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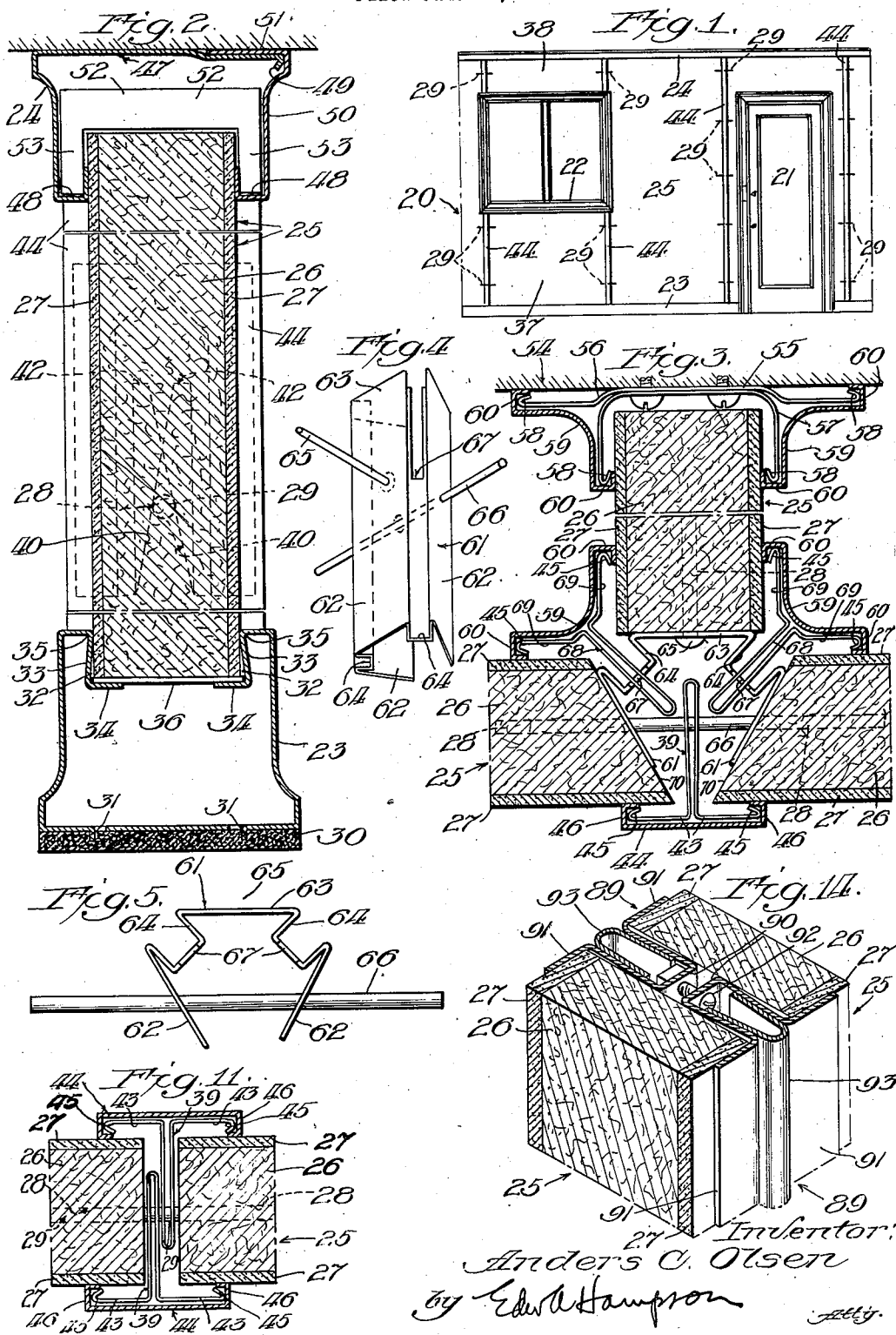
A. C. OLSEN

