

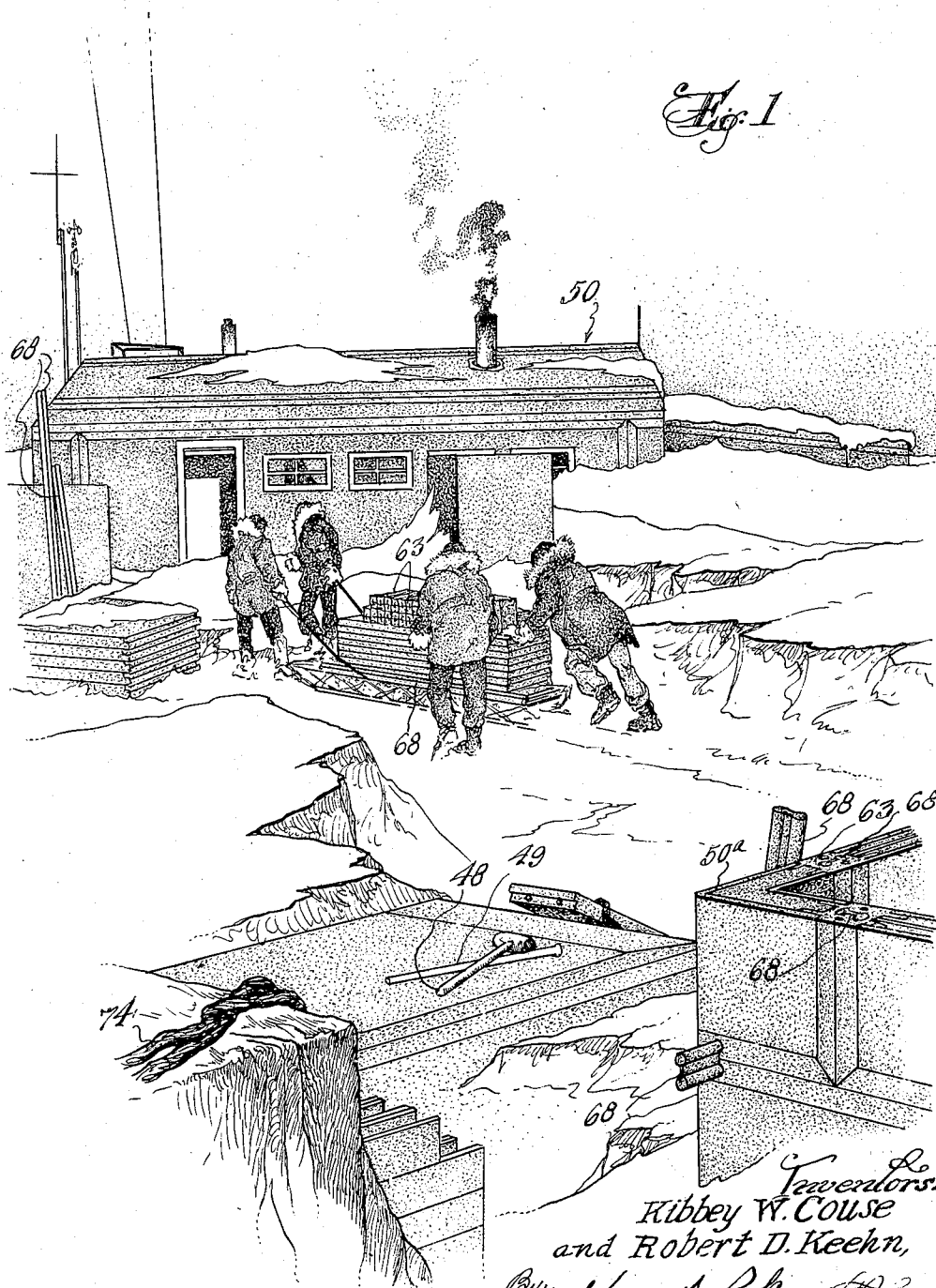
July 29, 1958

K. W. COUSE ET AL
BUILDING CONSTRUCTION

2,844,848

Filed Nov. 3, 1955

9 Sheets-Sheet 1



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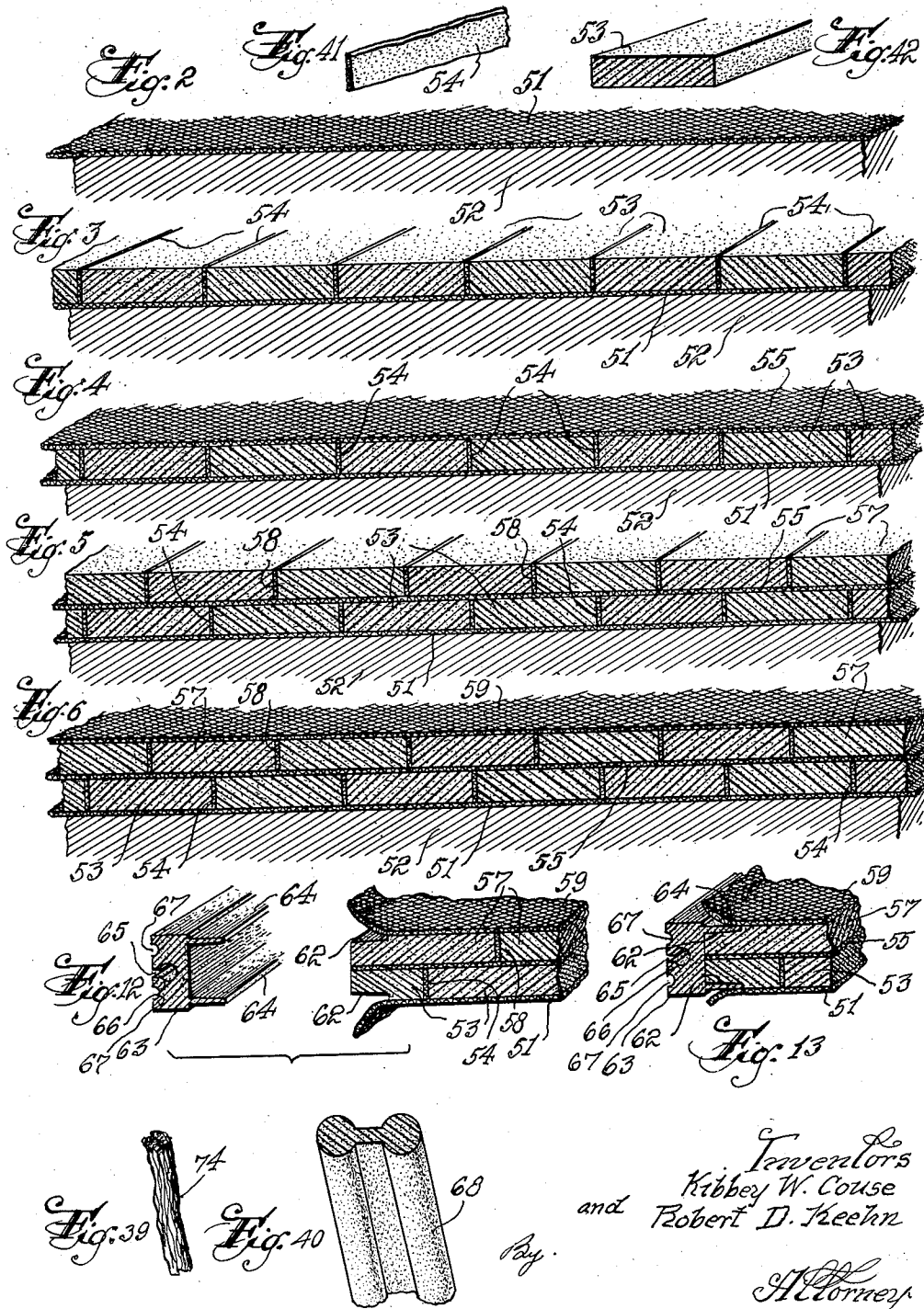
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9 Sheets-Sheet 2



