

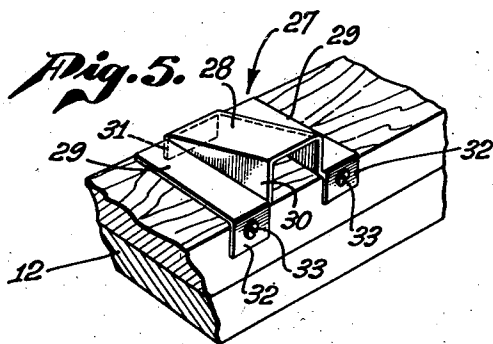
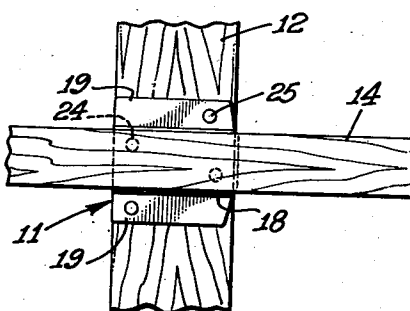
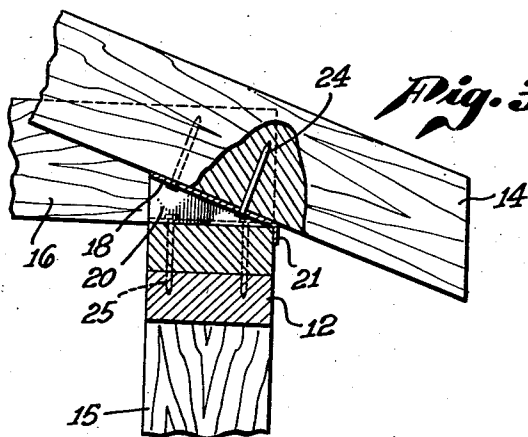
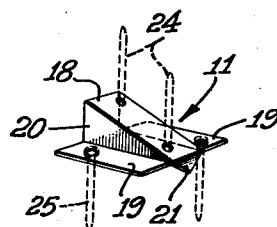
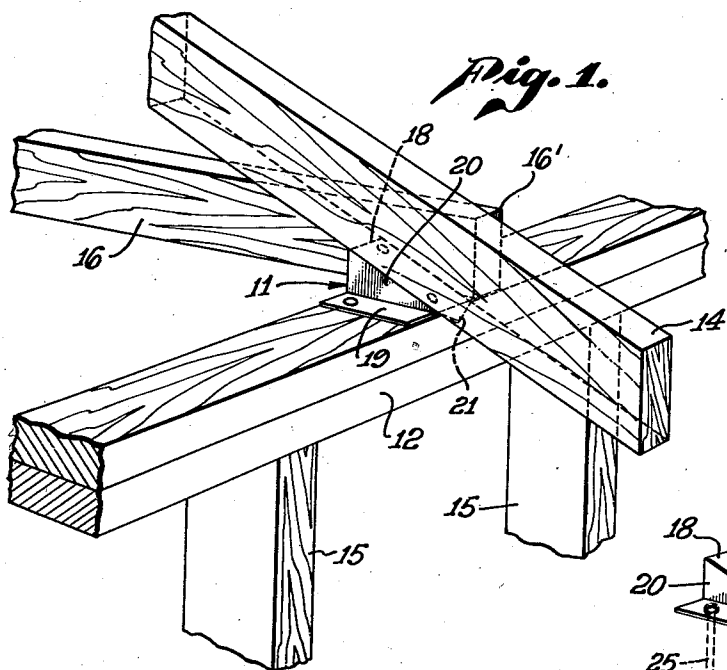
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2,354,801

RAFTER SEAT

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2,354,801

RAFTER SEAT

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6 Claims. (Cl. 20-2)

This invention relates generally to frame building construction and particularly relates to means for joining or mounting rafters or other diagonally placed members in wooden building framing.

