Jan. 9, 1940. M. THOMPSON 2,186,461

PREFABRICATED BUILDING

Filed May 7, 1938

Fig. 1.

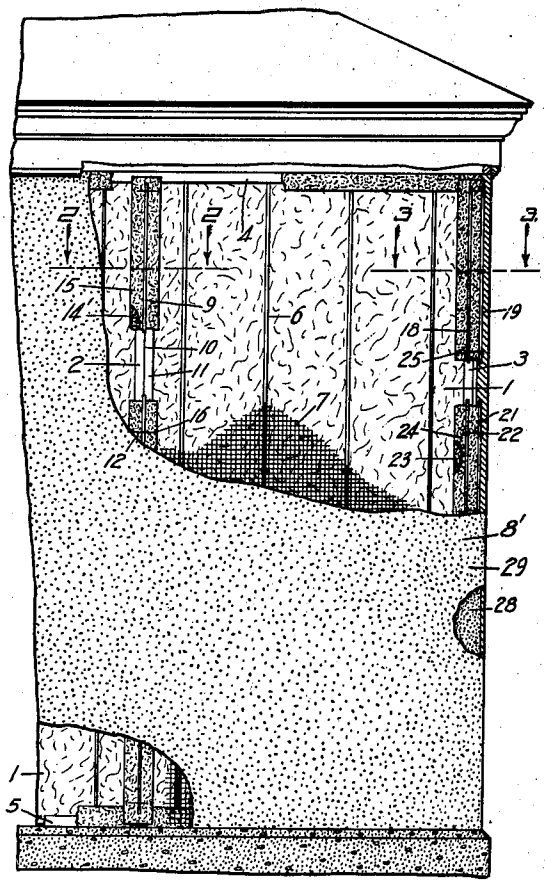


Fig. 3.

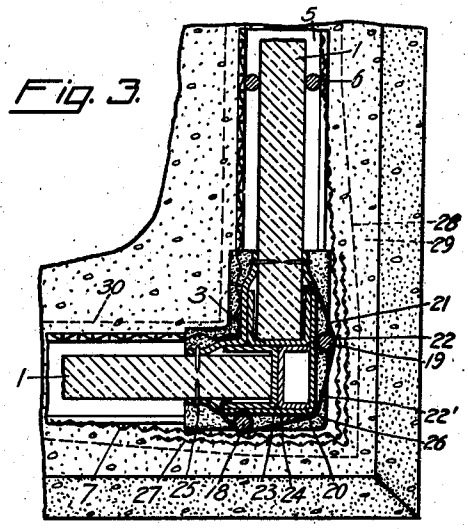


Fig. 5.

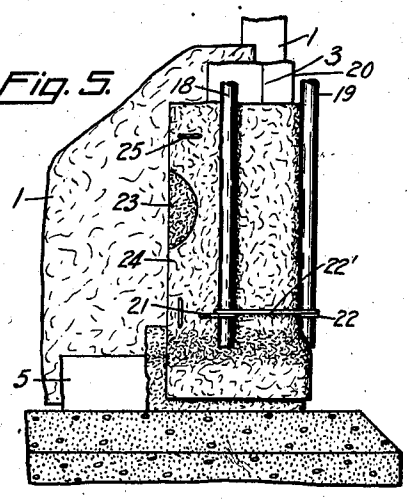


Fig. 4.

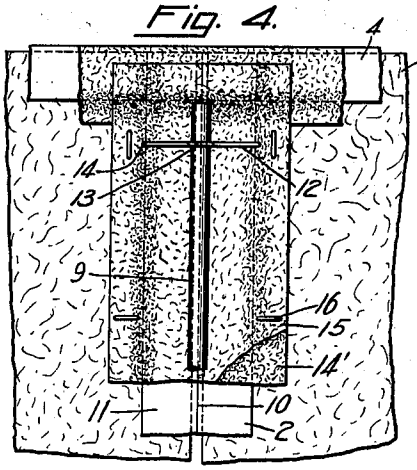
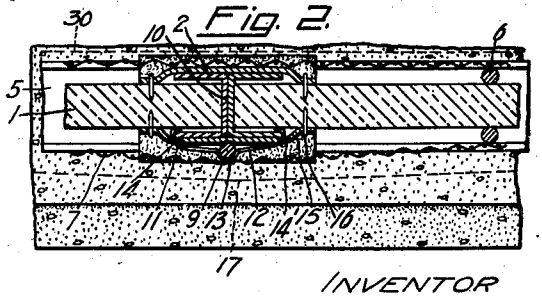


Fig. 2.



