Sept. 26, 1967 J. GIAMBALVO 3,343,685

MODULAR SHELF CONSTRUCTION

Filed Oct. 23, 1965

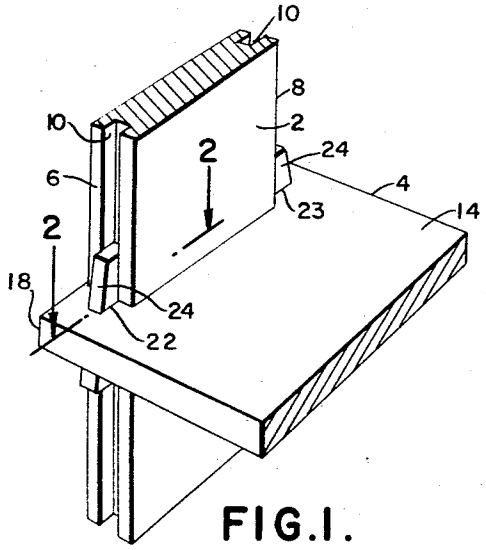


FIG. 1.

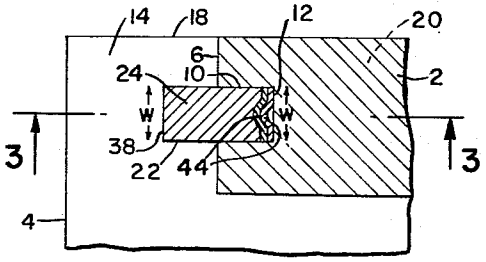


FIG. 2.

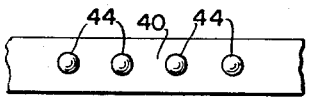


FIG. 4.

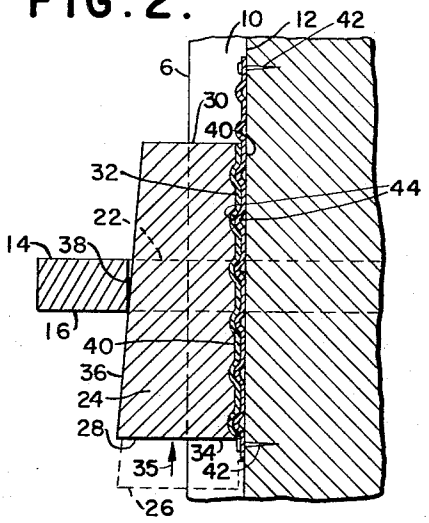


FIG. 3.

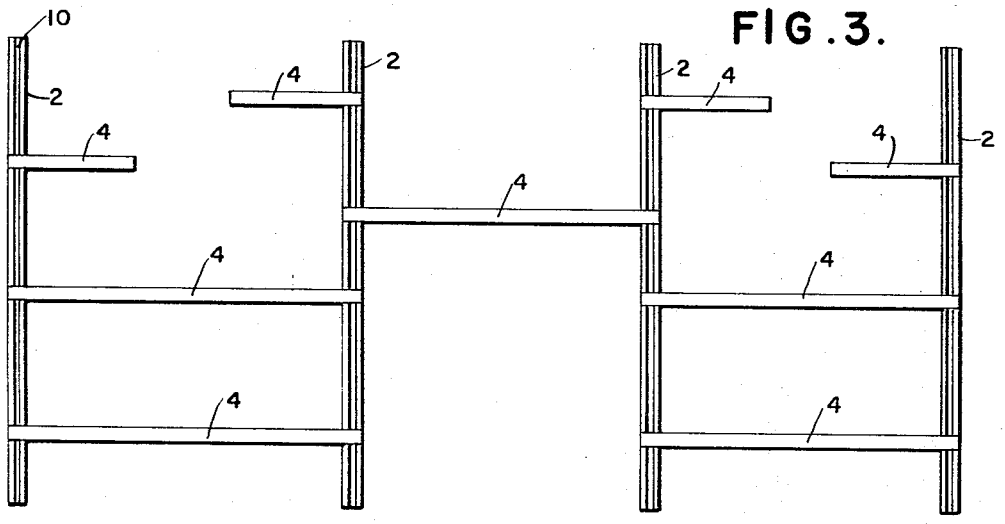


FIG. 5.

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MODULAR SHELF CONSTRUCTION

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This invention relates generally to modular furniture and more particularly to an improved construction therefor which will enable expedient, convenient and accurate assembly of such furniture.

Whereas, sectional furniture such as book cases, wall-desks, cabinetry and the like have become popular, e.g., as room dividers and wall breakers and as support means for stereo and high fidelity components and equipment, the provision of such furniture with versatile qualities is the desideratum of the present invention.