In the ordinary frame building construction the rafters are mounted on the plates by notching the rafters and then toe-nailing them to the plates. The ceiling joists must also be trimmed so that they do not protrude above the rafters. This method of construction requires the services of skilled carpenters and consumes considerable time thereby constituting an appreciable factor in the cost of construction. The ordinary construction is disadvantageous for this reason and for the further reason that the rafters are not rigidly secured to the frame plates having only a limited lateral bearing thereon against rocking. The holding value of toe-nailing is questionable and there are certain to be some inaccuracies in the seat or notch cut in the rafters.

It is a primary object of my invention to provide a new and improved means for mounting rafters on the frame plates which eliminates the necessity of cutting and trimming the rafters and joists respectively thus weakening the rafters and which provides a rigid construction and a full, predetermined bearing on all surfaces. It is a particular object of my invention to provide a rafter seat or bracket which is relatively inexpensive and can be quickly and firmly secured by either skilled or unskilled labor to the rafter and easily mounted and firmly secured to the frame plate to support a rafter thereon. In this connection it is an object to provide a rafter seat which makes it possible to utilize the full length of the nails used for securing the parts together and which eliminates the necessity of nailing through any wooden members at an angle, such as in the toe-nailing. Another object is to provide such a rafter seat which has a wide lateral bearing on the frame plate and thus insures the rafter against rocking.

It is also an object to provide a rafter seat or bracket of the type indicated which can be manufactured or stamped out of either mill sheets or scrap in various standard sizes to provide the desired standard inclination or pitch for the rafter.

It is a further object of my invention to provide a rafter seat which is demountable from the frame plates.

These and other objects will be apparent from the drawing and the following description thereof. Referring to the drawing, which is for illustrative purposes only—

Fig. 1 is a fragmentary view of a portion of a wooden frame construction showing a rafter seat member embodying the invention supporting a rafter;

Fig. 2 is a perspective view of a rafter seat embodying the invention;

Fig. 3 is a fragmentary cross section through the rafter seat;

Fig. 4 is a plan view of the rafter seat shown on the frame plate; and

Fig. 5 is a perspective view of a demountable rafter seat member shown in conjunction with the frame plate to which it is attached.

More particularly describing the invention reference numeral 11 generally indicates a rafter seat member which is shown mounted on the frame plate 12 of a wooden frame construction such as is used in buildings. The rafter seat 11 supports a rafter 14 at a desired angle to the frame plate 12. The frame plate is shown supported by studs 15 and it is adapted to support ceiling joists such as the one shown at 16. It is apparent from the construction shown that the rafter seat supports the rafter above the frame plate in such a manner that it is unnecessary to bevel or trim the ends of the ceiling joists as is necessary in the ordinary construction where the rafter is notched and consequently is mounted relatively lower than the rafter 14 shown and would thereby leave the square end 16' of the joist shown extending above the upper surface of the rafter.

The rafter seat itself comprises preferably a sheet of metal of sufficient thickness or gage to provide the necessary rigidity of support. This sheet of metal is bent or die-stamped to form a central inclined rafter seat portion 18, a pair of base plate portions 19 and a pair of substantially triangular connecting wall portions 20. The rafter seat can be provided with a vertical depending lip 21 designed to act as a guide or abutment to bear against the outer surface of the frame plate as indicated in Figures 1 and 3, however, this lip is not essential and can be omitted. The rafter seat portion 18 can be inclined with relation to the base plate portions 19 at a suitable standard roof pitch and various standard sizes of the rafter seats provided.

