Oct. 31, 1933. B. E. RICHARDSON 1,933,074

WOOD AND METAL FURNITURE CONSTRUCTION

Original Filed March 17, 1930 4 Sheets-Sheet 1

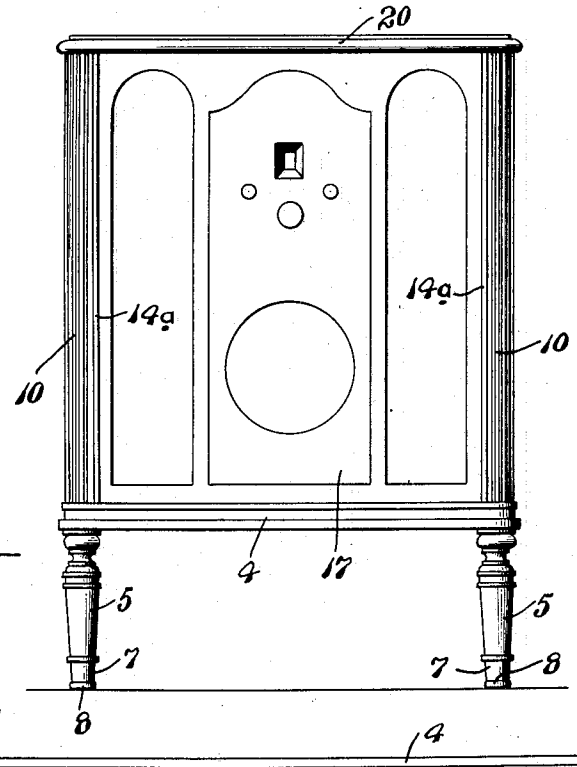


Fig. 1.

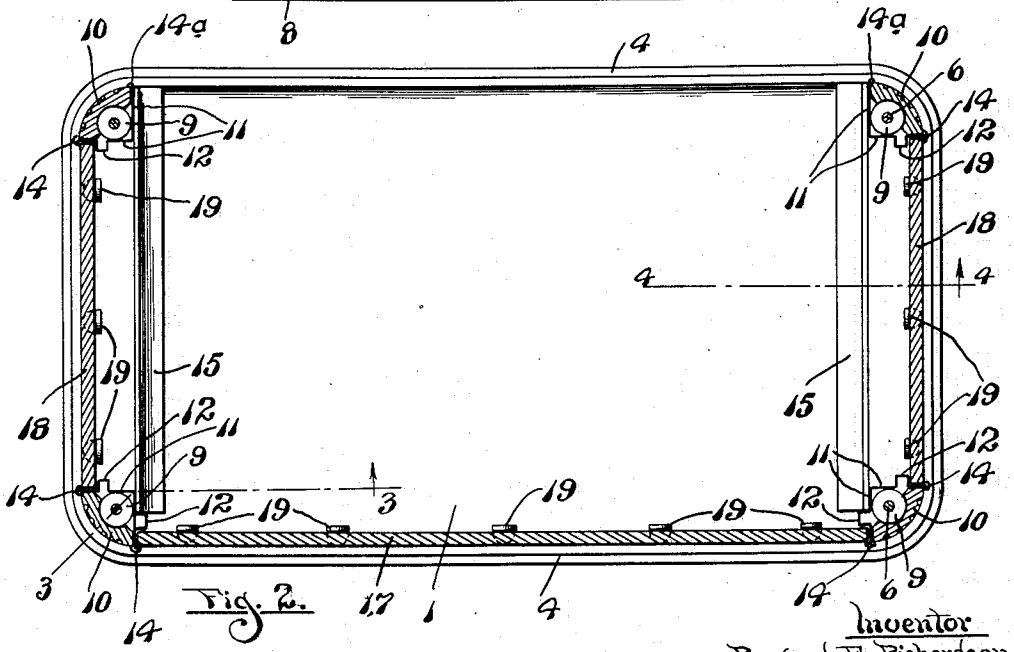


Fig. 2.

