

[54] UNIT FURNITURE

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[51] Int. Cl. **F16b 12/02**

[58] Field of Search 312/111, 257 R, 263, 264; 211/177

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[57] ABSTRACT

An easily assemblable and disassemblable furniture system, expandable from a basic unit which includes main plates, a rear plate, and joint poles. The main plate has sectoral projections on its end faces and upper and lower flutes, proximate and parallel to and extending the length of its lateral side edge. The rear plate is vertically received within flutes on upper and lower position main plates, and has defined therein four angled notches at its corners to accommodate the joint poles. The joint poles are substantially square in cross section and have four mating grooves of sectoral cross section, the two grooves and the vertical faces receiving the projections of the horizontally positioned main plates. Additional main plates are also positioned vertically to form the sides of the basic unit, the grooves in the horizontal faces receiving the projections of the vertical plates, and their flutes receiving the end sides of the rear plate.

Additional segments of the basic unit may be developed by further assembly of the above-mentioned elements, until a desired furniture system has been assembled.

13 Claims, 18 Drawing Figures

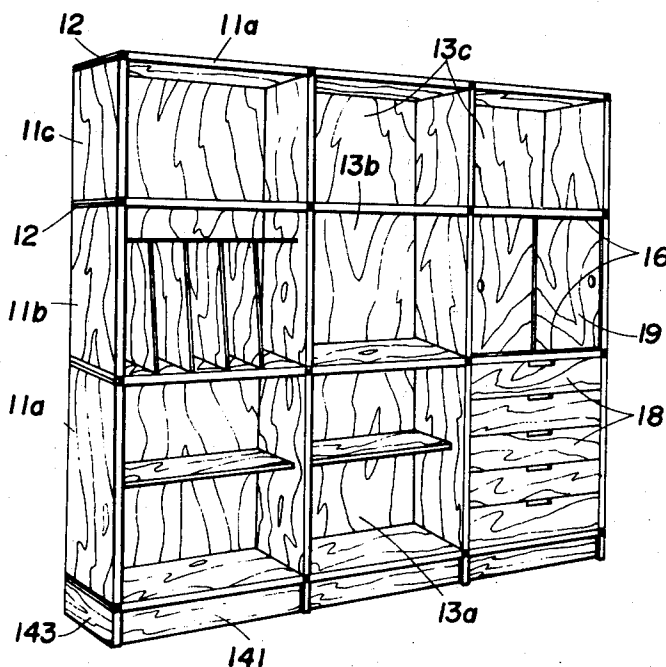


FIG. 1

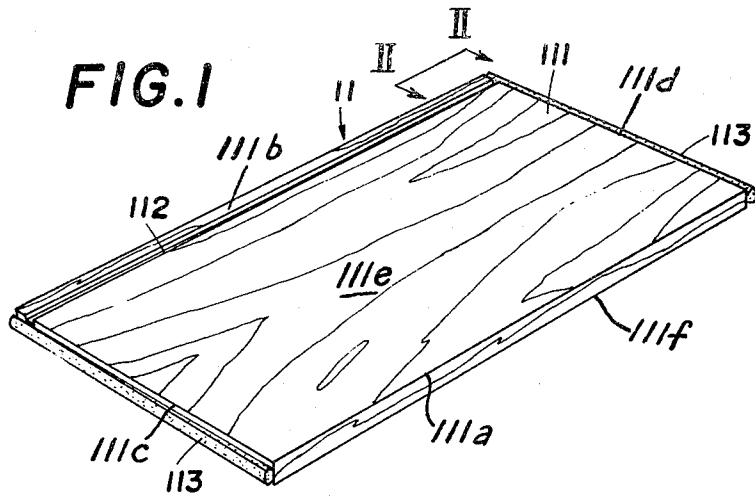


FIG. 2

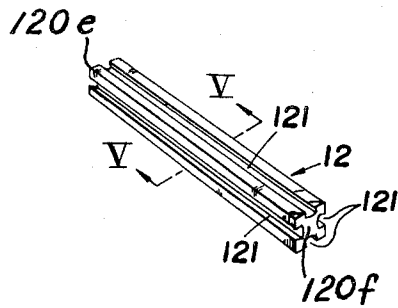


FIG. 3

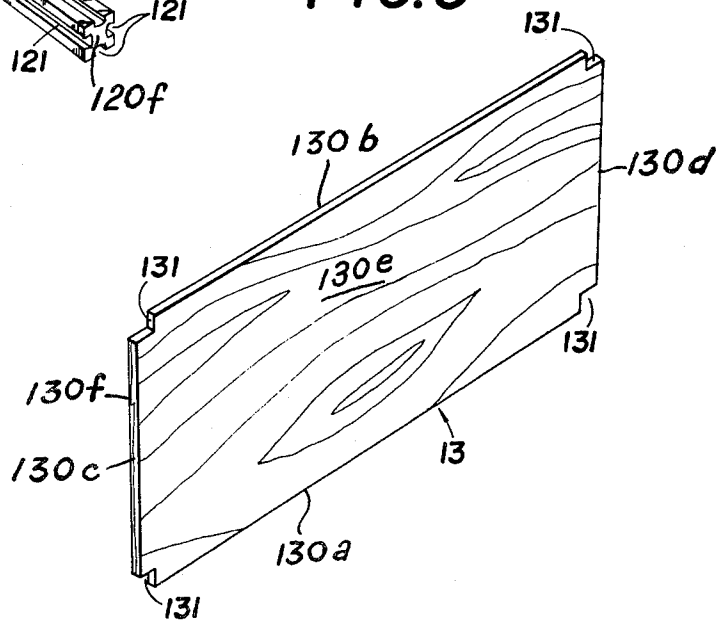


FIG. 4

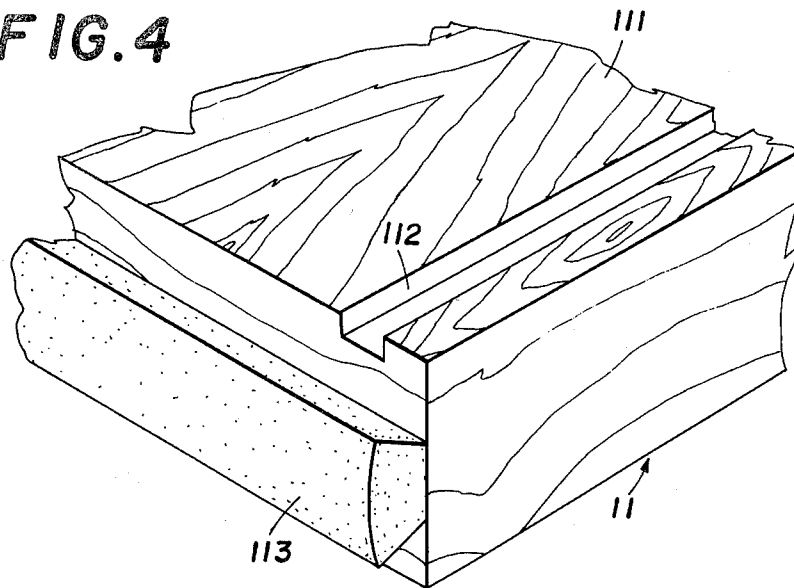


FIG. 14

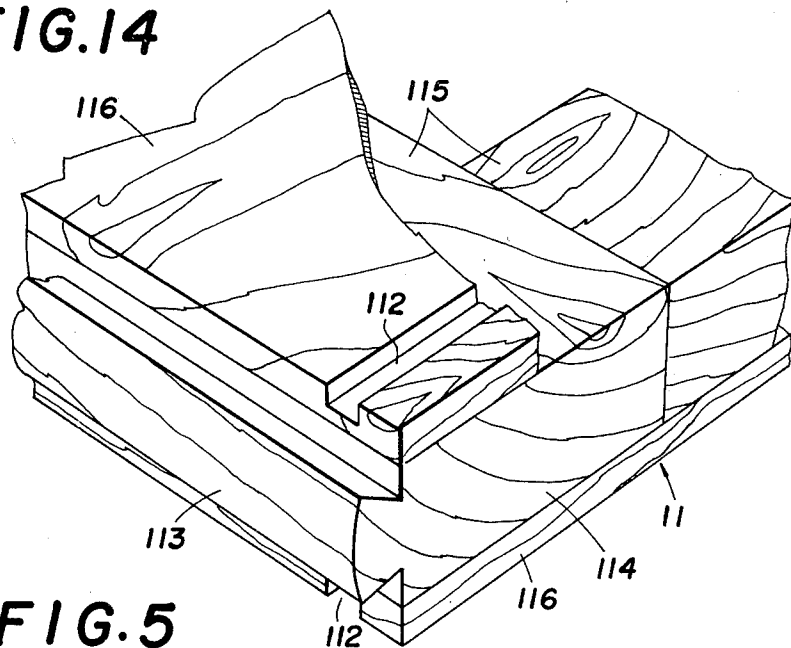


FIG. 5

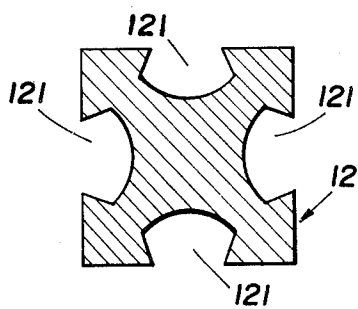


FIG. 6

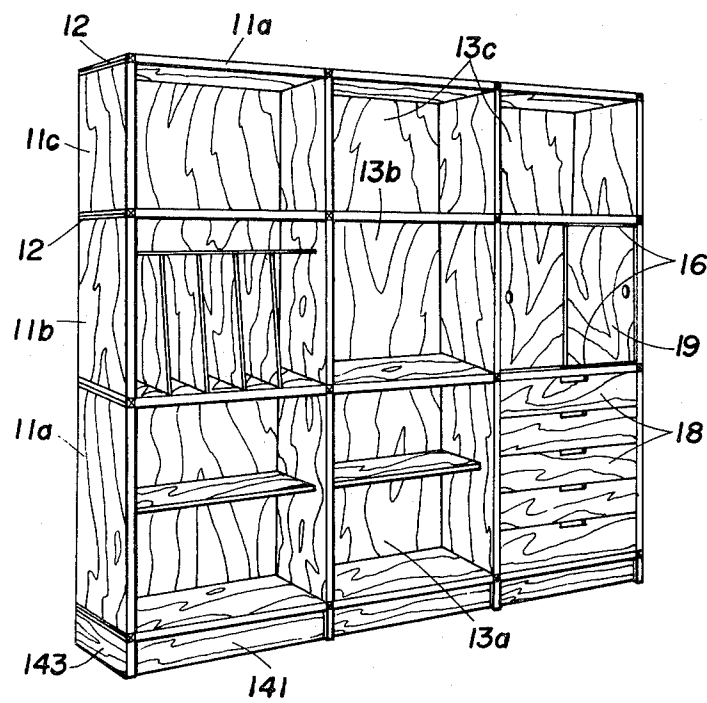


FIG. 10

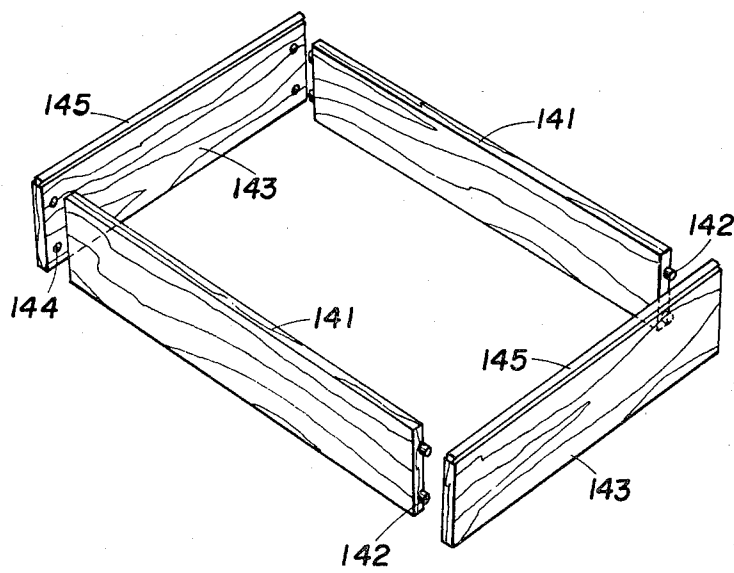
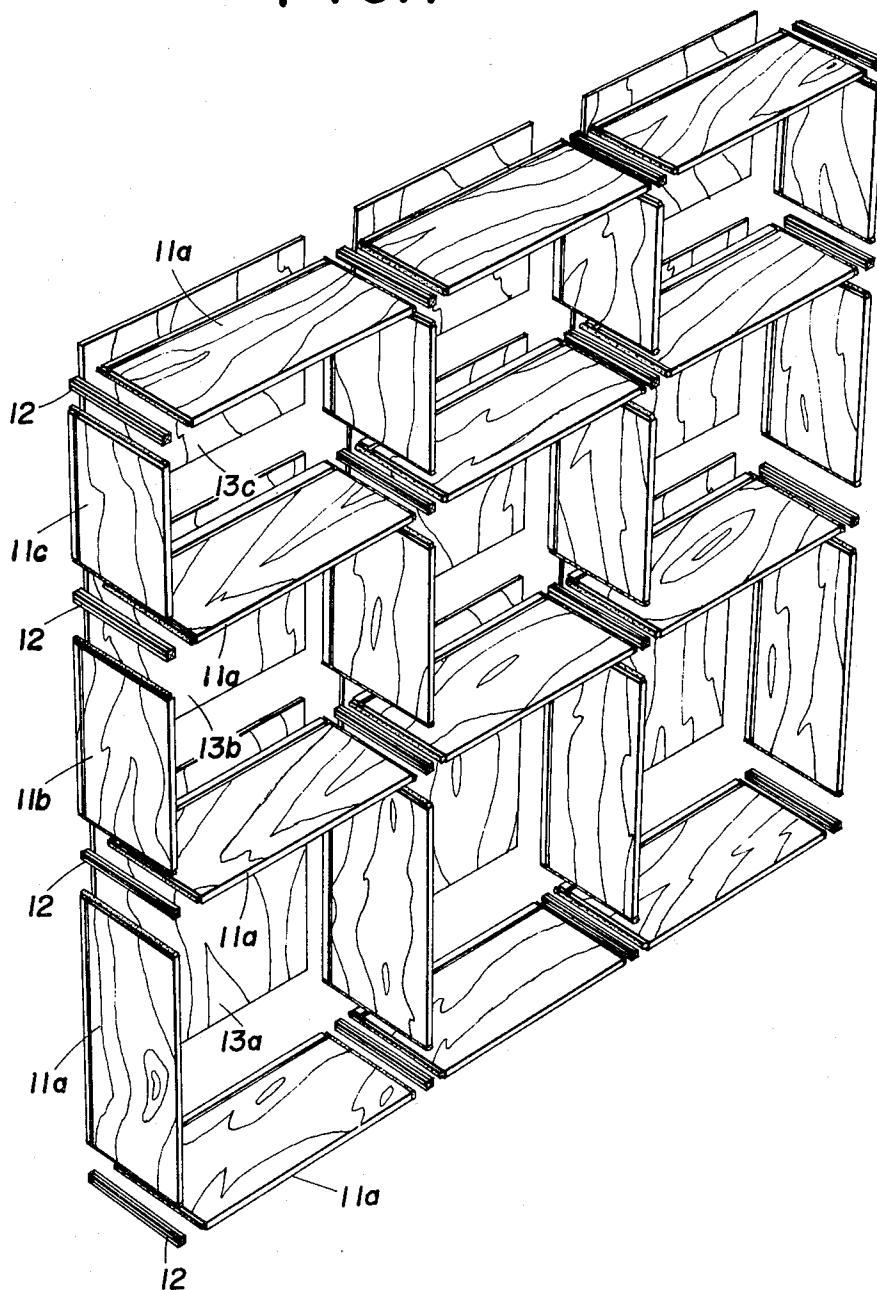


