METALLIC PARTITION STRUCTURE

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Application November 17, 1950, Serial No. 196,311

4 Claims. (Cl. 189—34)

This invention relates to building construction and more particularly to a metallic partition structure which may be readily assembled from a relatively few simple elements which are easily combined and joined into a strong rigid structure.

Numerous similar structures have been proposed for forming window frames or sashes, doors, partitions and like structures, however, these have not always provided sufficient rigidity in the composite structure or were too complicated and expensive to manufacture.

In accordance with the present invention a relatively few simple sections and a reinforcing member may be combined to form a very substantial and rigid partition which may be, if desired, partially formed of solid panels, transparent panels and pivoted ventilator panels, etc. The elements may be combined in a number of different ways to provide substantially any desired arrangement of the composite partition using only one set of sections or profiles for each of the rails, reinforcing elements and upright posts.

One object of the present invention is to provide a metallic partition structure formed of various panels with a relatively few simple preformed sections or profiles rolled or otherwise formed out of sheet metal and combinable in innumerable different arrangements where in the sections are fastened and secured together by suitable fastening elements to provide a substantial and rigid framework for the composite partition structure.

Another object of the present invention is to provide a metallic partition structure which may be readily assembled in position in the building and selectively put together to provide solid panels, transparent panels, ventilator panels, etc.

A still further object of the present invention is to provide a number of novel sections or profiles of rails, reinforcing and upright posts and cooperating fastening elements therefrom which form a framework for any desired partition may be readily formed by the proper selection, combination, and assembly of the elements.

Further objects and advantages of the invention will be apparent from the following description taken in conjunction with the drawings, wherein:

Fig. 1 is a perspective view in section of a composite partition formed in accordance with one preferred embodiment of the present invention and with portions of the panels broken away; Fig. 2 is a perspective view with parts in section and portions broken away illustrating one manner of connecting the horizontal rails with the upright posts; Fig. 3 is a view similar to Fig. 2 but showing the parts secured in position and with a solid panel and a transparent panel positioned in the supporting frame; Fig. 4 is a perspective view of a portion of a rolled reinforcing member; Fig. 5 is a perspective view of a portion of a symmetrical transverse rail; Fig. 6 is a perspective view of a portion of an asymmetrical transverse rail; and Fig. 7 is a perspective view of a portion of a channel section used in conjunction with the asymmetrical rail of Fig. 6.

Referring to the drawings in detail and more particularly to Figs. 4 through 7, illustrating the detailed construction of four of the more important basic elements of one preferred embodiment of the present invention. The various elements are preferably rolled in continuous strip form and sections cut off to the desired length.
rests on a wooden block or other support 106 placed in the channel on portion 42, and the glass 104 may be repositioned at any time by removing the glass 104 from the channel 41, making sure that the glass 104 is not accidentally damaged. The glass 104 is then replaced in the channel 41 and secured by the reinforcing member 32.

A packed steel panel 110 of the flush type has been shown adjacent the bottom of Fig. 1 and is provided with steel covering sheets 112 terminating in flanges 114 and 116 which extend between the flanges 52 and 54 of the box-like member 32. It will be obvious that the flanges 16 and 18 of the reinforcing member 10 will press against the flanges 52 and 54 and maintain a tight engagement with the flanges 114 and 116 on the solid panel.

Figs. 2 and 3 illustrate the manner of assembling and fastening the transverse rails such as 32 or 56 with upright posts 118. The upright posts 118 are provided with intermediately spaced two recessed flange plates 120 which cooperate with the channel portions 42 and the channel portion formed between the flanges 16 and 18 on the reinforcing member 10 to receive the intermediate panels 130. The intermediate panels 118 are also provided with transverse slots 122 and 124 which are adapted to receive the tabs 26 and 28 formed on the outer end of the reinforcing member 10. Where the slots 122 and 124 have been inserted through the openings 30 and 31 therein, as shown in Fig. 3, to securely retain the transverse rails in position relative to the upright posts 118.

In Fig. 3 a relatively thin packed steel panel 130 has been shown between the flanges 52 and 54. Panel 130 usually consists of two recessed metal sheets 132 and 134 with insulating material 136 therebetween. However, it will be apparent that plywood of proper thickness could be used in place of the packed steel panel 130 or the post 104 in a similar construction.

