

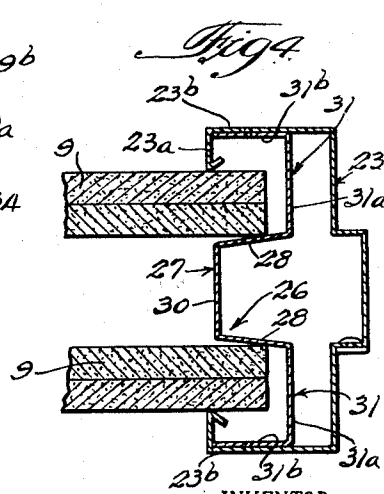
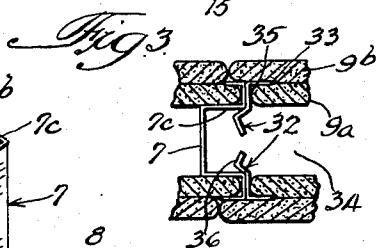
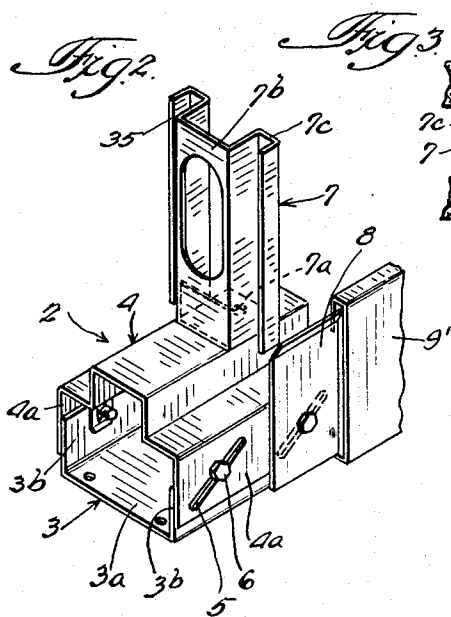
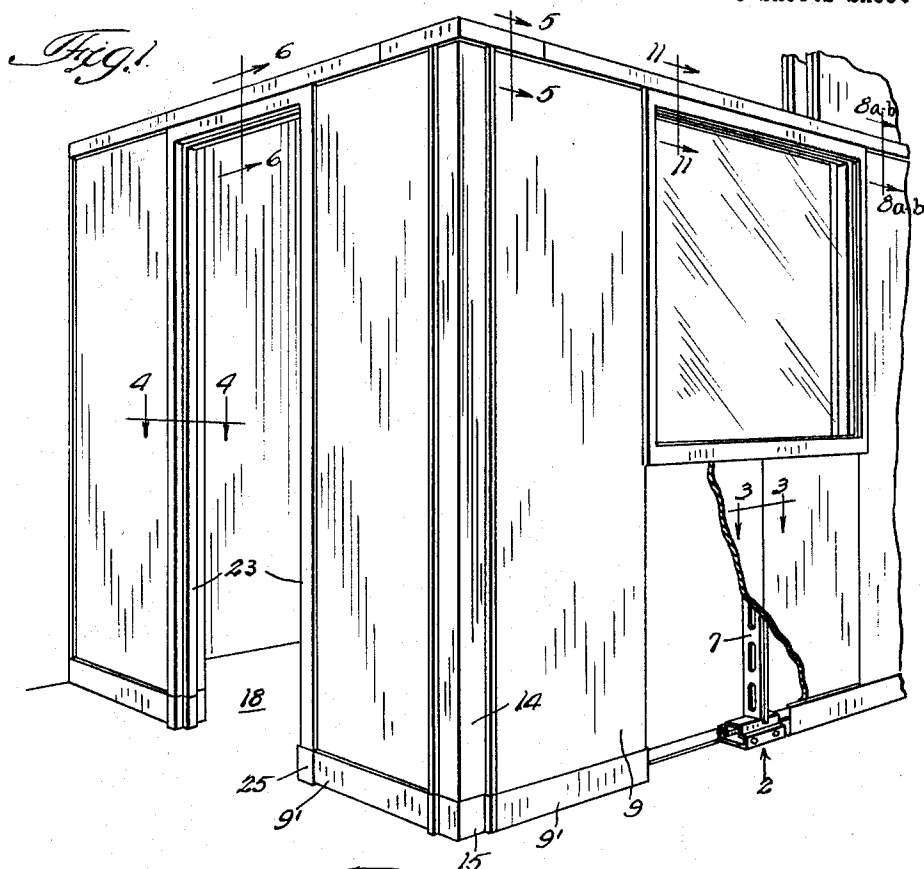
Nov. 1, 1960

