Oct. 11, 1938. A. A. PRIVE 2,132,832

BUILDING CONSTRUCTION

Filed July 16, 1937 2 Sheets-Sheet 1

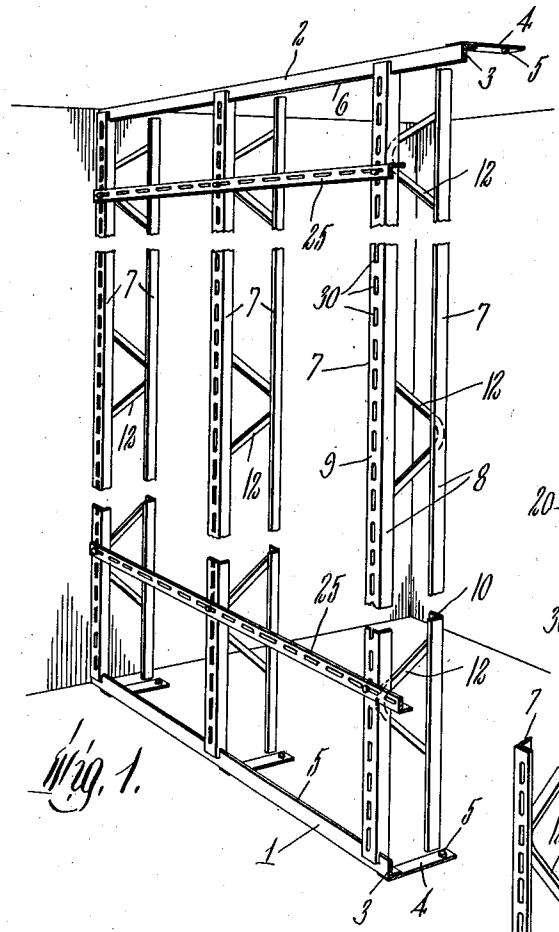


Fig. 1.

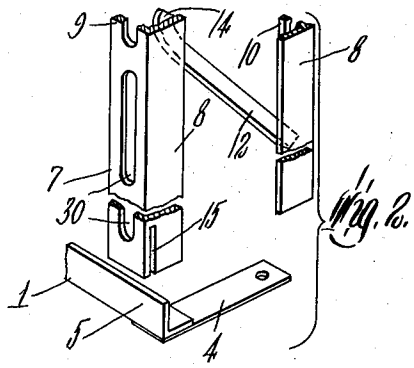


Fig. 2.

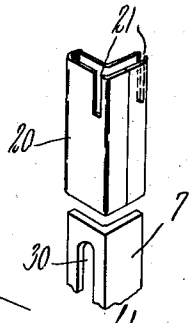


Fig. 3.

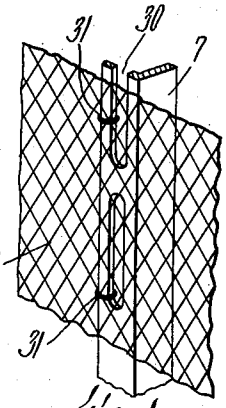


Fig. 4.

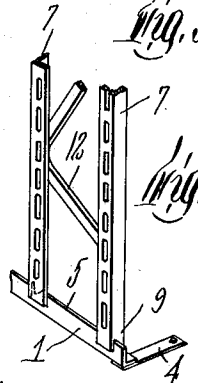


Fig. 5.

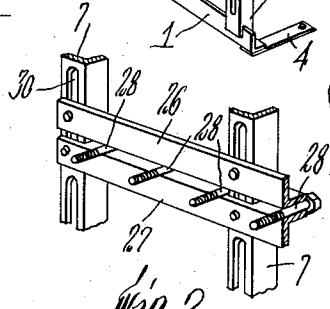


Fig. 7.

