(No Model.) 2 Sheets—Sheet 1.

O. J. STOUFFER.

ROOF TRUSS.

No. 571,055. Patented Nov. 10, 1896.

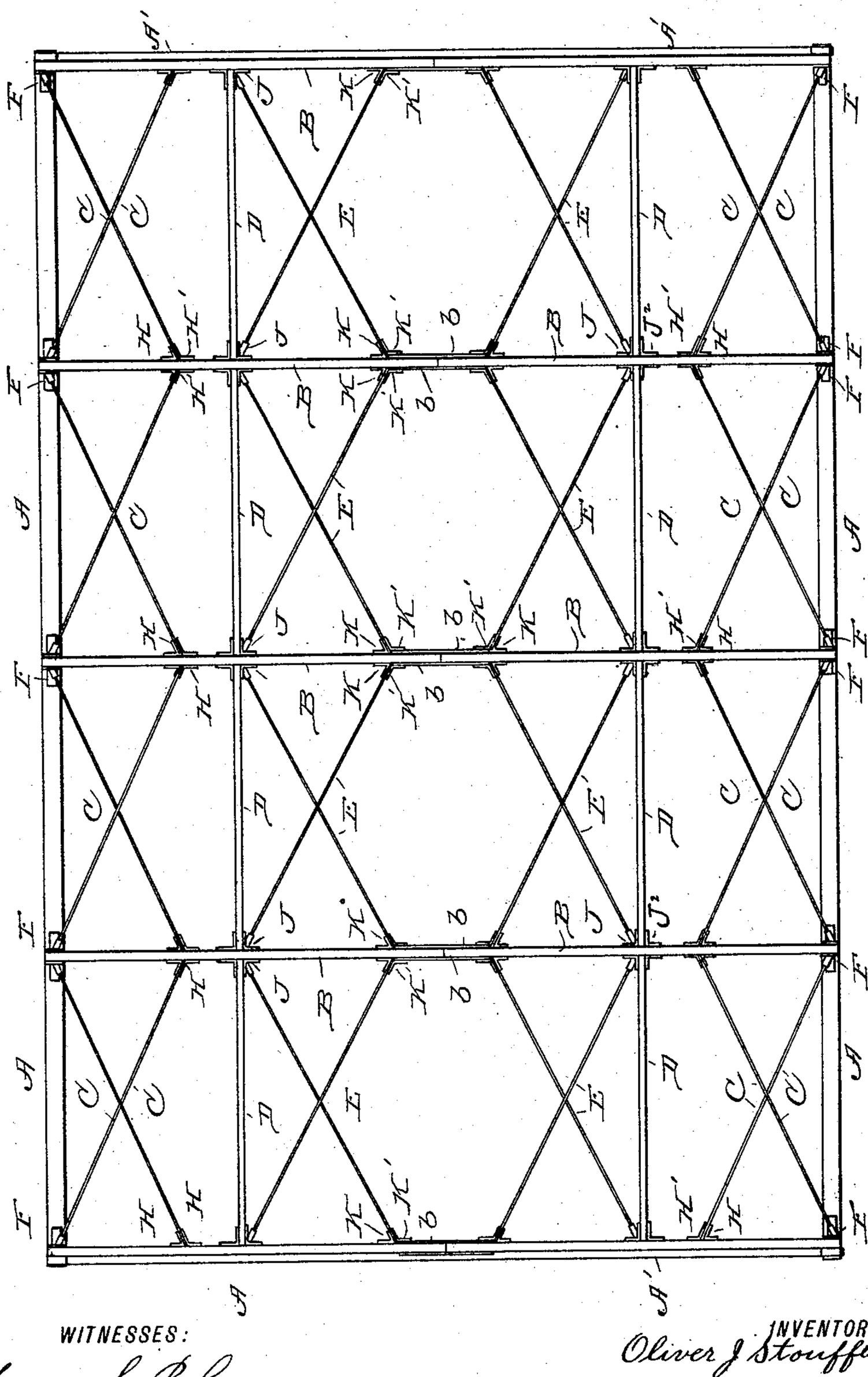


Fig. 1.

WITNESSES:

Henry S. Ashmun.

W. A. Redmond

INVENTOR

Oliver J. Stouffer.

BY

J. F. Beale

ATTORNEY.

(No Model.) 2 Sheets—Sheet 2.

O. J. STOUFFER.

ROOF TRUSS.

No. 571,055. Patented Nov. 10, 1896.

Fig. 2.

