

Dec. 22, 1936.

H. DERCUM ET AL
BUILDING CONSTRUCTION

2,065,433

Filed Dec. 1, 1934

2 Sheets-Sheet 1.

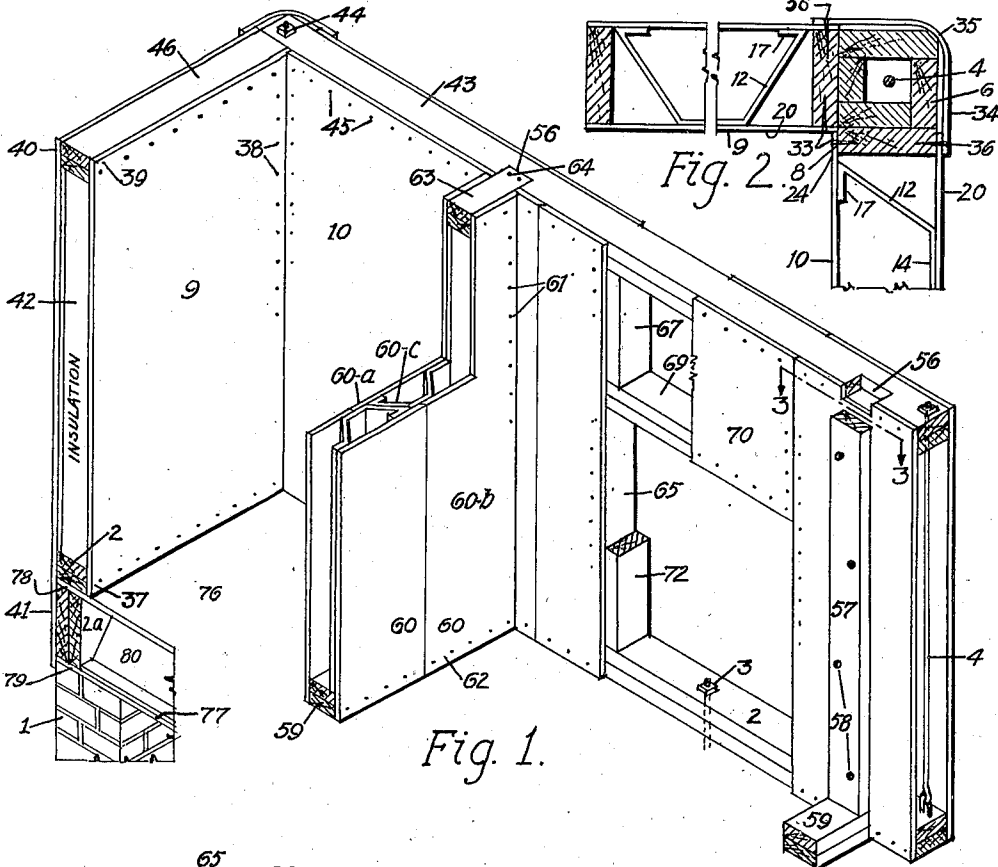


Fig. 2.

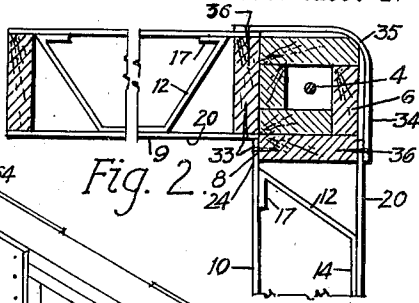


Fig. 1.

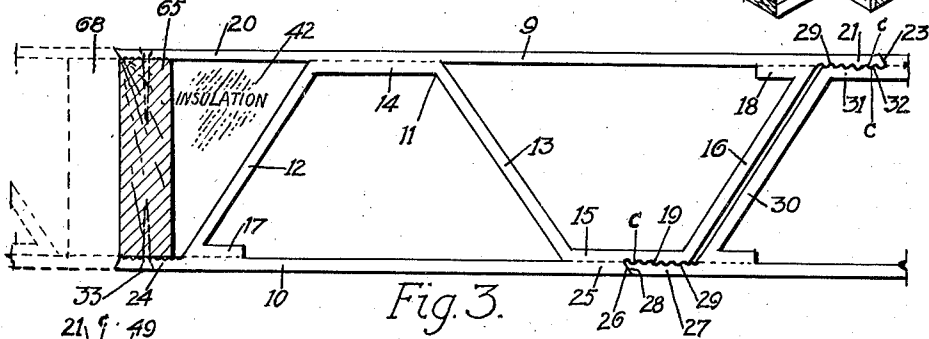


Fig. 3.

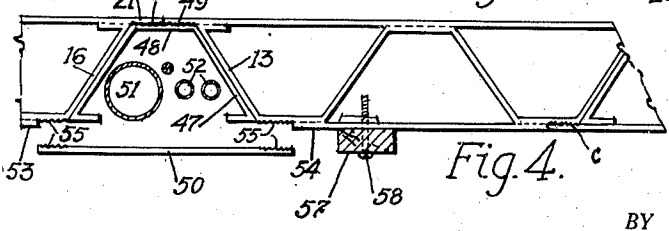


Fig. 4.

