J. H. SNYDER.

TRUSS BRIDGE.

No. 190,921. Patented May 15, 1877.

Fig. 1.

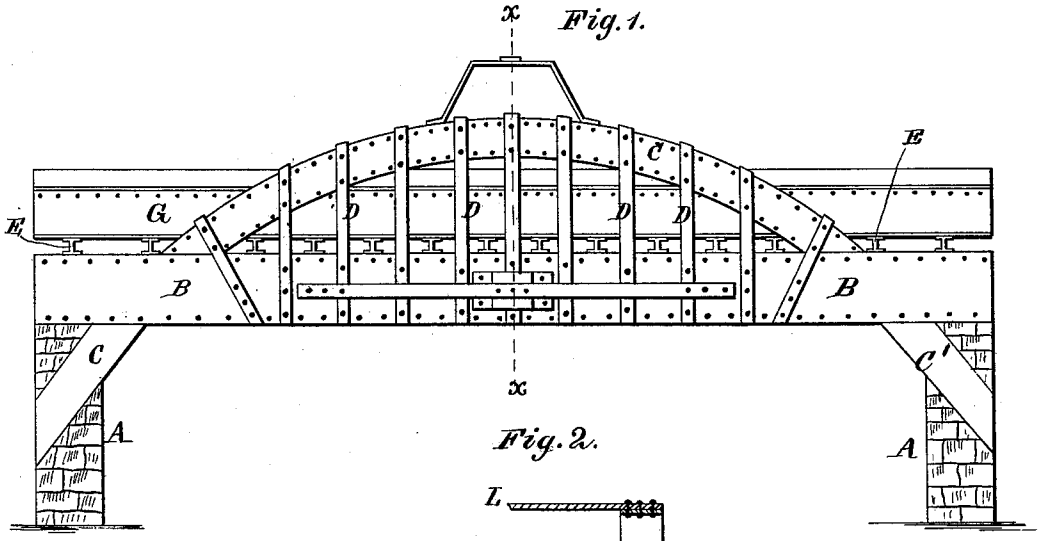
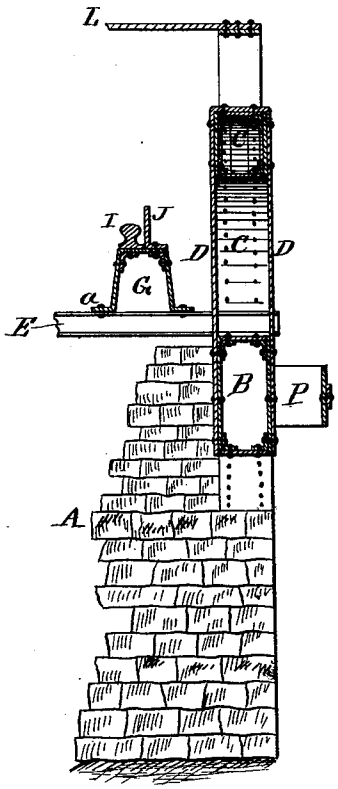


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN H. SNYDER, OF RICHMOND, VIRGINIA, ASSIGNOR OF ONE-FOURTH HIS RIGHT TO DAVID NORVELL WALKER, OF SAME PLACE.

IMPROVEMENT IN TRUSS-BRIDGES.

Specification forming part of Letters Patent No. **190,921**, dated May 15, 1877; application filed April 9, 1877.

To all whom it may concern:

Be it known that I, JOHN H. SNYDER, of Richmond, in the county of Henrico and in the State of Virginia, have invented certain new and useful Improvements in Bridges; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my intention consists in the construction and arrangement of a railroad-bridge, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side elevation of my improved railroad-bridge. Fig. 2 is a vertical section of one side thereof.

A A represent the piers supporting one span of the bridge.

On these piers are placed the side beams B, which are made in the form of hollow square-cornered tubes. They are made of boiler-plates, with angle-irons firmly riveted together, and of such dimensions, say, six feet by two feet, more or less, that the workman can pass through the same for the purpose of riveting the parts together.

C represents the arch, which is also made hollow, of the same general form or shape as the beams B, and the ends of the arch firmly riveted to the top of the beams. To the under sides of the beams B are riveted continuations C′ of the arch which connect the same to the piers.

D D represent metal bars, which are bent over the top of the arch, the ends of said bars passing downward, and connect with the beams B both on the inner and outer sides. These bars D are riveted to the top of the arch, as well as to its sides, and to the sides of the beam, thus forming a series of braces both on the outer and inner sides for strengthening the bridge, and making the same stiff and strong, and not liable to collapse.

On top of the beams B B, across the bridge, are laid flanged bars or ties E E at suitable distances apart, which are riveted to the beams, so as to be permanently and rigidly attached thereto.

Over these ties are laid the hollow sleepers or beams G G, which are provided at their lower sides with side flanges *a a*, and through these flanges said beams are riveted to the ties E, making a firm and permanent connection, so that the weight from a train of cars will be distributed over the entire length of the span, and the span cannot give way at any one point, as all the parts are solidly and firmly connected together.

I I represent the rails, which are also riveted to the top of the beams G, thus imparting additional strength to the bridge. On the outer side of each rail I is a flanged bar, J, running close to, and parallel with, it, riveted to the top of the beam G, and projecting a short distance above the upper surface of the rail I, thereby preventing the cars from running off the track on the bridge.

L represents a cross-bar, which, when the arches are high enough, may be fastened directly to the upper sides of the arches to connect the same; but when the arches are not high enough to allow the cars to pass under said cross-bar it is elevated and connected to the arches by suitable braces, as shown.

It will be seen that by this construction the weight and strain are evenly distributed throughout the whole length of the span, because all the parts are permanently and firmly united together by rivets.

On the sides of the beams B are other braces, P, to further strengthen the same, as shown.

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

1. In a bridge, the hollow or tubular beam B, hollow arch C, and the bars D, passed over the arch and down on both sides, and riveted to the arch and beam, substantially as and for the purposes herein set forth.

2. The combination of the hollow longitudinal beams G G and the rails I with the bars E E, all substantially as and for the purposes herein set forth.

3. The combination of the hollow beams B B, hollow arches C C, bars D, flanged bars E, and the hollow flanged beams G G, with the rails I I, all said parts being riveted together, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 5th day of April, 1877.

JOHN H. SNYDER.

Witnesses:
J. C. SCHROEDER,
FRANK GALT.