

Aug. 12, 1924.

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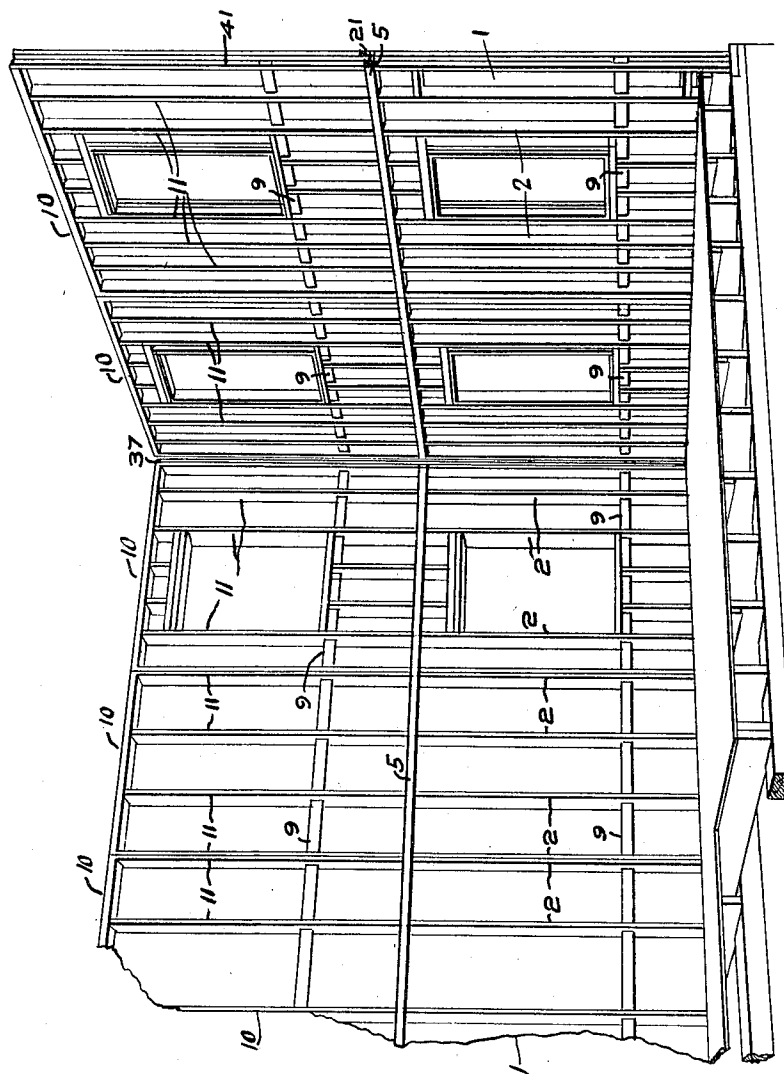
T. C. TYSON

BUILDING CONSTRUCTION

Filed July 31, 1920

4 Sheets-Sheet 1

Fig 1



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Aug. 12 , 1924.

