Aug. 17, 1965 R. F. DAVELAAR 3,200,962

COMPOSITE FURNITURE ASSEMBLY

Filed Nov. 12, 1963 2 Sheets-Sheet 1

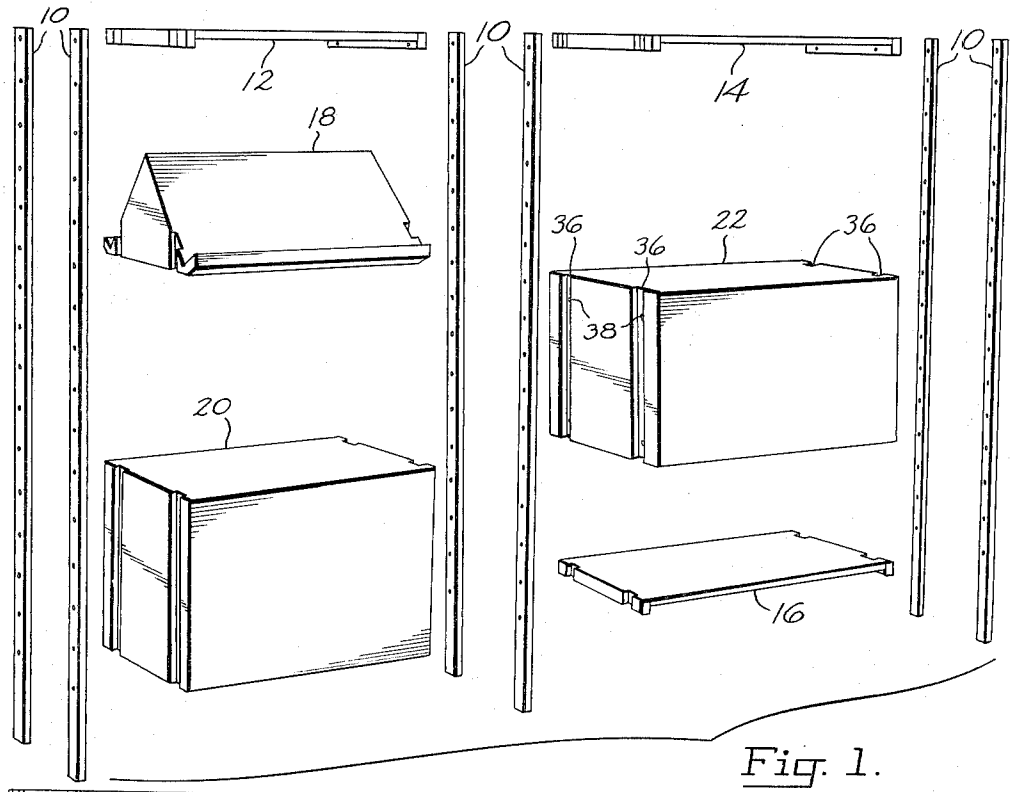


Fig. 1.

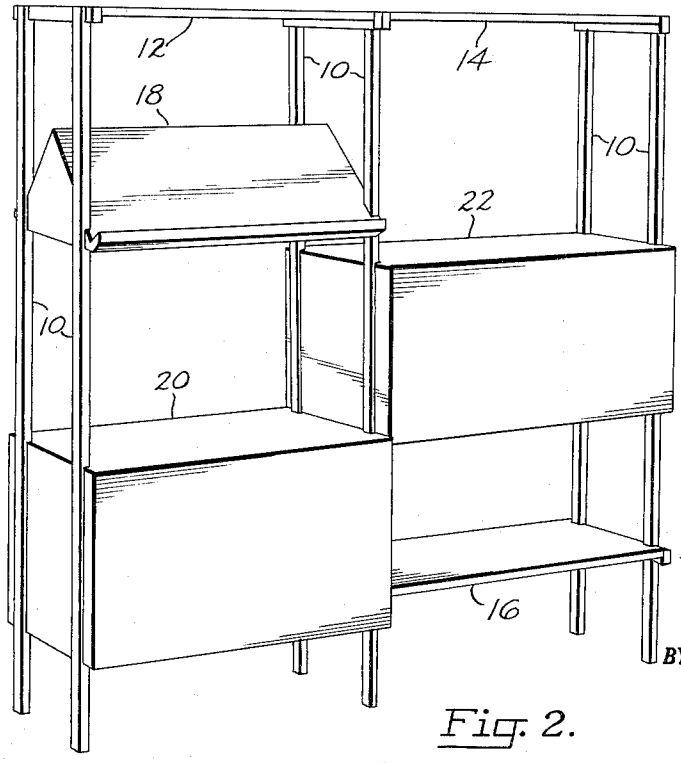


Fig. 2.

