

Nov. 27, 1962

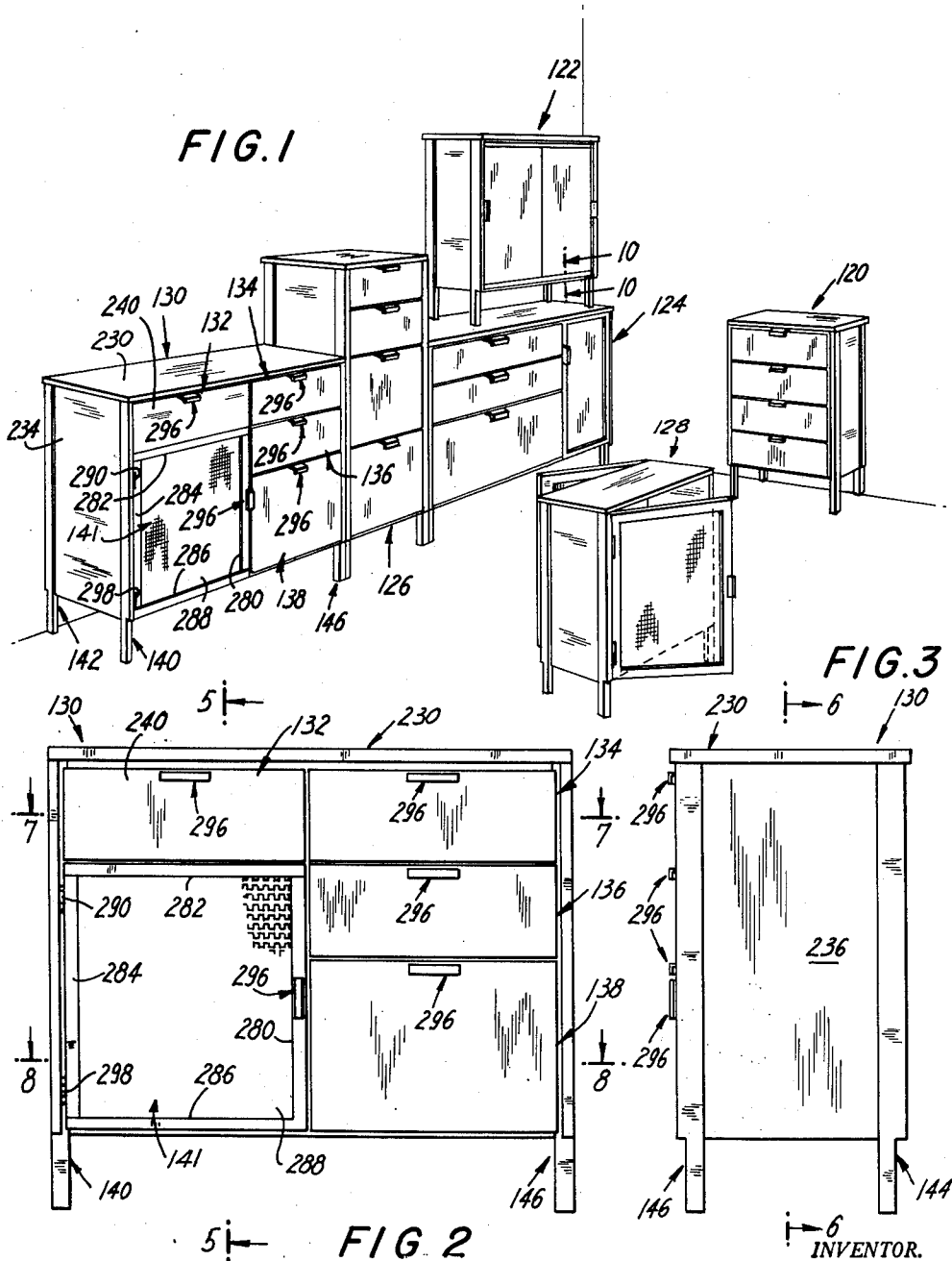
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3,066,004

UNIVERSAL FURNITURE CONSTRUCTION

Filed Aug. 15, 1960

5 Sheets-Sheet 1



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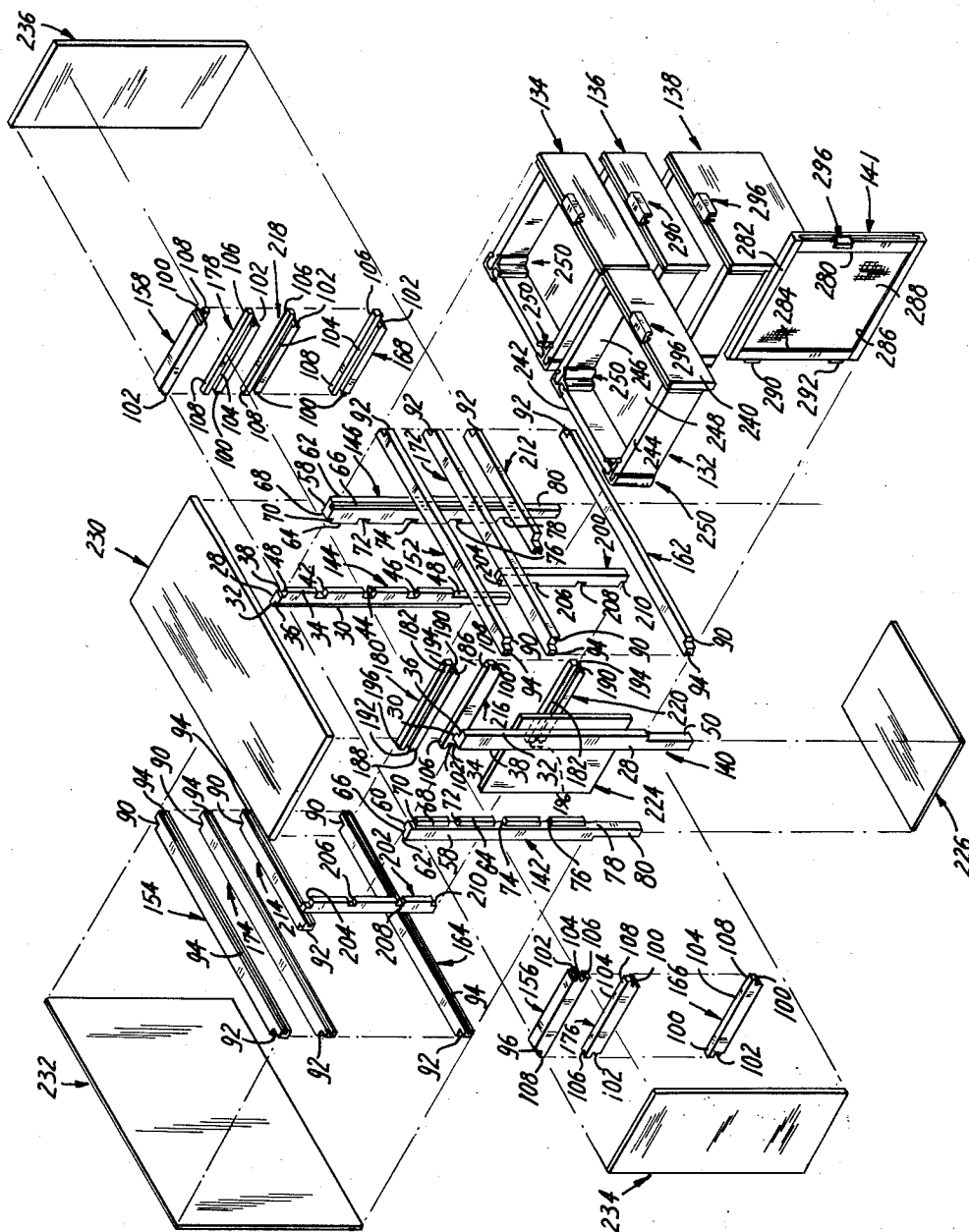
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# UNIVERSAL FURNITURE CONSTRUCTION