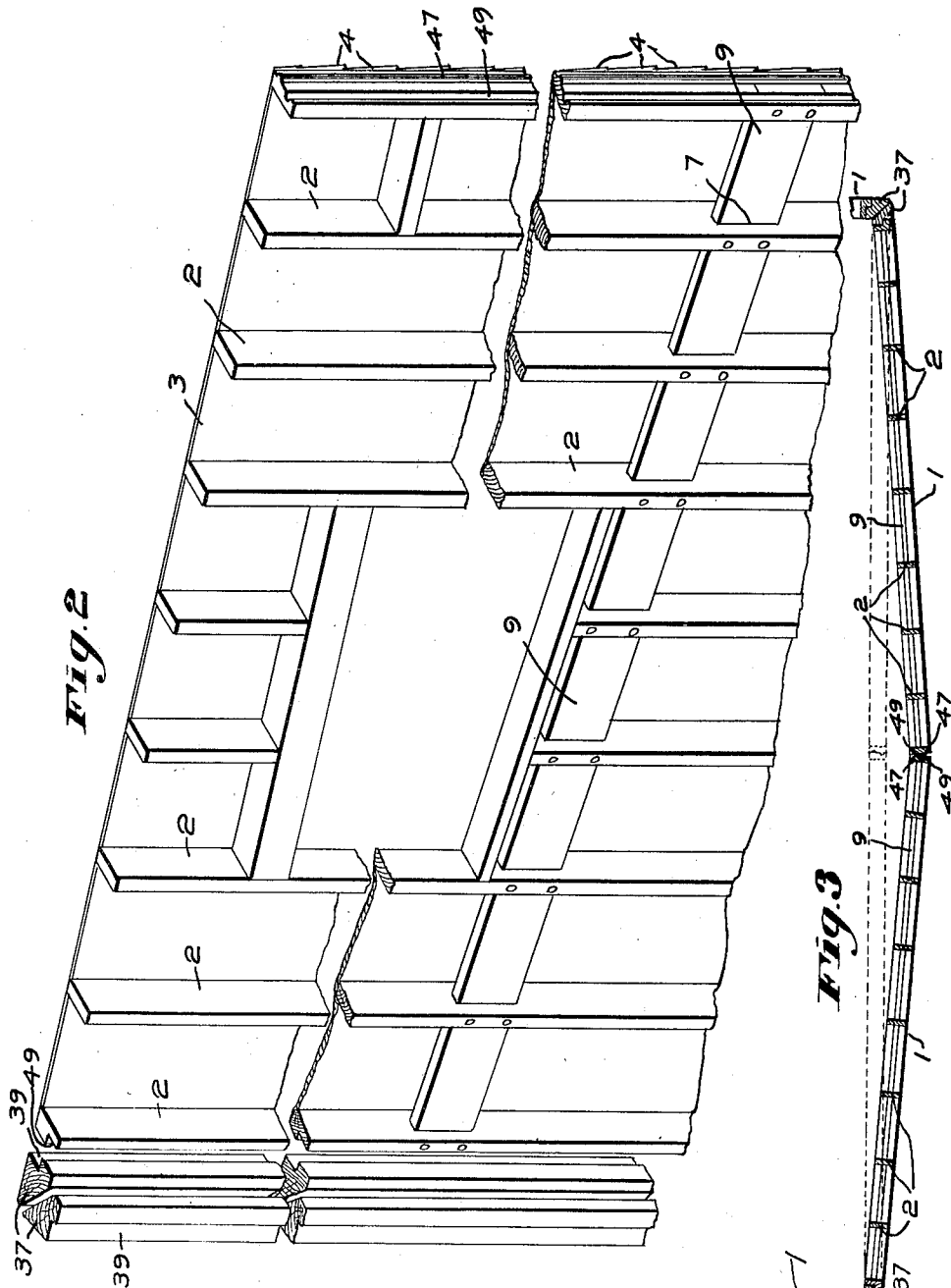
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4 Sheets-Sheet 2



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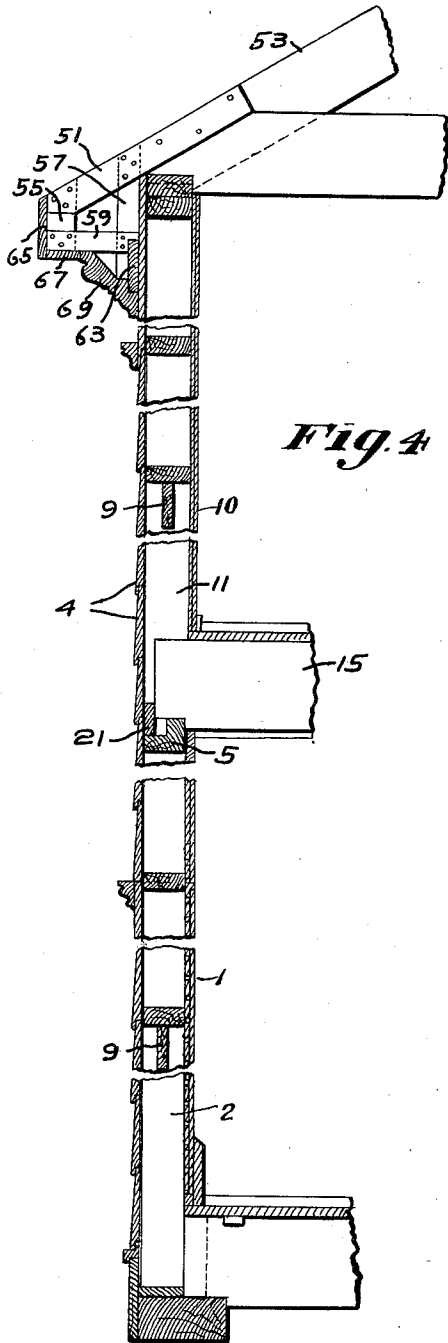