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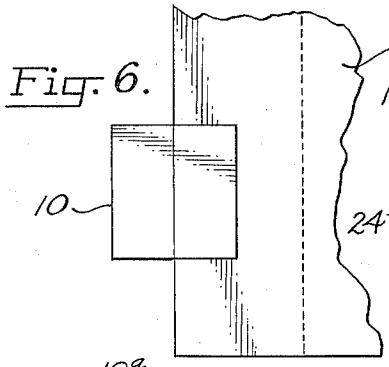


Fig. 6.

Fig. 7.

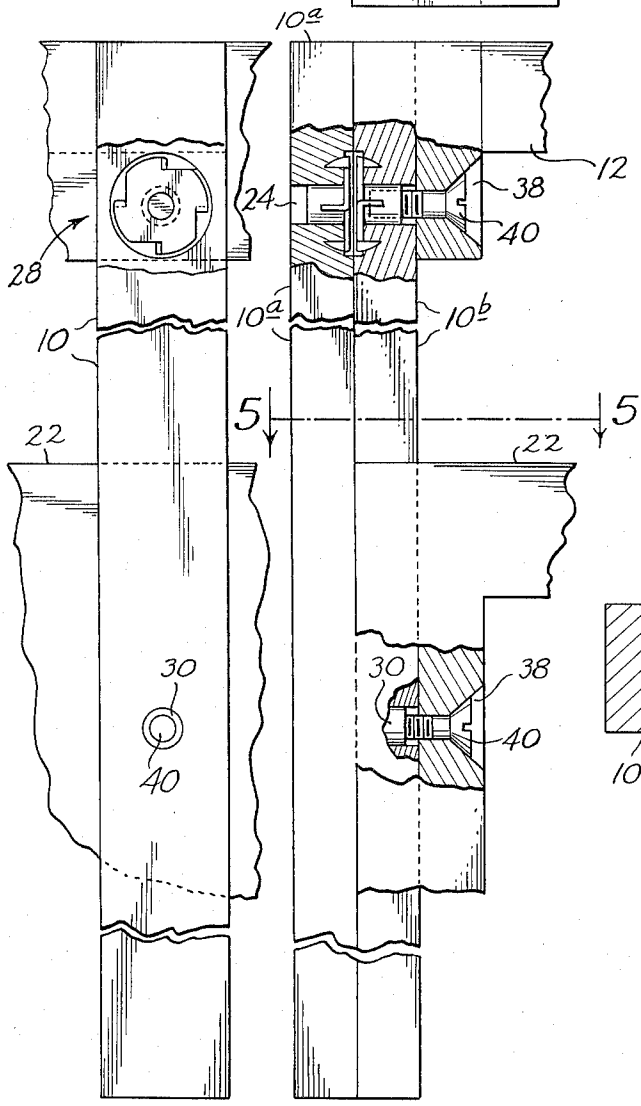


Fig. 4.

Fig. 3.

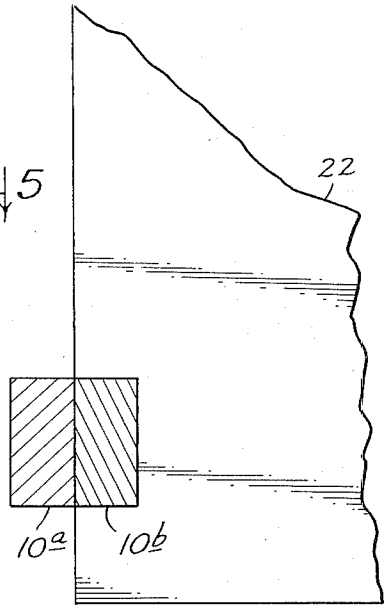


Fig. 5.

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COMPOSITE FURNITURE ASSEMBLY

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2 Claims. (Cl. 211—177)

This invention relates to a composite furniture assembly.

