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MODULAR DISPLAY UNIT HAVING A PLURALITY OF WALL PANELS

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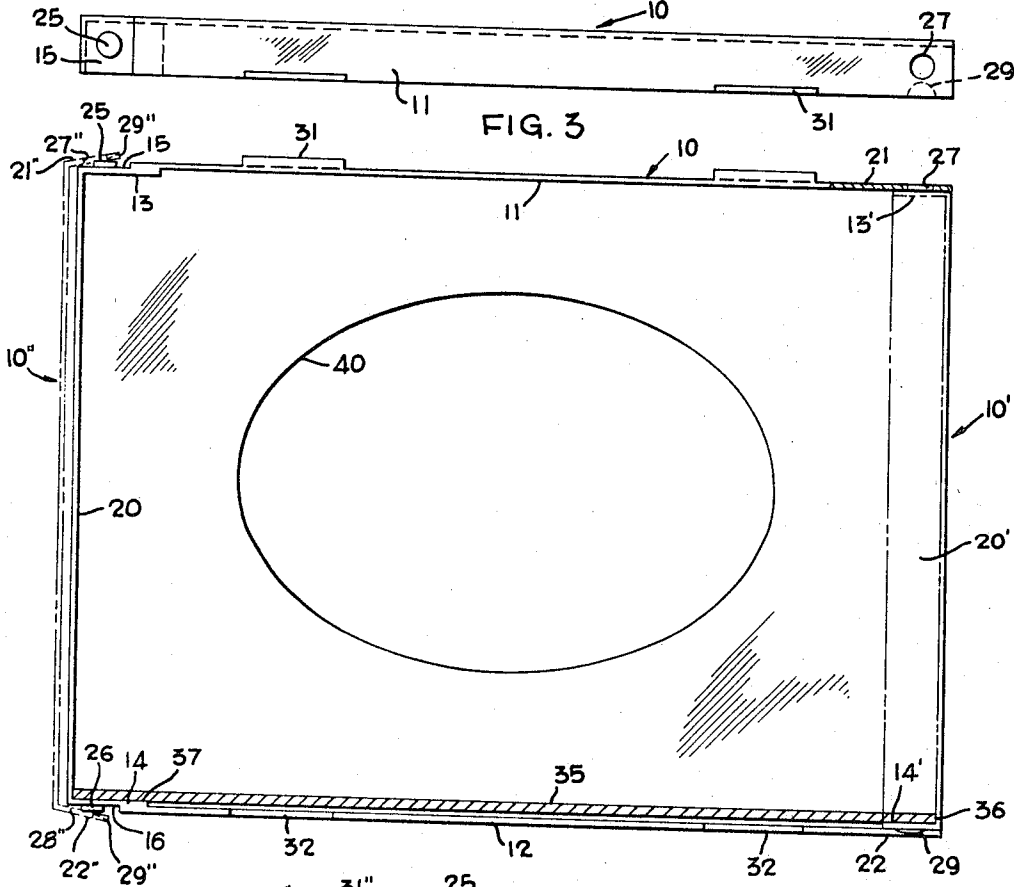


