July 21, 1931. T. A. LUCY 1,815,065

BUILDING CONSTRUCTION

Filed May 25, 1929 3 Sheets-Sheet 1

Fig. 1.

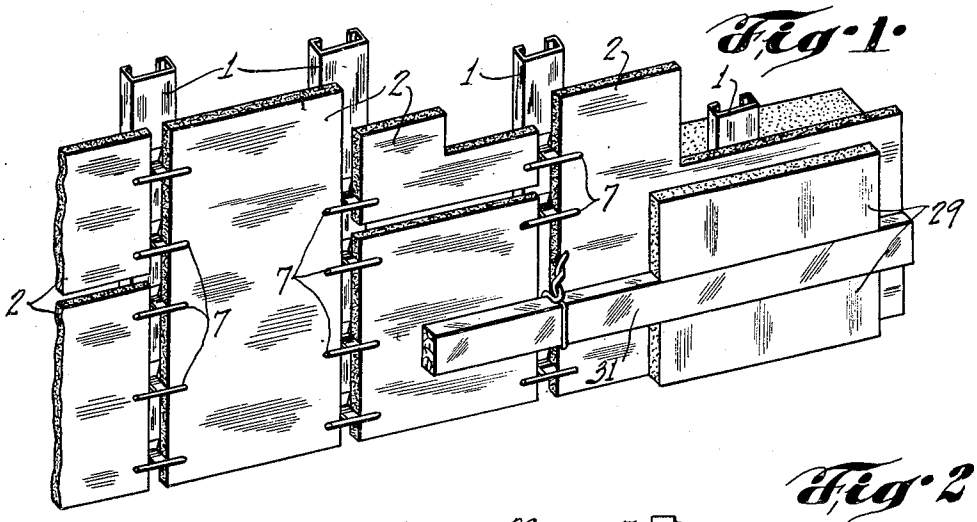



Fig. 2.

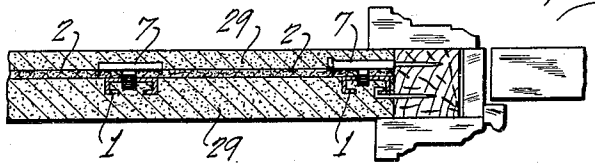
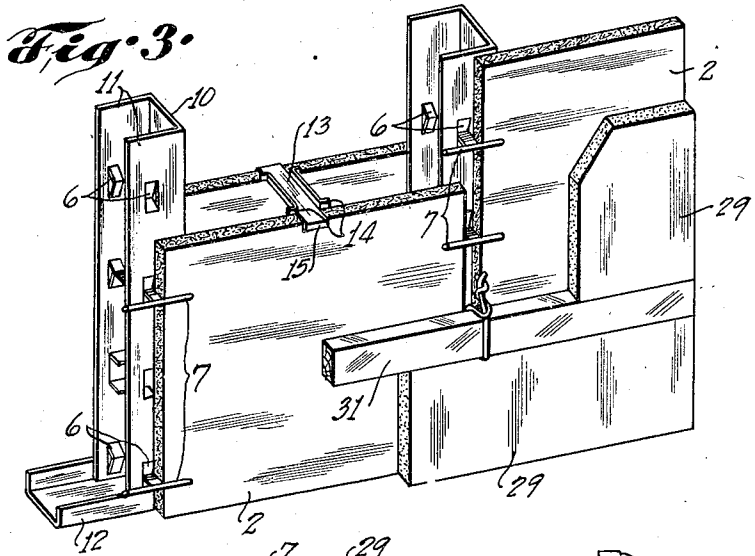



Fig. 3.



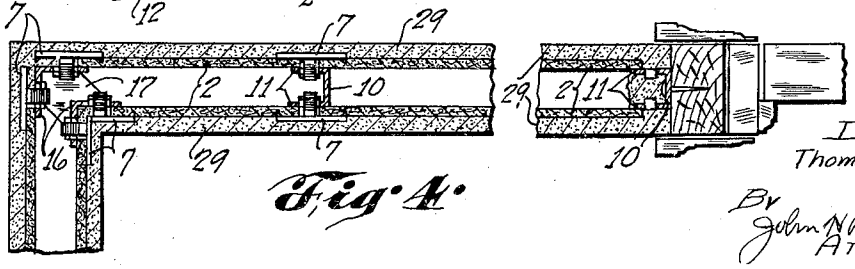




Fig. 4.