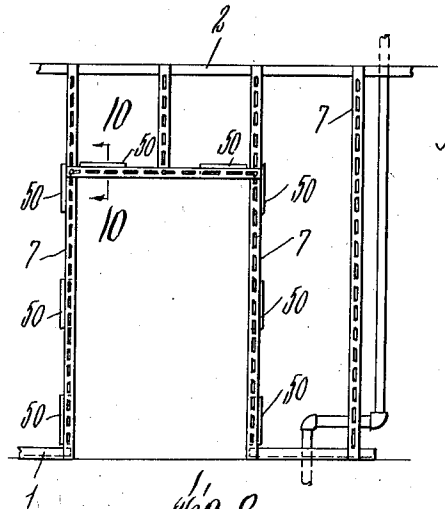


Fig. 8.

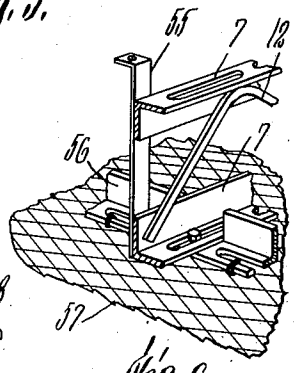


Fig. 6.

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Oct. 11, 1938. A. A. PRIVE 2,132,832

BUILDING CONSTRUCTION

Filed July 16, 1937 2 Sheets-Sheet 2

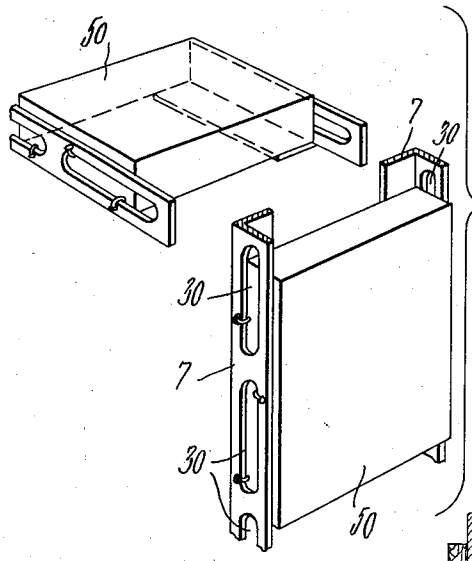
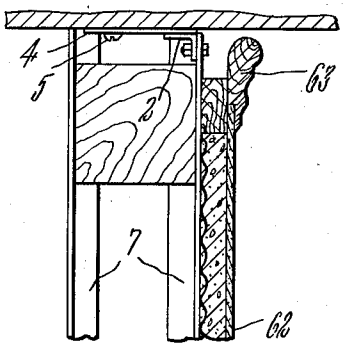


Fig. 9.



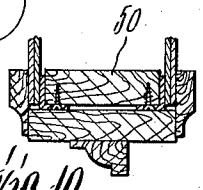
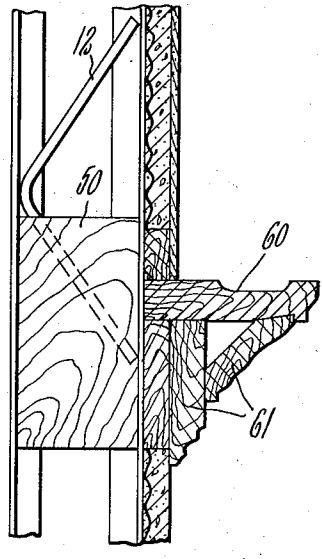


Fig. 10.



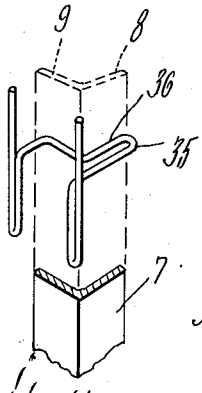


Fig. 11.

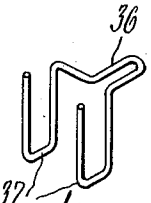


Fig. 12.

