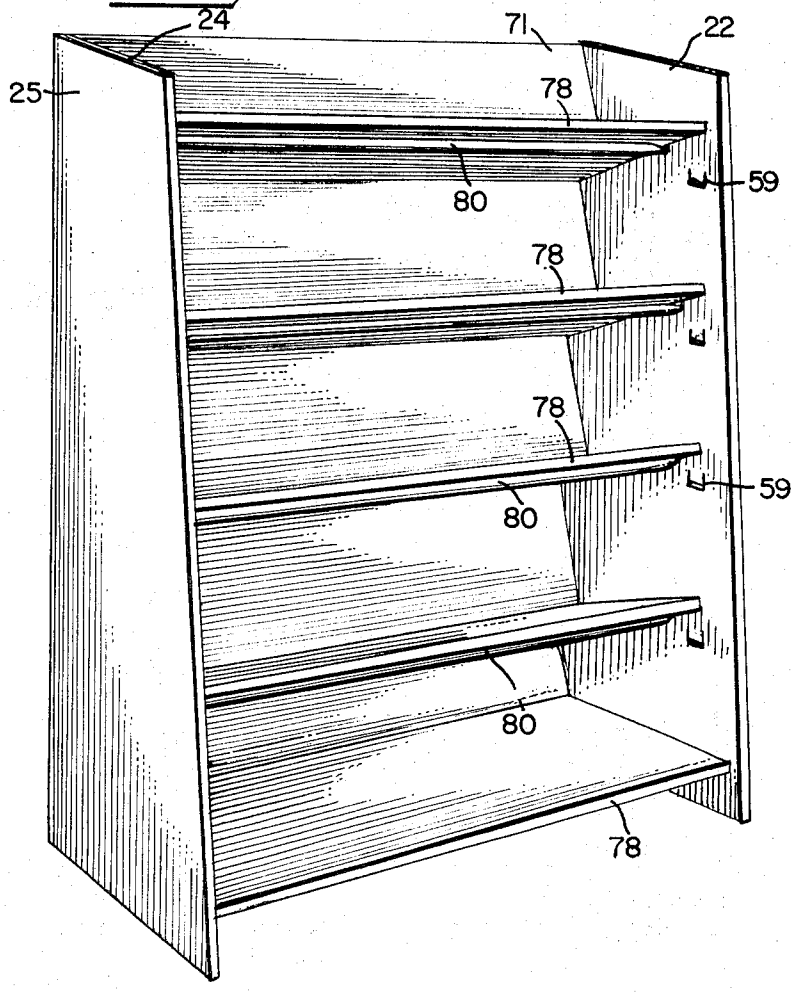


Fig 11



DISPLAY STAND

SUMMARY OF INVENTION

The present invention relates to a novel display stand construction having a back panel and a pair of attached side panels leaving an open front, to form a U-shaped configuration when viewed from the top. The display stand of the present invention was designed specifically to yield a one-piece construction that could be shipped in a knocked down condition, yet which would be easy to set-up at the point of use and would be less costly and more rigid than the display stands presently in use. By fabricating the dispay stand from a plurality of different blank elements that are preassembled at the place of manufacture, the resulting structure provides a single unit that is cheaper than the display stands currently in use and one which sets up without the need for struggling with die-cut sections having either a frictional fit or a requirement that they be stapled or otherwise secured.

In a typical display stand it is usually desirable to have a completely open front for visibility and easy access to the displayed contents. It is also desirable to provide either as an integral part of the display stand or as an add-on feature adequate printing surfaces for advertising or promotional messages. In addition, where the display stand is intended to be used to display more than one item, or a plurality of the same or similar items stacked one above the other, it is desirable to provide shelves for the different items that are staggered fore to aft to permit ready visibility of all of the displayed items.

Accordingly, in order to carry out the above and other objects, the display stand of the present invention is arranged to include only a back panel with a pair of attached side panels yielding a completely open frontal portion. In addition in its preferred form, the display stand of the present invention is constructed so as to provide all exterior surfaces with an attractive and printable finish with provisions also being provided for attaching riser cards or the like to the display stand structure itself for advertising messages. Finally, in order to provide adequate visibility for all of the items supported by the display stand, the side panels of the unit are made in a tapered fashion beginning large at the bottom and becoming narrow at the top and the shelves attached to the back panels and supported between the side panels are similarly shaped to fit the tapered side walls, i.e., with the width (fore and aft) of the shelves becoming smaller from bottom to top.