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2 Sheets-Sheet 2

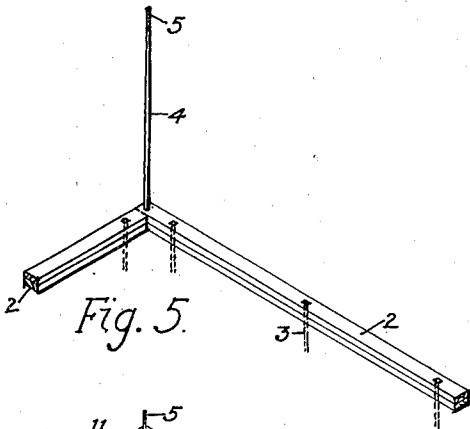


Fig. 5.

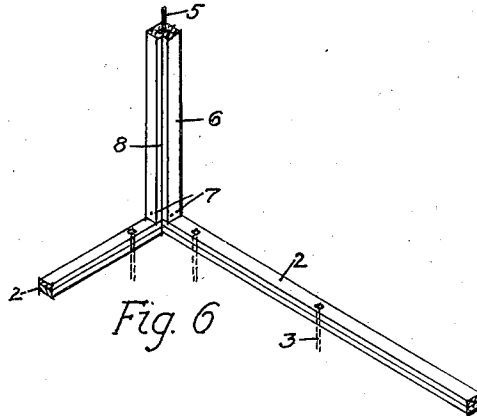


Fig. 6.

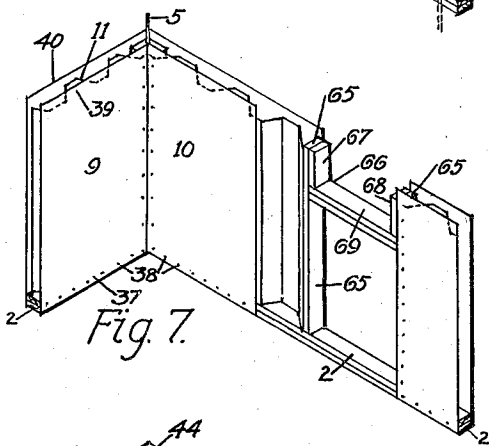


Fig. 7.

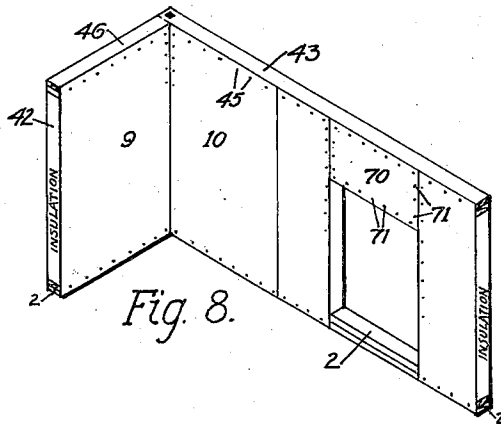


Fig. 8.

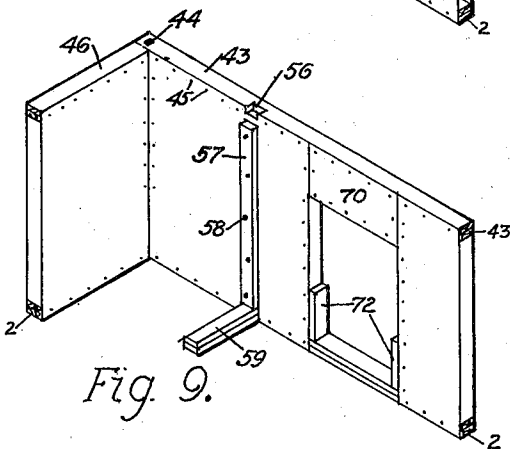


Fig. 9.

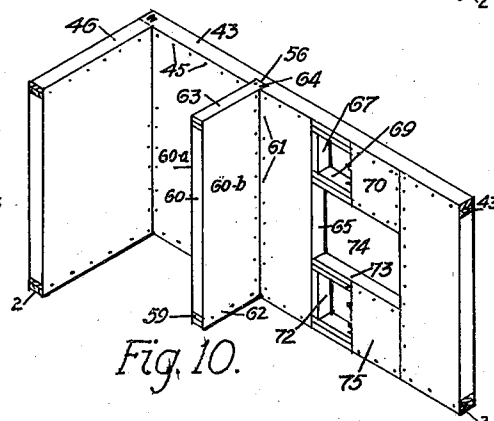


Fig. 10.

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2,065,433

BUILDING CONSTRUCTION

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Application December 1, 1934, Serial No. 755,616

28 Claims. (Cl. 72-16)

Our invention pertains to a method of erecting buildings, to a wall construction and to elements used therein. More particularly, our origination is calculated, as its general object, very greatly to reduce the cost of residence construction and contemplates the employment of partly or wholly pre-formed units of various standard sizes according to desired room dimensions and door or window locations, to dispense with the need of plastering interiorly and to obviate the need of any exterior finishing excepting a coat of paint or its equivalent while also eliminating the need for many elements and fittings to realize a gain in time and a saving in labor cost.

The necessity for decreasing the cost of homes has notoriously become progressively acute and much study, both official and private, has been devoted to the problem of construction and costs in the building trade. For purpose of comparison we list the items hitherto commonly occurring in any reckoning for building construction:

(A) In exterior masonry wall construction: (1) Stone or brick—each unit of comparatively small size and great weight and separately placed in position. (2) Mortar—a great many joints separately filled and pointed. (3) Furring—many strips separately applied. (4) Lath—many sheets or single lath, separately erected. (5) Plaster—much material separately mixed and applied by hand.

