Sept. 9, 1941. E. HAMILTON 2,255,315

HOUSE CONSTRUCTION PANEL

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Fig. 1

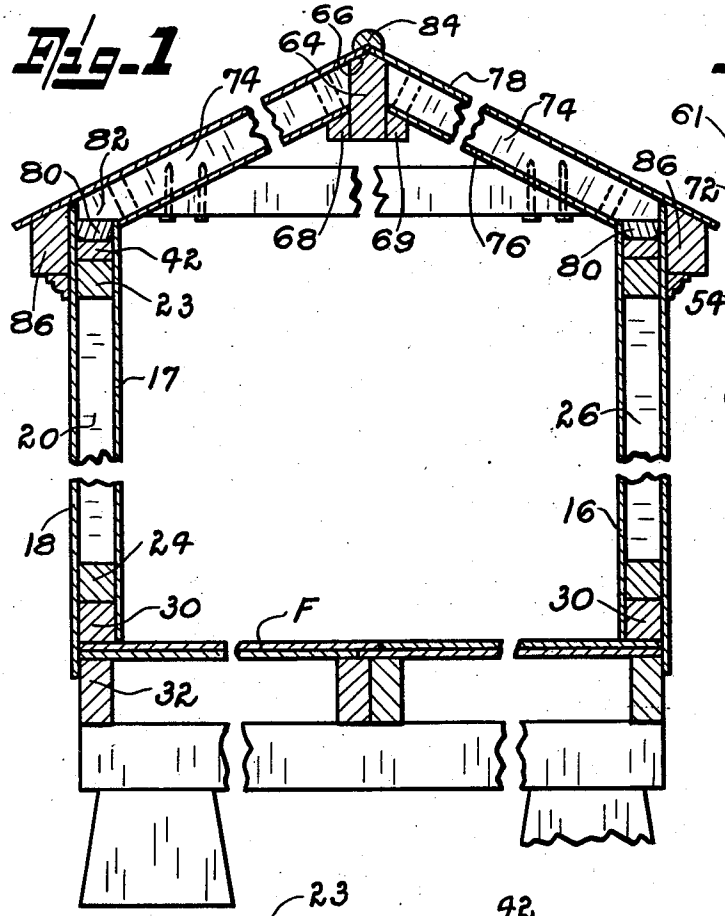
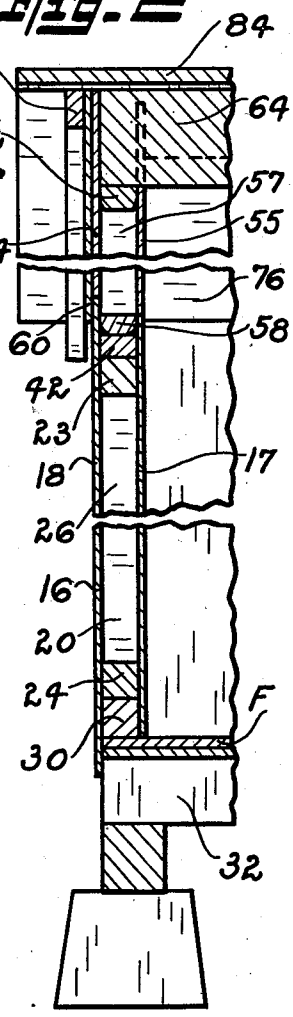


Fig. 2



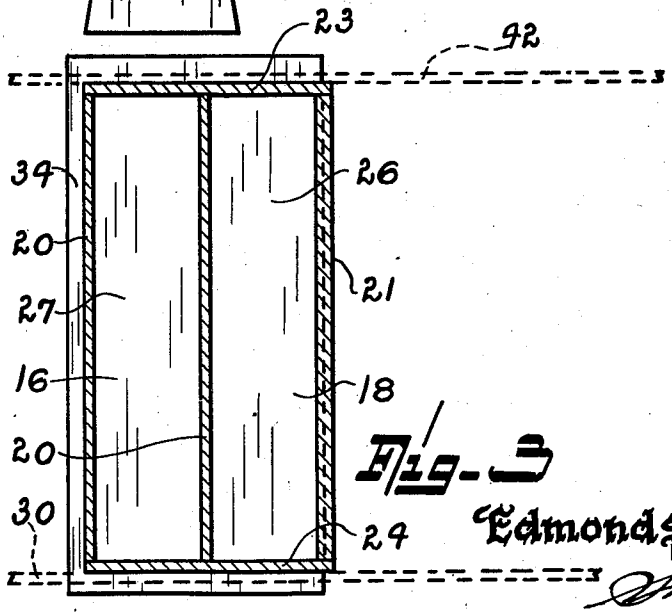


Fig. 3

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HOUSE CONSTRUCTION PANEL

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2 Claims. (Cl. 20—4)

My present invention relates to the art of prefabricated house construction and more particularly to house construction panels.

