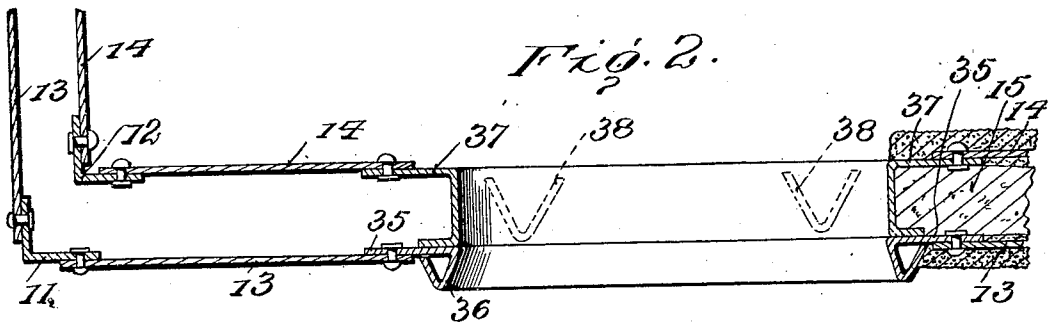
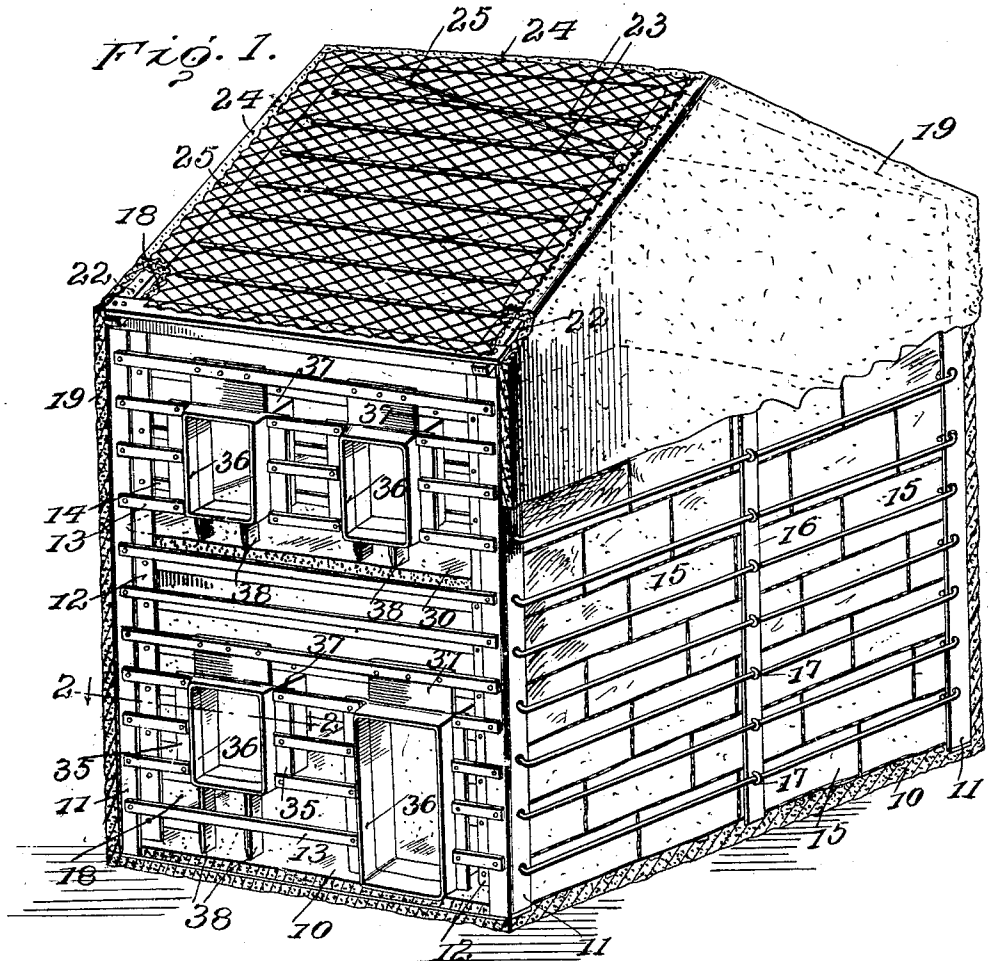


955,597.