(B) In exterior frame wall construction: (1) Studs—each separately handled and erected. (2) Sheathing—many separate pieces, each separately applied. (3) Building paper. (4) Lath—as in A-4, (5) Plaster—as in A-5.

(C) In interior partition construction: (1) Studs—each separately handled and erected. (2) Lath—one face of wall. (3) Lath—reverse face of wall. (4) Plaster—one face of wall. (5) Plaster—reverse face of wall.

(D) In floor and ceiling construction: (1) Joists—each separately handled and erected. (2) Bridging—many small units separately erected. (3) Floors—separately laid. (4) Lath—in connection with ceiling—separately applied. (5) Plaster—separately applied.

For the many separate materials enumerated above, each demanding its own erection with attendant labor cost, the method herewith presented contemplates the substitution of a single group of building units, shop-fabricated, in a number of standard heights, of any desired length in short multiples up to limits feasible for transportation by rail or truck, reversible and interchangeable, of comparatively light weight, ver-

min-proof, fire-proof and weather-proof as to material, with finished exterior and interior surfaces. The group of units may be set up in a few very simple operations and forthwith become, substantially, the finished wall, floor or ceiling of the building to be erected. It is further contemplated, in the development of this method of construction, that doors, windows and trim may be introduced as complementary portions of such a group of building units.

Adverting to the drawings:—

Fig. 1 is an isometric view of the general assembly of a building construction embodying the principles of our invention and with a portion of the partition cut away to reveal the reinforcing webbing and also showing at one place a portion of the foundation.

Fig. 2 is an enlarged horizontal section of the corner of the construction.

Fig. 3 is an enlarged plan section on line 3-3 of Fig. 1 to reveal a horizontal section of adjoining panels, their lapped and cemented interlock, insulating material around the webbing, a jamb-stud and a short stud section—the two latter at either a door or a window.

Fig. 4 is a plan view (to somewhat smaller scale than Fig. 3) showing a plurality of panels with alternate ones relatively reversed and with lapped obliquely abutting webbing sections, also showing scored interlock of facing sections, a partition stud connection by means of a toggle bolt, a separate facing sheet to permit entry of pipes and other conduits and distinct types of lateral end projections of facing sheets.

Figures 5 to 10 inclusive—on sheet 2 illustrate sequentially the order of expectable assembly; Fig. 5 showing meeting base plates bolted to a foundation and with a corner tie-rod in position; Fig. 6 showing the addition of a hollow corner post enveloping the tie-rod and secured to the base plates and fashioned along its interior corner with an L-shaped recess; Fig. 7 showing the erection of panel units with their lower ends straddling portions of the base plates, also showing jamb-studs and window or door lintel interfitted, the lateral laps of the facing sheets of the panels, being nailed to the base plates and showing a separate panel facing removed to reveal the pipe space; Fig. 8 showing the top plates snugly inserted between upper facing flanges and resting upon the reinforcing webbings, showing stuffed insulation, the pipe space panel nailed in place, the other panels also nailed along their tops to the top plates and with a standard sized shorter panel inserted over the window or door head; Fig.

9 showing an abutting partition unit excepting its top plate one end of which will occupy the notch shown on the upper plate and Fig. 10 showing the attachment of the partition panel and interfitting of the top plate of the partition and also suggesting the completion of the window with its emplaced lower units with sill set.

Observation of Fig. 1 will disclose in the lower left hand corner the top of a foundation 1 with surmounted framing 2A. Elsewhere, the foundation will also carry one or more floor plates 2 which are customarily secured thereto by means of tie-rods or bolts 3 as shown in Figures 5 and 6. At a corner of the building a tie-rod 4 having a screw threaded upper end 5 may be secured in any appropriate manner as by passage upwardly through the floor plates while Fig. 1 shows the complete assembly with the more important adaptations of door or window and partition conjunctions. Concurrent attention to the views on sheet 2 is recommended which illustrate the preferred sequence of steps and the method of erection and assembly. Furthermore, while corner posts and spaced studs have been incorporated in the disclosed exemplifications, we would have it distinctly understood that the inclusion of corner posts and full room-height studding is optional and not indispensable because our optionally preformed wall panels are intended and will be designed with such inherent rigidity and strength as by themselves as upright members to sustain all expectable loads when finally connected with adequate stability with nearly duplicated floor and ceiling panels. As distinguished from known prior practice, our panels are not mere fillers, but load sustaining elements. The thickness of the panel facings and both thickness and running depth of reinforcing webbing between the panel facings is a mere matter of design to be determined and/or varied according to estimated load duty.

Fig. 6 shows a wooden corner post 6 erected, enclosing the tie-rod 4 except for its upper extremity and with its base secured by nails 7 to the floor plates 2. The inside corner of the post 6 is fashioned along its entire length with an L-shaped channel 8, the purpose of which will hereinafter appear.