It will be apparent that the rafter seat or bracket provides a wide bearing for the rafter on the plate member and thereby insures rigid, non-rocking mounting of the rafter. In installation the rafter seat member is first secured to the rafter by nailing, suitable nails 24 being driven though the rafter seat portion and into the rafter

as indicated in Fig. 3. This prenailling can be done at the sawing location or in the stock pile before raising the rafters to place. In this connection it is pointed out that the rafter seat member can be provided with nail holes or the holes driven as desired at the time of installation. After the rafter seat has been nailed to the rafter the rafter is then placed on the frame plate and nails 25 are driven through the base plate portions into the frame plate. It is obvious that with the construction outlined full advantage is taken of the length of each nail and the nails thus serve to firmly anchor the parts together. This is unlike the ordinary construction where the rafters are toe-nailed, that is, the nails are driven at an angle into the sides of the rafter and then down into the frame plates, providing an insecure joint between rafter and frame plate wherein the rafter is not adequately secured against rocking. Furthermore, the rafter is not weakened by provision of a seat or notch therein as in the ordinary construction.

In Fig. 5 I have shown a modified form of rafter seat which can be demountably secured to the frame plate. This rafter seat member, generally indicated by reference numeral 27, comprises a central inclined rafter seat portion 28, a pair of base plate portions 29, connecting portions 30 and a depending lip or flange 31 at the lower end of the seat portion. In this form of the invention the flange 31 is made larger than the lip 21 heretofore referred to in order to provide adequate means for engaging one side of the frame plate. The principal difference between this form of rafter seat and the one previously described is in the provision of the depending vertical flanges 32 which extend from the end of the base plate portions 29 at the side or end of the rafter seat member opposite to the end having the depending flange lip 31. In this form of the invention it is contemplated that the rafter seat member can be nailed to the rafter in the ordinary manner and subsequently detachably secured to the frame plate by means of screws 33 extending through the flanges 32 and into the frame plates. Some other removable means, such as withdrawable nails for example, might be used in place of the screws 32. With the construction outlined the rafters are firmly secured but can be removed or demounted to facilitate dismantling of the structure.

Although I have shown and described particular forms which my invention may take I contemplate that various changes and modifications can be made without departing from the scope of the invention and I intend to cover such changes and modifications as come within the claims.

I claim as my invention:

1. A rafter seat comprising a sheet of metal bent to form a pair of horizontally disposed spaced base plate portions for seating on the up-

per face of a plate of a frame structure or the like; a rafter seat portion forming a joist supporting flat surface inclined with relation to said base plate portions; and a pair of vertically extending intermediate wall portions connecting said seat portion to the respective plate portions.

2. A rafter seat comprising a sheet of metal bent to form a pair of horizontally disposed spaced base plate portions for seating on the upper face of a plate of a frame structure or the like; a rafter seat portion forming a joist supporting flat surface inclined with relation to said base plate portions; a pair of vertically extending intermediate wall portions connecting said seat portion to the respective plate portions; and a depending vertical lip at the lower end of the flat surface of said rafter seat portion.

3. A rafter seating member comprising a sheet metal member formed to provide a central inclined rafter seat portion; a pair of spaced laterally extending base plate portions, a pair of substantially triangular upright connecting portions each extending from the inner side edge of a base plate portion to the side edge of the rafter seat portion connecting said seat portion to and supporting the seat portion on said base plate portions; and a vertically extending depending lip at the lower end of said rafter seat portion.

4. A rafter seating member comprising a sheet metal member having a pair of spaced flat base portions disposed in the same plane and adapted to rest on and be secured to frame plate or the like, having a flat seat portion intermediate said base portions and inclined thereto, said seat portion being adapted to support a rafter or the like seated thereon and secured thereto; and having a pair of upright connecting portions extending from the sides of said seat portion to the inner sides of said base portions, said inclined seat portion and said base portions having securing means receiving openings therein.

5. In a frame construction: a frame plate; a rafter disposed transversely and inclined relative to said frame plate; a rafter seat member interposed between said frame plate and said rafter, said seat member having base plate portions seated on said frame plate and an inclined seat portion for supporting said rafter; securing elements extending through said base plate portions into said frame plate; and a securing element extending through said seat portion into said rafter.

6. A demountable rafter seat comprising a sheet metal member forming a pair of spaced base portions; an intermediate portion providing an inclined rafter seat portion; a depending lip at the lower end of said seat portion; and a depending flange at the end of each base portion nearest the upper end of said seat portion.

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