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BUILDING CONSTRUCTION

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Fig. 5.

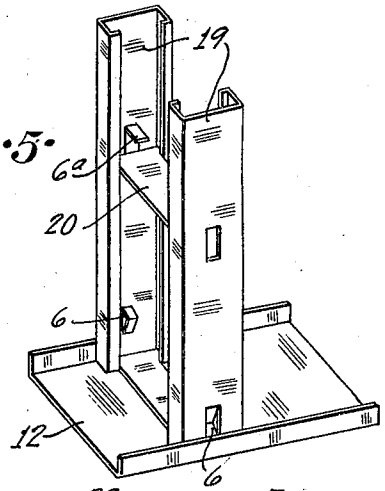



Fig. 7.

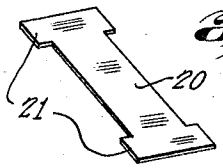



Fig. 6.

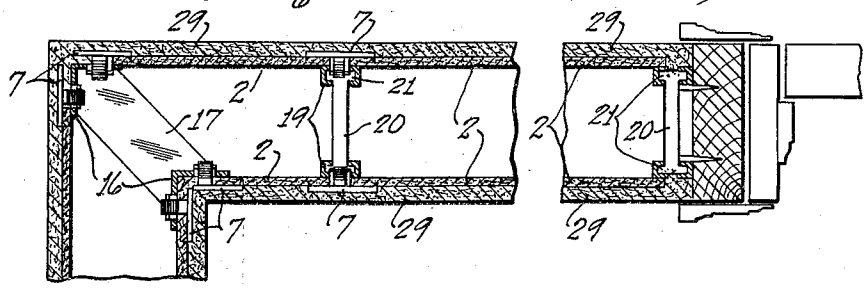
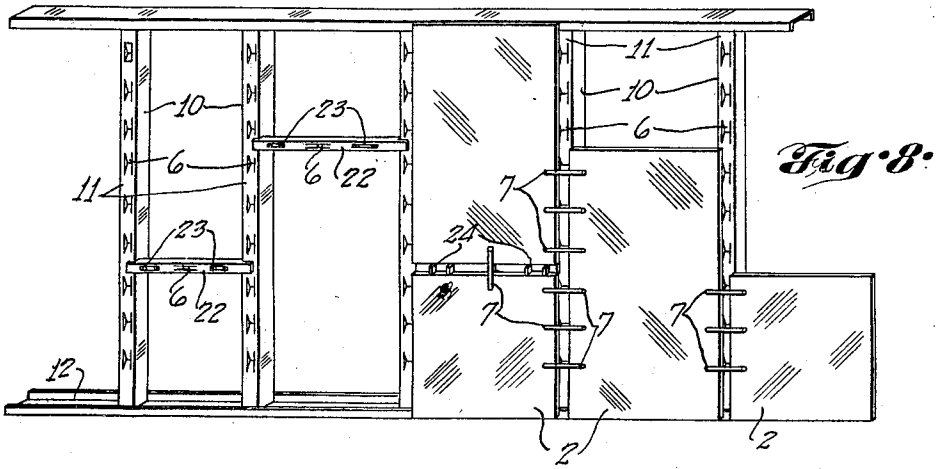



Fig. 8.




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BUILDING CONSTRUCTION

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Fig. 9.

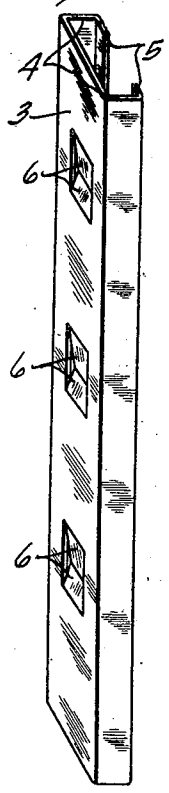



Fig. 10.

