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DISPLAY STAND

3,185,115

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3 Sheets-Sheet 1

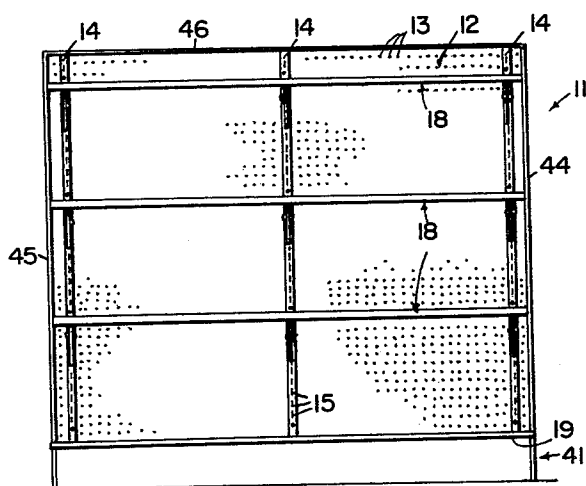


FIG. 1

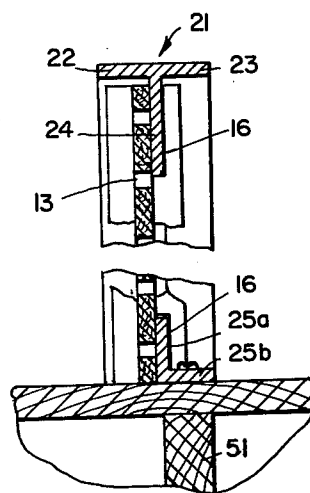


FIG. 4

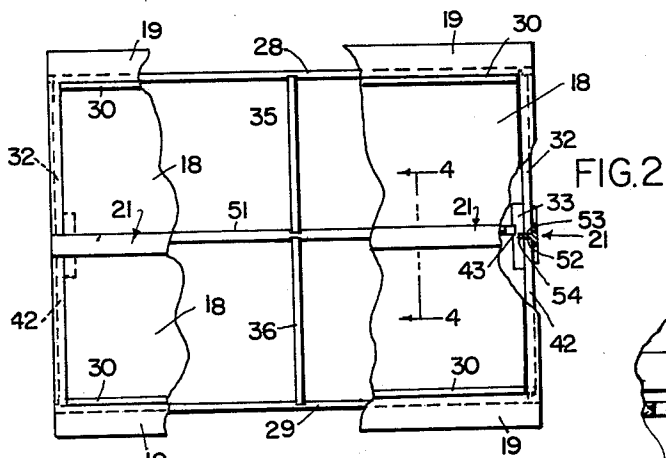


FIG. 2

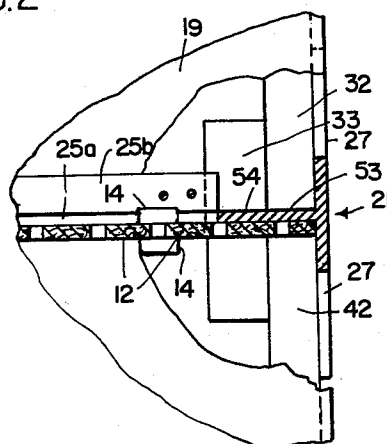


FIG. 5

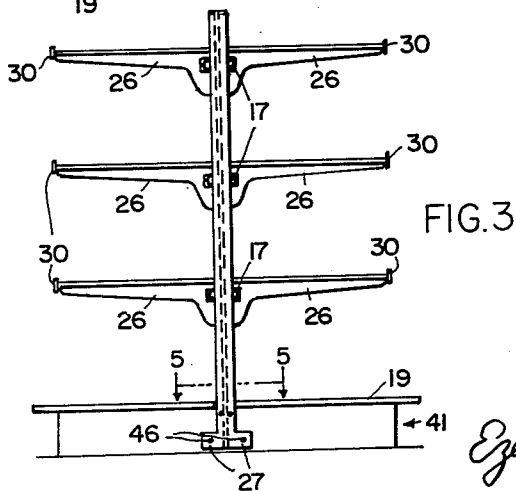


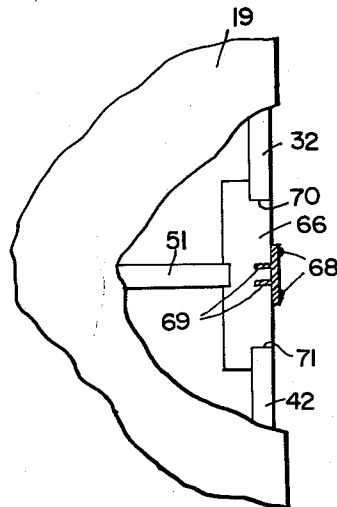
FIG. 3

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DISPLAY STAND

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The present invention relates in particular to a display stand for storing and displaying merchandise and in particular to a portable gondola which is relatively light in weight, highly compact and extremely sturdy. The gondola of this invention can support and display heavy loads of merchandise without buckling or tipping.