Thus it is a principal object of the present invention to provide a display stand, having a completely open frontal portion which is of one-piece construction as received at the point of use, and which is readily set up into a strong and semi-rigid structure.

It is a further object of the present invention to provide a one-piece display stand having an open frontal portion which is assembled initially from a plurality of separate blanks of material using readily available equipment and materials to gain advantageous qualities and characteristics not heretofore available in display stands of the same or a similar type.

It is a further object of the present invention to provide a one-piece display stand having an open frontal portion which is assembled and shipped in a knocked down flattened condition for erection at the point of use.

It is a further object of the present invention to provide a display stand having an open frontal portion with shelf structures that incorporate a novel means for adjusting the angularity thereof and including positive positioning support elements therefor.

It is a further object of the present invention to provide a display stand having an open frontal portion with a double wall back panel and quadruple wall side panels and a plurality of multiple wall shelf panels secured to the double wall back panel in such a manner that the front of each shelf panel going from bottom to top is suspended higher and slightly rearward of the preceding one by support elements attached between the quadruple wall side panels.

Other objects and advantageous features of the invention will be apparent from the subsequent description and claims. And the nature and characteristic features of the invention will be more readily understood from the following detailed description taken in connection with teh accompanying drawings.

IN THE DRAWING

FIG. **1** illustrates in plan view a typical blank structure for forming the inside back panel element of the display stand;

FIG. **2** illustrates in plan view an example of one of the two outside back panel blanks, with attached articulated inside side walls, required for the display stand;

FIG. **3** illustrates in plan view an example of one of the two hinged outside side panel blank structures required for the sides of the display stand;

FIG. **4** illustrates in plan view an example of a blank structure used to construct each one of the individual shelf elements used in the display stand;

FIG. **5** illustrates in plan view an example of the blank used to make the core element for each individual shelf structure in the display stand;

FIG. **6** is a perspective view showing the first step in the assembly of the display stand wherein a plurality of completed shelf structures are secured to the inside back panel element of the display stand;

FIG. **7** is a perspective view showing a second step in the assembly of the display stand wherein one of the two outside back panel blanks is arranged to have one of the outside side wall panel blanks folded around and secured to the previously secured articulated inside side wall elements thereof;

FIG. **8** is a perspective view showing a third step in the assembly of the display stand with the inside back panel and its attached shelf structures about to be secured to the two matching outside back panels;

FIG. **9** is a perspective view showing the partially assembled display stand in position to accept the shelf support elements;

FIG. **10** is a cross-sectional detail showing the arrangement of one end of a shelf support rod in a adjacent display stand side wall; and,

FIG. **11** is a perspective view showing the completed display stand structure.

DETAILED DESCRIPTION

The completed display stand of the present invention includes in its basic form a back panel having a pair of side wall panels foldably attached thereto with a plurality of shelf structures attached to the back panel and supported by shelf support elements which extend between the side wall panels. Each of the different ele-

ments of the display stand i.e., the back panel, the side wall panels and the shelf structures, are comprised of a plurality of blanks of semi-rigid material such as corrugated paperboard, which blanks are folded, arranged and secured to one another to result in a one-piece display stand construction. In its preferred form, the shelf structures, back panel and side wall panels of the display stand each have decorative outer surfaces which may be colored if desired, for the purpose of providing a good printability finish wherein advertising or other promotional literature may be printed. In addition, each of the blank elements are also cut and scored using conventional cutting and scoring dies for easy and quick assembly at the point of manufacture thereby insuring easy and quick assembly at the point of use.