2,317,635

BUILDING CONSTRUCTION

Filed Jan. 13, 1940

2 Sheets-Sheet 1



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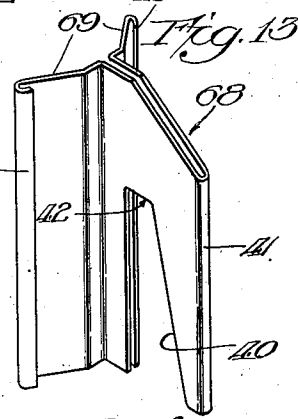
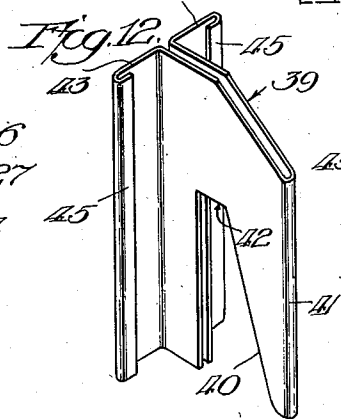
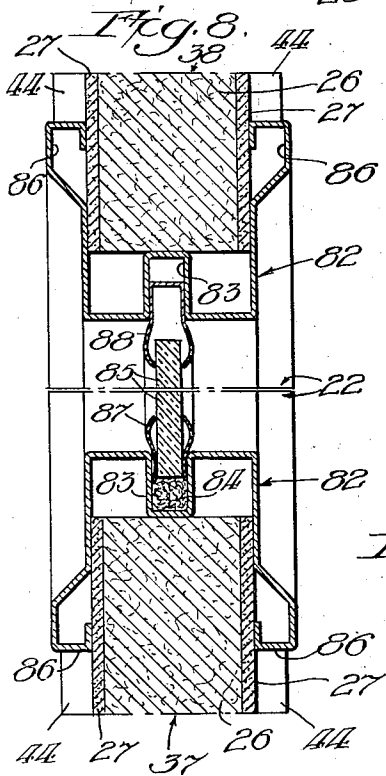
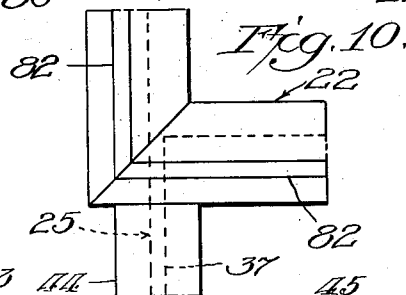
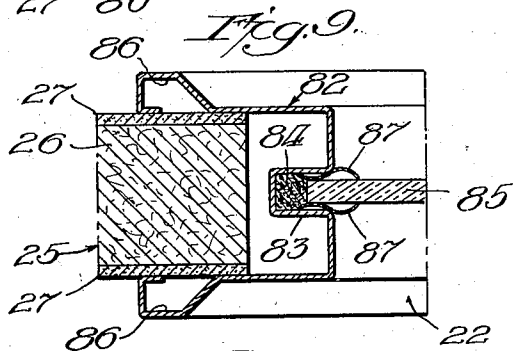
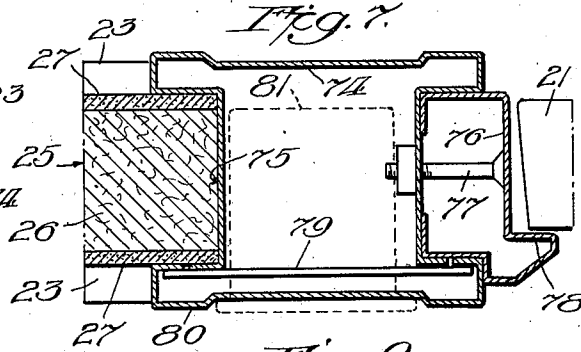
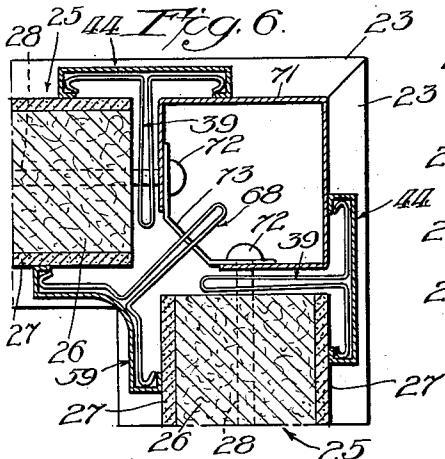
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2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,317,635

BUILDING CONSTRUCTION

Anders C. Olsen, Gwynedd, Pa.

Application January 13, 1940, Serial No. 313,780

10 Claims. (Cl. 72-46)

This invention relates to an improved method and means for forming a wall construction, particularly with respect to a batten type of partition system, which is adapted for use in buildings such as offices and the like, wherein there is a definite need for partition systems which may be readily erected or disassembled for changing office conditions.

This invention is concerned primarily with an improved method and means of installing and retaining wall slabs composed of materials possessing such qualities as being fire-retardant, soundproof, and thermal insulating. These slabs are supported on a novel baseboard construction and erected without the use of studs to form partitions; and are affixed to adjacent wall slabs by novel securing clips and are thus retained in place in a wall or partition by various alternative but non-equivalent methods and means which do not impair the physical or structural characteristics of the slabs or of the wall or partition as a whole.

The principal object of the invention is to provide a novel partition system wherein the erection of the partition or the like wall construction is simplified.

The principal features of the invention are that a panel can be readily removed to place a door without disturbing any other of the partition members; borrowed lights or transoms may be also readily placed or removed from the partition system, and the partition may be erected with prepanelled panels so that office partitions and the like may be erected over night for occupancy on the following day.

Another object of the invention is to provide a novel partition system adapted for interchanging office space from larger to smaller units and vice versa, incorporating certain features such as a novel baseboard construction adapted for erecting the wall slabs thereon and particularly adapted for laying conduits and flexible cables, and telephone connections.

A further object of the invention is to provide a novel partition system adapted either for a dwarf type of partition or for a ceiling height type of partition, incorporating such features as having the paneling readily removable and having such characteristics as being fire-retardant, thermal insulating, and soundproof.

Another object of the invention is to provide a novel partition system which will withstand vibration incident to tall building structures such as is inherent to the modern office building.

Another object of the invention is to provide a

novel partition system which is erected without the use of studs wherein the wall slabs forming the partition may be readily leveled by adjusting the wall slabs with respect to the baseboard construction, and the partition system is also adapted for the leveling of the door jambs, borrowed light frames, and the like.

Another feature of the invention is a novel clip construction for joining panels together and intersecting partitions together, and for securing the wall slabs and battens together. Other features of the invention are the novel corner stud construction, door buck construction, and glazing for the borrowed light construction.

Further objects, features, and advantages of the invention will become apparent from the following detailed description of the preferred embodiment of the invention and modification thereof as illustrated in the accompanying drawings, wherein like reference characters indicate similar parts, and where:

Figure 1 is view in elevation illustrating the novel partition system which includes the doors, borrowed lights, and other known features incorporated in the usual partition;

Figure 2 is a typical vertical section through the batten type of partition illustrating the baseboard construction, ceiling support, and the wall slab comprising an insulation sheet with fire-proof facings;

Figure 3 is a horizontal sectional view of a typical partition intersection illustrating a partition secured to a wall;

Figure 4 is an isometric view illustrating the clip adapted for joining wall slabs of the partition at an intersection for the partitions;

Figure 5 is a plan view of the clip illustrated in Figure 4;

Figure 6 is a horizontal sectional view illustrating a corner detail of the partition system;

Figure 7 is a horizontal sectional view through a typical door frame construction illustrating the detail of the door jamb and head of the door frame construction;

Figure 8 is a vertical sectional view through a typical borrowed light construction illustrating the detail of the head and sill of the frame for the borrowed light;

Figure 9 illustrates a horizontal sectional view of a jamb detail of the borrowed light frame construction;

Figure 10 is a corner elevation illustrating borrowed light frame details;

Figure 11 is a horizontal sectional view illus-

trating a detail of a typical joint construction of a partition;

Figure 12 is a perspective view illustrating a clip for securing the wall slabs together;

Figure 13 is a perspective view of a corner clip for securing the wall slabs at intersecting corners; and,

Figure 14 is a perspective view partially in section illustrating a modified form of joint treatment, adapted for horizontal and vertical joints.

