May 31, 1932. L. H. MORIN 1,860,940

RADIOCABINET

Filed Jan. 11, 1929 2 Sheets-Sheet 1

Fig. 1.

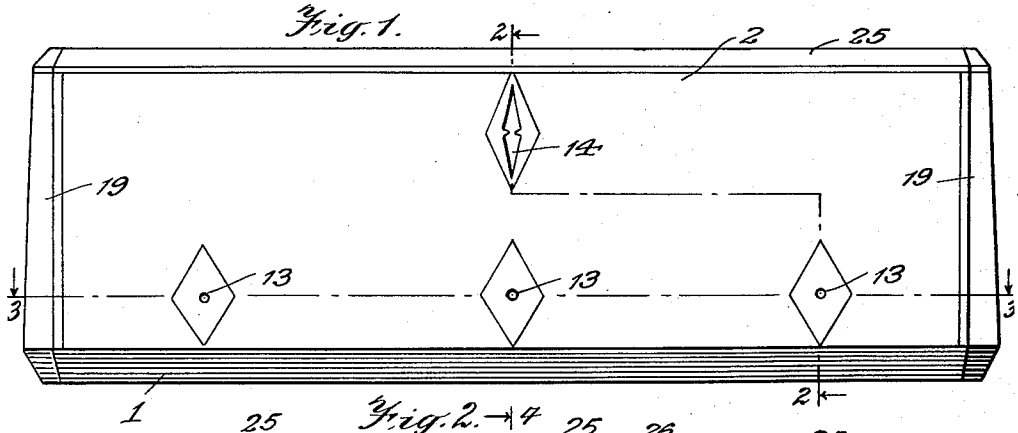


Fig. 2.

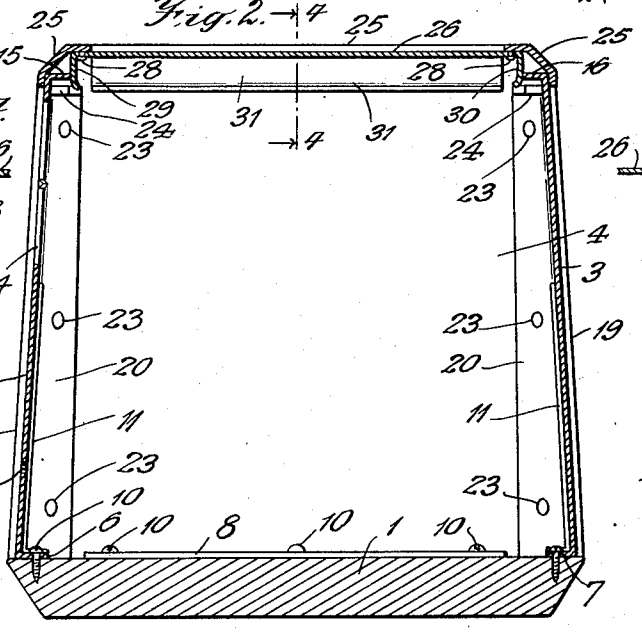


Fig. 4.

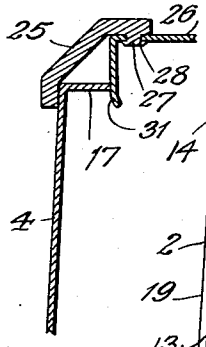


Fig. 5.

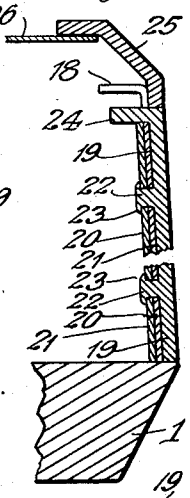
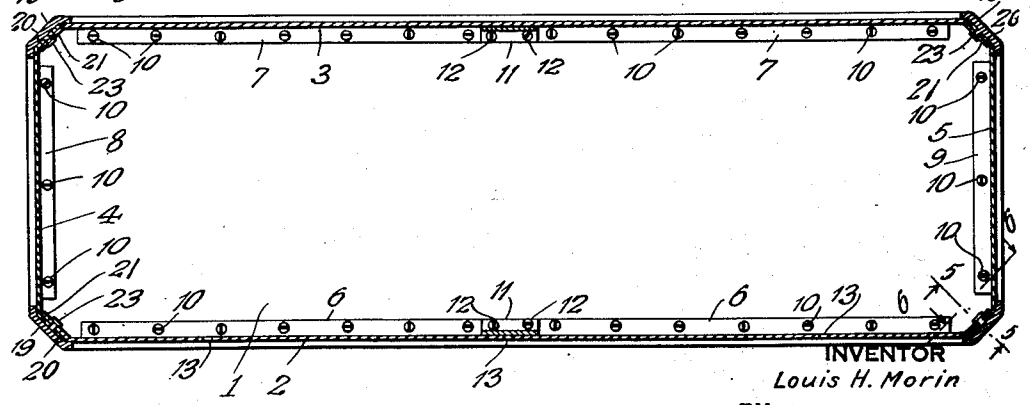


Fig. 3.



