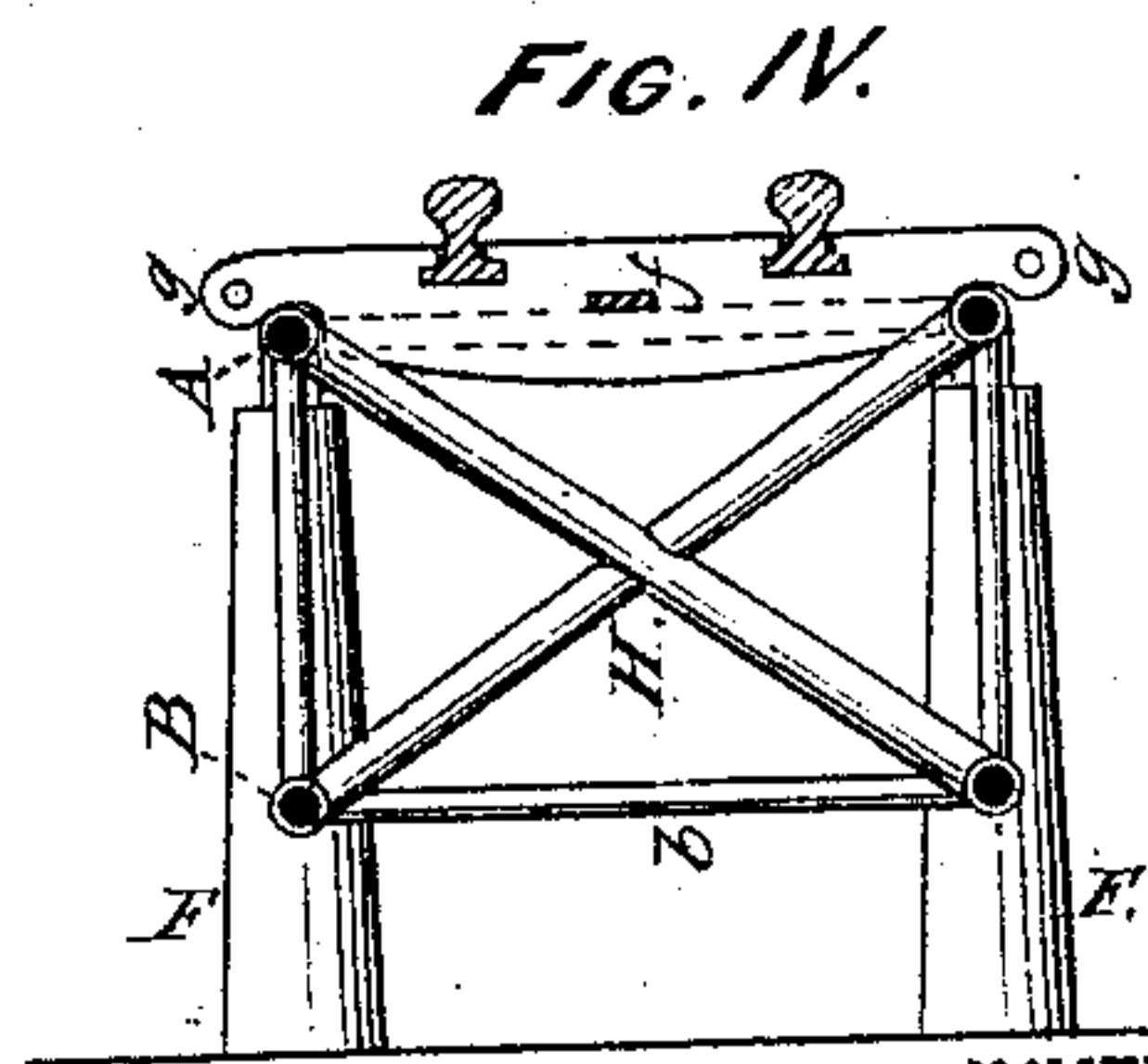