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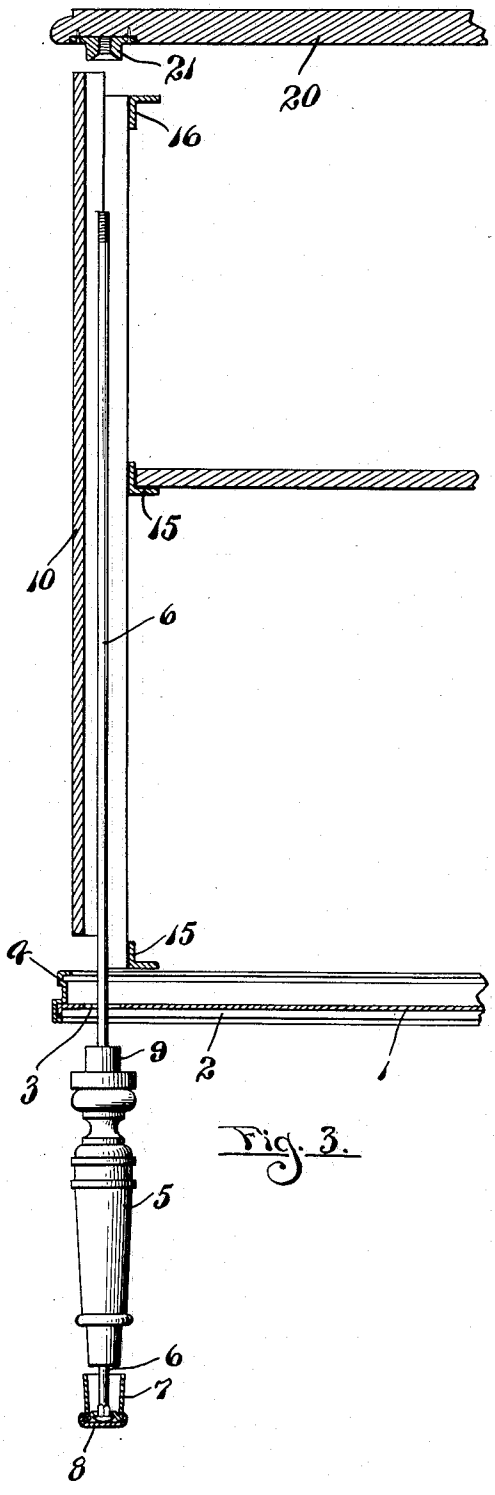


Fig. 3.

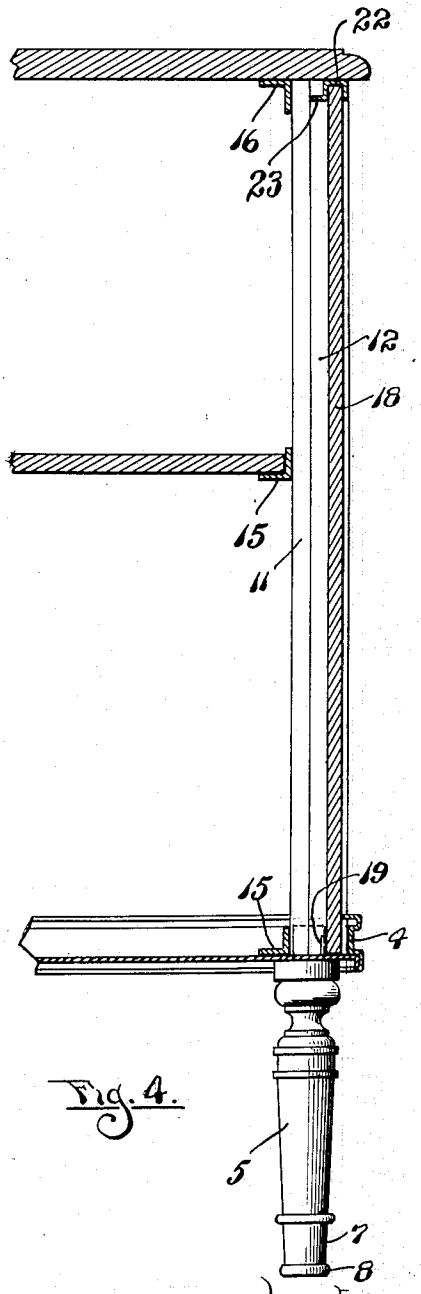


Fig. 4.

