

Nov. 13, 1951

J. U. RIDDER
METAL FURNITURE

2,574,758

Filed Dec. 28, 1944

6 Sheets-Sheet 1

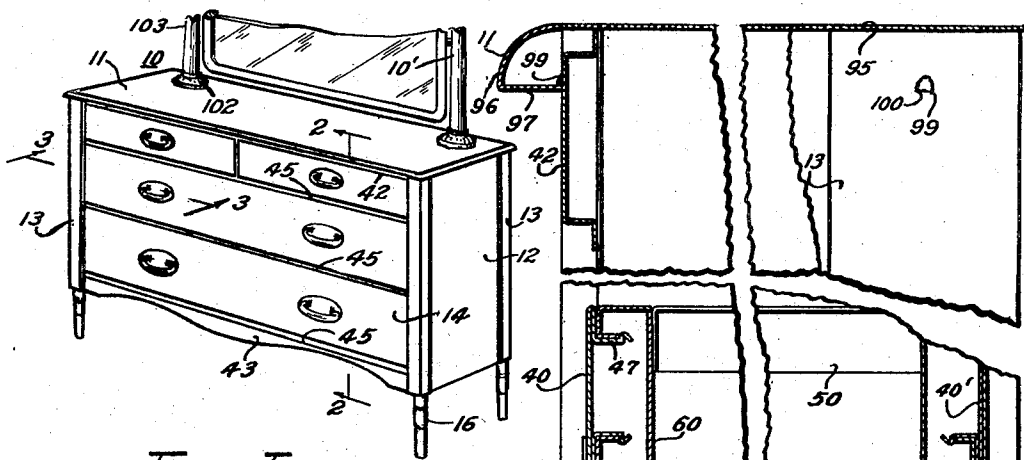


FIG-1

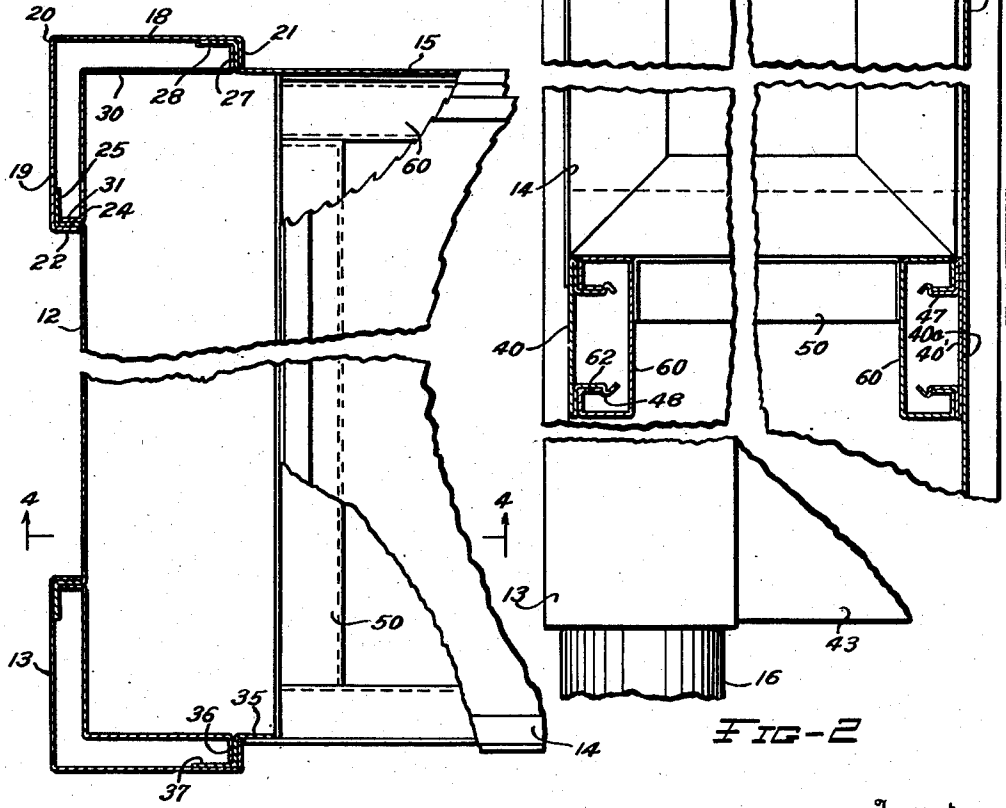


FIG-2

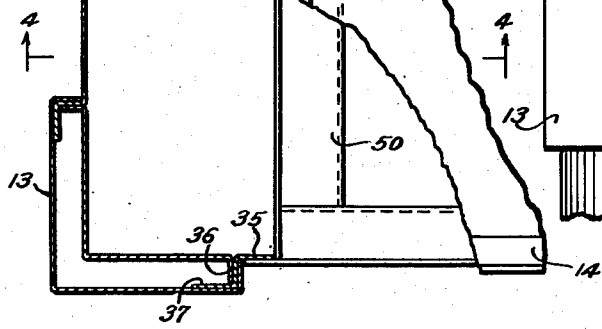


FIG-3

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FIG. 13

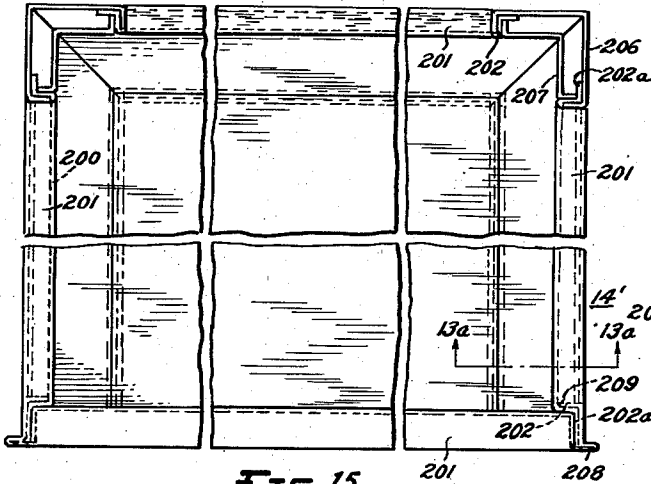


FIG. 14

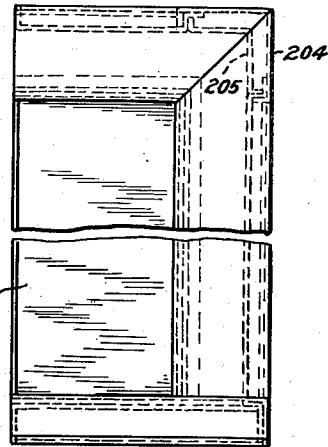


FIG. 15

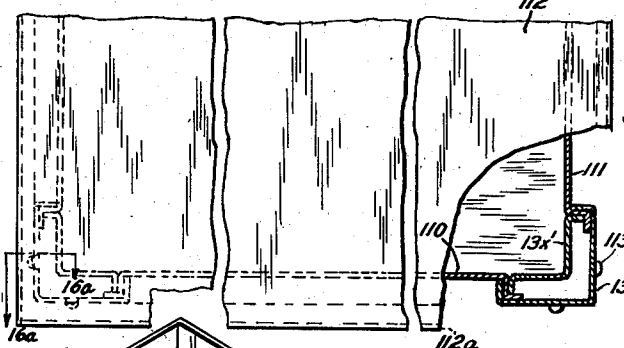


