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2,748,592

BUILDING CONSTRUCTION

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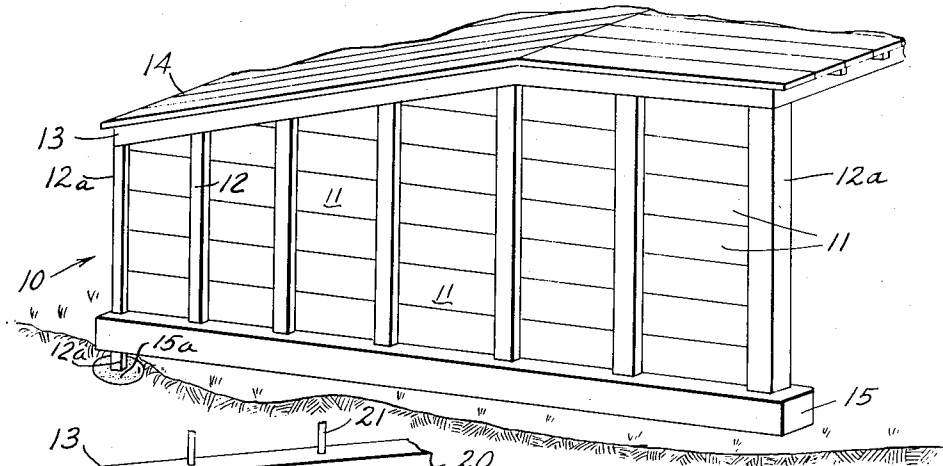


Fig. 1.

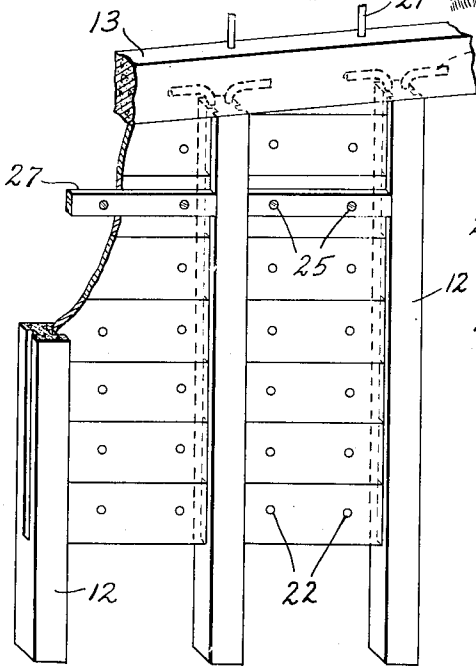


Fig. 2.

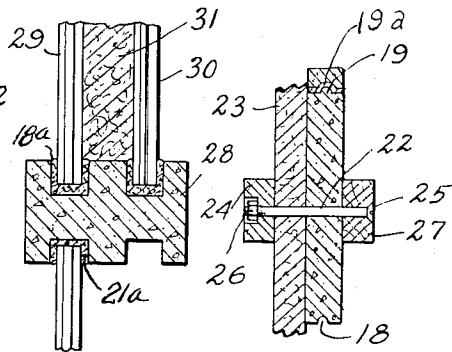


Fig. 5. Fig. 3.



Fig. 4.

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BUILDING CONSTRUCTION

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1-Claim. (Cl. 72-16)

This invention relates to building construction, and pertains in particular to an improved manner of forming concrete buildings.

An object of this invention is to provide a building composed of preformed concrete elements which may be readily assembled at the construction site.

A further object of this invention is to provide a building in which the necessity for a specially prepared foundation is eliminated.

Still another object of this invention is to devise structural details enabling the speedy assemblage of buildings made of preformed interfitting elements.

It is also an object of this invention to provide a cheaply constructed building which is nevertheless of adequate strength, and which has desirable ornamental characteristics.

These and other objects and advantages will become apparent from the following description of the present invention illustrated in the accompanying drawings, in which:

Figure 1 is a perspective view of the side of a completed building.

Figure 2 is an elevational view partly in section showing a portion of a building.

Figure 3 is a sectional view showing a manner of affixing insulation and siding to the building.

Figure 4 is a fragmentary view in plan illustrating the manner of inserting concrete boards into posts forming a part of this invention.

Figure 5 is a fragmentary plan view of a modified form of my invention.

Similar reference characters in the several figures represent similar parts.

In the preferred form of the invention, as illustrated in the drawing, numeral 10 indicates a building. The building is formed of concrete boards 11, concrete posts 12, a beam 13 and a roof 14. As shown in Figure 1, a base member 15 is formed along the ground surface; however, such a member is not necessary.

As shown in Figures 2 and 4, precast line posts 12 each has a shallow groove 16 and a deeper groove 17 formed on opposite sides thereof. The corner posts 12a have their grooves 16a and 17a formed in adjacent sides. The boards 11 have a groove 18 formed in the bottom thereof, and a tongue 19 on the upper surface. Both the tongue and groove run the full length of the boards.