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WOOD AND METAL FURNITURE CONSTRUCTION

Original Filed March 17, 1930 4 Sheets-Sheet 3

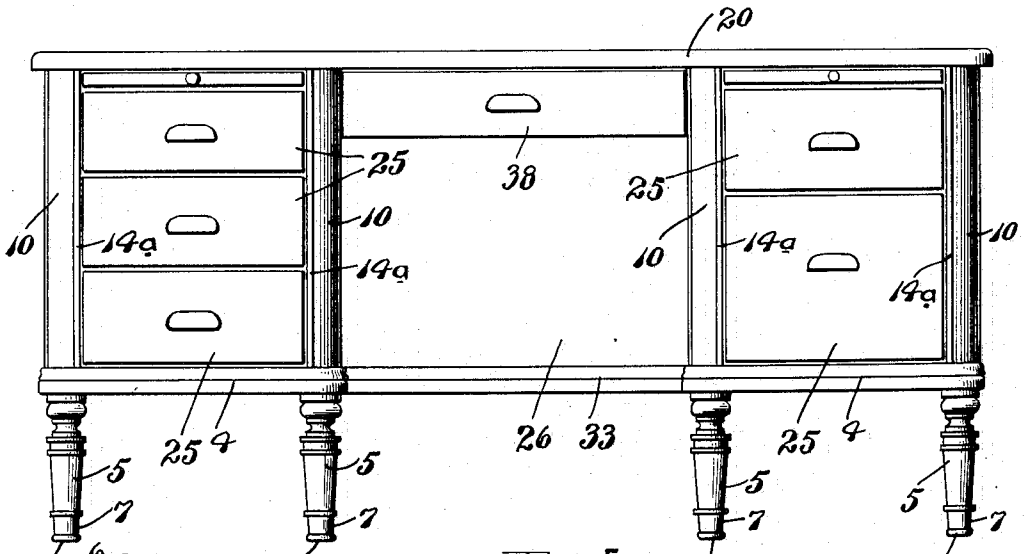


Fig. 5.