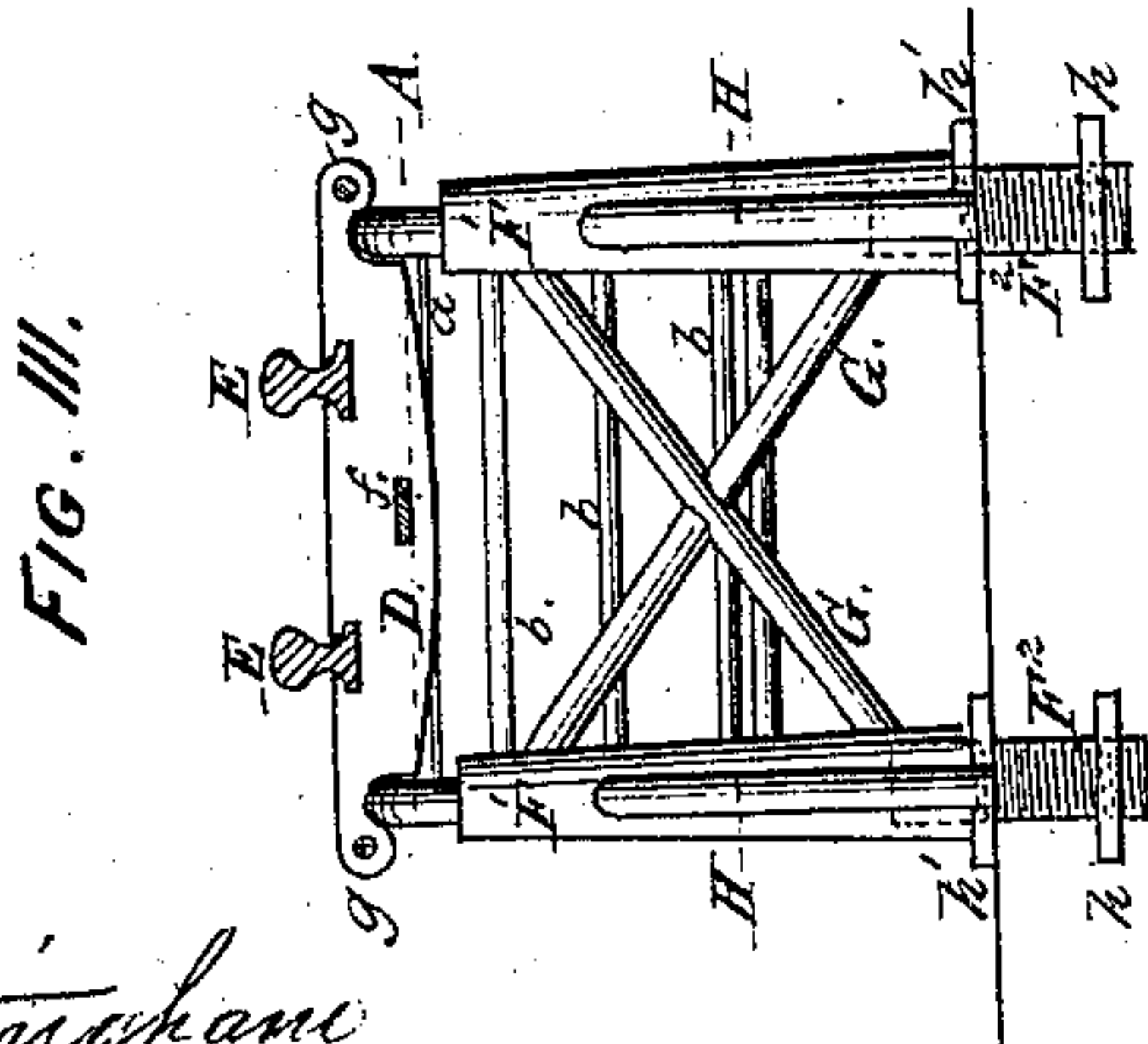
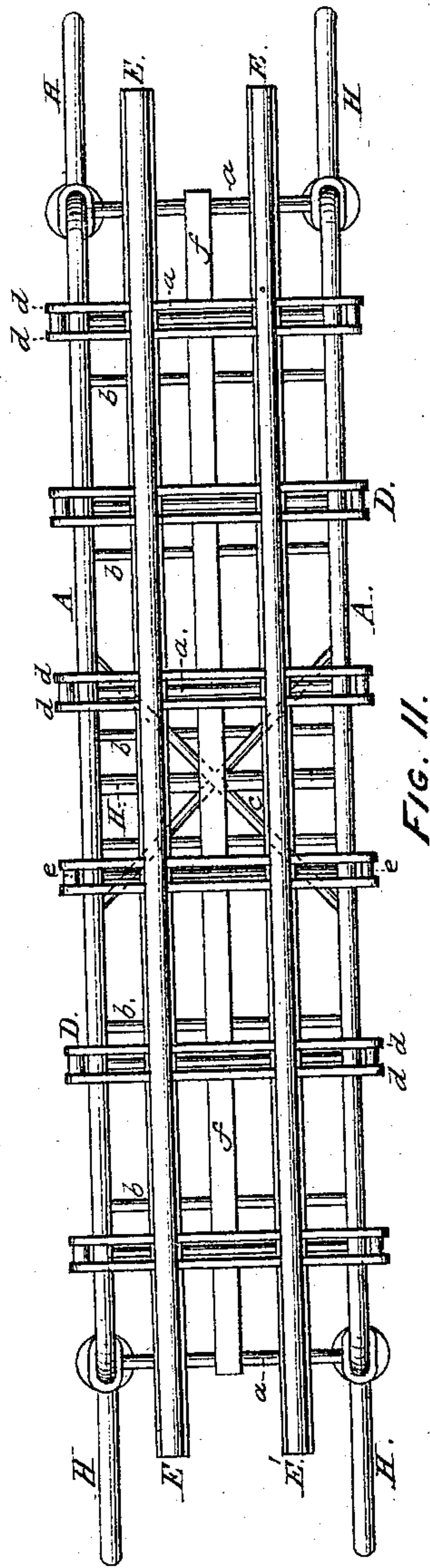