J. A. ROBERTSON
DEMOUNTABLE PARTITION

2,958,403

Filed Oct. 3, 1955

3 Sheets-Sheet 1



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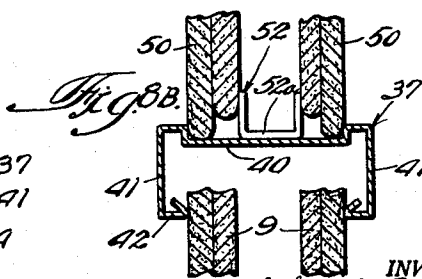
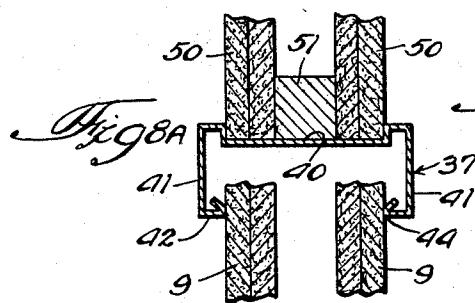
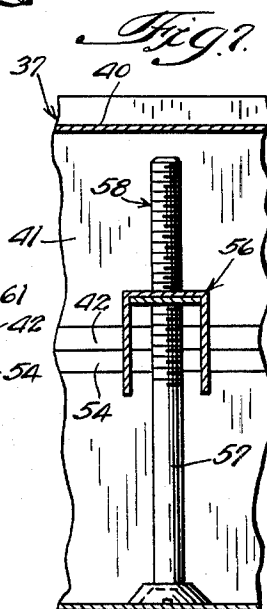
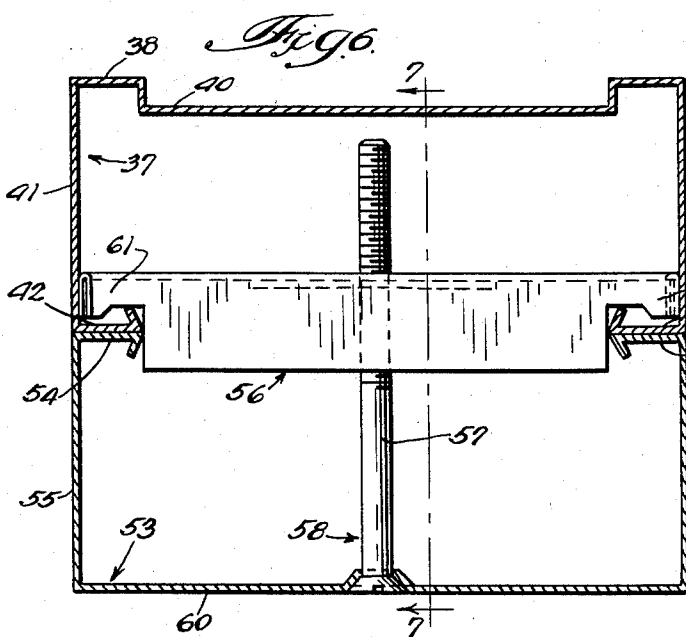
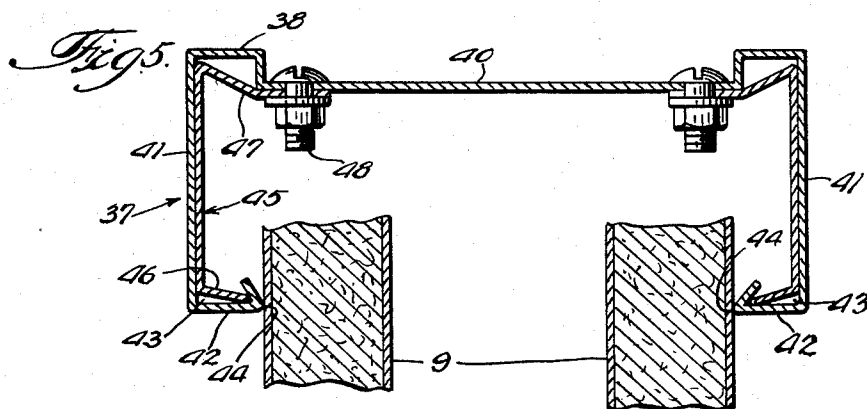
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DEMOUNTABLE PARTITION