FIG. 16

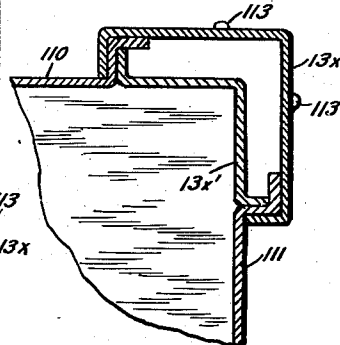
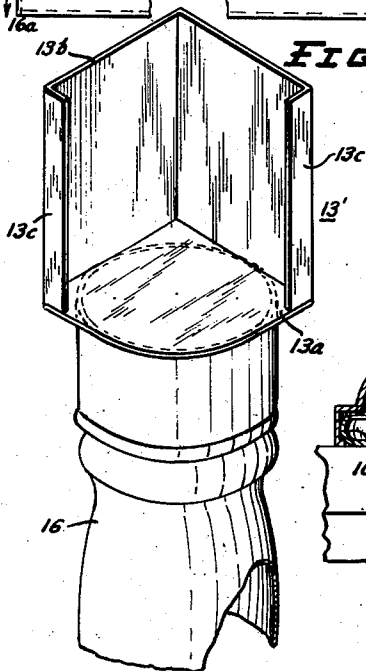


FIG. 1a



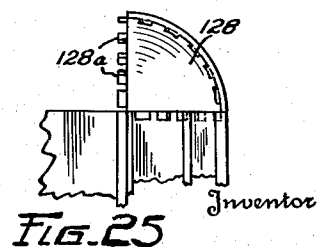
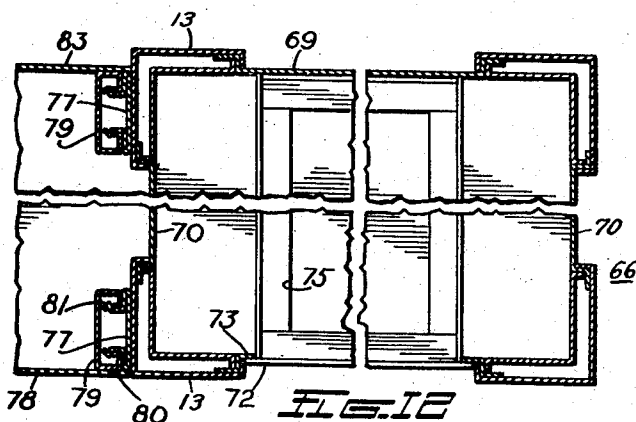
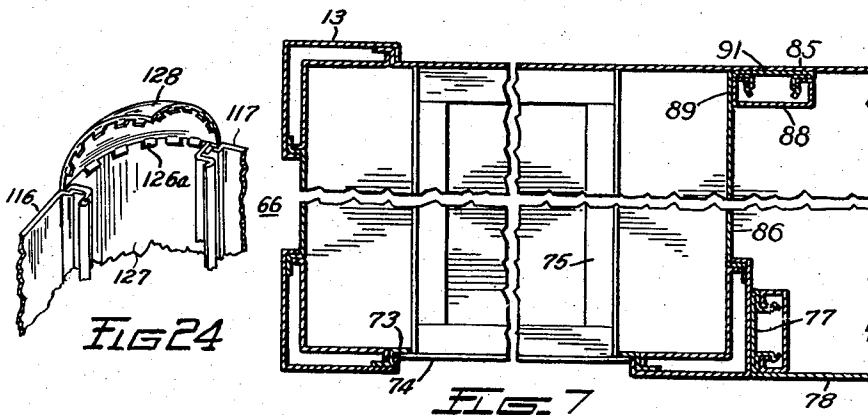
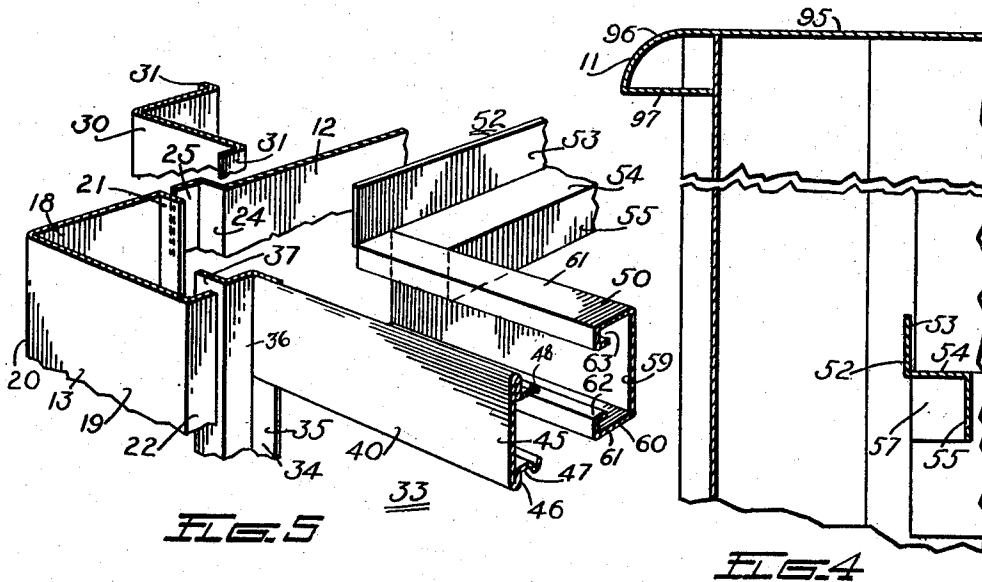
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Filed Dec. 28, 1944

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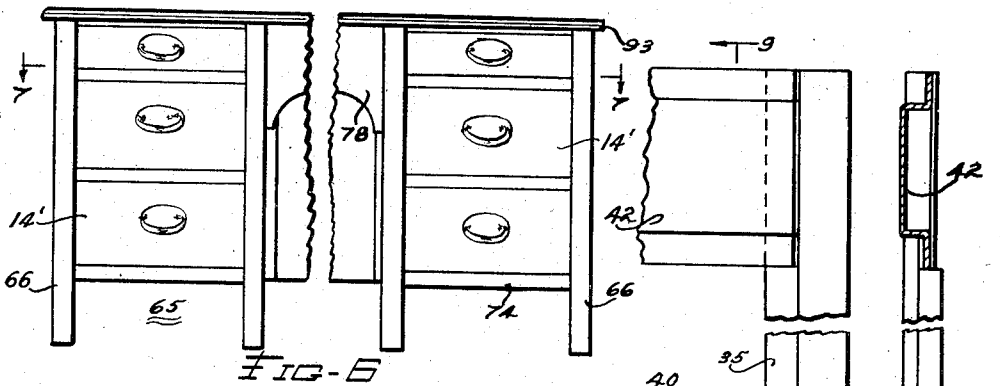