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5 Sheets-Sheet 2



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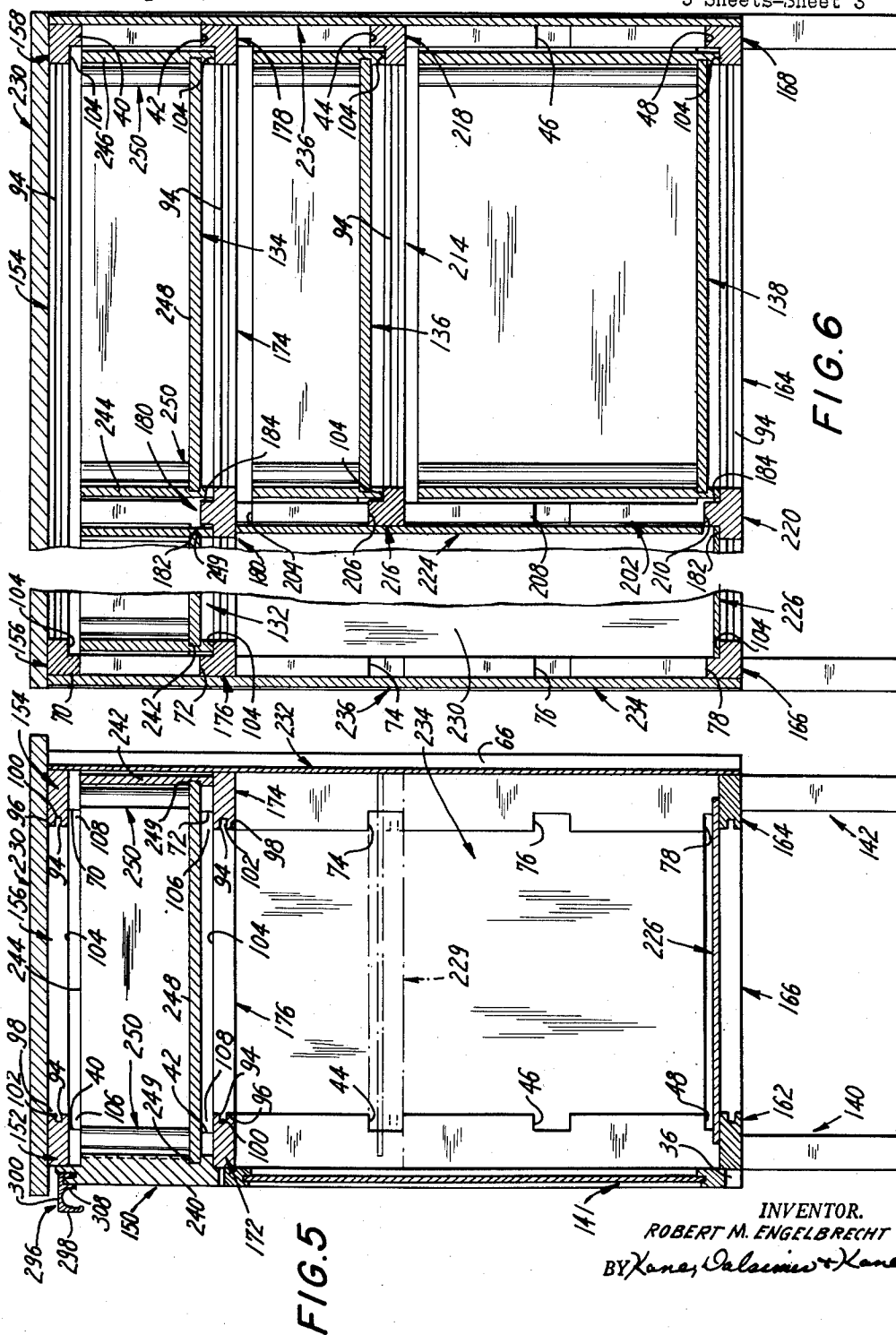
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UNIVERSAL FURNITURE CONSTRUCTION

Filed Aug. 15, 1960

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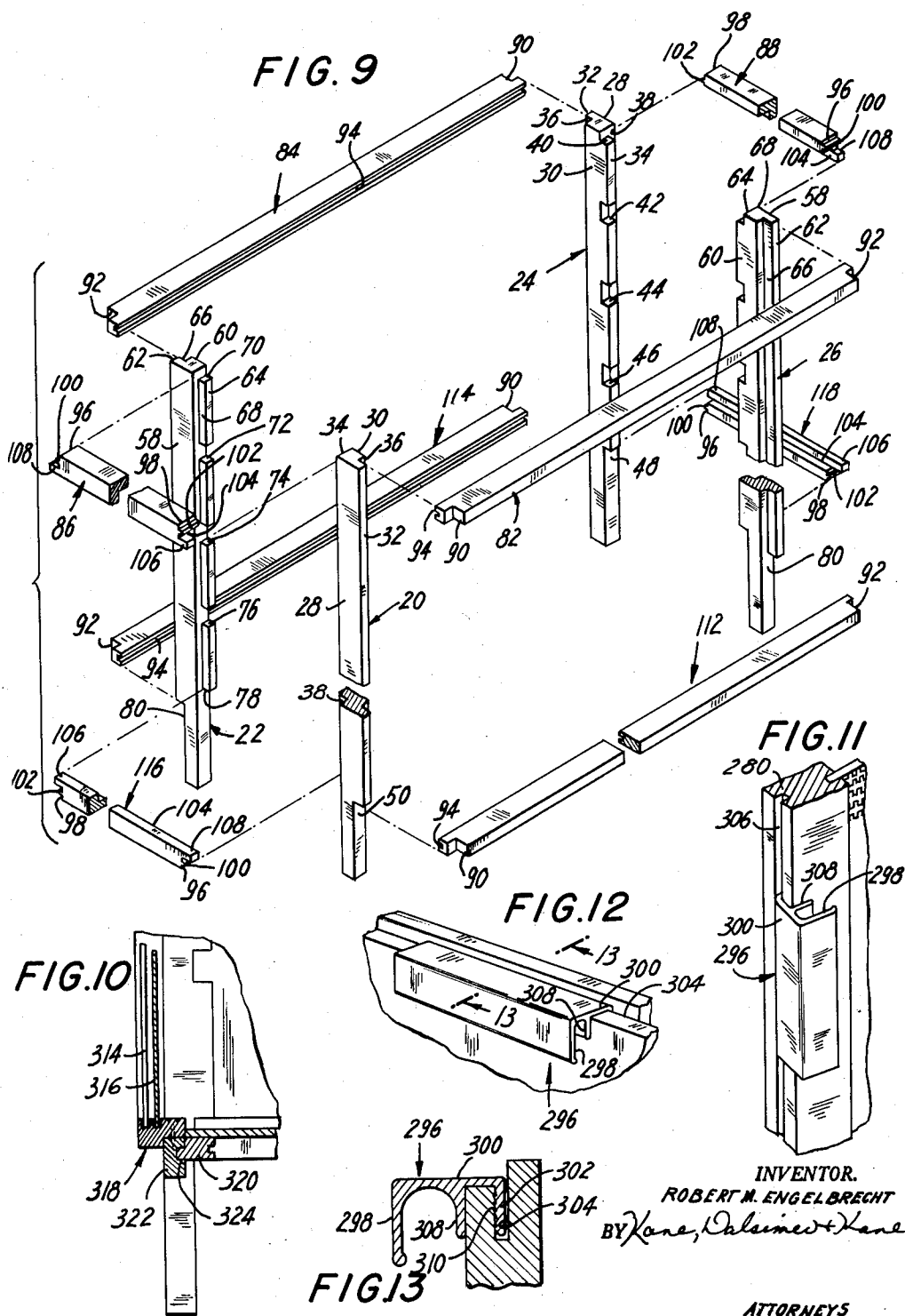
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UNIVERSAL FURNITURE CONSTRUCTION

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3,066,004

## UNIVERSAL FURNITURE CONSTRUCTION

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16 Claims. (Cl. 312-294)

This invention relates to universal furniture construction whereby a relatively full and complete line of furniture units is effectively realized. Although the present application invention is concerned with the furniture field per se, it is particularly applicable to the lower priced furniture market.

Unfinished furniture has needlessly been relegated to a position of being a low-grade, inferior product with little or no design character. Although the basic function of unfinished furniture is primarily one of storage, the end product may serve as decorative furniture and should, in such a case, contribute to the visual attractiveness of the home interior. To date, only limited attempts have been made to elevate what may be considered good utilization of lumber material and employment of manufacturing methods above the minimum level of construction standards.

Many retail and corporate policies lean toward finer quality and function standards for approximately the same expenditures for labor and materials. It should be appreciated that the general consumer is growing increasingly aware of sophistication in design, along with superiority in function and durability of furniture, at all price levels. Thus, it would be natural to question the lack of improvement in the lower-priced furniture market. The lower the market price level of furniture, therefore, would unavoidably require more effort in improving basic value to the consumer.

Accordingly, considerations and objectives would necessarily include a full line of furniture units which are versatile enough to fill the functions of storage and utility in any room in one home. A bilateral design appearance would be extremely desirable so that furniture units could be finished to appeal to the more romantic needs of the contemporary or traditional interior and, in addition, serve the sharp, clean sophistication of the modern interior. Above all, such furniture designs should be within the general confines of the existing market pricing structure which applies to the class of furniture under consideration.

Construction criteria, resulting in the most expeditious and efficient manufacture of the above furniture units, are dependent upon a design encompassing a system engineered for easy assembly, while at the same time allowing for better tolerance control and permitting optimum quality control. Accordingly, the present invention contemplates the utilization of a controlled number of engineered parts and a uniform assembly system for fabricating separate or special furniture units. The flexibility of the instant system is such that substantially any number of units may be assembled without the major addition of special parts. Of significance, is the contribution of the design theme, underlying the present invention, to elevate certain varieties of wood beyond a low-grade connotation. For example, pine is adapted to capture some of its historical heritage.

In accordance with the design theme, the present invention provides for modulation of sizes in furniture to satisfy the usual market demands. Thus, depth, height and length modulation is considered and contemplated by the present invention in introducing into this line of furniture various dimensional proportions.