It will be obvious that the rails, channels, and reinforcing members of the present invention may be combined with upright posts in any number of combinations and arrangements with other conventional elements of building structure to form partitions, panels, windows, doors, etc., and may be readily assembled and disassembled whenever desired by relatively unskilled craftsmen. The complete metallic partition presents a neat and attractive appearance, as well as providing a rigid and substantial structure which may be utilized to provide a structural support for other members in the building construction.

It will be obvious to those skilled in the art that various changes may be made in the invention and scope of the invention is not limited by that which is shown in the drawings and description in the specification, but only as indicated in the appended claims.

1. A partition structure comprising at least one upright post and one rail, said post comprising a body of sheet material bent to include edge walls arranged in substantially parallel spaced relation and a front face including portions secured to the adjacent edge wall and extending toward the other edge wall, other portions extending from said face rearwardly and a bottom portion extending between said other portions wherein said portions are provided with substantially horizontal slots in the face portions with the slots at substantially the same height, said rail comprising a generally box-like configuration, the top of said rail being provided with a panel receiving groove of substantially the same width as the recess, the bottom of said rail having inwarily extending flanges providing a longitudinal opening therebetween, and intermediate flanges engaging said flanges on the bottom wall of said rail, reinforcing member having a pair of tabs projecting into the slots in said post, said tabs having openings for receiving tapered pins, said groove registering with the recess and tapered pins inserted in said openings in said rail retaining said rail in assembled relation with said post.

2. A partition structure comprising at least one upright post and one rail, said post comprising a body of sheet material bent to include edge walls arranged in substantially parallel spaced relation and a front face including portions secured to the adjacent edge wall and extending toward the other edge wall, other portions extending from said face rearwardly and laterally and a bottom portion extending between said other portions wherein said portions are provided with substantially horizontal slots in the face portions with the slots at substantially the same height, said rail being provided with a panel receiving groove of substantially the same width as the recess, said reinforcing member having a pair of tabs projecting into the slots in said post, said tabs having openings for receiving tapered pins, said groove registering with the recess and tapered pins inserted in said openings in said rail retaining said rail in assembled relation with said post.

3. A partition structure comprising at least one upright post and one rail, said post comprising a body of sheet material bent to include edge walls arranged in substantially parallel spaced relation and a front face including portions secured to the adjacent edge wall and extending toward the other edge wall, other portions extending from said face rearwardly and a bottom portion extending between said other portions wherein said portions are provided with substantially horizontal slots in the face portions with the slots at substantially the same height, said rail being provided with a panel receiving groove of substantially the same width as the recess, said reinforcing member having a pair of tabs projecting into the slots in said post, said tabs having openings for receiving tapered pins, said groove registering with the recess and tapered pins inserted in said openings in said rail retaining said rail in assembled relation with said post.

4. A partition structure comprising at least one upright post and one rail, said post comprising a body of sheet material bent to include edge walls arranged in side-by-side spaced relation and a front face including portions secured to the adjacent edge wall and extending toward the other edge wall, other portions extending from said face rearwardly and a bottom portion extending between said other portions wherein said portions are provided with substantially horizontal slots in the face portions with the slots at substantially the same height, said rail being provided with a panel receiving groove of substantially the same width as the recess, said reinforcing member having a pair of tabs projecting into the slots in said post, said tabs having openings for receiving tapered pins, said groove registering with the recess and tapered pins inserted in said openings in said rail retaining said rail in assembled relation with said post.

5. A partition structure comprising at least one upright post and one rail, said post comprising a body of sheet material bent to include edge walls arranged in substantially parallel spaced relation and a front face including portions secured to the adjacent edge wall and extending toward the other edge wall, other portions extending from said face rearwardly and a bottom portion extending between said other portions wherein said portions are provided with substantially horizontal slots in the face portions with the slots at substantially the same height, said rail being provided with a panel receiving groove of substantially the same width as the recess, said reinforcing member having a pair of tabs projecting into the slots in said post, said tabs having openings for receiving tapered pins, said groove registering with the recess and tapered pins inserted in said openings in said rail retaining said rail in assembled relation with said post.
with said recess, the bottom of said rail having inwardly extending flanges providing a longitudinal opening therebetween, longitudinal walls connecting the top and bottom of said rail, a reinforcing member inserted in said rail and having longitudinal edge flanges engaging the longitudinal walls of said rail and means engaging said flanges on the bottom wall of said rail, said reinforcing member engaging the wall of the bottom of the groove, said reinforcing member having a pair of means thereon for cooperation with fastening means, and fastening means engaging said post and said pair of means retaining said rail in assembled relation with said post.

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