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Witnesses

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CONCRETE BUILDING.
APPLICATION FILED MAR. 2, 1909.

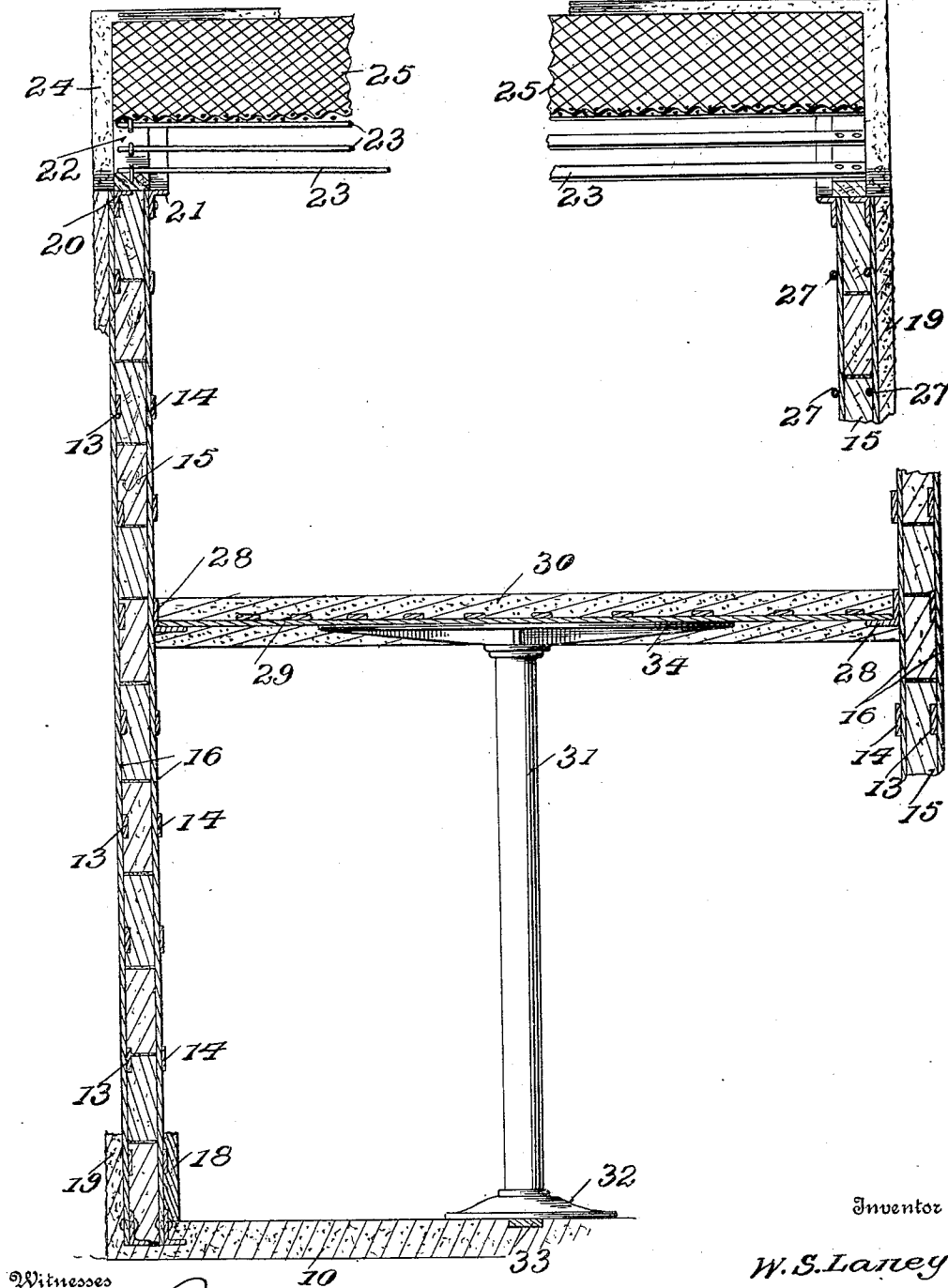
955,597.

Patented Apr. 19, 1910.

3 SHEETS—SHEET 2.

Fig. 3.

