March 3, 1936. D. E. HUNTER 2,032,878

FURNITURE TOP CONSTRUCTION

Filed May 3, 1935 2 Sheets-Sheet 1

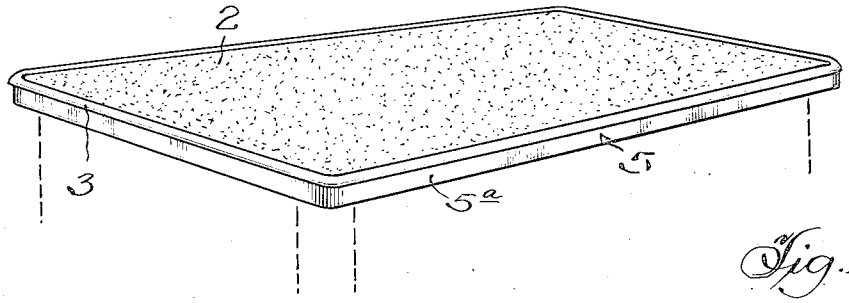



Fig. 1

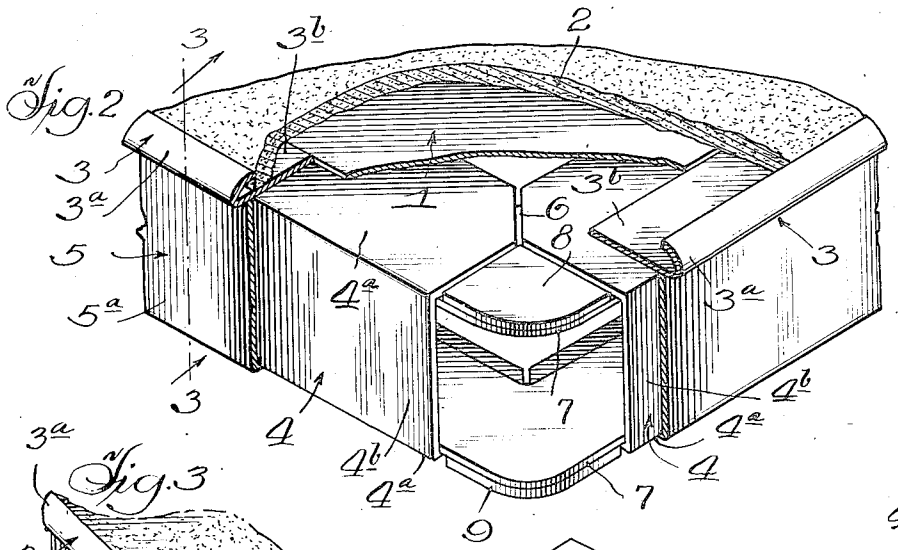



Fig. 2

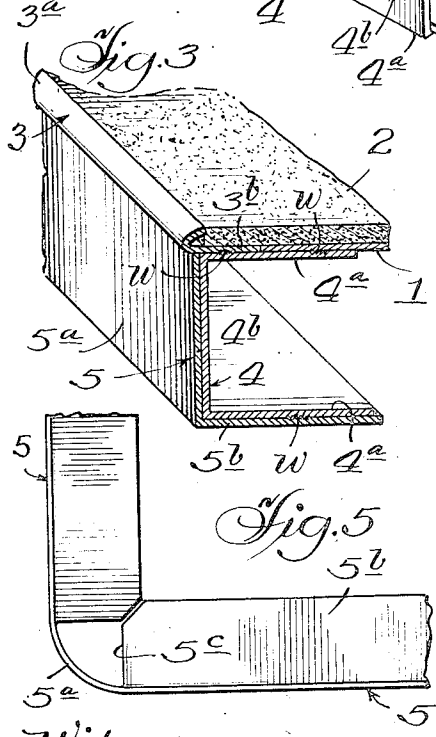



Fig. 3

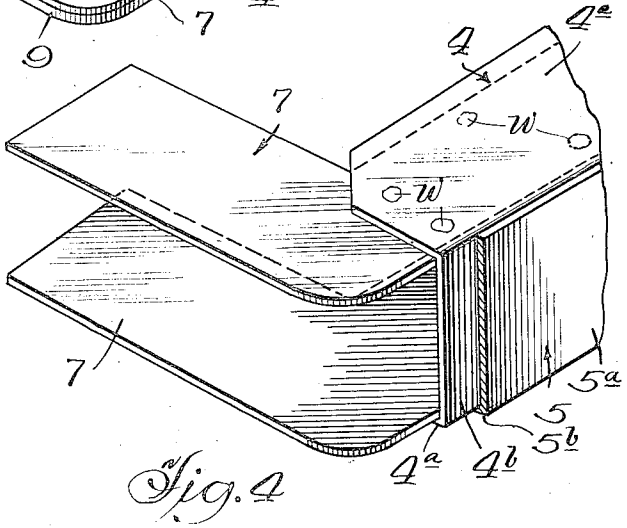



Fig. 4




Fig. 5

Witness:
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FURNITURE TOP CONSTRUCTION