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3 Sheets-Sheet 2



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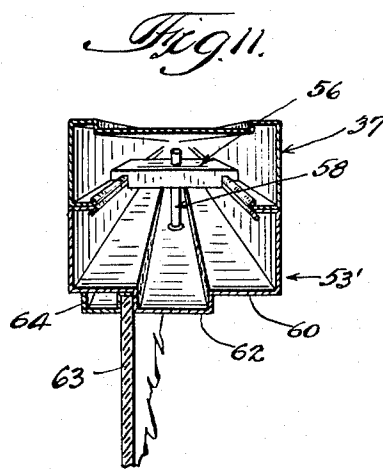
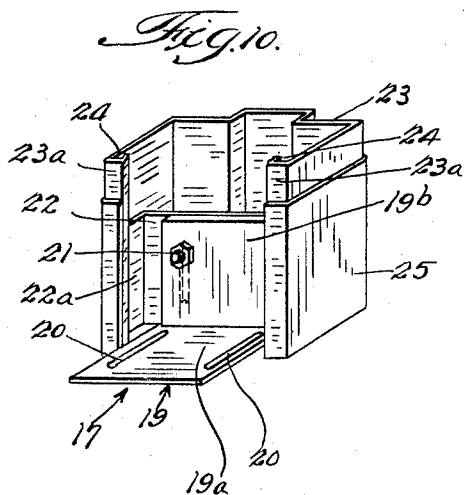
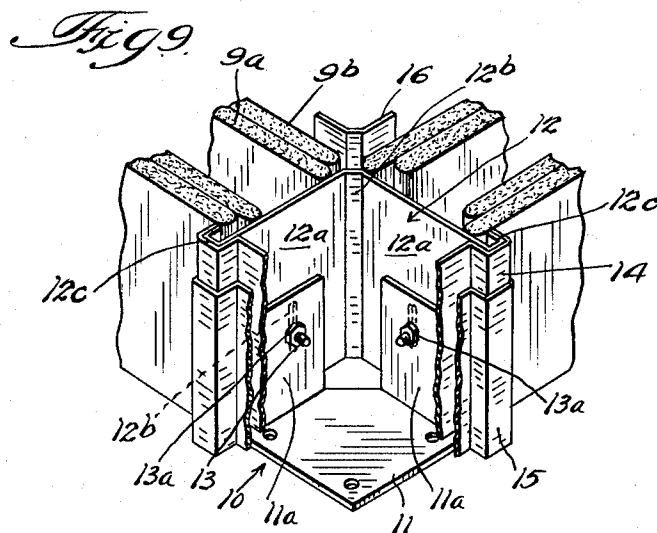
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DEMOUNTABLE PARTITION

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3 Sheets-Sheet 3



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2,958,403

DEMOUNTABLE PARTITION

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Filed Oct. 3, 1955, Ser. No. 538,166

5 Claims. (Cl. 189—34)

The present invention relates to a partition construction, and more particularly to a demountable type of partition adapted primarily for use in partitioning offices and the like.

The present application is an improvement on the subject matter of an earlier application of George W. Baker, Serial No. 374,545, which was assigned to the assignee of the present application. The Baker application discloses means for demountably attaching wallboard panels to studs and to means for adjustably securing the studs to the floor of the room in which the partition is erected notwithstanding the irregularities of the floor surface.

Various demountable office type partitions have heretofore been proposed which utilize materials such as wood and/or steel and, thus, by reason of this fact are costly and/or not effectively resistant to fire or atmospheric changes. In addition, parts of such prior demountable partitions are oftentimes permanently damaged when the partition is disassembled.

While partitions utilizing gypsum board panels are well known in the building industry, such partitions have, however, normally been of a permanent nature and erected either by adhesively securing, clipping or nailing the wallboards either to each other or to supporting studs in such a manner as to preclude any disassembly thereof without inherently destroying or damaging the wallboards.

Thus it is one of the objects of the present invention to provide a partition which may be readily assembled or disassembled, and wherein disassembly may be accomplished without damaging the wallboard panels utilized in such partition, or without necessitating the disassembly operation to be commenced at a predetermined terminal edge of or location on the partition.

It is a further object of the present invention to provide a partition which is inexpensive and is possessed of a high fire resistance rating and is unaffected by atmospheric changes.

It is a further object of this invention to disclose a novel means of anchoring various structural frame members, such as lintels, cornice caps, door bucks and the like, to one another to define the necessary window or door openings in the partition.

Further and additional objects will appear from the description, accompanying drawings, and appended claims.

