

Dec. 16, 1941.

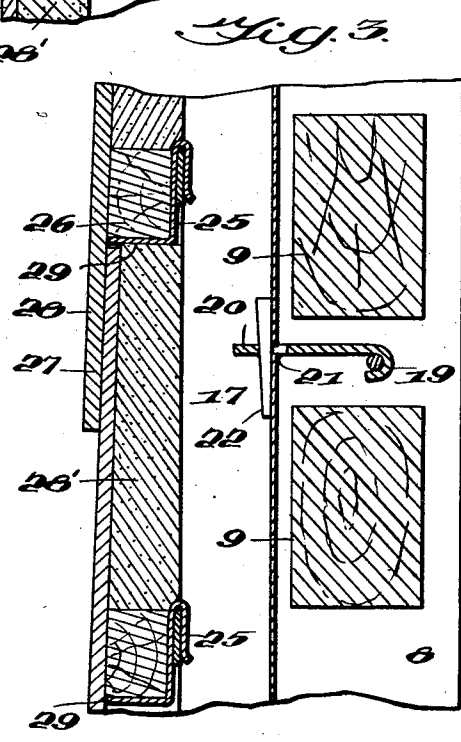
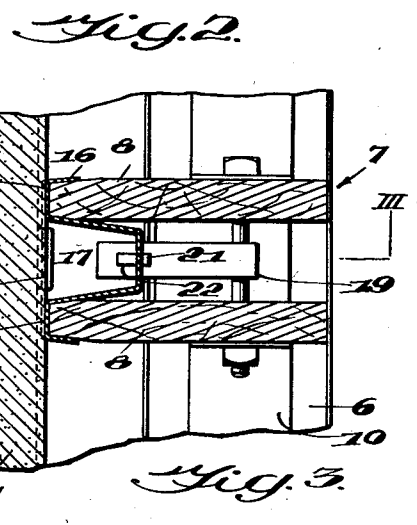
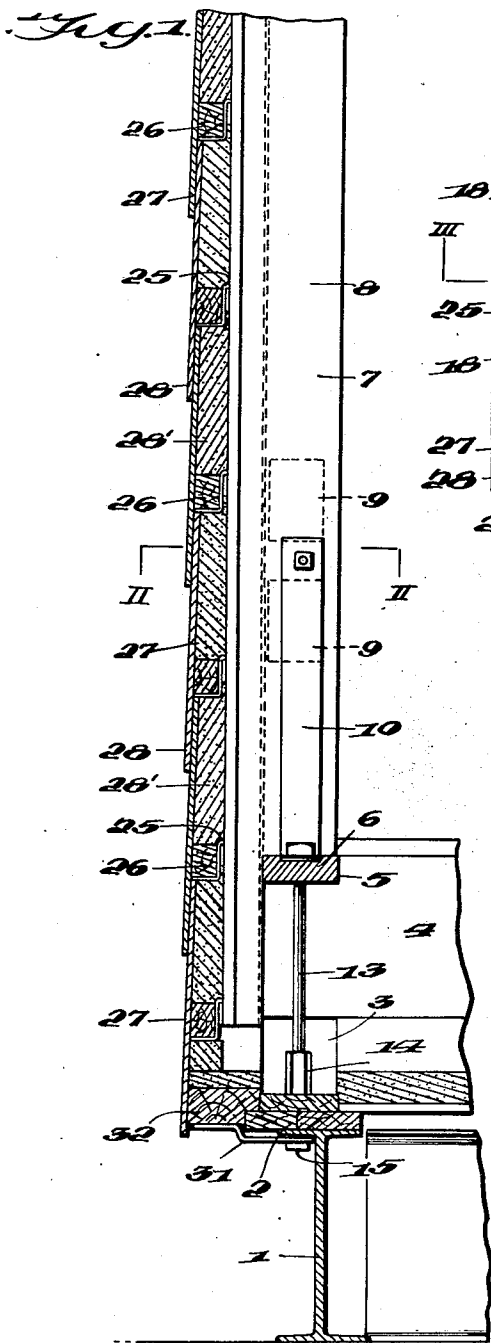
H. HASENBURGER ET AL

2,266,599

PREFABRICATED WALL FORMING UNIT FOR BUILDING CONSTRUCTION

Filed Oct. 17, 1939

3 Sheets-Sheet 1



Inventor
Henry Hasenburger,
Harvey Wiley Corbett,

354

W. S. McDowell
Attorney

Dec. 16, 1941.