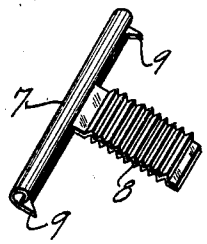



Fig. 11.

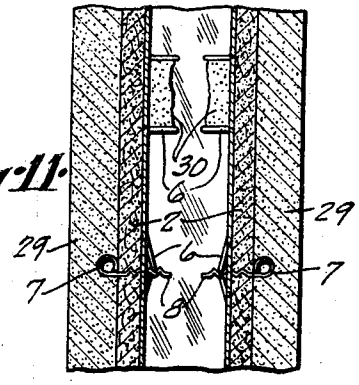



Fig. 12.

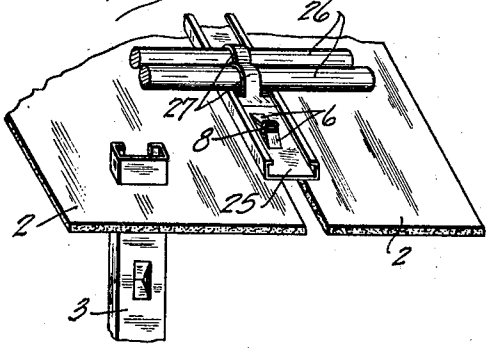



Fig. 13.

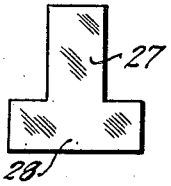



Fig. 15.

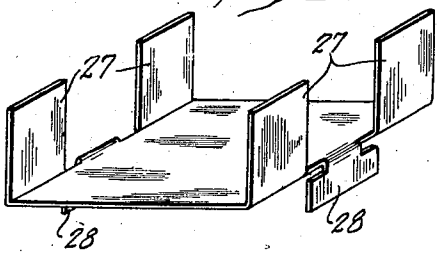
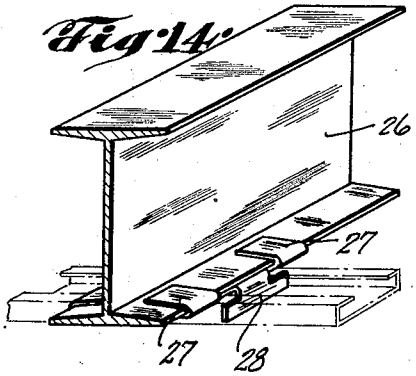



Fig. 14.



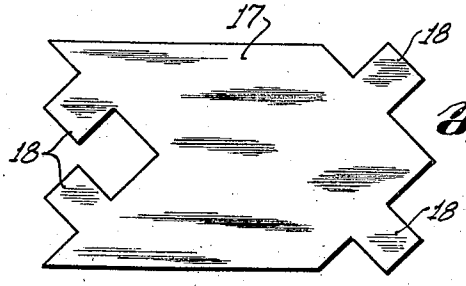




Fig. 16

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# UNITED STATES PATENT OFFICE

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## BUILDING CONSTRUCTION

Application filed May 25, 1929. Serial No. 365,880.

This invention pertains to building construction and more particularly to partition construction by the use of wall board or the like.

One of the objects of this invention is to provide a system of construction in which the wall board may be mounted on suitable studs in such a manner as to dispense with complicated fastening devices.

Another object is to provide a system of construction in which novel means for securing and spacing the sheets of wall board are employed.

Another object is to provide metallic studs for such a system with improved fastening devices whereby the wall board may be quickly and securely fastened to the studs.

Another object is to provide such a system which will lend itself readily to the construction of either solid or hollow partitions as well as of ceilings.

Another object is to provide novel securing devices for securing the wall board in place.

Another object is to provide such a system in which the wall may be plastered over the wall board and which will provide ample means for keying the plaster coating.