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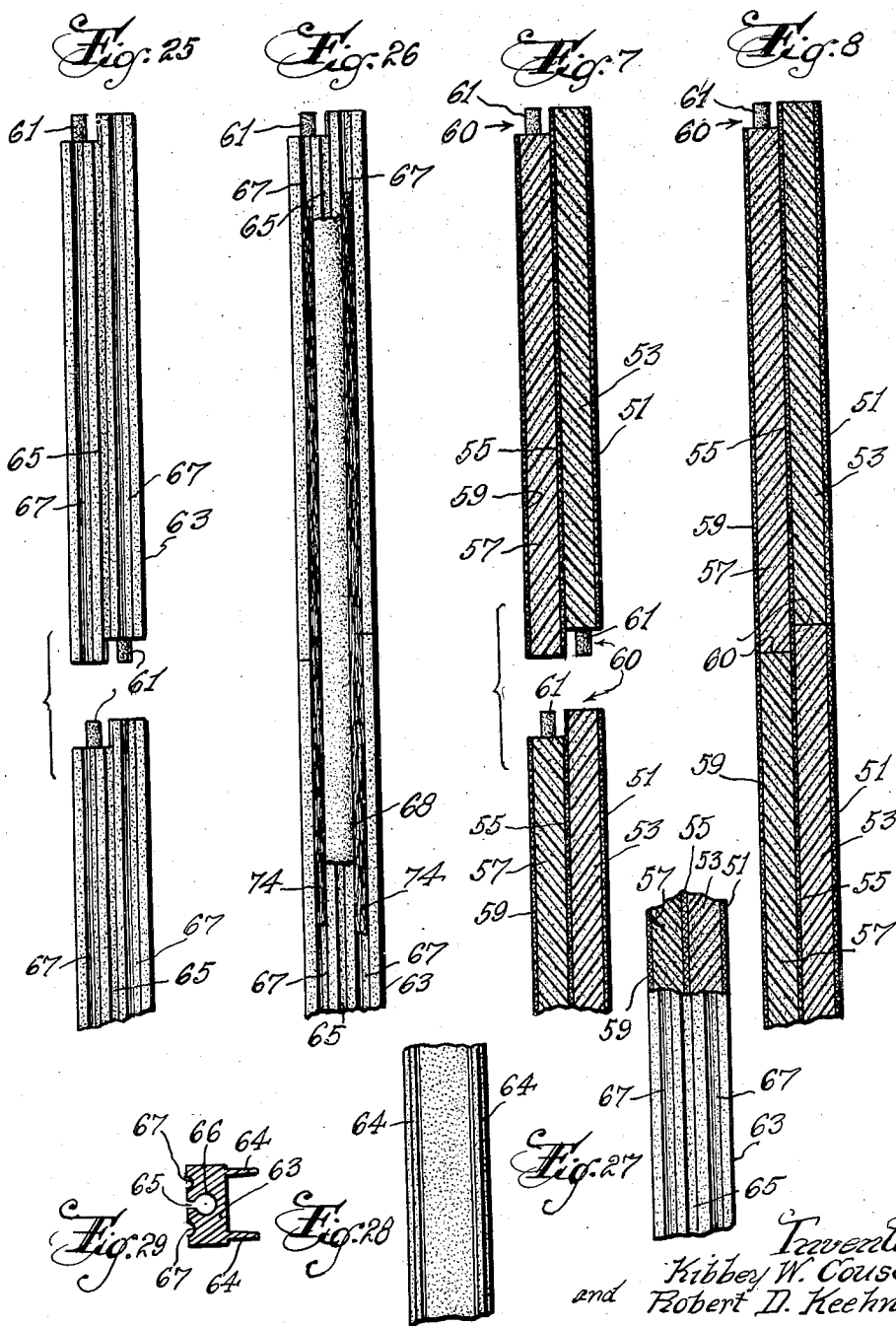
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Filed Nov. 3, 1955