Fig. 4

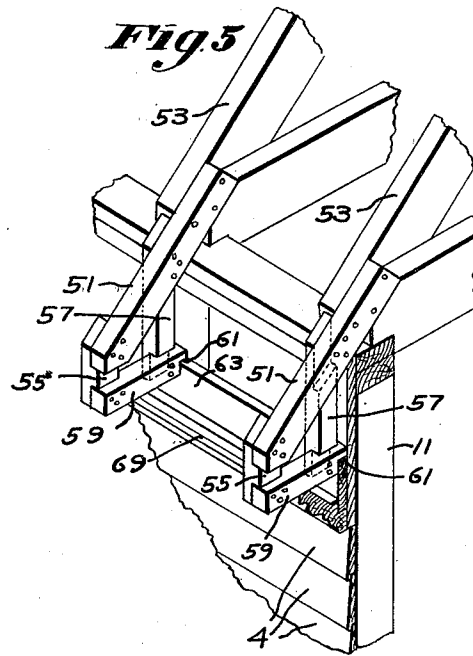


Fig. 5

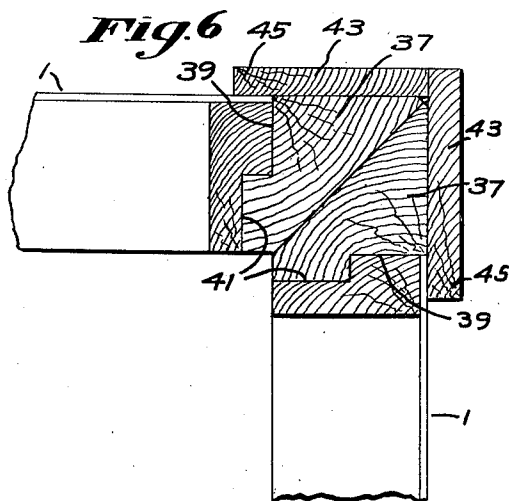


Fig. 6

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Fig. 7

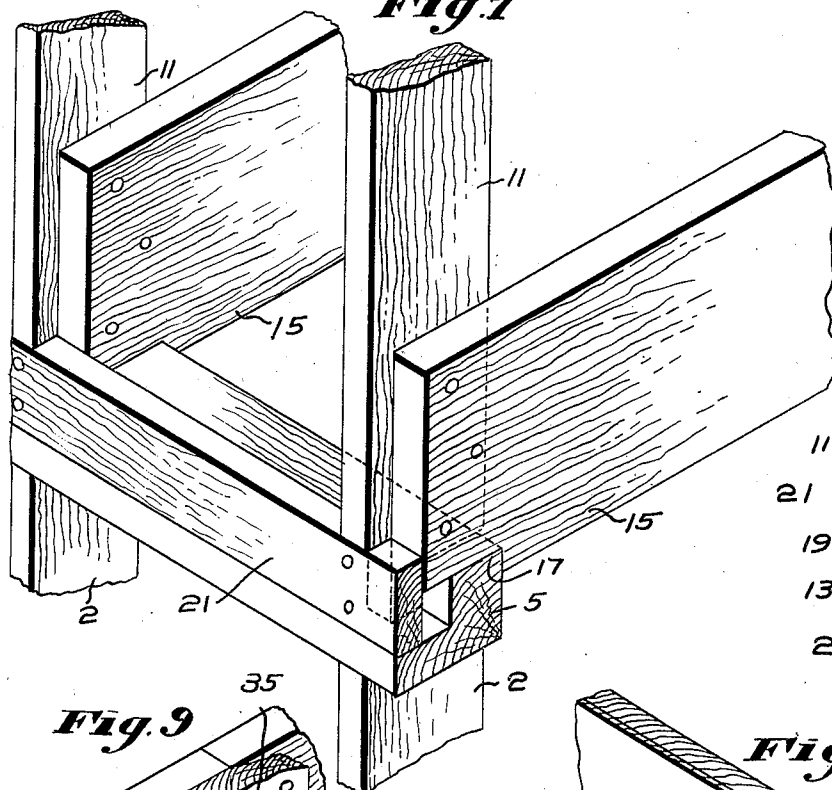


Fig. 8

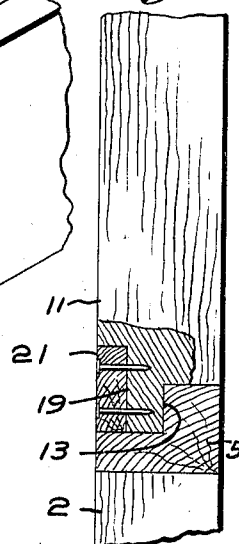


Fig. 9

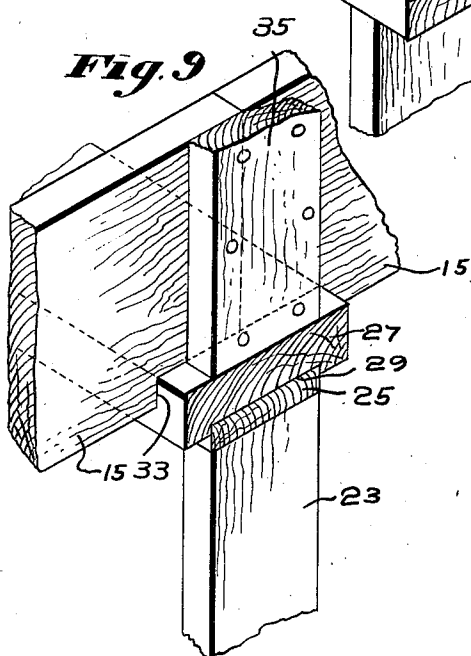
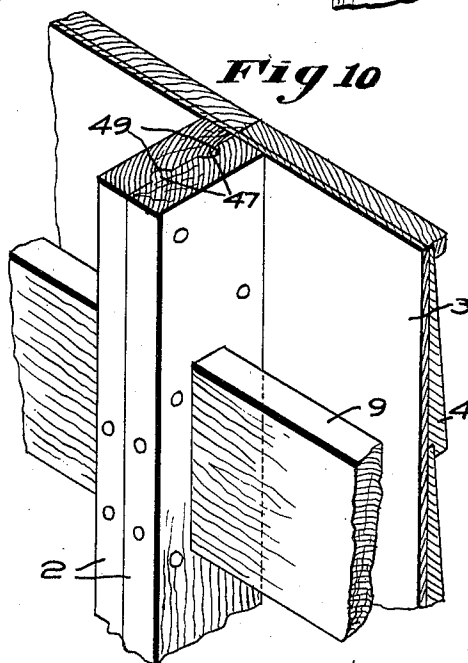


Fig. 10



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UNITED STATES PATENT OFFICE.

THOMAS CALVIN TYSON, OF MEDFORD, MASSACHUSETTS.

BUILDING CONSTRUCTION.

Application filed July 31, 1920. Serial No. 400,510.

To all whom it may concern:

Be it known that I, THOMAS CALVIN TYSON, a subject of the King of Great Britain, residing at Medford, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Building Construction, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

The invention to be hereinafter described relates to the construction of wooden houses and other buildings.

