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FURNITURE CASE CONSTRUCTION

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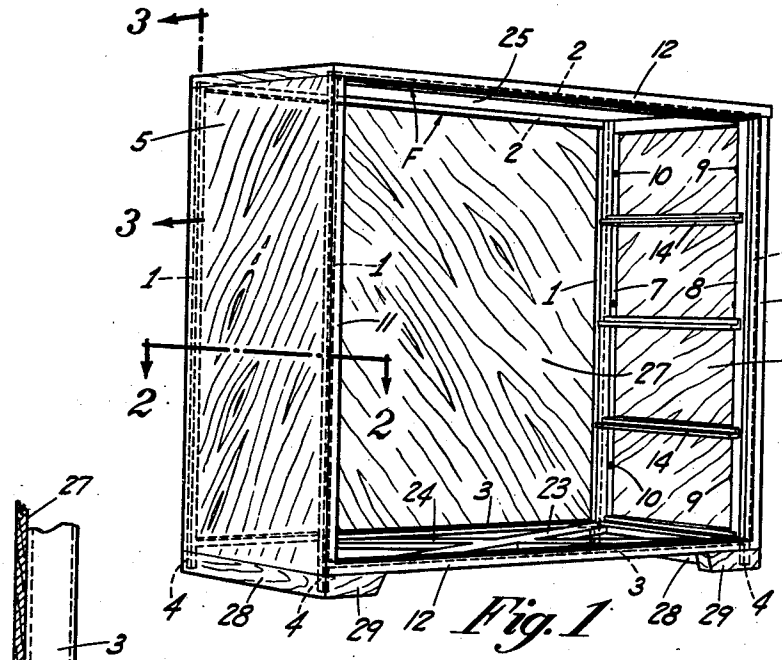


Fig. 1

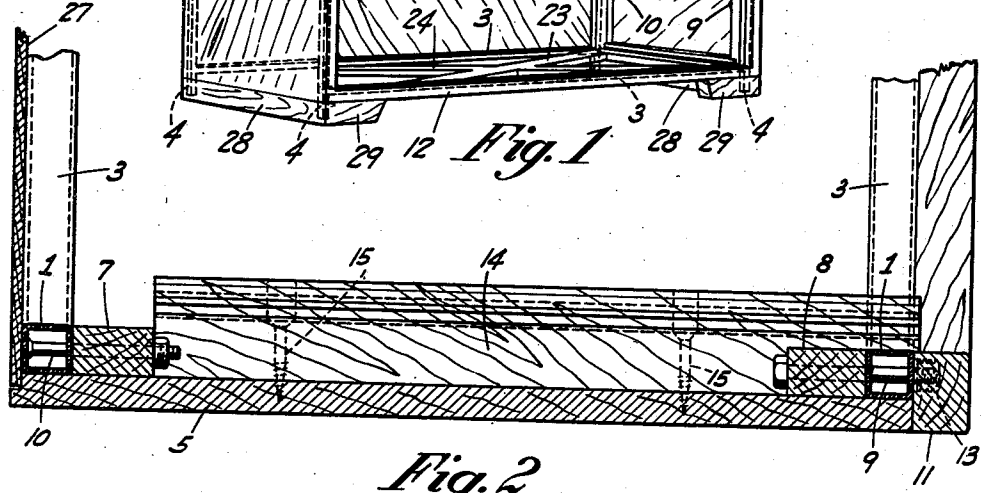


Fig. 2

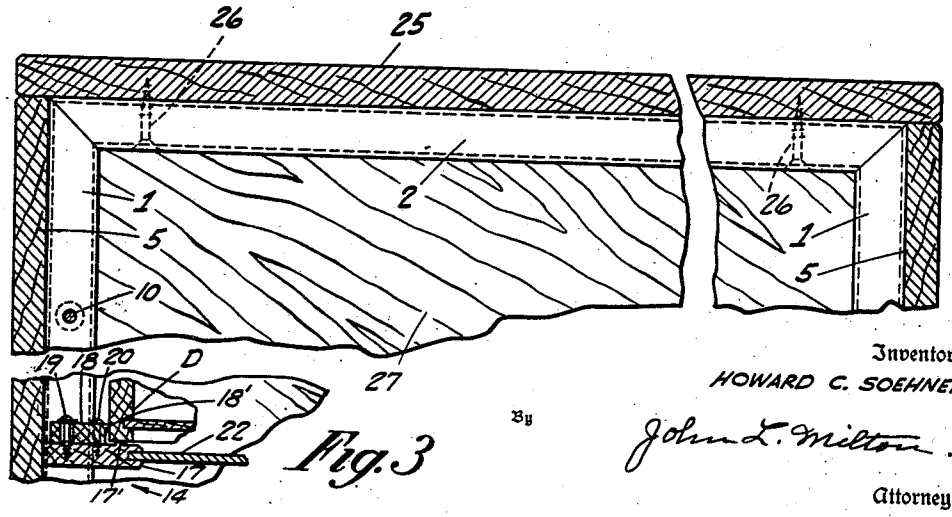


Fig. 3

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FURNITURE CASE CONSTRUCTION

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This invention relates to a furniture construction of the class in which a plurality of wall or surface panels are supported on and conceal a rigid metal frame.