FIG. 7



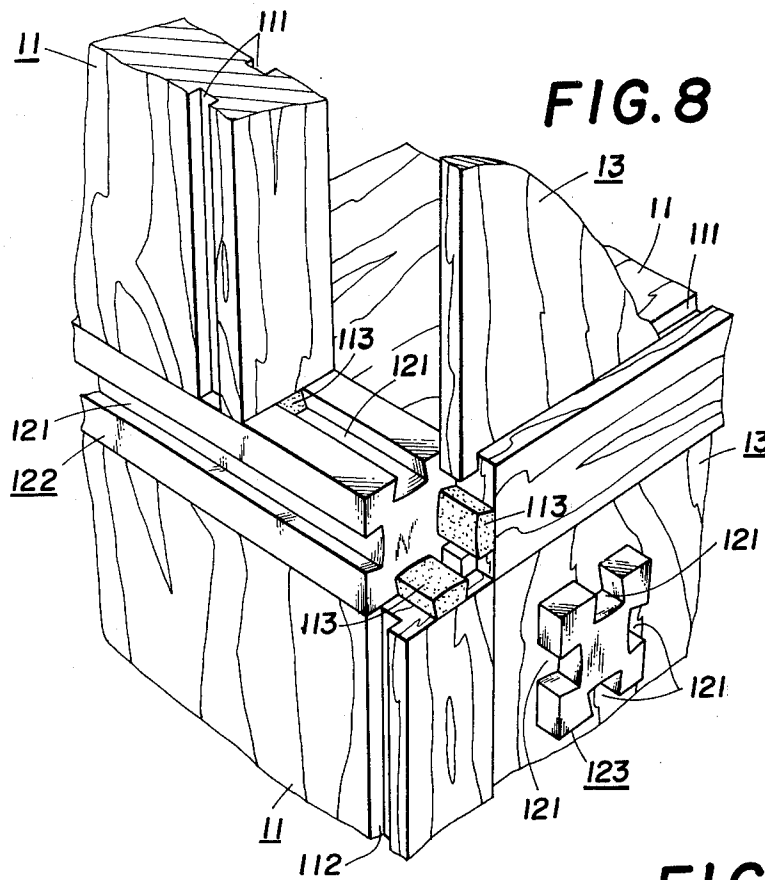


FIG. 11

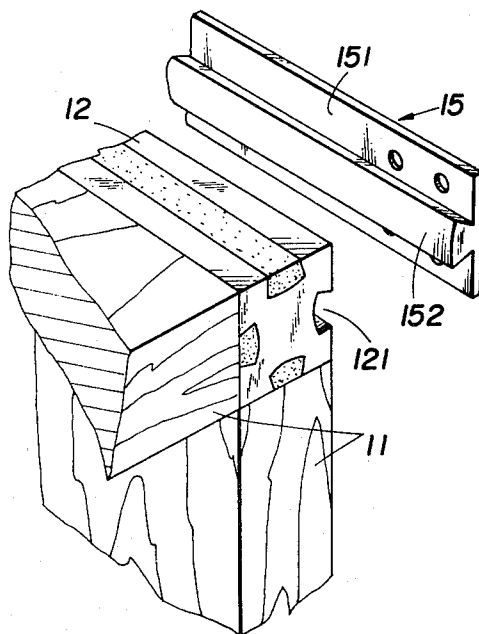


FIG. 9

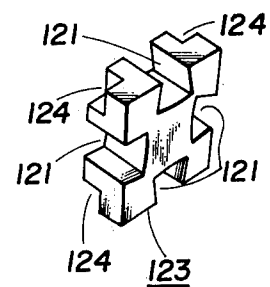


FIG. 12

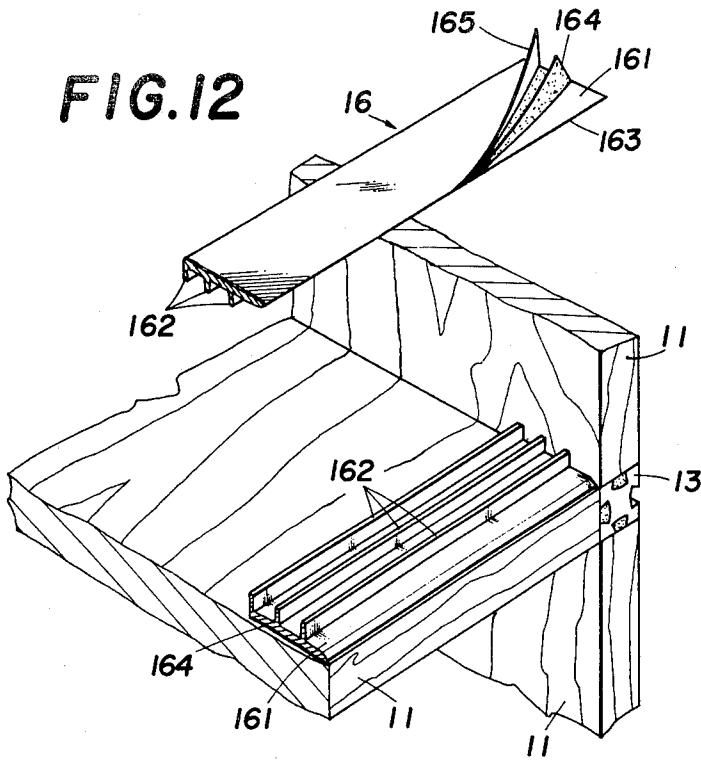


FIG. 13

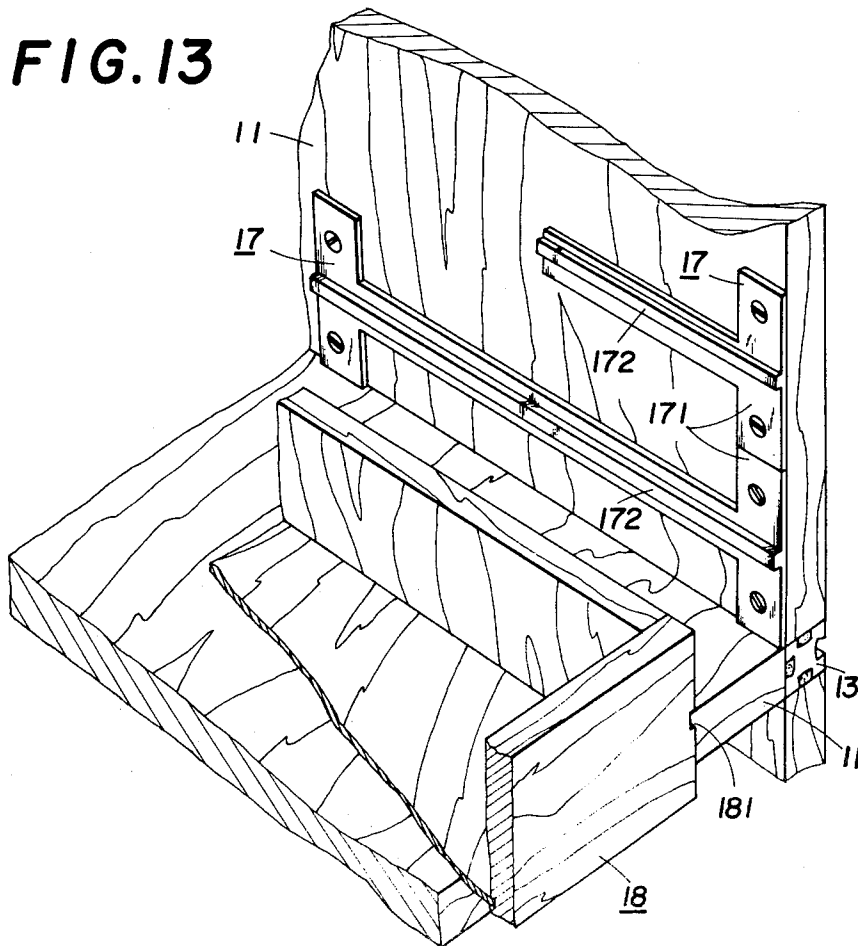


FIG.15

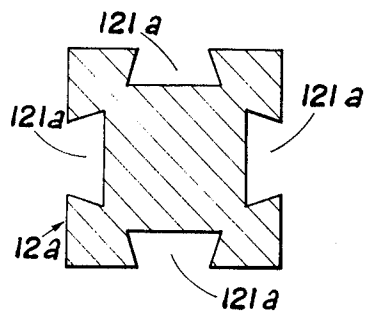


FIG.16

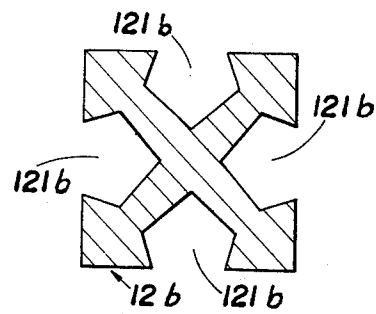


FIG.17

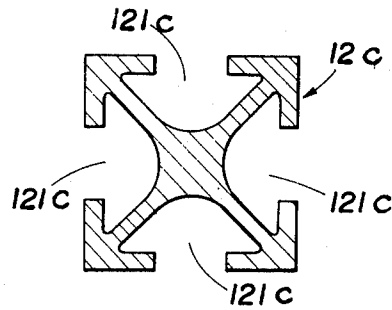
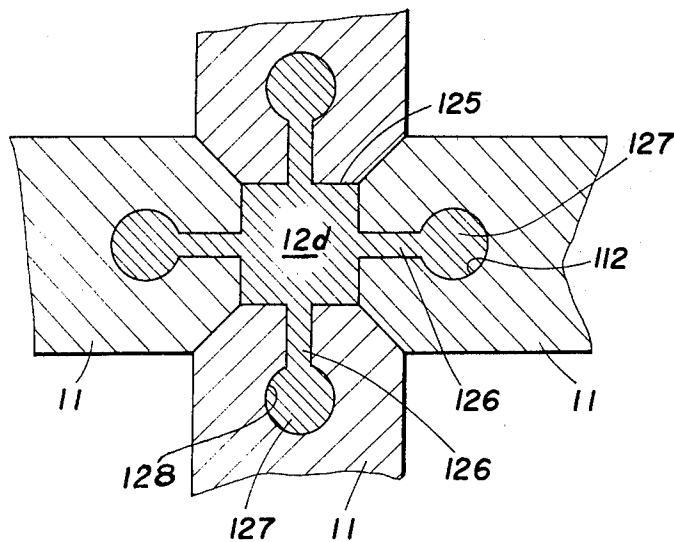


FIG.18



UNIT FURNITURE

BACKGROUND OF THE INVENTION

a. Field of the Invention

The present invention relates to unit furniture, and more particularly to furniture systems which may be developed from a basic unit, and in which the expanded system is simply variations developed from additional basic units, all interconnected.

b. Description of the Prior Art

Furniture systems composed of a plurality of basic unit systems are known in the art. Some systems have unit box-like component parts of identical size and shape, with or without door members or drawer members, and stacked one upon another to provide a complete system having a desired shape and size, and performing desired functions. Such systems have the obvious drawback of not being rigidly secured.