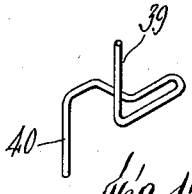


Fig. 13.

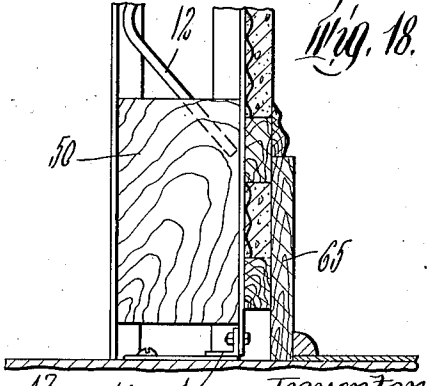


Fig. 18.

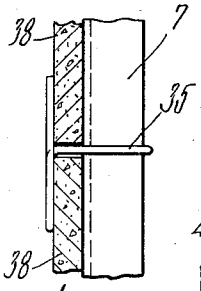


Fig. 14.

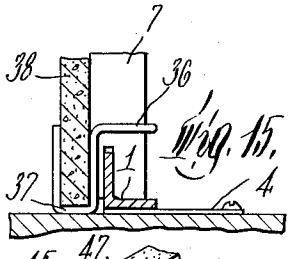


Fig. 15.

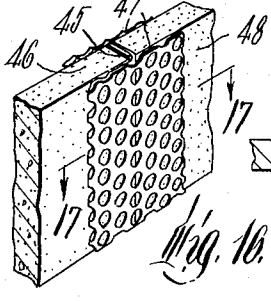


Fig. 16.

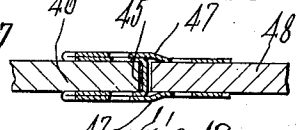


Fig. 17.

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Patented Oct. 11, 1938 2,132,832

UNITED STATES PATENT OFFICE

2,132,832

BUILDING CONSTRUCTION

Alfred A. Prive, Manchester, N. H., assignor to George E. Stevens, Melrose, Mass.

Application July 16, 1937, Serial No. 153,932

11 Claims. (Cl. 72—46)

This invention relates to building construction, and while not limited to such use, is of particular utility in connection with partitions.

One object of the present invention is to provide a construction in which certain of the parts may be prefabricated to advantage and then readily assembled on the job.

A further object is to provide cheap but strong parts which will insure strength and lateral stability sufficient to carry relatively heavy wall fixtures and which can be assembled on the job without requiring lateral bracing during the assembly.

A further object is to provide a building construction whereby much room is provided for the passage of heating and ventilating ducts, pipes, electric cables, etc. both within the partition itself and through floors and ceilings in line with the partitions.

A further object is to provide a frame construction to which any desired form of plaster foundation may be readily secured.

Still another object is to provide a frame construction to which blocks of wood or other desired material for the securement of door or other frames or trim may be readily fixed.

A still further object is to provide means for securely locating the partitions so that they may be built up in a proper location with a minimum of time and labor.

Further objects and advantages will appear from a more complete description of certain embodiments of the invention shown in the accompanying drawings in which

Figure 1 is a perspective view of the frame work of the partition constructed in accordance with this invention.

Figure 2 is a fragmentary detail in perspective and to a larger scale showing the mating parts separated from each other.

Figure 3 is a detail in perspective of a top extension.

Figure 4 is a detail perspective showing a construction including metal lath.

Figure 5 is a detail perspective showing a modified arrangement of certain parts.

Figure 6 is a detail perspective showing a ceiling construction embodying this invention.

Figure 7 is a detail perspective of a partition arranged for directly supporting heavy fixtures.

Figure 8 is a fragmentary side elevation of a partition provided with a doorway.

Figure 9 is a perspective view to a larger scale of certain of the parts shown in Figure 8.

Figure 10 is a detail section on line 10—10 of Figure 8, but showing certain additional parts.