A multitude of display stands are known. Portable gondola constructions are particularly desirable for many merchandising uses since they may be moved to various display areas as required. For these reasons, gondolas which are relatively light in weight and are capable of displaying large quantities of merchandise are advantageous. In addition, the gondolas must be durable, low in cost and present an attractive display area.

Accordingly it is an important object of this invention to provide a gondola for displaying and storing merchandise which is relatively light yet extremely durable. The gondola of this invention provides a positive support which is resistant to buckling and tipping forces caused by heavy loads placed on the gondola.

It is another object of this invention to provide a gondola in accordance with the preceding object which provides a maximum amount of attractive display area yet is compact, low in cost and simple in design.

The display stand of this invention comprises a base having a substantially horizontal mounting platform. A plural edge substantially vertically extending support panel is mounted on and extends above the mounting platform. A U-shaped bar having a multi-planar cross-sectional shape is mounted on the base and is affixed to peripheral edges of the support panel. The bar stiffens the panel and prevents distortion of the panel thereby permitting shelves mounted on the vertical panel to carry heavy loads without tipping or buckling of the vertical support panel.

The use of the U-shaped bar of this invention enables an entire support panel stiffening and buckling preventive reinforcing means to be located substantially within a single vertical plane. This feature prevents covering or masking of shelves mounted on either side of the support panel and allows visual access to a maximum possible display area.

In one form of the invention, the U-shaped bar has a T-shaped cross section. In another form of the invention, the U-shaped stiffening bar has a flat base section and plural depending ribs. In still another form of the invention the U-shaped bar is formed by a folded sheet having plural depending ribs. In the forms of the invention specifically described, at least one substantially planar, encircling backing frame is provided for the support panel by the U-shaped bar. Preferably vertically positioned parallel surfaces are provided in the base to provide support for the bar and prevent angular movement of the bar with respect to the base.

Numerous other features, objects and advantages of the present invention will become apparent from the following specification when read in connection with the accompanying drawing, in which:

FIG. 1 is a front plan view of the gondola of this invention;

FIG. 2 is a top view thereof with portions broken away;

FIG. 3 is a side view thereof;

FIG. 4 is a cross-sectional view taken through line 4-4 of FIG. 2;

FIG. 5 is a top view taken through line 5-5 of FIG. 3; FIG. 6 is a view similar to FIG. 4 showing a modification of the invention;

FIG. 7 is a view similar to FIG. 5 showing the modification of FIG. 6;

FIG. 8 is a view similar to FIG. 4 showing a modification of the invention; and,

FIG. 9 is a cross-sectional view through line 9-9 of FIG. 8.

A preferred embodiment of the gondola of this invention is designated generally at 11 in FIG. 1. The gondola 11 has a lower platform 19 supported in a substantially horizontal position by a base designated generally at 41. A panel 12 is vertically mounted on the platform 19 by means of a supporting U-shaped bar or frame 21. Three parallel shelves 18 are mounted on either side of the vertical support panel 12.

Preferably the base 41 comprises a series of internally braced boards defining an outer rectangular perimeter. Backboard 28, frontboard 29 and centerboard 51 preferably comprise 1 x 6" wooden boards and are located in parallel relationship as clearly shown in FIG. 2. Pairs of boards 32 and 42 are located on either side of the gondola and preferably have the same cross-sectional dimensions as the front and backboards 29 and 28 respectively. Boards 32 and 42 of each pair are axially aligned and are attached at their outer ends to front and backboards 29 and 28, respectively. A space is provided between inner ends of boards 32 and 42 of each pair allowing insertion and mounting of a rib 24 of U-shaped bar 21 as will be more fully described hereinafter. A joining block 33 extends between and overlaps boards 32 and 42 of each pair and is firmly affixed thereto by screws or other conventional means thereby keeping the boards in alignment. Opposed grooves 43 are formed in each joining block 33 for receiving ends of centerboard 51. In the specific example of FIGS. 1-5 the base 41 has an overall length of 5 feet and a width of 3 feet 6 inches.