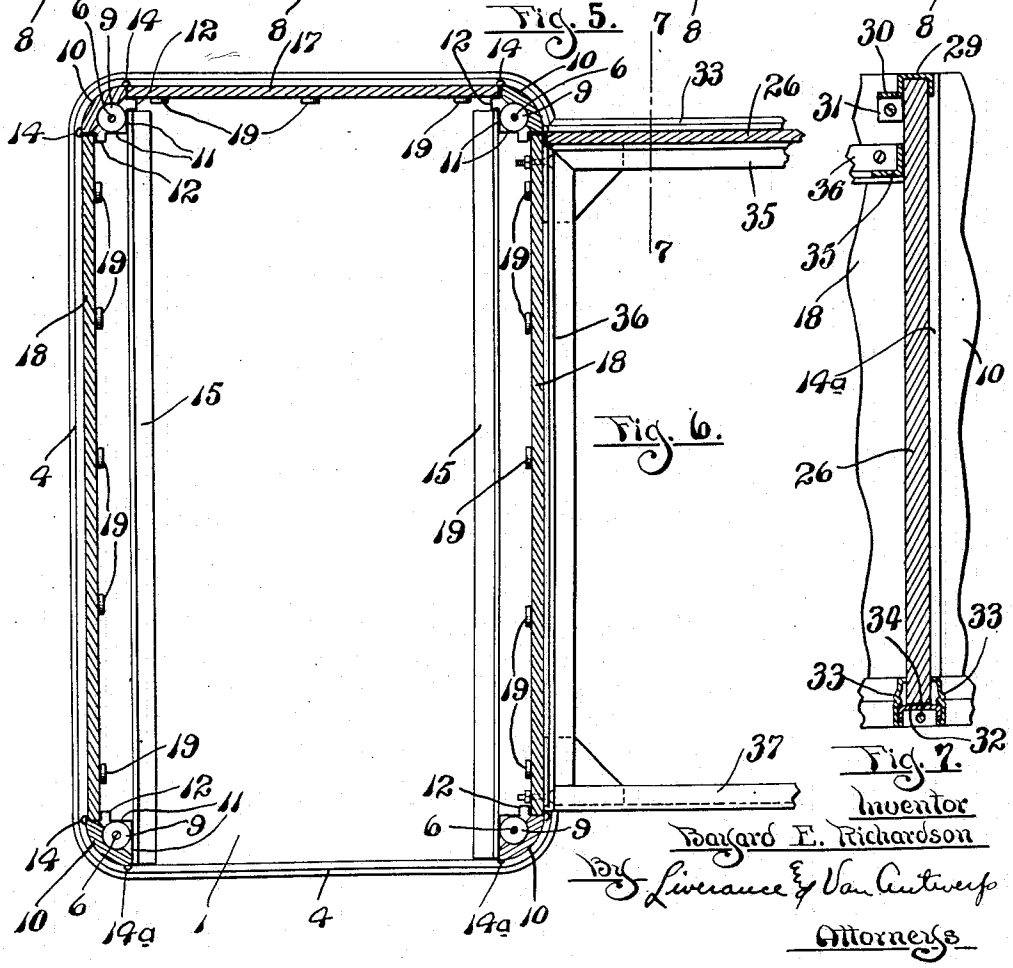


Fig. 6.

Fig. 7.

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WOOD AND METAL FURNITURE CONSTRUCTION

Original Filed March 17, 1930 4 Sheets-Sheet 4

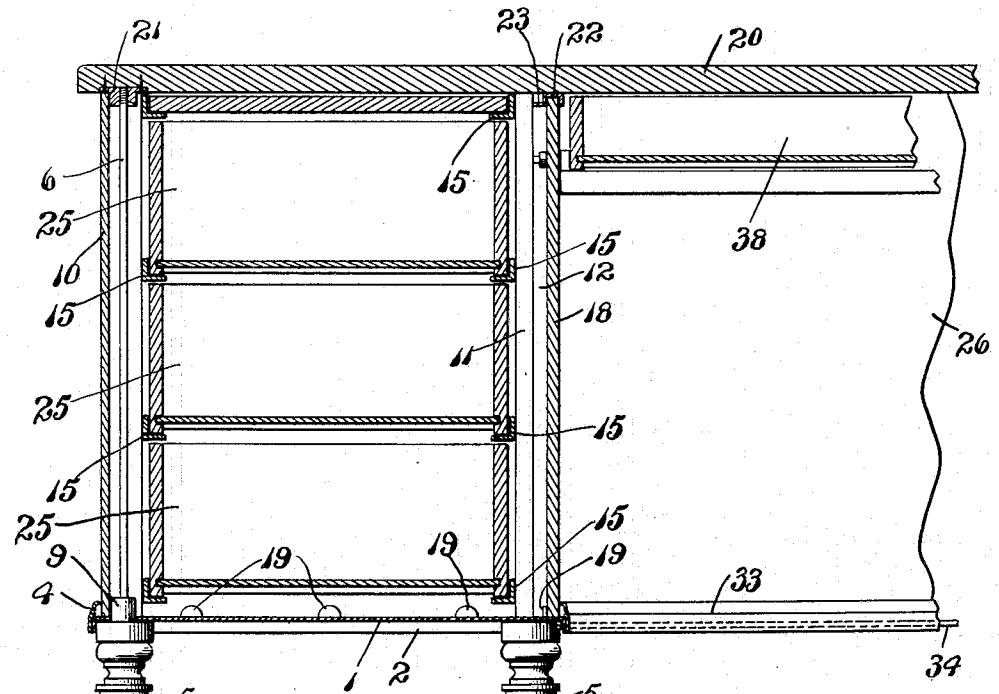


Fig. 8.

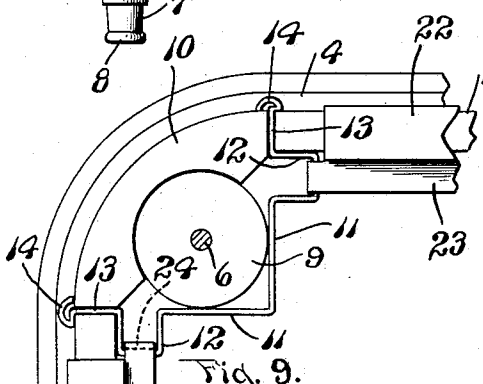


Fig. 9.