Referring to Figure 1, there is illustrated a novel wall or partition construction 20 primarily adapted for interior partition systems but which obviously may be used for exterior wall constructions. The partition 20 comprises the usual door construction 21 which may be of any type well known in the art. The partition also comprises the usual borrowed lights 22, baseboard construction 23, and crown molding 24. The partition may also comprise an extension portion when a dwarf type of partition is extended to a ceiling height type of partition as disclosed and claimed in my co-pending applications for building constructions respectively, Serial Nos. 313,778 and 313,779, filed respectively January 13, 1940, and January 13, 1940. As the hardware for the doors, borrowed lights, and transoms are of standard construction, these will not be described in detail as it is obvious that the usual glazed or metal doors may be used and that standard borrowed light sashes and transom sashes may be used with this novel construction, as has been disclosed in the above-mentioned co-pending applications.

Wall slabs 25 used in this wall construction are of standard width and height, preferably 24 inches in width and 8 feet in height, thus being adapted for standard dwarf type partitions and with extension studs and sections therefor for ceiling height type of partitions, or the partition may be erected with full ceiling height type of partition construction. When this partition system is adapted for a ceiling height type of partition, particularly when using an extension stud construction, it is preferred to use the construction disclosed and claimed in my above-mentioned co-pending applications. The wall slabs used in this partition system preferably comprise an insulating portion or core 26 preferably formed from felted fibrous material, preferably bagasse or other ligno-cellulose materials. This insulating material may be sized by any suitable process, but preferably is sized by precipitating rosin size on the fibers with alum. There is applied to each face of this core a facing 27 preferably of asbestos fiber and cement for ornamental purposes. The method of forming this composite sheet material is disclosed and claimed in the United States patent to T. B. Munroe et al., No. 1,976,684 granted October 9, 1934.

It is, obvious from the illustrations, particularly in Figures 1, 2, 3, 6, 7, 8, 9, 11 and 14, that there will be provided in a wall construction or partition system a wall construction which is not only insulating, but which also provides an ornamental and weather-proof surface which is also fire resistant due to the asbestos fiber and cement coating thereon. It is also evident that this surface material may be suitably ornamented by painting where the surface is exposed, or that the surface material may be left in its natural finish, or that there may be impressed thereon designs simulating brick siding or other forms of siding material. Also the ornamental surface applied to the insulating core may have one face

which is preferably adapted for exterior surfaces while the other face is adapted for an interior surface. When used for an interior partition construction, it is preferred to either leave the facing material in its natural finish or to decorate the surface in colors suitable to the tastes of those using the office space provided with the partitions; or, if in a home or apartment construction, to decorate to suit the residents thereof.

When the novel partition system, as illustrated and which will be further described in detail, is changed from the dwarf type of partition system to a ceiling height type as disclosed and claimed in the above mentioned co-pending applications, extension slabs formed from the same material as the main wall slabs or panels 25 may be utilized, or it is obvious that the partition may be finished to the ceiling with other suitable sheet forms of sheathing materials. This may include asbestos fiber and cement panels or other forms of felted fiber board, and the like material. Although this invention is being disclosed primarily for the application of the aforementioned composite material, nevertheless, it is evident that this system is equally applicable for the erection of slabs of any other suitable wall forming materials known in the building art.

In the novel partition or wall construction to be further disclosed in detail, the wall slabs 25 are erected without the use of the usual stud constructions. In the construction which is to be described, it is preferred that the wall slabs shall be formed so that there are dowel holes 28 for the erection of dowel pins 29 uniformly spaced along the edges of the wall slabs as illustrated in Figures 2, 3, 6 and 11, and therefore the slabs may be formed very cheaply in sizes preferred for the standard height type partitions or dwarf type partitions, involving only the labor necessary to form the compound wall slab of an insulating material and facing materials for the faces thereof. The construction of this invention provides that the wall slabs 25 may be readily erected or dismantled when the partitions or wall constructions are rearranged for changing office conditions or when the partition or wall constructions are being taken down, thus providing that the entire system may be salvaged. Other details of the novel wall construction and particularly with reference to a novel partition system will be described by reference to the remaining figures in the drawings.

In erecting the partition, referring to Figures 1 to 9 inclusive, there is first applied to the floor a strip of felted fibrous material 30 preferably impregnated with asphalt or other suitable material to form a sill between the floor and the baseboard construction 23, Figure 2, and also to provide a sound deadening construction in that any sounds transmitted to the partition will not be transmitted to the floor below. The asphalt impregnated material 30 is preferably applied to the floor by applying a coating of asphalt or other adhesive material. The flooring channel or baseboard construction members 23 are also provided with prongs 31 which extend into the sound deadening material retaining the flooring channel in position because of the weight of the partition. It is also obvious that the baseboard panel construction 23 may be secured to the floor construction in the usual manner such as by the use of lag screws or expansion bolts.

The crown molding construction 24, Figures 1 and 2, where a ceiling height type of partition

is necessary, may then be secured to the ceiling construction in the usual manner such as by the use of lag screws or toggle bolts. The panels 25 may then be erected between the baseboard panel 23 and the crown molding construction 24. It is to be understood that the floor channel constructions 23 and ceiling channel or crown molding constructions 24 shall be levelled by methods approved in the art and also that the panels shall be set plumb.

After the baseboard panels 23 and crown molding construction 24 have been properly erected, aligned, and levelled, the wall slabs 25 are then applied. Referring to Figure 2, the wall slabs 25 are erected in place by supporting the wall slabs or panels 25 on the baseboard construction 23. The baseboard construction 23 is preferably a U-shaped section formed from sheet metal and so formed or rolled that it provides an ornamental baseboard construction, as illustrated in Figure 1 and in section in Figure 2. The baseboard construction 23 may have the prongs 31 for retaining the baseboard construction in position on the felt fibrous material 30 or it may be erected and levelled in the usual manner by the use of lag screws and the like securing means.

