Jan. 9, 1940. A. T. LEVY 2,186,459

PREFABRICATED BUILDING

Filed Sept. 22, 1937

Fig.1.

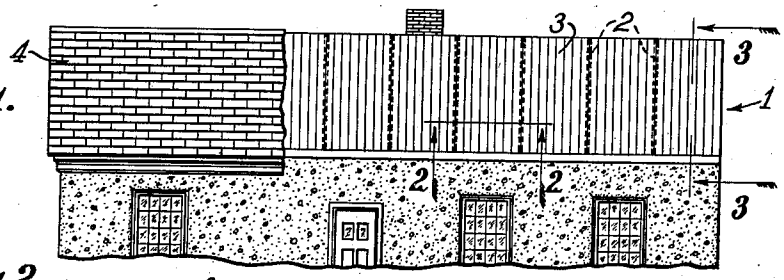


Fig.2.

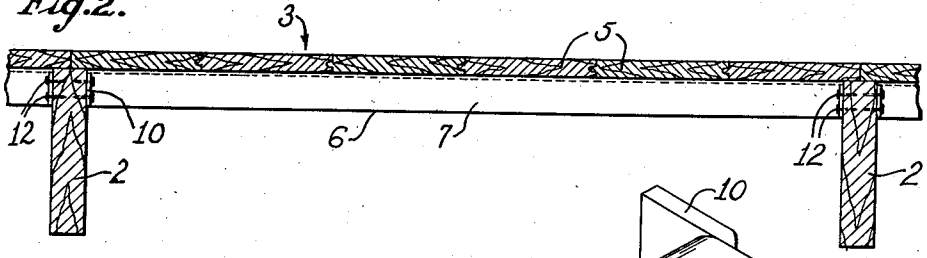
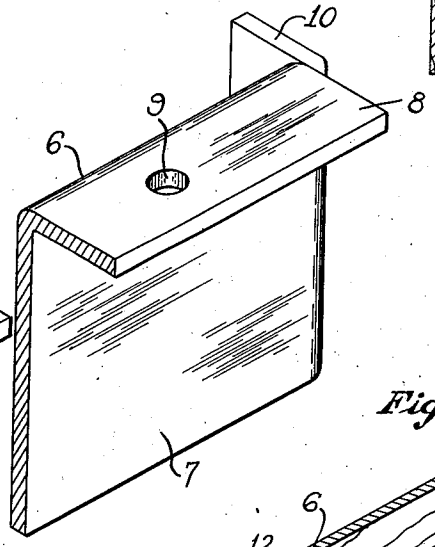


Fig.4.



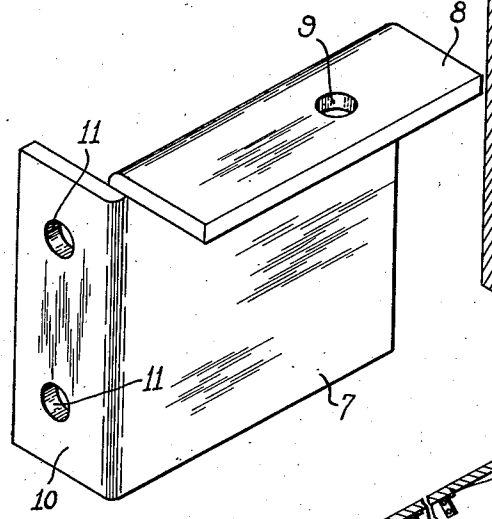


Fig.3.

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UNITED STATES PATENT OFFICE

2,186,459

PREFABRICATED BUILDING

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Application September 22, 1937, Serial No. 165,099

8 Claims. (Cl. 108—1)

My invention relates to prefabricated buildings.

It has heretofore been proposed to construct the roofs of prefabricated buildings as in the patent to Levens No. 1,599,335, wherein the roof comprises a series of sheathing sections which may be placed between adjacent rafters and which have the roofing members arranged longitudinally of the rafters, while the roofing members are held together by purlins and the sheathing sections are held in place by fastening members passing into holes in the sides of the rafters. Such a construction, while having some advantages, is difficult and costly to make and also to assemble, this last being due to the fact that the fastening members require holes to be made in the rafters in exact receiving location and must be necessarily bolted to the purlins. Thus, considerable time and expense is involved not only in making but in assembling each section and in placing the section between the rafters.