Figures 11, 12 and 13 are detail perspective views illustrating certain retainers for plaster board latch.

Figures 14 and 15 are detail sections showing the retainers of Figures 11 and 12, respectively, in position.

Figure 16 is a detail perspective illustrating an end coupling element for plaster board lath.

Figure 17 is a detail section on line 17—17 of Figure 16.

Figure 18 is a vertical section through a school room partition illustrating the invention.

Referring first to Figure 1, where the invention is shown as embodied in a partition, at 1 and 2 are indicated floor and ceiling locating pieces, respectively. As shown each of these pieces comprises an angle member 3, to one flange of which are secured the cross bars 4. These cross bars are preferably perforated at suitable points for the reception of securing bolts such as 5 which fix the locating members 1 and 2 in position to the floor and ceiling, respectively, one flange of each of these locating pieces being parallel to the floor and ceiling and the other flange, such as 6, being positioned vertically, the two being in opposed relation to each other. Between these locating pieces or rails may be assembled a plurality of skeleton cross frame members, each comprising a pair of angle members 7 arranged in spaced opposed relation with their flanges 8 in substantially a common plane and their flanges 9 and 10, respectively, extending in the same direction from the flanges 8, thus to form a somewhat channel-shaped girder, the two parts of which are connected at spaced intervals by V-bracing members 12. The angle members 7 may be spaced as desired in accordance with the desired thickness of the partition. As shown best in Figures 2 and 6, each of these bracing members comprises a bar bent intermediate its ends in V-form, as at 14, the apex of the V being secured as by welding to one of the flanges 8 of the angles 7 and the ends being secured as by welding to the corresponding flange of the other angle. These girders, comprising the angles 7 and their V spacing members, may be pre-fabricated so that the girders formed thereby have substantial inherent stability laterally of the partition. This V-form of bracing and connecting element makes it unnecessary to employ many to properly space and stiffen the girder angles. For example, in a room, say, ten feet high there need be but three

of these connecting members used, the end ones being located, say, eight or ten inches from the floor and ceiling, respectively, and the third being positioned centrally of the length of the girders. The lower end of the flange 8 of one of these angles 7 is preferably slotted, as shown at 15, to take over the flange 5 of the locating rail 1 at its lower end, thus locating the girder with respect to the locating element, and its upper end may be similarly slotted to take over the flange 6 of the ceiling locating member. It will be noted that there is only one locating member at each end of the upright girder, this being positioned at one side of the partition, thus leaving a large, unobstructed floor space between the angle 1 and the bars 4 through which heating and ventilating conduits, pipes, electric cables, and the like may be passed through from one floor to another without obstruction and within the outlines of the partition. Likewise since the three connecting members 12 between the upright angles 7 obstruct little of the side areas of the girders, a large amount of space is left for the passage of such conduits, pipes and cables throughout the length of the partition. The transverse girders being pre-fabricated are inherently stable and can be assembled on the locating strips without the necessity of any lateral bracing for the partition during the process of erection. After the girders are properly positioned, they may be spot welded to the locating strips at their overlapping portions.

Where pre-fabrication of these girders is employed, it may happen that the girders may be found slightly too short when they are being erected, and in such a case it is a simple matter to provide an extension, such as the sheet material piece 20 shown in Figure 3, which may be telescopically related to the upper end of the angle 7 and have slots 21 therethrough to take over the flange of the ceiling locating element 2.

Where the walls are intended to support other structures it may be desirable to brace the girders lengthwise of the partition, and this may be done by securing to these girders, members such as the angle members 25, shown in Figure 1. The horizontal flange of each of these angle members may be cut away to permit the flanges 9 of the angles 7 to engage the inner face of the vertical flange of the angle 25, and these angles 25 may be secured by suitable means such as by bolts or spot welding to the edges of the girders.