One proposed suggestion to eliminate this problem is to provide two vertical opposing side plates within the basic unit, extending above the horizontal partition plate forming the upper portion of the basic unit. The upwardly extending free end portions of the side plates are then coupled at the inside, for example, to another pair of side plates by separate coupling means, such as bolts or nuts, and the next basic unit is assembled on top of the first unit.

This eliminates the problem of having a rigid furniture system, but it has been discovered that furniture systems built with this proposed structure, are not useful unless the basic units are substantially large in size, and this will severely restrict the variety of the possible systems that may be made from the basic unit. Furthermore, such a system is much more laborious and difficult to assemble. Finally, the packing and shipping of the basic units becomes expensive because of their size.

Another attempted solution has been to develop furniture systems comprising poles and shelf plates. Poles are positioned at sites in a room which are to represent the four corners of the completed furniture system, and then shelf plates are affixed to the poles at desired vertical positions.

The disadvantages of such a system is that it requires a high level of skill and a considerable length of time to properly position the poles at the proper intervals. Furthermore, if such a system is to be assembled in the room of a wooden house where the ceiling boards are weak, the securement becomes difficult and dangerous, and as a result the installation of the system would tend to be limited to a site close to the wall.

SUMMARY OF THE INVENTION

Accordingly, it is among the principal objects of the present invention to provide a furniture system, which can be developed from a basic unit comprising only three different, but easily assemblable elements.

Yet another object of the present invention is to provide a basic piece of unit furniture of the character described which may be very easily packed and shipped.

Still yet another object of the present invention is to provide a basic piece of unit furniture which will form a furniture system that does not have to be secured to a ceiling or wall, unless desired.

Still yet another object of the present invention is to provide a unit furniture system which is simple and inexpensive to manufacture, and yet will be durable to a high degree in use.

Still yet another object of the present invention is to provide a furniture system comprising a basic unit which is easy to assemble or disassemble without excessive wear and tear.

Still yet another object of the present invention is to provide a unit furniture system which may be used to design various desired completed furniture systems of various sizes and shapes, and performing various functions without inherent difficulty, and which can be installed in any type of building or house and in any location of a room.

Still yet a further object of the present invention is to provide a unit furniture system of the character described, which because of the simplicity and low cost of manufacture, can accordingly be marketed at a low price.

The present invention contemplates a furniture system comprising a basic unit which has as its component parts rectangular flat main plates, joint poles and rectangular flat rear plates, these elements being assembled by the user, first into the basic unit furniture, and then into the desired system.

The main plate is substantially rectangular and flat and has a pair of flutes formed in the upper and lower faces proximate and parallel to the lateral side edge and extending the entire length of the plate. The plate also has projections extending outwardly from each end face extending the entire width. The projections are substantially sectoral in cross section.

The joint pole is generally square in cross section with the width of the side wall being substantially equal to the thickness of the main plate, and having a length substantially equal to the end face of the main plate. Furthermore, there is a groove formed in each of the side walls, which is substantially sectoral in cross section, and adapted to mate with the projections from the end faces of the main plate. The nature of the configuration, whether it be sectoral, or any other shape, is designed so that assembly can only occur by a sliding fit, starting with the placement of the projection at the groove at one of the ends of the pole; thus, the pole and the plate cannot be separated by transverse movement.

The rear plate is also a substantially rectangular flat plate, having a thickness just slightly smaller than the width of the flute, to insure its smooth, yet snug insertion and support within the flute. It has a length substantially equal to the overall lateral length of the main plate plus twice the depth of the flutes.

The basic unit furniture of the present invention is assembled by taking, for example, two main plates and placing them at right angles, and joining them by telescoping the projections in the two adjacent perpendicular faces of the joint pole. Then the rear plate may be positioned within the flutes of the horizontal and vertical main plates, the lateral side edges and lateral end extension of the rear plates being received within the respective flutes. Then, two additional main plates may be positioned both from the top and the remaining side, being joined to the first two main plates by three additional joint poles. The basic frame has thus been formed, and by coupling more component parts to the upper, bilateral, end stroke or bottom of this basic frame which has already been built, a desired furniture system may be assembled.

These component parts are provided in various dimensions so that various heights and widths of the basic units may be provided, but it is always possible to cou-

ple them together to assemble a desired furniture system.

Other objects and advantages of the present invention will become apparent by reading the following detailed description when taken in conjunction with the accompanying drawings in which:

FIG. 1 is a perspective view of a preferred embodiment of the main plate of the present invention;

FIG. 2 is a slightly enlarged, perspective view of a joint pole;

FIG. 3 is a perspective view of a rear plate;

FIG. 4 is an enlarged, fragmentary, perspective view of a main plate as viewed from the line IV—IV of FIG. 1;

FIG. 5 is an enlarged cross-sectional view of the joint pole taken along the line V—V of FIG. 2;

FIG. 6 is a perspective view of an example of an assembled furniture system using the basic unit furniture in accordance with the present invention;

FIG. 7 is a perspective view similar to FIG. 6, but with the parts in exploded form to show the manner in which the respective basic elements are assembled;

FIG. 8 is a perspective view of a modified embodiment of a two-member joint pole and the rear plate, and their manner of assembly;

FIG. 9 is another modified embodiment of the second member of the two-member joint pole;

FIG. 10 is a perspective view in exploded form, of a base unit which may be used together with the basic unit furniture system;

FIG. 11 is a perspective view of a fixing member which may be used together with the basic component parts, and the manner in which this fixing member is secured to the joint pole;

FIG. 12 is a perspective view of a rail for a sliding door, and the manner in which it is used and secured to the basic component parts;

FIG. 13 is a perspective view of a drawer and its guide rail, and the manner of its securement and use with the basic component parts;

FIG. 14 is an enlarged, fragmentary, perspective view, similar to FIG. 4, of a modified embodiment of the main plate;

FIGS. 15-17 are cross-sectional views, similar to FIG. 5, of modified embodiments of the joint pole; and

FIG. 18 is another modified embodiment of the basic unit furniture, and particularly the joint pole and the plates, and showing the manner of joinder.