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Fig. 6.

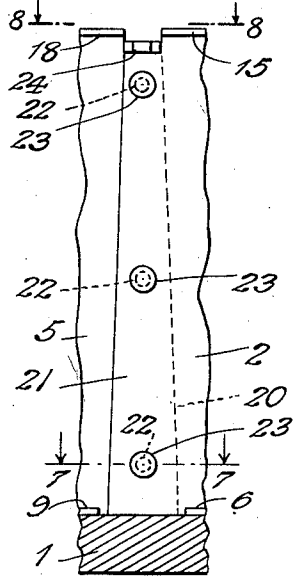


Fig. 10.

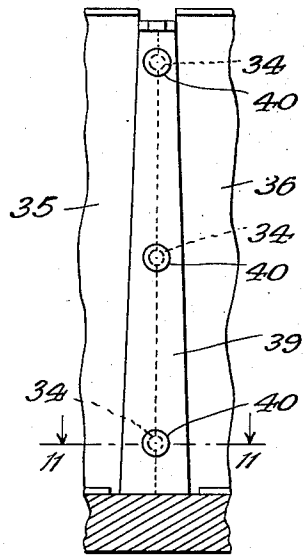


Fig. 12.

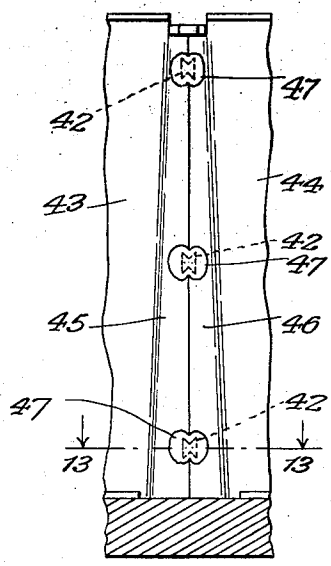


Fig. 7.

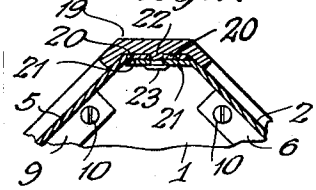


Fig. 11.

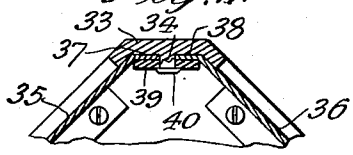
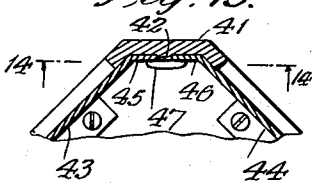


Fig. 13.



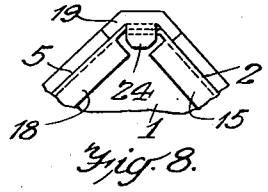


Fig. 8.

Fig. 15.

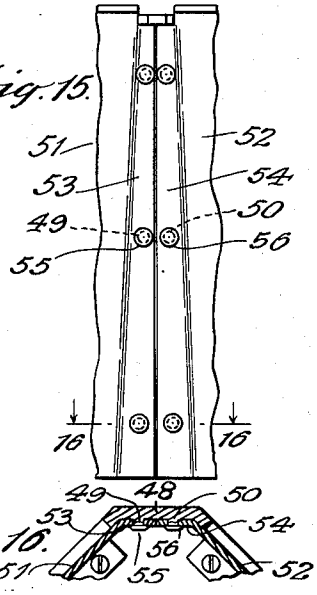


Fig. 14.

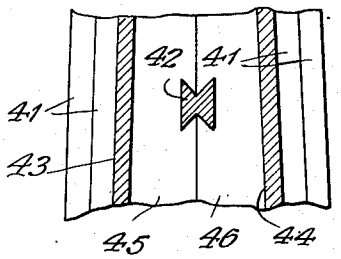


Fig. 9.