FIG. 6

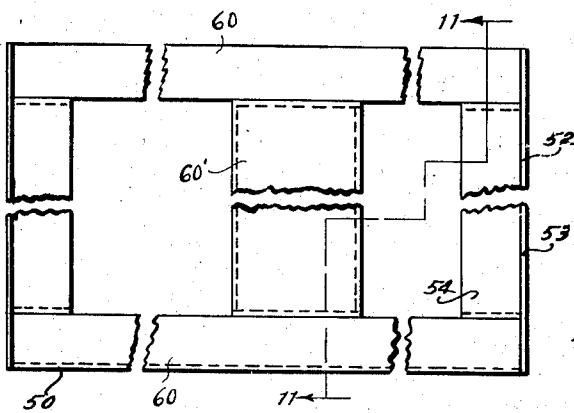


FIG. 10

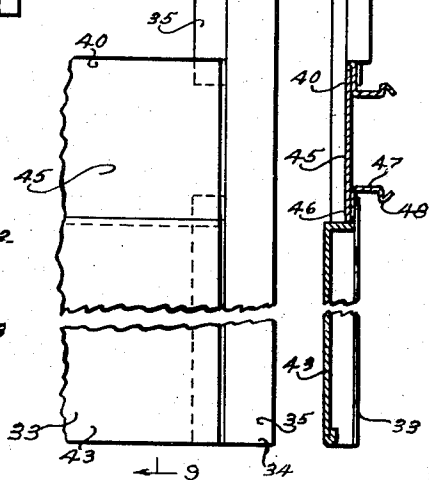


FIG. 8

FIG. 9

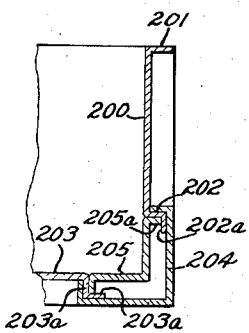


FIG. 13a

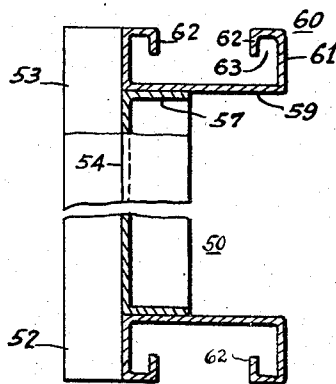


FIG. 11

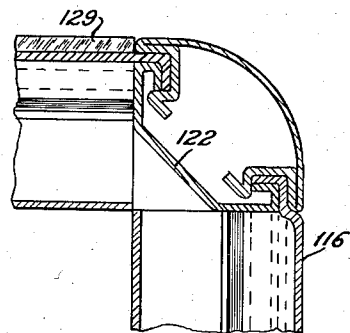


FIG. 23

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FIG 18

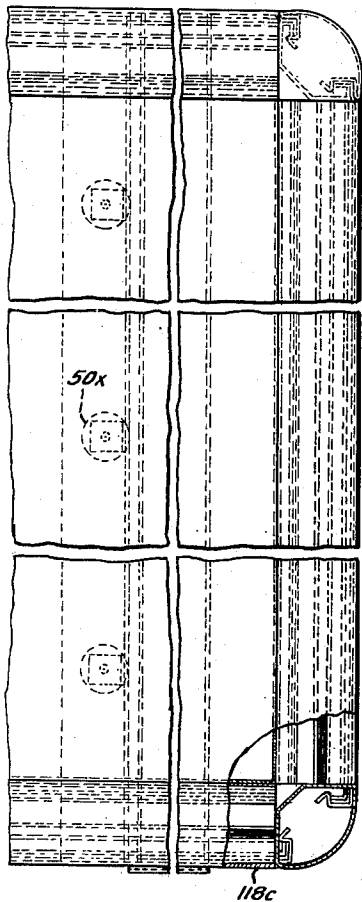


FIG 17

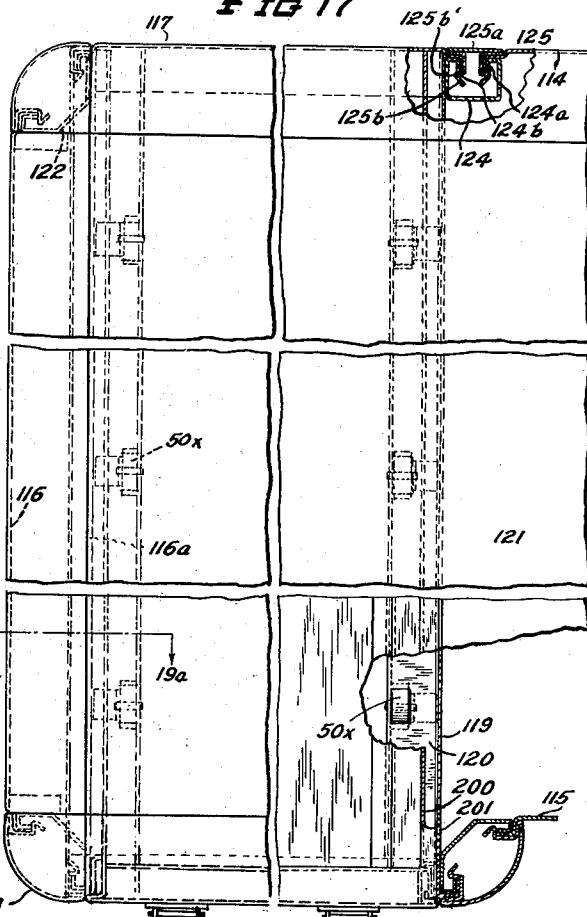


FIG 19

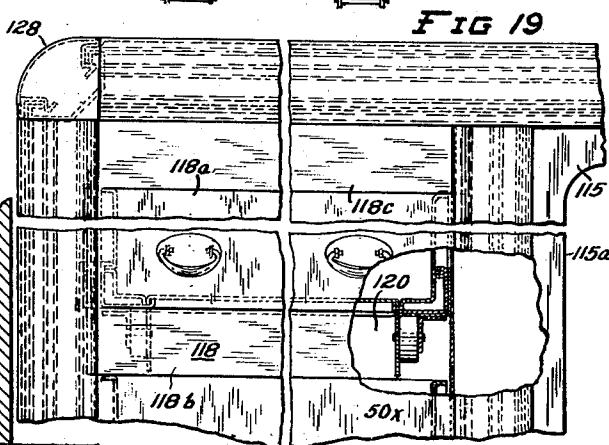
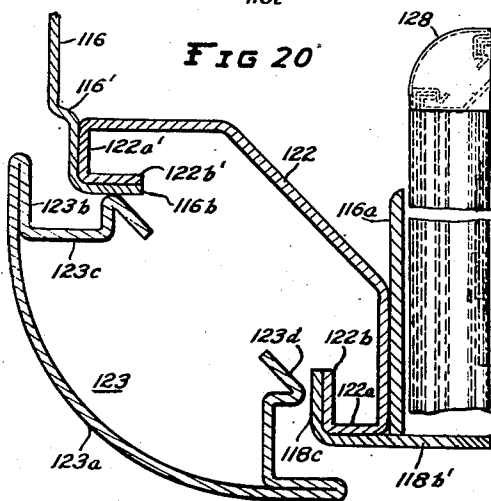


FIG 20



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Filed Dec. 28, 1944

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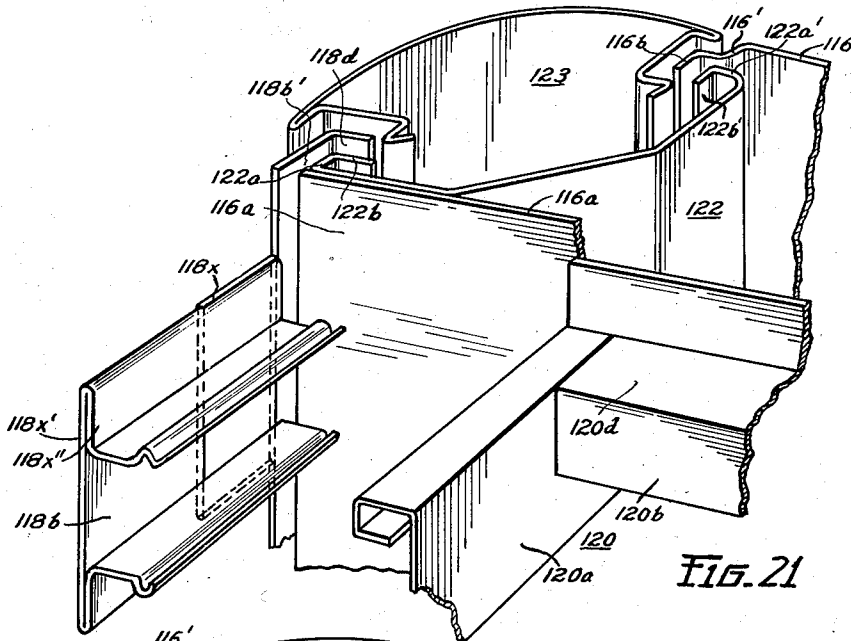


FIG. 21

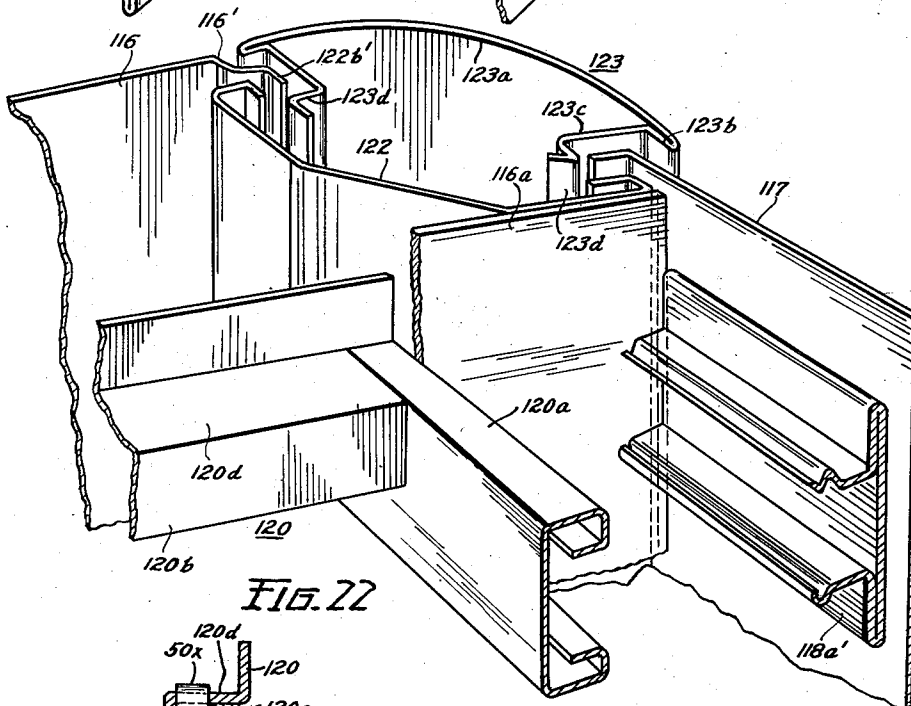


FIG. 22

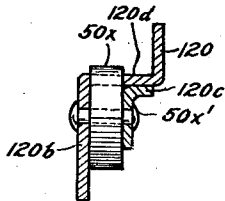


FIG. 17a

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UNITED STATES PATENT OFFICE

2,574,758

METAL FURNITURE

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Application December 28, 1944, Serial No. 570,168

2 Claims. (Cl. 312—257)

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This invention relates to an improvement in metal furniture and to the standardizing of certain of the elements thereof for the purpose of facilitating altering the design without the necessity for altering all the structural elements.

It is the purpose of the present invention to provide an article of metal furniture which can be readily made to conform to standard design for such furniture or can be altered to meet changes in design requirements. The furniture is built up of separable elements which may be readily assembled, whereby it is possible to eliminate much expense in the manufacture of the article as well as provide a stock of parts which may be utilized in the assembly of many different types of articles of furniture.

The preferred embodiment of the invention consists of a post, panel, pedestal and drawer guide construction which is susceptible of use to form different types of metal cases, desks, cabinets or household structures.

One object of the invention lies in the provision of a post construction including means for frictionally engaging and securing thereto one or more panels.

Another object of the invention lies in the provision of interchangeable rails, drawer guides and other parts.

Another object of the invention is to provide improved metal furniture consisting of fabricated members each having frictionally engaging elements readily attachable to elements on other members to form varying types of unitary structures.

Another and further object of the invention lies in the provision of an article of metal furniture comprising a plurality of parts which may be shipped in knockdown form and readily assembled at the location of use and without the aid of special tools.