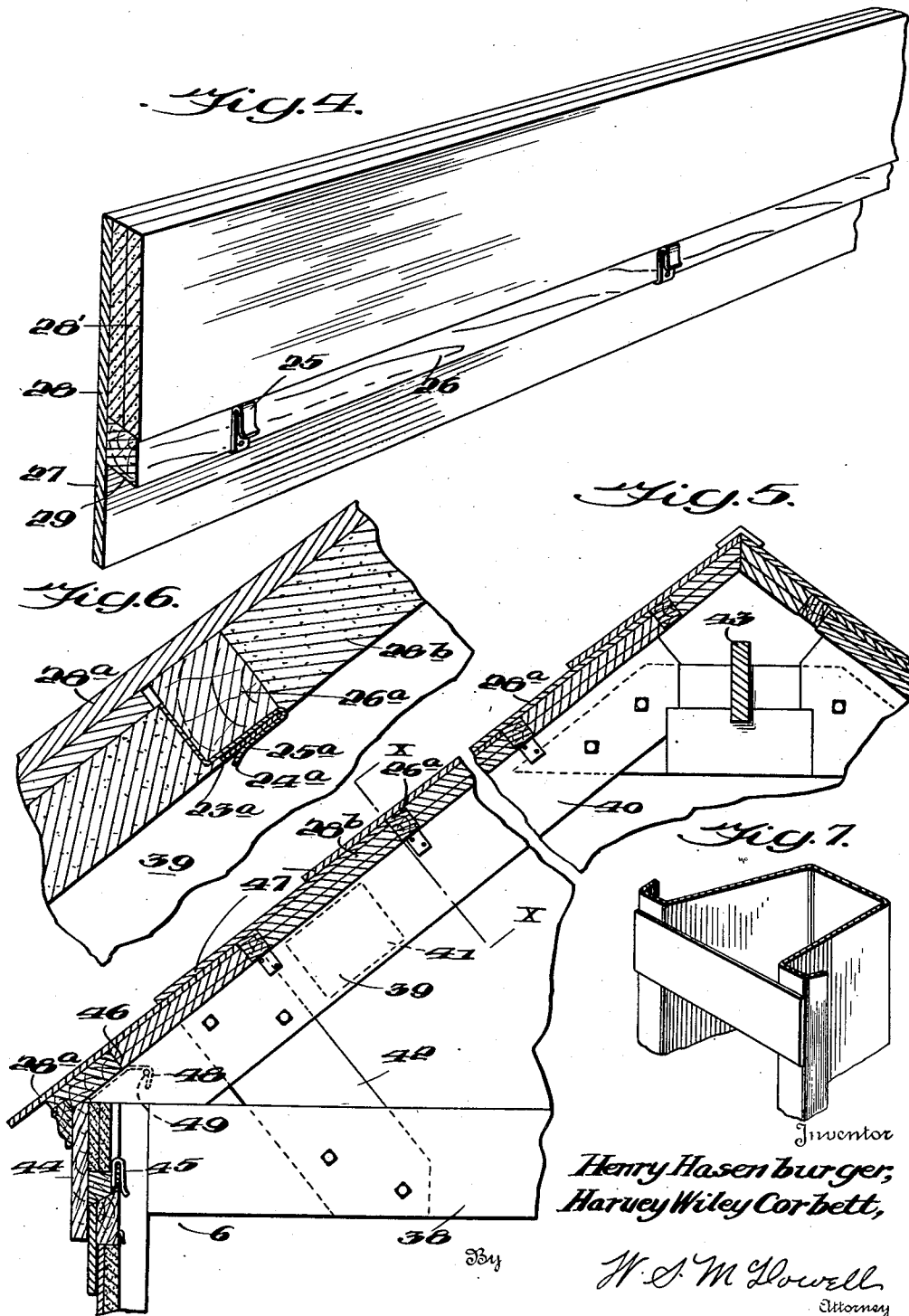
H. HASENBURGER ET AL

2,266,599

PREFABRICATED WALL FORMING UNIT FOR BUILDING CONSTRUCTION

Filed Oct. 17, 1939

3 Sheets-Sheet 2



Inventor
Henry Hasenburger,
Harvey Wiley Corbett,

W. S. M. Lowell
Attorneys

Dec. 16, 1941.

H. HASENBURGER ET AL

2,266,599

PREFABRICATED WALL FORMING UNIT FOR BUILDING CONSTRUCTION

Filed Oct. 17, 1939

3 Sheets-Sheet 3

Fig. 8.