Accordingly, the present invention contemplates a frame construction for furniture which permits selectivity and interchangeability of external surfacing of the em-

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braced furniture units. In addition and in an effort to minimize costs and still maintain versatility and flexibility in design appearance, a number of standardized parts constitute the furniture frame, notwithstanding the type of unit selected having predetermined utility, design characteristics, and outward visual effects and appearances.

Thus, the present invention encompasses a furniture unit formed from preformed parts that are individually selected and collectively assembled. A frame is conveniently provided for permitting this selectivity of furniture unit and, in its most basic configuration, presents furniture profiles of generally rectangular outlines. Vertical posts are disposed at each of the corners of the furniture unit and include a first pair of diagonally opposed, standardized and substantially identical posts. Another pair of posts are standardized and identical and are located at the other diagonally opposed corners of this basic outline. The individual posts are substantially rectangular in cross-section and are formed with a pair of diagonally opposed, longitudinally extending milled sections. These milled-out sections of the posts are adapted to receive, for certain furniture units, the external surfacing, which, in most instances, is in the form of panels, doors, drawer fronts and the like. Spaced notches are formed in the respective posts and extend into the inner end face of the posts. The notches are disposed at correspondingly spaced intervals such that the corresponding notches of the respective posts are substantially coplanar.

A system of standardized and substantially identical rails or cross-braces is employed for interconnecting the posts and supporting them in the desired vertical position. With respect to the frame an upper and lower series of braces serve to complete the basic structure. The cross-braces, located along the sides of the frame, both at the top and bottom, are all standardized and substantially identical. In this connection, each of these cross-braces is substantially rectangular in cross-section and provided with a milled-out sector at one of its corners. In accordance with certain types of fabrication, these cross-braces are flush; whereas the preferred embodiments contemplate, at both brace ends, a set-back or recessed section, bordering the milled-out sector, to thereby provide a projection alongside of such milled-out sector at both of the respective ends of a cross-brace. Such cross-braces cooperate with a front and rear horizontal rail at both the top and bottom of the frame. A mortise-and-tenon formation interconnects the side cross-braces to the front and rear rails, with the projections of the former advantageously sharing a notch of the vertical posts with the latter at the respective corners of the frame where these members interconnect.

Naturally, the respective lengths of the side rails and posts will depend upon the selected modules of depth and height, respectively, for the furniture unit. When the width of the furniture unit is modulated beyond that of the basic frame, compartments or sections of the furniture unit are generally contemplated. Under such circumstances, center posts, resembling the vertical corner posts, are utilized and are similarly provided with spaced notches for conveniently receiving cross-braces, which cooperate in reducing the space defined by the frame into the desired compartments. Those cross-braces, which extend from the front to the rear of the furniture unit, are, under most circumstances, substantially identical to the side rails. However, in certain instances, between width modules, this type of cross-brace will be somewhat similar, but will also include a second longitudinally extending milled-out sector, such that, the two milled-out sectors will be disposed alongside of and have interposed therebetween the retained longitudinally extending strip which provides the projections at the respective rail ends.

All of the front-to-rear side rails or cross-braces will have a particular orientation with their end projections being either at the top or bottom of the associated member. This will depend upon the functional character of the furniture unit on either side of the rail.

Upon the attainment of this stage of manufacture, the frame is still basically of universal construction, in that the front and rear, etc., of the furniture unit is not defined. Only upon the disposition of drawers, doors, panels and the like, all of which are standardized in construction, in accordance with the present invention, is the utility of the furniture unit defined.

Thus, by the inclusion of drawers, doors, panels and the like, the external surfacing of the furniture unit is completed to provide the predetermined utility design characteristics and outward visual effects and appearances. In this connection, the present invention provides for novel extruded handles for opening and closing the drawers and doors incorporated into the furniture unit. The milled sectors of the posts serve to receive the members serving to complete the external surfacing of the furniture unit, whether it be panels, drawers, doors or the like. The front-to-rear rails or cross-braces are so disposed that their longitudinally extending milled-out sectors conveniently receive panels, drawers, etc., in accordance with the functional characteristics between modules across the furniture width.

Other objects and advantages will become apparent from the following detailed description of the present invention, which is to be taken in conjunction with the accompanying drawings in which:

FIG. 1 is a perspective view of a number of furniture units constructed, in accordance with the present invention, having predetermined utility, design and functional characteristics, and outward visual effects and appearances;

FIG. 2 is a front elevational view of one of the furniture units of FIG. 1 to be disclosed in detail herein;

FIG. 3 is a side elevational view of such furniture unit;

FIG. 4 is an exploded perspective view of the members adapted to be assembled, in accordance with the present invention, to provide the unit of FIGS. 2 and 3;

FIG. 5 is a sectional view taken along the line 5—5 of FIG. 2;

FIG. 6 is a sectional view taken along the line 6—6 of FIG. 3;

FIG. 7 is a sectional view taken along the line 7—7 of FIG. 2;

FIG. 8 is a sectional view taken along the line 8—8 of FIG. 2;

FIG. 9 is an enlarged exploded and perspective view of the members constituting the basic frame of furniture units, constructed in accordance with the present invention;

FIG. 10 is a fragmentary sectional view, taken along the line 10—10 of FIG. 1, showing the construction employed for providing a furniture unit of the present invention with sliding doors;

FIG. 11 is an enlarged perspective view of an extruded handle, contemplated by the present invention, associated with a door;

FIG. 12 is an enlarged perspective view of a similar handle employed with a drawer;

FIG. 13 is a sectional view taken along line 13—13 of FIG. 12;

FIG. 14 is an enlarged fragmentary and perspective view of one form of corner connector for the panels constituting the drawer that may be employed with the furniture unit of the present invention.

The present invention utilizes a panelized type of furniture concept with a vertical construction system. Thus, it will become evident that an assembly of panels is employed together with a supporting frame having braced vertical posts. Referring now to FIG. 9, wherein the basic frame is illustrated, it will be observed that vertical

posts 20, 22, 24 and 26 are disposed at the respective corners of a generally rectangular network. In accordance with the present invention, posts 20 and 24 are substantially identical and include an outer side face 28, inner side face 30, outer end face 32, inner end face 34. These vertical posts 20 and 24 are initially of generally rectangular configuration and are then formed with a longitudinally extending milled-out sector 36, as shown, at the corner connecting the inner side face 30 and outer end face 32. A second longitudinally extending milled-out sector 38 is provided at the corner between the outer side face 28 and inner end face 34. In the thus reduced inner end face 34, a series of spaced notches 40, 42, 44, 46 and 48 are provided, with the notch 40 extending to the upper end of the posts 20 and 24; whereas, notch 48 extends to the base of these posts to thereby cooperate in forming the posts' lower leg design. The lower section of the outer end face 32 is similarly notched at 50 to contribute to the leg contour.

The other pair of vertical posts 22 and 26 are somewhat similar and with respect to one another, they are identical. Accordingly, the posts 22 and 26 are initially of the generally rectangular configuration and include an outer side face 58, inner side face 60, outer end face 62, and inner end face 64. In addition, longitudinally extending milled-out sectors 66 and 68 appear on these posts in diagonally opposed relationship. The inner end face 64 of the vertical posts 22 and 26 are suitably notched, as indicated at 70, 72, 74, 76 and 78, with the latter notch extending to the base of such posts. The outer end face 62, on the other hand, is formed with notch 80 to complete the fabrication of the leg structure for the posts 22 and 26.

The illustrated basic frame construction further includes a bracing means for the vertical posts 20, 22, 24 and 26. In its simplest form, this bracing means will include an upper and lower set of rails or braces interconnected with one another and with the posts to support the latter in a substantially vertical position. The upper set includes a front rail 82, a rear rail 84 and a pair of side rails 86 and 88. As will become evident shortly, the front and rear rails 82 and 84 are substantially identical; whereas, the side rails 86 and 88 are, likewise, substantially identical. The front rail 82 and side rail 86 will cooperate to share notch 40 of vertical post 20. Side rail 86 and rear rail 84 will share the uppermost notch 70 of vertical post 22. Rear rail 84 and side rail 88 will share notch 40 of vertical post 24. Side rail 88 will cooperate with front rail 82 to share notch 70 of post 26. These notches, as was explained in the foregoing, are so located as to be disposed in substantially the same plane.

Turning now to the front and back rail 82 and 84, it should be understood that these members are of substantially identical construction. In this connection, each rail 82 and 84 is formed with notches 90 and 92 at their respective ends, substantially, as illustrated. In addition, a mortise joint formation 94 is provided along the longitudinally extending inner end face of the rails 82 and 84.

With respect to the side rails 86 and 88, it should be evident that these members are initially, substantially rectangular in cross-section. Furthermore, it will be appreciated that these side rails are substantially identical in construction with their respective ends having recessed sections 96 and 98 formed with tenons 100 and 102, respectively, for mating engagement with the mortise construction of the front and rear rails 82 and 84. Each of the side rails 86 and 88 are formed with a longitudinally extending milled-out sector 104. Thus, the respective ends of the side rails 86 and 88 include projections 106 and 108, which serve to share the receptive notch of the vertical posts with the end projections appearing on the front and rear rails 82 and 84.

