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PREFABRICATED ROOF SECTION

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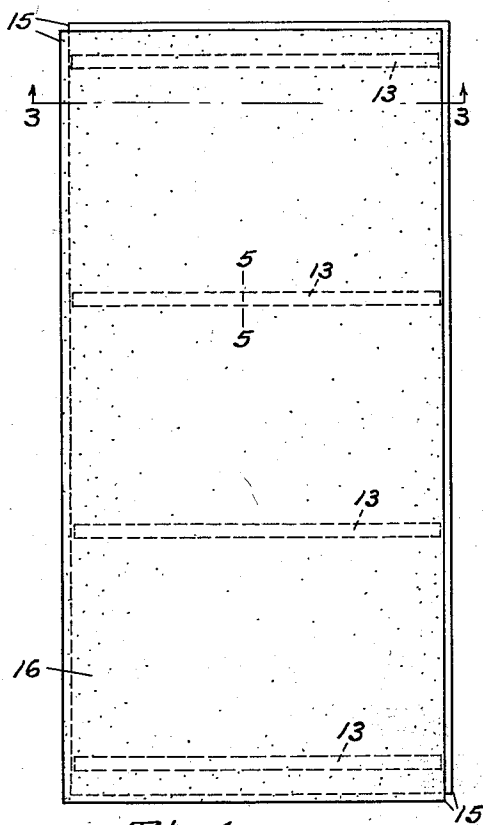


Fig. 1

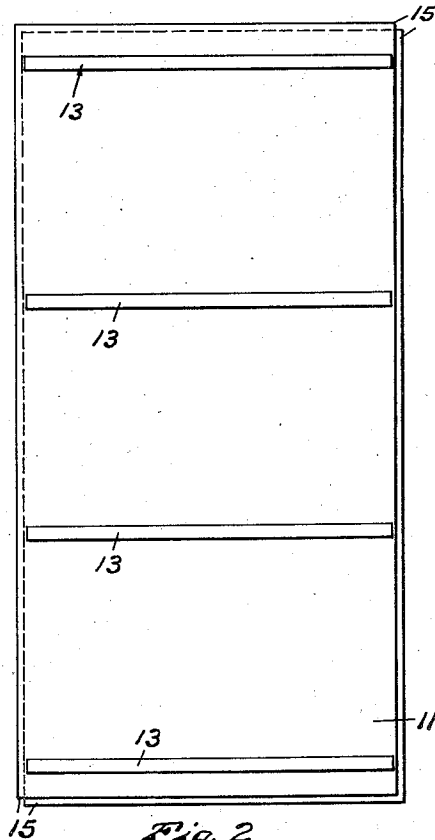


Fig. 2



Fig. 3

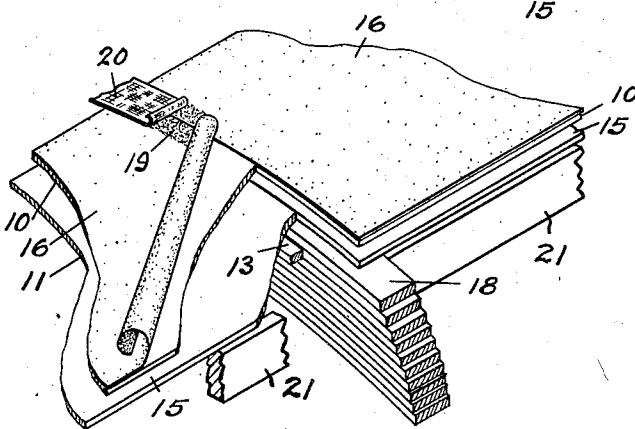


Fig. 4

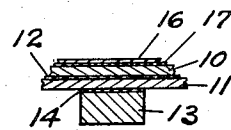


Fig. 5

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PREFABRICATED ROOF SECTION

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1 Claim. (Cl. 108—1)

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This invention relates to a prefabricated wood roof section or panel for use in building construction and an object of this invention is to provide a simple and inexpensive wood roof panel that is very strong in construction, that can be very quickly and easily installed in a roof under adverse weather conditions and that will provide a moisture tight and wind tight roof which will be long lasting and durable under substantially all climatic conditions.

In certain types of prefabricated buildings it is desirable to use curved roofs to obtain maximum room in a building of given height and at the same time provide a roof of great strength that will withstand heavy wind and snow loads. Requirements of these prefabricated roofs are that they should be highly resistant to wind and moisture, that they should be capable of being quickly and easily assembled or erected on the job and that they should be constructed so that they can be assembled and the roof completed in high winds and rainy weather. Also as buildings of this type are frequently shipped long distances it is highly desirable for these prefabricated roofs to be made in sections that are of relatively light weight and that are compact in the knocked down or disassembled condition in which they are shipped.

Another object of this invention is to provide a wood roof section that is made up of two overlapped sheets of plywood adhesively secured together in face to face relation, said two sheets being slightly offset as respects each other to provide edge flanges extending entirely around each roof section, said edge flanges being formed by the overhanging portions of the plywood sheets and being offset substantially one-half the thickness of the roof section and being adapted to overlap the flanges of adjacent roof sections when a plurality of these roof sections are assembled to form a roof.

Another object is to provide a wood roof section that is built to a proper curvature for a curved roof and that is permanently held to this curvature by stiffener rib means embodied in the roof section, said stiffener rib means also serving to greatly stiffen and strengthen the roof section.

Other objects are to provide a curved roof section that is made from whole plywood sheets of standard size thereby minimizing waste of wood and to construct this roof section without the use of nails or screws or any securing means except adhesive.