My invention has among its objects to eliminate the above difficulties and to facilitate the erection of prefabricated roof structures, while reducing the cost of such construction and assembling. A further object of my invention is to provide an improved roof unit which may be readily and quickly assembled against the rafters by the use of nails or similar driven fasteners without requiring any special rafter construction. A further object of my invention is to produce an improved unitary panel which may be assembled in place between adjacent rafters simply by lowering the same into position and without requiring bringing various parts into register or providing holes in rafters or members on the roof receivable in said holes. A still further object of my invention is to provide improved purlin strips adapted to cooperate with such units and with the rafters and to be quickly and easily attached thereto by nails or the like, while also having a strong upstanding web to support the roofers and a flange to which the roofers may be securely fastened. These and other advantages of my improved construction will, however, hereinafter more fully appear.

In the accompanying drawing, I have shown for purposes of illustration one embodiment which my invention may assume in practice.

In the drawing,

Figure 1 is an elevational view of a building, showing a sub-structure for the roofing surface formed of my improved units;

Fig. 2 is a sectional view on the line 2—2 of Figure 1;

Fig. 3 is a sectional view on the line 3—3 of Figure 1; and

Fig. 4 is a broken perspective view of one of the purlins.

In this illustrative construction, I have shown a roof structure, generally indicated at 1 in Figure 1, comprising spaced rafters 2 of standard form, i. e. free from special slots or notches, and room panels or units 3 of my improved construction disposed and supported in an improved manner between adjacent rafters.

The improved roofing panel or unit 3 is supported at each edge on one-half of the upper surface of a standard rafter 2, while the adjacent or next successive panel has its edge resting on the other half of the upper surface of the rafter. Thus, a continuous roofing sub-structure is formed when the panels have been placed, so the suitable roofing material 4, such as shingles or the like, may be applied as desired while utilizing standard rafters. Referring more particularly to Fig. 2, it will be noted that the panel 3 is made up of longitudinally disposed roofers 5 laid in the same general direction as the rafters 2 and preferably of substantially the same length as the rafters. The roofers 5 may be in the form of tongue and groove, matched boards, as shown, or may be straight edged boards of the usual roofer type. Where tongue and groove boards are used, however, the outer roofers forming the panels 3 are provided with no tongue or groove, in order that the panels may be placed in position readily without the necessity of making a driving fit.

Referring to Figs. 3 and 4, it will be noted that I have, in accordance with my invention, made use of a series of improved purlins 6 of improved construction, disposed in spaced relation and transversely of the roofers 5 and connecting these roofers into a unit. The purlins 6 may be of any suitable shape or material of light weight, but herein are each preferably in the form of an angle bar having a relatively long upright web or vertical leg 7. A short or horizontal leg 8 of the angle bar is also preferably at the top thereof and herein provided with holes 9 at regular intervals through which nails or other fastening means may be driven into the underside of the roofers to hold the same against the purlin. At the ends of each purlin, a short section of the leg 8 of the angle bar is removed and each end of the angle bar is bent at right angles to provide a supporting surface 10 which is adapted to rest against the side of the rafter when the panel is placed in position. Thus, with the roofers secured to the series of purlins and the ends

of each purlin supplied with holes 11, the units thus formed may be firmly secured to the rafter by nails 12 passing through these holes 11.

In the use of my improvement, it is made possible to build up panel units by fastening a suitable number of supporting purlins on the underside of closely assembled roofers, and to make the panels of a size so that they will fit between adjacent similarly spaced rafters. Where desired, on roofs having a substantial area between the ridge rafter and the eaves, more than one panel may be used to enclose the longitudinal space between any two adjacent rafters, two, three or more units then being disposed end to end in said space, so that roofers of only a practical commercial length need be used.