9 Sheets-Sheet 3



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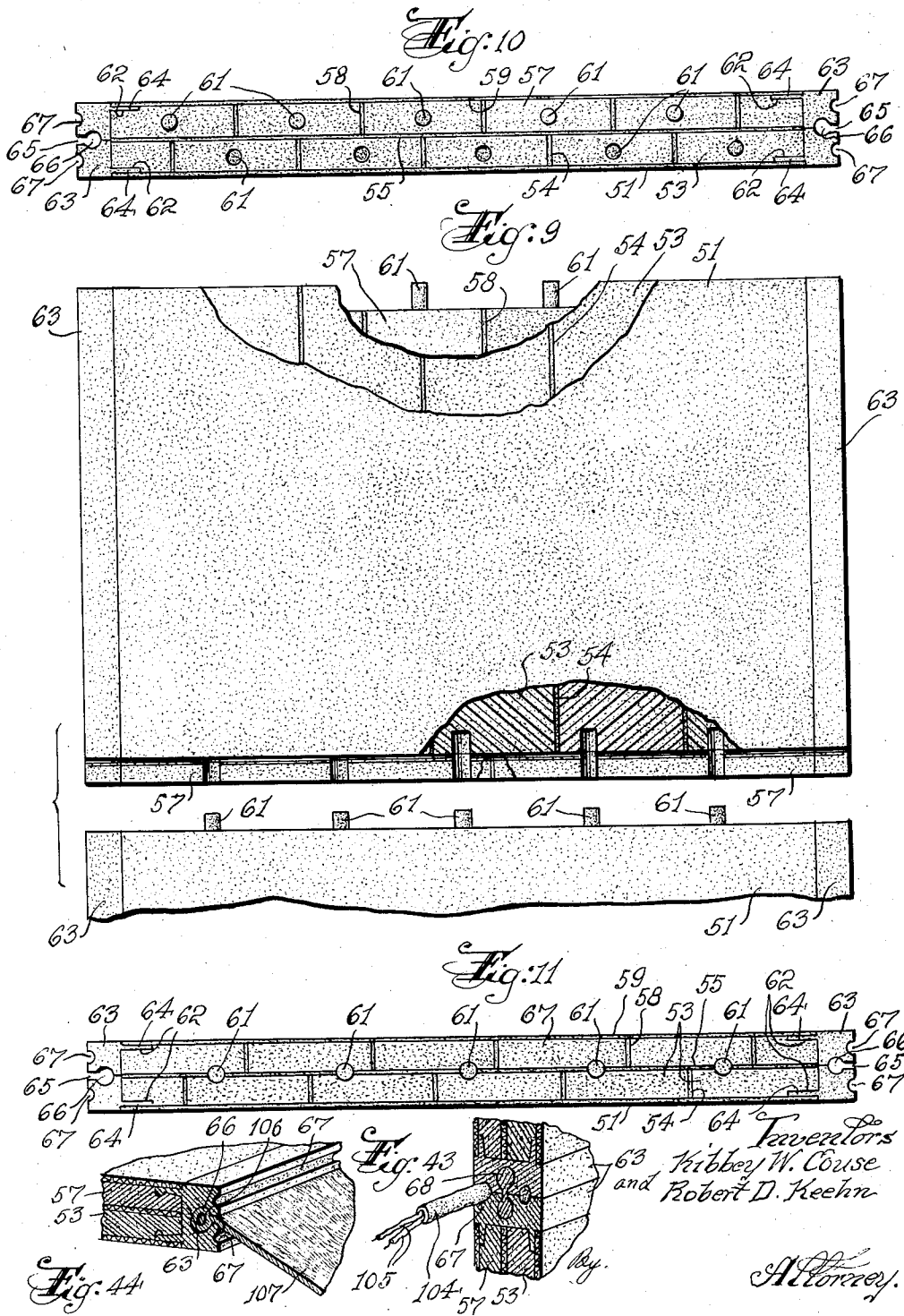
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2,844,848

Filed Nov. 3, 1955

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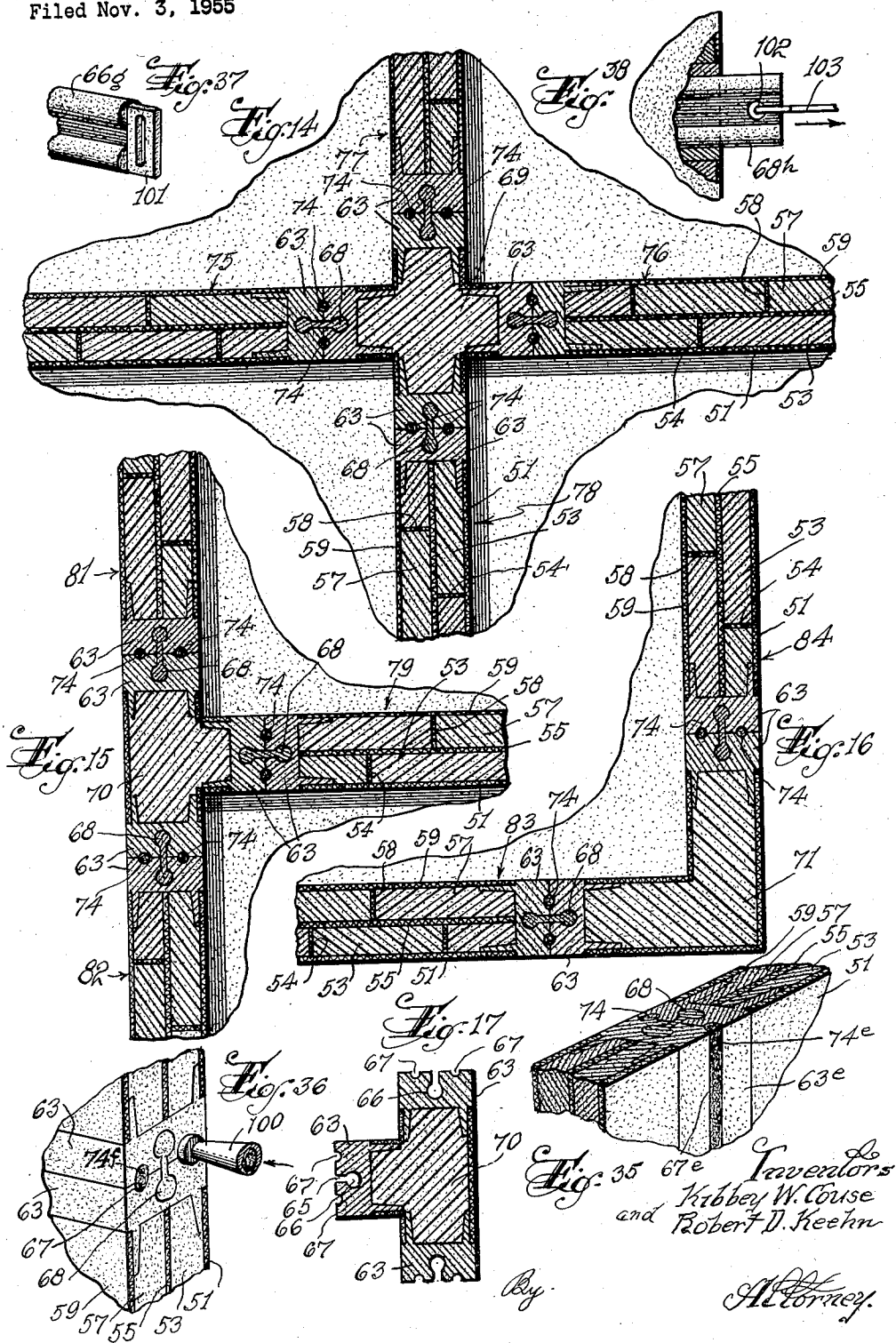
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Filed Nov. 3, 1955