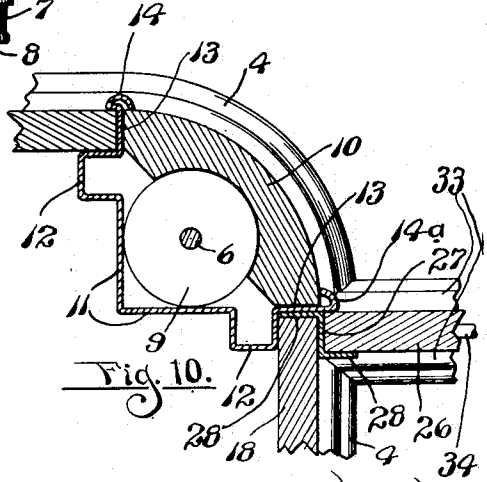


Fig. 10.

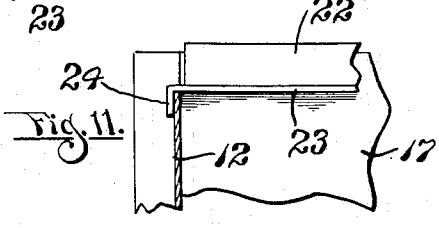


Fig. 11.

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UNITED STATES PATENT OFFICE

1,933,074

WOOD AND METAL FURNITURE CONSTRUCTION

Bayard E. Richardson, Grand Rapids, Mich.

Application March 17, 1930, Serial No. 436,376
Renewed March 16, 1933

9 Claims. (Cl. 45—6)

This invention relates to a furniture construction wherein there is used wood and metal, and the article of furniture made presents, as to outward appearance and design, substantially an appearance of being made entirely of wood, while the construction is strengthened and reinforced and at the same time produced economically through the use of metal members the greater part of which are either completely enclosed and covered or are not noticeable in the finished construction. This construction of furniture which I have devised is applicable in the manufacture of many articles of furniture and I have illustrated and described the application of the invention for production of cabinets and of desks, though in practice a great many other articles of furniture such as bureaus, chiffoniers, dressers and the like may be made utilizing my invention.

It is a primary object and purpose of the present invention to provide a practical, simple and durable construction of furniture wherein through novel combinations and arrangements of parts many useful and desirable results are attained; as economy of construction because of an ability to produce the articles in large quantity manufacture with quick and easy assembly, while the articles of furniture produced may be produced in many and various designs with the use of different exterior designs on the corner posts, panels and the like which are presented outwardly to the view of the beholder. Many objects and purposes other than those stated will be fully apparent upon an understanding of the invention had from the following description, taken in connection with the accompanying drawings, in which,

Fig. 1 is a front elevation of a cabinet adapted for radio installation which is made in accordance with my invention.

Fig. 2 is an enlarged horizontal section therethrough.

Figs. 3 and 4 are fragmentary vertical sections taken, respectively, on the planes of lines 3—3 and 4—4 of Fig. 2, the parts in Fig. 3 being shown in somewhat disassembled relation.

Fig. 5 is a front elevation of a desk made in accordance with my invention.

Fig. 6 is a horizontal section through one of the desk pedestals and a fragmentary portion of the construction betwen the pedestals.

Fig. 7 is a fragmentary horizontal section on the plane of line 7—7 of Fig. 6.

Fig. 8 is a fragmentary vertical longitudinal section through one of the desk pedestals and adjacent parts of the desk well.

Fig. 9 is a fragmentary enlarged plan view of one corner of the construction with the top removed.

Fig. 10 is a fragmentary transverse section substantially on the same scale as Fig. 9 showing the inner rear corner construction and adjacent parts of a desk pedestal in a desk, and

Fig. 11 is a fragmentary vertical elevation, partly in section, of the construction shown in Fig. 9 illustrating a detail thereof.

Like reference characters refer to like parts in the different figures of the drawings.

In the construction of the furniture unit, which may be used either for a cabinet, bureau, chiffonier or the like, or in which two of the units may be used each for a pedestal in a desk, a flat bottom 1 of sheet metal is provided which is reinforced by having downturned flanges 2 at its edges. This bottom or base 1 adjacent its corners is provided with relatively large openings 3 and it is completely surrounded by an attached ornamental molding indicated at 4 which not only serves in adding to and embellishing the appearance of the construction but also strengthens the base or bottom and, as will hereafter appear, supports and holds the lower ends of the corner posts, one of which is used at each corner of the base.