The structure of the individual panel units is most clearly revealed in Fig. 3 though several other views partially evidence it to smaller scale. The panels are now intended to be made of an artificial, fire-proof and substantially weather-proof composition which will also preferably be impervious to moisture, such for instance, as highly compressed, cemented asbestos fibre, glass, ceramic or indurated material, fibrous composition or metal. Possibly they are to be manufactured as integral units extruded from appropriately shaped molds. Each panel will comprise one or more facing sheets disposed in the same plane and one or more parallel spaced facing sheets also to occupy substantially the same plane. The spacedly appositioned facings are connected by reinforcing webbing or corrugated, zig-zag or any other sinuous design, but so disposed as to be adapted to a load-supporting function. Slight modifications, in the upright wall panels as to lateral extent of the facings and/or of the webbing may be adopted within the patentable scope of our invention to suit varying conditions of their contemplated interfitting. Some edges of the facings will always project beyond corresponding edges of the reinforcing webbing, the measure of recess-

sion of any particular webbing edge with respect to a corresponding edge of a facing sheet or with respect to corresponding edges of facing sheets will be determined by the dimension, shape or location of another element to come into juxtaposition therewith.

Directing the attention to Fig. 3 two facing sheets 9 and 10 are connected by a reinforcing webbing designated in its entirety by the numeral 11. The disclosed configuration, as a mere exemplification, comprises an oblique section 12, a reversely oblique section 13, a joining section 14 which is parallel to and in contact with or integral with a corresponding area of the facing 9, another section 15 parallel to the other facing 10, another oblique section 16 parallel to the section 12, an extremity 17 merging with one end of the section 12 and extending toward the section 13 while in contact with the facing 10 and a similar end section 18 of the section 16 which is in contact with the facing 9 and extends toward its counterpart 17. A portion, of that side of the section 15 which is remote with respect to the facing 9 and which is furthermore uncovered by the facing 10 is scored or otherwise roughened at 19 for purpose to be later explained. The facing 9 projects laterally at one end 20 beyond the junction of the sections 12 and 14 to terminate in a plane beyond that vertical plane which is occupied by the other end of the section 12 or enough beyond to give the desired lap of the jamb-stud. The other lateral end 21 of the facing 9 also projects a shorter distance beyond the near end of the section 16. The inner side of the projecting portion 21 is similarly scored at 22 and its terminal surface is cut at an oblique angle to form a bevel 23. That lateral end of the facing 10 which is opposite to the end 20 likewise projects beyond the near end of the section 12 by a distance substantially equal to the depth of the channel 8 in the corner post. The substantially uniform depth of the webbing 11 should about correspond with the breadth of the upright element (post or stud) against which it is preferably to rest whereby the ends 20 and 24, as the equivalent of vertically extending flanges, may straddle-lap the post 8 as shown in Fig. 2.

The other end 25 of the facing 10 terminates along the bevel line 26 about midway of the extent of the section 15. Since our panels are sometimes to be arranged as a row with edges in abutment we have so designed them for precise interfitting abutment when adjoining ones are relatively reversed as may be clearly seen at the right end of Fig. 3. The projecting end 27 of that facing sheet of the adjoining panel which is to be aligned with the facing sheet 10 is complementarily bevelled at its extremity 28 so as to be adapted for juxtapositioning with respect to the bevelled surface 26. The inner surface of the end 27 is complementarily scored at 29 for rabbeted interfitting with the scoring 19 where a cement C or other suitable adhesive is applied. The first oblique section 30 of the adjoining panel will thus conform to and preferably abut the oblique section 16 whereby somewhat to strengthen with a double ply. The next section 31 of the webbing of the adjoining panels is exteriorly complementarily scored at 32 for rabbeted interfitting with and cementation to scoring 22. We are to be credited with understanding that the number of return bends or of oblique sections of the reinforcing webbing, for any unit of measurement parallel

with the facings of the panel, may be selectively varied.

Redirecting attention to Fig. 2, it is to be there observed that the same design of panel edge is employed for cooperation with the two sides of the post 6 which extend to the channel 8 and that screws or nails 33 are driven through the flanges 20 and 24 of different right angularly related panels where they occupy the channel 8 and thence into the post 6. The other pair of flanges 20 and 24 of different panels may either be lengthened at a building corner if a post be used to meet at the outer corner of the post or, as shown in Figure 2, they may terminate some distance from the outer corner post to be enclosed by a corner covering sheet 34 rounded at its middle 35 at such outer corner of the post and securement effected by a vertically extending row of screws 36 passing through each of the edges of the cover sheet 20 through the facing flange underneath and into the post.

Both facings of every panel are further so designed as to exceed the length of their interposed webbing or that dimension of the webbing which constitutes its height as viewed for instance in Fig. 7. In other words, according to the showing of Fig. 7, the upper and lower margins of each facing sheet project beyond the corresponding edge of the webbing a predetermined distance to serve the function of straddling and securing flanges preparatory to attachment to another element to be snugly enclosed thereby while resting against the recessed edge of the webbing. The facing sheet 9 for instance, as appears in Figures 1 and 7, has downwardly directed flanges 37 which project beyond the bottom of the webbing 11 a distance substantially equal to the depth of the plate 2 which such flange is to be secured by means of screws or nails 38. Similarly, upper flanges like the flange 39 of the facing 9 will extend above the top of the webbing of that panel, the upper edge strip 40 of the outer facing sheet of the same panel will project as a flange a like distance whereas the lower end 41 of the outer facing may optionally project downwardly a greater distance as shown in order, if desired, to cover an upper portion of the outer side of the foundation wall whatever its structure may be. Insulating material 42 may then be stuffed down into the webbing.