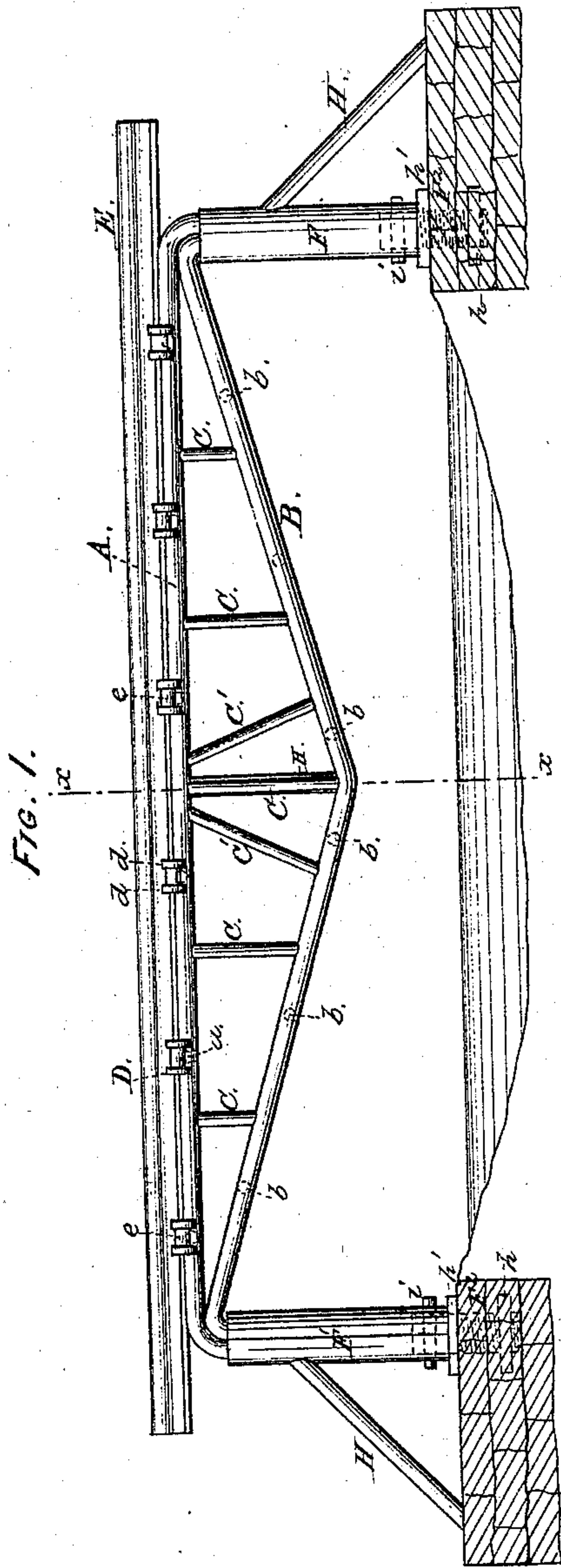