Filed May 3, 1935 2 Sheets-Sheet 2

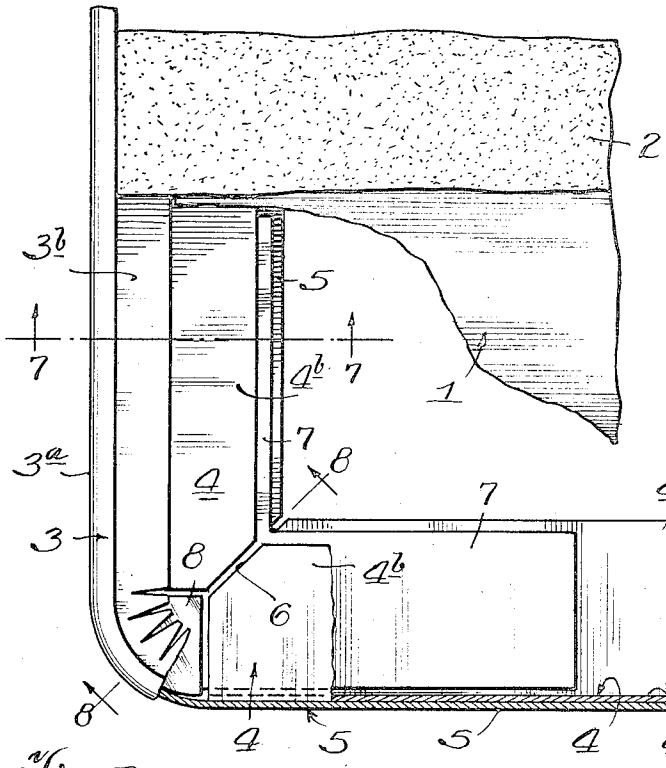



Fig. 6

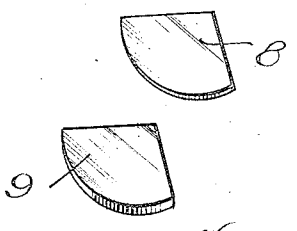



Fig. 11

Fig. 12

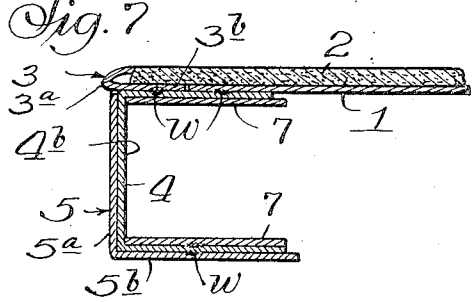



Fig. 7

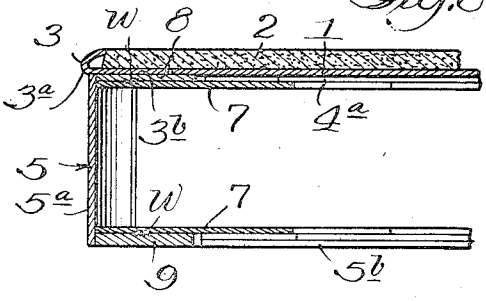



Fig. 8

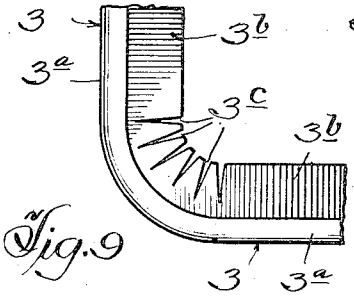



Fig. 9

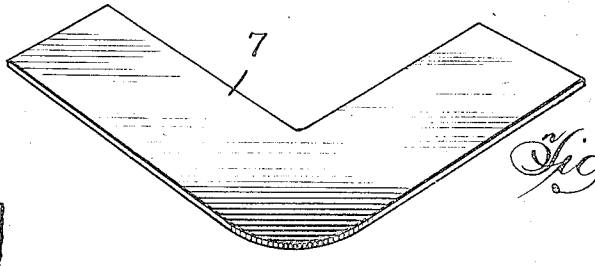



Fig. 10

Witness:
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Patented Mar. 3, 1936 2,032,878

# UNITED STATES PATENT OFFICE

2,032,878

## FURNITURE TOP CONSTRUCTION

David E. Hunter, Muskegon, Mich., assignor to The Shaw-Walker Co., Muskegon, Mich., a corporation of Michigan

Application May 3, 1935, Serial No. 19,664

5 Claims. (Cl. 311—107)

This invention relates to improvements in furniture top construction and more particularly to the structural features along the edges and at the corners of flat top metal desks, tables and similar articles of furniture, preferably covered with linoleum or like compositions.

The object of the invention is to provide an improved and practical construction for metal furniture tops which are preferably made up as separate members or units to be thereafter secured to the body of a particular article of furniture. These tops ordinarily include a flat metal plate over which is applied a sheet of linoleum extending to the extreme edges of the top and surrounded by an ornamental metal strip or beading providing a protective binding or abutment for the edges of the linoleum cover sheet. Moreover, the marginal portions of these tops project beyond the body of the desk or table and extend transversely to give the appearance of substantial thickness and also to afford strength to withstand the ordinary wear and tear in service.

A further object of the invention is therefore to provide an edge and corner construction for these tops which combines the essential elements of economical use of materials, simplicity of assembly, adequate strength and a finished and dignified appearance.

A preferred embodiment of the invention is disclosed in the accompanying drawings, in which

Figure 1 is a perspective view of a completed top.