Further objects will appear from the following description, taken in connection with the accompanying drawings, in which—

Figure 1 is a perspective view illustrating a solid partition constructed in accordance with this invention;

Figure 2 is a sectional view of part of a similar wall;

Figure 3 is a perspective view, illustrating the construction of a hollow partition in accordance with this invention;

Figure 4 is a section of a hollow partition showing the corner construction;

Figure 5 is a perspective view illustrating the manner of constructing a hollow partition of greater thickness in accordance with this invention;

Figure 6 is a sectional view of a wall constructed in accordance with the plan of Figure 5;

Figure 7 is a detail showing one of the spacing ties used with a construction of Figure 5;

Figure 8 is a perspective view illustrating the arrangement of studs and spacing bars in accordance with this invention;

Figure 9 is a detail of a stud constructed in accordance with this invention, which may be used either for wall or ceiling construction;

Figure 10 is a detail showing one of the securing elements for securing the wall board to the studding;

Figure 11 is a sectional view of a hollow partition constructed in accordance with this invention, showing the manner of securing the wall board and of keying the plaster coat;

Figure 12 is a perspective view showing the construction of a ceiling in accordance with this invention;

Figure 13 is a detail showing a suspension clip which may be used in the construction of Figure 12;

Figure 14 is a detail view showing another method of supporting the ceiling runner of Fig. 12;

Figure 15 is a perspective view showing another clip intended for use in the construction of Figure 14; and

Figure 16 is a detail of the corner separator.

In the construction of partitions by means of wall board which is afterward plastered over, it is desirable to provide means for rapidly setting up the studding and securing the same in proper position and for mounting the wall board thereon and securing the same thereto in a rapid and simple manner. To this end various types of metallic studs have been devised which may be set up and secured in place by various locking devices. Means are provided on the studs for securing the wall board thereto. These means, however, often take the form of projecting pieces or tabs which are drawn or bent outwardly from the stud to secure the plaster board thereto. Such projecting pieces are objectionable as they interfere with the proper handling of the studs and are liable to be broken off in handling and, therefore, not available for use when wanted.

In accordance with this invention, a stud is provided which has no projecting pieces and to which the wall board may be secured with a minimum of manipulation.

Referring to the drawings, more particularly to Figures 1 and 2, a series of studs 1 is mounted in any well known manner so as to receive sheets of wall board 2 to be mounted thereon. The studs 1 may be constructed as illustrated in Figure 9. The studs shown in this figure have a flat face 3, side flanges 4 and inwardly turned flanges 5. The flanges 5 serve to stiffen the side flanges 4 and also to act as locking elements for securing the stud in place, as will be more fully described hereinafter. The stud is provided at intervals therealong with fastening elements, each comprising a pair of wings or tabs 6 cut from the face 3 of the stud and bent inwardly—that is, toward the interior of the angle between the face and flange of the stud. The tabs 6 are bent inwardly only a short distance and are separated only slightly so that their ends are close together and the tabs are in position to form a toggle element.

When the sheets 2 are put in place as illustrated in Figure 1, they may be secured to the studs by means of securing elements 7, such as shown in Figure 10. This element comprises a cross-bar which spans the gap between a pair of sheets 2 and an extension 8, which may be formed of sheet metal and corrugated as shown, so as to provide a series of spaced offsets therealong. At the ends of the bar 7, teeth 9 may be provided to enter the wall board so as to secure the fastener against slipping. These securing elements are applied by placing the cross-bar against the faces of two wall board sheets 2 and passing the rearward extension or shank through the stud 1 between the ends of the wings 6, as illustrated in Figure 11. The extension is drawn back and the corrugations are threaded through the gap between the wings 6 until the cross-bar is pulled tight against the wall board. In thus pulling back the clip, the corrugations are stretched and one of them is positioned to interlock with the ends of the wings 6. Thus the securing element is tensioned so as to hold the wall board resiliently in place and the offset portions interlock with the wings 6. At the same time the wings 6 are in the position of a toggle so that tension on the securing element forwardly will tend to bind the toggle more securely together and lock the securing clip more tightly. This provides a very simple securing element and one which is easily and quickly applied.