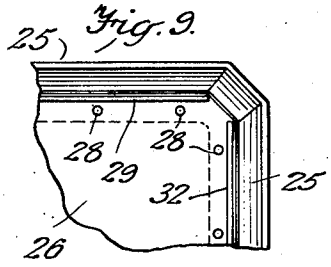


Fig. 16.

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Patented May 31, 1932 1,860,940

UNITED STATES PATENT OFFICE

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RADIOCABINET

Application filed January 11, 1929. Serial No. 331,876.

While this invention relates more particularly to radio cabinets, some of the features of construction thereof may be advantageously employed in other more or less similar cabinets or like constructions for metal furniture. Besides their utilitarian purpose of housing the radio receiving set, radio cabinets have now become recognized ornamental articles of furniture and accordingly must be built in such a manner as effectively to serve both of these demands. As a piece of furniture, a radio cabinet must be of symmetrical and graceful proportions, while at the same time lending itself to suitable ornamentation. For supporting and housing the electrical apparatus of the radio receiving set the cabinet must be exceptionally strong and rigid and also further suitably constructed and proportioned for effectively serving this latter purpose. Such cabinets were formerly made altogether of wood, but now are commonly constructed either entirely or nearly so of metal, generally similar in that respect to other articles of furniture. Metal construction is particularly desirable with radio cabinets for a variety of reasons, but more particularly for obtaining increased strength and rigidity of construction.

A general object of this invention is to provide an improved radio cabinet having a maximum of the desirable qualities required and in part above noted. Among these objects are convenience and economy of manufacture, as well as fulfilling the stringent mechanical requirements and satisfying the aesthetic sense of beauty. Other more particular objects and advantages will hereinafter appear.

The particular radio cabinet in which the invention is shown herein as embodied is what is commonly known as of the table type. In carrying out the invention, a suitable light, strong and rigid base is employed, which in this particular instance is a wooden baseboard, the remainder of the construction, however, being entirely of metal, and which comprises in general a die-cast framework which supports and reinforces suitably formed sheet metal wall panels.

The invention includes various features of construction and combinations of parts, as will appear from the following description.

One embodiment of the invention, together with slight modifications of some of the features thereof, which is illustrated in the accompanying drawings, will now be described and thereafter the invention will be pointed out in claims, reference now being had to the drawings in which:

Fig. 1 is a front elevation of a complete radio cabinet in which the invention is embodied;

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

Fig. 3 is a horizontal section on the line 3—3 of Fig. 1;

Fig. 4 is a further enlarged partial vertical section on the line 4—4 of Fig. 2;

Fig. 5 is a similarly enlarged partial vertical section on the diagonal line 5—5 of Fig. 3;

Fig. 6 is an elevation of a reinforced corner construction as viewed from the inside of the cabinet and may be considered as substantially a vertical section on the diagonal line 6—6 of Fig. 3, drawn to the scale of Fig. 2;

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

Fig. 8 is a plan view from the line 8—8 of Fig. 6;

Fig. 9 is an inverted partial plan view of a corner of the cabinet cover;

Fig. 10 is a view similar to Fig. 6, but showing a modified reinforced corner construction;

Fig. 11 is a horizontal section on the line 11—11 of Fig. 10;

Fig. 12 is a view similar to Figs. 6 and 10, showing another modified corner construction;

Fig. 13 is a horizontal section on the line 13—13 of Fig. 12;

Fig. 14 is a further enlarged partial vertical section on the line 14—14 of Fig. 13;

Fig. 15 is a view similar to Figs. 6, 10 and 12, showing a further modified corner construction; and

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

The complete embodiment of the invention

shown in Figs. 1 to 9 inclusive will now be particularly described. There is employed an elongated and in general rectangular baseboard 1 of suitable wood and of sufficient thickness so that it will be firm and rigid. This baseboard has its corners cut off or flattened and substantially throughout its thickness is beveled upwardly at both ends and at its corners, for harmonizing in artistic appearance with the metal superstructure. Similar front and rear sheet metal wall panels 2 and 3 incline slightly inward and upward from the baseboard 1, and a pair of similar sheet metal end wall panels 4 and 5 are similarly inclined, so that the cabinet as a whole will taper slightly upwardly. The front and rear panel walls 2 and 3 are provided respectively along their lower edges with horizontally inturned flanges 6 and 7, and the end panel walls 4 and 5 are provided with similar flanges 8 and 9, all of these four flanges being at the same level and being firmly secured to the upper side of the baseboard 1 by means of screws 10. The central portions of the front and rear panel walls 2 and 3 are shown as stiffened by means of similar bracket strips 11 which at their lower ends are turned to overlie the lower wall flanges and are secured in place by means of screws 12. The front panel 2 is shown as provided with three perforations 13 and with a slotted opening 14, these being for the accommodation of manually controlled parts of the radio receiving set. Each of the lower wall flanges 6, 7, 8 and 9 is continuous throughout its length, but at each end thereof terminates somewhat short of the panel wall, for reasons which will clearly presently appear. The front and rear walls 2 and 3 are provided respectively along their upper edges with horizontally inturned stiffening flanges 15 and 16, and the end walls 4 and 5 are also provided with similar inturned stiffening flanges 17 and 18 respectively.