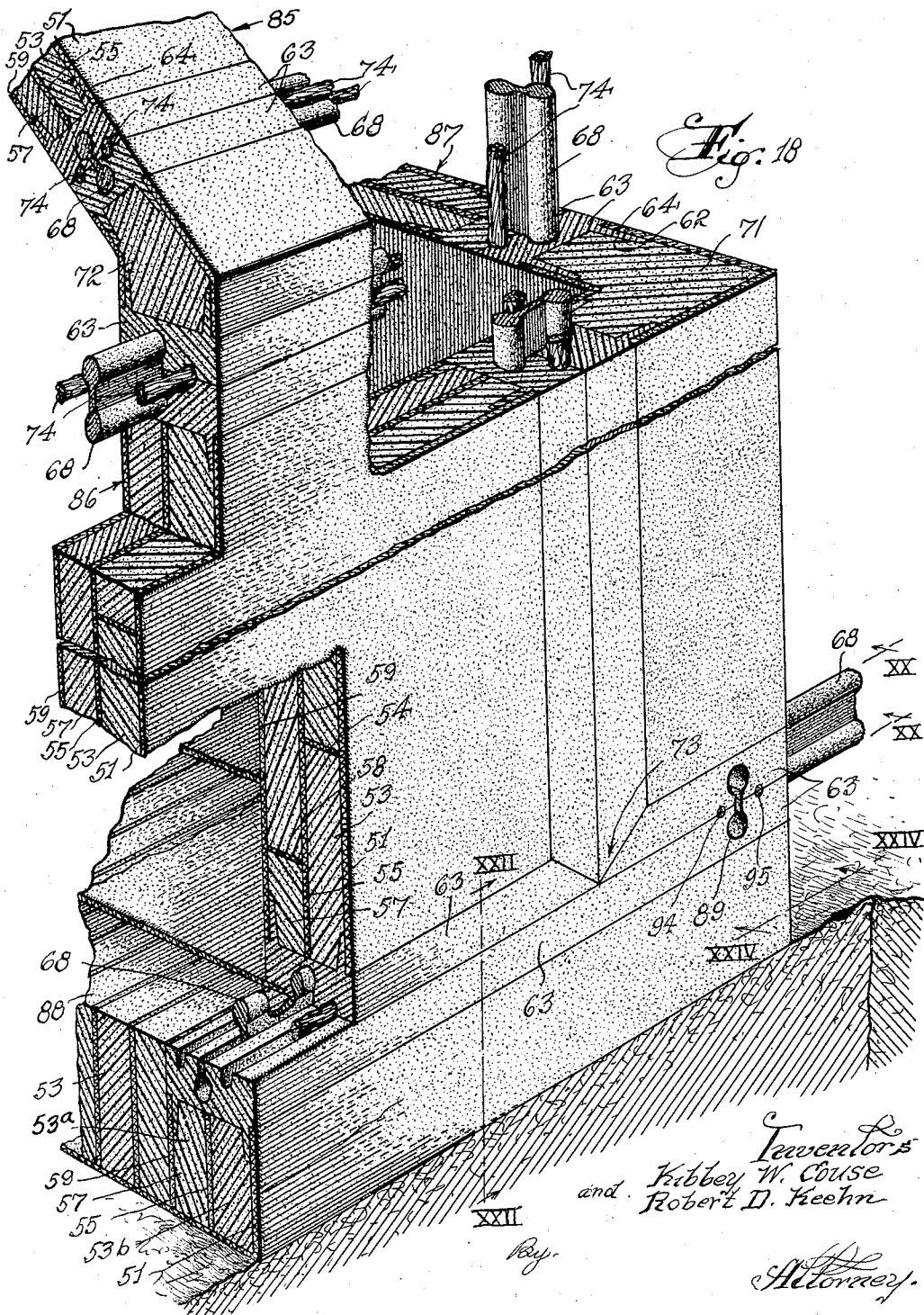
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Filed Nov. 3, 1955

BUILDING CONSTRUCTION

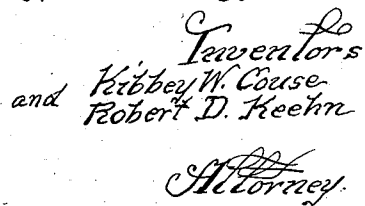
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BUILDING CONSTRUCTION