Other and further objects of the invention will be more fully understood from the following specification, taken in conjunction with the accompanying drawings, wherein

Fig. 1 is a perspective view of a chest or dresser embodying one form of the invention;

Fig. 1a is a fragmentary perspective view of the upper portion of a leg of modified form;

Fig. 1b is a fragmentary elevation of a pedestal, parts being broken away;

Fig. 2 is an enlarged vertical transverse section taken substantially on the line 2—2 of Fig. 1;

Fig. 3 is a fragmentary sectional view (enlarged) taken substantially on the line 3—3 of Fig. 1;

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Fig. 4 is a fragmentary vertical sectional view taken substantially on the line 4—4 of Fig. 3;

Fig. 5 is an exploded corner view of the chest showing further details of construction and assembly;

Fig. 6 is a front elevation of a modification of the invention in the form of a desk having four front legs;

Fig. 7 is an enlarged fragmentary horizontal sectional view through one pedestal portion of the structure shown in Fig. 6, taken substantially on the line 7—7 of that figure;

Fig. 8 is a front elevation showing the method of securing the spacing rails by which to define drawer location;

Fig. 9 is a vertical sectional view on the line 9—9 of Fig. 8;

Fig. 10 is a plan view of a guide assembly for one drawer;

Fig. 11 is a vertical sectional view taken substantially on the line 11—11 of Fig. 10;

Fig. 12 is an enlarged fragmentary horizontal sectional view through a four-legged pedestal;

Fig. 13 is a plan view of a drawer;

Fig. 13a is a section on the line 13a—13a of Fig. 13.

Fig. 14 is an end elevation of a drawer;

Fig. 15 is a fragmentary plan view, parts being broken away, of a modified form of desk top;

Fig. 16 is a fragmentary section of parts shown in Fig. 15, enlarged;

Fig. 16a is a fragmentary section on the line 16a—16a of Fig. 15;

Fig. 17 is a plan view of a portion of a desk or dresser showing a further modification, parts being broken away.

Fig. 17a is a fragmentary section on the line 17a—17a of Fig. 17.

Fig. 18 is a fragmentary side elevation of the desk shown in Fig. 17, parts being broken away;

Fig. 19 is a fragmentary front view of parts shown in Figs. 17 and 18, partly in section;

Fig. 19a is a fragmentary section on the line 19a—19a of Fig. 17;

Fig. 20 is a fragmentary sectional view of a corner, the parts being shown in separated relation;

Figs. 21 and 22 are exploded views of the parts for front and rear corners showing details of construction and assembly including the rear supporting elements for a drawer guide.

Fig. 23 is a fragmentary view similar to Fig. 19a, but showing a modification.

Fig. 24 is a fragmentary perspective view of the parts forming a corner.

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Fig. 25 is a fragmentary elevational view of parts shown in Fig. 24.

Referring to the drawings, the invention is shown in one form to be embodied in a chest or dresser, generally indicated by the reference numeral 10, having a pair of standards, each indicated as an entirety at 10', for supporting a mirror. The chest comprises a top 11, side panels 12, posts 13, drawers 14 and rear panel 15. The leg portion 16 of each post extending beneath the panels 12 may be of distinctive design and fastened to the part as later set forth or formed integral therewith.

Figs. 2, 3 and 5 show the post 13 to consist of a two-sided structure having walls 18 and 19 which are joined together or formed integral at the outer corner 20. The free vertical edges of the walls 18 and 19 terminate in turned flanges 21 and 22. These flanges, if continued, would form the remaining two walls of the post. Each end of each side panel 12 is formed with end flanges 24 which terminate in further flanges 25. The flanges 25 are parallel with but outwardly offset from the plane of the panel. The depth of each flange 24 is approximately that of the flanges 21 and 22. The rear panel 15 is also terminated at its opposite vertical ends by flanges 27 and 28 (Fig. 3), which correspond with flanges 24 and 25 at the adjacent ends of the panels 12. Referring particularly to Fig. 3, it will be noted that one of the posts 13 receives the adjacent ends of the panels 12 and 15 and secures them in place. This is accomplished by projecting the flanged ends of the panels into the post and causing said flanges to lie against the flanges 21 or 22 and a portion of the inner face of the walls 18 and 19. For example, the side panel 12, when mounted on the post 13, is arranged with the flange 24 abutting the inner face of the flange 22 and flange 25 abutting the inner face of wall 19. When the panels 12 and 15 are thus mounted on the post, a locking plate 30 is telescoped with the post to removably secured these related flanges of the panels against displacement. This plate 30 is preferably a right angle piece of spring-like metal co-extensive in length to the height of the panels 12, 15, and provided with flanges 31 terminating on the vertical edges thereof. The walls of the plate 30 are somewhat compressed when it is inserted into the post 13 and allowed to expand; in consequence spring pressure of flanges 31 against flanges 24 and 27 of the panels is obtained. This pressure of course urges the panel flanges into abutment with the flanges and walls of the post thereby preventing removal or dislocation of the panels except subsequent to the withdrawal of the locking plate 30.

It will be noted that the front end of the panel 12 (see Fig. 3) is engaged with and secured to one front post in a manner identical with that already described. Similarly, the other end of the rear panel 15 is joined in a manner already described to the other rear post. Thus far there is provided a structure comprising four posts, two side panels and one rear panel. It is necessary to bridge the gap between the two front posts with a frame 33 (see Figs. 2 and 5), which supplies the necessary drawer openings for the chest. This frame comprises a pair of vertical bars 34 and a plurality of spaced horizontal rails 40 connected at their opposite ends to the bars 34, as later set forth, the rails forming or defining the openings for the drawers 14. As will be apparent from Fig. 1, the frame 33 is the equivalent of one of the panels for spanning the space or

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gap between the front posts 13. Each of the vertical bars 34 is of substantially Z-shape in cross section (see Fig. 5), consisting of flanges 35, 36 and 37. Flanges 36 and 37 correspond to flanges 24 and 25 of the side panel 12 and are fitted into the front post in a manner already described (see Fig. 3). Flange 35 provides a seat for securing the adjacent ends of the rails 40 to the bars 34. In the present disclosure, the frame 33 includes not only the bars 34 and rails 40, but upper and lower horizontal aprons or trim 42 and 43 (Fig. 1). The ends of the trim 42 and 43 and the rails 40 are secured to the flanges 35 of the bars 34 in any suitable manner, as by welding. The trim 42 and 43 may be of any configuration and design in keeping with the design of the remainder of the structure and forms no part of this invention other than to constitute additional elements of the frame 33.

Each rail 40 comprises a face portion 45, the upper and lower edges of which terminate in return bent flanges 46; the latter being continued outwardly from the inner side of the base portion 45 to provide horizontal spring flanges 47. These flanges terminate in shoulders or spring catch elements 48; the purpose of which will be subsequently disclosed. It is to be noted when an article of metal furniture embodying the present invention includes four posts with a rear panel extending entirely across the back of the article and connected with the rear posts, that rails 40, similar in construction to the rails 49, are mounted on the inner face of the rear panel 15 (see Fig. 2), the face 45 of the rail being secured thereto in any suitable manner, as by welding. Each of these rails 40 is aligned with one of the rails 49 to support therebetween a frame 50. Each rail 40 is arranged with its flanges and shoulders or spring catch elements projecting inwardly from the panel in a manner similar to the provision already set forth in connection with the description of the rails 40.