The baseboard channel construction 23 is preferably formed with a recess 32 adapted to support the wall slabs 25. The recess 32 is formed by a downwardly extending and inwardly extending members 33 and 34, respectively, and is so formed as to provide resilient gripping edges 35 contiguous to the faces of the wall or partition slabs 25. Clips 36 extend between the inwardly extending members 34 and are spaced longitudinally along the baseboard construction 23 in order to form the recess 32 and to permit the edges 35 to resiliently grip the panels. It is preferred that the clips 36 shall be spot-welded or otherwise secured in position, and that a sufficient number of the stiffening clips 36 shall be used in order to form a rigid base panel construction 23 adapted to support the partition assembly. Also, it is preferred that two contiguous panels 25 or modified panels 37 and 38 shall be erected in place at the same time; that is, as the contiguous panels 25 or other modifications of the panels, particularly those formed contiguous to the borrowed light construction as illustrated in Figure 1, are erected in place, dowel pins 29, Figure 11, are placed in the dowel holes 28, and the contiguous panel is forced into position leaving a space sufficient for affixing clips 39 in place, Figures 11 and 12. The clips which are preferred to be used are those which have been disclosed and claimed in my second mentioned co-pending application, Serial No. 313,779, filed January 13, 1940.

Referring to Figures 2, 11, and 12, the clip 39 is preferably secured in position by inserting the clip between the contiguous panels in the space formed, as illustrated in Figure 11, and then is forced downwardly to wedge itself into position thus affixing the contiguous panels together, as illustrated in Figures 2 and 11. The clip 39, Figure 12, is provided with a wedge portion 40 formed in the inwardly extending portion 41 of the T-shaped clip 39. The wedge portion 40 is preferably formed by means of the slot construction 42. Referring to Figure 12, the preferred form of the clip 39 for affixing the panels in the wall or partition construction is illustrated, and it is preferably formed from sheet metal which may be rolled into standard shapes and each clip fabricated therefrom, or the clips may be individually fabricated as shown. The clip 39 is preferably

of T-shaped construction with the inwardly formed portion 41 U-shaped in section having at the outer ends resiliently and symmetrically formed members 43 adapted to retain ornamental batten strips 44 in position. The members 43 have formed at their outer ends members 45 adapted to resiliently engage complementally formed portions for the batten strip 44. As previously described, the wedge shaped portion 40 is formed by the complementally formed slot 42. Referring to Figures 2, 3, 11 and 12, the slot 42 permits the wedge shaped portion 40 after it has been inserted in the space between contiguous panels, as best illustrated in Figure 11, to engage the dowel pin 29, Figures 2, 3, and 11, in order to firmly affix the slabs 25 in place in the partition assembly. It is obvious that the wedge shaped construction of the clip permits an increasing pressure to be applied on the wall slabs as the clip is driven downwardly over the dowel 29 because of the resilient members 45.

In order to complete the erection of the partition, the crown molding construction 24 which comprises a member 47 is, as has been described, erected in position on the ceiling construction to provide a support for the upper ends of the wall slabs. The member 47 of the crown molding construction 24 for the ceiling molding is formed substantially in an L-shaped construction and has formed at the ends thereof resilient members 48 and 49, respectively. The member 48 is contiguous to the upper end of the panels 25 while the member 49 is spaced from the ceiling, as illustrated in section in Figure 2, and adapted to form a latch with a member 50 which is symmetrically formed with respect to the ornamentation as the member 47, to form an ornamented crown or ceiling molding construction. The member 50 is then erected in place by inserting a member 51 over the resiliently formed member 49 and between the ceiling and the member 49. The member 50 which is similarly formed as the member 47 with respect to the ornamentation and the resilient member 48 is firmly affixed in position contiguous to the upper end of the panels 25 and to the member 47 by clips 52.

The clips 52 are of sheet metal, and each clip is preferably formed as an inverted U-shaped member with the leg portions 53 thereof extending downwardly and engaging the recesses 48 of the members 47 and 50. A sufficient number of the clips 52 are used to firmly affix the crown or ceiling molding construction 24 in position at the upper ends of the wall slabs 25. Although the erection of the partition has been described with a full height type of partition system, it is obvious that the crown molding construction 24 may be utilized for a dwarf type of partition construction and may be erected and affixed to the upper ends of the panel constructions 25 in the same manner to complete the erection of the partition system and to strengthen and rigidify the partition construction.

With the clips 39 erected in position on both sides of the panel construction, the next step in the erection of the partition is to affix the ornamental batten strips 44 in position thus completing the assembly of the partition construction. It is obvious that with the construction described it is a very simple matter not only to erect the partition construction, but also to dismantle the partition construction by dismantling the partition in the reverse order to which the erection of the partition was described.

Referring to Figures 3, 4, 5 and 13, the parti-

tion construction will be described particularly with reference to the erection of the intersecting partition construction which is formed either between adjacent rooms or in corridor construction. The baseboard panel construction is erected in the manner previously described as is also the ceiling molding construction, particularly when a ceiling height type of partition is desired. Referring to Figure 3, the partition is affixed to a wall construction 54 by securing resiliently formed clip members 55 thereto and uniformly spacing them along the wall for the height of the partition. The clip 55 preferably comprises a transverse member 56 and an inverted U-shaped member 57 spot-welded or otherwise affixed to the transverse member 56. The transverse member 56 and the inverted U-shaped member 57 are symmetrically formed and have at their outer ends resiliently and similarly formed portions 58. This construction for affixing the panels of a partition to a wall construction is similar to that disclosed and claimed in the above second-mentioned co-pending application. The members 58 are resiliently formed and adapted to affix ornamental corner batten strips 59. The batten strips 59 have edge portions 60 complementally formed with respect to the portions 58 whereby the batten strips may be resiliently affixed in position to complete the intersecting partition construction of a partition and a main wall construction of a building construction.