Heretofore, houses have been built of panels and other sections manufactured in the mill and transported to the site of erection, where the sections are assembled, thereby enabling erection of the building with saving in time, labor and materials.

These houses, however, have been of a portable, temporary character and have lacked the substantial, strong construction necessary for permanent structures, and have not conformed to the requirements of municipal ordinances in respect to permanent wooden structures.

The aim and purpose of the present invention, therefore, is to provide inherently strong panels or sections which will not become warped, twisted or otherwise distorted, to provide means securely to join together the parts of the structure, so that the latter will have the permanence of buildings constructed by former methods, to provide weather-tight joints when said parts are located in the outside walls, and to provide a structure that has the same external appearance as permanent buildings constructed by former methods.

With the aforesaid and other purposes in view, the character of the invention will be best understood by reference to the following description of an embodiment thereof, shown in the accompanying drawings, wherein:—

Fig. 1 is a perspective view of a portion of a structure embodying the invention in process of erection;

Fig. 2 on an enlarged scale is a perspective view of a portion of one of the wall panels and a portion of sections of a corner post, certain parts being shown in section;

Fig. 3 is a horizontal section through one of the walls, showing the manner in which the wall panels are assembled together and in relation to the corner posts;

Fig. 4 is a portion of a house disclosing features of the invention;

Fig. 5 on an enlarged scale is a perspective view of a portion of the roof and one of the walls, and showing the cornice bracket construction;

Fig. 6 is a horizontal section through one of the corner posts, and portions of the wall panels adjacent thereto;

Fig. 7 is a perspective view showing the means for connecting lower and upper wall panels and upper floor joists;

Fig. 8 is a sectional detail of parts shown in Fig. 7;

Fig. 9 is a perspective view showing the means for connecting a main bearing partition with upper floor joists and wall panels; and

Fig. 10 is a perspective view showing the means for connecting adjacent wall panels.

Referring to the drawings, the structure shown therein as one good embodiment of the invention, comprises lower wall panels 1, each comprising a series of upright studs 2 preferably spaced equal distances apart and surmounted by a girt 5 nailed or otherwise secured to the upper ends of the studs 2, and in the present instance, the girt 5 is of L-shaped transverse section for a purpose to be hereinafter described. These panels may be formed to present window frames or frames for other openings, according to conditions as desired.

Waterproof paper or weatherboard 3 may be placed on the outer edges of the studs, and clapboards 4 or other external surfacing may be placed on the weatherboard and nailed to the studs in the usual manner.

A wall panel such as described may be manufactured and assembled in the mill, and then may be shipped as a unit or section to the building site for erection.

It is found that a unit or section so constructed is liable to buckle, twist or become otherwise distorted, either during shipment or during erection, or after erection. One of the purposes of the present invention, therefore, is to provide a strong, rigid wall panel or section which would not have the

objections referred to. To accomplish this, in the present instance, each of the studs 2 of the wall panel may have an opening 7 therein preferably located centrally in respect to the inner and outer edges of the stud, so as to leave a substantial amount of stock in the stud at opposite sides of the opening. Then a horizontal ribbon member 9 is threaded through the openings thus formed in the studs, (see Fig. 10) and preferably extends the length of the panel, the studs being nailed or otherwise secured to the ribbon member. This ribbon member may be located as desired intermediate the upper and lower edges of the panel, but preferably it is located nearer the lower edge of the panel, and conveniently directly beneath a window frame or frames in the panel. This ribbon member acts as a tie to hold the studs of the panel in position, and effectively prevents relative movement of the studs and ribbon member so as to eliminate liability of buckling, twisting or other distortion of the panel. This ribbon member also holds the studs against relative movement in the direction of the lengths of the studs, and thus insures that all of the studs will bear on the sill beneath the panel, and thus desirably distributes on the sill the load carried by the studs. Since the ribbon is inserted through registering openings in the studs with a substantial amount of stock on opposite sides of the openings, the studs retain a greater degree of strength than would be obtained if notches were cut in the edges of the studs, and the ribbon were placed in the notches and exposed at the edges of the studs. These wall panels may be of standard construction, and the number thereof required will vary according to the size or design of building required, but the panels lend themselves advantageously for use in constructing buildings of different designs.