This base is supported at any desired distance above the floor by legs 5, one at each corner thereof. These legs have a central longitudinal opening therethrough for the passage of an elongated rod 6 screw threaded at its upper end and provided with a head at its lower end. An ornamental and protective ferrule or cup 7 of metal is used to cover the lower end of each leg 5, the head on the rod 6 passing through the bottom of the cup and being covered by a foot member 8 of sheet metal which is attached in any suitable manner to the bottom of each of the cups 7. The upper projecting end 9 of each leg 5 is of such a form as to fit the opening 3 in the bottom or base 1, passing therethrough and extending a short distance above the base or substantially to the plane of the upper side of the molding 4.

The base with the molding 4 around it is of substantially rectangular form but with rounded corners. Adjacent each corner of the base a vertical post 10 is disposed, it being of convex or rounded form at its outer side and may be shaped to any desired ornamental design shown in Fig. 1; while at the inner side the post is of longitudinal concave recessed form whereby when the lower end of a post 10 is located at a corner of the base 1 within the molding 4, the cylindrical upper end portion 9 of a leg 5 at such corner fits snugly

into the longitudinal concaved recess at the inner side of the post, and thereby snugly holds the lower end of the post against the molding 4.

Each post is provided with a sheet metal guide and reinforcing structure, best shown in Figs. 9 and 10. A plate of sheet metal is bent vertically substantially midway between its edges to provide two sections 11 located at right angles to each other. From the outer edges of these sections 11 the metal is continued in a U-shaped vertical guide 12, as shown in Figs. 9 and 10, and from the said guides the metal extends outwardly providing sections 13 in the same vertical plane with the sections 11 which, at their terminal edges, are formed into beads 14 or 14*a*. These sheet metal members engage against their respective posts by having the sections 13 bear against the opposite side edges of the post while the beads 14 extend in one direction partly over the outer curved side of the post. Between the sheet metal members described, and in association with the front and rear posts at each side of a cabinet structure, horizontal angle bars 15 and 16 (see Figs. 3 and 4) are located and permanently secured to the vertical metal members described, the bars 16 being disposed at the upper ends of said sheet metal post members while the bars 15 are reversed as to position and located at the lower ends and intermediate the ends of said sheet metal vertical post members.

The furniture unit is ordinarily made with one side open and with the other side and its ends closed by panels. In a radio cabinet, as shown in Figs. 1 and 2, the front side is closed by a front panel 17 and the ends are closed by end panels 18 which, after the posts 10 have been located with their lower ends between the corners of the molding 4 and the upper ends 9 of the supporting legs, and the sheet metal guide members have been slid downwardly into place in association with the posts, then the panels are slid downwardly with their edges received between the outer sides of the vertical guides 12 and the beads 14. The lower edge portions of the panels 17 and 18 are held between the molding 4 and metal tongues 19 struck upwardly from the base plate 1.

When a unit has been thus far assembled it is ready to receive the top. The top 20 in a radio cabinet, as shown in Figs. 1, 2, 3, and 4, is of a size and outline substantially like the base 1 and adjacent its corners at its underside is provided with screw threaded sockets 21 into which the upper ends of the rods 6 thread; and the downwardly extending portions of the sockets 21 are of a shape and size, like the parts 9 on the legs 5, to fit snugly in the concave recessed portions at the upper ends of the posts 10. Prior to placing the top in position so that the rods 6 may be screwed at their upper ends into sockets 21 the upper edge portions of the panels 17 and 18 are equipped with channel shaped retaining members 23 of sheet metal which are laid over and against the upper edge portions of said panels 17 and 18. Each of these channel retainers 22 is provided with an inwardly extending flange 23 which, at each end, has a downturned lip 24 to hook over and engages with an adjacent U-shaped guide 12 at its upper end, as shown in Fig. 9, thereby tying the parts together and preventing their separation; then after the top 20 has been located in place and the rods 6 threaded into the sockets 21 the structure is complete.

