Jan. 11, 1938. J. A. WETHERBEE 2,104,876

PREFABRICATED BUILDING

Filed March 4, 1937

Fig. 1.

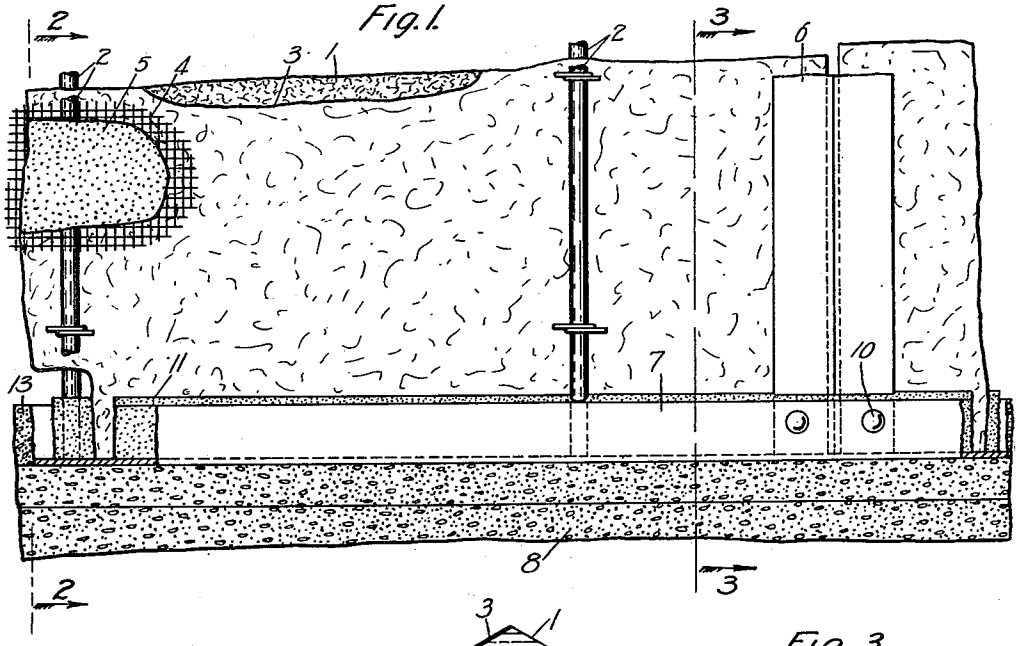


Fig. 2.

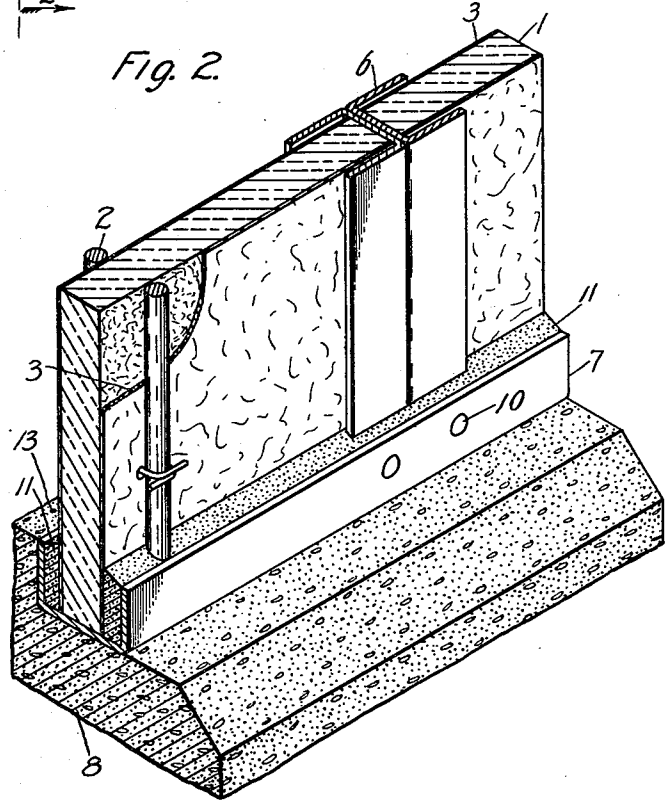
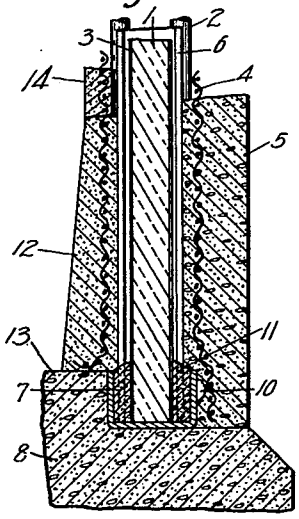