FIG. 3

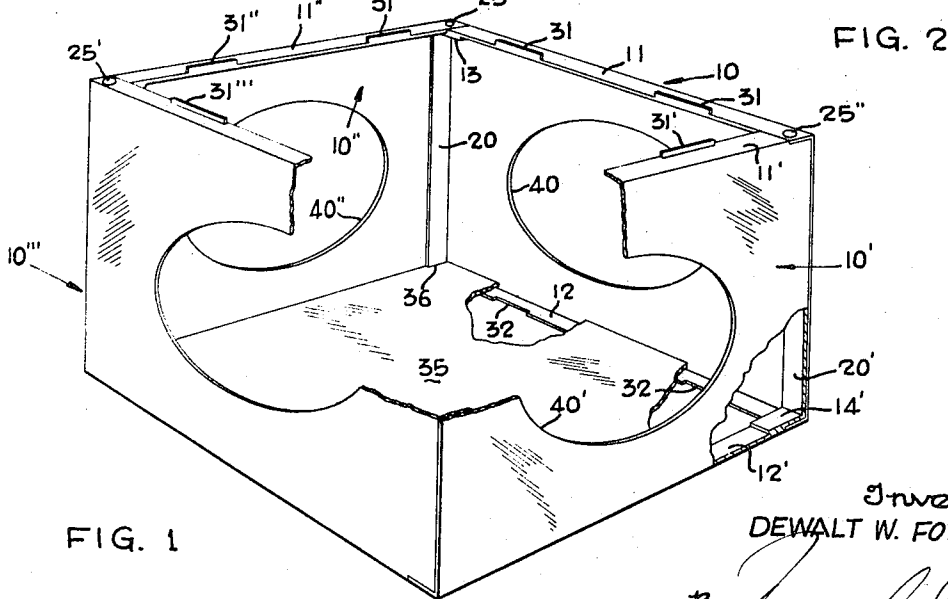


FIG. 2

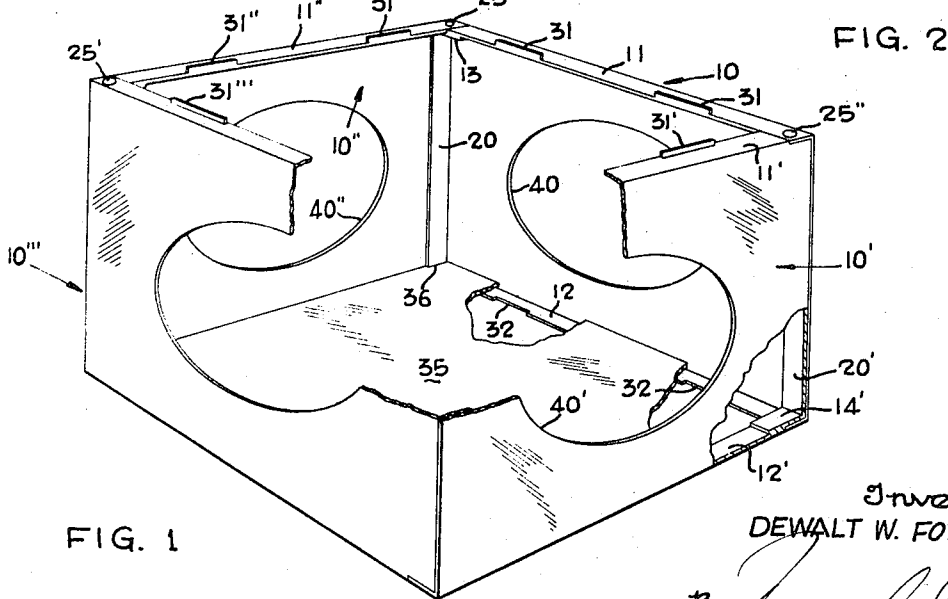


FIG. 1

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MODULAR DISPLAY UNIT HAVING A PLURALITY OF WALL PANELS

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9 Claims

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ABSTRACT OF THE DISCLOSURE

A modular display unit, adapted for stacking, has a plurality of identical side wall panels, preferably made of translucent plastic with large window cut-outs, and a shelf resting on lower inwardly turned flanges. In a simple embodiment, four rectangular panels interlock at vertical corners with post and recess interconnections, utilizing the spring-like resiliency of horizontal upper and lower flanges unsupported at one side of each panel but made rigid at the opposite side by a vertical connecting flange. An inward joggle, at the side having a connecting flange, seats the unsupported ends of the upper and lower flanges of the adjacent panel, with rigidity that retains the panels perpendicular to each other.

Background of the invention

This invention relates to modular display fixtures, for use in store display windows and other display areas, to show and focus attention on articles of merchandise displayed therein. More particularly, it relates to those display fixtures which are themselves ornamental, as those made of translucent or colored plastics; which are modular, so that they may be stacked securely upon one another; which are provided with large open areas or windows which focus attention on the articles displayed; and which are made up of relatively flat or shallow elements, to be assembled without any tools.

Description of the prior art

In order that display fixtures may be rigid, they are ordinarily constructed as rigidly assembled units. In contrast to plywood construction, such plastic materials are relatively delicate and frangible, and cannot readily be assembled, by the use of conventional simple fasteners, into rigid units.

Summary of the invention

The present invention is directed to the problem how relatively flat or shallow, structural members, made of attractive materials such as transparent and translucent colored plastics, may be assembled into rigid modular display fixtures without the use of any fasteners whatsoever. Generally summarizing the present invention (without limitation to the features summarized), I provide a modular display unit whose principal members are four identical side wall panels preferably made of such plastic material. Each has an inwardly turned horizontal upper flange and a similar lower flange. Adjacent to one side of the panel, the flanges have vertically offset joggles, whose ends are connected by a vertical flange formed inwardly from the side wall panel, affording to these ends great rigidity.

