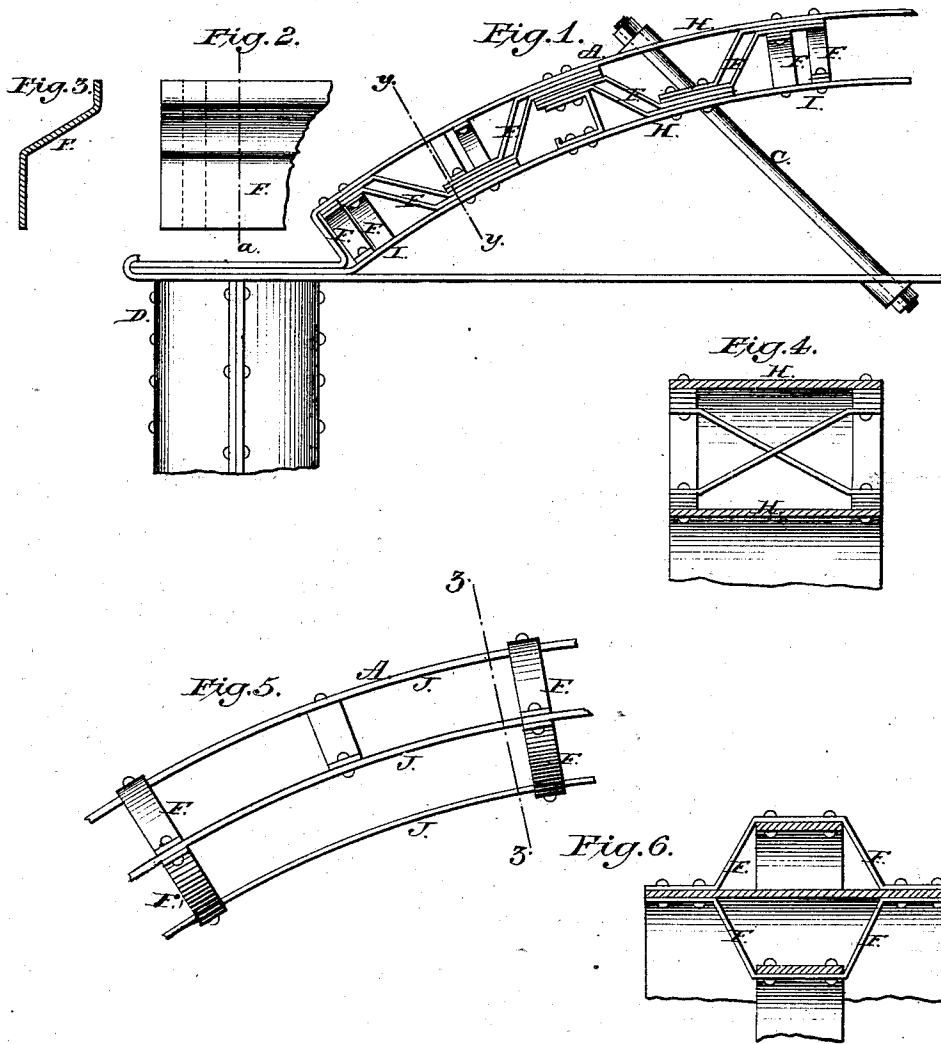


**J. VALLELEY.**  
**Metallic Truss Bridge.**

No. 166,042.

Patented July 27, 1875.



Attest:

*M. Wardner,*  
*Notary Public*

Inventor:

*J. Valleley,*  
*Attorney*

# UNITED STATES PATENT OFFICE.

JAMES VALLELEY, OF CANTON, OHIO.

## IMPROVEMENT IN METALLIC TRUSS-BRIDGES.

Specification forming part of Letters Patent No. **166,042**, dated July 27, 1875; application filed April 24, 1875.

*To all whom it may concern:*

Be it known that I, JAMES VALLELEY, of Canton, in the county of Stark and State of Ohio, have invented a new and useful Improvement in Bridges, of which the following is a specification:

The invention relates to the employment of transverse and lengthwise stays or braces of peculiar form, in connection with the parallel top and bottom plates of the arch, or curved top chord of a bridge, as hereinafter described.

In the drawing, Figure 1 is a sectional elevation of a fragment of the arch, Fig. 2 a side view, and Fig. 3 is a cross-section, of the stay or brace; Fig. 4, a cross-section of the arch in line *yy* of Fig. 1; Fig. 5, a side view of a modified form of arch; and Fig. 6, a cross-section thereof on line *zz*.

The arch *A* is composed of parallel top and bottom plates *H H* and the stay or brace pieces *F*, which are arranged both transversely or crosswise, and lengthwise, and alternating, as shown. The pieces *F* are formed of a wrought-metal plate having its end portions in different but parallel planes, and joined by a middle portion, which is inclined at about an angle of forty or forty-five degrees thereto. The said end portions constitute what may be termed the feet of the braces, and are perfo-

rated to receive the bolts by which they are secured in the arch. One foot is bolted to the upper and the other to the under plate *H* of the chord, the length of the inclined middle part determining the distance between the plates.

The braces may be arranged singly or in pairs, as preferred, according to the length of the arch and the strain to which it is liable to be subjected.

The transverse braces will intersect, as shown in Fig. 4, or be arranged on opposite sides of a central plate, *J*, as shown in Figs. 5 and 6. In the latter case two braces are made in one piece. I show a bottom chord, *B*, connected with the arch by a rod, *C*, and both supported upon a wrought-iron column, *D*.

What I claim is—

In an iron bridge, the arch *A*, composed of the top and bottom plates *H H* and connecting stay or brace pieces *F* of the form shown, and arranged transversely and lengthwise of the arch, as set forth.

JAMES VALLELEY.

Witnesses:

IRA M. ALLEN,

A. W. HELDENBRAND.