The platform 19 is firmly affixed to the upper edge of the base 41 by screws, glue or other conventional means. Preferably the platform 19 is an integral plywood sheet having an outer rectangular configuration with front and back edges overhanging the base as shown in FIG. 2. An upright support panel 12 rests on the platform 19 and is offset slightly to one side of the center board 51 as most clearly shown in FIG. 4. The panel 12 preferably comprises a thin perforated hardwood board such as a 1/4 inch perforated pegboard having rectangularly arranged apertures 13 evenly distributed throughout the board. The apertures 13 provide means for mounting hooks or display devices on the board 12.

The panel 12 is supported in a vertical position by the novel support frame or bar of this invention. The support frame comprises a U-shaped bar 21 having opposed upright sections 44 and 45 and an integral top section 46. In cross-section the bar 21 is T-shaped and has a flat outer portion comprising wings 22 and 23 and a 90° angled inwardly directed continuous rib 24 extending throughout the length of the bar. Lower ends of the bar 21 are mounted or anchored on opposed sides of the base 41 as most clearly shown in FIGS. 2 and 5. Rib 24 passes between sideboards 32 and 42 and into a notch 54 provided in the joining block 33. This mounting method is extremely significant in that it provides opposed parallel faces 52 and 53 formed by ends of boards 32 and 42 and notch 54 which lie directly adjacent opposed surfaces of the rib 24. In the specific embodiment shown where the base is 6 inches high, approximately 6 inches of the rib 24 are mounted in this manner on either side of the platform 19. This feature prevents angular movement of the upright portions 44 and 45 of the support frame with relation to the platform 19. Sides of platform 19

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are notched to receive the bar 21 thereby providing further support for the bar 21. In addition extension tabs 27 are provided at the ends of bar 21, and extend outwardly of the wings at right angles thereto. Bolts 46 affix the tabs 27 to sideboards 32 and 42 thereby providing additional support for the bar 21. In some instances, it may be desirable to provide further support for the bar by employing additional bolts or attachment means to attach wings 22 and 23 to the boards 32 and 42. This novel anchoring of bar 21 is significant in that no covering struts or sideboards need be employed to affix the bar 21 to the base 41.

The panel 12 is affixed to the rib 24 along the sides and top edges of the board as most clearly shown in FIGS. 4 and 5. Conventional means such as bolts, screws and adhesives may be employed to affix the panel 12 to the rib 24.

An angle iron 25 having a horizontal flange 25b screwed to platform 19 above centerboard 51 is provided. Flange 25a of angle iron 25 extends perpendicular to the base 19 and is aligned in a plane with rib 24 of the U-shaped bar 21. The arm 25a is affixed to the panel 12 by the same means as is rib 24. Ends of arm 25a are preferably bonded to the inwardly directed edges of rib 24 as was clearly shown in FIG. 5. In effect arm 25a acts in conjunction with rib 24 to form a complete rectangular substantially backing frame for the panel 12.

Preferably three rigid upright standards 14 are affixed by conventional means to the panel 12 in back to back relationship on either side of the panel 12. Preferably upper and lower ends of each of the three standards located on the rear side of the panel are notched as shown at 16 so as to lie over and snugly receive the rib 24 at upper end and the arm 25a at a lower end. The standards are preferably composed of steel although in certain cases other materials may be employed. In some embodiments of the invention, the notches 16 hold the panel 12 to the bar 21 and angle iron 25 without the necessity of using attachment means directly between the rib and the arm 25a. The standards 14 have a dual function in that they increase the rigidity of the panel 12 and in addition are adapted to receive shelf brackets 26. Conventional tabs or screws 17 of the shelf brackets 26 are affixed to the standards 14 by attachment with the slots 15. These brackets 26 may be of any conventional design and may be affixed to the standard 14 by conventional means. Preferably the brackets 26 are removably attached so that they may be adjusted in selected vertical positions. Three shelves 18 having outer raised edges 30 are mounted on either side of the support panel 12 by means of the brackets 26 as most clearly seen in FIGS. 1 and 3.