A second set of braces or rails are disposed in a plane defined by the uppermost zones of the longitudinally extending notches 48 and 78 in the corresponding vertical

posts. The lower front and rear rails 112 and 114 are substantially identical with respect to one another, as well as the upper front and rear rails 82 and 84. For this reason, the same parts of these rails will be designated by like numerals.

The bottom side rails 116 and 118, on the other hand, are similarly identical with one another and with the upper side rails 86 and 88. Accordingly, like numerals will be employed for purposes of designating like parts for such side rails. However, it will be noted that the bottom side rails 116 and 118 are reversed with respect to their companion upper rails; in that, the milled-out sector 104 of the bottom rails 116 and 118 will be disposed inwardly with respect to the interior of the frame, as is similarly the case with the upper rails 86 and 88. In other words, the recessed sections 96 and 98, of the respective bottom rails 116 and 118, will be lowermost, but to the contrary in the disposition of the upper rails 86 and 88, where they are located at the top of the positioned rails.

In the final analysis, projection 108 of bottom side rail 116 will share notch 48 of vertical post 20 with the associated projection of the bottom front rail 112. The projection 106 of the bottom side rail 116 will share the notch 78 of vertical post 22 with the projection appearing on the associated end of the bottom back rail 114; and so forth in a similar manner, as that present at the upper end of the frame.

At this stage of assembly of the members of the frame, it will be evident that the frame is universal; in that, no structure is present defining either front or back for an ultimate furniture unit or requiring either of the sides to assume a particular position in the finished unit. Thus, only upon the incorporation of drawers, doors, or the like, for purposes of completing the unit, will a particular orientation for the frame be established. With the foregoing manner of frame construction in mind, depending upon the functional design contemplated, doors or drawers or the like can be incorporated at either or both the front and rear of the frame established for descriptive purposes.

The basic frame, described in the foregoing, can be employed for purposes of arriving at the dresser 120 of FIG. 1 having four drawers, as shown, or doors or any combination of such functional characteristics to provide access to the interior of the furniture unit. As will be more fully described in the following in connection with a specific embodiment of the invention, the external surfacing of the furniture unit 120 will incorporate a panelized system for completing the top, sides and back, thereof.

In view of the foregoing, those skilled in the art will find it abundantly clear, that from the basic frame construction, a furniture line is thus provided having a versatility and flexibility in appearance. The exterior of a particular furniture unit can be changed without changing the design theme or principles, by simply altering or changing the profile of drawers, door panels, hardware, leg structure of the aforescribed vertical posts, periphery of the top panel or, on the other hand, surface treatment of the various panels employed. Furthermore, without departing from the design theme and principles, different depths, heights and widths of a furniture unit are considered in completing the instant furniture line. For example, two depths can be adopted with one being considered deep, while the other shallow. This, naturally, would determine the length for the side rails of the frame. The height may be divided into two categories, as for example, a 5-module and 7-module height with the distance between notches in the vertical posts determining module length. In this connection, the frame illustrated in FIG. 9 would be for a unit that is 5 modules in height. The contemplated furniture line may include units of three different widths. Thus, units of 1, 2 and 3 modules can be provided, with a drawer width establishing the length of the width module. Accordingly, the furniture unit 120 would possess a 1-module width.

In FIG. 1, there is additionally disclosed furniture units incorporating the teachings of the present invention wherein certain flexibilities in design are illustrated, while others are certain to be or become apparent. Accordingly, furniture unit 122 may be fabricated, in accordance with the present invention, with a pair of sliding doors and a 2-module width, as well as a shallow depth equivalent to that of furniture unit 120. Obviously, the length of the front and rear rails of the frame are increased. The details surrounding the incorporation of the sliding doors will be explored in detail later. Furniture unit 124 includes the combination of a hinged door and drawers. As will be apparent, the depth of this unit is increased along with its width. Thus, this unit can be considered deep and of a width of 3 modules. Once again, the length of the front and back rails are increased together with the length of the side rails of the frame. The furniture unit 126 represents a deep unit having a 7-module height and minimum modulation in width. Furniture unit 128 is illustrated simply for the purpose of showing the universal characteristics of the furniture construction considered to be endless by the frame of the present invention. Since the frame basically has no front or back, the finished unit can possess this characteristic by having the interior accessible from either side along the width, as for example, by oppositely disposed hinged doors, as shown. Quite obviously, this unit can be modulated in height, width and depth with various combinations of drawers and doors for purposes of providing a unit that can be employed as a room divider or the like. Referring to furniture unit 130, it should be clear that once again a combination of drawers and hinge door is built around the frame. This unit may be considered deep, of 2-module width and 5-module height. Since the members contributing to this construction of furniture unit 130 are representative of those members that are employed and common-most of the other units contemplated in completing the furniture line of the present invention, it will be described in detail shortly.

The furniture units shown in FIG. 1 are additionally important, because they suggest a number of the different types of drawers that can be associated with the aforescribed frame. Additionally, they represent the variations in height for the doors that are contemplated by the present invention. Needless to say, the different variations in drawers, doors and sizes of units are adequately covered by the furniture illustrated in FIG. 1.

Thus, with the modulations suggested in furniture depth, height and width, the present invention contemplates, for purposes of completing its furniture line, all hanging units that are opened and incorporating shelves, sliding doors of cane or glass, as well as hinged doors, drawers, drop lids for desk purposes, or any combination of the foregoing. Furthermore, for floor units: open bookcases; night stands; chests; cabinets, chiffonobe; buffets; speaker and "hi-fi" type of cabinets; compartmented headboards; corner wall and room divider type of units; and so forth and so on are advantageously considered with endless variations of the above together with the different combinations expounded upon with respect to the variations in the individual drawer and door sizes.

Referring now back to the details of the furniture unit 130 and, more specifically, to the FIGS. 1, 2 and 3, it will be remembered that we are concerned with a deep unit of 5-module height and 2-module width. The frame, otherwise, resembles in detail the structure shown in FIG. 9 and possesses the identical structural relationship of parts. This particular furniture unit 130, obviously, is constructed to include three drawers 132, 134 and 136 of 1-module depth, a single drawer 136 possessing a 2-module depth and a hinged door 141, all of which are confined to a width modulation of one.

Thus, the structure inter-relationship of parts can be better understood by referring to FIGS. 4-8, with FIG. 4 being of particular importance in this regard. The furni-

ture unit 130 is, obviously, of generally rectangular configuration; and its frame will comprise four-corner posts 140, 142, 144 and 146, which are respectively identical with the vertical corner posts 20, 22, 24 and 26 of FIG. 9. For this reason, like numerals will be applied to denote like-structural parts for these members. In addition, the frame will include both an upper and lower set of braces, as is the case with the basic frame of FIG. 9. Thus, an upper set of braces will have, for the furniture unit under consideration, a front rail 152, back rail 154 and a pair of side rails 156 and 158. With the exception of the increased length to meet the selected modulation for depth and width of the furniture unit 130, these rails are, otherwise, substantially identical with rails 82, 84, 86 and 88, respectively, contributing to the frame of FIG. 9. Once again, like numerals will refer to like parts. The lower set of braces for the furniture unit 130, completing the basic frame, will include forward rail 162, back rail 164 and side rails 166 and 168. Although these rails are longer than those illustrated in FIG. 9, they are, otherwise, identical and, accordingly, will possess like numerals signifying like parts comparable to those applied to the lower set of rails 112, 114, 116 and 118, respectively.

In order to adapt the basic frame to the functionality intended, therefore, in arriving at the finished furniture unit, this frame is further amplified. Accordingly, to accommodate both of the 1-module width drawers 132 and 134, a front rail 172 and back rail 174 are utilized. These rails are identical, respectively, with rails 152 and 154; and, consequently, like numerals will be applied to designate the correspondingly similar structure for these members. A pair of side rails 176 and 178 are also provided and are, respectively, identical to the side rails 166 and 168 and will have their structure designated by same numeral designation.

As will be observed, the terminal ends of the front rail 172 share the notches 42 of vertical post 140 and 72 of vertical post 146, as shown, with projections 108 of side rail 176 and 106 of rail 178, respectively. Similarly, the ends of back rail 174 cooperate with projections 106 and 108 of the respective side rails 176 and 178 in sharing notches 72 and 42 of vertical post 142 and 144, respectively. The mortise and tenon joints of this set of braces will cause their proper interengagement and their desired couplings with the vertical posts.

