

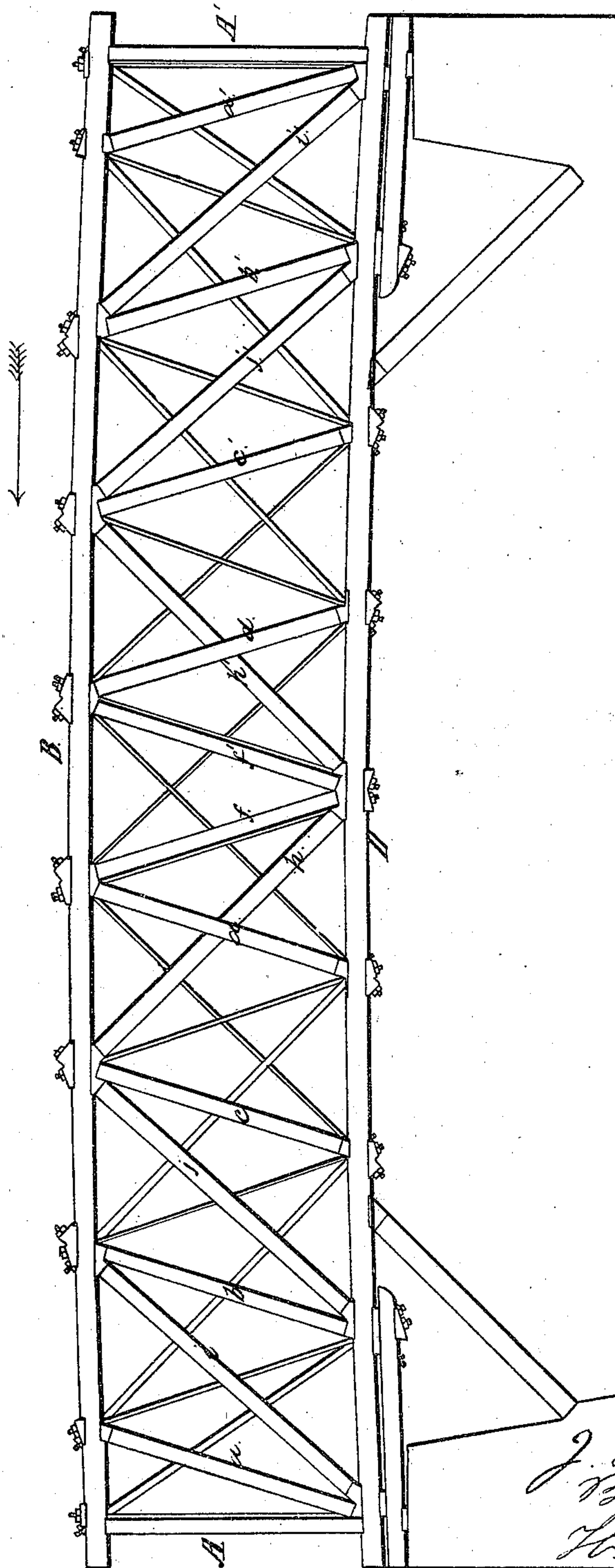
Sheet 1. 2 Sheets.

J. Foreman.
Truss Bridge.

N^o 78,797.

Patented Jun. 9, 1868.

Fig. 1.