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Filed Nov. 3, 1955

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Fig. 30

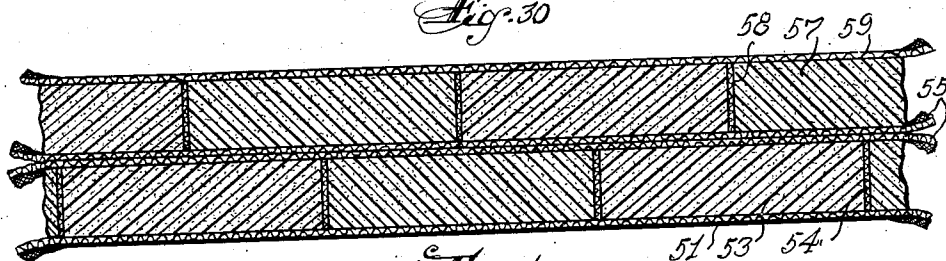


Fig. 31

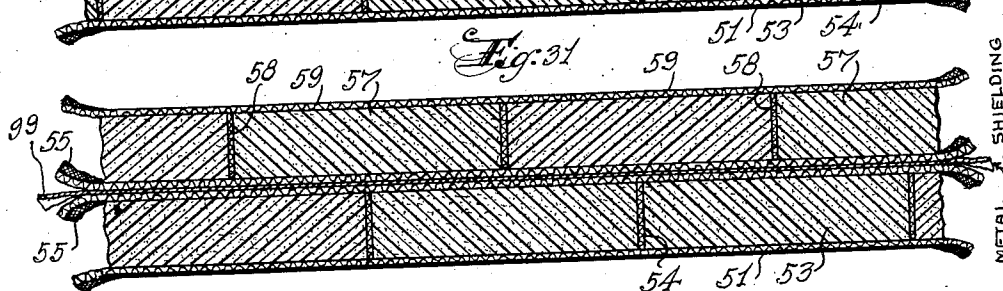


Fig. 32

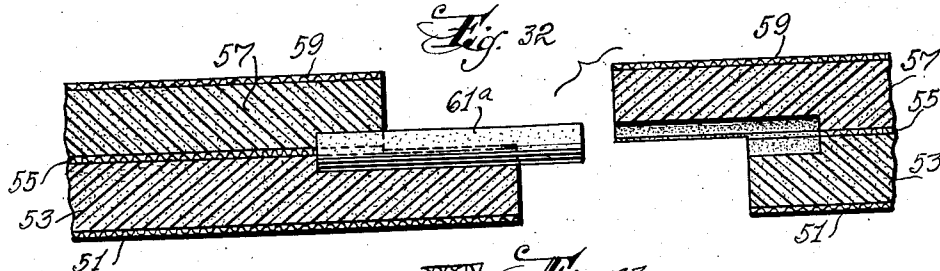


Fig. 33

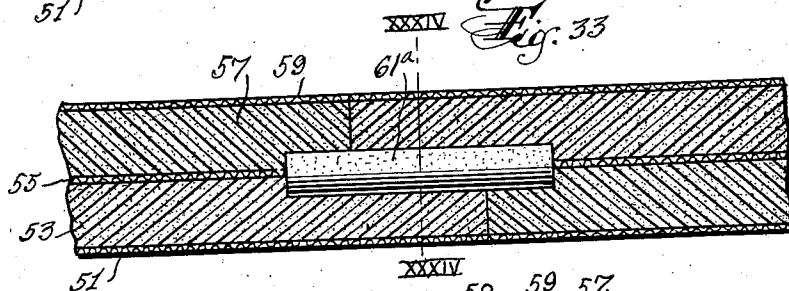


Fig. 34

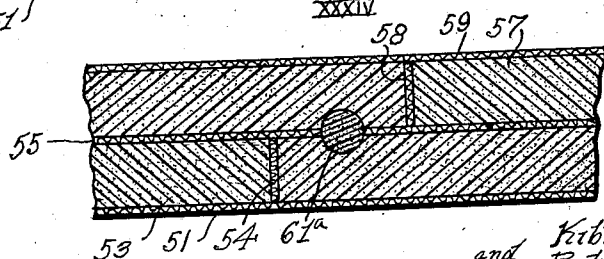


Fig. 34

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2,844,848

BUILDING CONSTRUCTION

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Application November 3, 1955, Serial No. 544,753

6 Claims. (Cl. 20—2)

This invention relates to building construction and, more particularly, to the quick and convenient assembly of parts of buildings of good insulating material so that they are especially adapted for use in the Arctic and other extremely cold regions.

It is the practice in the Arctic regions to erect a metal framework for buildings, such erection necessitating the use of special tools and skilled personnel. It is necessary to provide a foundation other than the ground, and the various parts which go into the construction are not especially adapted to the environment of the structure where it is erected. Also, these parts are not easily transportable by plane or capable of being conveniently parachuted without damage. In doing work in the Arctic regions, it is practically impossible to erect a building structure without first donning heavy gloves or mittens. Wearing such mittens, it is impossible to make fine adjustments in connection with the assembly of steel parts. Also, handling any metal with bare hands in severely cold weather is not only uncomfortable but dangerous, because any moisture will freeze the hands to the metal. In accordance with our invention, we propose to avoid the aforesaid difficulties and disadvantages.

An object of our invention is to produce rectangular panels of considerable width and length, made up of layers of material superimposed one upon the other in such a manner that the final product is monolithic, of any suitable width and length, as well as being capable of separation into smaller units or combination with other similar units.

Another object of our invention is to create elongated rectangular extruded units of predetermined length and shape for use in connection with panels such as are discussed in the preceding paragraph, in order to join panel to panel, to provide for walls at angles to one another, to provide for suitable attaching means between such walls and roof and floor panels and, where it is necessary, to provide for strengthening ribs within the structure.

A further object of our invention is to provide extruded or otherwise constructed binding units of predetermined length, having a dumbbell-like cross section, for the purpose of locking and reinforcement in connection with the joining of various rectangular panels.

A still further object of our invention is to produce building units of the character discussed in such a manner that they are interchangeable, that is, the need of different right and left units is avoided by producing such which may be reversibly placed.

These and other objects and advantages will become apparent from the following detailed description when taken with the accompanying drawings. It will be understood that the drawings are for purposes of illustration and do not define the scope or limits of the invention, reference being had for the latter purpose to the appended claims.

In the drawings, wherein like reference characters denote like parts in the several views:

Figure 1 is a pictorial view in perspective showing

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various structures and parts thereof used in the course of erection in accordance with our invention.

Figure 2 is a fragmentary sectional perspective view showing a structure embodying our invention which has just been begun, that is, where the first step has been taken in creating a panel therefor.

Figure 3 is a view similar to Figure 2, but showing the panel after another step has been completed.

Figure 4 is a view similar to Figure 2, but showing the panel after a third step has been completed.

Figure 5 is a view similar to Figure 2, but showing the panel after a fourth step has been completed.

Figure 6 is a view similar to Figure 2, but showing the panel after a fifth step has been completed.

Figure 7 is a vertical sectional view through parts of two panels constructed in accordance with our invention, showing the panels separated but near to one another as if they were about to be joined.

Figure 8 is a view similar to Figure 7, but showing the two panels joined.

Figure 9 is an elevational view, partly in section and partly broken away, showing the sides of panels such as those shown in Figure 7.

Figure 10 is a plan of the upper panel of Figure 9.

Figure 11 is a plan of the lower panel shown in Figure 9, the dowel pin connections being different from those of Figure 10.

Figure 12 is a fragmentary perspective sectional view of one edge portion of a panel and an adjacent marginal locking strip shaped for attachment thereto.

Figure 13 is a view similar to Figure 12, but showing such a locking strip actually fitted over the edge portion of the panel, the outside fiber glass cloth sheets not having been actually sealed to the flanges of said locking strip.

Figure 14 is a fragmentary horizontal sectional view of a structure having intersecting walls, in order to illustrate how panels embodying our invention may be connected at such an intersection.

Figure 15 is a view similar to Figure 14, but showing the connection between an outer wall and a partition or interior wall.

Figure 16 is a view similar to Figure 14, but showing the construction at the corner of a building embodying our invention.

Figure 17 is a view similar to Figure 15, but showing reversed only the locking joint unit of Figure 15, in order to illustrate the fact that such special units may be used either right or left.

Figure 18 is a perspective view adjacent a corner, with parts broken away, showing a building structure erected according to our invention, with special locking units and angular members used in the production and assembly of roof, walls and floor.

Figure 19 is a fragmentary horizontal sectional view of a floor, showing the means for interlocking the marginal units and floor proper to produce a rigid structure.

Figure 20 is a vertical sectional view taken through the floor, wall, and a locking units of Figure 18, approximately on the line XX—XX thereof, in order to show how to use the dumbbell locking units at right angles to each other.

Figure 21 is a fragmentary perspective view with parts in vertical section, parts in horizontal section, and parts broken away, in order to in its lower area further illustrate the structure shown in Figure 15 with a plain or free wall disposed thereabove.

Figure 22 is a fragmentary vertical sectional view on the line XXII—XXII of Figure 18, but showing a modified form of side wall, as well as a modified placement of the floor members.

Figure 23 is a fragmentary elevational view of one end

of a base marginal unit, as used in the structure of Figures 18 and 19, showing how such a unit is beveled and grooved in order to permit cross locking of the floor structure.

Figure 24 is a fragmentary horizontal sectional view of one of the corners of the floor structure below the interlocking dumbbell connectors, as on the line XXIV—XXIV of Figure 18.

Figure 25 is an edge elevational view of parts of two panels positioned as in Figure 7, but showing such with marginal locking units attached.

Figure 26 is a view similar to Figure 25 but showing the two panels after being joined as in Figure 8, with a locking dumbbell unit and caulking in place.

Figure 27 is a fragmentary view of one of the panels as in Figure 25, but showing a part of the marginal strip broken away.