In order to support and adequately accommodate the inner sides of the drawers 132 and 134, a cross-brace 180 is employed and extends between the front and back rails 172 and 174. This cross-brace is somewhat similar to the side braces of standardized construction for the present invention and is in itself a standardized frame member employed when the functionality of the particular furniture unit dictates its presence. This is usually the case intermediate the sides of a unit of more than 1-module width when a change of function is present across the furniture width. This cross-brace 180 is initially of generally rectangular cross-section and is provided with a pair of milled-out, longitudinally extending sectors 182 and 184. Both of the ends of the cross-brace 180 are set back at 186 and 188 to there present, respectively, tenons 190 and 192. Projections 194 and 196 are also located at the ends of the cross-brace 180 and are integral extensions of a strip of the brace remaining intermediately milled-out sectors 182 and 184. Under such circumstances, the ends of the standard cross-brace may be flush; but, under most circumstances, it is preferred that the ends be fabricated, as shown. For the particular application illustrated and the furniture unit 130 involved, the cross-brace 180 is oriented, as shown, with the projecting ends 194 and 196 disposed uppermost, so that they rest upon the upper side face of the front and back rails 172 and 174, respectively. In this connection, the cross-brace 180 is disposed intermediate the ends of these rails with the tenons 190 and 192 in engagement with the mortises

94 of the front rail 172 and back rail 174, respectively. Upon proper disposition of the cross-brace 180, its milled out sectors 182 and 184 will be adapted to receive the associated side edges of the drawers 132 and 134, respectively. Thus, the drawer 132 will ride in milled-out sector 104 of side rail 176 and milled-out sector 182 of cross-brace 180. On the other hand, the drawer 134 will ride in milled-out sector 184 of cross-brace 180 and milled-out sector 104 of side rail 178.

In order to properly mount drawer door 136 on the frame and, at the same time, provide a compartment accessible by means of hinged door 141, a pair of vertical center posts 200 and 202 are advantageously employed. These center posts may be substantially identical and include spaced notches 204, 206, 208 and 210. Notches 204 and 210 are not as long as the remaining notches, because of their disposition at the ends of the center posts. They are usually utilized to receive the projecting ends of cross-braces, if the functionality of the particular furniture unit dictates such an inter-engagement. Since, the projecting ends 194 and 196 of cross-brace 180 are uppermost, the functional characteristics of the furniture unit 130 do not require their respective dispositions in notches 204 of the front rail 172 and back rail 174. Although, the notches 204 in this particular case do not serve any function, they are, nevertheless, present, because of the fact that center post 200 and 202 are standardized members contributing to the contemplated universal furniture line construction. The spacing of the notches of the center posts correspond with that present in the vertical corner posts, so that a coplanar relationship may be established upon the incorporation of the necessary rails and cross-braces.

Thus, in order to properly mount the drawer 136, front rail 212, back rail 214, center rails 216 and side rail 218 are provided. Since there is an intended change of function at this zone of the furniture unit 130, a 1-module width of furniture unit need only be considered and, accordingly, the front and back rails 212 and 214 are correspondingly decreased in length but, otherwise, these rails are, respectively, identical in structure with front rail 172 and back rail 174. For these reasons, like numerals will be applied to denote like-structural parts. The center rail 216 is of standard construction and is identical with the aforescribed side rails only having one milled-out sector, such as is the case with such side rails comparable to side rail 176. As has been previously the case, like numerals will be applied to represent like structural parts for such identical members. Similarly, the side rail 218 is identical with its neighboring side rails 168 and 178 and will have the same numerical designation of structure. Thus, the end projection 106 of side rail 218 will share notch 74 of vertical post 146 with the associated end of front rail 212, substantially as shown. The other end of front rail 212 will share notch 206 of center post 200 with end projection 108 of center rail 216. End projection 106 of center rail 216 will share notch 206 of back center post 202 with the associated end of the back rail 214. The other end of this back rail 214 will share notch 44 of vertical post 144 with the end projection 108 of the side rail 218. Obviously, the mortise 94 of front rail 212, under the circumstances, will receive the tenons 100 and 102 of rails 216 and 218, respectively. On the other hand, the mortise 94 of back rail 214 will receive the tenons 102 and 100 of rails 216 and 218, respectively. As will be appreciated, the drawer 136 will be adapted to ride on the milled-out sector 104 of both the center rail 216 and side rail 218.

Reference is now made to the incorporation of the 2-module deep drawer 138 into the furniture unit 130 under consideration. In order to properly receive this drawer 138, the frame is additionally provided with a cross-brace 220, which is identical with the cross-brace 180 previously described in detail having two milled-out, longitudinally extending sectors 182 and 184. Under the circumstances,

the tenon 190 of cross-brace 220 will be disposed in the mortise 94 of the bottom front rail 162 with the associated end projection 194 of this cross-brace disposed on top of such front rail and in the notch 210 of the center post 200, as illustrated. In this connection, the notch 210 of both center posts 200 and 202 will be reduced in length, as a result of the end cutting, to neatly embrace the projecting ends of the cross-brace 220, in accordance with the standardized design theme of the present invention. Accordingly, the other projection 196 of cross-brace 220 will be disposed on the rear bottom rail 164 with the associated tenon 192 disposed in the mortise 94 of this rail. The projection 196 will of course be within the confines of the bottom notch 210 of the center post 202. It should be evident that the deeper drawer 138 will ride in milled-out sector 104 of side rail 168 and milled-out sector 184 of cross-brace 220.

Turning now to the hinged door 141 and the compartment to which access is provided by such door, it will be noted that a panel 224 is employed of generally rectangular configuration for finishing part of the interior of the compartment so that the adjacent sides of the drawers as well as their associated frame members are not visible. Similarly, another rectangular panel 226 is disposed in the respective milled-out sector 104 of side rail 166 and 182 of cross-brace 220, and is also supported by the front rail 162 and back rail 164, substantially as shown, for finishing the bottom interior of the compartment.

It is considered desirable a shelf 229 may be conveniently mounted in the compartment by means of the rails and cross braces heretofore disclosed.

For the particular furniture unit 130 under consideration, the interior is completed by the external surfacing employed, and therefore, specific reference is now made to such external surfacing and finishing. A substantially rectangular top panel 230 rests upon the front and back rails 152 and 154, side rails 156 and 158, as well as the upper ends of the corner posts 140, 142, 144 and 146. A substantially rectangular back panel is anchored to both the back rails 154 and 164 and at the same time is disposed in the longitudinally extending milled-out sectors 66 and 36 of the respective rear corner posts 142 and 144. A pair of substantially rectangular side panels 234 and 236 serve to enclose the sides and thereby complete the enclosure and surfacing of the exterior of the furniture unit 130. The side panel 234 is anchored to the side rails 156 and 166 and is disposed in the milled-out sectors 68 and 38 of vertical posts 142 and 140, respectively. The side panel 136, on the other hand is secured to the side rails 158 and 168 and is similarly disposed in the milled-out sectors 38 and 68, respectively, of vertical posts 144 and 146.

With reference to the specific construction of the drawers 132, 134 and 136 it should be appreciated that they substantially in all respects are identical. Therefore, like numerals will be applied to designate like parts. Thus, it will be observed that each of these drawers include a front panel 240, rear panel 242, side panels 244 and 246 and bottom panel 248. This bottom panel is adapted to be conveniently received by longitudinally extending slots 249 in the respective panels 242, 244, 240 and 246.

A connector 250 serves to conveniently join the ends of the front and rear panels 240 and 242 to the associated ends of the side panels 244 and 246. The connectors 250, at each of the corners of the drawer, is identical and are preferably extruded into the desired shape from aluminum or a suitable resinous material, and then cut to the desired length. The connector 250 comprises a pair of legs 252 and 254 which are substantially normal to one another. A longitudinally extending strip 256 is spaced from the terminal end of the leg 254 and is substantially parallel to the other leg 252. The terminal edge of this leg 252, on the other hand, includes an inwardly extending flange 258 extending substantially normal to its as-

sociated leg 252 and parallel to the other leg 254. The strip 256 also includes an inwardly depending flange 260 substantially normal to its mounting strip 256 and parallel to the flange 258 and leg 254. A strip 262 extends integrally from the strip 256 intermediate the leg 254 and flange 260. This strip 262 is substantially normal to strip 256 and terminates in a laterally extending flange 264, as shown.

The side panels of the drawer are adapted to be embraced by the leg 252 and strip 256 with flanges 258 and 260 disposed in preformed slots 266 and 268 cut adjacent the ends of these side panels. The strip 262 along with the terminal portion of the leg 254 are adapted to engage the front and back panels of the drawer. In this connection, the flange 264 is adapted to be inserted into a conveniently cut slot 270 of the front panel and back panel. The leg 254, on the other hand, is adapted to be disposed in suitably formed slots 272 of the front panel and slots 274 of the back panel. Thus, it will be apparent that the connectors 250 need only be driven downwardly or upwardly over the ends of the drawer panel to be connected for embracing such ends and, thereby, prevent their separation from one another.

Aside from the increased dimensioning of the front, back and side panels for obtaining the desired increase in depth, drawer 138 is substantially identical to the drawers described in detail in the foregoing. Quite obviously, the connectors for the front, back and side panels will be identical but the extruded stock will be cut to provide longer connectors to compensate for the increased depth of the drawer. Therefore, the details of the drawer 138 will not be considered; and for such details, reference should be made and the detailed description of the drawers of 1-module depth set forth in the above.