Fig. 4.



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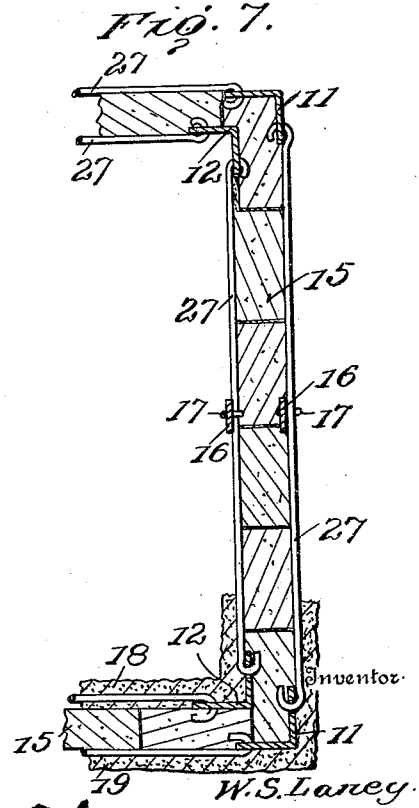
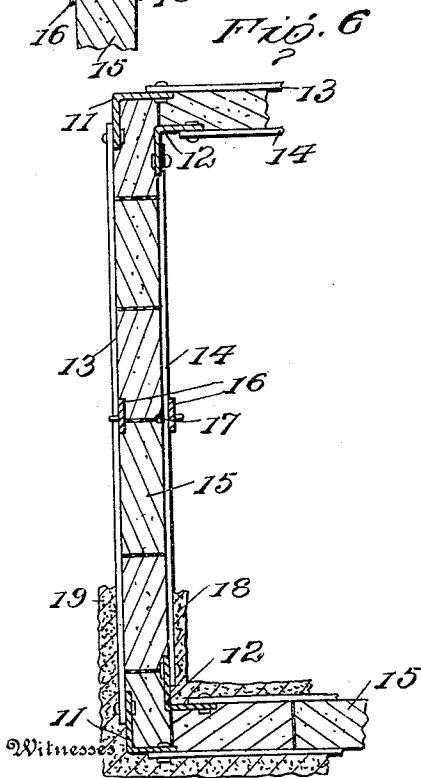
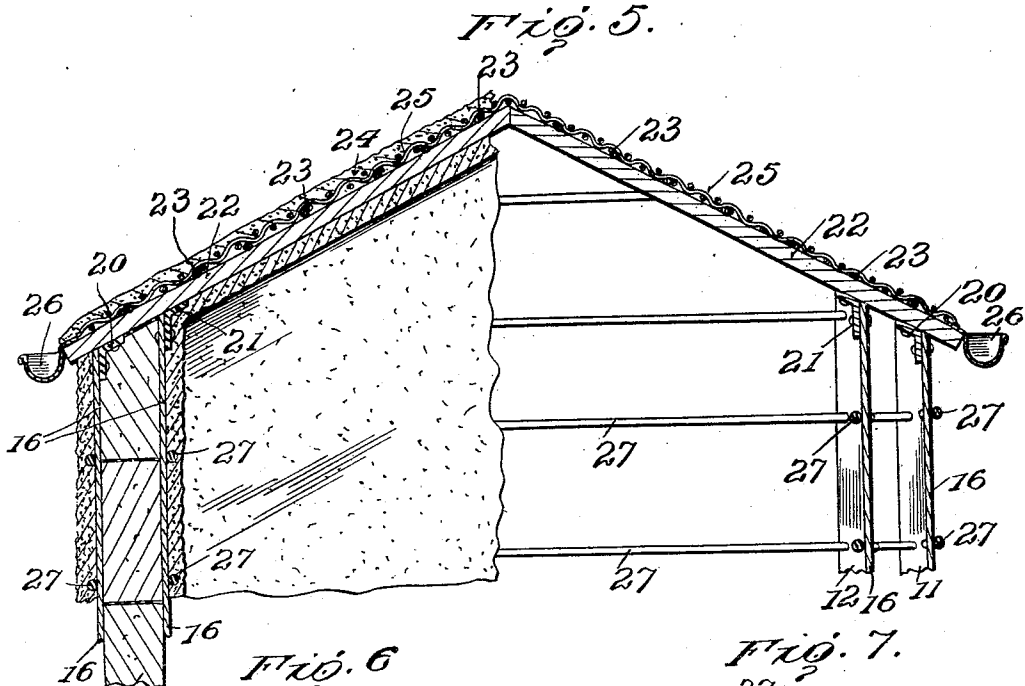
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3 SHEETS—SHEET 3.



