Nov. 24, 1936. D. O. PESCHEL 2,061,588

METAL FURNITURE

Filed Dec. 21, 1933

Fig. 1.

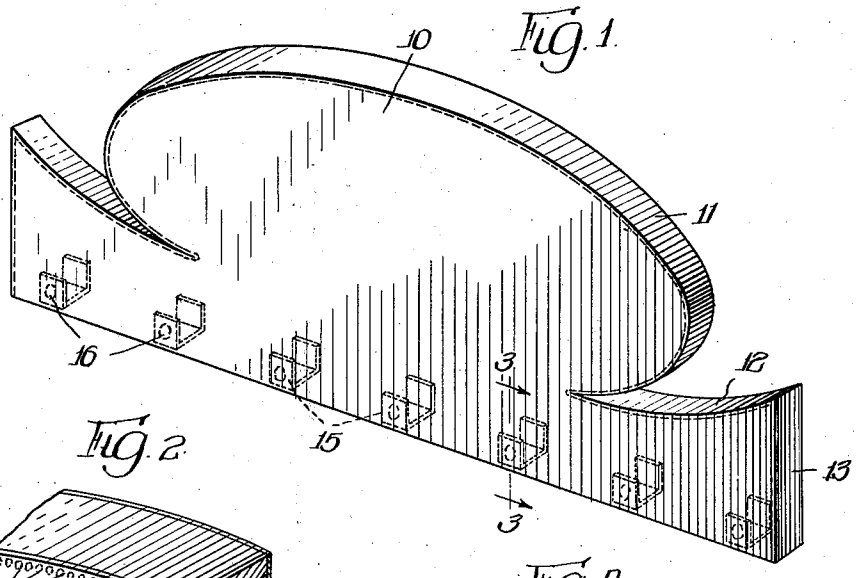


Fig. 2.

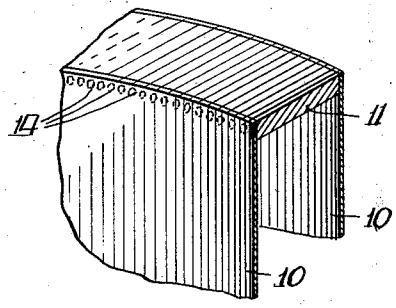


Fig. 3.

Fig. 4.

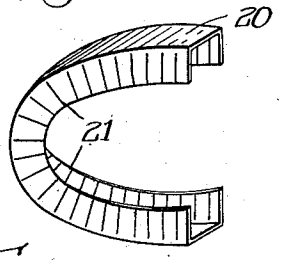


Fig. 5.

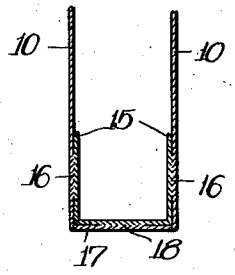


Fig. 7.

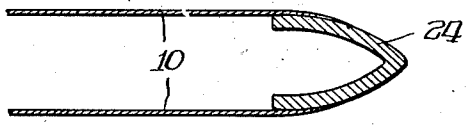
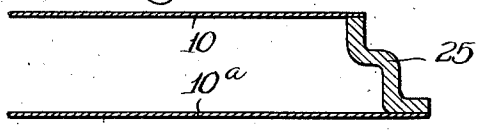
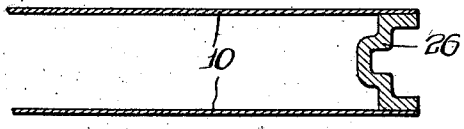


Fig. 6.





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METAL FURNITURE

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Application December 21, 1933, Serial No. 703,380

9 Claims. (Cl. 29—148.2)

This invention relates in general to a hollow metal plate or panel for furniture, building, and the like, and is more particularly described as a head or foot board for a bed.

One of the principal objects of the invention is in the provision of a hollow panel or board structure composed chiefly of sheet metal and adapted to be used or substituted wherever wood boards or panels are now used.

A further object of the invention is in the provision of a hollow metal panel composed chiefly of sheet metal and simulating a solid structure of wood or other material of the same size and shape.