Integral aligning connectors are provided on the flanges, preferably posts on one side and complementary recesses at the other side, to receive the posts of an adjacent panel. On assembly, the connectors on the unsupported flange portions will springingly engage the connectors at the supported ends of the flanges of the adjacent panels. Abutment of the flange edges against the vertical offsets of

the joggles aids in holding the panels precisely perpendicular to each other.

An interior shelf, resting at its corners on the joggles of the lower flanges, transmits superimposed loads downward at the corners only. As a result, the side wall panels may have central circular or oval cut-out windows, which serve to frame the view of an article displayed on the shelf. Vertical alignment of stacked modules is achieved by upward projections on the panel upper flanges and corresponding recesses in the lower flanges.

The simple preferred embodiment hereinafter described in detail is rectangular; however other forms of modules, such as those hexagonal or circular in plan form, may be constructed in the same general manner, as hereinafter more fully disclosed.

Brief description of the drawings

FIGURE 1 is a perspective view, partly broken away, of a rectangular modular display unit embodying the present invention.

FIGURE 2 is an inside elevational view of one of the side wall panels thereof, with a shelf panel shown in section. The phantom lines on the right show a second similarly formed panel assembled thereto, while the phantom lines on the left show a third panel in the process of assembly.

FIGURE 3 is a top view of the side wall panel of FIGURE 2.

Description of the preferred embodiment

The modular display unit of FIG. 1 is comprised principally of four rectangular side wall panels, such as the panel generally designated 10, shown in all the figures. The adjacent panels generally designated 10' and 10'', and the opposite panel 10''' are identical. Each is formed, as by molding, of material such as a transparent or translucent plastic, whose color and texture makes it attractive for purposes of display.

The side wall panel 10 is flanged inwardly on three sides. It has an inwardly turned upper flange 11 and an inwardly turned lower flange 12, which project normally horizontally, at least at and adjacent to the left and right edges of the side wall panel 10. The normally horizontally extending flanges 11, 12 will inherently possess a spring-like resiliency which, by suitable choice of material, permits them to bend slightly under a manually applied force. The flanges and other detail portions of the side wall panels 10', 10'' and 10''' are numbered like the corresponding superscripts.

Adjacent to one of the side edges (the left side in FIG. 2), the flanges 11, 12 have vertical spacing joggles 13, 14 respectively, whose depth is substantially equal to the depth of the flanges 11, 12 of which they are a part; hence the joggles 13, 14 will fit inwardly of portions of the corresponding flanges 11, 12 at the opposite side edge of an adjacent panel 10'. The joggles 13, 14 each have shallow vertical surface portions 15, 16 respectively which extend perpendicular to the inner surface portion of the side wall panel 10. Their spacing from the edge of the panel 10 is a distance substantially equal to the width of the upper and lower flanges 11, 12.

Parallel to the vertical space portions 15, 16 and generally perpendicular to the inner surface of the side wall panel 10, along the side edge thereto at which the joggles 13, 14 are formed, is a vertical flange 20. It joins the upper and lower flanges 11 at the outer edges of the joggles 13, 14, thus rigidly supporting the flanges 11, 12 at the joggled ends 13, 14. By the support so provided, the flanges 11, 12 are rigidly restrained from bending elastically away from horizontal. Hence on assembly, the locking means hereafter described will force apart the freely outstanding flange edges 21', 22' of an adjacent panel

10" as shown at the left side of FIG. 2. At the opposite side edge, however, (in FIG. 2 the right side) the upper and lower flanges 11, 12 have freely outstanding ends 21, 22, which will similarly deflect elastically on being manually assembled to that edge of an adjacent panel 10' which is reinforced by a vertical flange 20' connecting upper and lower joggles 13', 14'.

The locking means, used to effect rigid securement of the side wall panel 10', 10" etc. to each other, includes a pair of post-like upper and lower vertical projections 25, 26 in alignment with each other on the upper and lower flanges 11, 12 respectively. These are spaced inward from the vertical edge flange 20, a distance less than the width of the upper and lower flanges 11, 12. Mating with them are recess means to receive them, preferably bores 27, 28 of suitable size in the upper and lower flanges 11, 12 adjacent to and generally spaced inward from the opposite edge.