A single unit of the construction described may be readily used for a radio cabinet or in a larger size for a bureau or chiffonier, dresser or the like. In a radio cabinet the front is closed and the back is open and as many shelves or drawers as desired may be used as is convenient, using angle bars 15 as supports and guides therefor. With a bureau or chiffonier the front would be open and the drawers inserted into the cabinet structure thus produced, the drawers being guided on like supporting drawer guide bars 15.

In the building of a desk two of the unit constructions described are used, spaced apart from each other, each of said unit constructions comprising a pedestal of a desk. Instead of the opening being at the back as in the radio cabinet shown in Figs. 1 and 2 the openings in the desk units are at the front whereby drawers, such as indicated at 25, may be slidably placed in or withdrawn from the two desk pedestal units, the drawers having mountings on the bars 15; and the top 20 is of a size to extend over both units and the desk well so-called between the pedestal units.

At the back of a desk there is, in many cases, a vertical panel extending between the desk pedestals. This panel is indicated at 26 in Figs. 5 to 8 inclusive, also in Fig. 10. Its vertical edges are slidably received between a bead, such as 14*a* in Fig. 10 and a guide spaced therefrom which is provided by a vertically located Z bar of metal having a web 27 and oppositely extending flanges 28 one of which lies between the rear edge of the side panel 18 and the adjacent section 13 of the sheet metal guide and reinforcing member associated with the adjacent rear inner corner of the desk pedestal post 10 (see Fig. 10) while the other flange 28 is properly spaced from the bead 14*a*. The upper edge of the back panel 26 is received in a channel 29 (see Fig. 7) from which a flange 30 extends inwardly, the ends of which are turned down, as indicated at 31, and are secured by screws to the adjacent inner sides 18 of the desk pedestals. This channel 29 with the flange 30 and tongue or lips 31 is in construction similar to the channel 22, flange 23 and downturned lips or tongues 24 which are shown in Figs. 9 and 11.

The lower edge of the panel 26 rests upon an inverted channel bar 32 having downturned flanges to each of which metal molding 33 is permanently secured by welding, extending above the upper side of the channel 32 and being spaced apart so that the lower edges of the panel 26 may be entered between the upper parts of the moldings 33. A rod 34 extends lengthwise of and between the flanges of the channel 32 (see Fig. 7) and at its ends passes through the moldings 4 and the downturned edge flanges 2 on the bases 1 of the pedestals (see Fig. 8) thereby securing the parts together and holding them against disarrangement. The ends of the channel 32 and of the moldings 33 are properly shaped so as to fit against the sides of the moldings 4 as best shown in Fig. 10.

A frame is located a short distance below the top 20 and between the inner sides 18 of the desk pedestal units. This frame is of rectangular form, preferably of metal, having a back bar 35 and side or end bars 36 of angle iron while the front bar 37 is also of angle iron but with its vertical flange extending downwardly instead of upwardly as in the bars 35 and 36. Over this frame the usual drawer 38 in a desk located between the two pedestals is slidably mounted.

It is evident from the foregoing that a very practical and serviceable unit structure which

may be used in the manufacture of many articles of furniture is produced. The assembly of the parts is very simple and easy. The outward appearance of the desk, cabinet or other articles of furniture is that presented by the wood which is used, as, except for the molding 4 and the beads 14 and 14*a*, no metal shows. Where the vertical guide and reinforcing members including the guides 12, sections 11 and 13 and beads 14 are used at the closed side of a unit structure there is a channel shaped guide 12 in each leg of the sheet metal member but at the open side, as in Fig. 6 or in Fig. 2, the U-shaped guide 12 is not used on one leg thereof. There are many variations in detail of construction which may be resorted to without departing from the invention which is defined in the appended claims; and all variations of construction within the scope of said claims are to be considered as comprehended by my invention.

I claim:

1. In a construction of the class described, a base of substantially rectangular outline having openings therethrough adjacent its corners, supporting members having upwardly extending end portions passing through said openings, vertical posts, one adjacent each corner of the base fitting at their lower ends and inner sides against said upwardly projecting ends of the supporting members, means surrounding the base engaging against the posts at their lower ends and outer sides, sides and a back or front located vertically between certain of the posts, a top, sockets having downwardly extending portions attached to the underside of the top and fitting against the inner sides of said posts at their upper ends, and rods extending upwardly through said supporting members to said sockets on the top and connecting therewith.