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CONCRETE BUILDING.

955,597.

Specification of Letters Patent.

Patented Apr. 19, 1910.

Application filed March 2, 1909. Serial No. 480,868.

To all whom it may concern:

Be it known that I, WILLIAM S. LANEY, citizen of the United States, residing at Lithopolis, in the county of Fairfield and State of Ohio, have invented certain new and useful Improvements in Concrete Buildings, of which the following is a specification.

This invention relates to buildings and refers especially to that class of buildings which are known as fire proof or indestructible.

The object of this invention is to provide a building which is fire proof and one which is substantially built to withstand the stresses which are exerted upon the different parts of the same during the occupancy thereof and one which can be economically erected and constructed.

The invention has for another aim the provision of a building of this character which is composed substantially of concrete or like plastic substances and which is reinforced by the employment of metallic rods, beams or the like.

The invention further aims the construction of a cement building especially adaptable to dwelling houses as the parts thereof are substantially formed and arranged to such relation as to present great strength and durability, especially in the wall and floor constructions by such arrangement that the cement employed will not be subjected to tendencies which tend to crack or crumble the same.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings in which:

Figure 1 is a perspective view of the building formed in a novel manner which is described as being broken away at portions to show the construction of the walls, windows and roof of the same. Fig. 2 is a transverse section on the line 2—2 of Fig. 1. Fig. 3 is a front elevation having the front wall of the building removed and showing the roof and one of the walls partly broken away. Fig. 4 is a fragmentary view of one of the walls disclosing the manner of attaching the roof to the same in a modified form. Fig. 5 is a longitudinal section through the upper portion of the building disclosing the modi-

fied formation of the walls. Fig. 6 is a horizontal section through the front wall of the building as disclosed in Fig. 1. Fig. 7 is a horizontal section of the side wall of the building as disclosed in Fig. 1.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings the numeral 10 designates a ground floor of the building which is mounted upon any suitable foundation desired and adaptable to the location of the building and which is preferably formed with an upper layer of cement which is disposed over the complete ground area of the building. At the opposite corners of the floor 10 uprights 11 and 12 are positioned in pairs, the same being of substantially the same size and formation and which are of L-formation to support at their opposite edges the transverse metallic strips 13 and 14 which form the walls of the building. The strips 13 and 14 are disposed at equidistant intervals longitudinally of the uprights 11 and 12 and are disposed in pairs for the purpose of supporting between them a number of plastic blocks 15 which comprises the inner portion of the walls of the building.

The strips 13 and 14 are intermediately reinforced by the employment of vertically disposed strips 16 which are crossed at substantially right angles to the strips 13 and 14 and which are secured to the same by walls 17 or the like. The inner faces of the walls of the building are adapted to receive a coating of plaster 18 which is adapted to completely incase the uprights 12 which are disposed inwardly and also the strips 14 and 16 engaged upon the sides of the plastic blocks 15. The outer faces of the walls are covered with a coating of concrete or pebbledash 19 which completely incases the outer strips 13 and 16 and also positioned about the corner uprights 11 to protect the same from atmospheric changes and the like. At the upper front wall of the building angle beams 20 and 21 are disposed longitudinally and horizontally thereof which are supported upon the upper extremities of the vertical strips 16 and upon the uprights 11 and 12 at their opposite extremities, the

angle beams 20 and 21 are adapted to support diagonally and inwardly extended girders 22 which form the framework of the roof of the building.

5 The girders 22 are provided with a plurality of rods 23 which are disposed across the same at equi-distant intervals and which are adapted to receive and to reinforce a body of concrete 24 which is disposed there-
10 over and which is provided with a wire meshing 25 which is positioned upon the upper surface of the body of concrete 24 to hold the same in a uniform position. The body of the concrete 24 is beveled at its
15 outer edges for the purpose of admitting of the draining of the water into the gutters 26.