INVENTOR
Marcus Thompson

By Marcus Thompson
ATTORNEY

Patented Jan. 9, 1940 2,186,461

UNITED STATES PATENT OFFICE

2,186,461

PREFABRICATED BUILDING

Marcus Thompson, Harrisville, R. I., assignor to Austin T. Levy, Harrisville, R. I.

Application May 7, 1938, Serial No. 206,649

14 Claims. (Cl. 72—16)

My invention relates to prefabricated buildings.

It has heretofore been proposed to construct the walls of such buildings of a metallic marginal frame including channeled corner and intermediate studs, with insulating panel members set in the several channels and carrying reenforcing rods, and with wire mesh disposed outside the rods and over the studs between adjacent rods, and cementitious material covering the wire mesh and clinched thereby. However, in such walls some difficulty has been experienced with cracking of the cementitious material, it being found that cracks occasionally appear at the studs and work upward from the bottom of the wall along the studs.

My invention has among its objects to eliminate this difficulty. A further object is to provide an improved construction wherein the wire mesh is supported and spaced in an improved manner where it passes over the studs, in such manner as to produce more effective clinching of the cementitious material over the studs. Still further objects of my invention are to provide an improved construction and arrangement of reenforcing rods and wire mesh directly over the intermediate studs, and a further improved construction and arrangement of these rods and mesh over the corner studs. Still other objects of my invention are to provide improved means for connecting the above rods so disposed, improved means for protecting the external stud insulating strips, improved means for forming a square corner, and an improved method of applying the cementitious coatings. These and other objects of my improvements will, however, hereinafter more fully appear.

In the accompanying drawing I have shown, for purposes of illustration, one embodiment which my invention may assume in practice.

In this drawing:

Figure 1 is a side elevation of a corner of a building equipped with my improvements, portions of the wall and stud structure being broken away to facilitate illustration;

Fig. 2 is a detailed section on line 2—2 of Figure 1, showing the construction at an intermediate stud with the anchoring material applied thereto;

Fig. 3 is a similar section on line 3—3 of Figure 1, showing the construction at a corner stud with the anchoring material applied thereto;

Fig. 4 is an enlarged side elevation of the upper end of an intermediate stud equipped with my improvement, the wire mesh being omitted, and

Fig. 5 is a view similar to Figure 4 but of the lower end of a corner stud equipped with my improvement.

In this illustrative construction, I have shown a building having insulating panels 1 carried in a metallic marginal frame including oppositely disposed channeled intermediate studs 2 and right angled channeled corner studs 3, these studs being set between a channeled plate 4 and channeled sill member 5 and having the panels 1 set between the studs and carrying on their opposite faces usual vertical, spaced, reenforcing rods 6 spacing metallic anchoring material 7 in the form of continuous sheets of wire mesh on which plaster and stucco 8, 8' is suitably clinched on the opposite faces of the wall; the structure over the intermediate studs 2 and corner studs 3 herein being improved, as hereinafter more fully described.