Figure 2 is an enlarged perspective view of a corner section of a top constructed in accordance with the invention, with portions at the corner cut away to show the structural details.

Figure 3 is an enlarged detail view in cross section through the edge of the top as taken on line 3—3 of Figure 2.

Figure 4 is a perspective view showing a partial assembly at one corner of the top.

Figure 5 is a top plan view of a corner section of the outer finishing strip.

Figure 6 is a top plan view of a corner section of the top with portions broken away to show the corner construction.

Figure 7 is a view in vertical section taken on line 7—7 of Figure 6.

Figure 8 is a view in vertical section taken diagonally through the corner on line 8—8 of Figure 6.

Figure 9 is a top plan view of a corner section of the binding strip.

Figure 10 is a perspective view of one of the corner angle plates.

Figures 11 and 12 are perspective views of the top and bottom corner insert plates, respectively.

Considering the top as a unitary structure without relation to the particular article of furniture to which it is applied, the same comprises a flat rectangular top plate 1 of sheet steel of a fairly heavy gauge over which is laid and cemented thereto a sheet of linoleum 2 of the same shape as the plate, but slightly larger, with the result that the linoleum extends beyond the edges of the plate a matter of perhaps an inch entirely around the four sides. The linoleum thus marks the outer edges of the top, except for the narrow binding strip or edging 3 of bronze or other metal having an ornamentally finished surface. This binding or edging is initially a flat strip of substantially the same thickness as the top plate 1 with one of its marginal portions bent over in U-shape to form a bead $3^a$ having the same height as the thickness of the linoleum and preferably having its free edge drawn out or flattened to approach a beveled edge. The binding strip 3 extends beneath the extended marginal portion of the linoleum sheet 2 in the form of a horizontal flange $3^b$ lying in the plane and having abutting contact along its inner edge with the edge of the top plate 1, as shown in Figure 2.