2. A construction of the class described comprising, a base of flat sheet metal of substantially rectangular outline having openings therethrough adjacent its corners, a molding surrounding the base and extending above the same, supporting members located one below each corner of the base having upwardly extending portions passing through the openings in the base, vertical posts having outer surfaces substantially in the arc of a cylinder and inner surfaces of concave recessed form extending upwardly, one from each corner of the base, and having their lower ends received between the corner portions of said molding and the upwardly extending portions of said supporting members and contacting therewith, a top, rods extending upwardly through said supporting members and alongside of said posts to said top and means connected to the top with which said rods connect at their upper ends, said means projecting downwardly from the top and fitting within the concave recessed inner sides of the posts at their upper ends.

3. A construction containing the elements in combination defined in claim 2, combined with vertical members of sheet metal one for each post, each having two sections located at right angles to each other and disposed at the inner sides of the post around and covering said rods, and vertical guides integrally formed on said members for receiving and holding said sides and back or front at their vertical edges.

4. In a construction of the class described, a base of substantially rectangular outline having rounded corners made of sheet metal, supporting members located one under each corner of the base, vertical posts one at each corner of the base extending upwardly therefrom, each of said posts at its outer side being curved substantially in the arc of a cylinder and having edges located in planes at right angles to each other, vertical metal members one on each post each comprising two sections located at right angles to each other, said sections lying against the edges of the posts and at their outer edges formed with beads to extend over the adjacent curved outer surfaces of the posts, the sections of said members being formed with integral vertical guides extending at right angles from said sections, vertical sides and a back or front slidably received between said guides and beads on the sections of said members, a top, rods extending upwardly through the supporting members to said top and means on the underside of the top connecting with the upper ends of the rods.

5. A construction containing the elements in combination defined in claim 4, combined with the means on the supporting members for locating the supporting members at fixed positions relative to the corners of the base, and means on the base combined with said locating means on the supporting members for engaging with and holding the lower ends of the posts in proper relation to the corners of the base.

6. A construction of the class described comprising a base, supporting members underneath the corners of the base, vertical posts on and above the corners of the base, a top, sides, and a back or front located between said posts, guide members associated with the posts for engaging the edges of said sides and back or front, a molding around the base engaging the posts and said sides or back at their lower edges and outer sides, means projecting above said base to engage said sides and back or front at their lower edges and at their inner sides, rods extending through the supporting members and base and lengthwise of the posts to said top, means secured to the top to detachably connect with the upper ends of the rods, and horizontal metallic channel members fitting over the upper edge portions of said sides and back or front and being connected at their ends with said guide members.

7. A construction of the class described comprising, a base of substantially rectangular outline, supporting members one under each corner of the base, a molding around the base extending above the upper side thereof, vertical posts one at each corner of the base, metal guide members connected with each post and lying within and vertically alongside thereof, sides and a back or front located between the posts, guide means on said vertical guide members engaging with the vertical edges of said sides and back or front, means engaging the inner sides of the posts and said sides and back or front at their lower ends for holding the same against the molding, channel shaped horizontal members located one over the upper edge of each side and the back or front, means for connecting said channel shaped members at their ends to said vertical guide members, a top, rods extending upwardly through the supporting members and base and between said posts and guide members and extending to the top, and means secured to the lower side of the top with which said rods at their upper ends have detachable connection.

8. In a construction of the class described, a base having openings therethrough adjacent its corners, supporting members having upwardly extending end portions passing through said

openings, posts, one adjacent each corner of the base fitting at their lower ends and inner sides against said upwardly projecting ends of the supporting members, means surrounding the base engaging against the posts at their lower ends and outer sides, sides and a back or front located vertically between certain of the posts, a top, and rods extending upwardly through said supporting members to said top and connecting therewith.

9. A construction of the class described comprising, a base, supporting members underneath the corners of the base, vertical posts on and above the corners of the base, a top, sides and a back or front located between said posts, guide members associated with the posts for engaging the edges of said sides and back or front, said supporting members having portions thereon which extend through the base and engage the posts whereby said posts are held against movement in one direction and rods extending through the supporting members, base and lengthwise of the posts to said top combined with means secured to the top to detachably connect with the upper ends of the rods.

BAYARD E. RICHARDSON.