In constructing the building, holes suitably spaced apart are dug along the perimeter of the building and posts 12 are inserted in the holes. The holes are dug to at least a depth sufficient to insure that the grooves or channels 16 and 17 will extend slightly below ground level if no base member 15 is to be used. If the base member is used the holes need not be so deep. In any event the holes are deep enough and the portion of the posts below the grooves are long enough to insure adequate strength after assemblage.

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After the holes are dug a post is placed in each hole. The posts are so positioned that grooves in the posts are aligned with each other with the shallow grooves 16 facing the deeper grooves 17, as shown in Figure 2.

Next concrete grout 15a is placed in the holes and the posts are thus secured in position when the grout sets. If desired, the base member 15 is also poured and allowed to set. After the grout has set sufficiently the concrete boards are connected to the posts in the following manner: Each board is first inserted into the deep groove in a post with the groove 18 facing downwardly (see Figure 4) and the board is then swung in line with both grooves. Then the one end of the board is moved outwardly of the deep groove in the post until the other end of the board is engaged in the opposing shallow groove in the adjacent post. The space between the end of the board and the deep groove is packed with mineral wool 18a or other suitable material to seal the void and act as an expansion joint.

The space between the shallow groove and the board is made water-tight by inserting a plastic cement 21a therein. As the boards are put in position a cement 19a is also placed between the tongues and grooves of the boards, and cement can be placed below the bottom board, if desired. Of course, cement or mineral wool or some other suitable material could be used in all three instances.

The use of the alternate deep and shallow grooves in the posts and the above procedure makes it unnecessary to raise each board to the top of the posts and lower it into position.

The posts 12 have reinforcing elements 20 therein which extend upwardly and outwardly from the top. After the boards are in place the reinforced beam 13 is poured along the top of the structure. The poured beam forms a continuous member which is intimately united to the upper boards and the top of the posts, thus forming a continuous bearing member for connecting a roof. Bolts 21 are set into this beam, and are used to fasten the roof 14 to the side walls. Any desired roof such as a conventional hip or gable roof may be fastened to the beam.

The posts and boards may be of any suitable length and thickness. For small buildings 8 to 10' high 6" x 6" posts and boards 4' long by 1½" thick have been found satisfactory. The boards may be reinforced with longitudinally extending rods such as two #9 wires, or heavier. For taller buildings heavier posts and boards may be used.

As shown in Figs. 2 and 3, the boards may have holes 22 formed therein for use in securing insulation and/or siding in place. The insulation and siding may be secured by strips of wood or other material bolted or wired on by passing bolts or wire through the holes 22. As shown, insulation 23 is held in place by wooden strips 24, bolts 25 and nuts 26. Wooden strips 27 fastened to the outer side of the boards are also shown. Strips 27 are used when shingles or siding are to be used. As shown, strips 27 run horizontally, being placed in this manner for retaining shingles. If siding is to be used the strips 27 are placed vertically. The strips and insulation can be placed inside or outside the boards or on both sides. The strips as shown are of a thickness to bring them flush with the posts. They may of course be thicker if desired. Any internal finishing surface can be used. Lath and plaster for instance, can be placed over the wood strips 24.

In the modified form of my invention shown in Figure 5 the posts 28 are wider than posts 12 and have two grooves in each side for receiving two sets of boards 29 and 30. Insulation 31 may be placed between the

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double walls. Wooden strips may be bolted or wired in place, as as in the previously described modification.

From the foregoing description it will be seen that I have devised a building which is made of inexpensive, preformed materials and which can be quickly and easily assembled. My building, in addition, has the advantage of being resistant to fire and insect damage. Other desirable features of my building are that it has great strength and that little or no repairs will be necessary to keep it in satisfactory condition.

While I have shown and described a preferred form of my invention, it will be understood that variations in details of form may be made without departure from the invention as defined in the appended claim.

I claim:

In a structure of the kind described comprising preformed concrete posts inserted into spaced holes in a ground surface, and concrete grout surrounding said posts in said holes, and maintaining said posts in upright position, the improvement comprising each post having at least one deep groove formed in one side thereof and having at least one shallower groove formed in another side thereof, said posts being so arranged that the shallower groove in each post faces the deep groove of the adjacent post, concrete boards inserted in said grooves and spanning the distance between posts, an expansion joint comprising mineral wool arranged in the space between said boards and said deep grooves in said posts, cement between the ends of said boards and said shallower grooves, said boards having a groove in the bottom

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surface thereof and a tongue on the upper surface thereof and cement between adjacent boards, said boards having spaced holes therein, bolts extending through said boards, insulating material on one side of said boards, strips extending between said posts on said one side of said boards and lying against said insulating material, strips for supporting shingles extending on the other side of said boards and lying thereagainst, said bolts securing said strips and insulating material to said boards and a beam formed along the upper end of said posts and the upper board members and being integral therewith.

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