Referring first to my improved structure applied to the intermediate studs 2, it will be observed that improved spacing and reenforcing means are applied outside the studs. These herein are in the form of an additional vertical rod 9 which extends longitudinally of the studs on the outside thereof opposite the junction 10 between the oppositely extending connected channels comprising these studs. In a preferred construction, this rod 9 has its extremities opposite the edges of the plate and sill channels 4, 5, and is suitably connected to the front face 11 of the stud 2 at vertically spaced points along the latter. Herein, improved connecting means are also provided in the form of a series of wire clips 12 each having a middle portion 13 conforming to the rod 9 and welded thereto and side portions sloping away oppositely therefrom and having inwardly bent ends 14 extending around the opposite edges of the front face 11 of the stud 2. Further, it will be noted that as in a preferred construction, wherein the through connected members of the marginal frame are covered with felt or felt and paper, a felt strip 14' covers the front or outer face 11 of the stud 2 and is, in turn, covered by a water-proof paper strip 15, both the strips 14 and 15 being suitably connected to the adjacent panels 1, as, for example, by staples 16, at points beyond the edges of the portion 11. Herein, the rod 9 is disposed outside of and engages the paper strip 15 and the clips 12 have their ends extended through the paper and felt and bent around the edges of the portion 11, as indicated. Further, it will be observed that the wire mesh 7 is carried over the rods 9 and clips 12, as illustrated in Figure 2. Thus, it will be

observed that, instead of the wire mesh 7 between the adjacent rods 6 being free to be disposed, as heretofore, close to the outer surface of the paper 15 which protrudes beyond the surface of the panel 1, the portion of the wire mesh overlying the stud 2 is deflected at each stud 2, as shown at 17, in such manner as to conform generally to the outer portions of rods 9 and clips 12, and thereby enable a long lived coating to be obtained, as well as effective clinching and a stronger structure.

In Figure 3, I have shown my invention adapted to use in connection with a corner stud 3. There, it will be noted that a plurality of such additional rods is used, the same being shown at 18 and 19, and spaced at equal distances from the corner edge 20 of the corner stud. Here, clips 21 corresponding to the clips 12, are also connected at their ends over the edges of the sides of this corner stud, which are disposed at right angles to one another. Each of these clips 21 is also given a single turn 22 around each of the rods and welded thereto and each clip also has an intermediate portion 22' bent around the edge 20. As shown, this edge 20 is also spaced from the clip by felt and paper strips 23, 24, corresponding to the strips 14', 15 and likewise connected to the panels 1 on opposite sides of the corner by staples 25. Also, it will be observed that the wire mesh 7 is first spaced from the corner stud by a rod, as for example, the rod 19. It is then passed parallel to the adjacent face of the stud, and spaced therefrom, to a square turn or corner, illustrated at 26 and spacing the mesh from the clips 21 and corner 20. The disposition of the parts on the other side of the stud 3 and its corner 20 being similar, like deflected portions of the mesh are produced, one on each side of the squared corner 26. Thus, at each corner stud 3, I am also enabled to obtain markedly more effective clinching and also to obtain a strong and clean cut corner. Preferably, I also provide at each corner 26 of the mesh, an additional strip 27 of wire mesh on the outside of the mesh 7 and conforming thereto and also extending beyond the rods 18, 19, this structure even further increasing the possible clinching of the cementitious material around the corner, while further increasing the strength and insuring a square corner without requiring such accurate squaring up of the inner corner 26.

In the use of my improved construction, after the wire mesh is applied, herein including not only the continuous mesh 7, but the additional corner strip 27, the cementitious material is applied. In a preferred method, this material is applied, as a first coat, to produce a coating indicated in dotted lines at 28, which it will be noted has swelled or protruded portions as a result of the use of the rods 9, 18 and 19. After this first coat has dried, a second coat 29, which may be a colored coat, is preferably applied in such manner as to bring the outer coating to uniform thickness. Also, it will here be noted that the inside or plaster coating, indicated in dotted lines at 30, is of uniform thickness and that no such rods 9, 18 and 19 are used in connection therewith, it being found in practice that where my improvements are used, no change is necessary on the inner surface of the wall.

As a result of my improvements, it is found that a markedly stronger and longer lasting wall is produced and one wherein the difficulty with cracking over the studs, heretofore experienced, is effectually overcome. This is due, it is believed, not only to the additional reenforcement provided by the rods, but to the more effective clinching arising from the use of the wire mesh over these rods. At the same time that my improved construction makes it possible to eliminate shallow clinching zones at the studs, it will also be noted that the cementitious material is so disposed as to minimize pressure on the felt and paper, or wetting of the former, in such manner as to maintain maximum heat insulating effectiveness. Other advantages of my improvements will also be clearly apparent to those skilled in the art.