Now, directly beneath the marginal portions of the top plate 1 and the binding strip 3 is a relatively deep hollow rail 4 consisting of a strip of sheet steel bent in U-shape. This rail is assembled with its parallel webs $4^a$, $4^a$ horizontal and extending inwardly, and its intermediate web $4^b$ depending vertically from a point just inwardly from the outer edge of the binding strip 3. Thus the uppermost flange $4^a$ of the rail has contact with the abutting marginal portions of the top plate 1 and the binding strip 3 and these three members are joined together in the assembly process by a double row of spot-welding on either side of the line of abutting contact between the top plate and the binding strip. For convenience, points of spot-welding will be uniformerly indicated by areas marked *w* wherever they occur.

To complete the metallic structure of the top, a finishing strip 5 of L-section is applied over the exposed portions of the rail 4, that is, the vertical web $4^b$ and the lower horizontal web $4^a$, with one edge abutting against the underside of the beaded edge $3^a$ of the binding strip 3 and its other edge terminating at or slightly beyond

the inner edge of the lower web 4a to which it is welded as at points *w*. The vertical face of the strip is thus disposed substantially flush with the beaded edge of the binding strip and being exposed around the edge of the top is preferably finished either with an enamelled surface or the strip may be of polished bronze.

Manifestly, in the process of assembly, the metal parts thus identified would be assembled and welded together before the linoleum is laid over the top plate and cemented with its edges flush with the binding strip 3, thus presenting a smooth top surface terminating at its edges in a rounded bead-like strip.

Thus far the top construction has been considered as having the same structural arrangement at all points about its edge. But as a practical matter some departure is necessary at the corners which are preferably formed with a distinct rounded contour. In shaping the corners, therefore, it is proposed to carry the edge strip 3 as well as the finishing strip 5 around the corners by bending them to conform to the prescribed arc, a process requiring the cutting away of segments in the horizontal flanges and webs thereof and the addition of certain reinforcing elements.

The corner construction is clearly shown in Figures 2, 4, 6, 7 and 8. The top plate 1 and the linoleum sheet 2 being flat need only be cut with rounded corners, the former to conform to the inner edge of the binding strip and the latter to the outer or beaded edge thereof. The binding strip 3, however having a rather wide horizontal flange 3b has a series of deep V-shaped notches 3c cut into its inner edge at each corner, and which close to form radial slits as the strip is bent so that the flange is carried around the corners without buckling, as clearly shown in Figure 9.

It is not necessary, however, to bend the inner rail 4 around the corners, since it is not exposed and, therefore, it is preferable to use straight lengths of the rail material along the four sides of the top and join them together at their ends with separate connecting members. Each section of the rail is, therefore, cut so that it stops short of corners at opposite ends so that when they are assembed their end edges form a 90° angle except at the inner marginal portions of the horizontal webs 4a, 4a where the edges are cut on the diagonal and meet in a mitered joint, as at 6. To join the sections of the inner rail 4 together into a rigid frame, two angle plates 7, 7 (Figures 4 and 10) of the same width as the webs 4a, 4a and having rounded corners are inserted at each corner, one bearing flatwise against each of the upper and lower webs whereupon they are spot-welded thereto throughout overlapping portions beyond the right angular openings which are formed at each corner between the ends of the rail sections. Moreover, having joined the ends of the rail sections 4, 4 together by means of the angle plates 7, 7, a shallow recess or cavity in the shape of a quadrant of a circle is left on the top and bottom sides of the rail. The cavities on the top side of the rail are filled by inserting segmental plates 8, having the same thickness as the rail material, into the same and spot-welding them to the exposed portion of the angle plate 7 beneath, thus producing a flush surface at the corners and affording the necessary support for the top plate 1. The cavities in the bottom of the rail are treated somewhat differently, as will presently be described.

Now, the finishing strip 5 is bent around the corners in somewhat the same manner as the edge strip 3 in that its vertical web 5a is shaped to conform to the curvature at each corner, but its horizontal web 5b which extends inwardly beneath the bottom web 4a of the inner rail 4 has a V-shaped section 5c removed at each corner (Figure 5), not in the form of V-shaped notches as in the case of the binding strip 3, but a single and somewhat irregular shaped section which, when the rail is bent, assumes the shape of the quadrant of a circle of the same size and registering with the downwardly facing corner cavity in the bottom side of the rail 4, as well as the miter joint between the inner edge portions. Thus with the bottom cavity and opening, respectively of the overlapping horizontal webs of the inner rail 4 and outer finishing strip 5 in register, it is possible to fill and to reinforce both with one and the same member, namely, a metal block 9 in the shape of a quarter segment of a circle which is inserted into the downwardly facing cavity and spot-welded to the lower angle plate 7, as clearly shown in Figure 2. Incidentally the filler block 9 is of the same shape as the filler plate 8, except that it is twice the thickness, and this because the space to be filled is equal to the thickness of the two superimposed thicknesses of metal of the overlapping lower webs of the rails 4 and 5.