Fig. 10.

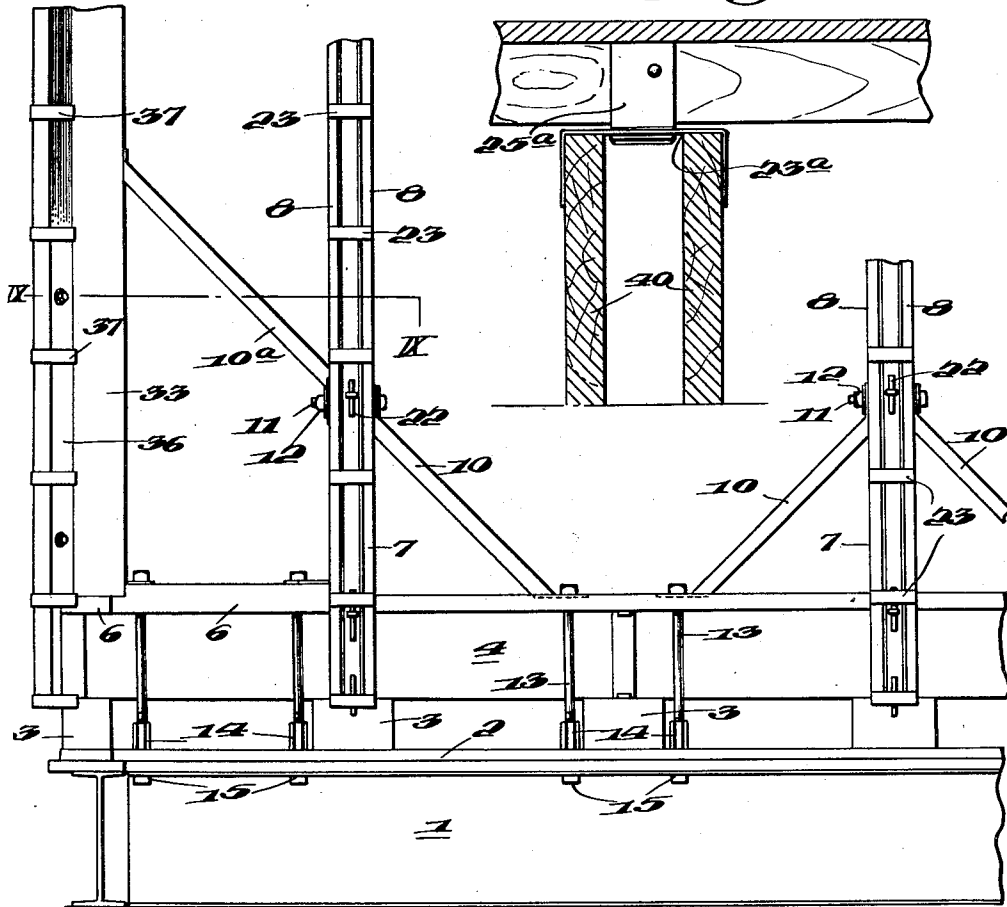
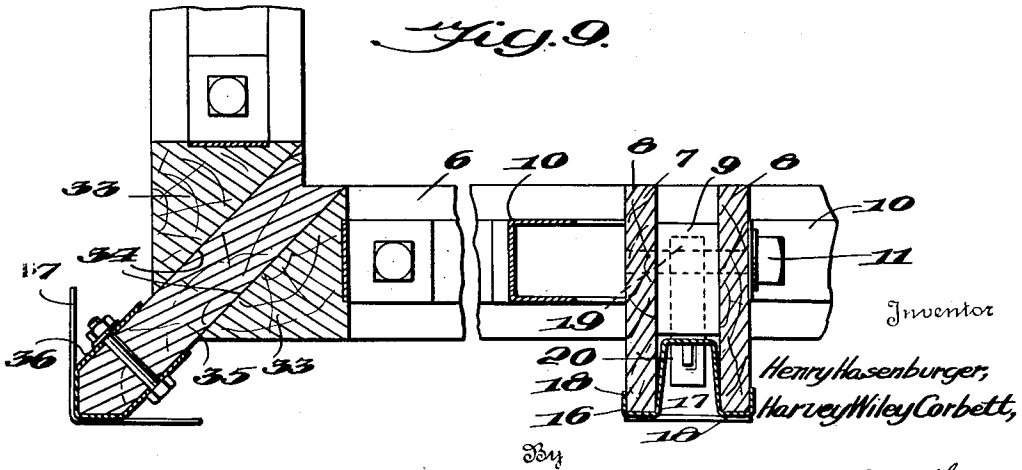


Fig. 9.



