E. Stanley.

Truss Bridge.

No. 8,337. Patented Sept. 2, 1851.

Fig. 1.

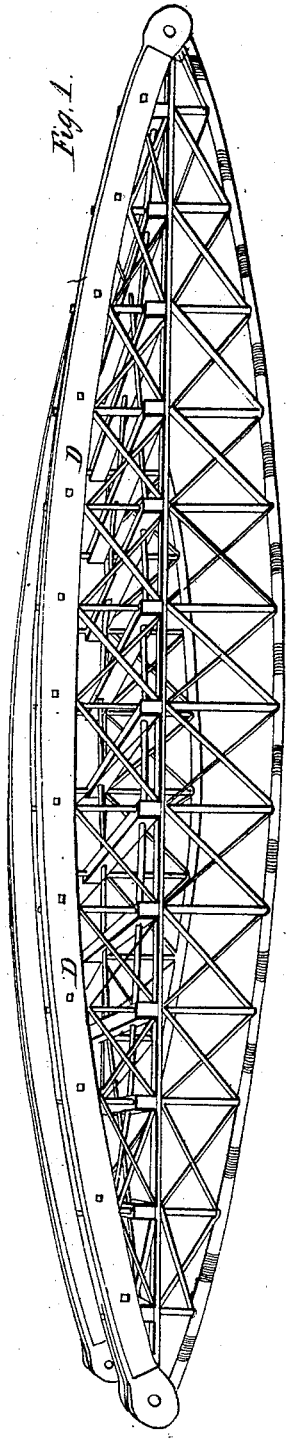


Fig. 2.

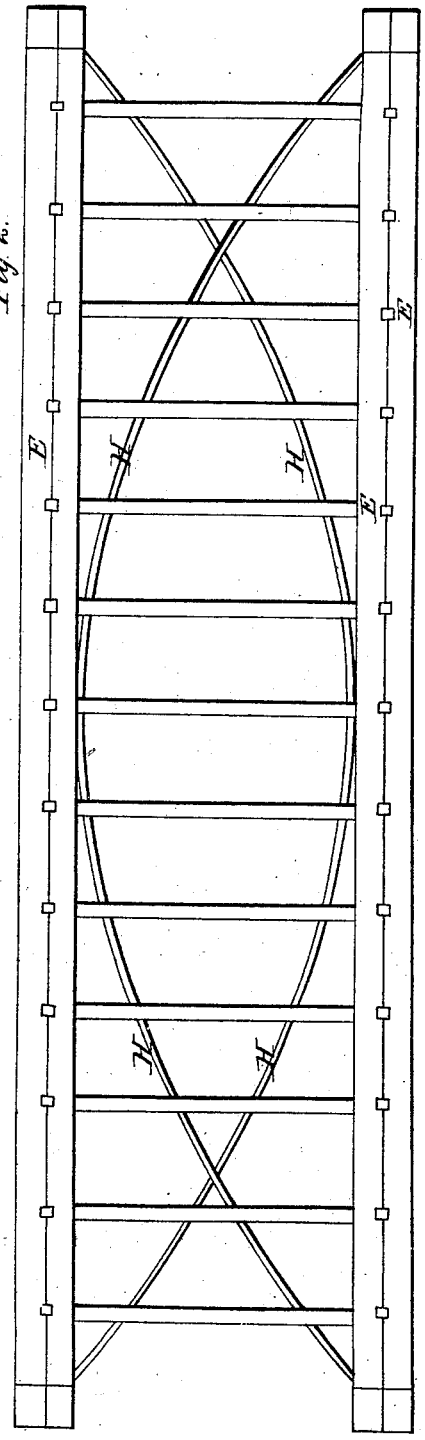
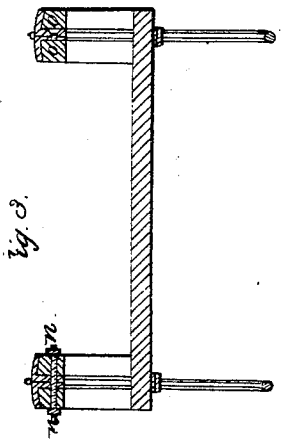


Fig. 3.



UNITED STATES PATENT OFFICE.

EDWIN STANLEY, OF BENNINGTON, NEW YORK.

CONSTRUCTION OF BRIDGES.

Specification of Letters Patent No. 8,337, dated September 2, 1851.

To all whom it may concern:

Be it known that I, EDWIN STANLEY, of Bennington in the county of Wyoming and State of New York, have invented certain new and useful Improvements in Bridges, which are sufficiently explained and illustrated in the following description and accompanying drawings to enable others of competent skill to make and use my invention.

The nature of my invention consists in making the arch which is intended to sustain the thrusting force of the load of wood and iron so combined and constructed as to afford a firm and durable iron bearing for the upper end of the braces and uprights, while I at the same time make the principal part of the arch of wood combining it with the iron portion of the arch in such a manner that it can when decayed be removed in portions and be replaced with new without destroying any other part of the structure—by which means I am enabled to secure in the same arch the lightness, cheapness, and security of wood and the durability of iron.

Figure 1 is a perspective view. Fig. 2 is a plan and Fig. 3 is vertical transverse section of said bridge.

The iron portions of the arch are bolted together with short flush headed bolts *o*, *o*, which are merely long enough to reach through and confine together the iron portions of the arch. The wooden portion D, D, of the arch, I usually make of planks of any convenient thickness though square timber will answer the purpose.

In constructing the arch I first make a light iron arch in two parts E, E, shown in the drawings. These parts E, E, may and in most cases would necessarily be made in section, but care should be taken that the joints in one side of the arch should not meet those in the other. The parts E, E, terminate at the foot in the manner shown in the drawings for the purpose of receiving the lower cord of the bridge and sustaining the thrust of the wooden portions of the arch. The uprights pass up through between the two parts of the arch—half of the hole necessary for that purpose being formed in each half of the arch B. The wooden portions D, D, are held in their places by the bolts *n*, *n*, which are screwed through the metalic part of the arch and answer the two fold purpose of holding said arch together, and of holding the wood in its place—one of these bolts being placed one side of each of the uprights—and one of the short flush headed bolts above mentioned the other side.

H, H, are cables for lateral bracing. They are fastened at the foot of each arch and either pass through the cross ties or are fastened to them on the under side as may be convenient. These are used to prevent the bridge from being thrown out of line laterally, which is quite important particularly for railroad bridges placed on or near curves as the lateral strain on the bridge of the engine and tender might otherwise prove distructive to the bridge.

By the mode of constructing the arch above described I build a cheaper arch than can be built wholly of iron while at the same time I secure the advantages of an iron arch to which to fasten the uprights and braces. The wood is also protected from the weather by the upper flanges of the arch and the bolts are so arranged that one side of the wood work of each arch can be removed without disturbing or weakening the other.

What I claim as my invention and desire secured to me by Letters Patent is—

The method above described and shown of making the throat arches of bridges, that is to say I claim the arch constructed partly of wood and partly of iron when arranged in the manner herein specifically set forth, the iron parts of the arch being constructed in such a manner as to afford a firm bearing for the braces and uprights with a projecting flanch of sufficient width to shelter the wooden part of the arch as herein set forth and the wood being bolted upon the sides under cover of the flanches of the iron in such a manner that the wood upon one side can be removed and be replaced without disturbing that on the other, the whole being constructed and put together substantially in the manner and for the purposes herein set forth.

EDWIN STANLEY.

Witnesses:

JOHN B. FAIRBANK,

HENRY F. WILLSON.