In accordance with one embodiment of this invention a demountable partition construction is provided for erection in an existing room to enclose a given floor area of such room. The partition construction utilizes a plurality of upright studs arranged in spaced, substantially

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parallel relation to define one or more walls of the partitioned area. The studs are secured to the floor by means which are adapted to accommodate the lower ends of the studs and permit vertical adjustment thereof to compensate for irregularities appearing in the floor surface and thus assure that the upper edge of the partition is level. Secured to the upper ends of the studs is an elongated cornice member which is spaced from the ceiling of the room. A plurality of wallboard panels are arranged in abutting edge-to-edge relation and removably secured to the corresponding opposite sides of the studs to conceal the latter and form substantially parallel, relatively spaced courses of wallboard panels. The upper edges of the courses of wallboard panels are embraced by the cornice member. Positioned within the parallel courses of wallboard panels is a frame assembly forming an opening through such courses. The frame assembly has a horizontal portion thereof removably secured to the underside of the cornice member and a pair of vertically extending portions which are adapted to embrace edge portions of the panels delimiting the opening.

For a more complete understanding of this invention, reference should be made to the drawings wherein

Fig. 1 is a fragmentary perspective view of the improved partition construction having portions thereof cut away to expose concealed structural elements;

Fig. 2 is a fragmentary enlarged perspective view of a vertically adjustable stud-supporting means utilized in the improved partition construction shown in Fig. 1;

Fig. 3 is a transverse sectional view taken along line 3—3 in Fig. 1;

Fig. 4 is a sectional view taken along line 4—4 in Fig. 1;

Fig. 5 is a sectional view taken along line 5—5 in Fig. 1;

Fig. 6 is a sectional view taken along line 6—6 in Fig. 1;

Fig. 7 is a fragmentary sectional view taken along line 7—7 in Fig. 6;

Figs. 8A and 8B are similar sectional views taken along lines 8—8 of Fig. 1 and showing alternate ways of attaching wallboard used as filler panels within the space between the cornice member and the ceiling of the room in which the partition is erected;

Fig. 9 is a fragmentary break-away perspective view of a corner construction for the improved partition;

Fig. 10 is a perspective view of the means for securing to the floor portions of the door frame utilized in the improved partition; and

Fig. 11 is a fragmentary perspective cross-sectional view taken along line 11—11 in Fig. 1.

In the application of George W. Baker, Serial No. 374,545, heretofore mentioned, a detailed description is given of a novel method of attaching laminated wallboard panels to a channel-like stud. This method is utilized generally in the present application and is shown in Fig. 3. Furthermore, in the Baker application there is also disclosed an adjustable base member used for mounting vertical studs and the like to a floor surface so that the upper edge of the partition will be level regardless of irregularities in the floor. Such a base member is similar to that disclosed in the present application and shown in Fig. 2. These structural members as well as certain other details set forth in the prior Baker application will, for the purpose of facilitating understanding

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of the present application, be reiterated in the description to follow.

In describing the improved partition construction certain important and novel features will be discussed in detail, such as the means employed for attaching board panels to frames of openings, means for securing the lintels of these frames to a cornice member, and means for splicing together sections of the cornice member.

In practicing the present invention a series of stud-supporting base members 2 are aligned with respect to one another and attached to the floor at the location of the intended partition, using one such member for each stud. Each supporting member 2, as shown in Fig. 2, consists of a channel-shaped element 3, the web 3a of which is attached to the floor of the room in which the partition is to be erected. The parallel flanges 3b of element 3 extend upright from the floor and are adapted to be contacted by depending, substantially parallel side flanges 4a of a second channel element 4 disposed in inverted relation thereabove.

Substantially parallel, angularly disposed, elongated slots 5 are provided in the side flanges 4a of upper channel 4 through which extend inwardly locking bolts 6. The bolts 6 also pass through openings formed in flanges 3b of the lower channel 3, and are threadably engaged by nuts. The slots 5 permit vertical adjustment of the upper channel 4 with respect to lower channel 3, and thus compensate for any irregularity occurring in the floor surface.

Channel 4 is provided with a raised web portion 4b on which rests the bottom of the vertical stud 7. An angle piece 7a is provided for anchoring the stud to channel 4 and has one leg thereof secured by riveting or any other suitable means to the web portion 4b of the channel and the other leg thereof extending upright and secured to the web 7b of the vertical stud.