It is obvious that the intervening panel constructions 25 may be erected in place on the baseboard panel constructions for the intermediate partition construction in the same manner as has been described with respect to Figures 1 and 2 for the general description of the erection of the partition system utilizing the novel construction of this invention.

When the intermediate partition construction forms an intersection with the main partition construction as illustrated in section in the lower half of Figure 3, it is preferred to use a clip construction 61 illustrated in detail in Figures 3, 4, and 5. The clip construction 61 is preferably formed from sheet metal in the form of a surface of a triangular prism as illustrated in section in Figures 3 and 5. The apexes of the legs 62 of the triangular shaped prism where they intersect with the base 63 have U-shaped recesses 64 formed thereat. The base portion 63 is adapted to abut the vertical edge of the slab completing the intermediate partition construction and is affixed thereto by a dowel construction 65 corresponding to the dowel construction 29 previously described. As illustrated in Figure 3, the dowel 65 is adapted to be inserted in the dowel holes 28 of the wall slab 25. Similarly, a dowel construction 66 is adapted to be inserted through and affixed to the legs 62 of the clip 61. Slots 67 are formed in the recesses 64, Figures 3, 4 and 5, and are adapted to receive corner clip members 68.

The corner clip members 68 have been previously disclosed in my copending second-mentioned application, Serial No. 313,779, filed January 13, 1940. Referring to Figure 13, the corner clip member 68 preferably comprises the wedge member 40 which is complementally formed by the slot construction 42 as previously disclosed with respect to the description of the clip member 39. The clip construction 68 comprises an inwardly extending portion 41 which has formed at the ends thereof symmetrically and resiliently formed members 69 adapted as illustrated in the

sectional view, Figure 3, to be formed in the shape of an L and has formed at the ends of the members 69 resiliently formed members 45. It is obvious as the clips 68 are forced downwardly in position that they are wedged in position and affixed to the clip construction 61, as illustrated in Figure 3, thus resiliently affixing the contiguous panels of the corner construction in position.

However, before the clips 68 are applied in position, the panels 25 of the main partition assembly are erected in position and the dowel construction 66 of the clips 61 are affixed in the dowel holes spaced along the vertical edges of the contiguous panels 25. It is preferred that the panels 25, as illustrated in the lower half of Figure 3, shall be bevelled as at 70 to be complementally formed with respect to the legs 62 of the clip 61. Thus with the dowel construction 65 firmly affixed to the intermediate partition and the dowel construction 66 erected in position, it is obvious that each clip 61 is firmly affixed between the contiguous panels to which it is attached. There should be a sufficient number of clips 61 used to provide that the intersecting panel construction shall be rigidly constructed. The corner clips 68 may now be erected in position through their respective slots 67 of the clips 61 and also the clip members 39 shall be erected in position and affixed to the dowel construction 66.

It is obvious with the construction illustrated that the inner corner ornamental batten strips 59 may then be readily affixed in position as previously described wherein the intermediate partition was affixed to the wall construction. The complementally formed members 60 of the batten strips 59 are resiliently affixed to the complementally formed members 45 of the clips 68. Similarly, the batten strip 44 is affixed in position to the clips 39 by coaction of the complementally formed resilient securing members 45 of the clips and the complementally formed members 46 of the batten strip. It is obvious, therefore, that when the various ornamental inner corner batten strips and the batten strips 44 are affixed in position, a rigid partition construction is formed particularly at the intersecting partition construction and that the partition assembly at an intersecting corner construction thereof may be readily disassembled by reversing the steps of erection previously described.

Figure 6 illustrates a preferred form of corner construction utilizing the novel construction of this invention. The base panels are erected in the same manner as previously described as well as the ceiling or crown molding construction. It is preferred to use a corner stud 71 for the full height of the ceiling partition or to the full height of the dwarf partition. This corner stud construction is preferably in the form of a square with one corner open and is rolled from sheet metal or formed on a brake. Uniformly spaced along the stud construction preferably on 20 inch centers are members 72 which serve as dowel pins. The wall slabs 25 also have formed in their edges the usual dowel holes 28 in which the dowels 72 fit. It is preferred that the dowel pins 72 as well as a metal clip 73 shall be spot welded to the main stud construction 71. The clips 73 are also uniformly placed along the stud at the point of the dowel construction and serve to stiffen the stud. It is obvious that with this construction, the corner studs may be erected in place and the wall slabs erected beginning from the stud or that the corner construction

may be finished by erecting the stud 71 at the slab which ends the wall construction and continue the wall construction from this point. In order to firmly affix the wall panels in place, the usual clip and batten construction is utilized. To join the panel 25 to its contiguous stud 71, the clips 39 are wedged in position at each dowel pin construction thus firmly affixing the wall panel 25 in place. However, to secure the panel firmly in place it is necessary to erect the corner clips 68 in position and wedge them in place with respect to the clips 73. As the clips 39 and 73 have been previously described, particularly with reference to the construction illustrated in Figure 3, further detailed description of these clips is believed unnecessary for the understanding of the invention. Likewise as the other partition is erected in place on the stud 71, the clips 39 are also affixed to the dowel construction 72 thus firmly affixing the contiguous corner panels to the corner stud construction. To complete the erection of the panels and to panel off the partition, the ornamental batten strips 44 and the ornamental corner batten strip 59 are erected in position by resiliently affixing these batten strips to the complemental securing means formed on the clips 39 and 68. Although this novel corner construction has preferably been disclosed with respect to a right angle corner construction, it is obvious that within the scope of this invention, corner stud constructions may be formed where partitions intersect at angles other than right angles.

