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METALLIC PARTITION STRUCTURE

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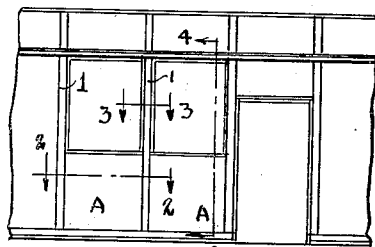


Fig. 1

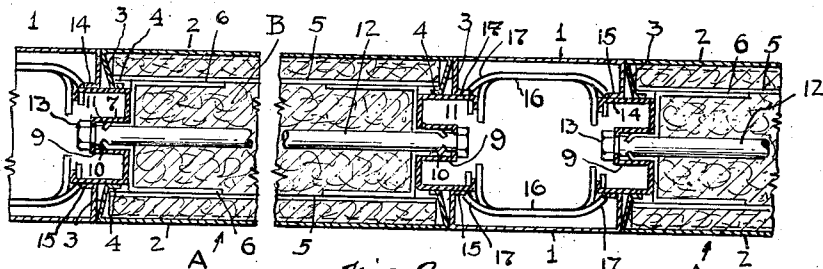


Fig. 2

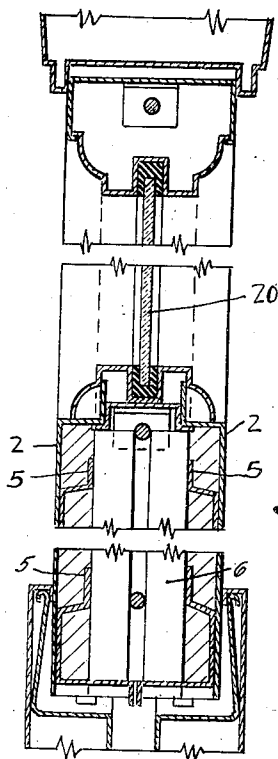


Fig. 4

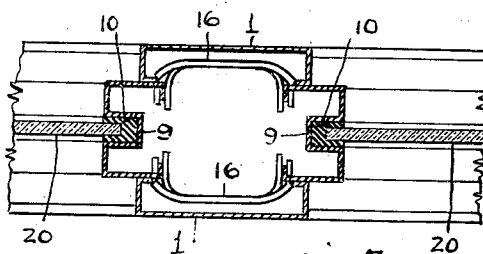


Fig. 3

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METALLIC PARTITION STRUCTURE

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11 Claims. (Cl. 189—34)

This invention relates, as indicated, to metallic partition structures, but has reference more particularly to partitions of the flush type.

A primary object of the invention is to provide a partition embodying the use of uprights or verticals to which steel panel halves are removably secured, and which function also to hold the glass in constructions wherein glazing is employed.

Another object of the invention is to provide a panel unit for partitions, in which the parts are held in assembled relationship solely by means of tie rods and associated securing elements.

To the accomplishment of the foregoing and related ends, said invention, then, consists of the means hereinafter fully described and particularly pointed out in the claims.

The annexed drawing and the following description set forth in detail certain structure embodying the invention, such disclosed means constituting, however, but one of various structural forms in which the principle of the invention may be used.

In said annexed drawing:

Fig. 1 is a fragmentary front elevation of a partition constructed according to the invention;

Fig. 2 is a horizontal cross-sectional view, taken on the line 2—2 of Fig. 1;

Fig. 3 is a horizontal cross-sectional view, taken on the line 3—3 of Fig. 1; and

Fig. 4 is a broken vertical cross-sectional view, taken on the line 4—4 of Fig. 1.

Referring more particularly to the drawing, the partition comprises a plurality of panels or panel units A which are spaced from each other, as shown, the space between the units being covered or filled by means of post caps 1, the outer surfaces of which are flush with the outer surfaces of the panel units, so as to present substantially flush walls.

Each of the panel units A comprises spaced sheet metal plates 2 having inturned flanges 3 at the vertical edges thereof, such flanges extending at an acute angle to the plates and terminating in rebent flanges 4 which are substantially parallel with the plates. Each plate has secured to the rear surface thereof, as by spot welding, a number of horizontally extending vertically spaced reinforcing members 5 of desired form, which stiffen the plates, and serve, incidentally to support vertically extending Z-bars 6. These Z-bars are secured to the members 5 adjacent each end of the latter, as by welding one leg of each bar to said member. The other leg

7 of each Z-bar is spaced from the members 5, and is disposed in a plane substantially parallel with that of the plate 2, forming with such members and the flange 4 recesses within which are received the end stiles, verticals or uprights 9.

Each of the uprights 9 is grooved or recessed as at 10 for the reception of the legs 7 of the Z-bars 6, the legs 7 being provided with angularly extending portions 11, which facilitate entry of such legs into said groove or recess.

The uprights 9 are secured to the Z-bars by means of tie-rods or tie-bolts 12 and nuts 13. The tie-rods thus serve to secure the various parts of each panel unit in properly assembled relation, it being noted that in drawing up the tie-rods and nuts, the uprights are automatically drawn into properly assembled relation with the other parts of the panel unit and the two halves of each unit are assembled in desired parallel relation. Since the grooves in the uprights are relatively narrow, as compared with the total thickness of the panel, the tie-rods themselves serve as clamping elements in holding the two halves of each unit in assembled relation.

Each panel may, if desired, be filled with an inorganic sound-deadening material B.