It is well recognized that one of the real needs of this country is low final cost, house construction. The ever increasing cost of labor has disproportionately increased the cost of small homes.

It is, therefore, the object of my present invention to provide home construction panels, having wide adaptability as to house design, which can be factory assembled and delivered to a property owner who, himself, can, with little or no assistance, erect the same at a minimum of labor and cost and still be assured that when finished he will have a snug, tight, permanent structure.

A further object of my present invention is to provide house construction panels, provided with factory inserted door and window frames of a simplified character, which may be assembled by unskilled labor and so arranged that, when assembled, a tight, secure, permanent structure is obtained.

Another important object of my present invention is to provide a panel for building purposes, so arranged that the cutting and fabrication of the panels can be very quickly and easily accomplished in a central plant so that wastage of material can be avoided and the panels supplied to their erectors in numbered blocks to facilitate their easy assembly into a finished house.

Other and more specific objects will be apparent from the following description taken in connection with the accompanying drawing, wherein

Figure 1 is a typical, sectional view through a house made after the teachings of my invention, the same being broken on its principal dimensions to increase the size, in proportion, of the essential parts.

Figure 2 is a typical wall elevation, the same being broken to increase the size of the essential elements, and

Figure 3 is a sectional view taken in the plane of my panel through the spacing or studding member with the longitudinal member shown in dashed line.

Referring to the drawing, throughout which like reference characters indicate like parts, 16 designates a typical panel unit used as the foundation of my prefabricated house. This consists of an inner panel 17 and an outer panel 18. These two panels, preferably of plywood, are spaced by vertically disposed studding members 20 and male studding members 21. Each panel is then provided with an upper horizontal member 23 and a lower horizontal member 24. These members enclose the air chambers as 26 and 27. These chambers can be left merely filled with air or, for use in severe climates, they may be filled with any of the approved types of heat insulating products. Attention is invited to the fact that the inner panel as 17 is shorter than the outer panel 18. This is to provide for an upper and lower covering board such as is probably best illustrated in Figures 1 and 2. This provides finish and a weather tight closure.

To anchor the bottom of my panels I provide, secured to the floor F, after the showing of Figures 1 and 2, the keeper members 30. These are of a width equal to the spacing of the inner and outer panels 17 and 18, so that, after the showing of Figures 1 and 2, the inner panel will fit down over the keeper until it meets the floor and the outer panel will extend down past the floor so that it overlaps the floor joist 32.

As each of the panels is placed in its vertical position in engagement with keepers 30 the female portions illustrated at 34 are treated with glue, if a permanent wall is desired, and the entire straight wall is clamped together. When these members are securely joined together key plates, as 42, are used to secure the upper end of the panels against displacement. The plates are set in between the inner and outer panels 17 and 18 and it will be apparent that a continuous keying arrangement is provided which will prevent any working of the panels, and distribute the strain due to wind pressure, shock, and the like that might otherwise fall on the upper end of the panels where the female joints as 34 are formed.

It will be noted particularly from Figures 1 and 2 that the lower keeper members 30 fit in between the side panel members 17 and 18 in the same manner and again provide the keying arrangement which adequately distributes any unusual strain. In this connection it is desired to point out that the preferred construction is to have the outer panel 18 extend down below keepers 30 so as to form a covering board for the floor F and to extend down somewhat on the sills themselves and thus form a satisfactory weather seal.

The outer panel 18 overlaps and extends above the upper edge of the inner panel 17 and while the inner panel 17 is sufficiently above the member 23 to form a groove deep enough to receive

the key plate 42 and the auxiliary plate 80, the outer panel 18 also extends high enough to overlap and enclose the ends of the rafter 74 and to cooperate in close proximity with the undersurface of the roof panel 78. In this way I effect a simple, air tight shield between the outer panel 18 of the wall units and the upper panel 78 of the roof units, and there is no possibility of air being entrapped under the eave and forced into the attic of the house between the rafters. At the same time I eliminate expensive and elaborate cutting and fitting to insure such a tight joint around the rafters. Across the gable end of the structure, built according to the principles of my invention, the outer panel 18 completely encloses the member 58, which is part of the auxiliary plate, and the depending edge of the overlapping or overhanging outer panel 60 cooperates with the panel 18 to effect a tight closure in this portion of the building.