Figure 7 illustrates a preferred form of construction used for a door jamb and head construction for the door. When it is desired to place a door in the partition system, a door jamb preferably as illustrated in Figure 7 is utilized. A door jamb 74 formed from suitably ornamented sheet metal which has been formed by either rolling or on a brake or by other suitable devices, has a recessed portion 75 which is adapted to receive the panel or wall slab 25 of the partition. When the door jamb 74 is anchored in place, it is obvious that a door jamb construction is had which is rigidly secured in the partition system and forms a suitable entrance, as illustrated in Figure 1. The door jamb is symmetrically formed and is of general U-shaped construction with a similarly formed recess 75 adapted to receive the door head construction 76. The door head construction is suitably secured to the door jamb by the usual screws and bolts as illustrated at 77. The door head construction 76 is also provided with a stop construction 78 for the door 21. It is also obvious that various forms of doors 21 may be utilized in this partition and they may be either of wood, metal, or of wood and glass, or metal and glass construction. In order to strengthen the door jamb construction, cross ties 79 are spot-welded or otherwise secured to the door jamb 74 and uniformly spaced along the length of the door jamb. In order to complete the door jamb construction, a metal trim 80 having the same ornamentation as the main door jamb construction is affixed in place by means of the ends of the transverse members 79 which act to lock the metal trim 80 in place and is also additionally secured in place by means of the door head construction 76. An electric switch box 81 may be mounted in the door jamb at the usual height in order that the lights in the room may be turned on and off as one enters or leaves the room. It is obvious that, as the partition is continued, the panels on the opposite side of the

door jamb may be erected in place as has been previously described.

Figures 8, 9, and 10 illustrate the details of construction of the borrowed light 22 and particularly the jamb detail, head detail, and sill detail, as well as a corner elevation of the borrowed light. Referring to Figure 8, the window sill and head construction will be described in detail. The window sill is preferably formed of a symmetrically shaped member 82 which has a U-shaped depression 83 therein adapted to receive a felt 84 for mounting the glazing 85 thereon. The sill construction 82 has symmetrically formed members 86 adapted to resiliently grip the panel construction 37 thus securing the window sash to the partition assembly. The window head construction is formed from similarly shaped members, but they are inverted with respect to the sill construction; but, as the means are similar, like reference characters will indicate similar parts. It is, therefore, obvious that the panel 38, as illustrated in Figure 1, may be affixed in position in the window sash construction. Also as illustrated in Figure 9, the window jamb constructions are also formed from members similar to those of the sash and head constructions, and therefore like reference characters will indicate not only the sill and head construction but also the similarly formed window jamb construction.

The glazing 85 is erected in place by first placing a felt 84 in the recesses 83 in the sill and jamb recess 83, and spring metal clips 87 are firmly affixed in position to resiliently secure the glazing 85. The upper end of the glazing is secured in position by an inverted U-shaped spring metal clip 88 which is first placed over the upper edge of the glass as the glazing is placed in position, and then the spring metal clip 88 is raised upwardly into its recess 83 thus firmly affixing the glazing in place and also permitting the glazing to be readily removed when the partition is dismantled.

It is obvious from the foregoing disclosure that the vertical edges of the panels 25 contiguous to the window jambs may be firmly affixed to the window sash construction 22 by means of the resilient members 86. With the construction which has just been described, it is also evident that the borrowed light construction 22 may be readily mounted in a partition construction, such as illustrated in Figure 1, and may be similarly as easily dismantled when it is desired to remove or modify the partition construction either by placing a door where the borrow light is or by removing the borrowed light and replacing it with a full length wall slab.

Figure 10 illustrates the corner detail of this borrowed light construction particularly where the panels 37 and 25 are contiguous thereto and also illustrates how the window jamb construction and window sill construction 82 are mitered together to form a neat and ornamental borrow light sash. There is also illustrated how the batten strip 44, as illustrated in Figure 1, joins the sill construction of the borrowed light construction 22.

As Figures 12 and 13 which illustrate the preferred form of joint clip 39 and corner clip construction 68 have been described in detail with reference to the previous constructions, further description with reference to these figures is unnecessary.

Figure 14 illustrates a construction which may be utilized with this invention where it is necessary to form intermediate joints between the

main panels particularly where it is desirous of obtaining further ornamentation by arranging the battens and panels in suitable designs; and, as this construction has also been disclosed and claimed in detail in my co-pending application Serial No. 313,779, filed January 13, 1940, only a description necessary for the understanding of its use with this invention will be given. Contiguous edges of the panels 25, which as has been described are of a form of composite material having facings of asbestos fiber and cement on both sides of an insulating core rather than the type of composite material having only a single facing, as previously described with respect to my co-pending application, are preferably secured together by a U-shaped batten strip and securing member 89. The batten strip 89 is symmetrically formed and preferably has a depending portion 90 adapted to be inserted between the contiguous panels and has laterally extending portions 91 at right angles thereto. The batten strips 89 are preferably secured on opposite faces by means of a securing means 92 preferably comprising the usual bolt and nut as illustrated. It is obvious that with this construction the panels are securely affixed together yet it permits the lateral and longitudinal expansion of the panels which takes place because of changes in humidity or temperature changes.

The construction illustrated in Figure 14 is particularly used in a partition system as has been described in detail with reference to the preceding figures and particularly when the panels 25 formed of the composite material having facings on both sides are used. Although this construction is preferably adapted for the formation of horizontal joint constructions, it is obvious that it is equally adapted for the formation of vertical joints, and particularly, wherein the batten strips 89 may serve as the studs which are erected into a partition wherein the composite material, as herein illustrated, forms the partition, that is, there is formed a similar facing 27 on the opposite sides of the material. However, the form illustrated in Figure 14 is adapted where a partition system may be erected having as a surface the pattern of the felted fiber board wall while in another office space or room there is a surface of asbestos and cement. This form is particularly adapted where, as in Figure 14, the facing 27 may illustrate an outside surface exposed to the weather while the inside surface, which is in this instance illustrated as a facing of asbestos fiber and cement, is the interior wall surface of a room. To further ornament the joint construction, an additional ornamental strip 93 may be applied on each side of the joint construction. The ornamental strip 93 also serves to cover over the securing means thus making a joint which is pleasing to the eye.