A still further object of the invention is in the provision of a hollow metal panel of substantial thickness in which the side sheets are attached to a rim or marginal part of substantially greater thickness.

A further object of the invention is in the provision of a hollow sheet metal panel which consists of sheet metal sides which are electrically spot-welded to a spacing member for holding them apart.

Still another object of the invention is in the improved method of making a hollow sheet metal structure which resembles a solid structural part of the same size and shape.

Other objects of the invention will appear hereinafter, the preferred structure being illustrated in the accompanying drawing.

In the drawing, Fig. 1 is a perspective of a bed end member constructed in accordance with the principles of this invention;

Fig. 2 is a detail sectional view of the structure shown in Fig. 1;

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

Fig. 4 is a perspective of a bent brazing element for a hollow metal structure as shown in Fig. 1; and

Figs. 5, 6 and 7 are sectional views of marginal edges of different structures embodying the principles of this invention.

In producing a hollow metal panel structure it is difficult to attach a thin metal sheet to a similar thin metal edge and to form a smooth joint between the parts by welding, brazing or soldering, for the parts being of the same thickness will easily become dented or warped and it is then practically impossible to restore the original contour so that the article will be fit and suitable for use. It is also found that if the marginal edge is formed of thin sheet metal the structure is liable to warp, shrink or expand which will make it unsuitable for finishing or use. The present invention provides a novel method of securing the plates at their marginal edges to a rim member which is substantially thicker and therefore more substantial, less likely to buckle or bend, more likely to hold its shape and position, and has sufficient width and thickness so that the marginal edge of the thin side plates may be rigidly secured thereto, preferably by electrical spot-welding or by a continuous rolling weld which is regarded as substantially the same thing.

Referring now more particularly to the drawing, a pair of thin sheet metal side sheets 10 are cut to a similar size and shape and at their marginal edge is inserted an exposed metal rim 11 of substantial thickness and a contour which conforms to the shape of the sheets 10. The rim may consist of a number of different pieces 11, 12, and 13 either attached together or separately attached between the edges of the plates 10.

In order to connect the side sheets 10 and the rim members at their marginal edges it is not the intention to solder or flame-weld the parts together but rather to electrically spot-weld the side sheets 10 to the edge of the rim member 11 by a close succession of spot-welds 14 which may be produced by automatic or manual spot-welding mechanism or by a continuous rolling weld which is regarded as equivalent thereto.

With the sheets spot-welded to the rim members any roughness, overlapping or under-lapping of the parts can be easily and quickly smoothed out by grinding or buffing the parts about the edge thereof, and making the edge smooth and continuous for receiving paint, enamel or other covering materials.

Even though this structure does receive severe bumps, the thickness of the rim members 11, 12 and 13 is such that it will prevent distortion of the structure and will resist a considerable bump or knock without showing it.

If desired the main or other edges which may be at the bottom or in other unexposed parts of the structure may be attached and spaced apart by a plurality of spacers 15 substantially U-shaped in cross-section and secured to the edges of adjacent sides 10 by spot-welds 16. It may also be desirable to insert a continuous rim 17 of sheet material between the side sheets 10 and attached at intervals to the spacing members 15 by spot-welds 18, thus in effect producing a thicker re-enforced marginal rim member which

corresponds to the rim members 11, 12 and 13 at the other edges of the structure.

For making continuous curves as shown in Fig. 1, a relatively thinner marginal rim member 20, as shown in Fig. 4, may be used which is U-shaped in cross section as are the spacers 15, the side edges being formed with transverse cuts 21 which adapt the member to be bent or curved in any desired form.

It is also contemplated that instead of the rim members being flat and conforming exactly to the curvature of the marginal edges of the sheets 10, a rim member 24 may project outwardly from the marginal edges of the sheets as shown in Fig. 5, or it may be in the form of a molding 25 as shown in Fig. 6, in which case one of the sheets 10^a will not be the same size or conformation as the sheet 10, or as shown in Fig. 7, the marginal member 26 may extend inwardly from the edges of the sheets which it connects. In each case however, the edges of the marginal members 24, 25 or 26 affords sufficient surface for making a spot-welding contact with the sheets which they connect.