The roof structure of my house embodies the same general principles employed in the rest of my structure. It has been found desirable to use special panels therefor. The gable panel is formed much as my other panels in that an outer panel 60 and an inner panel 55 are employed spaced from each other normally by a framework of the same thickness as the wall structure, but having in addition a filler 54 equal in thickness to the outer panel of the wall so that the outer panel of the gable will overlie the wall. These I have illustrated at 57 and 58. In the case of large gables having either wide extent or a large rise it would be desirable to have vertical partitioning and supporting members which are not shown in the drawing of Figure 2. In addition to these members a finish or molding is employed at 61 and the gable is notched at 62 so as to receive the ridge member 64. The construction of this ridge member is quite fully illustrated in Figures 1 and 2. It will be noted that it has the upper peaked surface 66 having the same slopes as the roof and at the spacing equal to the spacing of the roof panels, I have provided on each side of the ridge proper, sloping surfaces 68 and 69. Key members are provided at each end of the ridge as at 72.

The roof panel units themselves are laid up in much the same manner as the wall panel units being formed with male and female edges which engage adjacent members which are painted with glue in permanent structures and then joined together as by the clamp arrangement. It will be noted that in order to provide for complete intimate fitting that the rafter members 74 which now take the place of the studding members in the wall panels are beveled at their upper end so as to fit into the vertical space of the ridge member, and when the panels are put in place as are probably best illustrated in Figure 1, the inner panel board 76 and the outer panel board 78 make snug fits with the ridge member and the wall panel member; to accomplish this an auxiliary plate member 80 is secured to the lower beveled end of the rafter members at 82. These auxiliary plate members fit in on top of plates 42, used to key the side panels together as is believed will be clear from Figure 1. Thus, when these units are fully secured they make a complete closure for the group giving an inner and outer surface which produce an air space which may be used as such or filled with suitable insulating material. To form a complete weather tight closure, the covering strip, or molding, 84 is used to cover the extreme peak and to further provide, principally for finish, I have shown the eave closure members 86.

Throughout my entire specification I have generally inferred that my various panel units are glued together; this is the most desirable form where the panels are made of wood, or wood products, and where a permanent structure is desired. On the other hand my panel units make a very convenient knock-down, or portable, house structure in which case the various panel units would be secured to the keeper and plate members by a limited number of screws; or, in the case of metal, by small bolts or machine screws. It will be understood, it is believed, that my panel units could be made from any suitable building material which would include fabricated wall boards of various types, metal plate with metal studding and rafter members, or be molded from plastic materials, or glass.

The foregoing description and the accompanying drawing are believed to clearly disclose a preferred embodiment of my invention but it will be understood that this disclosure is merely illustrative and that such changes in the invention may be made as are fairly within the scope and spirit of the following claims.

I claim:

1. In a building structure including a floor having a fixed edge rail, a key plate, and an auxiliary plate disposed upon said key plate, a wall unit comprising inner and outer panels spaced apart from each other, an upper cross rail between said panels inset from the upper edges thereof to form a cross-groove for the reception of the key plate and auxiliary plate, the upper edge of the outer panel projecting upwardly beyond the upper face of the auxiliary plate and the upper edge of the inner panel terminating flush with the upper face of the auxiliary plate whereby roof joists resting thereon will have their ends enclosed by the upwardly projecting outer panel.

2. In a building structure including a floor having a fixed edge rail, a key plate, and a roof having an auxiliary plate disposed upon said key plate and an upper panel spaced from and overhanging said auxiliary plate, a wall unit comprising inner and outer panels spaced apart from each other, an upper cross rail between said panels inset from the upper edges thereof to form a cross-groove for the reception of the key plate and the auxiliary plate, the upper edge of the outer panel projecting upwardly beyond the auxiliary plate and the upper edge of the inner panel terminating flush with the upper face of said plate whereby roof joists resting thereon will have their ends enclosed by the upwardly projecting outer panel which is also cooperable with the underside of the upper panel of the roof to seal the space between said auxiliary plate and the roof panel.

EDMONDSTON HAMILTON.