The construction of the reinforced corner joint between the adjacent wall panels will now be described. Reinforcing upright corner pieces 19 are provided in the form of internally channeled die-cast rails. The channel in each of these outer corner pieces or rails 19 has a flat bottom and flat wing portons substantially at right angles to each other and joining the flat bottom at a reentrant angle of about 45°, these wing portions of the channel extending along and overlapping upon the adjacent marginal portions of the panel wall, with the flat bottom of the channel thus being at substantially an angle of 45° to the outer surfaces of these walls. The outward contour of these corner rails 19 is shown as the same as or complementary to the angular shape of its inner channel. These corner rails 19 thus being of laterally flanged construction or shape and being shown as of even thickness throughout. Each corner rail gradually tapers in width from its lower end, which rests upon the corner margin of the baseboard 1, to its upper end which terminates adjacent to but at a somewhat lower level than the upper edges of the panel walls and their inturned stiffening flanges, above described.

The lateral margins of the end walls or panels 4 and 5 project and have substantially 45° angular bends therein, thereby providing flat marginal portions 20, these angular portions being of the same width as the flat bottoms of the channels in the respective corner pieces or rails 19 and fitting flat against the bottom of this channel, the salient angles formed by the margins 20 fitting into the reentrant angles of the channel. The ends of the front and rear walls 2 and 3 have similar angularly bent end portions 21 which lie against and overlap upon the full width of the angular marginal portions 20 of the end panel walls 4 and 5. The corner piece or rail 19 along the middle line of the flat bottom of its channel is provided with a series of inwardly projecting studs 22 which are die-cast in the same piece therewith and are shown as three in number, although a larger number could be provided if thought desirable. These studs 22 pass through the overlapping marginal wall portions 20 and 21 and have heads 23 upset upon their inner projecting ends, so that thereby the overlapping bent edge margins 20 and 21 of the adjacent panels are firmly secured together and are also firmly secured to the corner rail 19 within its channel, this rail thus forming a strong and rigid reinforcement for the corner joint between the adjacent panels. The upper end of each of the corner rails 19 is provided with a horizontally inwardly projecting ledge or lug 24 which immediately overlies the upper ends of the overlapped angular wall margins 20 and 21, which terminate at this lug.

The angular flanged shape of the corner pieces 19 provides both strength and lightness, together with the use of a minimum amount of metal. Also it provides a channel of highly advantageous contour, together with an outer contour of pleasing appearance and harmoniously conforming to the rest of the cabinet construction as a whole. However, it is to be understood that the outer contour of these corner reinforcing pieces 19 might be different, such as rounded in part or throughout, or they might have square outer corners. Also the shape or contour of the internal channel might be varied more or less while still carrying out the invention.

A top cover is provided for the cabinet comprising a one-piece die-cast frame part 25, the integrally joined frame bars of which are substantially the same in cross-sectional shape as the corner pieces 19. The straight front, rear and end frame bars of this frame part

25 are joined or united at the corners of this frame by means of short angular portions of the same cross-sectional shape and in line with to form upward continuations of the corner pieces 19. Thus this frame part 25 has all of the way around it a depending substantially vertical lower flange and an inner horizontal flange, which is wider, these two flanges being joined by a flat intermediate portion forming a bevel which is inclined inwardly and upwardly at an angle of substantially 45°. The lower or depending flange telescopes over the upper edge margins of the panel walls 2, 3, 4 and 5 and this flange at the corners rests upon the upper ends of the corner pieces 19 in line with the upper surfaces of the inwardly projecting ledges 24.