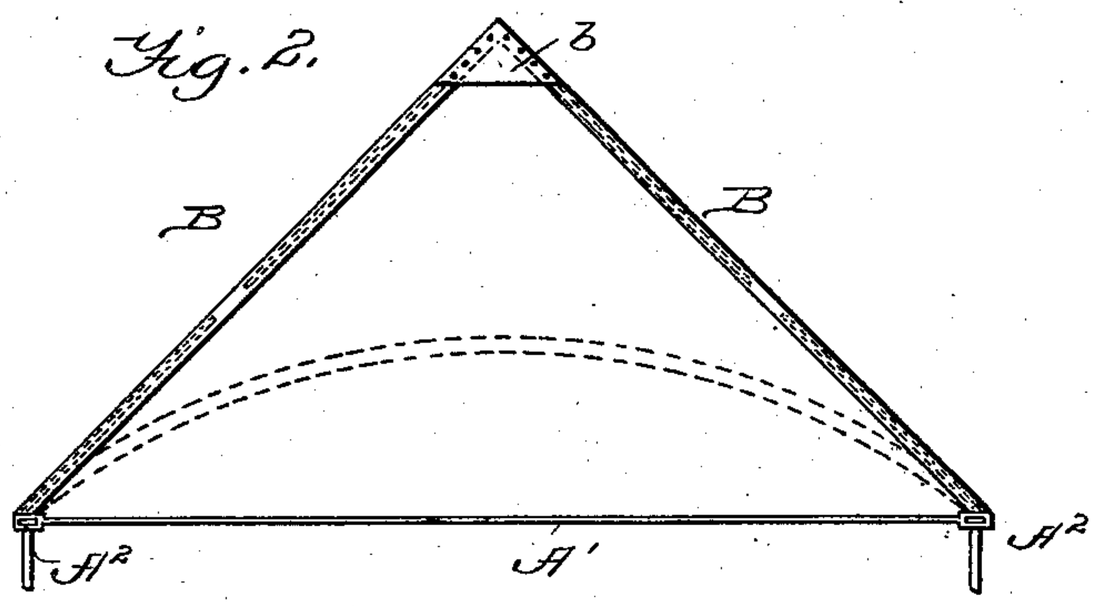


Fig. 3.

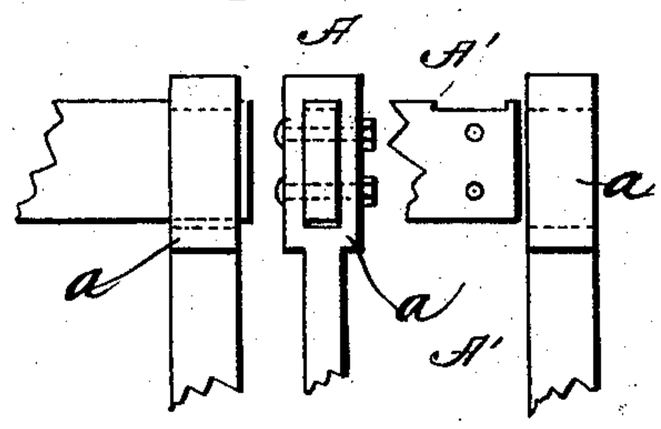


Fig. 4.

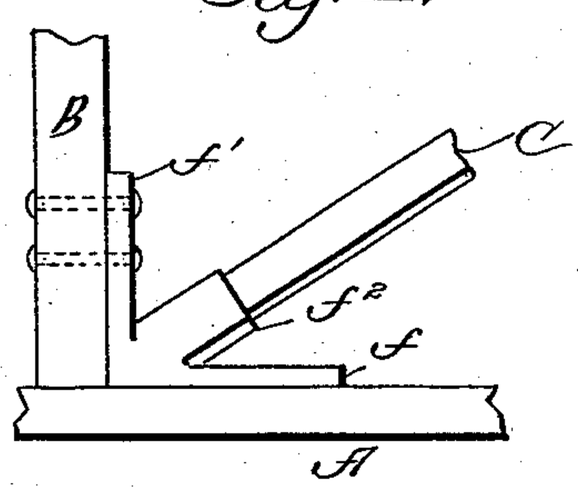


Fig. 5.