DETAILED DESCRIPTION OF THE INVENTION

Turning in detail to the drawings, and more particularly to FIGS. 1-7, there is shown a unit furniture system 10 (FIG. 6), in which the basic unit is assembled from main plates 11 (FIG. 1), joint poles 12 (FIG. 2), and a rear plate 13 (FIG. 3).

The main plate 11 is used for the upper and lower horizontal supports of the basic unit. In addition, the main plate is used as the side supports or the side walls of the basic system. The main plate is indicated as plate member 111 and is made of a sufficiently dried rectangular single plate, or a plywood or other man-made board which will not undergo warping during use. The entire surface of the plate member 111 is either coated with a paint or lacquer, or covered with a decorative paper or plate, by means of an adhesive, having aesthetically pleasing wood grain patterns and protected with a plastic coating.

The member 111 is defined by a front lateral side edge 111a, a rear lateral side edge 111b, a left end edge 111c, a right end edge 111d, a top surface 111e, and a bottom surface 111f.

A flute 112 is formed in both the upper and lower surfaces 111e, 111f of the plate member 111, and extends laterally along the entire length of the member having a principal longitudinal axis proximate and parallel to the rear lateral side edge 111b. The flute is defined by a front lateral side edge 112a, a rear lateral side edge 112b, and a base 112c (FIG. 4).

Extending outwardly from end edges 111c and 111d are projections 113 made of an extrusion-molded plastic material having a generally sectoral cross section. The projection extends the entire width of the member 111, or across the whole face of the edges, thus crossing the principal axis of the flute 112. The projection 113 may be secured to the end faces 111c, 111d of the plate member 111 by an convenient means, such as adhesive. It is very important that the plate member be perfectly flat and that each corner is formed so that the adjacent surfaces meet each other exactly at right angles. Furthermore, the projections 113 must be secured to the end faces at precisely the right position. The purpose of the precise positioning and dimensions of the member 111 is to insure that it will interchangeably fit with various joint poles and rear plates, and other articles from not only the furniture system of which it is initially a part, but any other furniture systems provided for future expansion of the basic system originally purchased.

FIG. 14 shows a modified construction of the main plate. The projection 113 is formed as an integral part of a plate piece 114 which is one of several elements forming the main plate, and in particular, forms the end faces of the plate member. This projection 113 of this modified construction is produced by milling a solid piece so as to form the sectoral shape desired. The plate member, per se, is formed by bonding two decorative plates 116 to both sides of a frame 115 which is constructed by coupling four frame members, including two pieces 114 and central pieces, to form a sandwich-type construction. Flutes 112 are milled in both of the exposed faces of the decorative plates. An advantage of this main plate is that it can be easily manufactured, at a low cost, is relatively light in weight, and its projections do not easily break or separate from the main unit.

The rear plate 13 (FIG. 3) is of a generally rectangular flat shape having a thickness which is only slightly smaller than the width of the flute 112 of the main plate 11. Its overall length is equal to the length of the main plate plug twice the depth of the flute 112, for the purpose hereinafter appearing. The rear plate is defined by a lower lateral side edge 130a, an upper lateral side edge 130b, a left end edge 130c, a right end edge 130d, a front surface 130e and a rear surface 130f. It is understood that the width of the rear plate will vary depending upon the length of the plate members 111 which are to be used as the side supports of the basic unit, this length determining the width requirement of the rear plate. It is also understood that the rear plate has the same type of finish on one side as the finish of the main plate member, for a specific furniture system.

The plate 13 is provided with an angled notch 131 at each of its four corners, for the purpose hereinafter appearing. The length of each face of the angled notch

131 is only slightly greater than the depth of the flute 112 in the main plate 11.

The joint pole 12 (FIG. 2) has a length dimension substantially greater than its width. It is generally square in cross section, with each side corresponding in width to the thickness of the plate member 111. It can now be seen that the purpose for the angled notch is to avoid interfering with the joint pole. The length of each face of the notch is just sufficient to allow it to basically abut against the closest portion of the surfaces of the joint poles.

The length of the joint pole is substantially equal to the width of the plate member. The pole 12 is more specifically defined by a left face 120a, a bottom face 120b, a right face 120c, a top face 120d, a rear face 120e (FIG. 2) and a front face 120f.

As best seen in FIG. 5, the four side faces of the joint pole 12 have formed therein a groove 121 of substantially the same sectoral configuration as that of the projection 113 although of slightly larger dimensions. It should be noted that for purposes of assembly the projection 113 and the corresponding mating groove 121 are always designed so that the only way to joint the two elements, is by a telescoping fit, that is, by placing, for example, the rear end 120e of the joint pole at the front face of the projection 113 and then sliding the pole backwardly. Thus, it is not possible to separate the joint pole from the plate member 111 by a transverse movement.

To further illustrate this feature of the invention, FIGS. 15-17 show modified embodiments of the cross-sectional configuration of the joint pole, and consequently, what would be a modified embodiment of the cross-sectional configuration of the projections. More specifically, FIG. 15 shows a joint pole 12a in which the cross-sectional configuration of the groove is in the shape of a simple frusto-conical recess. It should be noted that such a groove is simple to mill.

The grooves shown in FIGS. 16 and 17 allow a greater area of contact with the complementary projections. More specifically, the recess 121b in joint pole 12b as shown in FIG. 16 is pentagonal in cross-sectional configuration, while the recess 121c of pole 12c of FIG. 17 is of an arrowhead shape in cross-sectional configuration. Needless to say the mating projections 113a-c as modified on the main plate 11 have a cross-sectional configuration which is complementary to that of the respective grooves.

Further modifications of the joint pole are shown in FIGS. 8 and 9. In FIG. 8, the joint pole is shown as being comprised of two separate members 122 and 123, both having the same cross-sectional configurations but being of substantially different lengths. The member 122 is substantially the longer, and its length is equal to a distance measured from the front of the plate member 111 to front lateral edge 112a of the flute. The other substantially shorter member 123 has a length equal to the distance from the rear edge 112c to the rear lateral side edge 111d of the member 111. Thus there is an overall distance equal to the width of the flute which is empty. In this embodiment also, the rear member 123 is not notched, since there is no necessity to accommodate the joint pole, as described above.