It is the general object of this invention to provide a composite furniture assembly which may be located along a room wall, or as a room divider, and which includes a plurality of furniture units such as shelves, bookcases, cabinets, or desks mounted on vertical standards in a predetermined arrangement.

It is another object of the present invention to provide a composite furniture assembly including multiple furniture units which may be assembled in a desired arrangement and then at a later date disassembled and reassembled in a chosen re-arrangement.

A still further object of this invention is the provision of a composite furniture assembly mounted on standards of unique construction which render the assembly easy to assemble and dis-assemble, even by an unskilled person, which is self-aligning, which is inexpensive, which is versatile in that it may be used to mount a variety of furniture units in a variety of patterns, and which may be finished in a variety of ways to match the finish of the furniture units which it includes.

The manner in which the foregoing and other objects of the present invention are accomplished will be apparent from the accompanying specification and claims considered together with the drawings wherein:

FIG. 1 is an exploded view in perspective of the composite furniture assembly of the invention, illustrating the component parts and their manner of assembly;

FIG. 2 is a perspective view of the assembly of FIG. 1 with the component parts in assembled relation;

FIGS. 3 and 4 are fore-shortened fragmentary side and end elevations respectively of the standards employed in the presently described furniture assembly, partly broken away to illustrate the manner of application of the means employed to couple together the assembly components;

FIG. 5 is a fragmentary sectional view taken along line 5—5 of FIG. 3;

FIG. 6 is a fragmentary plan view of a corner of the assembly; and

FIG. 7 is an exploded view in section illustrating the manner of constructing the structural standards used to support the assembly and of incorporating therein the securing means employed to secure together the structural components.

Stated generally, the composite furniture assembly of my invention comprises a plurality of standards arranged with at least one standard at each end of the assembly. Each standard has transversely therethrough a plurality of longitudinally spaced openings. One or more furniture units is arranged between the standards.

Each unit has through one of its side frame members one or more openings sized and arranged to register with selected ones of the openings through the standards. Nut and bolt or other fastening means are provided for insertion through the registering openings, thereby securing the assembly components to each other. As many as desired of the assemblies created in this manner then may be fastened together end to end to provide an interesting, useful and re-arrangeable assembly of diverse furniture components.

Considering the foregoing in greater detail and with particular reference to the drawings:

As shown in FIGS. 1 and 2 each assembly includes a plurality of vertical standards **10** supporting a plurality of furniture units such as shelves **12**, **14**, **16**, magazine rack **18**, cabinet **20**, and drawers **22**. These units are exemplary only, since various other furniture units such as radio and TV cabinets, tables, desks, cupboards and the like may also be included as desired.

These various components are connected together through the agency of fastening means, the construction of which is shown in FIGS. 3–7 inclusive.

As shown in these figures, each of the posts is formed in two longitudinal sections **10***a* and **10***b*. Through each of these sections at spaced intervals along their length, are registering openings **24**. On the inner faces of the sections, the openings open out into countersunk recesses **26** (FIG. 7).

The height of posts **10** and the spacing of openings **24** is variable. However, in a typical installation, the posts may be 6 feet high, the uppermost opening spaced down the top of each post about 1½ inches, and the other openings located at intervals of about 6 inches along the length of the post. This lends versatility to the assembly in adapting it to the inclusion of a variety of furniture units having diverse dimensions and shapes, as well as to locating these units at selected heights and in desired arrangement.

Seated within openings **24** and countersunk recesses **26** are the fastening means employed to fasten the furniture units to the posts. Such means broadly comprise nut and bolt means and, in particular, nut and bolt means including a flanged, spurred nut which may be concealed in the posts and which cooperates with a bolt penetrating both the furniture unit and the post.

The construction of such a nut is shown particularly in FIG. 7. It comprises a hollow, threaded stem **30**, a transverse flange **32** and a plurality of spurs **34** mounted on and extending inwardly from the flange. These parts of the nut are dimensioned so that stem **30** is received in opening **24** and flange **32** in recess **26**, with spurs **34** pressed into the woody substance of post **10**.