Attached to the exposed surfaces of side flanges 4a of channel 4 are retaining pieces 8 which are adapted to be accommodated by a baseboard trim plate 9'. The pieces 8, in addition, serve as a splicing member for adjacent aligned trim plates 9'. Each piece 8 is secured to the flange 4a, in this instance by a bolt which, in turn, extends through a second angularly disposed elongated slot 5 formed in upper channel flange 4a and a second opening formed in lower channel flange 3b. The upper edge 8a of each retaining piece 8 is bent outwardly a slight amount so as to take up the space 9'a formed between the turn back edge 9'b of plate 9', and thus prevent any loose fit which might occur between pieces 8 and plate 9'.

The spaces formed on opposite sides of raised web portion 4b between the vertical sides of the web portion and the back side of the retaining pieces 8 are adapted to receive the lower edge portions of the wallboard panels 9, see Fig. 1.

After these base members 2 have been attached to the floor and leveled properly with respect thereto, the corner stud or studs of the partition, if there be such, are located. This is done by attaching a metallic corner member 10 (see Fig. 9) to the supporting floor at the desired location. Member 10 includes a base piece 11 having a pair of upright peripheral flanges 11a which are disposed in planes at substantially a right angle with respect to one another. A corner post or stud 12 is then mounted on the base piece 11 and is deformed so that the sides of the post contact and are secured to such flanges 11a. Each surface 12a of the post in contact with one upright flange 11a is provided with a vertically extending elongated slot 12b through which extends a locking bolt 13. The bolt 13 also extends through an opening in flange 11a and is threadably engaged by a nut 13a. Thus, by reason of slots 12b vertical adjustment of the post 12 may be effected to compensate for any irregularities in the floor surface. To conceal the base piece 11 and the post 12, an elongated, vertically extending angle piece 14 is provided which has the elongated, angularly disposed side edges thereof deformed so as to encompass the edges

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12c of the post 12. Overlying the lower exposed surface of piece 14 is a trim member 15 which is the same height and style as the baseboard trim plate 9', heretofore described. It will be noted in Fig. 9 that secured to the juncture of the post surfaces 12a is a substantially V-shaped backing element 16 which is adapted to contact the back or exposed side 9b of the inner course 9a of panels 9. It will be noted that the side edge of the exposed side 9c of the outer course 9d adjacent the corner post 12 is concealed by the deformed edge 12c of the post.

Subsequent to locating and attaching the base members 2 and corner members 10 to the floor, the door frame-supporting members 17, see Fig. 10, are positioned on opposite sides of the doorway 18 to be formed in the partition wall. Each member 17 includes an angle base piece 19 having one side thereof 19a attached to the floor. Side 19a is provided with a pair of spaced, substantially parallel, elongated slots 20 which permit anchoring bolts, not shown, to pass therethrough. Furthermore, the slots facilitate slidable adjustment of the piece along the floor. The second side 19b of the piece 19 extends upwardly from the floor and is provided with a pair of openings spaced a predetermined distance above side 19a. The openings accommodate bolts 21 which secure an adapter plate 22 to the piece side 19b. Plate 22 is provided with a pair of elongated, spaced, substantially parallel slots 22', through which bolts 21 also pass. Thus, by reason of slots 22' vertical adjustment of adapter plate 22 is possible. The side edges of plate 22 are bent back in substantially the same direction and form a pair of substantially parallel flanges 22a. Adapter plate 22 is encompassed by a vertical door frame structure 23, which is substantially channel-shaped in cross section. The elongated free edges 23a of structure 23 are turned inwardly toward each other and then back a slight amount to form a pair of pockets 24, in which are disposed flanges 22a of plate 22. Encompassing the lower end portion of structure 23 is a trim piece 25 which is in alignment with the baseboard trim plate 9', shown in Fig. 1.

The vertical door frame structure 23, as shown in cross section in Fig. 4, is provided at predetermined heights above the support member 17 with a plurality of spacer pieces 26, only one being shown, which are welded or otherwise secured to the concealed side of structure 23. Piece 26 includes a substantially channel-shaped center section 27 having the side flanges 28 thereof diverging slightly away from the web portion 30. The reason for the divergency of the side flanges 28 will become apparent hereinafter. Integrally connected to the flanges 28 of the center section 27 are outwardly extending wing sections 31a and 31b, respectively. The first portions 31a extend outwardly in opposite directions from the divergent edges of side flanges 28 and engage the inside of opposed flange segments 23b of structure 23. Second portions 31b are disposed at a right angle to first portions 31a and rest against the concealed surfaces of flange segments 23b and are secured thereto by spot-welding or any other suitable means.