The separate element that are used in the display stand of the present invention include an inside back panel **10** to which a plurality of separate shelf structures **78** are attached. The preferred method of attaching the shelf structures to the back panel **10** is with the use of stitches, however staples, adhesive or any other equivalent attaching means could also be used without deviating from the invention as disclosed. In addition to the back panel **10**, the display stand structure also includes a pair of left and right outside back panels **16, 17** which each include articulated inside side wall panels **18, 19** and **20, 21** respectively, and a pair of left and right two-part outside side wall panels **22, 23** and **24, 25.**

At the point of manufacture, the different blank elements described above are folded and arranged with respect to one another in the following manner. The shelf panel structures **78** are preassembled from their separate blank elements and secured to the inside back panel **10.** The two articulated inside side wall panels **18, 19** and **20, 21** attached to the outside back panels **16, 17** respectively, are folded over and secured to one another. Next, the two left and right two-part outside side wall panels **22, 23** and **24, 25** are folded together and secured to the outside of the articulated inside side panels **18, 19** and **20, 21.** And, finally, the inside back panel **10** (with the shelves attached thereto) is secured to the two outside back panels **16, 17** to yield a structure having a double thick back wall and quadruple thick side walls wherein the front of the side walls, the top of the back wall and the front of the shelf structures each have a finished edge. In this latter condition, the display stand is fully prepared as a single unit, and ready for shipment to the user in a knocked down condition where the stand is readily set up for use.

FIGS. **1–5** shown in detail plan views of representative examples of the different blank elements used in the construction of the display stand while FIGS. **6–10** show how the display stand is constructed and set up in its useable condition. Referring in more detail to the drawings, it may be seen that FIG. **1** shows in blank form a substantially rectangularly shaped inside back panel **10** having an abbreviated top flap portion **30** separated from the main portion of the back panel **10** by a pair of parallel and closely spaced fold lines **31, 32.** In addition, the back panel **10** also includes a plurality of opposed and spaced apart location lines **33, 34** at each side of the main portion of the back panel for the purpose of locating the positions for the shelf panel structures when they are stitched or otherwise attached to the back panel **10.** As will be further explained later, the shelf panel structures are themselves cut and scored from yet other blanks of material to form a rigid and strong shelf.

FIG. **2** shows an example of one of the two outside back panels **16** for use in the present invention with the articulated inside side wall panels **18, 19** attached thereto. The outside back panel **16** has a main portion which is substantially rectangular in shape and of a size having dimensions equal to approximately one-half those of the primary inside back panel **10.** In this manner, the two outside back panels **16** as illustrated in FIG. **6,** and **17,** not shown, but identical to and reversed from i.e., the mirror image of panel **16,** when placed side-by-side with their free edges in abutting relation, have a total dimension from side-to-side equal to that of the inside back panel **10.** Further as shown in FIG. **2,** the articulated inside side wall panels **18, 19** are foldably attached to the outside back panel **16** by a pair of cut/score lines **40, 41** that are parallel and spaced apart a distance to accomodate several thicknesses of the material from which the blank is constructed in the folded condition. Also as shown in FIG. **2** the articulated side wall panels **18, 19** are of a tapered configuration and are separated from one another by a cut line **42** that includes three hinge connections **43, 44, 45.** The tapered configuration of panels **18, 19** is preferred for the purpose of giving the side walls of the display stand a bottom area greater than the top area for increased stability and also to accomodate the staggered arrangement of the shelves mentioned hereinbefore. Of course, it should be understood that the tapered design illustrated could readily be altered or changed as desired to produce a display stand having a different specific shape. Finally, for the purpose of anchoring and retaining the shelf supporting elements in the side wall panels **18, 19** each of the panels includes suitably shaped cut-outs **46, 47** which become aligned with one another when the inside side wall panels **18, 19** are folded and secured to one another in the set up condition. Two different sets of cut-outs **46, 47** are shown for the side wall panels **18, 19** which permit the shelf supports to be placed in different positions to permit the angularity of the shelves to be adjusted depending on the style preferred and the products being displayed.

FIG. **3** shows an example of one of the two outside side wall structures which includes the two panels **22, 23.** Each of these panels are substantially the same in size and shape and are tapered in a fashion similar to that employed for the inside side wall panels **18, 19** of FIG. **2.** The outside side wall structure of FIG. **3** is used at one side of the display stand and for the purpose of the present invention there would be an identical but reversed, i.e., mirror like blank structure required for the opposite side of the display stand. Note in FIG. **3** that the two side wall panels **22, 23** are separated from one another by a pair of parallel fold lines **51, 52** spaced from one another by an amount equal to twice the thickness of the material from which the display stand is constructed. The spaced fold lines are required since in the final configuration, the two outside side wall panels **22, 23** are folded around and are adhered to the two inside side wall panels **18, 19.** The two outside side wall panels **22, 23** also have abbreviated flaps **53, 54** and **55, 56** foldably attached to their upper and lower edges respectively along closely spaced parallel fold lines **57** and **58.** The abbreviated flaps are provided on the outside side wall structures to give the