After the panels, which include as their two interior facings those marked 9 and 10, have been erected and secured to the post 6 and to the right angular plate 2, an upper or ceiling plate 43, designed snugly to fit between the upper flanges 39 and 40 of that panel of which the facing 10 is a part, will be caused to rest upon the top of the webbing, a suitable hole being provided at the junction of the plate 43 and another to be later described for the passage therethrough of the upper end 5 of the tie-rod 4 preparatory to screwing home the nut 44 as appears in Figures 1 and 8. Next, the upper flange on the interior facing 10 is secured to the plate 43 by means of the row of screws 45 as appears in Figures 1 and 8 to 10 inclusive and similarly the upper flange of the outer facing of the panel, which has as inner facing the one marked 10, secured to the outer side of the plate 43.

Another upper plate 46 is inserted between the flanges 39 and 40 of the panel which comprises the inner facing 9 where it is snugly enclosed while resting upon the top of the webbing 11 and with its corner end halved into the plate 43. Thereafter, rows of attachment will be similarly

effected through the flanges 39 and 40 and into the plate 46.

Because it is necessary to make provision in any building wall of space for runs of pipes or other conduits, we have shown in Fig. 4 a modification of one panel, likewise standardized, to facilitate accommodation to such a purpose. Such a special panel will be shorter measured parallel with its facings to comprise a webbing 47 having only two, reversely inclined, oblique sections connected on only one side by a section 48. Such a special purpose panel might be interposed, as shown in Fig. 4, between the right end of a panel such as is shown in Fig. 3 and another panel having its last left end oblique section corresponding to the oblique section 13 of Fig. 3 though such other adjoining panel would be further truncated as will be presently described. Against the section 48 there will meet preparatory to being affixed by cement C the projecting end 21 and the corresponding projecting end 49 of that facing of the panel to the right which occupies the same plane. On the opposite or open side of the special short panel a removable facing sheet 50 is to be applied after insertion and connection of a pipe 51, conduits 52 or anything else for which space remains. The attachable facing element 50 will fit between the extremities 53 and 54 of the opposite, usually interior, facings of the adjoining panels one of which comprises the webbing section 16 and the other of which comprises the webbing section 13. A pair of scored interfittings 55 are similarly provided to effect a better cemented union of the facing sheet 50 when it is desired to close the pipe space. A similar space appears open and unfilled in Fig. 7 and closed in Fig. 8 where the top and bottom edges of the loose facing sheet are secured to the plates 2 and 43.

Because in any building construction partitions, door and window openings are indispensable, we have deemed it to be expedient to disclose the adaptation of our system to incorporation of both in order to evidence the simplicity and facility which the principles of our invention permit a building to realize.

Supposing a partition to be desired where indicated in Figures 1 and 9. A notch 56 would be cut into the plate 43, next, a stud 57 would be positioned against the facing under the notch 56 and secured thereto through the medium of a row of the common type of toggle bolt 58. The bottom of the stud 57 would rest on the floor plate 59 which would be similarly straddled by the bottoms of a plurality of panels 60 each comprising a facing 60a, a facing 60b and a webbing 60c, the latter being illustrated in Fig. 1. Then, those edges of the facings 60a and 60b which lap the stud 57 would be secured thereto by rows of screws 61, whereas the bottom flanges 62 will be similarly secured to the floor plate 59. Thereafter, as appears in Fig. 10, the partition ceiling plate 63 would have its one end caused to occupy the notch 56 and the remainder of its length snugly fitted between the tops of the facings 60a and 60b and resting upon the webbing 60c. Nails 64 might secure the plate 63 in the notch 56.

Beyond another pipe and conduit-occupied panel, as shown in Fig. 7, a pair of suitably spaced jamb-studs 65 might be erected, one for confinement by the right end vertical flanges of the loose facing sheet and the other by the left vertical flanges of a panel beyond. Between the studs 65, an elsewhere fabricated unit frame 66, would be fitted, such frame comprising upper short section studs 67 and 68 on opposite sides of the

opening, and a lintel 69 thereacross. Then a special panel 70 in accordance with our design would have its lower edges confining the lintel preparatory to being secured to it and to the two upper short section studs 67 and 68 by nails or screws 71, as shown in Fig. 8.

Before proceeding with the description of the window adaptation we state that if the wall, of which the facing 10 is a part, is foreknown to embrace a window, the ceiling plate 43 would not be inserted in place until after all of the panels of that wall had been emplaced.

Next, as will readily be understood upon inspection of Fig. 10, a pair of lower short section studs 72 are affixed both to the floor plate 2 and to the jamb-stud 65 and a sill 73 provided, which latter eventually is complementarily to demark the window opening 74. Finally, another special panel 75 of suitable though standard size is locked and secured in the skeleton frame which is defined by the floor plate 2, two lower short section studs 72 and sill 73, but the latter would not be nailed into place until after the panel 75 had straddled the margins of the plate 2 and the studs 72 on both sides and been affixed thereto.