Turning now to the door 141, it will be noted that frame members 280, 282, 284 and 286 are interconnected through mortise-and-tenon-type of joints to provide a box-like frame embracing and supporting therebetween a substantially rectangular panel 288. The peripheral edges of the panel 288 disposed in longitudinally extending slots precut out of the frame members 280, 282, 284 and 286, substantially as shown. The frame members 282 and 286 are, respectively, adapted to overlie the exposed outer edges of the front rails 162 and 172, while at the same time the frame members 280 and 284 are adapted to be disposed against the center post 200 and milled-out sector 36 of vertical post 140, respectively. A pair of hinges 290 and 292 serve to provide the desired connection of the door 141 and corner post 140.

It should be apparent to those skilled in the art that the external surfacing of the furniture units under consideration, and, more particularly, the panels employed to this end, can be fabricated from suitable pressed hardboard, resawn solid wood or Masonite. In this connection, the present invention contemplates the use of a cane finish or pattern for certain of the panels to obtain optimum flexibility and versatility in the selection of outward visual effects and appearances for the presently considered furniture units. For example, the panel 288 may be formed from the hardboard having a cane pattern impressed thereon by an engraving plate. Through employment of this simple engraving process on hard wood, alterations in design are possible without resorting to any change in the basic principles employed in the instant furniture construction.

The present invention additionally contemplates the provisions for extruded drawer and door pulls or handles 296 which can be cut to any desired length to accomplish the suggested purpose, as well as contributing to the flexibility of appearance of the line. These pulls 296 include a pair of legs 298 and 300 integrally, as well as normally disposed with respect to one another. A flange 302 extends perpendicularly from the terminal edge of the leg 300 and is adapted to be inserted in a longitudinal-

ly extending slot 304 located along the upper edge of the front panel of a drawer or a longitudinally extending slot 306 of a door, whether it be of the hinged or sliding type. These slots are a standard structural formation in the furniture line under consideration. A strip 308 extends normally from leg 300 and is located intermediate leg 298 and flange 302. The strip 308 is adapted to embrace the outer face of the member to which it is attached and cooperates with flange 302 in anchoring the pull 296 to the drawer or door, as the case may be. Teeth or serrations 310 are provided on the inner face of the flange 302, as shown, with the teeth possessing a bevel such that the flange 302 can be readily inserted into the slot in which it is to be disposed, while, at the same time, bite into the adjacent wood surface to prevent removal or disattachment of the handle 296 by other than deliberate force or pressures. Quite obviously, the handle 296 may be removed deliberately and relocated without marring the external face of or surfaces of the member to which it is attached. It should be evident that when the handle 296 functions as a drawer pull or a handle for a hinged mounted door, the leg 298 need only be grasped to effect the desired shifting of the drawer or hinged door, as is the case. If the pull or handle 296 is anchored to a sliding door such as that incorporated into the furniture unit 122, the outer face of leg 300 is employed as a force transmitting or pressure-receiving surface in opening the mounting door. Then, the leg 298 can be suitably grasped and suitable force supplied to the exposed inner faces of leg 300 to effect the closing of such doors.

Reference is now made to FIG. 10 wherein a structure is illustrated exemplary of that employed in the present invention for mounting a pair of sliding doors 314 and 316 similar to that present in the furniture unit 122. As illustrated, a track 318 is secured to the top and bottom front rail 320 that determine the size of the doors. Instead of the track 318 being directly mounted on the front rail 320, as would be the case with the front rails heretofore described, an intermediate brace 322 is employed for purposes of minimizing the flexure of the front rail 320. A tenon-and-mortise-type of joint 324 can be employed to couple the front rail 320 to the brace 322, as shown. The track 318, in turn, is then secured to the upper edge of the brace 322. The arrangement of front rail 320 and brace 322 is important with respect to the furniture unit constructions heretofore described, because this combination can readily be substituted for the bottom front and back rails of the basic frame of the furniture unit contemplated by this invention. In some respects, the combination of rails 320 and 322 is preferred, because it tends to minimize the flexure and bending, especially when a change of function is present across a modulated width of a furniture unit, such that a center post must rest upon both the front and back lowermost rails of the frame. Thus, in place of front rail 162 and back rail 164 of the furniture unit 130, a rail 320 and brace 322 can readily be substituted and employed. As far as the track for the upper edges of the sliding doors 314 and 316 are concerned, it may be simply tied or anchored to the upper front rail without the necessity of an interposed brace equivalent to that represented by 322, on which the lower track 318 is mounted. Otherwise, the incorporation of the track system illustrated in FIG. 10 does not affect the basic design theme or principles of the frame or construction disclosed herein and contemplated by the present invention.

From the above, it should be apparent that the design theme is subtly modern in line and, at the same time, presents a traditional feeling in materials and details. The panelized ends and leg posts are reminiscent of many early American period furniture. Further traditionalizing of the details is found in the especially designed door panel inserts. A selection suggested by the present invention is in the nature of a cane texture. The exact size of the

texture is derived to give strong eye appeal. The texture should not be too small, for it would then have less shadow surface, and, at a distance, would have or would appear bland. The hardware suggested for the present invention, such as the connectors and pulls, are of a "snap-in" construction whereby permanent attachment is obtainable through relatively easy installation by the customer after the furniture has been delivered. There is no loss of hardware through loosening, nor marring by scratching or rubbing. In addition, customizing the appearance of each piece of cased goods is not confined alone to finishing but the location of the hardware or the amount of hardware can give a distinctive individual appearance. The attaching reglet for the pull hardware is subtly concealed in the drawer or door edge. If the customer prefers some other styling in hardware, the drawers and door fronts have no factory drilled holes that would dictate type or location of his personalized hardware. The interlocking construction of the frame, for example, produces a much higher strength for weight factor. Obviously, there is a higher selectivity of lumber stock and the possibility of wider use of engineered plastic accessories. In this connection, further hardware can include drawer guides, drawer bumpers, leg guides and etc., which can be readily formed from resinous materials.

It should be apparent that the aforementioned objects and advantages are most effectively attained. Under such circumstances, it should be understood that the present invention is in no sense limited by the specific embodiments disclosed herein, but is to be defined by the scope of the appended claims.

I claim:

1. A selected furniture unit having predetermined utility, design characteristics and outward effects and appearances, and being formed from preformed parts that are selectable and assembleable comprising: a frame means for permitting selectivity of said furniture unit, said frame means including a first pair of standardized and substantially identical spaced vertical posts, a second pair of standardized substantially identical spaced vertical posts, the posts of each of said pairs being diagonally opposed, each of said posts being substantially rectangular in cross section and having outer and inner longitudinally extending side faces and outer and inner longitudinally extending end faces, notches in all of said posts formed into their respective inner end faces, a first longitudinally extending sector being milled out of the corner of the outer end face and inner side face, a second longitudinally extending sector being milled out of the corner of the outer side face and inner end face, the notches of the respective posts being disposed at correspondingly spaced intervals such that the corresponding notches of the respective posts are substantially coplanar and means disposed in certain of said notches of said posts for cooperating to brace said posts in a vertical position, the bracing means including at least two sets of four cross-braces each extending between said posts, two cross-braces of each set being substantially identical, each of said identical cross-braces being substantially rectangular in cross-section and comprising a longitudinally extending sector milled out of the corner of adjoining side faces; and means disposed in certain of said sectors of said posts for cooperating to complete the external surfacing of said unit to thereby provide the predetermined utility, design characteristics and outward visual effects and appearances.

2. A selected furniture unit having predetermined utility, design characteristics and outward visual effects and appearances, and being formed from preformed parts that are selectable and assembleable as defined in claim 1 wherein at least one shelf is incorporated into said unit, and means are provided for mounting said shelf by corresponding notches of said posts.

3. A selected furniture unit of generally rectangular configuration having predetermined utility, design char-

acteristics and outward visual effects and appearances, and being formed from preformed parts that are selectable and assemblable as defined in claim 1 wherein said means for cooperating to complete the external surfacing of said unit to thereby provide the predetermined utility, design characteristics and outward visual effects and appearances, includes a top panel mounted by one of said sets of cross-braces and a bottom panel mounted by the other of said sets of cross-braces.

4. A selected furniture unit of generally rectangular configuration having predetermined utility, design characteristics and outward visual effects and appearances, and being formed from preformed parts that are selectable and assemblable comprising: a frame means for permitting selectivity of said furniture unit, said frame means including a first pair of standardized and substantially identical spaced vertical posts, a second pair of standardized and substantially identical spaced vertical posts, said posts being so disposed as to be located at the respective corners of the furniture unit, the posts of each of said pairs being diagonally opposed, each of said posts being substantially rectangular in cross section and having outer and inner longitudinally extending side faces and outer and inner longitudinally extending end faces, notches in all of said posts formed into their respective inner end faces, a first longitudinally extending sector being milled out of the corner of the outer end face and inner side face, a second longitudinally extending sector being milled out of the corner of the outer side face and inner end face, the notches of the respective posts being disposed at correspondingly spaced intervals such that the corresponding notches of the respective posts are substantially coplanar and means coupled to said posts for cooperating to brace said posts in a vertical position, the bracing means includes at least two sets of four cross-braces extending between certain of said posts and being disposed in certain of the corresponding notches, two cross-braces of each set being substantially identical, each of said identical cross-braces being substantially rectangular in cross-section and comprising a longitudinally extending sector milled out of the corner of adjoining side faces, a recessed portion at each end extending across the width of the associated identical cross-brace alongside the associated milled sector, said recessed portions and the remaining cross-braces of each of said sets being so constructed and arranged with respect to one another to provide means for a mortise-tenon joint for connecting adjoining cross-braces; and means for cooperating to complete the external surfacing of said unit to thereby provide the predetermined utility, design characteristics and outward visual effects and appearances.