The advantage of the aforementioned joint pole is that at the time of assembly, the component parts can be temporarily assembled first by use of the pole member 123, and this can be easily done because of its short

length, making it easier to insert than the longer member 122. Furthermore, the pole members are normally prevented from lateral movement along their major axes because of the presence of the unnotched rear plate 13; the only way to remove them is by a forcible, positive action. Thus, the members 122 and 123 will not slip out of position under normal usage.

A further modification of the joint pole is shown in FIG. 9. In this modification the member 123 is longer in length and extends from the front edge 112a of the flute to the rear lateral side edge 111b. Furthermore, there are defined recesses 124 which accommodate the corners of the unnotched rear plate 13. As a result, the use of the modified member 123 will leave no unfilled spaces as would result with the member shown in FIG. 8.

FIG. 6 shows an example of an assembled furniture system constructed by using the basic component parts. The system illustrated consists mainly of display shelves. As shown in FIG. 7 there are three main plates 11a, 11b, 11c having the same width, but different lengths. The plates 11a are not only used as the lower side walls of the basic unit, but also are shown as the horizontal support elements of the entire furniture system. The plates are connected together by a series of joint poles 12, providing adjacently arranged columns. As seen in FIG. 7, the joint poles may be initially telescoped on either side of the projections 113 of the bottom plate 11a, then the additional joint poles may be extended to the right of the numbered joint poles and main plates. Then the vertical main plates 11a may be positioned in the grooves in the upper face 120d of the joint plates, and the elements may be constructed accordingly.

As can be seen the use of the three horizontally positioned main plates allow the building of a furniture system which is comprised of nine basic units of three different types. In this example, there are three different rear plates 13a, 13b and 13c, used, having the same widths, all equal to the length of the main plates 11a but having the same length, equal to the length of the main plates 11a, and having varying widths, in accordance with varying lengths of the main plates 11a, 11b and 11c. During assembly, these rear plates are simply inserted in the flutes 112a, the edge 130a abutting the base 112c, and the upper edge 130b abutting the base 112c in the flute on the lower surface 111f of the main plates. In a similar fashion the side edges 130c and 130d fit in the flutes making up the vertical side walls, and this accounts for the fact that the length of the rear plates are equal to the lengths of the main plates, plus twice the depth of the flutes so that the extensions will fit properly within the flutes, and have exposed lengths equal to the length of the horizontal main plates.

The furniture system may be positioned upon a base frame which is formed as shown in FIG. 10. The illustrated base frame is comprised of a first base frame plate member 141 which is equal in length to the lateral side edge of the main plate 11. It has two spaced pins 142 extending from each longitudinal end face. The second base frame plate member 143 is equal in length to the end face of the main plate 11 and has a width equal to the first plate member 141. The member also has two spaced holes 144 which are formed in each of its longitudinal end faces in position for alignment with the pins 142. By taking two of each of the above-mentioned members, a four-way assembly may be pro-

vided with the pins 142 being received within their mating holes 144. On the upper faces of the two opposing plate members 143 are projections 145 which are substantially equal to the dimensions and the cross-sectional configuration of the projections 113. These projections 145 may be telescoped within the grooves on the lower face 120b of the bottom joint poles, thus securely positioning the assembled units on top of the base frame.

FIG. 11 shows an example of a fixing element to anchor the assembled furniture to a wall or ceiling. This element 15 is defined by a flat oblong plate 151 and has a projection 152 with the same cross-sectional configuration as that of the projection 113 of the main plate. The two elements are integrally formed, with the projection extending outwardly from one side of the plate. The plate 151 may be secured to the floor, wall, or ceiling, by means of adhesives, or by passing screws through openings formed in the plate. Then the joint pole may be telescoped on the projection and as seen in FIG. 11, the groove in face 120c would connect with the furniture. This would firmly anchor the furniture system in a room.

Such an element may be secured to any joint pole used in the assembled furniture. If it is used at the top of the system, it will tend to prevent the unit furniture from falling down or from tilting. The plate 151 is not always necessary since it would be possible to pass screws or to secure the projection 152 directly to a wall, if it is either affixed by a glue or if there are screws provided with countersink holes so that the top of the screw or bolt will be flush with the outer surface of the projection 152.

In expanding the utility of the unit furniture of the present invention, it is possible to provide elements which may be secured to the basic component parts for allowing use of sliding drawers or doors, thus allowing the user to have additional functions and configurations as are aesthetically and usefully desired. The additional elements are of such dimensions so that they can easily be attached to desired locations within the basic unit.

One such element is a rail for sliding doors and is shown in FIG. 12. The rail 16 for sliding doors is made of a flat base 161 having a length equal to that of the lateral side of the main plate 11. One side of the base is provided with three ridges 162 extending at right angles from the surface of the base and in spaced parallel relationship with one another. The ridges 162 are also parallel with one of the lateral side edge lines 163 of the base 161. These ridges cooperatively form grooved channels for sliding movement of doors 19, as shown in FIG. 6. A double-side adhesive tape 164 is bonded firmly to the opposite surface of the base 161 and the external exposed adhesive face of the tape 164 is covered and protected by a peel-off paper strip 165, as shown, until such time as it is to be secured in position.

Such a rail is simply attached to the upper surface of one main plate simply by having the edge line 163 align with the front lateral side edge 111a of the main plate. Thus the upper and lower rails and their ridges may be positioned in the desired aligned parallel positions relative to each other by a rather simple procedure. As mentioned above, the rails can only be affixed to the desired surfaces of the main plate by peeling off the protective peel-off paper strip 165. The rails are preferably made from an extrusion-molded plastic material.

Examples of additional supplementary elements are drawers and their guide rails. As shown in FIG. 13, each of the guide rails 17 is comprised of a double T-shaped flat base plate 171 and a rear 172 which projects from the longitudinal central portion of the plate, and in parallel relationship with its longitudinal side edge line. The distance between the upper and lower end edges of the lugs of the double T-shape is equal to a distance obtained by dividing the length of the lateral side edge of the main plate by an integer. As a result, by securing a first base plate to the main plate in a desired location, and then securing a second base plate to the same main plate, but above the first plate, with the outermost lugs in abutting relation, and then by repeating by procedure, it is possible to secure a plurality of the plates in precise adjacent and parallel relationship to each other.

Each drawer 18 is a well-known box-like configuration. The drawer has a height which is slightly smaller than the distance between the upper and lower end edges of the lugs of the plate 171. It has a groove 181 on each of its side wall surfaces, the groove having a shape which complements that of the rail 172. The rail and corresponding grooves provide the support for the drawers in the well-known manner.

