

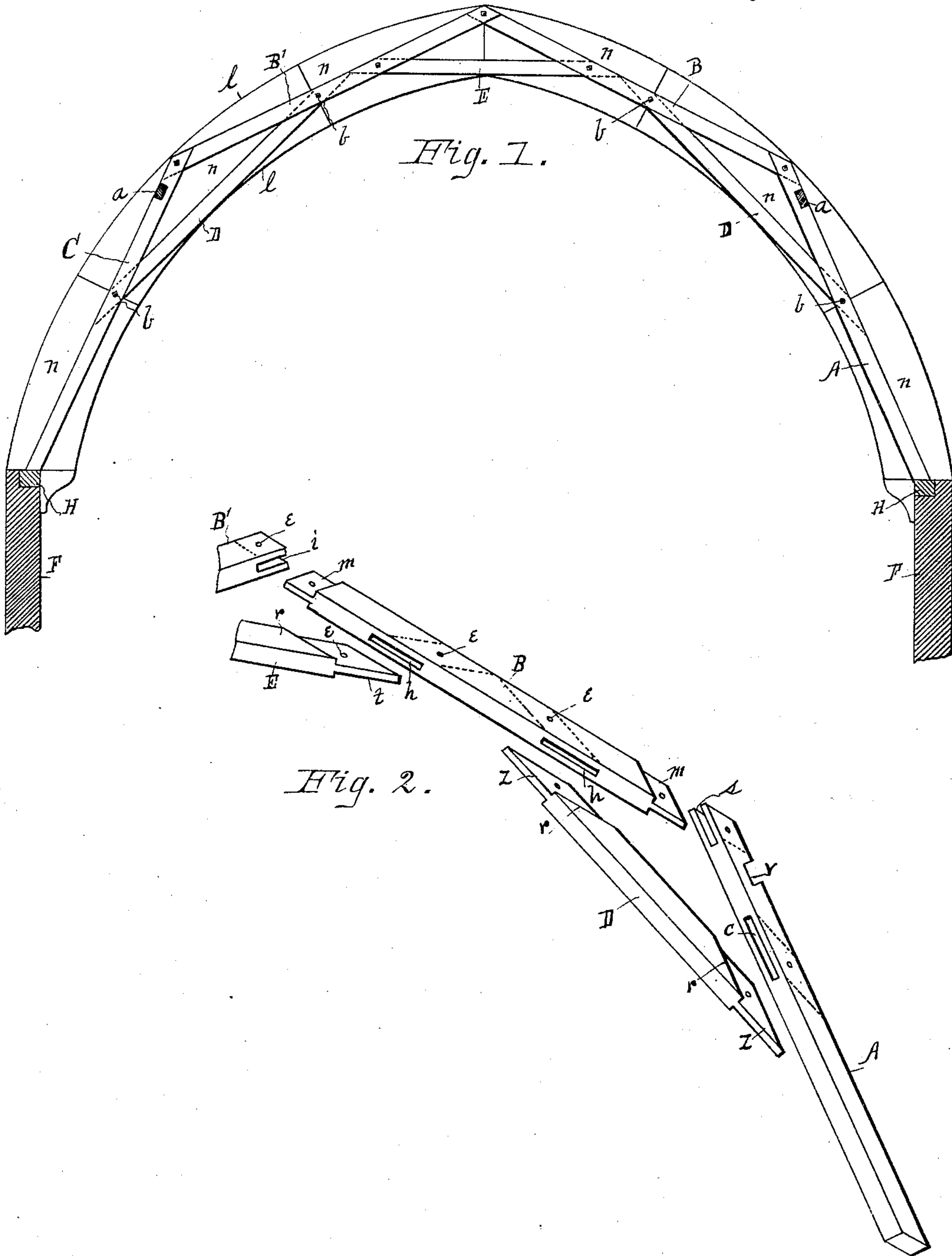
(No Model.)

D. BATES.

SELF SUPPORTING STRUCTURE.

No. 321,939.

Patented July 14, 1885.



WITNESSES:

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DANIEL BATES, OF COLDWATER, MICHIGAN.

SELF-SUPPORTING STRUCTURE.

SPECIFICATION forming part of Letters Patent No. 321,939, dated July 14, 1885.

Application filed May 22, 1885. (No model.)

To all whom it may concern:

Be it known that I, DANIEL BATES, a citizen of the United States, residing at Coldwater, in the county of Branch and State of Michigan, have invented certain new and useful Improvements in Self-Supporting Structures; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My present invention relates to the framing together of the timbers or rafters of a building to form a self-supporting structure, and in the attaching to said framed timbers a series of plank or boards having curved edges, which also strengthen the parts, forming true arcs; and my invention consists in the general arrangement of parts, as hereinafter set forth, and pointed out in the claims.

In the drawings, forming a part of this specification, Figure 1 is a side elevation of my invention. Fig. 2 is an enlarged detached view of the framed timbers.

F represents the walls of a building, and H the plates upon which I anchor the lower ends of the risers or rafters A C. Said rafters have a mortise, *c*, cut through the edge upon a slant, as shown by dotted lines of Fig. 2. The upper ends of said timbers are forked, having the slot *s* cut on an angle, and the notch *v* to receive the purlin-strip *a*.

B B' represent the upper joining-rafters. The rafter B is provided with a tenon, *m*, at each end to fill the slots *s* of the rafters A B'. The rafters or timbers B B' have two mortises, *h h*, diverging from each other, as shown by dotted lines of Fig. 2.

D D are girders joining the parts A B and C B'. Said girders are provided with tenons Z Z, which fill the mortises *h c* of the rafters.

E is a girder, located at the center, having

tenons *t*, which enter the upper mortises, *h*, of the rafters B B'.

All the mortised and tenoned parts are firmly held together by means of bolts *b* passing through the holes *e*.

The slant of the mortises, and that of the shoulders *r* upon the girders, will depend upon the pitch or slant of the rafters of the structure, and should be so framed that when joined together they will fit snugly, tying the joints, thus forming a self-supporting structure.

n represents a series of plank or boards having curved edges joining each other at the ends, as shown in Fig. 1, and are spiked or bolted to the face of the frame-work. The sections *n* are formed concavo-convex, and when joined together, as shown in Fig. 1, forming the true arcs *l l*, being sufficiently wide to form the arc above and below the framed timbers. The purlin-strips *a a* are for the purpose of supporting parallel with each other the framed sections, as in common use.

Having thus fully set forth my present invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the walls of a building and the plates supporting the rafters, of the rafters A C, said rafters joining at an angle the rafters B B', the girders D D and E, said rafters and girders mortised and tenoned together and bolted, substantially as specified.

2. The combination, with the rafters A C, joining the rafters B B', the girders D D and E, said rafters and girders mortised and tenoned together, substantially as specified, of a series of concavo-convex sections, *n*, spiked or bolted to the face of the frame-work, as and for the purposes set forth.

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

DANIEL BATES.

Witnesses:

JAMES R. DICKEY,

L. E. LOCKWOOD.