5. A selected furniture unit of generally rectangular configuration having predetermined utility, design characteristics and outward visual effects and appearances, and being formed from preformed parts that are selectable and assemblable comprising: a frame means for permitting selectivity of said furniture unit, said frame means including a first pair of standardized and substantially identical spaced vertical posts, a second pair of standardized and substantially identical spaced vertical posts, said posts being so disposed as to be located at the respective corners of the furniture unit, the posts of each of said pairs being diagonally opposed, each of said posts being substantially rectangular in cross section and having outer and inner longitudinally extending side faces and outer and inner longitudinally extending end faces, notches in all of said posts formed into their respective inner end faces, a first longitudinally extending sector being milled out of the corner of the outer end face and inner side face, a second longitudinally extending sector being milled out of the corner of the outer side face and inner end face, the notches of the respective posts being disposed at correspondingly spaced intervals such that the corresponding notches of the respective posts are substantially coplanar and means coupled to said posts for

cooperating to brace said posts in a vertical position, the bracing means includes at least two sets of four cross-braces each extending between said posts, two cross-braces of each set being substantially identical, each of said identical cross-braces being substantially rectangular in cross-section and comprising a longitudinally extending sector milled out of the corner of adjoining side faces; means for cooperating to complete the external surfacing of said unit to thereby provide the predetermined utility, design characteristics and outward visual effects and appearances, such latter means including a top panel mounted by one of said sets of cross-braces and a bottom panel mounted by the other of said sets of cross-braces, a back panel disposed in the first milled sector of one of the posts of each pair of posts, and a pair of side panels each of which is disposed in the second milled sector of one of the posts of each pair of posts.

6. A selected furniture unit of generally rectangular configuration having predetermined utility, design characteristics and outward visual effects and appearances, and being formed from preformed parts that are selectable and assemblable comprising: a frame means for permitting selectivity of said furniture unit, said frame means including a first pair of standardized and substantially identical spaced vertical posts, a second pair of standardized and substantially identical spaced vertical posts, said posts being so disposed as to be located at the respective corners of the furniture unit, the posts of each of said pairs being diagonally opposed, each of said posts being substantially rectangular in cross section and having outer and inner longitudinally extending side faces and outer and inner longitudinally extending end faces, notches in all of said posts formed into their respective inner end faces, a first longitudinally extending sector being milled out of the corner of the outer end face and inner side face, a second longitudinally extending sector being milled out of the corner of the outer side face and inner end face, the notches of the respective posts being disposed at correspondingly spaced intervals such that the corresponding notches of the respective posts are substantially coplanar and means coupled to said posts for cooperating to brace said posts in a vertical position, the bracing means includes at least two sets of four cross braces each extending between said posts, two cross-braces of each set being substantially identical, each of said identical cross-braces being substantially rectangular in cross-section and comprising a longitudinally extending sector milled out of the corner of adjoining side faces; means for cooperating to complete the external surfacing of said unit to thereby provide the predetermined utility, design characteristics and outward visual effects and appearances, such latter means including a top panel mounted by one of said sets of cross-braces and a bottom panel mounted by the other of said sets of cross-braces, a back panel disposed in the first milled sector of one of the posts of each pair of posts, and a pair of side panels each of which is disposed in the second milled sector of one of the posts of each pair of posts, at least one sliding drawer having a front panel disposed in the first milled sector of one of the posts of each pair of posts and means coupled to certain of the corresponding notches for supporting the drawer.

7. A selected furniture unit of generally rectangular configuration having predetermined utility, design characteristics and outward visual effects and appearances, and being formed from preformed parts that are selectable and assemblable comprising: a frame means for permitting selectivity of said furniture unit, said frame means including a first pair of standardized and substantially identical spaced vertical posts, a second pair of standardized and substantially identical spaced vertical posts, said posts being so disposed as to be located at the respective corners of the furniture unit, the posts of each of said pairs being diagonally opposed, each of said posts being substantially rectangular in cross section and having outer and inner longitudinally extending side

faces and outer and inner longitudinally extending end faces, notches in all of said posts formed into their respective inner end faces, a first longitudinally extending sector being milled out of the corner of the outer end face and inner side face, a second longitudinally extending sector being milled out of the corner of the outer side face and inner end face, the notches of the respective posts being disposed at correspondingly spaced intervals such that the corresponding notches of the respective posts are substantially coplanar and means coupled to said posts for cooperating to brace said posts in a vertical position, the bracing means includes at least two sets of four cross-braces each extending between said posts, two cross-braces of each set being substantially identical, each of said identical cross-braces being substantially rectangular in cross-section and comprising a longitudinally extending sector milled out of the corner of adjoining side faces; means for cooperating to complete the external surfacing of said unit to thereby provide the predetermined utility, design characteristics and outward visual effects and appearances, such latter means including a top panel mounted by one of said sets of cross-braces and a bottom panel mounted by the other of said sets of cross-braces, a back panel disposed in the first milled sector of one of the posts of each pair of posts, and a pair of side panels each of which is disposed in the second milled sector of one of the posts of each pair of posts, at least one hinged door operatively connected to said frame means and disposed in the first milled sector of one of said posts.

8. A selected furniture unit of generally rectangular configuration having predetermined utility, design characteristics and outward visual effects and appearances, and being formed from preformed parts that are selectable and assemblable comprising: a frame means for permitting selectivity of said furniture unit, said frame means including a first pair of standardized and substantially identical spaced vertical posts, a second pair of standardized and substantially identical spaced vertical posts, said posts being so disposed as to be located at the respective corners of the furniture unit, the posts of each of said pairs being diagonally opposed, each of said posts being substantially rectangular in cross section and having outer and inner longitudinally extending side faces and outer and inner longitudinally extending end faces, notches in all of said posts formed into their respective inner end faces, a first longitudinally extending sector being milled out of the corner of the outer end face and inner side face, a second longitudinally extending sector being milled out of the corner of the outer side face and inner end face, the notches of the respective posts being disposed at correspondingly spaced intervals such that the corresponding notches of the respective posts are substantially coplanar and means coupled to said posts for cooperating to brace said posts in a vertical position, the bracing means includes at least two sets of four cross-braces each extending between said posts, two cross-braces of each set being substantially identical, each of said identical cross-braces being substantially rectangular in cross-section and comprising a longitudinally extending sector milled out of the corner of adjoining side faces; means for cooperating to complete the external surfacing of said unit to thereby provide the predetermined utility, design characteristics and outward visual effects and appearances, such latter means including a top panel mounted by one of said sets of cross-braces and a bottom panel mounted by the other of said sets of cross-braces, a back panel disposed in the first milled sector of one of the posts of each pair of posts, and a pair of side panels each of which is disposed in the second milled sector of one of the posts of each pair of posts, at least one sliding door operatively connected to said frame means and the brace means and disposed in the first milled sector of one of said posts.

9. A selected furniture unit of generally rectangular configuration having predetermined utility, design characteristics and outward visual effects and appearances, and being formed from preformed parts that are selectable and assemblable comprising: a frame means for permitting selectivity of said furniture unit, said frame means including a first pair of standardized and substantially identical spaced vertical posts, a second pair of standardized and substantially identical spaced vertical posts, said posts being so disposed as to be located at the respective corners of the furniture unit, the posts of each of said pairs being diagonally opposed, a first longitudinally extending sector being milled out of the corner of the outer end face and side face, a second longitudinally extending sector being milled out of the corner of the outer side face and inner end face, the notches of the respective posts being disposed at correspondingly spaced intervals such that the corresponding notches of the respective posts are substantially coplanar and means coupled to said posts for cooperating to brace said posts in a vertical position, the bracing means includes at least two sets of four cross-braces each extending between said posts, two cross-braces of each set being substantially identical, each of said identical cross-braces being substantially rectangular in cross-section and comprising a longitudinally extending sector milled out of the corner of adjoining side faces; means for cooperating to complete the external surfacing of said unit to thereby provide the predetermined utility, design characteristics and outward visual effects and appearances, such latter means including a top panel mounted by one of said sets of cross-braces and a bottom panel mounted by the other of said sets of cross-braces, a back panel disposed in the first milled sector of one of the posts of each pair of posts, and a pair of side panels each of which is disposed in the second milled sector of one of the posts of each pair of posts, and means extending between the first and second sets of cross-braces for subdividing said unit into reduced compartments.