In FIG. 13, this groove is seen to extend up to the outer surface of the front end wall constituting a drawer. It should be understood that this groove may be provided only on each side wall of the drawer. By arranging the grooves in the fashion of the latter, there will be obtained the advantage that when the drawer is pushed in the frame on the guide rails, the inner surface of the front end wall of the drawer hits the front ends of the guide rails so that the extent of this pushing is limited thereat, and thus the surfaces of the front walls of the respective drawers — when they are placed in the frames — will be aligned relative to each other and provide a pleasant appearance of drawers.

FIG. 18 shows an additional modified and alternative arrangement of the joint pole and the main plates, with the joint pole carrying the projections and the main plates, the grooves. As seen in the FIGURE, the joint pole 12d is made from a cubic block 125 being substantially square in cross-sectional configuration and having projections extending from the four sides, each having a ridge 126 with a rectangular cross-sectional configuration and a head portion 127 having a circular cross-sectional configuration.

In a like manner, the component parts of the other elements have a recess 128 which is complementary in shape to the projections 126, 127, but of slightly large dimensions. Furthermore, the end edges of the main plates are mitred at a 45° incline on both sides, as illustrated, so that the adjoining component parts will be in an abutting relationship at their inclined surfaces, and the end surfaces will abut the opposite surface of the cubic block 125.

A filler element (not shown) substantially the same as projection 113 may be inserted in the exposed groove of the joint poles on the side of a system. The filler may be made of plastic and in the same manner as the projection.

While there has been described and illustrated preferred embodiments of the present invention, it is apparent that numerous alterations, omissions and additions may be made without departing from the spirit thereof.

The embodiment of the invention in which an exclusive property or privilege is claimed is defined as follows:

1. Unit furniture for a furniture system expandable from a base unit of component parts which comprises:

- a. a plurality of generally rectangular and flat main plates defined by lateral side and end edges, a flute formed in at least one face of said plate extending between the end edges, parallel and proximate to the rear lateral side edge, and including a plurality of vertically spaced horizontal main plates and a plurality of laterally spaced vertical side main plates;
- b. first engaging means associated with both end edges of the plate and extending between the front and rear lateral side edges and outwardly from the end edges of the plate;
- c. a plurality of generally square cross-sectional substantially horizontally transversely extending joint poles, each side having a width substantially equal to the thickness of said plate, the pole having a length substantially equal to the width of said plate;
- d. second engaging means associated with each of the four sides of the joint poles, and being defined by grooves formed in the sides of said joint poles and having a cross-sectional configuration complementary to the cross-sectional configuration of said first engaging means the second means having a cross-sectional configuration complementary to the cross-sectional configuration of the engaging means of said main plate and being in telescopic engagement therewith;
- e. a substantially vertical rear plate, having a generally rectangular flat configuration and a thickness slightly smaller than the width of and engaging the flute of the main plate, and having length and width dimensions substantially the same as the main plate, so that assembly of the plates and joint poles may be effected by coupling two main plates at right angles to each other by the joint poles and then inserting the rear plate in the flutes of the opposing surfaces of the main plate, and then coupling two additional main plates at right angles to the first main plates there is obtained a box-like unit frame, and by coupling additional component parts to this unit frame to obtain a desired furniture system;

said joint pole having a length corresponding to the width of said main plate, and said rear plate having angled notches formed at its four corners, and registering with the rear sections of respective joint poles, each side of said angled notch having a length corresponding to the depth of the flute formed in said main plate, at least one of said main plates having said flutes formed in the opposite faces thereof and a rear plate engaging each of said opposite flutes and extending in opposite coplanar directions from the respective main plate.

2. The invention according to claim 1, in which said engaging means of the main plate secured by an adhesive to the end faces of said main plate.

3. The invention according to claim 1, in which said engaging means of the main plate is integral with the end face of said main plate.

4. The invention according to claim 1, in which the joint pole is comprised of two members, one of which being of a length corresponding to the distance from

that lateral side edge of the plate member located closer to the flute to the front lateral edge of said flute, the other said member being of a length corresponding to the distance from the rear lateral edge of said flute to the rear lateral side edge of said main plate.

5. The invention according to claim 4, in which the length of said one of the members of the joint pole extends to the rear lateral edge of said flute, and said one of the members has notches formed at the end faces of said extended portion and having a depth equal to the length of this extension.

6. The invention according to claim 1, further comprising rails for sliding doors, said rails each comprising a base plate and at least three spaced parallel ridges extending from one surface of said base plate in parallel with the longitudinal side edge line of this base plate.

7. The invention according to claim 6, in which said oblong flat base plate has a double-face adhesive tape, one adhesive surface thereof being bonded to the other surface of said base plate containing no ridges, and the other adhesive surface being covered by a protective peel-off paper strip.

8. The invention according to claim 1, further comprising guide rails for drawers, said guide rails each comprising a central oblong flat base plate member, lugs extending in opposite directions and at right angles from both ends of said base plate member to form a double T-shape, and a ridge extending outwardly from the central portion of said plate member and the lugs to form a continuous projection, the opposite end surfaces of said lugs being parallel with each other and those end surfaces of spaced adjacent lugs being aligned with each other, the distance between the opposite end surfaces of lugs being associated with the length of the lateral side of the main plate.

9. The invention according to claim 8, further comprising drawers each having a box-like configuration and a height smaller than the distance between the opposite end surfaces of said lugs of the base plate member and also having a groove formed in each of the opposing two side walls of the drawer for receiving said ridge of the guide rail, said groove having a cross-sectional configuration complementary to that of said ridge.

10. The invention according to claim 1, further comprising a fixing member comprised of an oblong flat base plate and an engaging portion formed on one surface thereof, said engaging portion being of the same cross-sectional shape as that of the engaging portion of the main plate and having a recess for receiving therein the head of a fastening piece such as a screw to keep said head from protruding beyond the surface of said engaging portion.

11. The invention according to claim 1, further comprising a fixing member having the same cross-sectional shape as that of the engaging portion of the main plate and having a recess for receiving therein the head of a fastening piece such as a screw to keep said head from protruding beyond the surface of said engaging portion.

12. The invention according to claim 1, further comprising a supporting base for supporting the assembled furniture thereon, said base comprising two different pairs of base plate members, those two base plate members in one of the two pairs each having a length corresponding to the length of the lateral side edge of the main plate and having at least two spaced pins extending from each end face thereof, those two base plate

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members in the other of the two pairs each having a length corresponding to the end edge of the main plate and having spaced holes formed in one face of said base plate member at positions corresponding to the locations of said pins and further having an engaging portion provided on the upper end face of this base plate member, said engaging portion being of the same cross-

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sectional shape as that of the main plate.
13. The invention according to claim 1, the first engaging means extending inwardly from the end edges of the main plate, the second engaging means extending outwardly from the sides of the joint poles.

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