It will be apparent from the foregoing that the invention provides a number of related but non-equivalent methods and means of attaching relatively thick slabs of wall material to form a novel partition system erected without the use of studs except as has been described with reference to the corner stud construction illustrated in Figure 6. There has also been described a suitable method of erecting a partition or wall construction adapted for interior or exterior surfaces and which is particularly adapted for the formation of corner constructions with respect to the intersection of partitions and wall constructions erected without the use of the usual stud constructions, and thus forming a simple and cheap

building construction. Each of these methods and means is particularly well adapted to use with wall slabs composed primarily of the so-called rigid type of heat insulating material and particularly has been described with respect to the aforementioned form of composite material comprising a fibrous insulating base material to which there has been applied on each face a surface coating or weather-proofing surface of asbestos fiber and cement. The wall slabs may comprise asbestos fiber and cement panel members, or gypsum block, and may also include slabs of insulation composed of fibrous material as well as other types of insulating slabs or blocks, or ornamental panelling members, such as for example, cast or molded material containing ingredients of good insulating quality or a high percentage of relatively small voids or pockets of entrapped air or inert gas wherein the panels or slabs are so formed that they have relatively high strength, without the necessity of having incorporated in the slabs securing means in the form of kerfs which would reduce the strength of the panel. The novel wall panels only require a dowel construction wherein relatively cheap dowels formed preferably of wire rods or similar construction are inserted in the panels which does not necessarily increase the cost of erecting the panels into a partition system, particularly as there is no need for the use of the usual stud construction; and, it is only necessary in this novel partition and wall construction to have a corner stud construction formed in accordance with the disclosure of this invention to which are adapted to be affixed the wall panels by means of the novel clips and batten construction which firmly affixes the wall panels or slabs in position. The features of the invention are particularly desirable in connection with the use of slabs or blocks of insulating material since the method and means of attachment provided do not materially decrease the overall efficiency of the insulating material used and eliminate penetrating members of high heat conductivity although it is obvious, where the clips are affixed to the studs, that there will be a tendency for a small heat loss.

The invention is not limited to the use of materials of good heat insulating quality for the wall slabs since the methods and means provided for attaching the slabs together in the partition or wall construction will also prove advantageous for attaching other types of wall materials where a high degree of insulating efficiency is not essential. Molded or precast slabs of hydraulic cement, natural synthetic resins, ceramic materials, and the like may be attached to the studs of the partition construction or of any type of construction in the manner and by the means herein provided.

As applied to buildings, such as houses, office buildings, factories and the like, any desired form and type of interior and exterior wall materials may be utilized in conjunction with the wall slabs. Although the partition system has been particularly described with reference to interior partition systems and particularly with respect to a form of material having an insulating base over which is applied a surface finish of asbestos fiber and cement, and it is preferred that the partitions shall be left either in their natural color or may be suitably decorated by any of the finishing materials well known in the art; nevertheless, if necessary, these wall slabs may have plaster applied thereto as an

interior finish particularly when the base is solely a fibrous insulating material and when necessary it may be directly applied to the wall slabs although it is not particularly recommended with a surface of asbestos fiber and cement nor is it needed.

Stucco or the like may be applied to the exterior surface of the slabs, either without, or preferably with, a suitable reinforcing mesh; and also, in this form of application of stucco, it is preferred that the base material will be fibrous insulating material to which the stucco and other materials are applied, instead of applying it to the asbestos and cement surfacing material. Brick or stone veneer may be applied although the panels suitably caulked as originally erected may be utilized for an exterior surface when the panels or slabs of the insulating fiber base over which an asbestos cement fiber surface has been applied, have been suitably sized and painted with a weather-resisting surface coat. When wood siding, shingles, or panels of wood, metal or composite materials are employed, suitable nailing strips may be anchored in the slabs in any desired manner, such as for example by imbedding or anchoring bolts, metal clips, or the like, in the panels of insulating material and attaching the same to the nailing strips. Masonry veneer may also be anchored to the slabs in a similar manner.

It is also to be understood that while metal studs have been particularly disclosed for the erection of the composite panels comprising a fibrous insulating base and the asbestos fiber and cement surfacing for a corner partition intersection, particularly because of the fire-proof character of the asbestos fiber and cement surfacing for the wall slabs; nevertheless, a wood framing may be employed with equal facility for the corner stud construction, in which case as has been previously described with respect to the stud construction, it may be either square or rectangular or any other suitable shape adapted for erecting the clips thereto, such as has been disclosed in detail with reference to the metal studs for attaching the slabs and particularly with respect to the stud construction disclosed and claimed in my co-pending application, Serial No. 313,779, filed January 13, 1940, where a novel form of wood stud construction has been described in detail.

It will, of course, be understood that various combinations of the features of the invention, other than the combinations illustrated and described will be obvious to those skilled in the art and are therefore entirely within the scope of the invention as defined by the appended claims. The same applies to various modifications and minor departures from the specific form of wall slabs as well as the method and means of securing the wall slabs herein illustrated and described in this novel partition system or wall construction.

What is claimed is:

1. A wall comprising in combination, a baseboard construction, a crown molding construction, panels of wall material mounted therebetween and supported by the baseboard construction, complementally formed means on the edges of the contiguous panels, said complementally formed means comprising vertically spaced dowels and complementally formed means to receive the dowels, said panels at the contiguous edges thereof spaced apart, and clip means inserted in the space between the contiguous panels, each

of said clip means comprising as a part thereof a wedge member engaging the dowels whereby the panels are affixed together at the contiguous edges thereof into a wall.

2. A wall comprising in combination, panels of wall material affixed together, complementally formed means on the edges of contiguous panels, clip means affixing the panels together at the contiguous edges thereof, said clip means of T shape, the stem thereof comprising a wedge member, engaging the complementally formed means on the contiguous edges of the panels whereby the panels are affixed together, and a corner stud construction having affixed thereto the edges of the panels forming an intersecting corner construction in the wall, said corner construction comprising complementally formed means to engage the complementally formed means on the edges of contiguous panels, clip means affixing the edges of the panels forming an intersecting corner construction to the corner stud construction, corner clip means affixing the edges of the panels forming an inner intersecting corner construction to the corner stud construction, said corner clip means comprising a wedge member and complementally formed means on the corner stud member whereby the edges of the panels forming the inner intersecting corner construction are affixed to the corner stud member by the wedging action of the corner clip means, and batten strips mounted on the clip means and the corner clip whereby inner and outer corner constructions are formed.