Upon the lower wall panels 1 are mounted upper wall panels 10 which for the most part may be similar in construction to the lower wall panels, and the upright studs 11 of the upper panels have the reinforcing ribbon members 9 threaded therethrough similar to the lower panels.

Heretofore, difficulty has been experienced in properly connecting upper and lower floor wall panels with each other and with the upper floor joists so as to insure the strength required for permanent construction. An important feature of the invention comprises simple and efficient means for strongly and permanently securing said parts together. Referring more particularly to Figs. 7 and 8, the studs 11 of the upper wall panel may be formed to present notched portions 13 at their lower ends adapted to rest on and mate with the L-shaped girt 5 referred to, at the top of the lower wall panel.

The upper floor joists 15 have notches 17 formed therein adjacent the ends thereof and adapted to rest on the girts 5 with shoulders bearing against the inner faces of the girts. These floor joists may be nailed or otherwise secured to the upper wall panel studs 11. Each of the upper wall studs may have a notch 19 formed therein adapted to receive a horizontal ribbon member 21 having its lower edge resting on the girt 5 adjacent the outer faces thereof, said ribbon member being nailed or otherwise secured to the upper wall panel studs 11.

The construction is such that continuous horizontal ties are obtained between the adjacent edges of the upper and lower wall panels and the upper floor joists. Since the upper panel studs and the upper floor joists have shoulders or portions engaging opposite vertical faces of the lower panel girt 5, the upper and lower panels are locked together so as to prevent relative movement of said panels outward or inward transversely to the plane of said panels, and wall panels at opposite sides of the structure are efficiently braced by the joists against outward or inward movement. Also, this construction enables the upper floor joists to be placed before the upper wall panels are erected. After said joists have been placed, it is merely necessary to drop the upper wall panels onto the girts without lifting or otherwise disturbing the floor joists, since no portions of the upper panels extend under the floor joists. Thus, the upper panels may be quickly and easily dropped into place and secured with minimum danger to the erectors, and without damage to the panels.

Another important feature of the invention relates to the construction of the main bearing partition or partitions. Referring more particularly to Fig. 9, a portion of a main bearing partition 23 is shown as provided with a face member 25, and upon the member 25 is seated a cap 27. The member 25 extends the length of a panel, and is nailed or otherwise secured to the upper end of the upright studs 23 of the partition panel.

The cap 27 is of a length corresponding to the length of the partition, and runs continuously across the points of juncture of adjacent panels of the partition, thus tying them together. The under face of the cap 27 may be provided with a groove 29 adapted to receive the members 25 of the panels, and positively prevents relative movement of the panels of the partition in respect to the plane of the partition as a whole. The groove in the cap 27 insures accurate location of the cap on the members 25 of the partition panels, and provides an upper surface having a bearing area greater than the widths of the panels. Upper floor joists

15 may be mounted on the cap or bearing member 27, and may have notches 33 providing shoulders engaging the edges of the cap or bearing member, thereby positively preventing relative movement of the lower wall panels 23 in respect to said joists, and insuring support of said panels permanently in upright position. The studs 35 of the upper partition panels may rest on the cap or bearing member 27 in a position to overlap the end portions of the meeting joists 15, said studs being nailed or otherwise secured to said joists. Since the studs of the upper partition panels are secured to the joists, and the joists are confined by their shoulders 33 against movement relatively to the lower partition panels 23, the upper partition panels will be held positively and permanently in the same plane as the lower wall panels.

An important feature of the invention relates to the construction of the corner posts, each, in the present instance, comprising sections 37 (Figs. 2 and 6) having longitudinal notches 39 therein adapted to mate with corresponding longitudinal notches 41 in the end studs of the wall panels adjacent the corner posts. Corner boards 43 may be nailed or otherwise secured to outer faces of the sections 37, and may have margins 45 extending beyond the notches 39 of the sections.