The die-cast frame 25 is closed by a sheet metal top panel 26, the margins of which extend under the horizontal inner or top flanges of this frame 25. The top panel 26 is firmly secured to the frame 25 by means of studs 27, die-cast in one piece therewith, projecting downward from its upper or inner flange through the margins of the top panel 26 and provided at their ends with upset heads 28. Outwardly from the heads 28 of the securing studs 27 the top panel 26 has downturned front and rear flanges 29 and 30 formed thereon, and at its ends has similar downturned flanges 31 and 32. All of these downturned flanges are turned or curved slightly inward along their lower edges and these flanges for convenience of manufacture have their ends separated at the angular corners of the frame 25. When the cover is in place on the cabinet box, these cover flanges 29, 30, 31 and 32 telescope respectively just within the inner edges of the inturned stiffening flanges 15, 16, 17 and 18 of the respective panel walls, as shown in the drawings, more particularly in Figs. 2 and 4. In the construction shown, thus the complete cover may be conveniently lifted off for gaining access to the inside of the cabinet and may be as conveniently replaced in its telescoping relation with the panel walls of the cabinet.

In Figs. 10 and 11 there is shown a variant or modified reinforced corner joint construction which may be utilized in carrying out the invention. The internally channeled corner piece or channeled rail 33 there shown may be and as is shown, of the same construction as the channeled corner piece 19 hereinbefore described. Similarly to the corner piece 19, this corner piece 33 has a series of securing studs 34 die-cast in the same piece therewith and projecting inwardly along the middle line of the flat bottom of its angular channel. However, in this modified construction, the adjacent panel walls 35 and 36 are provided respectively with flat angular marginal edge portions 37 and 38, with the angular bends in each of these panel walls fitting into the reentrant angle of the channel and with these marginal edge portions 37 and 38 both fitting against the flat bottom of the channel with their edges in abutting relation, these edges being provided with semicircular notches to fit around the studs 34. A flat clamping strip 39, which gradually tapers upwardly along its edges, fits against the inner faces of the angular edge margins 37 and 38 throughout the width thereof, with the inner corners of its edges fitting into the reentrant angles which the edge margins form with the panel wall. The securing studs 34 pass through this clamping strip 39 and have upset heads 40 thereon which press the clamping strip 39 tightly against the bent angular margins 37 and 38 of the panel walls 35 and 36, so that thereby the clamping of these angular edge margins against the flat bottom and in the angles of the channel firmly secures both of the panels 35 and 36 to the corner piece 33.

The modified corner construction just described with reference to Figs. 10 and 11, may be considered as alternative to that first described with reference to Figs. 1 et seq., inasmuch as this construction shown in Figs. 10 and 11 has been found to be more rigid while the cost and convenience of manufacture remain substantially the same, depending somewhat upon the particular tools and machines which may be readily available in any particular instance. A reinforced corner joint construction substantially similar to that shown in Figs. 10 and 11, has been disclosed and claimed in my prior copending application which became Patent Number 1,812,360, June 30, 1931, for Metal furniture.

Another variant or modified reinforced corner joint construction is shown in Figs. 12, 13 and 14. In this construction the corner piece 41 has the same internally angular channel as in the corner pieces hereinbefore described. However, along the middle line of the flat bottom of this channel, this corner piece 41 has die-cast thereon in the same piece therewith a series of double dovetail lugs 42 which are of considerably greater cross-sectional area than the headed securing studs hereinbefore described. Each of these lugs 42 is shown as having flat sides laterally, while its upper and lower sides are formed by deep V-shaped notches, so that this lug 42 is thus transversely in the shape of a double dovetail, as is shown most clearly in Fig. 14. The panel walls 43 and 44 have angularly bent edge margins 45 and 46 respectively, with the salient angles which they form with the panel walls fitting into the reentrant angles of the channeled corner piece 41. These angular edge margins 45 and 46 lie flat against the flat bottom of the channel in the corner piece 41 with their edges abutting against each other. Each of these edge margins 45 and 46 is provided, for each of the lugs 42, with an undercut notch to fit closely

or snugly over the dovetail at that side of the lug 42. The inwardly projecting ends of these lugs 42 are upset to form surrounding flanges or heads 47. These large heads press the panel margins 45 and 46 tightly against the bottom of the channel in the corner piece 41, and together with the dovetails of the lugs 42 cooperate with the lateral wing portions of the channel for firmly securing the panel walls 43 and 44 to the corner piece 41, which thus connects the two panels together and provides a strong reinforced corner joint. This modified corner joint construction also can be produced by means of ordinary manufacturing methods without any particular difficulty, and this joint effectively serves its intended purpose.