In the construction of the walls and roof of the building rods 27 are employed in lieu of the strips 13 and 14 for the purpose of
20 holding the plastic block 15 in rigid relation and also for reinforcing the coating of plaster upon the inner face of the wall of the building and a coating of cement 19 upon the outer face thereof. The rods 27, when
25 employed are curved inwardly at their opposite extremities for engagement through apertures formed equi-distantly at the edges of the uprights 11 and 12.

The floor construction employed in the
30 erection of a building of this character comprises L-beams 28 which are disposed oppositely in parallel upon the inner faces of the walls of the building and are secured at their opposite extremities to the uprights 11
35 and 12 and intermediately upon the vertically disposed strips 16, the L-beams 28 being adapted to support a plurality of strips 29 which are engaged between the same and crossed at their intermediate portions at
40 right angles for the purpose of forming and reinforcing a body of cement 30 which is disposed about the same to form the ceiling upon the under side and a floor upon the upper face thereof. The floor is supported
45 intermediately by a support 31 which is vertically disposed and which is provided with a flanged base 32 which carried intermediately a depending projection 33 for the purpose of embedding in the concrete floor
50 10, the support 31 being provided at its upper extremity with radially extended arms 34 which engage against the under sides of the strips 29 to rigidly position the same and to prevent the cracking of the cement 30.

55 Where a wall is to be formed in which windows or doors are placed the strips 13 and 14 are extended from the uprights 11 and 12 inwardly and engaged with flanges 35 which are radially extended from the
60 window casing 36, the window casing 36 being formed of metal and being provided with the flanges 35 which engage the outer strips 13 and the flanges 37 which are adapted to engage the inner strips 14. The win-
65 dow frames are formed of sheet metal which

are bent substantially U-shaped in cross-section at their rear portions and which are bent outwardly at their inner edges to form the outer bead thereof and to form the flange 35. The flanges 35 and 37 are adapted to
70 coöperate with the strips 13 and 14 in supporting a plurality of blocks 15 in superimposed relation and to receive the coating of the plaster 18 about the inner side flanges 37 and a coating of pebble-dash or cement
75 19 upon the outer face of the flange 35 about the bead 36 formed thereon. The door construction is substantially the same as the window construction with the exception that the frame or casing is enlarged for the re-
80 ception of the door frame thereon. The windows are supported from the adjacent floor by means of braces 38 which are substantially V-shaped in cross-section and which are vertically disposed for engage-
85 ment against the intermediate body portion of the window frames.

In constructing a building of this nature the supports 11 and 12 are vertically erected from the floor or foundation 10. Spacing
90 the same apart equal to the thickness of the wall desired: when the strips 13 and 14 are transversely positioned between the same longitudinally of the walls to be formed to a limited height in order to admit of the po-
95 sitioning of a plurality of plastic blocks 15 therebetween. When the plastic blocks 15 are inserted to form the inner portion of the wall equal to the height of the strips 13 and 14, thus positioned, the wall construction
100 is continued by placing another plurality of such strips 13 and 14 above the first placed strips and of then continuing the positioning of the blocks 15 from the first placed blocks. This operation is continued
105 until the four walls are completed.

It will be noted that in positioning the window or door frames the strips 13 and 14 are terminated at the flanges 35 and 37 of such frames and that the plastic blocks 15
110 are positioned thereabout. The walls are now provided with a coating of plaster upon their inner faces to completely inclose the metallic construction which supports the blocks and which are provided upon their
115 outer faces with a thickness of pebble-dash cement or the like.

In forming the roof of the building the angle beams 20 and 21 are secured across the upper extremities of the uprights 11 and 12 when the girders 22 are positioned and the rods or strips 23 are positioned across the girders 22 to support a body of cement 24. Prior to the positioning of the body of the cement 24 upon the rods 23 a wire mesh-
125 ing corresponding to the meshing 25 is detachably positioned across the under side of the rods 23 for the purpose of supporting the body of the cement 24 until the same sets when such detachable wire meshing is re-
130

moved and a coating of plaster is positioned in lieu thereof upon the under face of the body of concrete or cement 24. The wire meshing 25 is embedded in the body of the cement 24 adjacent the upper surface thereof to form a binding element for holding the cement together and preventing the cracking or destruction of the same. The cement 24 is slopped off at the eaves of the roof to admit of the drawing of water therefrom into the gutters 26.