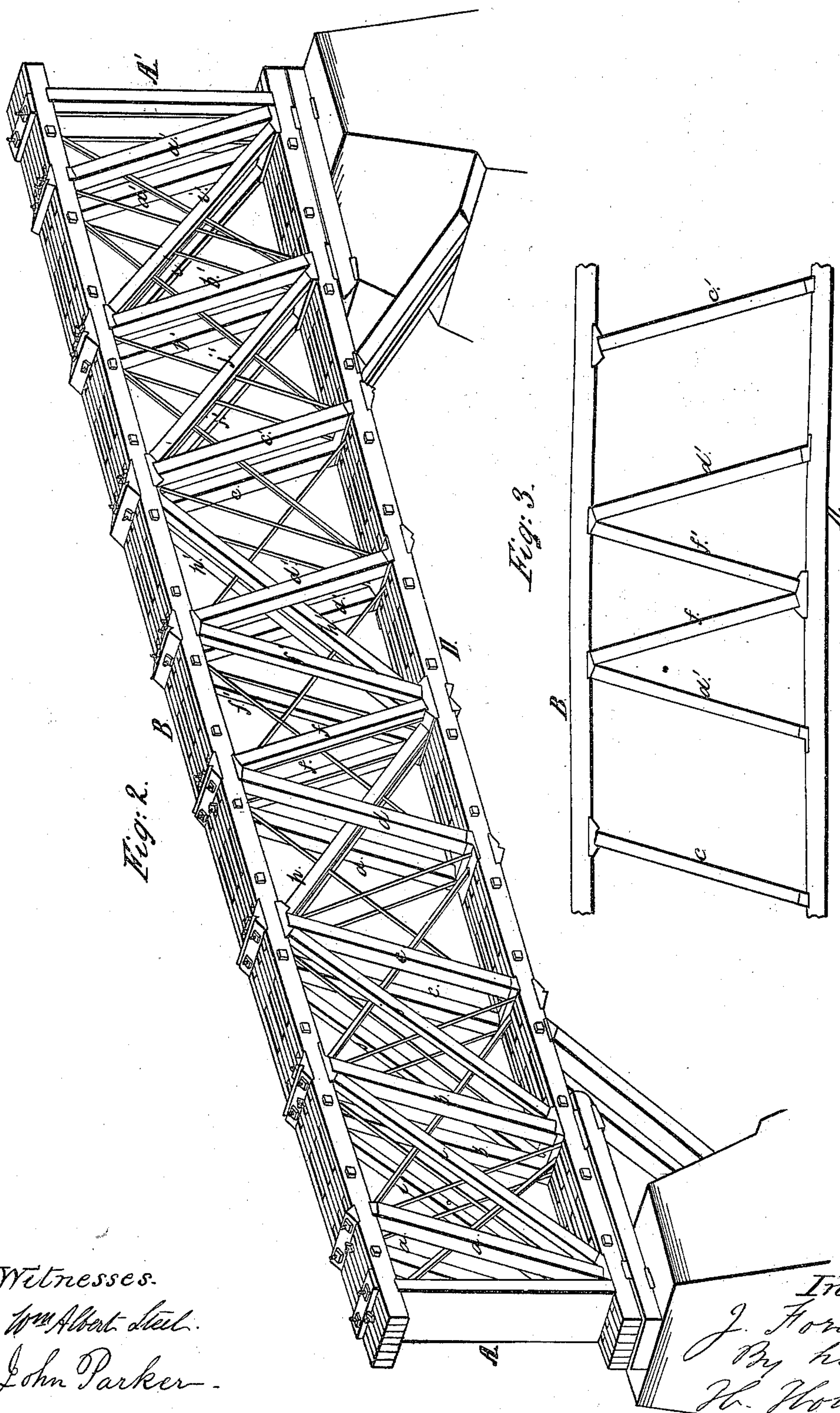
Witnesses.
Wm. Albert Steel
John Parker

Inventor.
J. Foreman
By his Atty
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United States Patent Office.

JOHN FOREMAN, OF POTTSTOWN, PENNSYLVANIA.

Letters Patent No. 78,797, dated June 9, 1868.

IMPROVED TRUSS-FRAMED BRIDGE.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOHN FOREMAN, of Pottstown, Pennsylvania, have invented an Improvement in Truss-Frame Bridges; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention consists of a truss-frame bridge, the posts of one-half of which are inclined in one direction, and those of the other half in the opposite direction, in combination with the system of suspension-rods herein described, or the equivalent to the same, the bridge being thereby increased in strength, while it can be built at a less expense than ordinary truss-bridges.

In order to enable others skilled in the art to make and apply my invention, I will now proceed to describe its construction and operation, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figure 1 (Drawing No. 1,) is a side view of my improved truss-frame bridge.

Figure 2 (Drawing No. 2,) a perspective view of the same, and

Figure 3 a side view of part of the frame.

Similar letters refer to similar parts throughout the several views.

The main peculiarity of my improved truss-frame bridge is the absence of the usual vertical posts or vertical rods, which have heretofore been considered indispensable in bridges of this class.

The opposite end posts or frames, A and A', only are vertical, the remaining posts being inclined, those marked *a*, *b*, *c*, and *d*, in one direction, and those marked *a'*, *b'*, *c'*, and *d'*, in a contrary direction, as best observed on reference to fig. 1 (Drawing No. 1.) These posts, or, as they may be termed, on account of their inclination, main braces, are fitted to cast-iron sockets, secured to the upper chord B and lower chord D.

At the centre of the bridge, on the lower chord D, meet the two posts *f* and *f'*, (inclined in contrary directions,) and the two diagonals or counter-braces, *h* and *h'*, the post *f* meeting the post *d*, and the post *f'* meeting the post *d'* at the upper chord, while the counter-brace *h* meets the inclined post *c*, and the counter-brace *h'* the inclined post *c'* at the upper chord. A diagonal or main brace, *i*, extends from the point where the end post or frame A meets the inclined post or brace *a* at the lower chord, to the point where the post *b* is connected to the upper chord, and a similar main brace, *j*, extends from the point where the inclined post *b* is connected to the lower chord, to the point where the inclined post *c* and counter-brace *h* meet at the upper chord. Similar main braces, *i'* and *j'*, are arranged in a similar manner at the opposite end of the bridge.

On reference to the perspective view, fig. 2, it will be seen that the above-mentioned posts, braces, and counter-braces, consist each of two timbers, and that the upper and lower chords consist of a number of longitudinal beams, arranged a short distance from each other, and bolted together.

By adopting this arrangement of inclined posts or braces, and by the system of suspension-bolts, the disposal of which is indicated in the drawings too clearly to need description, I am enabled to dispense with the usual system of heavy counter-braces, common to wooden-truss bridges, there being in my improved bridge but two counter-braces, *h* and *h'*.

While the bridge is thus made much lighter than others of this class, it is increased in rigidity, especially as regards its resistance of the strains to which it must be subjected by passing trains.

This will be readily understood on supposing a heavy train to be passing on to and over the bridge, in the direction of the arrow, fig. 1. Whatever tendency the bridge may have to yield in the same direction, is met by the resistance afforded by the inclined posts or braces *a*, *b*, *c*, and *d*.

In like manner, if a train be passing in the opposite direction on to the bridge, the strain to which the latter is subjected will be resisted by the inclined posts or braces *a'*, *b'*, *c'*, and *d'*.

It will thus be seen that by inclining one half of the posts of the bridge in one direction, and the other half in the other direction, these posts perform a duty which no vertical posts can accomplish.

It will be understood that the number and arrangement of the timbers composing the several parts of the bridge, and, in a measure, the disposal of the diagonal rods, will depend upon the span and size of the bridge.

Without confining myself, therefore, to the precise construction and arrangement of parts herein described, I claim as my invention, and desire to secure by Letters Patent—

The arrangement, substantially as described, of the inclined posts, suspension-rods, and diagonals, for the purpose specified.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN FOREMAN.

Witnesses:

JOHN WHITE,
C. B. PRICE.