J. WALL.

Bridge-Truss.

No. 164,349. Patented June 8, 1875.

Fig. 1

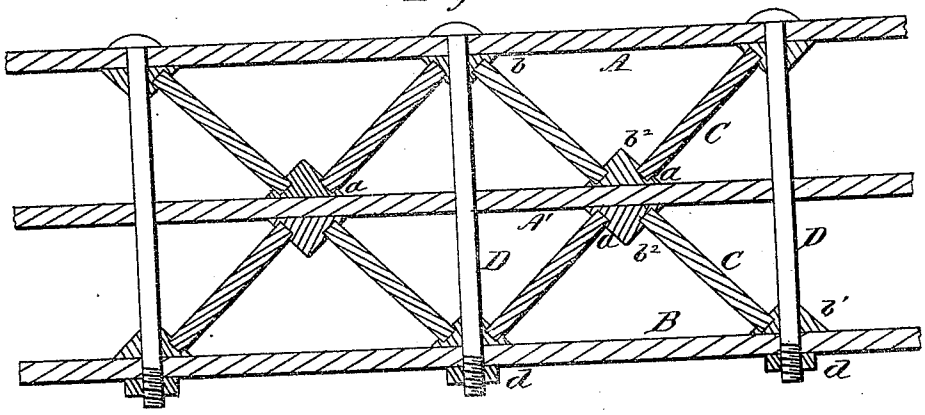
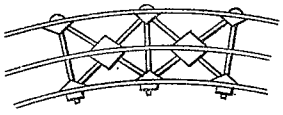


Fig. 2



Witnesses

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UNITED STATES PATENT OFFICE.

JONATHAN WALL, OF WILMINGTON, OHIO.

IMPROVEMENT IN BRIDGE-TRUSSES.

Specification forming part of Letters Patent No. 164,349, dated June 8, 1875; application filed March 27, 1875.

To all whom it may concern:

Be it known that I, JONATHAN WALL, of Wilmington, in the county of Clinton and State of Ohio, have invented certain new and useful Improvements in Trusses for Bridges; and I do hereby 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a side view of my invention. Fig. 2 is a side view of a modification.

This invention has relation to the novel construction of a straight or arched truss for a bridge, having in view the employment, in connection with the upper and lower plates, of the span of an intermediate or third plate, whereby the strength of the truss is greatly increased at a comparatively moderate addition to the weight and cost of a two-plate truss. This invention accordingly consists in the novel arrangement of parts, and especially of the struts which separate and brace the plates, whereby the intermediate plate is held in position and made to combine with the outer plates in resisting general compressive strain.

I regard the present invention as an improvement, particularly on the bridge patented by J. and Z. Wall, February 24, 1874, wherein is also shown a three-plate truss, which is adapted to resist both compressive and tensile strain.

In the present instance I have avoided the use of tubular struts and the zigzag arrangement shown in said patent, and have adopted solid rods of wrought or cast iron held in place by recessed angle-blocks, through the outermost series of which—that is, the blocks resting against the inner surfaces of the outer plates—pass the tension-rods which hold all the members of the truss together, the innermost series of blocks being fastened to the intermediate plate in any appropriate manner. The struts have a zigzag arrangement in relation to each pair of plates, including the intermediate plate, but their lines intersect at the middle of the intermediate plate. The latter is, therefore, supported and braced equally on both sides, and equally countersustains the outer plates and interposed members.

Referring to the accompanying drawings, A A′ B designate the three plates of a truss, which may be either straight or arched. b b^1 b^2 designates the angle-block applied, respectively, to the upper, lower, and intermediates plates, and recessed at a to receive the ends of the diagonal struts C, which terminate at the blocks b^2, from each pair of which, as a hub, they radiate. D represents the tension-bolts passing through the blocks b b^1, and holding nuts d on one end.

Although I purpose using solid struts I do not confine my claim thereto, but reserve the right to use tubular struts wherever desirable. Nor do I limit myself to, specifically, three plates, as it is obvious that more than one intermediate plate may be employed without departing materially from the essential idea.

I claim—

The combination, in a truss, of the three plates A A′ B, short diagonal struts C, recessed angle-blocks b b^1 b^2, and tension-bolts D, said struts being arranged on lines intersecting at or near the middle of the plate A′ with their ends resting in the recesses a of the angle-blocks b^2, and the latter arranged on opposite sides, respectively, of the plate A′, all substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 26th day of March, 1875.

JONATHAN WALL.

Witnesses:

THOS. A. CONNOLLY,

JOS. B. CONNOLLY.