It should be understood from the above description that buckling and tipping forces created by stocking the shelves 18 with merchandise, are directed to the panel 12 and substantially directly transferred to the support frame formed by the bar 21. Thus, the bar 21 forms a main support for the shelves 18. The firm mounting of the bar 21 in the platform 19 and base 41 sustains the upright panel 12 and bar 21 in a perpendicular direction to platform 19 even when heavy loads are positioned on the shelves 18.

In another embodiment of this invention, the gondola 11 as shown in FIG. 1 is modified as illustrated in FIGS. 6 and 7. In the modified form of the invention the panel 12 is supported entirely around its outer perimeter by a continuous groove formed by a notch 61 in the horizontal platform 19 and plural ribs 63 and 64 of a U-shaped bar 62. The bar 62 is multiplanar and has planar parallel ribs 63 and 64 extending perpendicular to wing or base portion 73. In this embodiment the panel 12 preferably extends directly above center board 51. Ribs 63 and 64 form a slot 65 therebetween having a width substantially equal to the width of the panel 12. Thus it is not necessary to employ attachment means to attach the panel 12 to the ribs 63 and 64 nor to the walls of

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the notch 61. In this embodiment of the invention, angle iron 25 is eliminated and the upper ends of standards 14 on both sides of the panel board 12 are notched at 16 to receive the ribs 63 and 64 as shown in FIG. 6.

In effect the bar 62 has a double T cross-sectioned bar as employed in the embodiment of FIGS. 1-5. Bar 62 provides a substantially planar backing frame on both sides of panel 12. One backing frame is formed by rib 63 and a vertical wall of notch 61 while a second backing frame is formed by rib 64 and a second vertical wall of notch 61.

As shown in FIG. 7, the lower ends of the upright portions 44 and 45 of the bar 62 are affixed directly to a joining block 66 by screws 68. Notches 69 in adjoining block 66 snugly receive ribs 63 and 64 and provide parallel surfaces preventing arcuate movement of the bar 62 with respect to the base 41. In this modification the joining block 66 is enlarged and provided with cutout corner portions 70 and 71 for receiving ends of sideboards 32 and 42 which are affixed in the cutout portion by conventional means such as gluing, bolting, etc.

The bars 21 and 62 of the invention are preferably composed of a lightweight, high strength metal such as aluminum. However, other materials such as steel may be employed. The bars resist torques tending to buckle the panel 12. A substantial amount of stress created by weights placed on shelves 18 is directed to and supported directly by the metal structure formed by the U-shaped bar and the standards 14. This is particularly so when standards 14 are mounted in back to back relationship and all of shelves 18 are directly supported on the standards. The particular shape of the T and double T bars is significant in that the wings of the bars may be narrow allowing substantially complete visual access to shelves 18 yet arcuate twisting or distortion of the bars in the plane of the wings is prevented. Thus, wide side supports or struts from upper portions of the bars to the base need not be employed. In the preferred embodiments the full width of the wings 22 and 23 is 1 3/4 inches while wing 73 has a width of 2 inches.

In still another embodiment of this invention, the gondola 11 as shown in FIG. 1 is modified as illustrated in FIGS. 8 and 9. In this modified form the panel 12a is similar to panel 12 but is preferably composed of expanded metal or wire mesh and is supported entirely around its outer perimeter by a continuous groove formed by a notch 61a. The notch 61a is formed by a lower sheet metal shoe piece 81 mounted above center board 51 on platform 19 and U-shaped bar 82.

The U-shaped bar 82 is actually a folded sheet metal strip having a cross-sectional configuration defining planar parallel ribs 63a and 64a extending perpendicular to base or wing 73a. The wing 73a itself has a flattened C-shape and side portions of the bar 82 are tapered from bottom to top as seen in FIG. 8. Preferably the top of each side has a width of approximately 2 and 1/2 inches tapered to a bottom width of approximately 7 inches. The shoe piece 81 comprises two right angle members defining ribs 81a and 81b perpendicular to corresponding base portions which are joined at bend 81c. Screws such as shown at 83 may be used to anchor the shoe piece 81 to the platform 19.

Both the shoe piece 81 and the U-shaped bar or frame 82 may be formed of 14 gage steel sheet although other metals such as aluminum may be used. In some cases the top horizontally extending portion of bar 82 may be formed as a separate unit and welded or otherwise joined to the side members of the bar.