10. A selected furniture unit of generally rectangular configuration having predetermined utility, design characteristics and outward visual effects and appearances, and being formed from preformed parts that are selectable and assemblable comprising: a frame means for permitting selectivity of said furniture unit, said frame means including a first pair of standardized and substantially identical spaced vertical posts, a second pair of standardized and substantially identical spaced vertical posts, said posts being so disposed as to be located at the respective corners of the furniture unit, the posts of each of said pairs being diagonally opposed, each of said posts being substantially rectangular in cross section and having outer and inner longitudinally extending end faces, notches in all of said posts formed into their respective inner end faces, a first longitudinally extending sector being milled out of the corner of the outer end face and inner side face, a second longitudinally extending sector being milled out of the corner of the outer side face and inner end face, the notches of the respective posts being disposed at correspondingly spaced intervals such that the corresponding notches of the respective posts are substantially coplanar and means coupled to said posts for cooperating to brace said posts in a vertical position, the bracing means includes at least two sets of four cross-braces each extending between said posts, two cross-braces of each set being substantially identical, each of said identical cross-braces being substantially rectangular in cross-section and comprising a longitudinally extending sector milled out of the corner of adjoining side faces; means for cooperating to complete the external surfacing of said unit to thereby provide the predetermined utility, design characteristics and outward visual effects and appearances, such latter means including a top panel mounted by one of said sets of cross-braces and a bottom panel mounted by the other of said sets of cross-braces,

a back panel disposed in the first milled sector of one of the posts of each pair of posts, and a pair of side panels each of which is disposed in the second milled sector of one of the posts of each pair of posts, and at least one shelf incorporated into said unit, and means for mounting said shelf by corresponding notches of said posts.

11. A selected furniture unit of generally rectangular configuration having predetermined utility, design characteristics and outward visual effects and appearances, and being formed from preformed parts that are selectable and assemblable comprising: a frame means for permitting selectivity of said furniture unit, said frame means including a first pair of standardized and substantially identical spaced vertical posts, a second pair of standardized and substantially identical spaced vertical posts, said posts being so disposed as to be located at the respective corners of the furniture unit, the posts of each of said pairs being diagonally opposed, each of said posts being substantially rectangular in cross section and having outer and inner longitudinally extending side faces and outer and inner longitudinally extending end faces, notches in all of said posts formed into their respective inner end faces, a first longitudinally extending sector being milled out of the corner of the outer end face and inner side face, a second longitudinally extending sector being milled out of the corner of the outer side face and inner end face, the notches of the respective posts being disposed at correspondingly spaced intervals such that the corresponding notches of the respective posts are substantially coplanar and means coupled to said posts for cooperating to brace said posts in a vertical position, the bracing means includes at least two sets of four cross-braces each extending between said posts, two cross-braces of each set being substantially identical, each of said identical cross-braces being substantially rectangular in cross-section and comprising a longitudinally extending sector milled out of the corner of adjoining side faces; means for cooperating to complete the external surfacing of said unit to thereby provide the predetermined utility, design characteristics and outward visual effects and appearances, such latter means including a top panel mounted by one of said sets of cross-braces and a bottom panel mounted by the other of said sets of cross-braces, a back panel disposed in the first milled sector of one of the posts of each pair of posts, and a pair of side panels each of which is disposed in the second milled sector of one of the posts of each pair of posts, a panel having an outer face extending between the first and second sets of cross-braces, and said outer faces being impressed with a cane simulating outline.

12. A selected furniture unit of generally rectangular configuration having predetermined utility, design characteristics and outward visual effects and appearances and being formed from preformed parts that are selectable and assemblable comprising: a frame means for permitting selectivity of said furniture unit, said frame means including a first pair of standardized and substantially identical spaced vertical posts, a second pair of standardized identical spaced vertical posts, said posts being so disposed as to be located at the respective corners of the furniture unit, the posts of each of said pairs being diagonally opposed, and means coupled to said posts for cooperating to brace said posts in a vertical position, the bracing means includes at least two sets of four cross-braces each extending between said posts, two cross-braces of each set being substantially identical, each of said identical cross-braces being substantially rectangular in cross-section and comprising a longitudinally extending sector milled out of the corner of adjoining side faces, a recessed portion at each end extending across the width of the associated identical cross-brace alongside the associated milled sector, said recessed portions and the remaining cross-braces of each of said sets being so constructed and arranged with respect to one another to provide means for providing a mortise-tenon joint for connecting adjoining cross-braces.

constructed and arranged with respect to one another to provide means for providing a mortise-tenon joint for connecting adjoining cross-braces, the both ends of said identical cross-braces additionally including an extension projecting beyond the associated recessed portion for cooperating with the adjoining cross-brace to interconnect the sets of cross-braces to said posts, and each of said posts being substantially rectangular in cross-section and having outer and inner longitudinally extending side faces and outer and inner longitudinally extending end faces, notches in all of said posts formed into their respective inner end faces, the notches of the respective posts being disposed at correspondingly spaced intervals such that the corresponding notches of the respective posts are substantially coplanar, and the extension of the identical cross-braces being cooperable with the adjoining cross-brace to share a notch of the supporting posts; and means for cooperating to complete the external surfacing of said unit to thereby provide the predetermined utility, design characteristics and outward visual effects and appearances.

13. The invention, in accordance with claim 12, wherein said frame means further includes at least another cross-brace disposed within said furniture unit and being of substantially similar construction as said identical cross-braces but having a further longitudinally extending sector milled out of the corner of adjoining side faces of said another cross-brace with the extension being disposed alongside of and intermediate both milled sectors of such another cross-brace.

14. A universal frame for furniture comprising: a first pair of standardized and substantially identical spaced vertical posts, a second pair of standardized and substantially identical spaced vertical posts, said posts being so disposed as to be located at the respective corners of a furniture unit of generally rectangular configuration, the posts of each of said pairs being diagonally opposed, each of said posts being substantially rectangular in cross-section and having outer and inner longitudinally extending side faces and outer and inner longitudinally extending end faces, notches in all of said posts formed into their respective inner end faces, a first longitudinally extending sector being milled out of the corner of the outer end face and inner side face, a second longitudinally extending sector being milled out of the corner of the outer side face and inner end face, the notches of the respective posts being disposed at correspondingly spaced intervals such that the corresponding notches of the respective posts are substantially coplanar, and means coupled to said posts for cooperating to brace said posts in a vertical position, the bracing means including at least two sets of four cross-braces each extending between said posts, two cross-braces of each set being substantially identical, each of said identical cross-braces being substantially rectangular in cross-section and comprising a longitudinally extending sector milled out of the corner of adjoining side faces.

15. A universal frame for furniture as defined in claim 14 wherein a recessed portion is at each end extending across the width of the associated identical cross-brace alongside of the associated milled sector, and said recessed portions and the remaining cross-braces of each of said sets being so constructed and arranged with respect to one another to provide means for providing a mortise-tenon joint for connecting adjoining cross-braces.

16. A universal frame for furniture comprising: a first pair of standardized and substantially identical spaced vertical posts, a second pair of standardized and substantially identical spaced vertical posts, said posts being so disposed as to be located at the respective corners of a furniture unit of generally rectangular configuration, the posts of each of said pairs being diagonally opposed, each of said posts being substantially rectangular in cross-section and having outer and inner longitudinally extending side faces and outer and inner longitudinally extending end faces, notches in all of said posts formed into their respective inner end faces, a first longitudinally extending sector being milled

out of the corner of the outer end face and inner side face, a second longitudinally extending sector being milled out of the corner of the outer side face and inner end face, the notches of the respective posts being disposed at correspondingly spaced intervals such that the corresponding notches of the respective posts are substantially coplanar, means coupled to said posts for cooperating to brace said posts in a vertical position, the bracing means including at least two sets of cross-braces extending between said posts, two cross-braces of each set being substantially identical, each of said identical cross-braces being substantially rectangular in cross-section and comprising a longitudinally extending sector milled out of the corner of adjoining side faces, a recessed portion at each end extending across the width of the associated identical cross-brace alongside of the associated milled sector, and said recessed portions and the remaining cross-braces of each of said sets being so constructed and arranged with respect to one another to provide means for providing a mortise-tenon joint for connecting adjoining cross-braces, and the both ends of said identical cross-braces additionally including an extension projecting beyond the associated recessed por-

tion for cooperating with the adjoining cross-brace to interconnect the sets of cross-braces to said posts.

References Cited in the file of this patent

UNITED STATES PATENTS

|           |        |               |
|-----------|--------|---------------|
| 573,942   | Watson | Dec. 29, 1896 |
| 746,589   | Shimer | Dec. 8, 1903  |
| 2,175,632 | Maga   | Oct. 10, 1939 |
| 2,360,451 | Stone  | Oct. 17, 1944 |
| 2,375,726 | Bales  | May 8, 1945   |
| 2,437,665 | Rose   | Mar. 9, 1948  |
| 2,459,658 | Klein  | Jan. 18, 1949 |
| 2,730,421 | Burst  | Jan. 10, 1956 |
| 2,992,055 | Kass   | July 11, 1961 |

FOREIGN PATENTS

|        |             |                |
|--------|-------------|----------------|
| 55,222 | Netherlands | Sept. 15, 1943 |
|--------|-------------|----------------|

OTHER REFERENCES

"Modern Cabinetwork, Furniture and Fitments," John Hooper; published by J. B. Lippincott Co. (Philadelphia). Plate LXXXII and page 323 relied on.