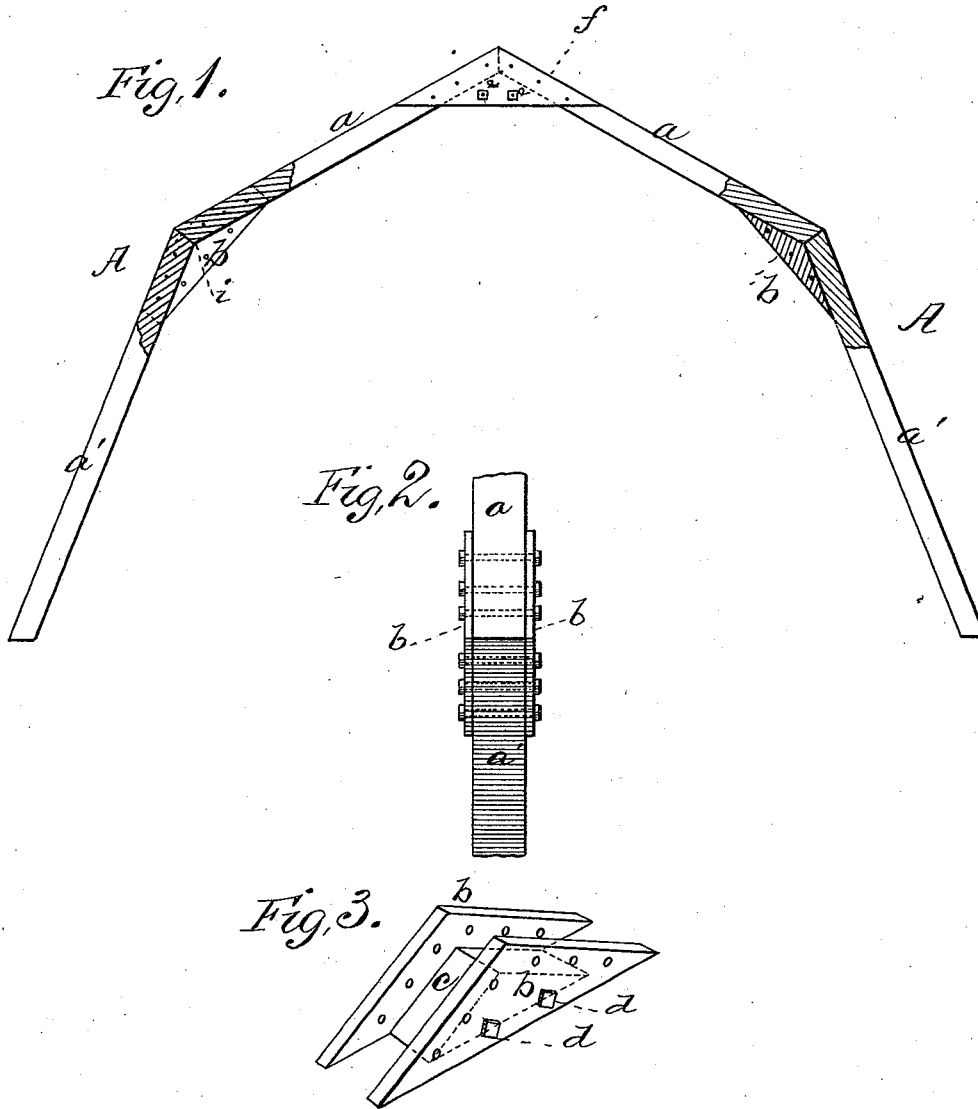


F. M. COVERT
Rafter.

No. 209,024.

Patented Oct. 15, 1878.



WITNESSES
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F. J. Masi

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UNITED STATES PATENT OFFICE.

FRANK M. COVERT, OF LODI, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT
TO W. V. GOULD, OF SAME PLACE.

IMPROVEMENT IN RAFTERS.

Specification forming part of Letters Patent No. 209,024, dated October 15, 1878; application filed
September 7, 1878.

To all whom it may concern:

Be it known that I, FRANK M. COVERT, of Lodi, in the county of Seneca and State of New York, have invented a new and valuable Improvement in Rafters for Self-Supporting Roofs for Farm-Buildings; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side view of my improved rafter, and Figs. 2 and 3 are detail views.

This invention has relation to improvements in rafters for gambrel, Mansard, curb, or hip roofs for barns, warehouses, and other buildings designed more especially for storing merchandise; and the nature of the invention consists in a rafter composed of two sections and having two pitches, the said sections being clamped together at the sides by face-plates, and held against displacement vertically by means of an angle-plate bolted to the sections at their angle of union and under sides, the rafter thus made being connected to the rafter on the opposite side of the roof by means of a metallic plate breaking joints with said rafters and securely bolted thereto, as will be hereinafter more fully set forth.

In the annexed drawings, the letters *a a'* designate, respectively, the upper and lower sections of a hip-roof rafter, the adjoining ends of which are beveled in accordance with the pitches sought to be given to the roof. The joints of this rafter are broken by strong wooden or metallic face-plates *b* at each side thereof, that are securely bolted, nailed, or screwed to each of the sections *a a'*. The upper edges of the plates *b* conform to that of the rafter at the joint of the sections, while their lower edges are below the corresponding surfaces of the rafter-sections, and subtend the angle which they form with each other after the manner of a chord. An angular recess, *i*, is thus formed at the joint of the rafter underneath the same—that is, filled by an angle-plate, *c*, the ends of which are securely bolted, the one to the section *a*, and the other to the section *a'*.

It will be seen that the side plates, *b*, effectually

hold the ends of the rafter-sections *a a'* against lateral displacement, and the angle-plates *c* against vertical movement, thus producing a tie or coupling of unusual strength and reliability. The plates *b* and *c* are usually bolted together, with a view to equalizing the strain, as shown at *d*, and when made of metal may be cast in one piece.

The beveled extremities of the rafters *A* meet to form the gable or upper pitch of the roof, and are connected together by means of the side plates, *f*, the ends of which are bolted to the rafters, as shown at *e*, Fig. 1. The upper corners of these plates may be cut off to correspond to the pitch or inclination of the upper rafter-sections, *a*, and their lower rectilinear edges subtend the angle which they form with each other, serving as a tie to prevent spreading of the rafters.

I usually employ a single plate, *f*, at the gable of each rafter, this being a sufficiently-strong tie at that point.

It will be seen that I have constructed a rafter for gambrel or Mansard roofs wherein I dispense with tie-beams, king-posts, and struts, and have the entire space under the roof clear for the stowage of bulky merchandise, hay in bulk, and other articles.

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

1. In a rafter for gambrel or Mansard roofed structures, the sections *a a'*, of different pitch, having the lateral plates *b* secured thereto and breaking their joints, and the angle-plate *c* fitting in between plates *b* in the angle of the sections across their joint, and bolted to said sections, substantially as specified.

2. The combination, with the sections *a a'* of a hip-roof, of the side plates, *b*, breaking joints with said sections, and forming under the same, at their angle, a recess, *i*, and the angle-plate *c*, arranged in said recess across the joint of said sections and bolted thereto, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

FRANK M. COVERT.

Witnesses:

C. B. VESCELIUS,
C. P. WOODWORTH.