In constructing the floors the L-beams 28 are positioned about the inner walls of the building to form cleats about which the strips 29 are positioned. The strips 29 are secured at equi-distant intervals of the L-beams 22 and crossed intermediately at substantially right angles to form a binding element for a body of cement 30 which is disposed thereabout. The under face of the body of cement 30 or ceiling is preferably provided with a coating of plaster or the like while the upper portion forms the floor of the binding which may be treated in any suitable manner. The support 31 is mounted upon the floor 10 embedding the extension 33 within the concrete body portion of the floor 10 while the arms 34 which are radially extended from the support 31 at the upper end thereof and embedded and set in the body portion of the cement 30.

A house constructed in this manner forms a substantial fire proof structure which is adapted to resist changes in the weather as the iron structural parts which form the supporting element of the same are completely inclosed within the plastic material and are thereby not affected by moisture or the like. The support 31 which is centrally disposed in the building forms a very substantial means for supporting the upper floor of a building. Of buildings of more than two stories in height the same process is carried out by simply interposing a plurality of supports 31 one above the other embedding the projections 33 of the base 32 thereof within the cement body portion upon which the supports are mounted.

When partitions are to be formed in the building it is readily understood that the walls are constructed in the same manner as the outer walls, the same being positioned in the desired angles in accordance with the arrangement of the compartments or rooms in the building.

It is not necessary to the formation of a building of this nature to form the blocks 15 of a cementitious material but the same may constitute a number of bricks which are placed between the transverse strips 13 and 14 to form the center or body of the wall. The uprights 11 and 12 may be spaced apart equal to the thickness of the wall desired and provided with a filling of gravel or the like between the same to insure the substantial

setting of the wall by the filling of all the crevices and corners incident to such a structure.

This construction may be adapted to the formation of any form of building as houses, barns, stables, livery barns, sheds, corn cribs or the like, especially where a fire proof construction is desired and is practically necessary for safety and protection.

It is to be understood that the wall construction is the important feature of this invention and that any form of flooring, as wood or the like, may be employed in connection therewith in lieu of the floors herein specified and which are especially adaptable to walls of this formation. The roof construction may also be varied to suit conditions instead of the formation herein set forth.

Having thus described the invention, what is claimed as new is:—

1. In building construction, a plurality of uprights of angular cross sectional formation arranged in pairs at the corners of the building, one of the uprights of each pair being disposed in advance of the other, spaced connecting strips secured to said uprights to form a rigid frame, a filling interposed between said connecting strips, and a plastic facing secured to the outer walls of the frame and covering the uprights and connecting strips.

2. In building construction, a plurality of uprights of angular cross sectional formation arranged in pairs at the corners of the building, one of the uprights of each pair being spaced inwardly from the other, connecting strips secured to said uprights to form a rigid frame, a filling interposed between the connecting strips, and a plastic facing secured to the inner and outer walls of the frame and covering the uprights and connecting strips.

3. In building construction, a foundation, uprights of angular cross sectional formation positioned in pairs at the corners of the foundation, one of the uprights of each pair being spaced inwardly from the other a distance equal to the thickness of the wall of the building, spaced horizontally disposed connecting strips secured to the uprights to form a rigid frame, vertical reinforcing strips arranged between the uprights and secured to the connecting strips, and a filling interposed between said connecting strips.

4. In building construction, a foundation, a plurality of uprights of angular cross sectional formation arranged in pairs at the corners of the foundation, the uprights of each pair being disposed in spaced parallel relation, horizontal connecting strips secured to the uprights to form a rigid frame, window and door frames secured to the adjacent connecting strips, a filling interposed

between the connecting strips and surrounding the window and door frames, and a plastic facing secured to the inner and outer walls of the rigid frame and covering the
5 uprights and connecting strips, respectively.

5. In building construction, a foundation, a plurality of L-shaped uprights arranged in pairs at the corners of the foundation, one of the uprights of each pair being disposed
10 in advance of the other, connecting strips

secured to the uprights to form a rigid frame, and a filling interposed between the connecting strips of said frame.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM S. LANEY. [L. s.]

Witnesses:

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