It will be noted in Fig. 4 that the vertical edges of the panels 9 forming the panel courses are wedged within the spaces formed between the side flanges 28 of the center section 27 of spacer piece 26 and the corresponding deformed, vertical edge portions 23a of structure 23. Thus, the divergency of side flanges 28 assures that the exposed surface of each end panel of a course will positively contact deformed edge portions 23a. Furthermore, the spaces in which the panel edges are wedged compensate for any irregularity in the panel edges caused by sawing or the like, and thus present a pleasing appearance for the partition.

Fig. 3 illustrates one of the embodiments found in the copending Baker application, Serial No. 374,545, in re-

gard to a means for securing the vertical edges of adjoining panels of a course to a vertical stud 7. The means in this instance comprises a plurality of vertically spaced clips 32 which are adapted to have one end portion 33 thereof wedged within the joint formed between the laminations of inner course 9a or outer course 9d, respectively, of the panels disposed to one side of the vertical stud 7. The clip engages the panel which has the outer or exposed lamination thereof overhanging the inner lamination thereof along the vertical edge of the panel. Extending at substantially a right angle from portion 33 and inwardly toward the spacing 34, formed between the courses, is an intermediate portion 35 of the clip. This latter portion 35 is of a width equal substantially to the thickness of the inner lamination of course 9a or 9d. The inner end portion 36 of the clip is deformed in a direction opposite from that which portion 33 extends from portion 35. The deformation of end portion 36 permits the clip to slidably snap into engagement with a segment 7c of stud 7 upon the edge of the panel being pressed in a direction toward the stud. It will be noted that the bent back side segments 7c of the stud 7 are adapted to have the free edge 7d thereof embracing the edge of the inner lamination of the panel courses 9a or 9d extending to the left from stud 7, as viewed in Fig. 3. Thus, stud 7 and clip 32 positively secure the adjoining panels to the stud.

Subsequent to the studs, corner posts, and door frame being erected a cornice member 37 is positioned in place. The cornice member 37, as seen in Fig. 5, is formed preferably of sheet metal material and is shaped into substantially an elongated channel. The web portion 38 of the member is provided with a longitudinally extending recess 40, the width of which is equal to the distance measured normal from one exposed surface of a course of panels to the exposed surface of the other course of panels. The purpose of the recess will be discussed more fully hereinafter. The side flanges 41 of member 37 depend from web portion 38 and have the lower free edges 42 thereof turned inwardly a short distance and then outwardly and angularly upwardly therefrom to form pockets 43. A corner 44 of each deformed lower free edge 42 of flange 41 is adapted to engage the exposed surface of the adjacent course of panels, see Fig. 5. To effect interconnection of adjoining sections of cornice member 37, a splicing piece 45 is provided which has the lower inwardly bent edges 46 thereof disposed within the pockets 43 formed in the side flanges 41 of cornice member 37. The upper edge 47 of splicing piece 45 is likewise deformed inwardly and is secured by a nut and bolt assembly 48 or the like to the under side of recess 40 formed in the cornice member web portion 38. The splicing piece 45 is of sufficient length to span the joint between adjacent sections of cornice member and, thus, retain the latter in properly aligned relation. In positioning the cornice member, one end thereof is normally affixed to an existing wall of the room by an angle-shaped bracket. The opposite end of the cornice member is likewise normally attached by an angle-shaped bracket or the like to one of the surfaces 12a of the corner post 12. Where, however, the corner post is spaced a considerable distance from the existing wall of the room, it might be advisable to support the cornice member at predetermined segments of its longitudinal dimension. This may be accomplished by adjusting vertically certain of the studs 7 between the wall and the corner post so that the upper ends of such studs engage the underside of the web portion 38 of the cornice member. Such vertical adjustment of the studs may be effected by adjusting the channel elements 4 of the supporting base members 2. If desired, the contacting upper ends of the studs may be secured to the cornice member by an angle-shaped bracket, not shown, whereby one leg of the bracket is attached by screws to the stud and the other leg attached by screws to the cornice member web portion.