Adjacent to each of the upper and lower bores 27, 28 is an entrant slope 29. As will be seen from FIGS. 2 and 3, on application of a manual force to assemble the adjacent panel 10", the entrant slope portions 29" provide camming contact with the upper and lower post-like projections 25, 26 to force apart the freely outstanding flange ends 21, 22" until the upper and lower bores 27", 28" spring and lock in place onto the post-like projections 25, 26. So engaged, the inwardly extending edges of the upper and lower freely outstanding flange ends 21", 22" will abut squarely against the vertical surface portions 15, 16 of the upper and lower joggles 13, 14; and the panel edge having the vertical flange 20 will abut squarely against the inner surface of the adjacent side wall panel 10". The other corners of the module are similarly locked in position precisely perpendicular to each other.

Along the upper flange 11 spaced inwardly from the side edges of the wall panel 10, are narrow upward projections 31, which fit into corresponding recesses 32, vertically aligned therewith along the lower flange 12. When a similar modular unit to that shown in FIGURE 1 is placed thereon, the projections 31 of the lower unit will nest in the recesses 32 of the unit thereabove, to effect its secure vertical alignment.

A shelf panel 35, shown in FIGS. 1 and 2 is substantially square, having notched corner cut-outs 36 which accommodate the vertical flanges 20. Adjacent to these cut-outs 36 on the lower surface of the shelf panel 35 are support areas 37 which correspond in area to the lower joggles 14 on which they rest. As will be seen from FIGURE 2, the only contact between the shelf panel 35 and the remainder of the structure is at the support areas 37. Accordingly when such modular units are assembled and stacked on each other, the weight supported by the several shelf panels 35 will be transmitted through the lower joggles 14, 14', 14", 14'" and reacted through the vertical flanges 20, 20', 20", 20'" of the units therebeneath.

This pattern of load transfer to the substantially rigid corners of the modules makes it possible to provide the side wall panels 10, 10', 10", 10'" with large oval or circular window like cut-outs such as the oval cut-out 40. Such cut-outs would seriously lessen the load-bearing capacity of the panels themselves.

Accordingly, the present construction provides a unit made up of a plurality of identically formed side panels 10, 10', 10", 10'" which are nearly flat, together with a flat shelf panel 35; so that the unit is readily shipped in knocked-down condition and readily assembled without the use of any tools whatsoever. The manner in which the panels interlock, without fasteners, makes it possible to use plastic panels whose assembly would otherwise present a difficult problem. The extremely large cut-outs serve as attractive frames through which objects supported on the shelf panels 35 are clearly seen, while the attractive transparent or translucent material invites the viewer to look more closely at the articles displayed.

By appropriate modifications, which will be apparent

from the foregoing without detailed illustration, the modules may be made in differing shapes. For example, hexagonal modules may be readily made up of six four-sided panels. Vertical flanges on such panels will project inwardly therefrom at any convenient angle. The vertical surface portions of the joggles will be so spaced and so extend inwardly from each side wall panel as to receive and abut portions of the edges of the freely outstanding flanges of the adjacent panel, which formed to such contour as to engage the joggles and abut their vertical surface portions. This abutting engagement, in cooperation with the post and recess interlock, serves to position adjacent side panels at the 120° exterior angle of a hexagonal module. Likewise, a module may be made in cylindrical form, by utilizing any convenient plurality of four-sided wall panels arcuate in shape and sufficient to total 360°. All such panels include the horizontal upper and lower flange portions described, freely outstanding at one side edge and reinforced by a vertical flange portion at the other side edge.

Accordingly, the present invention is not to be narrowly construed, but rather as co-extensive with the claims.

I claim:

1. A rectangular modular display unit, comprising four similarly formed rectangular side wall panels, each having an inwardly turned upper flange and an inwardly turned lower flange projecting normally horizontally therefrom at and adjacent to its left and right edges,

said flanges being of such material composition and thickness as to possess spring-like resiliency under a manually-applied force,

the portions of said flanges adjacent to one of said side edges having vertical spacing joggles substantially equal in depth to the thickness of the flange, whereby to fit inwardly of the opposite edge flange portions of an adjacent panel secured to it at a rectangular corner,

locking means to effect such securement, comprising a pair of post-like vertical projections on the upper and lower flanges adjacent to one said edge aligned with each other and spaced inward from said edge less than the width of the flanges, and

recess means to receive said post-like projections in said upper and lower flanges adjacent to and similarly spaced inward from the other edge,

each panel being characterized in having a vertical flange perpendicular to the side wall panel along one of its side edges and joined to the upper and lower flange ends at said edge,

whereby to provide rigid support for the upper and lower flange ends at said edge and restrain same from bending elastically away from horizontal,

the upper end lower flange ends at the other side edge being freely outstanding,

whereby to deflect elastically on being manually assembled to the flanged side edge of an adjacent panel and to lock springly onto the locking means thereon.