Each of the verticals 9 has a pair of flanges 14, which extend beyond the vertical edges of the plates 2, and into the space between the panel units, forming seats for the rebent flanges 15 of post caps 1. The flanges 14 thus overlap the post caps as well as the panels themselves, and since such flanges may be accurately formed to lie in planes parallel with the plates 2, assurance is had that when the post caps are applied, their outer surfaces will be flush with the outer surfaces of such plates.

The units are held in properly spaced, parallel relation, by means of clips 16, which are secured to the flanges 14 of the adjacent units, such clips having portions 17 which are engaged by the flanges of the post caps to hold the latter in position, as shown in Fig. 2.

As shown in Fig. 3, the uprights 9 are extended upwardly beyond the plates 2 of the panel units, and the grooved or recessed portions 10 of these extended portions serve to hold the marginal portions of a glass panel 20.

Although the units are shown as consisting partially of steel and partially of glass, it will be understood that they may consist entirely of steel, that is, the plates 2 may extend all the way up to the cornice, or they may consist entirely of glass, in which case, the glass panels

20 will extend downwardly to the lower edge of the unit.

It will be noted that the panel halves are removably secured to the verticals and that the connection is representative of longitudinal movement between the units and the verticals. As a result, the panel units as a whole are non-rigid, and, therefore, not subject to damage in handling, especially when lifted flat-wise. Panel units of the size and construction here considered are necessarily very heavy, and if lifted flat-wise, there would be a tendency for them to become sprung or warped if of rigid or semi-rigid construction. If the panel halves were to be welded to the verticals, the structure would be rigid, and if the unit were then to be picked up flatwise, it would have a tendency to buckle and this buckle or warp could never be taken out.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the structure herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:

1. A panel unit for partitions and the like, comprising spaced plates having reinforcing members secured to the rear surfaces thereof, Z-bars secured to said members adjacent the ends of the latter, verticals engaging said Z-bars, said verticals being grooved to receive portions of said bars, and means interconnecting said verticals for holding said plates in assembled relation.

2. A panel unit for partitions and like structures, comprising spaced plates, vertically extending members secured to said plates and having flange portions spaced from said plates, uprights engaging said plates and embracing the flange portions of opposite members, and means interconnecting said uprights, said means extending between said flanges.

3. A panel unit for partitions and like structures comprising spaced plates, members secured to said plates and having flange portions parallel with said plates and spaced from the latter, end uprights having portions extending into the spaces between said flanges and plates, tie-rods interconnecting said end uprights, said tie-rods being in an intervening space between flange portions of the members.

4. A panel unit for partitions and like structures, comprising spaced plates, horizontal reinforcing members secured to the rear surfaces thereof, vertically extending elements having a leg secured to said horizontal reinforcing members and another leg spaced internally and having angularly extending margins, and end uprights removably secured to said plates by engaging the internally spaced legs of the vertically extending elements.

5. A panel unit for partitions and like structures, comprising spaced plates, vertically extending elements each having a leg connected to one said plate and another leg spaced internally, and uprights to engage said spaced legs to clamp said plates together, said uprights being wholly within the plane of the plates and having

flanges extending beyond the vertical edges of the plates, said flanges providing seats for post caps.

6. A partition comprising panel units, each comprising spaced plates, uprights, horizontal reinforcing members secured to the rear surfaces of said plates and carrying means for engaging said uprights, said uprights engaging said means carried by the horizontal members to clamp said plates together, said uprights being wholly within the plane of the plates and having flanges extending beyond the vertical edges of the plates, clips engaging said flanges and holding said units in spaced parallel relation, and post caps flush with said plates and secured to said clips, said post caps having flanged portions engaging said first-named flanges.

7. In a partition, spaced metal uprights, and half-panels removably secured to said uprights, vertically extending elements each having a leg connected to one said half-panel and another leg spaced internally, and said uprights being grooved centrally for the reception of the spaced internal legs.

8. In a partition, half-panels, vertically extending elements each having a leg connected to one said half-panel and another leg spaced internally, and spaced uprights having recesses centrally in their opposed faces to engage the spaced internal legs to hold the half-panels, and a glass panel also held by said uprights with its marginal edges disposed in said recesses.

9. In a partition, half-panels, horizontal reinforcing members secured to the rear surfaces thereof, vertically extending elements having legs secured to said horizontal reinforcing members and another leg spaced internally and having angularly extending margins, and end uprights having recesses centrally in their opposed faces to receive the spaced internal legs and hold the half-panels, said uprights being extended above said half-panels, whereby glass panels may be mounted with their edges in the recesses of the extended portions of the uprights.

10. In a partition, panel units, each comprising spaced metal uprights and half panels, said uprights having recesses centrally thereof and means connected to said half panels and extending inwardly, part of said means being received in said recesses and clamped therein to removably secure said half panels in a predetermined spaced relationship with respect to an opposite panel, and in the same vertical plane as an adjacent panel.

11. In a partition, panel units, each comprising spaced metal uprights and half panels, said uprights having recesses centrally thereof and means connected to said half panels and extending inwardly, part of said means being received in said recesses and clamped therein to removably secure said half panels in a predetermined spaced relationship with respect to an opposite panel, and in the same vertical plane as an adjacent panel and a glass panel also held by said uprights with its marginal edges disposed in said recesses, said glass panel being interchangeable with two of said half panels.

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