In the wall shown in Figure 3, the studs 10 may be provided with broad flanges 11, and the fastening elements 6 may be formed in the side flanges as shown. These studs may be mounted in a sill 12 comprising simply a metallic channel with its flanges turned up, and a plate of similar form may be placed at the top of the partition with its flanges turned down so as to secure the proper alinement and support of the studs.

The sheets of wall board 2 may be applied in the same way as described for Figure 1. In this case, however, sheets may be applied to both faces of the studs 10 so as to provide a hollow partition. The sheets 2 may be supported at intermediate points by means of a separator 13 having upwardly turned flanges extending therealong as shown. These flanges have tabs 14 adapted to bear against the inner face of the wall board and a tab 15, which may be bent downwardly over the front face of the wall board so as to secure the same in place.

Figure 4 shows the manner in which the corners are constructed. In this case the corner studs 16 have a simple angle section and are held in spaced relation by a spacer 17 of the form shown in Figure 16 and having tabs 18 adapted to enter the openings at the fastening elements 6 to be bent over on the other side of the stud so as to hold the two studs securely in spaced relation.

In the construction shown in Figure 5, a pair of studs 19 of the form shown in Figure 9 is placed back to back in a sill 12 of channel form. These studs are held in spaced relation by means of a separating tie 20 having a T-head 21 at each end thereof. The T-heads 21 are dimensioned to fit within the flanges of the studs so as to secure the same together. In order to support the ties 20, the wings 6 of a pair of fastening elements are bent inwardly at right angles to the stud as shown at 6*a*, Figure 5, and the spacer 20 is placed upon the in-turned tab. The wall board is secured to the studs in the manner already described.

In Figure 8 is shown a partition similar to that of Figure 3, in which the studs 10 are accurately spaced by means of cross members 22. The members 22 may be provided with simple tabs 23, which may be bent outwardly at right angles to the member 22 so as to stand edgewise between two sheets of wall board, as illustrated at 24. The cross members 22 may also be provided with fastening members 6 as already described. In this partition, the cross member 22 provides both for spacing the sheets of wall board and for securing the same in place.

Ceilings may be constructed in a manner practically identical with that of the partitions already described. As shown in Figure 12, a stud 25, preferably of the form shown in Figure 9, is secured to a bar joist or other support 26. The fastening may be made by means of a clip 27 having a T-head 28, as shown in Figures 12 and 13. The T-head is interlocked with the flanges of the stud, as shown, and the shank of the clip is bent over the lower chord of the bar joist as illustrated in Figure 12. Where the studs 25 are to be secured to I-beam supports, a clip such as illustrated in Figure 15, may be applied as shown in Figure 14. The sheets 2

of the wall board are applied to the studs 25 in the same manner as for a partition and held in place by securing elements 7 engaging the fastening elements 6 in the manner described.

It will be seen that this invention provides a system of partition wall construction which lends itself in a simple manner to the construction of any type of partition wall. The metallic studs are of simple angular section and may be made of comparatively light gauge metal so that they are light and yet sufficiently strong and stiff to make a rigid partition. The fastening elements 6 are so constructed that the parts are bent inwardly in forming the same. Accordingly, no outward projections are found on the studs, and on this account handling is greatly simplified and the danger of injuring the fastening elements in handling is obviated.

When the wall boards are all in place, a coat of plaster 29 may be applied to each face of the wall. Prior to this, the wings 6, which are not in use as fastening elements, may be bent inwardly substantially at right angles to the stud so that the openings so made will admit the entrance of plaster to form keys 30 as illustrated in Figure 11. The inwardly bent wings 6 serve to support the plaster of these keys until the same has set. Wooden grounds 31 may be secured to the studs in any suitable manner, as by wiring thereto prior to plastering.

A partition may thus be built which is very rigid, but which at the same time is very light and very easily and rapidly constructed. Either single or double partitions may be constructed with the same equipment. No special tools are necessary.

While the invention has been described as a complete unitary system, certain individual features may be used alone independently of the remainder of the system, and the employment of such sub-combinations is contemplated by this invention and is within the scope of the appended claims. It is further obvious that various changes may be made in the details of construction, within the scope of the appended claims, without departing from the spirit of this invention. It is, therefore, to be understood that this invention is not be limited to the specific details shown and/or described.