Figure 28 is a fragmentary inside or panel-engageable elevational view of a margin piece.

Figure 29 is a cross-sectional view of one of said margin pieces such as shown in Figure 28.

Figure 30 is an enlarged sectional view of a portion of a panel as shown in Figure 6, but employing two layers instead of one between the overlapping boards or structural elements, and omitting to show a base or support.

Figure 31 is a view similar to Figure 30, but showing in addition the use of metal foil or shielding between the medial layers which separate the sets of structural elements.

Figure 32 is a fragmentary sectional view showing the use of dowels for joining panels, in which the dowels lie on the medial plane of said panels as in the structure shown in the bottom portion of Figure 9 and in Figure 11.

Figure 33 is a view similar to Figure 32, but showing the construction after the panels have actually been joined by said dowels.

Figure 34 is a transverse sectional view on the line XXXIV—XXXIV of Figure 33, in the direction of the arrows.

Figure 35 is a fragmentary vertical perspective view, with parts in section, to show a modified form of margin piece, with caulking means applied externally of the panel.

Figure 36 is a fragmentary perspective view of an end of a wall portion or panel, showing a funnel extending therefrom as a means for extruding caulking material into a groove between the margin pieces.

Figure 37 is a fragmentary perspective view of one end of a dumbbell locking unit, modified to have a handhold or tool-receiving lip which may be integral therewith.

Figure 38 is a fragmentary elevational view of the edge of a structure, at the junction between two panels, with a part broken away, showing a dumbbell locking unit with its end projecting therefrom and apertured so that it may be more easily removed.

Figure 39 is a fragmentary perspective view of one form of caulking member which may be used in structures embodying our invention.

Figure 40 is a fragmentary perspective view of a dumbbell connecting unit which may be used in accordance with our invention.

Figure 41 is a fragmentary perspective view of the dividing skin used as separating means when assembling boards or building elements in accordance with our invention.

Figure 42 is a fragmentary perspective view of one of the building elements or boards employed to construct panels in accordance with our invention.

Figure 43 is a fragmentary perspective view to show how one of the caulking grooves or cavities may be used to carry wiring and/or piping.

Figure 44 is a fragmentary perspective view illustrating how one of the locking marginal units may be employed to support a canvas area.

Referring to the drawings in detail, and first consider-

ing Figure 1, there is shown in perspective some of the things which may be built in accordance with our invention. In the background appears a house or structure 50 set up under conditions of severe cold. In front of said structure are disposed panels constructed in accordance with our invention, as well as locking units 68. There is also shown a sled carrying such panels and edge members or margin pieces 63 for receiving such locking units to unite the panels, said sled being pulled by two men and pushed by a third.

In the foreground, is shown the corner of another building 50a in the course of construction, with various building units disposed near it. On top of a pile of building panels lie a hammer 48 and a straight bar 49, as illustrative of the tools used in constructing buildings in accordance with our invention, as well as some caulking material 74. It will be seen that such tools may be used by men wearing heavy gloves or mittens, thereby avoiding the necessity for exposing the hands to severe climatic conditions such as represented by the scene.

In the Figures 2 to 6, inclusive, and 13, there is illustrated a panel embodying our invention in various stages of construction, the panel comprising a rectangular body portion of heat insulating material having fragile edges, and the aforesaid margin pieces 63 of relatively rigid, hard and tough material. In Figure 2, there is illustrated the first stage in which a layer of fibrous glass skin or cloth 51 is laid on a base 52, which base may be a floor, a table or a flat area of ground. Such cloth 51 may or may not be impregnated at this time with plastic material, an example of such being polyester resin. Upon this cloth 51, as shown in Figure 3, are placed structural elements or "boards" 53, also shown separate in Figure 42. Said boards are formed of porous material, examples of such being cellular cellulose acetate and other foamed material, including concrete, so that the heat-insulating qualities are excellent. These boards are placed side by side, but separated by skins of fibrous glass cloth 54, also shown separate in Figure 41, which may or may not be impregnated with such plastic. The fibrous glass cloth 51, the boards 53 and fibrous glass separating skins or cloth 54 constitute the first layer of the finished panel.

A second layer of fibrous glass cloth 55 is placed upon the primary structure, illustrated in Figure 3, to form a structure as illustrated in Figure 4. This layer 55 may or may not be impregnated with such plastic. Upon the structure illustrated in Figure 4 is placed another layer of porous boards 57, said layer being disposed directly upon the cloth 55 to form a structure as illustrated in Figure 5. Each board 57 of this layer is also separated by a skin of fibrous glass cloth 58, which also may or may not be impregnated with such plastic. Upon the structure of Figure 5, a third layer of fibrous glass cloth 59 is applied to the upper surface of the second layer of boards to form a structure as illustrated in Figure 6. Such plastic material may serve to bond the elements of the panel to form a weather-resistant, vermin-proof unit.

From a consideration of Figures 5 and 6, it will be noted that the edges of the boards 57 of one layer (in this case, the top) are offset from the edges of the boards 53 of the other layer (in this case, the bottom), making a structure looking like part of a brick wall when seen in cross-section. This arrangement of boards and interdisposed vertical and horizontal fibrous glass pieces, when plastically bonded together as intended, create a structure of great strength and durability. The edges of the fibrous glass cloth that extend beyond the margins of the board structure may be lapped and bonded, if desired.

When placing the boards 53 and 57 as herein stated, the ends of one layer are also offset from those of the other as indicated at 60 in Figure 7. These offset edges may be provided with dowels 61 of plastic, wood or other suitable material, as also indicated in Figure 7 and in

Figures 8, 9, 10 and 11. These dowels are positioned in spaced relationship along the edges of the panel, being preferably at the inset or short edge as indicated in Figures 7, 8 and the upper part of Figure 9, so as not to extend beyond the outer edge of the panel and be exposed to injury. However, as an alternative, they may be placed centrally of the panel edge as viewed in the lower part of Figure 9 and in Figure 11, in which event they might extend beyond the outer edge of the panel, as shown in the lower part of Figure 9.

The abutting edge of the next panel is provided with holes to receive the dowels, as indicated in Figures 9 and 10. The panels may be constructed of any desired thickness, width and length, using the desired number of board layers, only two being here illustrated. The individual boards are desirably about one inch thick and four inches wide, the length being subject to the requirements of the structure, said boards being readily cut into desired lengths by means of an ordinary wood saw. However, the panel at either end of its length will normally have a stepped or offset portion illustrated in Figures 7, 8 and 9.