Each frame 50 comprises a pair of drawer supporting guides 52, each of which consists of an outer vertical flange 53, a horizontal flange 54 and an inner vertical flange 55 (see Fig. 5). The forward and rearward ends of each of the guides 52 is provided with a vertical securing flange 57 (see Fig. 4), which is perpendicular to the flange 55. These flanges 57 are joined in any suitable manner, as by welding, to the outer faces of the base portions or walls 59 of front and rear channel members 60. The side walls 61 of each channel member 60 terminate in inwardly directed flanges 62 which are spaced from said side walls to form recesses 63. The channel members open outwardly, being arranged on edge with the upper edge of the base wall 59 flush with the horizontal flanges 54 of the guides 52. The vertical flange 53 of each guide 52 overlaps the channel members 60 the depth of their side walls 61. When two guides 52 and two channel members 60 are joined together they constitute the frame 50. The channel members 60 are preferably connected together intermediate their ends by a cross member 60' (see Fig. 10). Each frame 50 is mounted in the article of furniture by projecting the flanges 47 of the rails 40, 40', into the adjacent channel member 60. Since the flanges 47 of each rail 40, 40', are spring-like, the shoulders 48 thereof are moved toward each other until they have passed the inner edges of flanges 62 of the adjacent channel members 60, at which time they snap into place to lock each channel member to the ad-

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adjacent rail. As above stated, there is a rail 40' secured to the inner face of the rear panel 15 with which the rear channel member 60 is engaged, and since the front and rear rails 40, 40', are horizontally aligned, the frame 50 is properly located within the article of furniture. As will be observed from Fig. 1, three rails 40 are provided in the chest 10. Thus, I provide three frames 50, each of which is mounted in the article of furniture in the manner described. These frames serve to impart rigidity to the entire article.

Where the legs 16 are to be removably connected to the posts 13, the upper end of each leg 16 is provided with a connecting member 13' (see Fig. 1a), preferably formed from a single section of sheet metal, comprising a base 13a, upstanding, angularly related side walls 13b, the outer edge of each of which is provided with a flange 13c. As will be observed the side walls 13b are adapted to be related face-to-face with the sides 18, 19 of a post 13, with the flanges 13c in engagement with the flanges 21, 22, thereof, whereby the adjacent locking plate 30 is effective to hold these flanges in fixed relation.

Each standard 10' comprises the following parts (see Fig. 1b): 10' indicates a base member preferably spot welded to the top 11 and provided with an upwardly extending peripheral flange 101a which is curvilinear in cross section capable of flexing inwardly. 102 indicates a hollow supporting member shaped to fit over and enclose the base member 101, the lower end thereof terminating in a flange 102a arranged to telescope over the flange 101a and engage the top 11. The flange 102a is of a size to effect slight inward flexing of the flange 101a, whereby sufficient friction is provided between the flange 101a of the base member 101 and flange 102a of the supporting member 102 to rigidly support the latter on the top 11. The upper end of the supporting member 102 terminates in a collar 102b, into which the lower end of a tubular member 103 telescopes, the free end of the member 103 being welded to the collar 102b as shown at 103a.

In order that the full applicability of the invention may be understood, a modified form of an article of metal furniture is shown in Fig. 6 of the drawings. This article, generally indicated by the reference numeral 65, comprises two pedestals 66 which are joined together in a manner hereinafter fully described. In some instances, each of the pedestals include three posts and in other instances each includes four posts, so that the article of furniture may be a six or eight post piece. Figs. 7 and 12 of the drawings show six and eight post embodiments, respectively. Referring to Fig. 12, it will be understood that the posts shown constitute a pedestal 66 and include a rear panel 69, side panels 70 and a front frame 72. The side and rear panels 69 and 70 are assembled with the posts in a manner identical with that previously described in connection with the form of construction shown in Figs. 1 to 5, inclusive. In Figs. 6, 7 and 12 the frame 72 includes vertical bars 73 and rails 74 which define the drawer openings. An interior frame 75, which form guides for drawers 14', is provided for each of the rails 74, being likewise engaged with rear rails (not shown) secured to the inner face of the rear panel 69. In other words, each pedestal 66 includes the identical structure described in connection with the chest 10 in slightly different proportion. It is evident that when two pedestals 66 are to be

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used together, provision must be made for an intermediate rear panel 83 and a front apron 78. Such provision is made by securing elements 77 in any suitable manner, as by welding, to the side walls of the adjacent posts 13 and providing on the inner faces of the rear panel 83 and apron 78 channel members 79 for removable engagement with the elements 77. The elements 77 are identical in construction to the rails 40 heretofore described, but are arranged vertically, that is, longitudinally of and secured (preferably welded) to the posts as shown in Figs. 7 and 12. The channel members 79 are similar in construction to the channel members 60, their outer side walls 80 being welded or otherwise suitably secured to the panel 83 and apron 78. The channel members 79 are snapped into engagement with the elements 77, the spring flanges 81 of said elements 77 serving to lock the channel members in place. Since one channel member 79 is provided adjacent each vertical end of apron 78 and panel 83, the apron and panel are held in place and serve to rigidly connect the adjacent front and rear posts of the adjacent pedestal.

Desks and other articles of furniture are frequently provided with only six posts and under such circumstances the construction shown in Fig. 7 of the drawing is utilized. In this instance four posts are provided in the front of the article and two in the rear. The two rear posts 13 are connected to the opposite ends of a back panel 85 in a manner identical with that shown in Fig. 3, wherein the back panel 15 connects the rear posts 13. In Fig. 3, no provision is made or required for supporting the inner side panels such as shown at 70 (Fig. 12) and 86 (Fig. 7) of adjacent pedestals at the rear of the article. In the arrangement shown in Fig. 7, the front end of the inner panel 86, is secured to the adjacent front post in a manner consistent with the disclosure of this invention as described in connection with the construction shown in Fig. 12. The rear end of the side wall 86 is provided with a vertically disposed channel member 88 the inner side wall 89 of which is welded or otherwise suitably joined to the wall 86. This channel member 88 is identical with the channel members 79 and 60 and faces the rear panel 85 to which is secured a supporting element 91, as by welding. The element 91 also corresponds in construction to the elements 77 and rails 40 and inter-engages the walls of the channel member 88 to secure the rear end of inner panel 86 against both lateral and vertical displacement. Inasmuch as four posts are provided in the front of both six and eight post structures, there is no change in the arrangement or construction of the front apron 78, which connects adjacent pedestals 66.