In Figs. 8A and 8B is shown alternate means for securing filler panels 50 to the upper side of the cornice members 37. The filler panels 50, shown in Figs. 8A, are of laminated wallboard construction, the same as panel courses 9, and have the lower edges thereof disposed within recess 40 formed in the web portion 38 of cornice member 37. The lower edges of the filler panels 50 are maintained in proper shaped relation by a block 51 of proper dimensions. In Fig. 8B the lower edges of the filler panels 50 are shown to be of offset construction and are retained in proper spaced relation within the cornice member recess 40 by a channel piece 52, having the web portion 52a thereof resting against the base of recess 40. The filler panels 50 rest against the outer surfaces of upwardly extending flanges of piece 52. The upper edges, not shown, of the filler panels 50 contact the ceiling of the room in which the partition is erected. Suitable molding, not shown, for concealing the upper edges of the filler panels 50 may be utilized.

The lintel 53 of a door frame or the lintel 53' of a window frame is secured to the under side of cornice member 37 in a manner as shown more clearly in Figs. 6 and 11, respectively. The lintel 53 or 53' is substantially channel-shaped in cross section and is disposed in inverted relation with respect to the cornice member 37. The upper or free edges 54 of the side flanges 55 of the lintel 53 or 53' are deformed in a manner similar to the free edges 42 of the side flanges 41 of the cornice member 37. The deformed edges 42 and 54 have portions thereof in abutting relation, as seen in Fig. 6. The cornice member 37 and lintel 53 or 53' are maintained in abutting relation by a hanger element 56 threadably engaging the shank 57 of an upwardly extending bolt 58, the latter extending through the web portion 60 of the lintel 53 or 53'.

The hanger element 56 is elongated and substantially channel-shaped in cross section, see Fig. 7. The opposite ends 61 of the hanger element 56 are undercut so as to form a yoke-type connection between the ends of the hanger element and the deformed edges 42 of the cornice member 37. The longitudinal dimension of the hanger is slightly greater than the spacing between the side flanges 41 of the cornice member 37. The opposite end faces of the hanger element 56 are substantially parallel and angularly disposed to the longitudinal axis of the element. The angularity of the end faces permits the element to rotate in one direction about bolt 58 as an axis until the ends 61 of the element become wedged between the concealed or inner surfaces of the side flanges 41 of cornice member 37 whereby the element, when in wedged position, will be disposed transversely with respect to the side flange 41 of the member 37 and the free edges 42 of the member 37 will be accommodated by the undercut ends 61 of the element 56. Thus, once the element 56 is disposed in a wedged position the bolt 58 may be turned relative to the element 56 and cause the lintel 53 or 53' to be drawn up tight against the under side of the cornice member. By reason of the channel-shaped configuration of element 56, the latter is capable of being drawn up tight against the terminal edges of the side flanges of the cornice member without becoming deformed.

The lintel 53' of the window frame, shown in Fig. 11, has the web portion 60 thereof provided with a downwardly protruding rib 62 which is adapted to serve as a stop or jamb for the glass pane 63 disposed to one side thereof. A molding strip 64 is secured to the opposite side of the glass pane 63 and retains the latter in assembled relation. The strip 64 may be secured to the web portion 60 by screws or any other suitable means, not shown.

Thus, it will be seen that a partition construction has been provided which is readily demountable without causing damage to any portion or part thereof. In addition, the improved partition is of inexpensive construction,

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readily assembled or disassembled, and possessed of a high resistance to fire or atmospheric changes.

While several embodiments of this invention have been shown, it will be understood, of course, that the invention is not to be limited thereto, since many modifications may be made, and it is contemplated, therefore, by the appended claims, to cover any such modifications as fall within the true spirit and scope of this invention.

I claim:

1. A demountable partition construction for erection in an existing room, said construction comprising a plurality of support members arranged in spaced, substantially parallel, upright relation and delimiting a predetermined floor area of the existing room, vertically adjustable means mountable on the room floor and on which the lower end portions of said support members are mounted to effect retention of the latter in said upright positions, an elongated cornice member removably secured to the upper end portions of a predetermined number of said support members and supported thereby in a substantially horizontal plane spaced a predetermined distance from the ceiling of the existing room, a plurality of offset edge wallboard panels arranged in abutting edge-to-edge relation and removably secured to corresponding opposite sides of said support members to conceal the latter between spaced substantially parallel courses of panels, each of said panels being removable from support members independently of the other panels secured to said support members, the upper edge portions of said panels being embraced by said cornice member and the lower edge portions of said panel being supported by said vertically adjustable means, and a frame positioned within said panel courses and delimiting an opening extending transversely through corresponding portions of said panel courses; said frame including a lintel removably secured to the underside of said cornice member and slidable longitudinally thereof to predetermined positions of adjustment between selected support members prior to securing of said panels to said support members.