Fig. 3.



INVENTOR
John A. Wetherbee

By

ATTORNEY

Patented Jan. 11, 1938 2,104,876

UNITED STATES PATENT OFFICE

2,104,876

PREFABRICATED BUILDING

John A. Wetherbee, Harrisville, R. I., assignor to Austin T. Levy, Harrisville, R. I.

Application March 4, 1937, Serial No. 129,095

9 Claims. (Cl. 72—1)

My invention relates to prefabricated buildings.

It has previously been proposed to form the walls of such buildings of panel units comprising insulating panel boards covered with waterproof paper and carrying on their opposite faces reenforcing rods, and to mount these panels in a frame presenting panel apertures and comprising studs in the form of oppositely disposed channel members, and cooperating upper and lower channel members connected to and receiving the opposite ends of the studs and including a top channel plate and bottom channel member upstanding from the foundation, the edges of the panel board being received in the several channel members and the opposite ends of the rods also being received in the upper and lower channel members between the board and the channel flanges. However, it has been found in practice, after these panels and the frame have been covered with anchoring material, usually in the form of wire mesh, and the latter has been subsequently encased in cementitious material, such as stucco on the outside and plaster on the inside, that there is occasionally an abnormal and persistent damp area along the bottom of the panel and extending a short distance upward therefrom, and also occasionally a like damp area on the top of the interior of the foundation wall and extending inward from the bottom channel over the top of the wall foundation and down the inside face thereof.

My invention has among its objects to eliminate these difficulties. A further object of my invention is to provide an improved construction at the lower edge of the panel, whereby the lower horizontal cut edge of the panel board, which I find, if formed of Insulite or other like material, readily absorbs liquid, not only is effectually sealed off, but whereby it is also made possible to prevent the retention of liquid in the lower channel member and any consequent wick action by the insulating board, tending to draw any liquid in the channel up into the board, as well as any subsequent seepage over the foundation. A still further object of my invention is to provide an improved method of erecting such walls whereby the previously described difficulties with dampness creeping up the panel or over the interior of the foundation, are effectually overcome in a simple and inexpensive manner. These and other objects and advantages of my improved construction 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 the drawing:—

Figure 1 is a side elevation of the bottom of a wall constructed in accordance with my improvement, a portion of the side of the panel board being shown exposed and the remainder thereof covered with the usual waterproof paper, except for a small portion which is shown as covered with the anchoring material and stucco outside the latter, a portion at the bottom of the channel also being broken away to facilitate illustration;

Fig. 2 is a perspective view of the lower edge of the wall structure carried on the foundation as it appears after filling the bottom channel and before any further steps, the end of the structure being shown in section on line 2—2 of Figure 1, and

Fig. 3 is a detail section on line 3—3 of Figure 1, but also showing the completed wall.