The top 11 shown in Figs. 1 and 2 and top 93 shown in Fig. 6 are identical and are shown (see Figs. 2 and 4) to consist of a work surface 95 which terminates at all four edges in rolled portions 96. These portions are completed by inwardly directed flanges 97. Struck out from the side and rear panels of the article as well as the upper trim 42, are a plurality of blisters 99 (see Fig. 2). Each blister is formed with an outwardly sloped wall which terminates in a shoulder 100. Each top 11 and 93 is mounted on the article and pressed downwardly with the flanges 97 riding over the sloped walls of the blisters 99 to engage the shoulders 100 thereof. With the top thus mounted, it is impossible to inadvertently remove it. Since the flanges 97 follow the

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general contour of posts, panels and trim; they are, when the top is in position, in abutment with these elements and further aid in rigidifying the entire article of furniture.

Figs. 13, 13a and 14 illustrate a drawer adapted to be slidably mounted on one of the frames 50 and consisting of front, rear, side and bottom panels. In this form of construction, the front, side and rear panels are similar in shape in cross section, each consisting of a side wall 200, (see Fig. 13a) having along its upper edge an out-turned flange 201 and along its lower wall an out-turned flange 202, terminating in a further flange 202a off-set from but parallel to the wall 200, whereas the bottom panel 203 is provided along each edge with a depending flange 203a terminating in a laterally extending flange 203a'. 204 indicates a corner member corresponding in shape in cross section to each of the posts 13, the flanges of the corner member having inter-engaging relation with the outer faces of the flanges 202, 203a, on the panels 200 and 203. 205 indicates a resilient locking plate of a right angular shape having along its terminating ends laterally extending flanges 205a arranged to engage the inner faces of the flanges 202, 203a, on the panels 200 and 203. The plate 205, which is slightly resilient, is compressed when being inserted in position and then allowed to expand, so as to frictionally secure the parts together. As will be understood from Figs. 13 and 14, the opposite ends of the rear panel and the rear ends of the side panels are provided with flanges 202, 202a engaged by a corner member 206 and a locking plate 207. The opposite ends of the front panel are provided with outwardly extending end walls 208, which fit within the flanges on the front ends of the side panels. Each wall is extended laterally and bent back on itself to form a flange 208, which limits the inward movement of the drawer, is then bent laterally to lie against the adjacent flange 202a of the side panel and terminates in an intumed flange 209 engaging the flange 202 to hold the front panel in position. As will be observed from these views, the herein disclosed principle of the invention in securing the posts 13 and side and rear panels together is employed in the assembly of the parts forming each of the drawers.

Figs. 15, 16 and 16a illustrate another form of furniture consisting of a flat top desk having front and rear panels 110, side panels 111, posts 13x and a top 112, the opposite ends of the panels 111 being connected to the posts 13x by locking plates 13x' in the manner already set forth in connection with Figs. 1, 3 and 5. The top 112 is provided along its front, rear and ends with a depending wall 112a which terminates in an intumed flange 112b, arranged to engage the shoulders formed by a plurality of blisters 113 provided on the side walls of the posts 13x (see Fig. 16a), whereby the top 112 may be assembled and held in position similarly to the top 93.

Figs. 17, 18 and 19 illustrate an article of furniture of the desk type having two pedestals each supported by two legs at the front and one leg at the rear, the pedestals being connected at the rear by a plate 114 and connected at the front by an apron 115, the central portion of which is cut-away as shown at 115a, to accommodate the user's legs. Each pedestal comprises an outer side panel consisting of inner and outer walls 116, 116a, a rear panel 117, a front frame 118, which defines the openings for the drawers 118a (the drawers preferably being similar in

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construction to that shown in Figs. 13, 13a and 14), an inner side panel 119, guide frames indicated as an entirety at 120, disposed between the wall 116a and panel 119, a top 121, which extends over both pedestals and the space or gap between them, and the connections for the related ends of the panels and top.

The front frame 118 comprises spaced rails 118b, side walls 118b' and an upper cross member 118c, which may be formed integrally with the upper end portions of the side walls 118b'. The rails 118b are similar in construction to the rails 40 (already described), each connected at its opposite ends to alined brackets 118x extending inwardly from the side walls 118b'. The connection between each rail 118b and the adjacent brackets 118x is provided by cutting away the end portions of the base wall 118x' of the rail, which permits the brackets 118x to engage face-to-face with the reversely folded section 118x of the rail and secured thereto and the end of cut-away by a welding operation. When the front frame 118 is assembled with the outer side panel and inner panel, as later set forth, the above described construction serves to eliminate projecting shoulders.

Each guide frame 120 is similar in construction to the frame 50 (except it is preferable provided with rollers 50x to facilitate movement of the adjacent drawer) and provided with channel members 120a mounted on rails 118a' on the rear panel 117 (see Fig. 22) and the rails 118b' of the front frame 118 similarly to mounting of the frame 50 as shown in Figs. 2 and 5. The opposite end portions of the inner wall 116a of the outer side panel are welded to the adjacent sides or faces of inner connecting elements indicated as an entirety at 122. As shown in Figs. 20 and 21, the end element 122 adjacent the wall 116a is provided with a laterally bent wall 122a terminating in an intumed flange 122b, whereas the opposite end of the connecting element 122 is provided with a laterally bent wall 122a' terminating in an intumed flange 122b'. As shown in Fig. 21, the rails 118b are connected at their opposite ends to the vertically extending side walls 118b'. The lateral portion of each wall 118b' is extended to engage the wall 122a and flanged as shown at 118d to engage the wall 122b, whereas the front end of the outer wall 116 is extended to engage the wall 122a' and flanged as shown at 116b to engage the flange 122b'. The related walls and related flanges 122b, 118d and 122b', 116b, are removably secured together by an outer connecting element indicated as an entirety at 123, consisting of an arcuate wall 123a the opposite end portions of which are bent back on the wall 123a, as shown at 123b, then extended inwardly, as shown at 123c and terminate in shouldered members 123d. By pressing the member 123 inwardly, the shouldered members 123d flex inwardly and ride the free ends of the flanges 118d, 116b, and then spring laterally to engage the ends of the both related flanges 122b—118d and 122b'—116b, to secure the walls 118b' and walls 116, 116a together. The spaces between the walls 123b and the shouldered members 123d are arranged to form pockets for the related walls and related flanges, so that these parts are held in close relation to avoid looseness therebetween. It will be understood that the rear ends of the walls 116, 116a, are connected together and to the rear panel 117 similarly to the construction above described. By preference the opposite end