Conventional metallic standards 14 may be used to form shelf supports and additionally act as a means of rigidifying panel 12a. Preferably the standards 14 are notched at upper and lower ends as best shown in FIG. 8 to snugly engage the ribs 63a, 64a, 81a and 81b as shown. The standards 14 may be welded to the frame 82 and shoe piece 81 but are preferably bolted in back

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to back relationship by conventional bolts 84 as best seen in FIG. 9. In the preferred form of this modification, one side portion 85 of each standard 14 lying adjacent base 73a is cut back so that the assembled side standards grip ribs 63a and 64 to provide pressure on the center panel 12a as best seen in FIG. 9.

The embodiment shown in FIGS. 8 and 9 minimize construction costs and reduce overall weight since sheet metal may be used for the U-shaped frame member while heavier solid frame members are used in the previously described U-shaped frame member. In addition the standards 14 in back to back relationship and provided with the described cut away portions, reinforce the rib members and as well as the panel while acting as supports for conventional shelves.

The specific embodiments of this invention as described above are by way of example only. Those skilled in the art may now make numerous variations. For example, the number of shelves may be varied or shelves may be affixed directly to the panel 12 without the use of standards. The specific dimensions and materials recited may be changed to suit particular needs. Therefore while there have been described what are at present considered to be preferred embodiments of this invention, it will be obvious to those skilled in the art that various changes and modifications may be made therein without departing from the spirit and scope of this invention, and it is therefore aimed in the appended claims to cover all such changes and modifications as are inherent in the true spirit and scope of this invention.

This application is a continuation in part of U.S. patent application Serial No. 200,105, filed June 5, 1962 and entitled Display Stand.

What is claimed is:

1. A display stand comprising a base, a support panel mounted on said base and located in a substantially vertical plane, support means for mounting said panel on said base and preventing distortion of said panel as well as angular movement of said panel with relation to said base, said support means comprising a downwardly opening U-shaped bar having two vertically arranged legs and a joining section extending between upper portions of said legs, said U-shaped bar having a substantially uniform sectional configuration throughout, said configuration comprising a peripheral outer co-extensive pair of wings lying on either side of an inwardly extending continuous rib, said rib lying essentially in a single plane and joined to and in facing relation with one side of said panel, means located on said base contacting lower ends of said legs for anchoring said support means, a plurality of substantially vertically extending rigid standards provided adjacent to and on either side of said panel in back to back relationship forming pairs with selected ones of said pairs having ends interengaging said rib to rigidly support said panel and interlock it with said rib, and a plurality of substantially horizontally extending shelves supported by said standards on either side of said panel.
2. The display stand of claim 1 wherein said anchoring means comprises opposed parallel surfaces defining a notch, a portion of said rib lying within said notch with opposed sides of said rib portion snugly received between said opposed parallel surfaces.
3. The display stand of claim 1 wherein said two legs

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each have a lower end with said wings carrying means for rigidly attaching said two lower leg ends on opposing peripheral portions of said base.

4. A display stand in accordance with claim 1 wherein said U-shaped bar cross sectional configuration comprises a second rib positioned in a plane parallel to said first mentioned rib plane with said support panel having a peripheral edge lying between and closely adjacent said ribs.

5. A display stand comprising a substantially horizontally extending base,

a support panel mounted on and extending above said base and located in a substantially vertical plane, support means for mounting said panel on said base and preventing distortion of said panel as well as angular movement of said panel with relation to said base,

said support means comprising a downwardly opening U-shaped supporting bar having two vertically arranged legs and an adjoining section extending between upper portions of said legs,

said U-shaped bar having a substantially uniform cross sectional configuration throughout,

said configuration comprising a flattened C-shaped metallic base with wing portions on either side of two inwardly extending ribs,

said ribs lying substantially in two corresponding facing parallel planes and defining a U-shaped notch for receiving said panel,

means located on said base and contacting lower ends of said legs for anchoring said support means,

a plurality of substantially vertically extending rigid standards provided adjacent to and on either side of said panel in back to back relationship forming pairs with selected ones of said pairs having ends interengaging said ribs to rigidly support said panel and interlock it with said ribs, and

a plurality of substantially horizontally extending shelves supported by said standards.

6. A display stand of claim 5 wherein said panel comprises non-self supporting expanded metal.

7. A display stand in accordance with claim 5 wherein said base carries a notch having side walls lying respectively substantially in said first and second rib planes and adapted to receive a lower edge of said panel,

said ribs and said notch forming a substantially planar backing frame for each side of said panel.

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