The structure thus produced is extremely strong, light and inexpensive; it wears better and is more durable than a similar structural piece made of wood; it will not warp, shrink or expand to an objectionable degree; and by making furniture such as beds, tables and structural panels in this improved simple manner it is possible to materially reduce the cost of manufacture of a similar wood construction and also to provide a strong, durable article of furniture which is pleasing in appearance and one which may be easily painted or otherwise decorated.

In carrying out the method of this invention for making hollow structural articles, thin metal sheets of thirty gauge metal and heavier, up to and including ten gauge in thickness, are cut to the desired size and shape, and to the ordinarily exposed marginal edges thereof is applied a rim member, or members, which may be of a slightly heavier gauge material and may be as thick as one inch, which space the edges apart and which provide sufficient contact surface for electrically spot-welding the marginal edges of the sheets thereto. For other edges which do not receive severe wear or usage, or are usually unexposed, the edges of the sheets may be spaced apart by spacers placed at intervals to which a cover strip of thinner material may be spot-welded either before or after the spacers are spot-welded to the sheets. After the entire structure is thus assembled and produced the edges may be ground or buffed to smooth them for the application of paint, enamel or any other covering or decoration.

I claim:

1. A hollow structural metal part for furniture, panels, and the like, comprising thin metal sheets with similarly curved outer edge contour and a rim member inserted between the sheets and the outer surface flush with their marginal edges, curved longitudinally to correspond to said contour, and having a sufficient contact space, and spot-welds connecting the sheets to said contact space.

2. A hollow panel comprising thin metal sheets having curved outer edges, and a marginal connecting metal rim inserted between the sheets and of relatively thicker material shaped to conform to and fit with its outer face flush with the edges and to provide a substantial contact surface with the inner edges of the sheets, and spot-welds for connecting the sheets to the rim at said contact surfaces.

3. A hollow structural member simulating a wood part of the same size and shape, comprising thin metal sheets of the desired shape and size, and means inserted between the sheets for connecting and spacing them apart at their marginal edges, said means being flush with the edges of the sheets and including a metal rim member longitudinally conforming to the shape of the sheets, and spot-welds connecting the sheets to the rim at frequent intervals.

4. In a hollow panel structure, thin metal sheets having shaped marginal edges, marginal spacing means comprising a relatively thick marginal rim member for exposed edges and curved to conform to the shape of and between the sheets, other angular spacing members for edges not exposed, said sheets being spot-welded to said rim and angular spacing members for holding the sheets against warping, buckling, and bending.

5. A hollow metal panel structure comprising thin metal sheets having shaped edges with straight and curved portions, marginal spacing means comprising a thick metal rim member between the sheets for exposed and straight edges, a thinner metal rim member for curved and other edges, braces between the sheets at intervals and engaging the latter rim member, and spot-welds between the thick rim member and the sheets, between the braces and the sheets, and between the braces and the inner rim member.

6. In a hollow metal structure, the combination with thin metal sheets, of channel-shaped spacers at the marginal edges of the sheets, a thin metal rim member between the sheets and against the connecting web of the spacers, and spot-welds between the side surfaces of the spacers and the sheets, and between the web of the spacers and the rim member.

7. The method of making hollow sheet metal structures of irregular contours which consists in cutting thin sheet metal to the desired size and shape, in applying to the highly curved edges a channelled spacer of thin metal and to the relatively straight marginal edges thereof a thicker rim member conforming to the contour thereof, and in spot-welding the edges of the sheets to the edges of the rim member in contact therewith.

8. The method of making hollow sheet metal structures which comprises inserting a relatively thick metal rim between the exposed marginal edges of two thin metal sheets, in spot-welding the sheets to the rim, in inserting angular spacers at intervals between unexposed marginal edges of the sheets, in applying a thinner rim to the spacers and between the sheets, and in spot-welding the spacers to the sheets and the inner rim to the spacer.

9. In the method of making hollow sheet metal structures of thin metal, the step which comprises applying angular spacers at intervals between the marginal edges of the sheets, in spot-welding the opposite sides to the opposite sides of the spacers, in applying a thin rim to the spacers between the sheets, and in spot-welding the rim to the spacers.

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