While I have in this application specifically described one embodiment of my invention, it will be understood that the same has been chosen for purposes of illustration, and that the invention may be modified and embodied in other forms without departing from its spirit or the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent is:

1. In a prefabricated building, a frame presenting panel apertures having a stud between the same, panels in said apertures, anchoring material spacing means along said stud, and anchoring material overlying said panels having a deflected portion spaced by said spacing means from said stud.

2. In a prefabricated building, a frame presenting panel apertures having a stud between the same, panels in said apertures, insulating means extending along the outside of said stud, anchoring material spacing means outside said insulating means, and anchoring material overlying said panels having a deflected portion spaced by said spacing means from said insulating material.

3. In a prefabricated building, a frame presenting panel apertures having a stud between the same, panels in said apertures, anchoring material spacing means along said stud connected thereto at spaced points along said stud, and anchoring material extending over said panels and stud and spaced by said spacing means from said stud.

4. In a prefabricated building, a frame presenting panel apertures having a stud between the same, panels in said apertures, anchoring material spacing means along said stud, and holding clips spaced along said stud for connecting said spacing means to said stud.

5. In a prefabricated building, a stud between panel apertures, an anchoring material spacing rod extending along said stud, holding means for said rod spaced along the latter and fixed thereto and connected to said stud, and anchoring material overlying said panels and stud and spaced laterally from said stud by said rod.

6. In a prefabricated building, a stud between panel apertures comprising oppositely disposed channels, a reenforcing rod extending along said stud intermediate the edges thereof, and holding clips for said rod spaced along the latter having intermediate portions engaging said rod and bent ends hooked around the edges of said channels.

7. In a prefabricated building, a stud between panel apertures comprising oppositely disposed channels, a reenforcing rod extending along said stud intermediate the edges thereof, holding clips for said rod spaced along the latter having intermediate portions engaging said rod and end portions engaging said stud, and insulating sheet means between said rod and stud through which the ends of said clips are extended.

8. In a prefabricated building, a corner stud between panel apertures and having angularly disposed faces, anchoring material spacing means on said angularly disposed faces of said stud, and anchoring material enclosing said stud and spaced therefrom by said spacing means.

9. In a prefabricated building, a corner stud between panel apertures and having angularly disposed faces, anchoring material spacing means on said angularly disposed faces of said stud, anchoring material enclosing said stud and spaced therefrom by said spacing means, and insulating means between said spacing means and stud.

10. In a prefabricated building, a corner stud having a corner portion and angularly disposed side portions, insulating material extending around said stud, spacing rods spaced from the corner of said stud and outside said angularly disposed portions and insulating material, and common means for connecting said rods to said stud.

11. In a prefabricated building, a corner stud having a corner portion and angularly disposed side portions, insulating material extending around said stud, spacing rods spaced from the corner of said stud and outside said angularly disposed portions and insulating material, and clips spaced along said rods and extending through said insulating material for connecting said rods to said stud.

12. In a prefabricated building, a wall structure including studs presenting panel apertures, panels in said apertures, anchoring material spacing means disposed in different planes overlying the outer faces of said panels and said studs, and anchoring material having portions overlying said panels and substantially parallel thereto and intermediate portions deflected outward from said studs by said spacing means overlying the latter.

13. In a prefabricated building, a wall structure including studs presenting panel apertures, panels in said apertures, anchoring material spacing means disposed in different planes overlying the outer faces of said panels and said studs, anchoring material having portions overlying said panels and substantially parallel thereto and intermediate portions deflected outward from said studs by said spacing means overlying the latter, and insulating means between said last mentioned spacing means and studs having said anchoring material spaced therefrom by said spacing means.

14. In a prefabricated building having a corner stud and panels positioned thereby, anchoring material spacing means on said corner stud, anchoring material spaced by said spacing means, and a bent corner forming sheet of anchoring material spaced from said stud at the corner thereof and overlying said spacing means.

MARCUS THOMPSON.