Accordingly, the present invention is primarily directed to the provision of unique means wherewith vertical and horizontal furniture members may be readily connected without the use of tools and in highly varied relation.

Thus, a general object of this invention resides in the provision of simplified means permitting the do-it-yourself enthusiast with knock-down furniture components which can be readily assembled in a minimum amount of time.

Another object of the instant invention is to provide furniture components which include means enabling the convenient adjustment of the relative spacing relation therebetween.

A further object of the invention is to provide a construction of the foregoing character which includes gripping means adapted to afford accurate positioning of the structural components and to afford positive connection therebetween.

Another general object of the present invention is to provide a device of the foregoing character which will be simple in structure, economical of manufacture, easily and quickly assembled and highly effective in use.

Other objects and advantages of the instant invention will be set forth in part hereinafter and in part will be obvious herefrom, or may be learned by practice of the invention, the same being realized and attained by means of the structure defined and pointed out in the appended claims.

The accompanying drawings referred to herein and constituting a part hereof, illustrate one embodiment of the invention, and together with the description, serve to explain the principles of the invention.

FIGURE 1 is a perspective view of a vertical and horizontal member being mutually secured by means of the wedge members illustrated therein;

FIGURE 2 is a fragmentary cross-sectional view taken along line 1—1 of FIGURE 1;

FIGURE 3 is a cross-sectional view taken along line 2—2 of FIGURE 2;

FIGURE 4 is a fragmentary plan elevational view of a typical strip member; and

FIGURE 5 is a front elevation of a sectional furniture arrangement illustrating both extension and cantilever relationships between vertical and horizontal members.

The foregoing accompanying drawings illustrate shelf constructions as explanatory of modular furniture constructions falling within the contemplation of the present invention, but are not, however, intended to limit this disclosure to the exemplary furniture shown in said drawings.

Accordingly, and with reference now to FIGURE 1 of the drawings, the furniture construction designated generally by numeral 1 will be seen comprised of vertical member 2 and horizontal member 4, said members being arranged in perpendicular relation as shown. Said vertical member is provided with side edges 6 and 8,

said edges being located on opposite sides of the member and thus face in opposite directions. Each said side edge is provided with a groove 10, the latter being preferably rectangular in cross-section and extending longitudinally of said groove. Numeral 12 designates the deepest portion of said grooves.

Horizontal member 4 will be observed to comprise upper and lower surfaces 14 and 16, respectively, said surfaces being seen in FIGURE 3 of the drawings. End edge 18 extends normally between said surfaces and as shown in FIGURES 1 and 2 is partially cut away to provide a preferably rectangular recessed portion 20 shown in broken line. Said recessed portion extends inwardly of the said end edge of said horizontal member and includes a pair of opposingly disposed grooves 22 and 23 extending between said upper and lower surfaces 14 and 16. It will be appreciated that said grooves 22 and 23 are preferably rectangular in cross-section, the width W thereof being substantially equal to the width W of grooves 10. As illustrated in said FIGURES 1 and 2, said vertical member 2 is perpendicularly receivable within the recessed portion 20 of said horizontal member whereby grooves of said respective members are opposingly disposed and in longitudinal alignment, FIGURE 2 being illustrative of such relative alignment of grooves 10 and 22, the groove within side edge 8 being in similar alignment with groove 23 positioned within said recessed portion.

To the end frictionally securing said perpendicularly arranged vertical and horizontal members, wedge means 24 is receivable between said opposingly disposed pairs of grooves. As shown in FIGURE 3, said wedge means 24 is movable upwardly into the space provided by an aligned pair of grooves, such movement being indicated from the position designated as 26 to the in-place position designated as 28.

With more particular reference to the preferred construction of wedge means 24, FIGURE 3 illustrates said means as comprising side edges 30, 32, 34 and 36, edges 30 and 34 being perpendicularly related to edge 32, edges 30 and 36 intersecting to form an obtuse angle and edges 34 and 36 intersecting to form an acute angle as shown. Further, it will be seen that side edge 32 is receivable within groove 10 of said vertical member and side edge 36 is receivable within groove 22 of said horizontal member. Thus, it will be appreciated, that the wedge means, when positioned as shown in the drawings, will tighten against said deepest portion 12 of grooves 10 and against deepest portion 38 of grooves 22 and 23. To further tighten said wedge means subsequent to placement thereof, horizontal member 4 may be pressed downwardly or the wedge may be urged upwardly in the direction of arrow 35. Where the horizontal member is cantilevered from a single vertical member rather than supported between two vertical members, the position of the wedge means may be preferably reversed, that is, the obtuse angled corner facing downwardly rather than as shown in the drawings.