2. A demountable partition construction having angularly disposed vertical walls for erection in an existing room, said construction comprising a plurality of wall support members and a corner support member arranged in spaced, substantially parallel, upright relation and delimiting a predetermined floor area of the existing room, vertically adjustable means mountable in relatively spaced relation on the room floor and on which the lower end portions of said wall and corner support members are mounted to effect retention of the latter in said upright position, an elongated sectional substantially channel-shaped cornice member removably secured to the upper end portions of said wall and corner support members and supported thereby in a substantially horizontal plane spaced a predetermined distance from the ceiling of the existing room, splicing means for interconnecting adjoining cornice member sections in aligned abutting relation whereupon the longitudinal dimension of said cornice member corresponds to the perimeter of the delimited floor area, said splicing means being concealed within said adjoining member sections and secured thereto, and a plurality of offset edge wallboard panels arranged in abutting edge-to-edge relation and removably secured to corresponding opposite sides of said wall support members to conceal the latter between spaced substantially parallel courses of panels forming the angularly disposed vertical walls of said partition, each of said panels being removable from said support members independently of the other panels secured to said support members, the vertical terminal edge portions of said panel courses adjacent said corner support member being embraced and concealed by the latter, the upper edge portions of said panels being encompassed by said cornice member section.

3. The demountable partition construction recited in claim 1, wherein the cornice member is substantially

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channel-shaped and has depending side flanges, the free edge portions of which are bent inwardly toward each other, then angularly upwardly and away from each other to form abrupt corners, the free edge portions terminate in spaced relation with respect to the remainder of said depending flanges, the lintel of said frame is substantially channel-shaped in cross-section and is disposed in inverted relation with respect to the cornice member, the upwardly extending flanges of said lintel have the edge segments thereof offset and abutting the bent edge portions of said cornice member, and a hanger-bolt assembly carried by said lintel and having the hanger thereof rotatable into wedging engagement with the depending flanges of said cornice member to effect locking of said member and lintel in a selected position of adjustment; said hanger being of elongated construction and spanning the distance between the free edge portions of the depending flanges of said cornice member, the opposite ends of said hanger being undercut to provide ways in which the free edge portions of said cornice member depending flanges are accommodated, said hanger being slidable longitudinally of said cornice member free edge portions when said hanger is in an unwedged position, said hanger being provided with a threaded opening intermediate the undercut ends thereof for accommodating the threaded upwardly extending shank of the bolt of said assembly, said bolt having an exposed enlarged head cooperating with an opening formed in the web portion of said channel-shaped lintel, said web portion interconnecting the flanges of said lintel.

4. The combination recited in claim 3 wherein the hanger of said hanger-bolt assembly has a longitudinal dimension greater than the spacing between the side flanges of said cornice member, the end faces of said hanger being substantially parallel and angularly disposed with respect to the longitudinal axis of said hanger whereby the latter assumes a wedged position intermediate said cornice member side flanges upon rotation of said hanger in one direction about the bolt of said assembly as an axis.

5. A demountable partition construction for erection in an existing room, said construction comprising a plurality of support members arranged in spaced, substantially parallel, upright relation and cooperating with the walls of the existing room to delimit a predetermined floor area, vertically adjustable means mountable on the room floor and on which the lower end portions of said support members are mounted to effect retention of the latter in said upright positions and permit vertical adjustment of said support members, an elongated, substantially channel-shaped horizontally disposed cornice member positioned in spaced relation above the floor and beneath the ceiling of the existing room, said cornice member being disposed in inverted position whereby flange portions thereof are depending and the web portion thereof interconnecting said flange portions is overlying the upper ends of said support members, the upper ends of a predetermined number of said support members being in contact with said cornice member web portion, and a plurality of offset edge wallboard panels arranged in abutting edge-to-edge relation and removably secured to corresponding opposite sides of said support members to conceal the latter between spaced, substantially parallel courses of panels, the upper edge portions of said panels being spaced from the web portion of said cornice member and overlapped by the depending flange portions of said cornice member, the lower edge portions of said panels being supported by said vertically adjustable means; each of said panels being removable from said support members independently of the other panels secured to said support members, the lower terminating edge segments of said cornice member depending flange portions being offset in a direction inwardly toward one another to form a first edge portion, and then angularly offset upwardly and outwardly to form a second por-

tion, the latter terminating in spaced relation with respect to the adjacent depending surfaces of said flanges, the juncture of said first and second edge portions effecting a line contact with the exposed surface of a panel course.

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