The width margins of the panels are preferably cut out or notched, as indicated at 62 in Figures 12 and 13, to receive the flanges 64 of an elongated margin piece or edge connector 63. These flanges serve to firmly attach the margin piece, shown in place in Figures 9, 10, 11, 25, 26 and 27, and separate in Figures 28 and 29, to the end of the panel, as the fibrous glass skin and plastic binding material are lapped thereover after the edge member has been moved into assembled relationship as viewed in Figure 13. The margin pieces 63, which may be formed by extruding hard plastic, examples being Lucite and Bakelite, are, as indicated in Figure 12, generally rectangular in cross-section. Each length normally corresponds to the length of the board panel. Its width is desirably approximately one inch, exclusive of its flanges 64, and its height about two inches. The margin piece 63 is provided with a slot 65 communicating with an enlarged, generally cylindrical pocket 66 therebeneath. The slot 65 and the pocket 66 extend from end to end of the margin piece 63. The ends of the piece 63 are notched to correspond with the offset of the panel, as indicated in Figure 9. The margin piece 63 is also desirably provided with small semi-cylindrical notches 67 on its outer or edge face. The purpose of these notches 67, and the notches 65 and pockets 66, will now be explained.

When it is desired to attach one panel to another by the margin pieces 63, these pieces are abutted and a locking unit 68, shown separate in Figure 40, is used to connect the two pieces 63 together, as will be seen in Figures 14, 15 and 16. These locking units 68 are shaped in section as elongated dumbbells. They are at least as long as the panel and longer when extending longitudinally between panels also connected by dowels as viewed, for example, in Figures 7, 9 and 33. Figure 21 shows such panels so connected, but the dowels being interior are not visible. A locking unit 68, shown separate in Figure 40, has one of its ends inserted into the slot 65 and pocket 66 of each of the abutting members 63. It is then driven or drawn in so that it at least extends from end to end of each panel. Each locking unit 63 is preferably made of hard plastic material, examples being Lucite and Bakelite, although non-rusting metal may be used, and when inserted, constitutes an efficient lock or reinforcing member for the panels which it connects. Should the panels desired to be joined be composed of four or more units, that is, two or more panels to each unit, the locking unit 68 is made long enough to extend from end to end, or from top to bottom, of the structure, that is, along two or more panels instead of only one. The semi-cylindrical notches 67, which then register, may be filled with suitable desirably fibrous caulking material 74, shown separate in Figure 39,

which may be conventional, and this, together with the locking unit 68, produces a weather-tight joint of great strength and durability.

Figure 14 shows a structure in which two walls intersect one another or four walls meet, such as in the making of four rooms. In accordance with this figure, we have four vertical panels 75, 76, 77 and 78, formed as described in connection with Figures 2 to 6, inclusive, the adjacent ends of which have margin pieces 63, applied as described in connection with Figures 12 and 13, respectively connected to corresponding margin pieces 63 outstanding from a special cross-shaped structural support member or unit 69. This unit 69 may be formed of material like that of the boards 53, its arms being tipped by margin pieces 63, which are in turn connected to the respective walls or panels 75, 76, 77 and 78, by the dumbbell-shaped connectors 68 with or without caulking material 74.

Figure 15 shows a structure similar to Figure 14, except that there are only three panels, 79, 81 and 82, connected similarly to the structure of Figure 14, but by a specially shaped structural support member or unit 70. The unit 70, desirably also formed of material like that of the boards 53, differs from the specially shaped unit 69 of Figure 14, in that it is T-shaped in section, but the construction is otherwise similar. Figure 17 illustrates how the T-shaped unit 70 may be employed for connecting three walls in which a wall, such as 79 shown in Figure 15, extends from the opposite side, that is, to the left rather than to the right. In other words, the same unit 70 may also be used for connecting three walls, such as 81, 82, and another wall extending in the direction opposite to that of the wall 79.

Figure 16 shows a construction in which a special L-shaped or angled structural support member or unit 71, desirably also formed of material like that of the boards 53, connects two side walls 83 and 84. These side walls 83 and 84 may be connected exactly like the walls 79 and 81, respectively, that is, provided with margin pieces 63 connected to corresponding margin pieces 63 on the L-shaped member 71, as by means of the dumbbell-shaped connecting devices 68, with or without the insertion of caulking material 74.

Figure 18, supplemented by Figures 19, 20, 22, 23 and 24, shows the employment of a specially shaped structural support member or unit 72, desirably also formed of porous material like that of the boards 53, between a roof portion 85 and a side wall portion 86. In this case the unit 72 is like the unit 71, except that the angle between the arms thereof, instead of being 90° as in the unit 71, is an obtuse angle corresponding with the angle made by the roof and side wall. However, the sloping arm thereof is provided with a margin locking piece 63 connected to a corresponding margin piece 63 on the member 85 by a dumbbell-shaped connector 68, with or without caulking material 74.

In the embodiment of Figure 18, the wall 86 is shown thicker than the roof 85, so the margin piece 63 at the bottom of the special unit 72 is wider than the margin piece 63 adjacent the roof. However, it is otherwise similarly formed and connected to the wall portion 86 therebelow by means of a dumbbell-shaped member 68, with or without caulking material 74. Also shown in Figure 18 is one of the special corner units 71, which unites the adjacent walls 86 and 87 as by means of corresponding dumbbell-shaped connectors, which in this instance are shown as extending beyond the tops of the broken-away wall portions.

Figure 18 also shows how the side walls are connected to the floor portion 88. In said floor portion, the boards 53 of porous material extend upright, that is, on their edges rather than lying on their sides as shown in Figures 3 to 6, inclusive, thereby giving correspondingly greater strength. However, the end members are correspondingly reduced in height, as indicated at 53a and 53b, so as

to receive in this case an upper margin piece 63, which connects with a corresponding margin piece 63 immediately thereabove by means of a dumbbell-shaped locking member 68.

As will be seen near the right hand edge portion of the structure shown in Figure 18, there is an aperture 89, also shown in Figure 19, for receiving a dumbbell-shaped connecting member which extends between the floor 88 and the bottom of the wall portion 86, but which here cannot extend to the exterior face of the structure because of the presence of a similar member extending across its end. When it is desired to erect vertical margin pieces 63 on horizontal margin pieces 63, as indicated in Figure 18 at 73, the abutting ends of the pieces 63 are mitered, as also shown in Figure 20 at 91, and the vertical locking unit 68 forced down to abut against the upper edge of the horizontal locking unit 68.

In order to place the locking dumbbell units 68, each must be of such a length that when it is inserted flush with the outer surface of its receiving part, its following end lies in, the other end of the dumbbell unit is short of the path required for the next dumbbell unit to be inserted. This is clearly shown at 89 in Figures 18 and 19. A structure erected according to these Figures may have walls and roof about two inches thick, partitions, if used, of the same thickness, a floor four inches in thickness, and margin pieces 62 on three or on all four edges of panels, rather than dowels on an edge or edges, as in Figures 7 to 11, inclusive. However, other thicknesses may be created at will, the number of special pieces and the form and method of using them varied, as well as the position of the notches 67.