Inventor

Henry Hasenburger,
Harvey Wiley Corbett,

By

W. S. McDowell
Attorney

UNITED STATES PATENT OFFICE

2,266,599

PREFABRICATED WALL FORMING UNIT FOR BUILDING CONSTRUCTION

Henry Hasenburger, Newark, N. J., and Harvey Wiley Corbett, New York, N. Y., assignors to Prebilt Housing Corporation, New York, N. Y., a corporation of Ohio

Application October 17, 1939, Serial No. 299,890

6 Claims. (Cl. 189—34)

This invention relates to prefabricated building construction and has for its general object the provision of an improved residential building wherein the walls, including siding and roof members, are composed of readily applied and conveniently removable prefabricated parts, the latter being so designed that they may be readily assembled at the time of erection of the building and serve to produce a strong and substantial construction, one highly resistant to heat transmission and economical to produce and maintain.

Another object of the invention resides in the provision of an improved building construction wherein use is made of wall-forming frames having spaced studs or beams which carry spaced sockets, there being a plurality of siding or roof-forming units which have their inner faces equipped with hook-shaped fasteners which are adapted to be removably positioned in the sockets of the studs or beams so that the siding or roof-forming members may be quickly applied and securely held in their operative positions without the employment of conventional nailing or special carpentry operations at the time of assembly.

For a further understanding of the invention, reference is to be had to the following description and the accompanying drawings, wherein:

Fig. 1 is a vertical sectional view taken through the outer vertical wall of the building formed in accordance with the present invention;

Fig. 2 is a horizontal sectional view taken on the plane disclosed by the line II—II of Fig. 1;

Fig. 3 is a vertical sectional view on the plane set forth by the line III—III of Fig. 2;

Fig. 4 is a perspective view showing the inner or under face of a siding member formed in accordance with the invention;

Fig. 5 is a vertical sectional view taken through the roof construction of the building and disclosing more particularly the interchangeable members, their relative order and associated supports;

Fig. 6 is a similar view on an enlarged scale of the roof-forming members;

Fig. 7 is a fragmentary perspective view of one of the metallic lock rails;

Fig. 8 is a view in front elevation with the siding members removed, showing a stud frame;

Fig. 9 is a horizontal sectional view on the line IX—IX of Fig. 8;

Fig. 10 is a transverse sectional view on the line X—X of Fig. 5.

Referring more particularly to the drawings, the numeral 1 designates the base girts of the

building, the same comprising in this instance a plurality of interconnected structural steel beams. Supported upon the upper flanges of these beams are longitudinally extending sill strips 2, which may be of wood or other suitable materials. Positioned on the strips 2 are blocks 3 which effect the support of floor joists 4. The ends of these joists, contiguous to their upper edges, are recessed as at 5 to receive horizontally extending upper sill strips 6. Also arising from the blocks are a plurality of spaced vertically extending stud columns 7. Each of these columns comprises a pair of relatively spaced vertically extending studs 8 which are relatively separated by means of spacers 9. Assisting in the support of the studs 8 are metallic braces 10, the upper ends of the latter being apertured to receive fastening bolts 11. The latter pass transversely through registering openings formed in the studs 8 and the upper ends of the braces 10 and are equipped with binding nuts 12. The lower ends of the braces 10 are positioned within recesses formed in the upper sill strips 6 and are connected thereto by means of vertically extending bolts 13. The lower threaded ends of the bolts 13 are received within threaded thimbles 14, which rest on the lower sill strips 2. Passing through openings formed in the upper horizontal flange of each of the girts 1, and through registering openings formed in the sill strips 2, and having their upper threaded ends entering the thimbles 14, are complementary fastening bolts 15. The latter serve to positively retain the sill strips 2 in their applied positions on the top flanges of the girts 1 and to hold the thimbles 14 in their operating positions, while the bolts 13 operate to anchor the braces 10 and to join the upper sill strip 6, the floor joist 4 and the blocks 3 in united relationship with the lower sill strips 2 and the base girts 1.

Engaged with the forward vertical edges of the studs 8 are channel-shaped sheet metal lock rails 16, the channel 17 of these rails being disposed in the space formed between an adjoining pair of the studs 8, while the outer ends of said rails terminate in U-shaped extremities 18 which have a frictional tapered engagement with the correspondingly shaped forward edges of the studs 8. The rails 16 are coextensive with the studs 8 and are employed to unite the removable and replaceable siding, hereinafter described, with the stud columns 7.