In prior constructions of this class it has been customary to provide a metal load bearing frame embodying several parts or sections which must be assembled as a unit prior to the application of the wall or surface panels thereto, the latter being merely supported on the frame and not functioning as an essential part of the frame construction or contributing substantially to the strength thereof. The provision of such a frame not only requires a substantial number of steps in assembling the frame members, but also requires a relatively large number of specially constructed metal parts with consequently increased cost.

With the foregoing in mind, it is a primary object of the present invention to provide a furniture construction, sometimes hereinafter referred to as being of the "free-standing type" utilizing a pair of separate preassembled metal frame components which are located connected and braced by certain of the wall panels employed in the furniture construction, the latter thus being incorporated in the resulting frame construction and permitting the elimination of metal parts such as are ordinarily used to connect the frame components as a unitary frame structure. Such an arrangement permits application of the wall or surface panels to the frame components without first requiring that these components be interconnected to form a unitary frame.

It is a further object of the invention to provide such a construction in which the separate frame components are flat and, in the disassembled or knockdown condition of the furniture, may be stacked in a substantially flat bundle with the several panels which cooperate with said components in forming a complete furniture unit. Obviously such an arrangement will effectually minimize storage and shipping costs of furniture constructed in accordance with the invention.

Other more general objects are: to simplify such a construction and its mode of assembly, as well as to reduce the cost thereof.

In this application is shown and described only the preferred embodiment of the invention, as by law required. However, it is recognized that the invention is capable of other and different embodiments and that the several details thereof may be modified in various ways, all without departing from the invention. Accordingly, the drawings and description herein are to be considered as merely illustrative and not as exclusive.

In the accompanying drawings:

Figure 1 represents a perspective view of a furniture unit constructed in accordance with the invention, embodying a cabinet structure for operatively holding a plurality of slidable drawers (not shown);

Figure 2, a fragmentary section on the line 2—2 of Figure 1, looking in the direction of the arrows; and

Figure 3, a fragmentary section on the line 3—3 of Figure 1, looking in the direction of the arrows, and showing in detail the manner in which a drawer may be slidably supported in the furniture unit.

Referring now in detail to the accompanying drawings, the furniture unit illustrated incorporates in its construction a pair of rigid metal frame components, each designated F in its entirety. Each of these frame components F consists of a pair of vertical linear side sections 1—1 and horizontal top and bottom sections 2 and 3 respectively, these preferably being of tubular metal construction and rigidly connected together, as by welding, in rectangular formation. It will be seen that in this embodiment, though not necessary, the two frame components F—F are identical in size and shape.

If desired, the lower ends 4 of the respective vertical side frame sections 1 may project somewhat below the level of their respective bottom frame sections 3 to function as legs for the finished furniture unit.

These frame components F—F are connected and maintained in relatively spaced registering vertical planes by vertical side wall panels 5—5, of wood, plywood or the like, which extend transversely between and are firmly secured to the vertical side sections 1—1 of the respective frame components. Each panel bridges a vertical section of one frame and the corresponding or registering vertical section of the other frame.

In the preferred embodiment, each of the side wall panels 5 is provided on its inner face with spaced vertical ribs 7 and 8 which project into the common plane of its cooperating frame side sections 1—1, and the side sections 1—1 are secured firmly against and parallel to these respective ribs 7 and 8, as by bolts 9 and 10. It will be noted that vertical ribs 7 and 8 at their outer edge faces provide a pair of shoulders arranged at right angles to the plane of the wall panel and extending substantially throughout the length of the panel. The shoulders are in overlapping relation with vertical sections of the frame components so that each shoulder faces a side wall of the adjacent vertical frame section. The bolts 9 and 10 passing through the vertical sections of the frame components clamp the vertical frame sections against the adjacent shoulder faces.

It will thus be seen that the side panels 5—5 firmly connect the two separate metal frame components F—F against relative displacement in a direction parallel to the planes of said panels, and thus in effect are incorporated in the structural frame of the cabinet and contribute substantially to the strength thereof.

In order to mask the front frame component F from view through the open front of the furniture unit or cabinet, I provide a rectangular wooden frame consisting of vertical side members 11—11 respectively secured to the front edges of side panels 5—5 and projecting in front of the side frame sections 1—1, and horizontal top and bottom rails 12—12 extending between the respective side members 11—11 in front of the top and bottom frame sections 2 and 3.

Preferably, the nuts 13, which cooperate with the several bolts 9 in securing the front frame component F to the side panels 5—5, are embedded and concealed in the inner face of the side members 11—11, as in Figure 2.