Having thus described the invention, what is claimed is:

1. In a partition wall construction of the character described, a supporting frame member of angular section having a face thereof provided with a fastening element extending inwardly of said angle, a sheet of wall board positioned against said face, and means cooperating with said fastening element to secure said board in place.

2. In a partition wall construction of the character described, a supporting frame member of angular section having a face thereof provided with a fastening element extending inwardly of said angle, a sheet of wall board positioned against said face, and resilient means cooperating with said fastening element to secure said board in place.

3. In a partition wall construction of the character described, a supporting frame member of angular section having a face thereof provided with a fastening element extending inwardly of said angle, a sheet of wall board positioned against said face, and a securing device constructed to interlock with said fastening element and adapted to secure said board in place.

4. In a partition wall construction of the character described, a supporting sheet-metal frame member of angular section having a face, a portion of which is bent inwardly of said angle to provide a fastening element, a sheet of wall board positioned against said face, and means cooperating with said fastening element to secure said board in place.

5. In a partition wall construction of the character described, a supporting frame member of angular section having a face having a pair of wings cut therefrom and bent inwardly of said angle to provide a fastening element, a sheet of wall board positioned against said face, and means cooperating with said fastening element to secure said board in place.

6. In a partition wall construction of the character described, a supporting frame member of angular section having a face having a pair of wings cut therefrom and bent inwardly of said angle to form a fastening toggle, a sheet of wall board positioned against said flat side and a securing element cooperating with said toggle to secure said sheet in place.

7. In a partition wall construction of the character described, a supporting frame member of angular section having a face thereof provided with a fastening element extending inwardly of said angle, a sheet of wall board positioned against said face, and a securing element having a resilient extension cooperating with said fastening element to secure said sheet in place.

8. In a partition wall construction of the character described, a supporting frame member of angular section having a face having a pair of wings cut therefrom and bent inwardly of said angle to form a fastening toggle, a sheet of wall board positioned against said flat side and a securing element having a resilient extension engaging said toggle to secure said sheet in place.

9. In a partition wall construction of the character described, a supporting frame member of angular section and provided with a toggle fastening element extending inwardly of said angle, a sheet of wall board posi-

tioned against said member, and a securing element engaging said toggle to secure said sheet in place.

10. In a partition wall construction of the character described, a supporting frame member of angular section and provided with a fastening element extending inwardly of said angle, a sheet of wall board positioned against said member, and a securing element having an extension adapted to interlock with said fastening element.

11. In a partition wall construction of the character described, a supporting frame member of angular section and provided with a fastening element extending inwardly of said angle, a sheet of wall board positioned against said member, and a securing element having an extension provided with an offset portion adapted to interlock with said fastening element.

12. In a partition wall construction of the character described, a supporting frame member of angular section and provided with a fastening element extending inwardly of said angle, a sheet of wall board positioned against said member, and a securing element having a corrugated extension adapted for interlocking engagement with said fastening element.

13. In a partition wall construction of the character described, a pair of supporting frame members each of angular section and having formed thereon a fastening element, and a locking element extending between said members to interlock therewith and supported by said fastening elements.

14. In a partition wall construction of the character described, a pair of supporting frame members each of angular section and having formed thereon a fastening element, and a locking element extending between said members to interlock therewith, said fastening elements being bent inwardly to support said locking elements.

15. In a partition wall construction of the character described, a pair of supporting frame members, a sheet of wall board secured to said members, and a cross member extending between said frame members and having parts interposed between said sheets to separate the same.

16. In a partition wall construction of the character described, a pair of supporting frame members, a sheet of wall board secured to said members, and a cross member extending between said frame members and having parts interposed between said sheets to separate the same, said cross member having a perforation to receive a plaster key.

17. In a partition wall construction of the character described, a pair of supporting frame members, a sheet of wall board secured to said members, and a cross member extending between said frame members and having an inwardly extending fastening element, and a securing element engaging said sheet and interlocking with said fastening element.

In testimony whereof I affix my signature this 6th day of May, 1929.

THOMAS A. LUCY.