In the further modified or variant reinforced corner joint construction shown in Figs. 15 and 16, the reinforcing die-cast corner piece 48 is of the same angularly channeled shape as those hereinbefore described. This corner piece 48, however, is provided with two rows or series of securing studs 49 and 50, die-cast in the same piece therewith and projecting inwardly from the flat bottom of its angular channel at opposite sides of the middle line thereof, these studs 49 and 50 being shown as arranged horizontally opposite to each other in pairs. The adjacent panel walls 51 and 52 have angularly bent marginal portions 53 and 54 respectively fitting into the channel and through which the respective studs 49 and 50 pass, the inner projecting ends of these studs being provided respectively with upset heads 55 and 56. In this construction, more particularly by reason of the fact that each of the rows of studs 49 and 50 is relatively near to the adjacent angular wing of the channel in the corner piece 48, it will be evident that these studs will effectively cooperate with the angular formation of the channel for firmly securing the panel walls 51 and 52 to the corner piece 48 and that a strong reinforced corner joint will be formed between these panel walls. This reinforced corner joint construction also may be economically and conveniently manufactured by means of ordinary methods.

The hereinbefore described practical embodiment of this invention, including the above noted modifications therein, is designed to fulfill the numerous exacting requirements in a radio cabinet. It is necessary that such a cabinet should be strong and rigid in order properly to protect the electrical apparatus of the radio set. Also it is required that these cabinets must be handsome and finely finished articles of furniture. Also it is desirable that these cabinets should be of a simple construction which may be conveniently and economically manufactured.

The several wall panels constructed as hereinbefore described may be made from suitable sheet metal, such as sheet steel. Besides their other advantages, these sheet metal walls provide desirable shielding for the electrical apparatus of the radio set. The smooth outer surfaces of these walls may be provided with any suitable kind of finish desired. Thus they may have a plain finish in any desired color or they may be ornamented to whatever desired extent and in whatever way and different colors and patterns desired, which may be readily accomplished by any suitable convenient method and means.

The hereinbefore described die-cast frame parts may be conveniently and economically die-cast from a suitable metal or alloy, such as an aluminum base or a zinc base alloy. However, in carrying out the invention in a radio cabinet such as shown, a zinc base alloy is considered superior to an aluminum base alloy, since the zinc alloy provides greater strength and rigidity, which are particularly desirable in a radio cabinet. It will be noted that the die-cast frame parts shown in the drawings and above described lend themselves readily to suitable artistic ornamentation of their exposed outer surfaces in whatever way or to whatever extent may be desired. For example, the smooth outer surfaces shown may be painted in whatever color or colors or ornamental designs desired. Also, if desired, an ornamental pattern comprising elevations and depressions, such as an ornamental pattern in raised or elevated outline upon a lower or depressed background, may be die-cast upon the outer surfaces of these frame parts. Such a raised pattern if desired may be made to appear in a harmonizing contrasting color with its depressed background, which may be done by a suitable convenient method.

It is obvious that various other modifications may be made in the constructions shown in the drawings and above particularly described, within the principle and scope of the invention as defined in the appended claims.

I claim:

1. In a cabinet, the combination of rigid metallic corner uprights each having its inner face longitudinally channeled, sheet metal panels having their edge portions entering the channel face and shaped and secured thereto, the said corner uprights at their upper ends terminating below the level of the upper edges of the panels, and a top cover closure comprising a rigid metal frame part having an outer lower depending flange which telescopes over the upper margins of the said panels and rests upon so as to be supported by the upper ends of the said corner uprights and said frame also having an upper horizontally inwardly directed flange, and a sheet metal top panel having its mar-

gins firmly secured to the latter flange of the said frame part.

2. In a cabinet, the combination of rigid metallic corner uprights each having its inner face longitudinally channeled, sheet metal panels each having an edge portion entering the channel face and shaped and firmly secured thereto, each of the panels having a free inturned stiffening flange along its upper edge and the said corner uprights at their upper ends terminating below the level of the flanged upper edges of the panels, and a top cover closure comprising a rigid metal frame part having an outer lower depending flange which telescopes over the upper margins of the said panels and rests upon so as to be supported by the upper ends of the said corner uprights and said frame also having an upper horizontally inwardly directed flange, a sheet metal top panel within the frame firmly secured at its front and rear and end margins to the lower side of the said inturned flange on the frame, and downturned marginal flanges on this top panel at the front and rear and ends to fit telescopically within the edges of the said inturned flanges on the upper edges of the respective panels.

In witness whereof, I hereunto subscribe my signature.

LOUIS H. MORIN.