It is to be further understood that our panels, irrespective of possible variation in dimensional strength, are equally well adapted for use in floors, ceilings and roofs. The application in flooring is illustrated for instance over the foundation wall in the lower left hand corner of Fig. 1 where enough of one corner of a floor panel is disclosed interfitted and secured. Its upper facing 76 and its lower facing 77 project as flanges 78 and 79, the former compressed between the plate 2 and framing 2a and the latter in like manner between the framing 2a and foundation 1. The webbing 80 has its return bends staggered in superposed horizontal planes. Since the upper flooring or ceiling would be a duplication, no showing thereof is necessary. The roof panels, if sloped to convergence to a ridge, would have their lower ends bearing against diagonal surfaces of triangular thrust blocks extending along opposite ceiling plates and be appropriately connected at their meeting ends with a ridge member where a water-proofing cap might be added. Illustration of the roof assembly has been omitted because deemed not to present patentable novelty worthy of claim. It is contemplated that a construction using our panels and completed according to our disclosure, will present finished surfaces except for coats of paint exteriorly and either paint or some preferred covering interiorly.

It is to be realized that the scope of our invention comprehends many equivalent methods and constructions. The showing of the drawings and the particular description are merely specific exemplifications of a plurality of mechanical embodiments and arrangements.

We claim:—

1. A building wall comprising the combination of parallelly spaced supports, a preformed panel composed of webbing and facing sheets disposed on opposite sides of said webbing extending obliquely to and fro therebetween, the top and bottom ends of each of said facing sheets projecting beyond the correspondingly located ends of said webbing, the latter being of the same depth as the width of said supports and located therebetween and means for attaching said sheet ends to opposite sides of the plates.

2. In a building construction, the combination of a row of preformed panels with upright edges in abutment, each panel comprising a webbing

including reversely oblique sections confined by flat facings in parallel relation with respect to each other and disposed on opposite sides of said webbing, certain ends of said facings being lapped in staggered relationship against an adjoining similar panel and means for attaching pairs of appositioned areas of differing angular relationship on adjoining panels with respect to each other.

3. In a corner wall construction, the combination of floor and ceiling plates, a corner post connecting said plates and fashioned along its inner corner with a channel, and preformed panels including webbing abutting both plates and post and also including facings on opposite sides of said webbing, corner ends of said facings projecting beyond corresponding edges of said webbing and lapping said plates and post, corner ends of the inner facings projecting into said channel and means for securing such lapped areas to each other.

4. In a building construction, the combination of base and ceiling wall plates, a pair of posts connecting said plates, a row of panels arranged in abutment between said posts and extending from plate to plate, said panels each comprising facing elements in spaced relation and a corrugation type of connection therebetween, the facing elements on opposite sides of each panel being of different length with the longer one projecting laterally beyond each end of the longer side of said connection and with the shorter one having its ends terminating certain distances from the ends of the shorter side of the connection therebetween, adjacent panels being relatively reversed whereby the projecting ends of the longer facings overlap at unfaced areas of the corrugated connections and means for securing the panels to the plates and posts.

5. In a wall construction, the combination of a plate, a plurality of panels arranged as an abutting row extending along said plate, said panels each comprising flat facing elements in substantially parallel spaced relation and with a zig-zag connecting webbing therebetween, the facing elements on opposite sides of each panel being of different length with the longer one projecting laterally beyond each end of a longer side of said webbing and with the shorter one having its ends terminating distances from the ends of the shorter side of its webbing, adjacent panels being relatively reversed whereby the projecting ends of the longer facings lap at unfaced areas of the webbings, both of said facing elements furthermore projecting transversely beyond another margin of their connecting webbing and overlapping the sides of said plate and means for attaching said lapped areas of the facing elements to said plate.

6. In a building construction, the combination of base and ceiling wall plates, a pair of posts connecting said plates, a plurality of panels arranged as an abutting row extending between said posts and with all of the panels of a height to extend from plate to plate, said panels each comprising flat facing sheets and a corrugated webbing therebetween, the facing sheets on opposite sides of each panel being of different length and with the longer one projecting laterally beyond each end of the longer side of its webbing and with the shorter one having its ends terminating some distance from the ends of the shorter side of its webbing, adjacent panels being relatively reversed whereby the projecting ends of the longer sheets lap the unfaced areas of the webbings,

means for securing the lapped facing areas of one panel to the webbing of an adjoining panel, both facing sheets of each panel furthermore projecting transversely beyond the top and bottom margins of their webbings and overlapping the sides of said plates and means for attaching said top and bottom plate-lapped areas of the facing sheets to said plates and to said posts.

7. In a wall, a plurality of panels in adjacent edge to edge relationship, each panel comprising a pair of facing sheets spaced apart and a reinforcing connection therebetween, meeting edges of adjacent panels being provided one with a scored recess and the other with a complementarily scored projection adapted for interfitting with their scored surfaces in apposition and in-duratable material occupying to seal said scored connection.

8. In a building partition construction, the combination of a wall comprising floor and ceiling plates and a panel construction therebetween, one of said plates being fashioned at a selected point with a notch, a partition including a stud and a plate, the latter having its one end occupying and secured in said notch and means for attaching said partition stud and plate to said panel construction, said panel construction comprising a webbing having two sides appositioned to said stud and plate respectively and further comprising facing sheets attached to opposite sides of said webbing, margins of said facing sheets lapping and secured to both stud and plate.