3. A wall comprising in combination, a baseboard construction, a crown molding construction, panels of wall material mounted therebetween and supported by the baseboard construction, certain of said panels, baseboard and crown molding constructions forming an intersecting wall construction, an intersecting clip means affixing contiguous panels together to form an intersecting wall construction, complementally formed means on the edges of the contiguous panels forming the intersecting wall construction, said intersecting clip means engaging the aforesaid complementally formed means whereby the aforesaid panels are affixed together in an intersecting wall construction, clip means affixing adjacent panels at the contiguous edges thereof, and corner clip means affixing contiguous edges of intersecting panels together, each said clip means and corner clip means comprising in part a wedging member and complementally formed means in the intersecting clip means whereby the panels are affixed in the wall by the wedging action of the aforesaid clip means and the corner clip means.

4. A wall comprising in combination, a baseboard construction, a crown molding construction, panels of wall material mounted therebetween and supported by the baseboard construction, said crown molding construction comprising an L-shaped member engaging the upper portion of one face of the panels, another member engaging the opposite face at the upper edge of the panels and affixed to the first-mentioned member, clips of inverted U form overlying the upper end of the panels and affixing the members forming the crown molding construction whereby the crown molding construction is affixed to the upper ends of the panels.

5. The combination with a wall construction of a partition formed substantially at right angles thereto, said partition construction comprising panels of wall material, resilient formed clip

members affixed to the wall construction, the clip members having a substantially flat base portion with a U shape mounted thereon and the legs thereof engaging opposite faces of a panel of the partition construction contiguous to the wall construction, and corner batten strips affixed to an outer end of the base portion and a leg of the U shape portion respectively of the resiliently formed clip means whereby ornamental corner constructions are formed between the partition and the wall construction.

6. As an article of manufacture, an intersecting clip means for affixing panels of wall material and clips to form an intersecting wall construction, said clip means substantially triangular in section, and comprising a base portion and converging leg portions, and means affixed to the aforesaid base and leg portions of the clip means and affixed to the panels of wall material contiguous thereto, U-shaped recesses formed contiguous to the base and leg portions and pierced to receive the clip and the legs of the triangular shaped section spaced apart whereby a clip may be inserted therebetween.

7. The combination with panels of wall material and clip means forming an intersecting wall construction, of an intersecting clip means mounted at the intersection of the panels forming the intersecting wall construction and affixing the panels together, said intersecting clip means substantially triangular in section, the base and leg portions of the intersecting clip means formed complementary with respect to the panels contiguous thereto, means affixed to the aforesaid base and leg portions of the intersecting clip means and affixed to the panels of wall material contiguous thereto, U-shaped recesses formed contiguous to the base and leg portions and receiving the clip means, the legs of the triangular shaped section spaced apart and receiving a clip means, said means affixed to the base and leg portions comprising a transverse member extending between the leg portions, said clip means affixing the panels at the contiguous edges thereof to the intersecting clip means, the aforesaid clips each comprising in part a wedge member engaging the complementally formed recesses and the transverse member whereby the panels are affixed together into an intersecting wall construction.

8. The combination with panels of wall material and clip means forming an intersecting wall construction, of an intersecting clip means mounted at the intersection of the panels forming the intersecting wall construction and affixing the panels together, said intersecting clip means substantially triangular in section, the base and leg portions of the intersecting clip means formed complementary with respect to the panels contiguous thereto, means affixed to the aforesaid base and leg portions of the intersecting clip means affixing the panels of wall material con-

tiguous thereto, U-shaped recesses formed contiguous to the base and leg portions and receiving the clip means, said U-shaped recesses having slots formed therein, the legs of the triangular shaped section spaced apart and receiving a clip means, said means affixed to the base and leg portions comprising a transverse member extending between the leg portions, said clip means comprising corner clip means engaging contiguous panels intersecting at the corners thereof, and wedgingly engaging in U-shaped recesses, said corner clip means each comprising in part a wedge member engaging the slotted U-shaped recess whereby the panels are affixed together into the intersecting wall construction.

9. A wall construction comprising in combination, a corner stud member, panels of wall material affixed to the corner stud member whereby inner and outer corner constructions are formed, a corner clip mounted on the corner stud member and resiliently engaging the faces of contiguous panels intersecting in a corner, a batten strip mounted on the corner clip to complete the inner corner construction, means spaced vertically along the edges of the corner stud contiguous to the panels and complementally formed therewith whereby the contiguous panels are affixed to the corner stud member, and clip means affixed to the means vertically spaced along the edges of the corner stud member contiguous to the panels, said clip means resiliently engaging a face of the stud and a face of the panels contiguous thereto, and ornamental batten strips affixed to the clip means whereby the joints between the corner stud and the panels contiguous thereto are concealed.

10. As an article of manufacture a corner construction member constructed to have panels of wall material affixed by clip means to certain of the faces of the corner member in angular relation to each other, dowel members extending horizontally outwardly beyond faces of the corner member and to which panels may be affixed forming a corner construction, adjacent faces of the corner member to which panels are affixed connected by a connecting portion substantially perpendicular to the bisector of the angle between said faces, the connecting portion slotted to receive a clip whereby a clip may be affixed to the corner member and providing a corner member construction for mounting thereon panels of wall material with an edge face thereof complementing a face of the corner member and provided with dowel receiving recesses and secured to the corner member between clip means, one wedgingly engaging in a slot in a connecting portion connecting adjacent faces of the corner member, and another wedgingly engaging a said dowel member whereby the panel is clamped between the clip members.

ANDERS C. OLSEN.