The construction is such that the notched studs of the panels will engage the notches of the corner post sections and prevent movement of the wall panels inward in respect to the corner posts, and since the corner board margins 45 overlap the wall panel studs, the wall panels are prevented from outward movement in respect to the corner posts.

The corner boards are secured to the post sections in the mill, and therefore, after being shipped to the erection site, the sections and boards are in readiness for assembly with the wall panels. The shape of the corner posts is such that it enables the end studs of the wall panels to be nailed thereto from the interior of the structure, and eliminates the necessity of driving nails or other fastening means from the exterior of the structure. The overlap of the margins of the corner boards in respect to the panels enables waterproof paper or weatherboard to be placed back of the corner boards, and insures a desirable waterproof joint extending the entire length of the corner posts. The corner posts may be of a length sufficient to extend from the sill to the top of the wall, and thus tie the lower and upper wall panels adjacent the posts together.

In some instances it may be desirable to place all of the wall panels and three of the corner posts in position, and to leave one post out to be inserted as the last member.

To accomplish this, the corner post may be elevated to the top of the structure, and lowered along the edges of the adjacent wall panels until it rests on the sill in proper position.

Another important feature of the invention relates to means for securely connecting the edges of adjacent wall panels together. To accomplish this, in the present instance, the adjacent end studs of the wall panels may each be provided with a tongue 47 and a groove 49 (Figs. 2, 3 and 10) extending longitudinally of the studs, the construction being such that the tongue and groove of the end studs of one panel will mate with the groove and tongue respectively of the stud of the adjacent wall panel. This form of construction enables the tongue and groove to be formed on the face of a stud which may then be cut into sections of appropriate length, the sections being reversed for adjacent wall panels.

This tongue and groove construction materially facilitates placing of the panels in position. To accomplish this, the outer edges of the panels are presented to the corner posts, so that the notches of the end studs will engage the notches of the corner posts. Then the inner ends of the panels are brought together, so that the inner tongue of the end stud of one panel will enter the groove of the end stud of the other panel. Then the panels will be in buckled relation, as shown in full lines in Fig. 3. Thereupon, the panels may be pressed inward and rocked somewhat about the corner posts as fulcrums, to bring the panels in straight relation or in the same plane as shown in dotted lines in Fig. 3. This will cause the outer tongue of the end stud of one of the panels to snap into the opposed groove of the end stud of the other panel. This tongue and groove construction not only facilitates assembly of the panels, but also prevents free passage of air from the outside to the inside of the building, and insures proper fit and alignment of the adjacent edges of the panels.

Still another important feature of the invention relates to the cornice construction. It is desirable to form the cornice in large sections, so that the cornice may be placed by the assembly of a minimum number of parts. To accomplish this, in the present instance of the invention, brackets may be provided comprising inclined members 51 (Figs. 4 and 5) having portions adapted to overlap, and be nailed or otherwise secured to the roof rafters 53. Depending from the inclined members 51 are outer members 55 and inner members 57 nailed or otherwise secured to the inclined members 51. The lower ends of the depending members 55 and 57 may be connected by cross members 59 nailed or otherwise secured thereto. The depending

members 55 and 57 may be notched to receive the inclined members 51 and cross members 59, thereby contributing to the rigidity of the construction, and tending to prevent twisting or distortion thereof. The cross members 59 may have notches 61 adapted to rest on the upper edges of a ledger or wall board 63. The fascia 65 may be secured to the outer depending members 55 of the brackets. The plancia 67 may be secured to the cross members 59, and the frieze or moulding 69 may be secured to the cross members and ledger.

The construction is such that the elements of the cornice may be formed and assembled in the mill, so that after being shipped to the building site, it is merely necessary to secure the inclined members 51 to the roof rafters, and to secure the ledger to the wall studs, in order to complete assembly of the cornice in the structure.

The sections or units described are strong and simple in construction. They can be manufactured in the mill easily and economically in large quantities. They can be quickly and easily assembled at the erection site in the production of a structure which conforms to best practices in building construction. The sections or units are so formed that they may be joined together with strong permanent connections insuring proper alignment and relation of the sections.