In this illustrative construction, it will be understood that the panels used are of a well-known construction, including an insulating board 1, such as Insulite or the like, having vertical reenforcing rods 2 in spaced relation on opposite sides thereof, waterproofing paper 3 preferably being disposed between these rods and the board 1, and anchoring means 4 in the form of any suitable wire mesh being preferably subsequently applied and spaced from the board 1 and paper 3 by the rods 2, while cementitious material 5 is carried on the anchoring material 4. Further, it will be understood that adjacent panels have their vertical edges disposed in upright studs 6 comprising oppositely disposed channels having their upper edges disposed in upper channel members, not shown, and their lower edges disposed in lower upstanding channel members 7 carried on the foundation 8, the lower ends of the rods 2 also being disposed within the upright flanges of the channel 7 and the latter also being suitably connected as by suitable connecting means 10 to the channels 6.

My improvements comprise an improved construction at the bottom of the wall and associated with the bottom channel 7, the bottom edge of the panel board 1, and the lower stud and rod ends. Here it will be noted that instead of leaving the space between the bottom edge of the panel and the upstanding flanges of the channel 7 empty save for such particles of cementitious material as may find their way into the same through the anchoring material, I fill this space. Also, I do this at a new stage in the erection of the wall, while also utilizing a waterproof filling

material applied in an improved manner and performing new functions. More particularly, note that I not only seal off the bottom liquid absorptive cut edge of the board 1, but that I also fill the previously empty space in the channel, in such manner as, not only to cause any liquid therein to be expelled during erection, but also to prevent any later accumulation of liquid therein, and that this is done at a new stage in the erection of the wall. Thus, in my improved construction, after the paper covered panel board with the rods thereon has been inserted in the frame, with its bottom edge and rods in the position illustrated in Figure 1, and preferably before the anchoring material 4 is applied to the panel, I pour a suitable hot waterproofing adhesive liquid which will harden as it cools while still remaining elastic, such, for example, as hot asphalt, into the channel along the bottom of the board 1, to form an enclosing and sealing means for the bottom edge thereof. As a result, I am able not only to seal off the absorptive cut bottom edge of the board 1 and the adjacent portions of the cut vertical edges of the latter, but also to dry the lower edge of the board and cause any water in the channel to be expelled, the water bubbling out as the hot material is poured in. Further, I preferably continue this pouring operation until the spaces between the channel flanges and each side of the panel are filled to the top of the channel 7 as indicated at 11, in such manner as thereby to prevent any later entry of liquid or its accumulation in the channel. Then the anchoring material 4 is applied in the usual manner, as shown in Fig. 3, with the lower edges of the outer wire extending down over the outer face of the outer channel flange and the inner wire terminating at the top of the inner channel flange. Thereafter, I also preferably cover a narrow area along the bottom of the inside wire 4 with grout or other suitable dry mixed cementitious material, as indicated at 12, in such manner as thereby to form a thin upper continuation of the flange 13, which is usually provided on the inside of the foundation 8 and extends to the top of the inner channel flange, this continuation 12 preferably extending clear around the inside of the foundation along the bottom of the walls adjacent the foundation. Thus, an even further obstacle to the passage of liquid into the interior of the building is provided, the outer and inner coatings of stucco 5 and plaster 14 preferably not being applied until after this wall 12 of grouting has thoroughly dried.

As a result of my improvements, it is found that even under the most adverse conditions, as when the panels are inserted in channels filled with water following a rain, the water which is in the channel is quickly and effectively removed by prompt pouring of the hot waterproofing liquid, and that later difficulty with dampness at the bottom of the panel is not experienced. Further, with the hot liquid poured in along each edge of the channel promptly following the insertion of the panel in the channel, the subsequent entry of water, resulting, for example, from a rain before the cementitious coatings are applied or the roof is put on, is effectually prevented, the water running down the waterproofed sides of the board and being prevented from accumulating in the bottom channel and causing wicking in the board, as heretofore. Further, by pouring in the liquid before the anchoring material is applied, the process of pouring the same in is materially facilitated. However, it will be evident that where large mesh screening is used, the liquid can, if desired, be poured in after the application of the screen. Further, where the mesh is small and is carried upon the panel as a part of the panel unit when the latter is assembled, the lower end of the mesh may of course also be bent up out of the way during pouring if necessary. As a result of sealing off the channel, as described, i e. before applying the supplementary grout, and also permitting the latter to dry, before applying the cementitious material, it is also made possible further to minimize dampness and to expedite drying of the cementitious coating when applied. Further, the lower ends of the reenforcing and spacing rods and the studs are very securely positioned by the waterproofing material as it hardens, in such manner as thereby even further to strengthen and stiffen the wall. These and other advantages of my improvements will, however, 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 this is chosen for purposes of illustration, and that the invention may be modified 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 foundation, a panel frame thereon including a bottom channel, a panel in said frame having its bottom edge in said channel, and waterproofing means in said channel and in which the lower edge of said panel is embedded, for sealing said edge.