Figure 21 shows how a free side wall 92 may be placed above the wall portions 81 and 82. In this case, the dumbbell connectors 68 between the special unit 70 at the corners, shown in Figures 15 and 17, as well as between the outer ends of the panels beyond the corners and the panels beyond them, are extended vertically and continuously between the lower panels 82 and 81 and the upper panel 92. These connectors 68 thus serve as connecting and reinforcing means in addition to the edge connectors 63 and the dowels (not shown) which connect the lower edge of the panel 92 to the upper edges of the panels 81 and 82.

Figure 22 shows a connection similar to that between the wall 86 and the floor 88 of Figure 18, except that in this case the boards 53c of porous material extend at right angles rather than parallel to the edge connector 63c which, therefore, has to be let into the end portions of said boards at right angles thereto, rather than longitudinally thereof. A further distinction lies in the fact that the side wall 86c is in this instance only formed of only one layer of boards 53d rather than two layers.

Figure 23 shows how the end of a margin piece 63, mitered at 93, may be slotted transversely as at 98, as well as notched on its face as indicated at 96 and 97, so as to allow for reception of the dumbbell-shaped connector 68 of the correspondingly-mitered portion of a connecting margin piece (not shown). This slotting corresponds with the aperture 89 shown in Figure 18, said aperture being, if desired, supplemented by apertures 94 and 95, corresponding with the notches 96 and 97 in Figure 23. The slot 98 in Figure 23 broadens into a nearly cylindrical aperture, as appears at 89 in Fig. 18.

Figure 30 shows a construction similar to Figure 6 except that two layers 55 of fibrous glass cloth are disposed between the upper and lower series of boards 57 and 53 of porous material. Figure 31 shows an additional embodiment which corresponds to that of Figure 30 except that between the two intermediate layers 55 is a sheet of metal shielding, such as bright aluminum foil or thin plate 99. Such material provides additional means for conserving heat in a building by reflecting it back and thereby correspondingly minimizing loss.

Figures 32, 33 and 34 illustrate the connections of 75

adjoining panels by means of dowels 61a, but involves a modification as compared with the showing in Figure 9 and the upper part of Figure 10. These figures amplify the showing of the lower part of Figure 10 and Figure 11, in that the dowels 61a are shown disposed on the central planes of the panels, rather than there being two sets of dowels with each set disposed centrally of a series of boards 53 and 57 respectively. In this instance, because there are fewer dowels, it is proposed to make them correspondingly larger, rather than as in Figures 10 and 11.

Figure 35 shows a modification of the marginal locking pieces, here designated 63e, in which the grooves or notches 67e on either side of the pockets which receive the dumbbell locking members 68 open to the exterior surfaces, rather than being contained between said surfaces. In this case, therefore, the caulking material 74e, if used, is on the exposed surfaces of the walls, rather than being contained between said surfaces.

Figure 36 shows a further embodiment in which the caulking material 74f is formed of a substance which is placed in position by being extruded through a funnel-shaped device 100, rather than being laid along the grooves or notches 67 as in the preceding embodiments. Figure 37 shows a modification of the dumbbell-shaped locking member 68g by the provision of a handhold or lip 101, engageable by the hand or a tool or wire, to facilitate placing or permit easy extraction. Figure 38 shows a modified form of dumbbell locking member 68h, in which an end portion thereof is provided with an aperture 102 to receive a hook or other tool 103 for removing it from position or otherwise conveniently handling it.

Figure 43 shows the employment of one set of grooves or notches 67 in corresponding marginal locking units 63 for holding, instead of caulking, a pipe 104 or one carrying power or other wires 105. Figure 44 shows the employment of the pocket 66, which normally receives one of the dumbbell locking members 68 for, in this instance, holding a bead or enlargement 106 on the upper end of a sheet of canvas 107, which may serve as an awning or for any desired purpose.

From the foregoing, it will be seen that the entire structure made in accordance with our invention consists of a number of panel pieces, marginal members, connecting or locking members, and a few special joint units. Although the structure is shown and described as formed primarily of plastic or non-metallic material, it will be understood that it may be constructed of other materials and modified in form.

Having now described our invention in detail in accordance with the patent statutes, those skilled in the art will have no difficulty in making changes and modifications in the individual parts or their relative assembly in order to meet specific requirements or conditions. Such changes and modifications may be made without departing from the scope and spirit of the invention, as set forth in the following claims.

We claim:

1. A composite panel comprising a rectangular body portion formed of heat-insulating material and having fragile edges, and a relatively hard, tough and rigid margin piece extending throughout the length of each of opposite edges of said body portion and rigidly secured thereto, the exposed edge surface of each margin piece being provided with a slot communicating with an enlarged pocket, said slot and pocket extending from end to end of the margin piece and being adapted to receive an end of a dumbbell-shaped connecting unit for connecting the margin pieces to other similar margin pieces.

2. A composite panel comprising a rectangular body portion formed of heat insulating material and having fragile edges, two opposite margins of said panel being notched, and a relatively hard, tough, and rigid margin piece extending throughout the length of each of opposite edges of said margin portion and having flanges extending into said notched portions and rigidly connected

to said body portion, the exposed edge surface of each margin piece being provided with a slot communicating with an enlarged, generally cylindrical pocket, said slot and pocket extending from end to end of the margin piece, and there being at least one notch extending longitudinally of said exposed surface of each margin piece at one side of said slot to receive caulking material, said slot and pocket being adapted to receive an end of a dumbbell-shaped connecting unit to connect the margin pieces to other similar margin pieces.

3. The invention as defined in claim 2 in which each margin piece is formed of an extruded synthetic plastic composition, and, exclusive of the flanges, is generally rectangular in cross section.

4. In a building construction, a panel as defined in claim 1, and an elongated rigid structural support member formed of heat insulating material having a margin piece identical with the first-mentioned margin piece extending throughout the length thereof and rigidly secured thereto, and a dumbbell-shaped unit the ends of which are fitted respectively into the pockets of said margin pieces with the portions of said unit between said ends extending through said slots in the margin pieces thereby rigidly connecting said margin pieces and consequently connecting said panel to said support member.

5. In a building construction a panel as defined in claim 4 said exposed edge of each margin piece having at least one notch extending longitudinally throughout the length thereof, and the addition of caulking material filling said notches.

6. An elongated margin piece to be secured to the edge

of a panel for connection to an adjacent panel in building construction, comprising an elongated extruded synthetic plastic composition member generally rectangular in cross section and having a pair of flanges extending from one side thereof for connection with a building panel, said member also having a slot extending longitudinally of its opposite side and communicating with an enlarged, generally cylindrical pocket, and said member also having at least one small notch at one side of said slot extending longitudinally of the second-mentioned side of said member, said slot and pocket being adapted to receive an end of a dumbbell-shaped connecting unit for connecting said member to another similar member.

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