Although the frictional securing action effectuated by the wedge means and the coaction of the grooves therewith is satisfactory and advantageous, it has been determined that more accurate levelling of the horizontal member when secured between two vertical members will be occasioned where strip members designated by numeral 40 and illustrated in FIGURE 4 are utilized. The use of a gripping means such as said strip member 40 further serves to more positively secure said vertical and horizontal members in the desired adjusted position thereby precluding slippage which might otherwise occur. Other gripping means such as sandpaper or other suitable friction inducing means is also within the purview of the invention.

Strip member **40** is characterized by a width smaller than width W whereby it may be secured by nails **42** or other suitable fastening means to the deepest portion **12** of the grooves of the vertical member or cemented thereto as it is cemented to side edge **32** of said wedge means **24**. As shown in FIGURES 2 and 3, said strip member is provided with regions **44**, said regions being intermittently raised on the obverse surface and intermittently indented on the reverse surface thereof. As shown in the drawings, the strip member or gripping means secured to the vertical member is arranged whereby the raised portions face outwardly, the indent regions, however, facing outwardly of the strip member secured to the wedge means.

Accordingly, where the spacing of the raised and indented regions is uniform and said strip members are uniformly positioned within the respective grooves and upon the side edge **32** of said wedge means, level adjustment of the horizontal member will be readily obtainable.

In lieu of using strip member **40**, the raised and indented regions **44** may be directly embossed within grooves **10** and along side edge **32**, respectively. Further, it will be appreciated that the raised and indented regions may be reversed insofar as their placement within the grooves and upon the wedge means is concerned.

The invention in its broader aspects is not limited to the specific forms, shapes and construction described, but departures may be made therefrom within the scope of the accompanying claims without departing from the principles of the invention and without sacrificing its chief advantages.

What is claimed is:

1. An adjustable furniture construction comprised of a vertical and horizontal member, said members being adjustably connectible in perpendicular relation, said vertical member having oppositely directed side edges, said side edges each having a groove provided longitudinally thereof, said horizontal member having upper and lower surfaces and an end edge extending normally between said surfaces, said end edge being partially cut away to provide a recessed portion extending inwardly of said horizontal member, a pair of opposingly disposed grooves within said recessed portion, said grooves extending between said upper and lower surfaces, said vertical member being receivable within the recessed portion of said horizontal member whereby grooves of said respective members are opposingly disposed and in longitudinal alignment, and wedge means, said wedge means being receivable between said opposingly disposed grooves to thereby preclude movement between said vertical and horizontal members.

2. A construction as set forth in claim **1** wherein said grooves are rectangular in cross section and substantially equal in width.

3. A construction as set forth in claim **1** wherein said wedge means includes first, second, third and fourth side edges, said first and third edges being perpendicularly related to said second side edge and forming obtuse and acute angles, respectively, with said fourth side edge.

4. A construction as set forth in claim **3** wherein said second and fourth side edges are receivable within the grooves of said vertical and horizontal members, respectively.

5. A construction as set forth in claim **1** wherein said recessed portion of said horizontal member is substantially rectangular in configuration.

6. A construction as set forth in claim **1** wherein each groove of said vertical member is provided with gripping means disposed along the deepest portion thereof.

7. A construction as set forth in claim **6** wherein said gripping means comprises a plurality of intermittently arranged raised regions.

8. A construction as set forth in claim **7** wherein said raised portions are provided surfacedly of a strip member, the latter being secured to the deepest portion of said groove.

9. A construction as set forth in claim **3** wherein the second side edge of said wedge means is provided with gripping means disposed surfacedly thereof.

10. A construction as set forth in claim **9** wherein said gripping means comprises a plurality of intermittently arranged indent regions.

11. An adjustable furniture construction comprised of a vertical and horizontal member, said members being adjustably connectible in perpendicular relation, said vertical member having oppositely directed edges, at least one edge of said vertical member having a groove provided longitudinally thereof, said horizontal member having upper and lower surfaces and an edge extending normally between said surfaces, said edge of said horizontal member being partially cut away to provide a recessed portion extending inwardly thereof, a groove within said recessed portion, said groove being normally disposed with respect to said edge of said horizontal member and extending between said upper and lower surfaces thereof, said vertical member being receivable within the recessed portion of said horizontal member whereby the grooves of said respective members are opposingly disposed and in longitudinal alignment, and wedge means, said wedge means being receivable between said opposingly disposed grooves to thereby preclude movement between said vertical and horizontal members.

12. A construction as set forth in claim **11** wherein the groove of said vertical member is provided with gripping means disposed along the deepest portion thereof.

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