Although the furniture units may be associated variously with the posts, it is preferred to arrange them in tongue and groove relation in order to lend stability to the assembly, as well as to improve its appearance. Thus, as is shown in FIG. 1, and in detail in FIG. 5, each of the furniture units is provided with spaced, parallel, vertical grooves dimensioned to receive posts **10** in tongue and groove relation. Cabinet **22**, for example, is thus provided with spaced grooves **36** which receive posts **10** in the manner shown in FIGS. 3 and 5.

The grooved, structural members of the furniture units are provided with one or more countersunk openings **38** spaced vertically from each other a distance corresponding to the spacing of openings **24** through the posts. Accordingly, when putting the assembly together, openings **24**, **38** may be placed in registration with each other. Thereupon bolts **40** may be inserted through the openings and screwed into stems **30** of flanged nuts **28**, which are embedded in the posts. For the sake of appearance, wooden, plastic, or fabric plugs may be placed in the countersunk openings, covering the heads of bolts **40**.

It is a particular feature of the invention that during the manufacture of posts **10**, two flanged nuts **28** may be placed back to back one in each of posts sections **10***a* and **10***b*, thereby enabling the post to mount furniture units on each side.

This arrangement of the nuts may be accomplished by cutting and drilling the two post sections, inserting the nuts in openings **24** with the spurs embedded in the wood,

applying adhesive to the inner faces of the post sections, and then clamping the sections together until the adhesive has set. If desired, a substantial number of the posts may be laid up together side by side and pressed simultaneously in a single pressing operation.

The manner of assembling the furniture units is shown in FIG. 1. First, the furniture units to be incorporated in the assembly are selected and their arrangement decided upon. Usually such an arrangement is determined with one of the larger units at the bottom of the assembly. It is placed on its back on the floor. Posts 10 are bolted to it at the desired elevation. The four posts and the bottom furniture unit then are placed in upright position and the remaining furniture units bolted to the posts, working from the bottom toward the top.

If the assembly is to be a multiple assembly, this procedure may be repeated with the other multiples, fastening them end to end, using the center posts as common structural supports.

In this manner there may be built up a great diversity of furniture assemblies useful in the living room, dining room, library or office, depending upon the furniture units included. The assembly may be placed against the wall, or, if desired, used as a room divider. Furthermore, it may be disassembled and re-arranged from time to time to suit new plans of the owner.

It is to be understood that the form of my invention herein shown and described is to be taken as a preferred example of the same and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of my invention or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. A composite furniture assembly comprising:
(a) a plurality of standards arranged at least one at each end of the assembly,
(b) each standard having transversely and completely therethrough a plurality of longitudinally spaced openings,
(c) at least one furniture unit adapted for support between the standards and provided at opposite ends with transverse openings arranged and sized to register with selected ones of the openings through the standards,
(d) fastening means dimensioned for insertion through the registering openings in the standards and furniture units, thereby securing the assembly components to each other, and
(e) the fastening means comprising nut and bolt means, the nuts of the nut and bolt means having spurred flanges, there being two nuts placed back to back in each standard opening for mounting furniture units on opposite sides of the standards.

2. A composite furniture assembly comprising:
(a) a plurality of standards arranged at least one at each end of the assembly,
(b) each standard including a pair of longitudinal sections secured together in side by side relationship and having a plurality of longitudinally spaced registering pairs of openings therethrough, the inner portions of said openings being enlarged,
(c) a fastener nut in each opening of a pair, the nut having a bolt-receiving threaded stem and a transverse spurred flange at one end of the stem, the flange being received in the enlarged inner portion of the opening and the stem extending outward in the outer portion of the opening, whereby there are two nuts placed back to back in each pair of openings for mounting furniture units on opposite sides of the standard,
(d) at least one furniture unit adapted for support between the standards and provided at opposite ends with transverse openings arranged and sized to register with selected ones of the openings through the standards, and
(e) bolt means dimensioned for insertion through the openings in the furniture units and for threaded engagement with the corresponding fastener nuts, thereby securing the assembly components to each other.

References Cited by the Examiner

UNITED STATES PATENTS

375,177	12/87	McKinnon	151—41.73
1,427,249	8/22	Weston	211—177 X
2,102,558	12/37	Johnson	151—41.73
2,789,702	4/57	Schofield	211—134 X
3,043,642	7/62	Nelson	312—111
3,096,130	7/63	McCobb	312—111

FOREIGN PATENTS

1,164,445	5/58	France.

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