Where very heavy fixtures such as toilet fixtures are to be supported directly from the wall, a pair of such angles 26 and 27, such as shown in Figure 7 may be employed, arranged with their horizontal flanges spaced apart sufficiently to receive therebetween fixture-securing bolts 28.

Where it is desired to employ metal lath, the edge flanges of the girders may be perforated, as shown at 30, so that binding wires or clips 31 may be engaged in the perforations of the metal lath 32 and through the perforations of the flanges as shown best in Figure 4.

Where plaster board or other wallboard lathing material is employed, these perforations may be omitted and the wallboard lathing may be secured in position by suitable clips, such, for example, as shown in Figures 11 to 13. Then a wire clip 35 may be bent to form a narrow U portion 36 engaging about the transverse flange 8 of the angle 7, the sides of the U then being widened sufficiently to permit the passage of the clip on either side of the end flange 9. The end portions of the clip may then be formed to engage over the front faces of the wallboard members. In Figure 11 the clip is bent to project both upwardly and downwardly from the plane of the portion 36. This will permit engagement of the clip with wallboard pieces both above and below the plane of the portion 36.

In Figure 12 the forward ends of the clip are shown as bent downwardly and then upwardly in U form to engage the lower edge of the wallboard as shown in Figure 15. This formation is suitable for the lowest course of the lathing next to the floor, the base of the U-shaped holding portion 37 resting on the floor, and the upwardly projecting portion engaging the front face of the plaster board lath 38.

In Figure 13 one end of the clip is bent upwardly, as at 39, and the other end bent downwardly as at 40 so as to engage with two courses of the plaster board. Of course, where clips are employed at the ceiling they will be downturned to engage the upper edge only of the wallboard, being in this respect reversed to the showing of Figures 12 and 13. The abutting ends of the wallboard of each course may be held together, as shown in Figures 16 and 17, by a clip formed up from sheet metal, herein shown as reticulated, which is bent to form a U portion 45 to engage about one end 46 of a piece of wallboard, the material then being folded back on itself as at 47 to overlap opposite sides of the contiguous wallboard section 48. The reticulations in this clip permit the plaster to pass therein and to lock the parts firmly in position.

The formation of the frame members, as previously described, provides for the securing between the angles 7 of each pair, blocks of wood or similar material such as 50 (see particularly Figures 9 and 10) which may be secured in position and furnish supports to which various wall trim members may be secured. For example, in Figures 8 and 10, these blocks may be employed for the purpose of securing in position door frames, the frames being nailed or otherwise attached directly to these blocks.

In some cases it may be desired to provide a very thin partition, for example, where the partition is to pass around chimneys, closets, or the like, and where this is desired the partition girders may be arranged as shown in Figure 5 with their angles 7 spaced apart lengthwise instead of crosswise of the locating strips 1 and 2. Where this is done, both of these angles may have their flanges 9 formed with slots to take over the flanges, such as 5 and 6 of the floor and ceiling locating members.

In Figure 6 a further modification is shown in which the built up girder is employed for supporting a ceiling. In this case the angles 7 are arranged horizontally, being supported from a suitable overhead structure as by means of the hangers 55 and angle members joining these girders similar to the angle members 25, shown in Figure 6 at 56, may have secured thereto the metal or other lath 57 for the ceiling itself.

In Figure 18 is shown a partition for a school room made up in accordance with this invention. It will be noted that the angles 7 carry between them the wood blocks 50 to one of which may be secured the chalk tray 60 and the molding pieces 61 of a blackboard shown at 62. The upper moldings 63 for this blackboard may be secured to the top block 50, while the baseboard

65 and its molding may be secured to the lower block 50.

It will be seen from the foregoing description of certain embodiments of this invention that it provides a very flexible building construction readily adaptable to local conditions and in which the upright partition members are so pre-fabricated as to have inherent stability such that no lateral bracing is required during the erection and whereby a large amount of space is available, both in the partition itself, and the floor and ceiling alined therewith, for the passage of conduits, pipes, cables and so forth as may be required in the building. The constructions illustrated in the drawings have been shown by way of example and not of limitation, and it will be evident to those skilled in the art that various changes and modifications and other adaptations may be made without departing from the spirit or scope of this invention as defined by the appended claims.