The wall panels are strong in construction, due to the ribbon member threaded through the studs as described, and due to the girt which also has the advantage of projecting up beyond the clapboards of the panel or other external surfacing and hence affords desirable protection thereto during shipment from the mill to the erection site and during handling of the panels.

Usually the upper walls rest on the upper flooring, but it will be noted that in accordance with the present invention, the studs of the upper panels rest directly on the girts of the lower panels. This provides a strong support for the upper panels, reduces the liability of shrinkage and provides fire and vermin stopping.

While the invention has been described more particularly with reference to a two story building, it will be recognized that features of the invention are applicable to buildings of any number of stories.

It will be understood that the invention is not limited to the specific embodiment shown, and that various deviations may be made therefrom without departing from the spirit and scope of the appended claims.

What is claimed is:—

1. In building construction, the combination of lower and upper wall panels, each comprising a series of upright studs, a girt at the top of the lower wall panel having a

shoulder extending longitudinally thereof, the upper panel studs having notches in their lower ends forming shoulders engaging the shoulder of the lower panel girt to prevent inward movement of the upper panel, joists resting on said girt and notched to form shoulders engaging the inner face of the girt and secured to the upper panel studs to prevent outward movement of the upper panel, and a member extending longitudinally of the girt and secured to the upper panel studs.

2. In building construction, the combination of a lower wall panel, an upper wall panel having its lower end resting on the top of the lower wall panel, and floor joists, resting on the top of the lower wall panel, said panels and joists having interengaging means to hold the lower and upper wall panels in the same plane and against movement relatively to said joists.

3. In building construction, the combination of adjacent wall panels each having upright end studs, an upright corner post between said panels, said panel end studs and post having inter-engaging shoulders for preventing inward movement of the panels relatively to said post, and corner boards on said post overlapping margins of said panels and preventing outward movement of the panels relatively to said post.

4. In building construction, the combination of corner wall panels disposed transversely to each other and each having a series of connected upright studs, a corner post located between adjacent edge studs of said panels, said post and edge studs being formed to present interlocking parts to prevent relative lateral movement of said panels and post.

5. In building construction, a cornice unit comprising fascia, plancia and frieze, a ledger adapted to be secured to a wall of the building, and brackets permanently connected to the fascia, plancia, frieze and ledger and having portions adapted to be secured to the roof rafters and second portions depending from the first to be supported thereby in substantially a horizontal position.

6. In building construction, a cornice unit comprising a ledger adapted to be secured to a wall of the building, and brackets having a portion to overlap and be secured to the roof rafters of the building and a second portion below and depending from the first portion in position to be secured to said ledger, said brackets located at intervals along the cornice unit and secured thereto.

7. In building construction, the combination of lower wall panels disposed edge-to-edge, upper wall panels disposed edge-to-edge above the lower wall panels, said lower wall panels being formed with interengaging means for holding the panels in alignment,

and floor joists resting on the lower wall panels, said joists and upper and lower panels having interengaging parts to hold the upper and lower panels in the same plane.

8. In building construction, the combination of a lower wall panel having a girt at the upper edge of the panel, an upper wall panel having its lower end resting on the top of the lower wall panel and having studs provided with shoulders engaging a lateral face of said girt to prevent relative movement between the upper and lower panels in one direction, floor joists secured to said upper panel and having shoulders engaging a different lateral face of said girt, to prevent relative movement between

the upper and lower panels in an opposite direction.

9. In building construction, a wall panel comprising a series of studs secured in lateral spaced relation and the studs having elongated openings formed therethrough in lateral alignment with stock remaining at all sides of the opening in each stud, and a wooden ribbon having a configuration in cross-section to fit said openings and inserted through the aligned openings to hold the side and intermediate studs of a panel rigidly in place and to stiffen the panel and prevent shewing thereof.

In testimony whereof, I have signed my name to this specification.

THOMAS CALVIN TYSON.