9. A wall panel structure composed of a continuous, laterally extending corrugated and load-supporting webbing and a flat facing disposed against a pair of spaced webbing bends on one side of said webbing, ends of said facing projecting beyond the correspondingly located ends of said webbing and a pair of facings on the other side of said webbing and arranged with meeting ends at a bend of the webbing which is staggered with reference to one of said first mentioned pair of bends, other ends of said pair of facings also projecting beyond correspondingly located edges of the webbing.

10. In a wall construction, the combination of a quadrilateral wooden frame, a row of panels fitted in said frame and each having an upright edge in abutment with an edge of an adjoining panel, each panel comprising an outer and inner flat facing and a corrugated webbing therebetween, the four frame-defining edges of said webbings being recessed with respect to the four corresponding frame-defining edges of each of said facings respectively and abutting the inner margins of the frame whereby extremities of said panels lap all sides of the frame, means for securing the lapped panel extremities to the frame and tie rods passed through opposite sides of the frame and extending between adjacent pairs of reversely oblique sections of said webbing.

11. In a wall construction, a base plate, a pre-formed panel of artificial, fireproof and substantially weatherproof composition and of inherent load-supporting rigidity, said panel comprising a pair of facing sheets and between them a reinforcing webbing having all edges recessed with respect to corresponding edges of said sheets, the lower continuous edge of said webbing resting throughout its length upon said plate, a top plate resting throughout its length upon the top edge of said webbing, said plates being lapped by top and bottom margins of said sheets and in-

terlocking means for securing said facing sheet margins to said plates respectively.

12. In a wall construction, a four-sided, wooden skeleton frame comprising spaced studs and top and bottom connecting plates, a panel assembly of artificial, fireproof and substantially weatherproof composition and of inherent load-supporting rigidity, said panel assembly comprising a plurality of vertically abutting panels each including; facing sheets in spaced relation and a corrugated connecting webbing, oblique, cross-wise extending sections of the webbing of adjacent panels being appositioned, marginal vertical edges of the webbing of the end panels being appositioned to the inner sides of said frame, upper and lower edges of said plurality of panel webbings resting against the lower side of the top of the frame and against the upper side of the bottom of said frame respectively, defining lateral margins of the facing sheets of the end panels and the upper and lower extremities of all of the facing sheets projecting beyond corresponding edges of webbing whereby to lap the frame and means for securing said margins and extremities to the frame.

13. In a wall, the combination of a row of panels with upright edges in abutment, each panel comprising a webbing including reversely oblique sections confined by flat facings in parallel relation with respect to each other and on opposite sides of said webbing, certain ends of said facings being lapped against an adjoining panel, one panel being provided with a detachable facing section adapted to permit access to the space between a pair of adjacent reversely oblique sections together with means for securing the lapped areas to each other and for securing said detachable facing section in place.

14. In a building construction, preformed panels each comprising a pair of facing sheets in spaced relation and between them reinforcing webbing including to and fro oblique sections and an interjacent sheet-parallel section, one facing sheet of each panel having an end projecting beyond a corresponding end of its side of the webbing to form an obtuse angle with the latter and the other sheet of each panel having an end recessed with respect to the end of its side of the webbing to there provide in conjunction with the exposed area of the sheet parallel section a recess adapted to receive the projecting sheet edge on an adjacent panel with respect to which said first mentioned panel is relatively reversed.

15. In a building construction, a panel comprising a pair of facing sheets in spaced relation and zig-zag reinforcing webbing between said sheets and having staggered sections parallel to said sheets, one facing sheet having a V-shaped end with an oblique edge located beyond a corresponding end of its side of the webbing and the other facing sheet having a complementary oblique edge located part way across a sheet-parallel webbing section on its side of the webbing to provide there a V-shaped recess adapted for interlock with the V-shaped projecting end on an adjacent panel.

16. In a building construction, a row of panels arranged in edge to edge juxtaposition and each comprising; a pair of substantially parallel facing sheets in spaced relation and connecting them a to and fro-type of webbing, one facing sheet of a panel having that one edge which is nearest to an adjoining panel projecting beyond a corresponding end of its side of the webbing and the other facing sheet of the same panel having

that one of its edges which is nearest to the same adjoining panel retracted with respect to the end of its side of the webbing, the appositioned facing sheet edges of an adjoining panel being relatively reversed to permit interfitting on opposite sides of the assembled panels and also appositioning of sections of the webbings of the assembled panels and additional interlocking means at conforming points of said adjoining panels.

17. As a new article of manufacture, a panel comprising a pair of facing sheets in substantially parallel spaced relation and as a connection therebetween a zig-zag reinforcing webbing, one facing sheet having an end projecting beyond a corresponding end of its side of the webbing and said facing sheet end being fashioned as an acute-angle extremity, the other facing sheet having its corresponding end retracted with respect to the same end of its side of the webbing and said retracted end furthermore having its end surface undercut to form in conjunction with its side of the webbing an acute-angled recess, said acute-angled facing sheet extremities being adapted for interfitting with relatively reversed formations on an adjoining panel.

18. In a building construction, the combination of a row of panels with lateral edges in juxtaposition, each panel comprising a webbing having oblique sections extending to and fro between flat facings which latter are in substantially parallel relation with respect to each other opposed ends of two aligned facings of adjoining panels terminating part way across to leave partially unfaced the webbing section to which they are attached, one panel being provided with a detachable facing section adapted to permit access to the space between a pair of adjacent webbing sections and said detachable facing section having ends lapped against the unfaced webbing sections of the adjoining panels and means for holding said detachable facing section in place.