Horizontal drawer runners, each designated 14, are mounted on the inner faces of the respective side panels between the ribs 7 and 8 thereof, as by screws 15 (Fig. 2) the runners 14 of the two panels being disposed in laterally opposed pairs, as shown in Figure 1. The runners 14 may also be glued to the inner faces of the side panels 5.

Inasmuch as these runners 14 extend parallel to the side panels 5 and any drawers D slidably mounted thereon will open and close in a direction parallel to the said side panels, it will be seen that the side panels 5—5 effectually brace the cabinet structure against swaying responsive to the forces exerted thereon by opening and closing of drawers, even though the two metal frame components F—F are entirely separate and in no way provided with metal cross braces or otherwise assembled as a unitary metal frame to withstand such forces.

The specific construction of the runners 14 preferably comprises a main base member 17 secured to the side panel 5, to slidably support the drawer D, and a laterally adjustable guide member 18 thereon to slidably engage the side of the drawer D and maintain it in proper lateral position. Adjustment of the guide 18 may be by screws 19 and 20 threaded into the base member 17 through lateral slots in the guide 18. If desired, the base 17 and guide 18 may be provided with raised relatively narrow horizontal tracks or ribs 17' and 18' respectively to engage the drawer and guide it with a minimum amount of friction. Also, if desired, horizontal partition members 22 may be supported between the laterally opposed drawer runners 14 to protect the contents of each drawer D from dust or other foreign matter.

Means for maintaining the various components of the cabinet structure against relative displacement in a lateral plane may comprise the horizontally disposed diagonal wooden braces **23** and **24** rigidly connecting the side panels **5—5** and/or the horizontal members **3—3** of frames F—F, as shown in Figure 1, and also of a top panel **25** of wood or other material secured across the top frame sections **2—2** by screws **26** (Fig. 3).

In accordance with usual practice, the rear of the resulting cabinet structure is closed by means of a rectangular back panel **27** of fiber board, plywood or other suitable sheet material, and the appearance of the structure may be improved by the application of side and front base members **28** and **29** respectively to conceal the metal frame legs **4**. The weight of the cabinet may be carried either by base members **28** and **29** or by legs **4**.

It will be noted that with a case structure as herein described that the open front of the cabinet or the like has practically fixed dimensions unaffected by humidity changes while the case structure is still rigid: the side wall and top components of wood or the like is free to move in harmonious relationship without altering any functional dimension, whereas in a completely integrated separate metal framework covered with wood the framework size changes by reason of temperature changes and the wood covering changes dimensions by reason of varying humidity with the very possible result of buckling or warpage splitting or excessive strain on the fastening holding the covering to the framework.

It will be apparent that a plurality of drawers D (Figure 3) may be slidably disposed in the cabinet between the laterally opposed pairs of runners **14—14** to form a chest of drawers, bureau, dresser or the like, which may be used in conventional manner.

While a preferred embodiment of this invention has been described herein it is evident that this same principle may be employed for other cabinet structures, using doors rather than drawers as an example, it is also obvious that by this construction increased useful storage volume can be had with the same exterior dimensions of other constructions by reason of the elimination of struts, rails or bracing members across the open side of the case. It is also evident that this construction could be used for two way construction having an open front and back.

Another important aspect is the freedom allowed a designer by not being hampered in creating desirable aesthetic effects by having to increase dimensions in order to affect structural strength.

It is likewise very obvious that the metal frames do not necessarily have to be identical in shape or size, for instance they could be trapezoid or of other shape as required by the case contour.

Thus the novel construction and assembly of parts above described provides a furniture construction embodying flat preassembled frame components which, in the disassembled condition of the furniture unit, may be stacked and shipped in a comparatively small space, with resulting economy in storage and transportation, and which may be readily assembled by unskilled persons, the mode of assembly being greatly simplified by the use of the separate metal frame components which are not required to be assembled as a unitary frame before application of the various wooden or other panels thereto.

Having thus described my invention, I claim:

1. A furniture construction comprising a pair of flat rectangular metal frames formed as structurally independent components and disposed in spaced registering relationship, each frame component being formed of a rigid open-frame structure consisting of two vertical sections joined at their ends by two horizontal sections; two side wall panels, each arranged in bridging relation with a vertical section of one frame and a registering vertical section of the other frame, each panel having a pair of parallel shoulders formed thereon at right angles to the plane of the panel and extending substantially throughout the length of the panel, the two shoulders of each panel being in overlapping relationship with vertical sections bridged by the panel so that each shoulder faces a side wall of the adjacent vertical frame section; and screw-threaded fastening means extending through each vertical frame section and into the adjacent shoulder for clamping the vertical sections of said frame components against the faces of said shoulders, said side wall panels providing the entire support for said frame components to maintain them in spaced relation and to prevent relative displacement of said frames in a direction parallel with the planes of the panels.

2. A furniture construction according to claim 1 wherein the pair of shoulders on each panel are formed of a pair of ribs arranged vertically on one face of the panel.

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