2. A rectangular modular display unit as defined in claim 1, together with

entrant slope means cooperating with the freely outstanding flange ends to urge same to deflect elastically to effect locking engagement between said post-like projections and said recess means.

3. A rectangular modular display unit as defined in claim 1, wherein

the end portions of the upper and lower flanges having said joggles are closer to each other than the height of the remainder of the panel and

the vertical flange is along that side edge at which the joggled ends are formed on the upper and lower flanges,

whereby to rigidly support said joggle ends and on assembly to force apart the freely outstanding flange

edges of such an adjacent panel and abut against the inner side wall surface thereof.

4. A rectangular modular display unit as defined in claim 3, wherein

the post-like vertical projections are formed on the said joggled end portions of the upper and lower flanges and extend in alignment respectively upwardly and downwardly therefrom, and entrant slopes are formed in the inwardly extending edges of the freely outstanding flanges, and the recess means extend through said flanges adjacent to the entrant slopes.

5. A rectangular modular display unit as defined in claim 3, wherein

each joggle end portion of said upper and lower flanges has a vertical surface portion extending perpendicular to the side wall surface and parallel to the vertical flange at a distance therefrom substantially equal to the width of said flanges,

whereby on engagement of the locking means in alignment, the vertical flange of one panel will abut squarely against the inner surface of the side wall of the adjacent panel and its freely outstanding flange ends will abut squarely against said vertical surface portions of the joggles,

thereby securing the adjacent wall panels precisely perpendicular to each other.

6. A rectangular modular display unit as defined in claim 3, together with

upward projections along the upper horizontal flange and

recesses vertically aligned therewith along the lower horizontal flange,

whereby the upward projections will seat into the recesses of a similar modular unit placed thereon and thereby effect vertical alignment thereof.

7. A rectangular modular display unit as defined in claim 6, wherein

the side wall panels have enlarged cut-outs, together with

a substantially square shelf panel having a length substantially equal to the length of the side wall panel and having notched corner cut-outs of such size as to receive the vertical flanges of said shelf panels, the shelf panels having at their lower side corners, support areas corresponding to the areas of the joggled end portions of the flanges,

whereby the weight supported by a shelf panel will be reacted through said joggled ends and through the vertical flanges of similar modular units in vertical alignment therebeneath.

8. A modular display unit, comprising

a plurality of similarly formed four-sided wall panels, each having an inwardly turned upper flange and an inwardly turned lower flange projecting normally

horizontally therefrom at and adjacent to its left and right edges,

said flanges being of such material composition and thickness as to possess spring-like resiliency under a manually-applied force,

the portions of said flanges adjacent to one of said side edges having vertical spacing joggles substantially equal in depth to the thickness of the flange,

whereby to fit inwardly of the opposite edge flange portions of an adjacent panel secured to it,

locking means to effect such securement, comprising a pair of post-like vertical projections on the upper and lower flanges adjacent to one said edge aligned with each other and spaced inward from said edge less than the width of the flanges, and

recess means to receive said post-like projections in said upper and lower flanges adjacent to and similarly spaced inward from the other edge,

each panel being characterized in having

a vertical flange projecting inwardly from the side wall panel along one of its side edges and having portions joined to the upper and lower flange ends at said edge,

whereby to provide rigid support for the upper and lower flange ends at said edge and restrain same from bending elastically away from horizontal,

the upper and lower flange ends at the other side edge being freely outstanding,

whereby to deflect elastically on being manually assembled to the flanged side edge of an adjacent panel and to lock springly onto the locking means thereon.

9. A modular display unit as defined in claim 8, wherein the end portions of the upper and lower flanges having said joggles are closer to each other than the height of the remainder of the panel and

the vertical flange is along that side edge at which the joggled ends are formed on the upper and lower flanges, and wherein

each joggle end portion of said upper and lower flanges has a vertical surface portion extending inwardly from the side wall panel surface and spaced from the vertical flange,

whereby on assembly to such an adjacent panel, to receive and abut the portion of the edge of the freely outstanding flange thereof.

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JAMES B. MARBERT, *Primary Examiner*.

U.S. Cl. X.R.