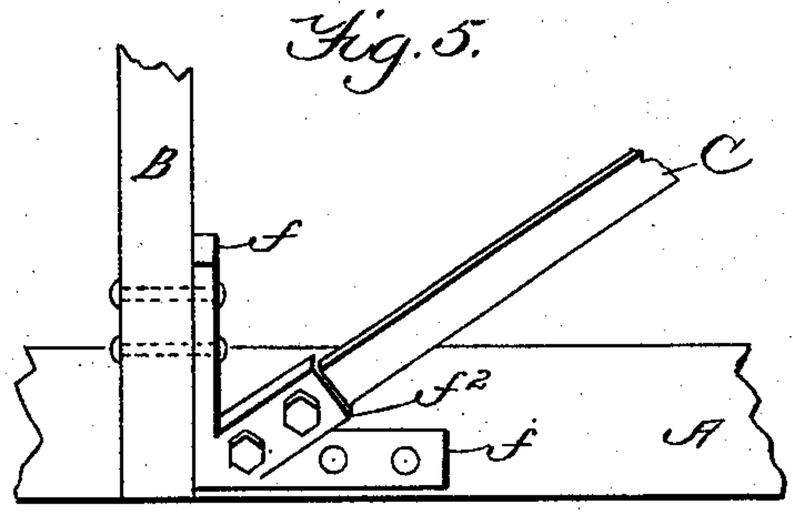


Fig. 6.

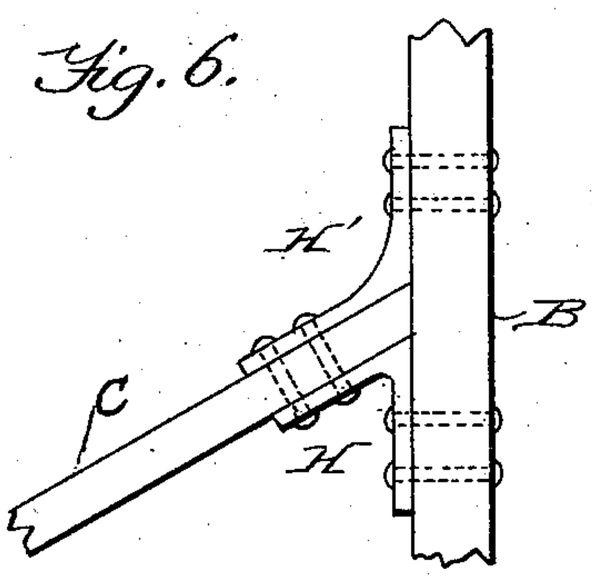


Fig. 8.

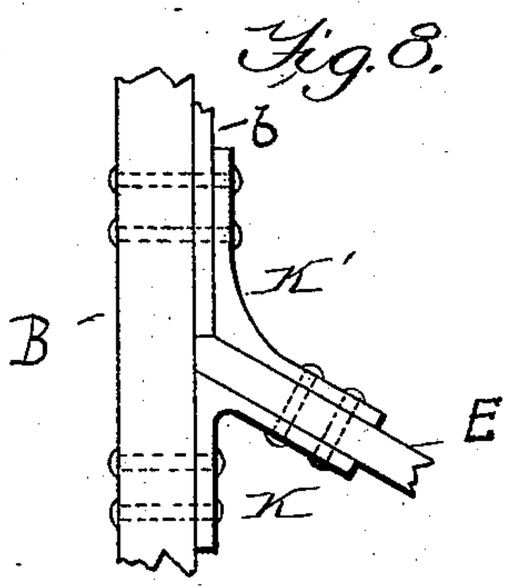
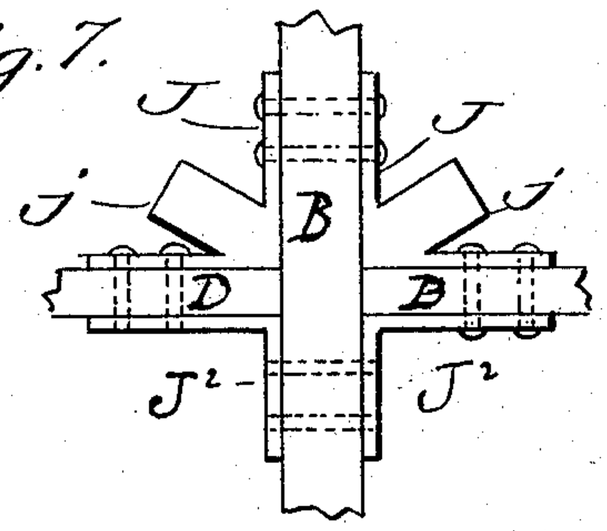


Fig. 7.



WITNESSES:

Henry S. Rohrer.

W. A. Redmond

INVENTOR

Oliver J. Stouffer

BY

J. F. Beale.

ATTORNEY.

UNITED STATES PATENT OFFICE.

OLIVER J. STOUFFER, OF LOGANSPORT, INDIANA.

ROOF-TRUSS.

SPECIFICATION forming part of Letters Patent No. 571,055, dated November 10, 1896.

Application filed June 12, 1896. Serial No. 595,302. (No model.)