portions of the wall 116 are off-set inwardly, as shown at 116' to accommodate the adjacent end of the connecting element 123, whereby they have a flush relation. The connecting elements 122, 123, extend from the upper edge of the cross member 118c to the lower edge of the lower rail 118b and either or both may extend below the latter rail to form legs for the adjacent pedestal. The front end of the inner panel 119 and the adjacent end of the apron 115 are connected together similarly to the connections between the side walls 118b' and wall 116. The rear end of the panel 119 and adjacent ends of the panels 114 and 117 are preferably removably connected together in the following manner: 124 indicates a channel member one side wall of which is secured to and extends along the outer face of the wall 119 adjacent to its rear end. The member 124 is preferably similar in construction to the channel members 60 (already described) to provide spaced inturned flanges 124a. The adjacent end portion of each wall 114, 117, is extended and terminates in an inturned flange 124b disposed in engagement with the adjacent flange 124a and having a width so that its free end coincides with the free end of the adjacent flange 124a. 125 indicates a locking element consisting of a back wall 125a the lateral portions of which are bent back on the wall and then extended inwardly to form spring members 125b normally disposed in face-to-face relation with the flanges 124b. The terminating ends of the spring members 125b are off-set to form shoulders 125b' each engaging the free ends of the adjacent flanges 124a, 124b, to lock the parts together. As the metal of the locking element is slightly resilient, the shoulders 125b' ride the flanges 124b when the element 125 is inserted into the channel member 124. The walls 114, 117 are off-set, as shown at 114' so that the back wall 125a will be disposed in flush relation to these walls. The sides and ends of the top 121 are connected to the side wall 116, rear panel 117, rear plate 114, and cross member 118c, respectively, in a similar manner, although it will be observed that the connection between the top 121 and cross member 118c and/or the connection between the top 121 and plate 114 may be omitted without affecting the rigidity of the assembled units. As these connections are similar, only one need be described. Referring to Fig. 19a, the top 121 is extended along its end, as shown at 121a and bent inwardly to form a flange 121b, whereas the upper end of the side wall 116 is extended as shown at 116x and bent inwardly to form a flange 116x'. 126 indicates an inner connecting element shaped similarly to the element 122 (hereinbefore referred to) to provide along one end walls 126a, 126b, to engage the walls 121a, 121b and along its opposite end walls 126a', 126b', to engage the walls 116x, 116x'. 127 indicates an outer connecting element shaped similarly to the connecting element 123 (hereinbefore described) having reversely bent portions 127' provided with inturned walls 127a which terminate in shouldered members 127b arranged to engage the ends of the flanges 121b—126b and 116x'—126b' and lock them and their contiguous walls in engagement with the walls 127'. It will be observed that the related connecting elements 126, 127, along each side and end of the top 121 are co-extensive therewith. In this arrangement it will be noted that the adjoining ends of adjacent members 127 are at right angles to each other. To en-

close the ends of the members 127 I provide a closure consisting of a wall having the shape of a quarter section of a hollow sphere, as shown at 128 (Figs. 24 and 25), the radius of the wall being substantially equal to that of the arcuate walls of the members 127, so that when the closure is positioned its wall conforms to the shape of the adjacent member 127. To secure the closure 128 in position its lower and side edges are off-set inwardly and provided with spaced lugs 128a which frictionally engage the inner walls of the members 127.

As shown in Figs. 17, 18, 19 and 19a, the top 121 is off-set along its ends and sides as shown at 121x (Fig. 19a) so that it will be in flush relation to the connecting members 127, but where the top is to be provided with a wall 129 for protection or other purposes, such as a glass plate, as shown in Fig. 23, this off-set is omitted.

By this construction it is possible to completely assemble and disassemble an article of metal furniture without the aid of special tools. It will also be understood that the elements which go to make up an article of metal furniture, such as above described, may be packaged together in a comparatively small container or crate, thus considerably reducing transportation costs as well as economical storage of unassembled units.

It will be observed that since certain of the parts are standardized for assembly with other parts to make complete structures of different arrangements and the standardized parts are detachably connected to the other parts of each complete arrangement, the standardized parts of one complete arrangement may be employed to complete a different arrangement. Accordingly, where parts of an article of furniture are damaged, such parts may be readily and economically replaced or its other parts utilized to complete another similar or different article of furniture.

It will also be observed that the connections between the parts are of a construction to enclose the detachable elements; for example, the posts 13 (Fig. 1) and members 127 (Fig. 17); also, the channel members 60 (and similar members herein referred to) being hollow, provision is made for disposing the flanges 62 therein and extending the spring catch elements 47 into the members for engagement with flange edges to permit free movement of the drawers. Accordingly, none of the exposed walls of the furniture carry protruding devices, so that dusting or wiping of all exterior surfaces of the article is facilitated. It will be observed that various parts of the article may be economically rolled into final form from sheet metal, including the parts 18—19, 38, 40, 62, 122, 123.

It will be further understood that although applicant has shown and described only certain specific modifications of his invention for removably securing the elements of an article of metal furniture together, that other modifications or adaptations of the structure are contemplated.

To those skilled in the art to which my invention relates, many changes in construction and widely differing embodiments and applications of the invention will suggest themselves without departing from the spirit and scope of the invention. My disclosures and the description herein are purely illustrative and are not intended to be in any sense limiting.

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What I claim is:

1. An article of furniture comprising a front frame consisting of spaced horizontal bars and vertical side members the outer portions of which terminate in inwardly disposed flanges, a rear member, the opposite end portions of which terminate in inwardly disposed flanges, and side panels each consisting of inner and outer parallelly spaced walls, the opposite end portions of each outer wall terminating in inwardly disposed flanges, and connections between the opposite ends of each side panel and said rear member and adjacent side member, each said connection consisting of inner and outer connectors, said inner connector being fixed to the adjacent inner wall and having at each end thereof an inwardly disposed lateral wall engaging the inner face of the adjacent member and terminating in a flange engaging the inner face of the flange on said member and said outer connector being provided at its opposite ends with inturned walls each engaging the outer face of the flange on the adjacent member and terminating in a shouldered element engaging the free ends of the flanges on said member and the adjacent inner wall, said outer connector being formed of resilient material, whereby it may be deformed for insertion relative to said inner connecting member, the expansion of said connector serving to secure said flanges in engagement face-to-face one with the other.

2. An article of furniture comprising a front frame having spaced horizontal bars and vertical side members the outer portions of which terminate in inwardly disposed flanges, a rear member, the opposite end portions of which terminate in inwardly disposed flanges, and side panels each consisting of inner and outer parallelly spaced

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walls, the opposite end portions of each outer wall terminating in inwardly disposed flanges, a spacing member fixed to each inner wall adjacent each end thereof, each spacing member being provided at each end with an inwardly disposed lateral wall engaging the inner face of the adjacent member and terminating in a flange engaging the inner face of the flanges on said member, and a connecting member for the inner and outer walls of each side panel, each said connecting member being of arcuate shape in cross section and coextensive in length to the height of said walls and provided along its opposite edges with inturned walls each engaging the outer face of the flange on the adjacent member and terminating in a shouldered element engaging the free ends of the flanges on said member and the adjacent inner wall, each said connecting member being formed of resilient metal, whereby it may be deformed for assembly in position.

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