ends of each side wall of the display stand added strength and rigidity in the set up condition and to provide a finished edge to the top and bottom of the side walls. In addition, panel **22** which in the final form is arranged on the inside of the display stand, contains a plurality of flapped cut outs **59** substantially like the cut outs **46, 47** in the inside side wall panels **18,** and **19.** Accordingly, when the display stand is put together at the place of manufacture, the cutouts **46, 47** and **59** each become aligned with one another for the purpose of accepting the shelf support rods described in more detail hereinafter. Since outside side wall panel **23** is arranged on the outside of the display stand in the final configuration, no cut outs are necessary nor are they desired since the intention is to achieve a finished outer surface to the complete display stand unit. As pointed out hereinbefore, each of the outside surfaces of the blanks which make up the individual components of the display stand, and which are exposed in the final form of the display stand, are covered with a coated or highly finished surface to enhance the attractiveness of the display stand and to provide printability surfaces for advertising messages useful on point of purchase displays.

FIGS. **4** and **5** illustrate the separate components which are used to fabricate the individual shelves of the display stand. Of course, the number of shelves actually required for a given display stand will vary depending upon customer preference and the type of produce displayed. Therefore, FIGS. **4** and **5** are exemplary only of the components required for one complete shelf. In this regard, it should be pointed out that the display stand of the present invention is intended for use under conditions which require a substantially rugged construction, yet the display stand itself is desired to be attractive and have a finished outer surface. Thsu for the purpose of making the shelf structure rugged and strong, FIG. **5** illustrates a blank of material consisting of two panels **60** and **61** separated by a slit score line **62** into preferably two unequal widths. The two panels **60, 61** are folded over about the slit score **62** and adhered to one another to form a core element for an individual shelf. Accordingly the blank of FIG. **5** is not required to have an outer finished surface since the core element is completely enclosed in the blank structure of FIG. **4** when completed.

FIG. **4** illustrates the outer covering blank structure for an individual shelf element. The blank consists of a first flap element **70** which is attached (preferably stitched) to the inside back panel of FIG. **1,** a rear shelf riser panel **71** and a pair of upper and lower shelf panels **72, 73.** The flap element **70** is separated from the riser panel **71** by a fold line **74** preferably formed by alternating signle and double scores as shown. In addition, in the preferred form the flap **70** is divided into separate areas along its length to define regions where the stitches are applied. As shown in FIG. **4,** the stitched regions are adjacent the double scores to give the flap **70** increased folding versatility, in those areas. The riser panel **71** is separated from the upper shelf panel **72** along a cut score line **75** to permit ease of folding and the two shelf panels **72** and **73** are separated from one another along a pair of scored lines **76, 77** that are parallel and spaced apart a distance to accomodate the double thickness of the core element shown in FIG. **5.** The upper and lower shelf panels are also preferably of different widths as noted above for panels **60, 61.** Thus, during assembly, and after the core element panels **60, 61** are folded over and adhered to one another, the completed core is then enveloped within the two primary shelf panels **72, 73** which are in turn adhered to the core element formed from the blank of FIG. **5** preferably by gluing. The resulting structure is therefore one that has completely finished outer surfaces to present a neat and attractive overall appearance. Of course, since FIGS. **4** and **5** illustrate only the exemplary construction for one single shelf structure and because the preferred form of the display stand is one with tapered sides and staggered shelves fore and aft, each of the blanks for the different shelves would have different dimensions to produce the desired results. The unequal widths for the panels **60, 61** and **72, 73** becomes important when the shelves are set up since as shown in FIGS. **6** and **8** of the drawing, the lower panel of the shelf element **78** abuts against the back panel **10** forcing the riser panel **71** into the correct position when the angulation of the shelves is changed. The shelves are thereby allowed to float on the back panel **10** until their proper orientation is assumed.