I claim:

1. A partition comprising oppositely disposed floor and ceiling locating elements each having a single flange projecting toward the other, and members extending between said locating elements each member comprising a pair of spaced parallel angles and connections for holding said angles assembled, one of said angles having a slot at each end for engagement with said flanges.

2. A wall comprising partition locating floor and ceiling members each comprising a single angle element and extensions from one flange of said element for securing said members in position, and transverse girders each having an edge portion secured to the other flanges of said locating members and extending transversely thereof on the side of said extensions, said transverse girders each comprising angle members and transverse bracing elements.

3. A partition comprising spaced skeleton upright transverse girders, and means for securing said girders to the floor and ceiling, comprising longitudinally extending elements along one face only of each girder and to which said girders are secured, and bars extending laterally of said elements at intervals transverse to said partition and secured to said floor and ceiling, respectively.

4. A partition comprising oppositely disposed floor and ceiling locating angle members extending lengthwise of the partition at one side only thereof, one of the flanges of each angle member being arranged substantially parallel to said floor and ceiling, and the other flanges extending toward each other, strips secured at intervals to said parallel angle flanges and extending laterally thereof for securement to said floor and ceiling, respectively, and skeleton transverse upright partition members secured at intervals to said other flanges.

5. A partition comprising oppositely disposed floor and ceiling locating angle members extending lengthwise of the partition at one side only thereof, one of the flanges of each angle member being arranged substantially parallel to said floor and ceiling, and the other flanges extending toward each other, strips secured at intervals to said parallel angle flanges and extending from one edge thereof and laterally thereof for securement to said floor and ceiling, respectively, and skeleton transverse upright partition members secured at intervals to said other flanges and extending therefrom in the same direction as said strips.

6. A partition comprising oppositely disposed floor and ceiling locating elements each having a flange projecting toward the other, and members each comprising a pair of spaced parallel angles and connections for holding said angles assembled, said angles being spaced transversely to said locating elements, and one of said angles of each member having a slotted end to take over one of said flanges.

7. A partition comprising oppositely disposed floor and ceiling locating elements each having a flange projecting toward the other, members each comprising a pair of spaced parallel angles and connections for holding said angles assembled, one of said angles having a slot at its ends for engagement with said flanges, and an extension sleeve telescopically related to one of said angles and having a slot to take over the other of said flanges.

8. A wall comprising a partition locating floor member having an upstanding flange, transverse girders spaced lengthwise of and slotted to receive said flange, a pair of substantially horizontal angle members each having a vertical flange overlapping the edge faces of said girders and horizontal flanges cut away to receive said girders, said angle members being positioned adjacent to each other, and fixture-securing members extending between said angle members.

9. Partition construction comprising a pair of angle members, said members having one flange of each in a plane with a flange of the other and said flanges extending toward each other, the other flanges of said members extending on the same side of said plane, means for fixing said angle members in substantially parallel relation, and a block fitted between said other flanges and said first mentioned flanges and secured thereto, said blocks providing an anchorage for trim for said partition.

10. Partition construction comprising a plurality of upright angle members having spaced apart alined flanges, clips surrounding the other flange of each of said angular members and having parts projecting beyond the outer faces of said alined flanges, and lath board engaging the outer faces of said alined flanges, said projecting parts being shaped to engage the outer faces of said lath board and hold it in position.

11. A partition comprising a supporting frame, lath board secured to said frame and having alined contiguous end edges, and a sheet material piece folded to channel form to engage about one of said end edges, the free edges of said piece being bent backwardly and extended beyond the base of said channel form in position to engage about the contiguous end edge.

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