Other objects of the invention will be apparent

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from the following description taken in connection with the accompanying drawings.

In the drawings

Figure 1 is a plan view showing the outer side of a roofing panel constructed in accordance with this invention.

Fig. 2 is a similar plan view showing the inner or under side of a roofing panel.

Fig. 3 is a sectional view of said panel taken on broken line 3—3 of Fig. 1.

Fig. 4 is a fragmentary isometric view on a larger scale than Figs. 1, 2 and 3 showing the manner of applying these panels to a roof.

Fig. 5 is an enlarged fragmentary sectional view taken substantially on broken line 5—5 of Fig. 1.

Like reference numerals designate like parts throughout the several views.

Each roof section or panel comprises two sheets 10 and 11 of plywood secured together in slightly offset face to face relation by waterproof adhesive 12. The adhesive 12 is shown in somewhat exaggerated thickness in Fig. 5. Each roof section is provided on its inner side with a plurality of spaced apart transverse stiffener ribs 13 that are secured by adhesive 14, Fig. 5, to the innermost sheet 11 of plywood.

The two plywood sheets 10 and 11 are slightly offset relative to each other, both longitudinally and transversely to provide flange portions 15 which extend entirely around each section. One end flange and one side flange of each roof section are formed by one sheet 10 and the other end flange and side flange of the roof section are formed by the other plywood sheet 11. The flanges formed by the respective sheets 10 and 11 are offset and are arranged to interfit and overlap and form lap joints when a plurality of these roof sections are laid to form a roof.

A suitable water repellant material, such as roofing paper 16 is secured by adhesive 17, such as hot asphalt, to the outer surface of the outermost sheet 10 of plywood. This outer covering of water repellant material covers the entire outer surface of the sheet 10 of plywood.

In making up the panels or roof sections I preferably place water resistant adhesive or glue between sheets 10 and 11 and between ribs 13 and sheet 11. I then place these parts 10, 11 and 13 under pressure which bends them to a desired curvature, as by putting them in a press, and holds them under this pressure and curvature until the adhesive has firmly set. When the pressure is released the roof sections will straighten out to a certain extent but the initial curva-

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ture is enough greater than the desired curvature so that the curvature of the panels when cured will be correct and this final curvature will be permanently retained. A number of roof sections may be placed in a press in superposed relation and glued up at the same time.

I find it convenient to use standard plywood sheets four feet wide and eight feet long and to offset these sheets enough to provide flanges 15 of about one inch in width. However plywood sheets of different size may be used and the width of the flanges 15 may be varied.

The roof sections or the wooden parts from which such sections are constructed are preferably treated with a toxic sealer which both hardens and seals the wood and makes the same more resistant to fungus and vermin and the like.

The roof sections are transversely curved and the stiffener ribs extend crosswise of these roof sections and permanently maintain the curvature of the roof sections. One stiffener rib is provided near each end of the panel but far enough inwardly from the end of the panel or roof section to afford room for the end portion of said panel or roof section to rest on a support, such as a curved rafter or arch support 18 shown in Fig. 4. As many transverse stiffener ribs as desired may be provided at spaced intervals between the two end stiffener ribs 13. The curved rafters or arch supports 18 may be made of laminated wood as shown in Fig. 4. Also purlins 21, Fig. 4, are preferably provided at right angles to the curved arch supports 18 and the overlapping lateral edge portions of the roof sections rest on and are secured to these purlins. Preferably the overlapping marginal portions of the roof sections are secured to the arch members 18 and purlins 21 by nails or screws.

After the roof sections have been properly secured to the roof framing the waterproofing of the roof is completed by applying over the adjoining edge portions of the panels a water repellent mastic 19 and then applying and pressing down onto this mastic 19 a strip of open mesh material 20 such as cotton or cotton impregnated with tar or asphalt. This mastic and cotton mesh strip can be applied in the rain if necessary.

In the use of these roof panels or sections in forming a roof the sections are relatively easy and fast to lay and the flanges 15 always form lap joints at all places where two panels adjoin. The panels are of strong and substantial construction and can be applied to a roof in windy and rainy weather. The roofing paper 16 is a part of the prefabricated construction of each roof panel or section and this eliminates separate handling of roofing paper at the time the roof

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is constructed. This is a very great advantage in windy weather as high winds make it substantially impossible to apply ordinary rolled roofing to a roof. Also the mastic and cotton mesh can be put on in the rain thus making it possible to complete the waterproofing of a roof in heavy winds and rain.

Obviously changes in the construction of this roof section may be made within the scope and spirit of the following claim.

I claim:

As an article of manufacture a prefabricated roof section of large area comprising two rectangular sheets of standard plywood of equal size adhesively secured together in face to face contact and in slightly offset echelon relation providing along all sides of said roof section flanges formed by overhanging portions of the sheets, each sheet of plywood being of standard size and formed of a plurality of sheets of wooden veneer, the flanges along two adjacent sides of the roof section being offset relative to the flanges along the other two adjacent sides of the roof section to provide overlapping flanges along all adjoining edges of roof sections when a plurality of the roof sections are assembled to form a roof; transverse stiffener ribs adhesively secured to the inner surface of the roof section permanently holding said roof section under transverse curvature whereby installation of said roof section in a roof of corresponding curvature is facilitated; and roofing paper adhesively secured to the outer surface of said roof section providing a completely finished externally weatherproofed strong and durable roof section of large area for quick and easy incorporation into a roof.

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