19. In a building construction, the combination of a wall frame, a row of preformed panels fitted in abutment within said frame, means for attaching the panels to the frame, said panels each comprising facing elements in spaced relation and a connection extending obliquely to and fro between said facings, the facing element on opposite sides of the same lateral end of each panel being disposed with one projecting laterally beyond an end of one side of said connection and with the other one having a diagonally opposite end terminating a certain distance from the end of its side of the connection therebetween, adjacent panels being relatively reversed whereby the projecting ends of the facings overlap unfaced areas of the connections of adjoining panels in staggered relationship and separate means for securing the panels in such relationship.

20. In a building construction, the combination of parallel spaced wall plates, means connecting said plates, a plurality of panels arranged as an abutting row extending along said plates and with all of the panels of a size to extend from plate to plate, said panels each comprising flat facing sheets and a corrugated webbing therebetween, the facing sheets on opposite sides of each panel being of different width and with the longer one projecting laterally beyond an end of the longer side of its webbing and with the shorter one having an end retracted some distance from the end of the shorter side of its webbing respectively adjacent panels being relatively reversed whereby the projecting ends of the longer sheet laps the unfaced areas of the

webbing, means for securing the lapped facing area of one panel to the webbing of an adjoining panel, both facing sheets of each panel furthermore projecting transversely beyond the other margins of their webbings and overlapping the said plates and means for attaching said plate-lapped areas of the facing sheets to said plates.

21. As a new article of manufacture, a preformed panel comprising a pair of facing sheets and as a connection therefor a reinforcing webbing extending to and fro therebetween, said panel having a scored projection at one corner and at another corner a complementarily scored recess adapted to receive the projection on an adjacent reversely disposed panel arranged in edge-to-edge abutting relationship.

22. As a new article of manufacture, a panel comprising a pair of spaced facing sheets and a reinforcing webbing extending back and forth therebetween said panel having one corner projecting laterally and fashioned with an acute-angle-extremity and having another corner fashioned with a recess defined by acute-angle-forming walls adapted respectively precisely to occupy and to receive the recess in an extremity on an adjacent reversely disposed panel.

23. In a building construction, a plurality of panels in lateral edge-to-edge relationship, each panel comprising a pair of facing sheets and a reinforcing connection therebetween, meeting edges of adjacent panels being provided one, in conjunction with a section of the reinforcing connection, with a recess partly defined by an oblique wall and the other one with a projection terminating with a complementarily oblique edge in abutment with said oblique wall of the recess in the adjacent panel and locking means for maintaining said interfitted connection.

24. In a building construction, the combination of a frame, a row of preformed panels fitted in said frame and each having an edge in abutment with an edge of an adjoining panel, each panel comprising an outer and an inner facing and a reinforcing webbing therebetween, all frame-appositioned edges of said panel webbings being recessed with respect to corresponding edges of all of said panel facings respectively, margins of said panel facings collectively lapping all sides of the frame and means for securing the lapped margins of the facings to the frame.

25. In a building construction, a plurality of preformed panels arranged in lateral edge-to-edge abutment and each comprising; a pair of substantially parallel facing sheets in spaced relation and a connecting webbing therebetween, one of a pair of adjoining panels having its facing sheet on one side projecting beyond its webbing and having its facing sheet on the opposite side recessed with respect to its adjacent webbing, the other panel having on its one side a complementarily recess occupied by said projection on the first panel and said second panel further having on its opposite side a complementarily facing sheet projection occupying the recess in the first panel, said pair of interfittings being staggered with respect to the mean normal plane between the panels whereby to prescribe their alignment.

26. In a building construction, the combination of an open frame, zig-zag webbing of inherent load-supporting rigidity fitted within said frame, said webbing including alternate sections which are parallel with, and lie substantially within the planes of, outer surfaces of opposite sides of said frame respectively and also including alternate

sections in contact with inner sides of said frame, facing elements enclosing said webbing and secured thereto, said facing elements overlapping the frame, and means for attaching the margins of said facing elements to the frame.

27. In a building construction, the combination of an open frame, zig-zag webbing units of inherent load-supporting rigidity fitted as a row within said frame, said webbing including alternate sections which are parallel with outer surfaces of opposite sides of said frame respectively and also including alternate sections in contact with inner sides of said frame, facing elements enclosing said webbing and secured to the frame-parallel sections thereof, said facing elements overlapping portion of frame-parallel sections of the webbing and also overlapping the frame, pairs of appositioned facing edges on one side of the entire frame being staggered with respect to

similar joints on the opposite side of the frame in its entirety and means for attaching the margins of said facing elements to the frame.

28. In a building construction, upright supports in spaced relation, panels each comprising outer and inner facing sheets and between them a reinforcing webbing, a longer one of said sheets having its lateral ends projecting beyond corresponding ends of its side of the webbing and the other shorter sheet having ends terminating an appropriate distance from the ends of its side of the webbing to provide complementary recesses adapted to receive the projections on adjacent panels and end panels having one pair of corresponding lateral ends of their facing sheets projecting beyond their sides of the webbing and overlapping said supports respectively.

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