2. In a prefabricated building, a foundation, a panel frame thereon including a bottom channel, a panel in said frame having its bottom edge seated in said channel and spaced at each side from the inner walls thereof, and waterproofing means in the spaces between each side of said panel and said channel for sealing the lower edge of said panel and preventing the accumulation of liquid in said channel.

3. In a prefabricated building, a foundation, a panel frame thereon including a bottom channel, a panel in said frame having its bottom edge seated in said channel, and elastic waterproofing means in said channel in which the lower edge of said panel is embedded, said panel having a liquid absorptive lower edge and said waterproofing means sealing said edge and substantially filling said channel.

4. In a prefabricated building, a foundation, a panel frame thereon including a bottom channel, a panel in said frame having its bottom edge seated in said channel and spaced from an inner wall thereof, waterproofing means in the space between said panel and said channel and sealing the lower edge of said panel, and anchoring material spacing means on said panel and embedded in said waterproofing means and positioned thereby.

5. In a prefabricated building, a foundation, a panel frame thereon including a bottom channel and a channeled stud having its lower end seated in said channel, a panel in said frame having its bottom edge seated in said channel and spaced from the inner walls thereof and its vertical edge received in said channeled stud, and waterproofing means in said channel in which the bottom of said panel is embedded, for sealing the lower edge of said panel and the portion of the vertical edge thereof entering said channel.

6. In a prefabricated building, a foundation, a panel frame thereon including a bottom chan-

nel, a panel in said frame having its bottom edge seated in said channel and spaced from the inner walls thereof, and waterproofing means in the space between each side of said panel and said channel sealing the lower edge of said panel, said panel carrying reenforcing and anchoring material spacing rods and said frame also including a channeled stud seated in said channel and enclosing the vertical edge of said panel, the lower ends of both said rods and stud being embedded in said waterproofing material.

7. In a prefabricated building, a foundation, a panel frame thereon including a bottom channel, a panel in said frame having its lower edge seated in said channel walls thereof, waterproofing means in said channel and in which the lower edge of said panel is embedded, for sealing said edge, anchoring material spacing means carried by said panel, anchoring material spaced by said spacing means and overlying the outer faces of said panel, and coatings of cementitious material clinched by said anchoring material.

8. The method of erecting walls of prefabricated buildings including a panel board and a channel receiving the bottom edge thereof, which consists in, assembling said panel in said channel, sealing the bottom edge of said board in said channel, applying a clinched coating of dry mixed cementitious material enclosing the inner leg of said channel and the adjacent portion of said panel, and after said coating has dried applying clinched coatings of cementitious material to the remainder of the inside and on the outside of said panel and channel.

9. The method of erecting prefabricated buildings which consists in, providing an upstanding bottom channel on the foundation, disposing studs and spacing means carrying panels in said channel with the spacing means and lower stud ends inside the channel, filling the spaces on each side of said panel and between said spacing means and studs with hot waterproofing liquid to drive out any liquid in said channel and seal the lower edge of said panel, applying anchoring material spaced by said spacing means and overlying the outer face of said channel, applying a coating of dry mixed cementitious material to said anchoring material along the bottom of the lower inner side of said panel and the inner leg of the channel, and after said coating dries applying cementitious material to the remainder of said anchoring means.

JOHN A. WETHERBEE.