To retain the lock rails in secured relation with the studs 8, the bolts 11, as shown in Figs. 2 and 3, have engaged therewith the hook-

shaped ends 19 of metallic straps 20. These straps project forwardly through horizontal openings formed in the central webs of the rails 16. The forward extremities of the straps 20 are provided with longitudinal slots 21, the latter being adapted to receive wedge keys 22, which when driven to occupy the positions disclosed in Figs. 3 and 8, serve to effectively hold the lock rails in firm positive engagement with the studs of the columns 7.

The lock rails are provided at regular vertical intervals with transversely extending cross strips 23. These strips, as shown in Fig. 3, are adapted to receive the hook-shaped ends of metallic fastening clips 25. The clips 25 closely engage and are secured to longitudinally extending cleats 26 which in turn, are secured to the backs of longitudinally extending siding members or boards 27.

Each of the siding members 27 comprises the outer panel 28, which may be formed from any suitable material, i. e., wood, plywood or various organic or mineral compositions. In addition, the inner or back sides of each panel 28, above its intermediately disposed cleat 26, is provided with one or more layers of a heat insulating material 28' by which heat transmission through the siding members is retarded. Below the cleats 26, the rear faces of the panels 28 are devoid of insulation so that the lower surface of each cleat will form a shoulder 29 by which the siding members are seated in overlapped superposed relationship, with the lower portion or skirt 30 of each panel projecting over the upper portion of the next lower panel, thus producing a strong, weather resisting and easily and quickly mounted siding structure.

As shown in Fig. 1, the base girts are provided at intervals with outwardly and laterally extending arms 31 which are held in place by the bolts 15. The arms 31, in connection with the sill strips 2, effect the support of an insulated, horizontally extending closure strip 32. The lowermost of the siding members 27 rest on these closure strips 32 but are supported at least in part by the clips 25 and the cross strips 23 of the lock rails 16. It will be obvious that it is a simple matter to assemble these siding members, since each siding member can be almost instantly secured in its operative and fastened position by merely inserting the hook-shaped ends 24 of its clips 25 with the cross strips 23 of the lock rails 16. After one siding member has been so attached, the next siding member is then placed in position, fastened in exactly the same manner with its shoulder 29 resting on the upper edges of the next lower siding member. These operations are continued until the necessary number of siding members have been applied to complete the vertical wall or walls of the building. Since the siding members are factory made, no skilled labor is necessary to effect their installation.

In Figs. 8 and 9, the corner stud columns have been disclosed. These corner columns each comprise vertical studs 33—33 having the inner faces thereof mitered as at 34. Between these mitered faces, there is arranged a diagonally extending spacer strip 35 which projects outwardly beyond the studs 33 a sufficient distance to register with the outer edges of the studs 8. The outwardly projecting portion of the strip 35 is provided with a substantially U-shaped metallic facing strip 36, which is provided at spaced intervals with angular cross strips 37, which cor-

respond in position and function to the cross strips 23 in the matter of uniting the corner studs with the removable siding members. The corner studs are reenforced by metallic braces 10a which extend downwardly and angularly from the studs 33 to the next adjacent stud 8 to which the braces 10a are bolted.

The upper ends of the stud columns 7 and 33 support ceiling rafters 38 and roof rafters 39. These rafters are preferably of the construction disclosed in Fig. 10 wherein each rafter consists of a pair of beams 40—40 joined with spacer blocks 41. Angularly extending knee braces 42 may be employed for joining and reenforcing the meeting portions of the rafters 38 and 39, while the upper ends of the roof rafters 39 are joined with a ridge member 43.

The uppermost of the siding members 27 carries a fascia board 44, which is detachably fastened as at 45 with the upper portions of the lock rails 16. Cooperative with the upper edge of each of the boards 44 is the anchor section 46 of the roof-forming members 47. The members 46 and 47 are of substantially the same construction as the siding members 27 and are applied in substantially the same manner. Thus the sections 46 and 47 are each formed to include an outer longitudinally extending panel 28a, corresponding to the panel 28 and may be formed from the same materials. Each panel 28a has its inner or under surface provided with a longitudinally extending cleat 28a and with associated layers of suitable heat insulating material 28b. Since the anchor section 46 receives greater stresses than the companion sections 47, the section 46 is held in place by means of a plurality of relatively heavy metallic clips 48, which fasten around pins 49 carried by the rafters 39.