In this manner, it is possible to carry the exposed edge members around the corners without a break or joint, thus not only giving the top a dignified and substantial appearance by eliminating sharp corner angles, but reinforcing the structure at the points which receive the hardest blows and greatest amount of wear and tear.

Having set forth a preferred embodiment of my invention including the assembly of the essential members constituting the top as well as the construction at the corners,

I claim:

1. A top construction for metal furniture comprising a top plate, a sheet of covering material applied to said top plate with its marginal portions extending beyond the edges thereof, a metal binding strip having an upturned edge embracing the edges of said covering sheet and a horizontal flange extending inwardly beneath said sheet in the plane of said top plate, and an inwardly opening hollow rail of U-section having a vertical web depending from the outer edge of said binding strip and inwardly extending top and bottom webs, said top web underlying the horizontal flange of said binding strip and integrally connected therewith and along the edge of said top plate, and an outer facing strip of L-section embracing the vertical and bottom webs of said rail with its corresponding vertical web substantially flush with the upturned edge of said binding strip.

2. A top construction for metal furniture comprising a rectangular top plate having rounded corners, a similarly shaped cover sheet superimposed upon said top plate, a binding strip extending around the edges of said cover sheet and bent to conform to the rounded corners thereof, rails of angular section extending along the edges beneath said binding strip and terminating short of the corners, angular corner plates connecting the horizontal webs of said rails at the corners, segmental plates inserted in the angular corner spaces formed by the ends of the plates and the angle plates and an L-shaped facing strip overlying the vertical webs of said rails and having a

corresponding vertical web rounded to conform to the curvature of the binding strip at the corners.

3. A top construction for metal furniture comprising a rectangular top plate having rounded corners, a similarly shaped cover sheet superimposed upon said top plate, a binding strip extending around the edge of said cover sheet and bent to conform to the rounded corners thereof, rails of angular section extending beneath said binding strip and the marginal portion of said top plate and terminating short of the corners, angular plates connecting the horizontal webs at the corners, and an outer facing strip of L-section applied over said rails and having a vertical web depending from the outer edge of said binding strip and curved at the corner to conform to the rounded contour of the outer edge of said binding strip.

4. A top construction for metal furniture comprising a rectangular top plate, a cover sheet superimposed upon said top plate with its marginal portions extending beyond the edges thereof and rounded at the corners, a binding strip having an upturned outer edge embracing the edges of said cover sheet and bent to conform to the rounded corners thereof, and a horizontal flange extending radially inward at the corners to the edge of said top plate, rails of U-section having horizontal webs extending inwardly beneath the horizontal flange of said binding strip and the marginal portions of said top plate between the corners, said webs being cut away at the corners in the form of the quadrant of a circle, right angular corner plates connecting the horizontal webs of said rails at each corner, and a facing strip of angular section embracing the exposed portions of said rails and having a vertical web rounded to conform to the curvature of the binding strip at the corners.

5. A top construction for metal furniture comprising a rectangular top plate cover sheet superimposed upon said top plate and having rounded corners, a binding strip extending around the edge of said cover sheet and bent to conform to the rounded corners thereof, rails of U-section extending beneath said binding strip and the marginal portion of said top plate and terminating short of the corners, angle plates connecting the horizontal webs of said rails at each corner, segmental plates inserted in the recesses between the ends of the horizontal flanges of said rails, and an outer facing strip of L section applied over said rails and having a vertical web depending from the exposed edge of said binding strip and a horizontal web extending inwardly beneath the lower flange of said rails, said vertical web of the facing strip being curved at the corner and segments cut from the horizontal web at the corners and forming openings registering with the corner openings between the adjacent ends of said rails, and filler plates mounted in said corner openings and fixed to the adjacent angle plate.

DAVID E. HUNTER.