In the course of the manufacture of the display stand of the present invention, the individual shelf elements **78** are initially prepared as set forth above prior to assembly on the inside back panel **10** of FIG. **1.** FIG. **6** shows a perspective view of the composite structure including the back panel **10** with a plurality of preassembled shelf elements **78** stitched thereto at spaced intervals. A second step in the manufacture of the display stand is shown in FIG. **7** wherein one of the two outside back panels **16** is shown with the two articulated inside side wall panels **18, 19** folded over and adhered to one another. Also in FIG. **7,** one of the two (i.e., the left side) outside side wall structures is shown with the two panels **22, 23** thereof in position for being secured to the outer surfaces of the inside side wall panels **18, 19.** This construction yields the four panel thick side wall construction mentioned hereinbefore with the added feature of providing a finished and substantially smooth top and bottom edge to the side walls because of the presence of the abbreviated flaps **53–56** which are glued to one another, on the outside side wall panels **22, 23.** Of course, the same steps are used in assembling the right side of the display stand to the right side outside back panel **17** (not shown). Subsequently, with the two outside back panels **16, 17** fully assembled, they are placed in side-by-side relationship with their free edges abutting for assembly of the combined inside back panel **10** and shelf structures **78** as shown in FIG. **8.** For this purpose, the back panel **10** is adhered to the two outside back panels **16, 17** and the top flap portion **30** is folded over and adhered to the back of the panels **16, 17** to give the display stand a smooth, finished upper edge.

At this point, as shown in FIG. **9,** the two sides of the display stand are folded inwardly in preparation for inserting the shelf support rods **80** in the aligned slots **46, 47** and **59** of the composite side walls. FIG. **10** illustrates a detail showing the method of assembly for the shelf support rods **80** in the side walls. For this purpose, the flanged ends of the rod **80** are passed through opposed pairs of the flapped cut outs **59** in panel **22** and then inserted in matching pairs of the cut outs **46, 47** in panels **18** and **19** respectively. For the purpose of altering the angularity of the shelves, different sets of the

cut outs are chosen. And FIG. 11 shows a perspective view of the completed display stand.

Accordingly it may be seen that the display stand of the present invention consists of a plurality of components which are each prepared from blanks of material such as paperboard. The components are arranged into a single unit by the manufacturer for shipment to the user who then only needs to fold the two side walls into position for inserting the shelf support rods provided. The display stand is of extremely rigid construction and is completely self supporting when assembled. In addition, because of the choice of materials, the display stand preferably has a completely finished outer surface to provide an attractive outer appearance to the user.

We claim:

1. A display stand having a completely finished outer surface and consisting of a plurality of components prepared from separate blanks of material such as paperboard that are folded, arranged and secured to one another to result in a single integral unit for shipment to the user, said display stand when set up having an open frontal portion formed by a back panel, a pair of side walls foldably attached thereto and arranged at right angles to said back panel, a plurality of shelf panels each secured to said back panel along one edge thereof, and a plurality of shelf support elements locked in position between the side walls and arranged to lie beneath each individual shelf panel, the improvement wherein:

a. said back panel is of double wall construction and consists of a full sized inside back wall panel and a pair of left and right half-sized outside back wall panels which are adhered to the back of said inside back wall panel, each half-sized back wall panel including a pair of articulated inside side wall panels foldably attached along one edge thereof which are folded over about their articulated joint and adhered to one another to form a pair of side wall core elements;

b. said side walls are of quadruple wall construction and each consists of a pair of left and right two part outside side wall panels which are folded around and adhered to a side wall core element, said outside side wall panels further including abbreviated flaps at the upper and lower ends thereof which are folded inside and adhered to the side wall panels to form finished upper and lower edges for said side walls;

c. said shelf panels are of multiple wall construction and consist individually of a two-piece core element adhered together and an outside shelf panel structure, said outside shelf panel structure including a pair of upper and lower shelf panels which are folded around and adhered to each core element, a riser panel foldably attached to said upper shelf panel and a flap member foldably attached to said riser panel, said multiple wall shelf panels each being attached to the front of said inside back panel only along said flap member; and,

d. means is provided in said quadruple wall side walls for accepting and retaining the shelf support elements in different positions for adjusting the angularity of the multiple wall shelf panels while the lower shelf panel of each multiple wall shelf panel abuts against the inside back panel forcing the riser panel into its proper position when the angulation of the shelves is changed.

* * * * *