J. W. POST.

BRIDGE.

No. 176,806.

Patented May 2, 1876.



WITNESSES:

J. R. Nottingham  
 Geo. R. Goodridge

INVENTOR:

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ATTORNEYS.



# UNITED STATES PATENT OFFICE.

JOHN W. POST, OF NEW YORK, N. Y.

## IMPROVEMENT IN BRIDGES.

Specification forming part of Letters Patent No. **176,806**, dated May 2, 1876; application filed April 11, 1876.

### *To all whom it may concern:*

Be it known that I, JOHN W. POST, of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Deck Truss-Bridges; and I do hereby declare that the following is a full, clear, and exact description thereof, which 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 letters of reference marked thereon, which form a part of this specification.

The object of my invention is to construct a truss-bridge of deck form especially adapted for railroad purposes, that is very light, strong, simple, and durable, and that can be easily taken apart and set up in the desired locality.

This invention consists of a deck truss-bridge constructed in all its main parts of pipes or tubes made of wrought or cast iron, steel, or other suitable material, and whose parts can be easily put together or taken apart for transportation to the desired place. It also consists in a peculiarly-shaped metal tie for securing and retaining the rails in position in a simple and effective manner, in connection with the bridge, and in making the piers or abutments of tubular or elliptical shape, braced together by tubes or pipes.

In the accompanying drawing, Figure 1 is a side elevation of my improved bridge. Fig. 2 is a plan view of the same. Fig. 3 is an end view of the same. Fig. 4 is a cross-section on line *xx* of Fig. 1.

In the drawing, A represents the upper or main chord of a bridge, made of tubes or pipes, and B the lower or truss chord, which acts, in this case, as a tension-chord, and between which are arranged the vertical braces or struts C and inclined braces C', which are screwed into suitable couplings into the chords A and B, or secured in any other suitable manner. These two trusses or girders are secured together and held in position, according to the width desired, by horizontal cross-braces *a* and *b*, as well as by diagonal braces *c*, and are also made of tubes or pipes. In the center of the bridge is furthermore arranged a diagonal cross-brace, H, secured to the upper

and lower chords A and B in any suitable manner. The upper chords A A are, furthermore, held in place by iron cross-ties D, which are of peculiar construction. They are made of two pieces, *d d*, held apart by short thimbles *e* at their ends. Said ends are notched, and partly embrace the chords A, as best seen in Fig. 3, and are recessed on their upper sides so as to embrace or grasp the lower edge of the railroad-rails E, and hold them firmly in their proper position. If desired, flat tie-rods *f* may be inserted in the center of the cross-ties, or round ones in the eye *g* on each end of said cross-ties, to which hand-rails may be secured. The piers or abutments F F' are made of cylindrical or elliptical tubes, and with diagonal cross-braces G and struts H, also made of tubes or pipes. The piers are secured to the foundation by a short tube, F<sup>2</sup>, which is built into the foundation, and held by an anchor-plate, *h*, and cap-plate *h'*, which are screwed or keyed into the tube F<sup>2</sup>, a short end of which protrudes through the cap-plate *h'*, and over this the tubular columns of the piers exactly fit, and are secured by keys or pins *i*.

In constructing the bridge, the chords B, with their struts and braces, are arranged on the lower side of the chord A, and may be secured to the piers or abutments in any suitable manner.

The great advantages of my bridge are, that greater strength and steadiness are obtained with less and very light material than most bridges in use; that it can be very easily put together and taken apart for transportation, &c.; that it can be lengthened or shortened to suit different locations by the addition and insertion of additional lengths of tubes or pipes, which can also be varied in size to suit different loads or strains; that it does not need costly stone or brick abutments, and these can also be lengthened or shortened to suit different heights, and offer very little resistance to the water; and that these bridges can be furnished at a very reasonable cost, and are not likely to get out of repair.

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

1. The girder or truss herein described, con-

structed of tubular chords A B, with vertical braces or struts C and inclined braces C', substantially as shown.

2. In combination with a bridge, the metal cross-ties D, composed of the parts *d d* and thimbles *e*, and provided with notches or recesses for the reception of the railroad-rails E, when constructed substantially as shown and herein described.

3. The combination of the bridge herein described, consisting of tubular chords A B, vertical braces or struts C, and inclined braces C', with the tubular piers F F<sup>1</sup>, secured by tubes F<sup>2</sup>, anchor-plates *h*, cap-plates *h'*, and keys *i*, all constructed and arranged as shown and specified.

4. The bridge herein described, consisting of the upper and lower chords A B, braces C C', cross-braces *a b c*, and diagonal braces H,

and the cross-ties D, all constructed substantially as shown and described.

5. The bridge constructed, in the manner herein described, of tubes or pipes, in combination with the piers F F<sup>1</sup>, provided with diagonal cross-braces G and struts H, all as shown, and for the purpose set forth.

6. The tubular piers F F<sup>1</sup>, secured in place by the tube F<sup>2</sup>, anchor-plates *h*, cap-plates *h'*, and keys *i*, substantially as shown and herein described.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

JOHN W. POST.

Witnesses:

J. R. NOTTINGHAM,

FRED. R. GOODRIDGE.