The remaining sections between the section 46 and the ridge 43 are detachably fastened in place, as shown in Fig. 6, by means of clips 25a having hook-shaped ends 24a which engage with metallic cross strips 23a carried by the spaced beams 40 of the rafters 39. After the anchor section has been positioned, the succeeding sections are secured in place and in overlapping order by merely inserting the ends 24a of the clips 25a around the strips 23a. As noted in reference to the application of the siding members 27, the roof-forming members may be quickly and easily applied, without involving the conventional nailing operations, in weather-excluding overlapped relationship.

In view of the foregoing, it will be apparent that the present invention provides a frame building, adapted for residential purposes, in which the wall-forming units or members may be factory produced in definite constructional and dimensional characteristics. At the erection site, it is merely necessary to assemble these units in their proper relative order and this can be done with the aid of simple tools and without any shaping or fitting of adjoining parts. After the assembly of the house frame, the siding and roof-forming members may be readily joined with the frame construction, producing an enclosure of strong and substantial design, economical to produce and thoroughly insulated throughout the side walls and roof construction.

What is claimed is:

1. A removable siding for building construction comprising a substantially rectangular weather-resisting panel, a longitudinally extending securing cleat mounted on the inner face of

said panel and disposed in spaced parallel order with respect to the upper and lower edges of the panel, and a plurality of hook-shaped securing elements carried by said cleat for detachably mounting said panel in connection with an associated frame structure.

2. A removable siding for building construction comprising: an elongated substantially rectangular panel, a longitudinally extending cleat mounted on the inner face of said panel and disposed in spaced parallel order with respect to the upper and lower edges of the panel, a layer of heat-insulating material positioned between said cleat and the upper edge of said panel, and a plurality of hook-shaped securing elements carried by said cleat for detachably connecting the panel with an associated wall frame.

3. A removable siding for building construction comprising: an elongated substantially rectangular panel, a longitudinally extending cleat mounted on the inner face of said panel and disposed in spaced parallel order with respect to the upper and lower edges of the panel, a layer of heat-insulating material positioned between said cleat and the upper edge of said panel, and a plurality of hook-shaped securing elements carried by said cleat for detachably connecting the panel with an associated wall frame, the inner face of said panel below said cleat being devoid of insulating material to provide a seating recess adapted to receive and overlap an adjoining siding.

4. A wall-forming frame for building construction comprising: a base, longitudinally spaced vertically extending stud columns arising from and joined with said base, each of said columns being composed of a pair of vertically extending parallel and transversely spaced stud beams, metallic lock rails arranged between said beams, each of said lock rails having flanged extensions engaging with the outer longitudinal edges of its associated beams, an apertured strap carried by each pair of beams, one end of said strap being receivable within an opening formed in its adjoining lock rail, and wedge means extending through the aperture of said strap and coopera-

tive with a lock rail to maintain the latter in secured engagement with said beams.

5. In building construction, a frame structure having spaced vertically extending studs, anchor strip members spaced longitudinally of said studs, panel means extending substantially at right angles to said studs, each of said panels having a relatively thin elongated body, a cleat secured to the rear surface of said body in spaced parallel relation to the longitudinal edges thereof, the bottom surface of said cleat forming a shoulder, a mat of insulation covering the rear surface of said body between the upper edge and said cleat, the combined thickness of said mat and body at the upper edge thereof being substantially equal to the width of said shoulder, and clip means spaced longitudinally of said cleat, said clip means being engageable with said anchor strips to retain said panel in assembled order on said frame structure.

6. In building construction, a wall having a horizontally disposed sill bar, a plurality of longitudinally spaced columns projecting upwardly from said sill bar, said columns having spaced stud sections, anchor strips extending transversely between the stud sections of each column, said strips being spaced longitudinally of said columns, a plurality of finish panels removably secured to said columns, each of said panels having an elongated relatively thin body, a mat of insulation secured to the rear surface of said body, said mat being narrower than and equal in length to said body and disposed adjacent to the upper portion thereof, and clip means carried by said body adjacent to the lower edge of said insulation mat, said clips being spaced longitudinally of said body distances equal to the spacing of said columns to engage said anchor strips and secure said panel to said columns, the body portions of said panels being in overlapping relationship and the insulating mats being in substantially abutting relationship when the panels are assembled.

HENRY HASENBURGER.
HARVEY WILEY CORBETT.