It will be noted that not only is the manufacturing cost of a panel roofing structure materially reduced by my improvement, but also that the erection of the panels has been facilitated and expedited. Whereas panels previously have required that they be handled and placed in a certain and exact manner between the rafters, my improved construction enables panels to be lowered readily into place so that the bent ends of the purlins abut against the inside surface of the rafters and the edges of the panels receive support from the upper surface of the rafters. Further, it will be evident that my improved construction requires only the use of nails to fasten the panels in place instead of bolts, tie-rods or other fastening means, such as would require additional time and expense in assembly. It will also be evident that the holes in the bent ends of the purlins are in a readily available position so that nails may be driven therethrough into the rafters without the expenditure of any extraordinary time and effort. It will also be noted that my improved panel is easily assembled before being lifted into place, and that it is capable of supporting heavy roofing surfaces, while at the same time requiring a minimum number of parts. These and other advantages of my improved construction will, however, be clearly apparent to those skilled in the art.

While I have in this application specifically described one embodiment which my invention may assume in practice, it will be understood that this form is shown for purposes of illustration, and that the same may be modified and embodied in other forms without departing from its spirit or the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent is:

1. In a roof construction, a plurality of spaced rafters, roofers operatively connected to form a unit and arranged in adjacent relation to one another and longitudinally of the rafters to cover the space between adjacent rafters, and means within the lateral limits of the roofers comprising said unit for connecting said unit to said rafters and insertable from above the rafters.

2. In a roof construction, a plurality of spaced rafters, roofers arranged in adjacent relation to one another and longitudinally of the rafters, purlin strips holding said roofers together to form a unit extending between centers of said rafters, and connecting means on said strips disposed within the lateral limits of the roofers comprising said unit and insertable between the rafters when said unit is lowered therebetween and having side abutments adapted to be fixed to the sides of the rafters.

3. In a roof construction, a plurality of standard rafters, roofing members operatively connected to form a unit extending longitudinally of and between said standard rafters, and means for connecting said unit to said rafters disposed within the lateral limits of the roofing members comprising said unit and insertable from above the rafters.

4. In a roof construction, a plurality of spaced rafters, roofers arranged in adjacent relation to one another and longitudinally of the rafters to cover the space between rafters, purlin strips disposed transversely of the roofers and connected thereto to form a unit, and means disposed within the lateral limits of the roofers comprising said unit and including bent angular portions at the ends of the purlin strips for securing the same to the inner edges of said rafters.

5. In a roof construction, a plurality of spaced rafters, a unitary panel enclosing the space between adjacent rafters and resting on the edges of the rafters, said panel comprising roofers extending longitudinally of said rafters, and purlins being of angular cross section to support said roofers and having bent ends for securing the same to said rafters, said purlins and said bent ends being disposed within the lateral limits of the roofers comprising said panel and connected to said roofers to form a unit insertable from above the rafters.

6. In a roof construction, a plurality of spaced rafters, a unitary panel enclosing the space between adjacent rafters, said panel comprising matched roofers extending longitudinally of said rafters, and purlins having a flange for supporting said roofers and having bent ends for securing the same to said rafters, said purlins and bent ends being disposed within the lateral limits of the roofers comprising said panel and connected to said roofers to form a unit insertable from above the rafters.

7. A unitary panel for a supporting structure between rafters comprising roofing members adapted to extend longitudinally of the rafters, purlins supporting said roofing members, and means on said purlins for connecting the same to the sides of said rafters, said purlins and said means thereon being disposed within the lateral limits of the roofing members comprising said panel and connected to said members to form a unit insertable from above the rafters.

8. A unitary panel for a supporting structure between rafters comprising roofing members adapted to extend longitudinally of the rafters, spaced angle-shaped purlins supporting said roofing members, and means including bent ends of said purlins for connecting the same to the sides of said rafters, said purlins and said bent ends thereon being disposed within the lateral limits of the roofing members comprising said panel and connected to said members to form a unit insertable from above the rafters.

AUSTIN T. LEVY.