To all whom it may concern:

Be it known that I, OLIVER J. STOUFFER, a citizen of the United States, residing at Logansport, in the county of Cass and State of Indiana, have invented certain new and useful Improvements in Roof-Trusses; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in trusses for supporting roofs.

The object of my invention is to provide a truss for hip-roofs which will economize room in the attic and leave a clear space therein, reduce the cost of construction, and one which will brace the four walls of a building together and support the weight of the roof vertically upon said walls without lateral or endwise thrust.

In the accompanying drawings, forming a part of this specification, Figure 1 is a plan view; Fig. 2, an end elevation. Figs. 3, 4, 5, 6, 7, and 8 are detail views.

Referring more particularly to the drawings, A A A′ A′ denote four metal plates, the plates A A having loops *a a* formed at both ends, in which the ends of plates A′ A′ are fitted and bolted in place, as shown in Fig. 3.

A^2 A^2 A^2 A^2 denote ties or anchors which secure said plates to the four walls of the building. In some instances, as especially in the construction of composite or frame buildings, said anchors extend downward, either through the wall or upon the inside thereof, and are anchored in the foundation. In the construction of a roof having one or more gable ends the said plates extend across said ends at the base of gables, as shown in Fig. 2.

B denotes metal rafters extending from opposite sides of the building, their upper ends being joined together by triangular plates *b b*, secured to opposite sides of the same.

C denotes diagonal tie-rods secured to the plates A and the rafters B by means of angle-irons, as hereinafter described.

D denotes metal braces secured to and bracing the rafters upon each side, and E denotes upper diagonal ties secured to the plates *b* at one end and the rafters and braces D by angle-irons, as hereinafter shown.

In Figs. 4 and 5 I show detail views of the angle-irons F, which are provided for securing the ties C to the plates A A′, Fig. 4 being a side view and Fig. 5 a top view. Said irons are formed with a horizontal flange *f* and an upwardly and inwardly inclined flange *f′*. At the vertex of the angle-iron is formed an upwardly-inclined socket f^2, perforated for the passage of bolts which secure the ties C in said sockets. The horizontal flange is bolted to the plates A A A′ A′ and the inwardly-inclined flange is secured to the rafters, as shown in the drawings.

H H′ denote angle-irons secured to the rafters at sufficient distances apart to admit between them the upper ends of the ties C, which are bolted in this position, as shown in Fig. 6, by bolts passing through said ties and downwardly-inclined flanges of both angle-irons.

J denotes right-angle angle-irons secured to opposite sides of the rafters and to the upper side of the braces D. At the vertex of the right angle said irons have sockets *j*, in which are secured the lower ends of ties E. The rafters and braces D, abutting on opposite sides thereof, are bolted together by these angle-irons, and for additional security I use angle-irons J^2 upon the under sides of said braces and secure them to the braces, rafters, and irons J, as shown in Fig. 7. The upper ends of the ties E are secured between angle-irons K K′ and abut against the rafters and against the triangular plates *b*, as shown in Fig. 8.

The angle-irons H and K are acute-angular in form and the irons H′ and K′ obtuse-angular.

It is evident that by means of my plates *b* and upper diagonal ties uniting meeting rafters at the top and adjoining rafters at the side I tie together the two skirts of the truss at and below the crest of the same, while the lower diagonal ties and united wall-plates tie in and brace together the lower portion of the rafters. A truss is thus formed for a hip-roof which dispenses with the necessity of employing girders and tie-rods projected across the attic, which obstruct the same and render it unfit for use. The horizontal braces D stay the rafters and diagonal ties and give rigidity and additional strength to the truss.

My truss equalizes the weight of the roof

upon the walls and takes up all side and end thrust. It is especially valuable for large buildings having a great spread of roof and for hip-roofs having a steep pitch given to the skirts. It braces the walls upon all sides. In case of fire it prevents the roof from falling in, or if a portion of the wall is destroyed it sustains the remaining portion.

In the construction of roofs having gable ends I may use arc-shaped end plates, as shown in dotted lines in Fig. 2, extending across and united to the side wall-plates. This construction is adapted for arched ceilings, or where a clear story is required in place of an attic, or where the end walls are omitted, as in the construction of arcades, halls, &c.

Having shown and described my invention, what I claim, and desire to secure by Letters Patent, is—

In a truss for hip-roofs the combination of the rafters, the wall-plates, the ties C and E, the braces D, the angle-irons F and J having sockets formed at the vertexes of their angles, the oblique angle-irons H and K, and the acute angle-irons K′ and H′, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

OLIVER J. STOUFFER.

Witnesses:
JNO. D. RAUCH,
JAS. F. CONIMGORE.