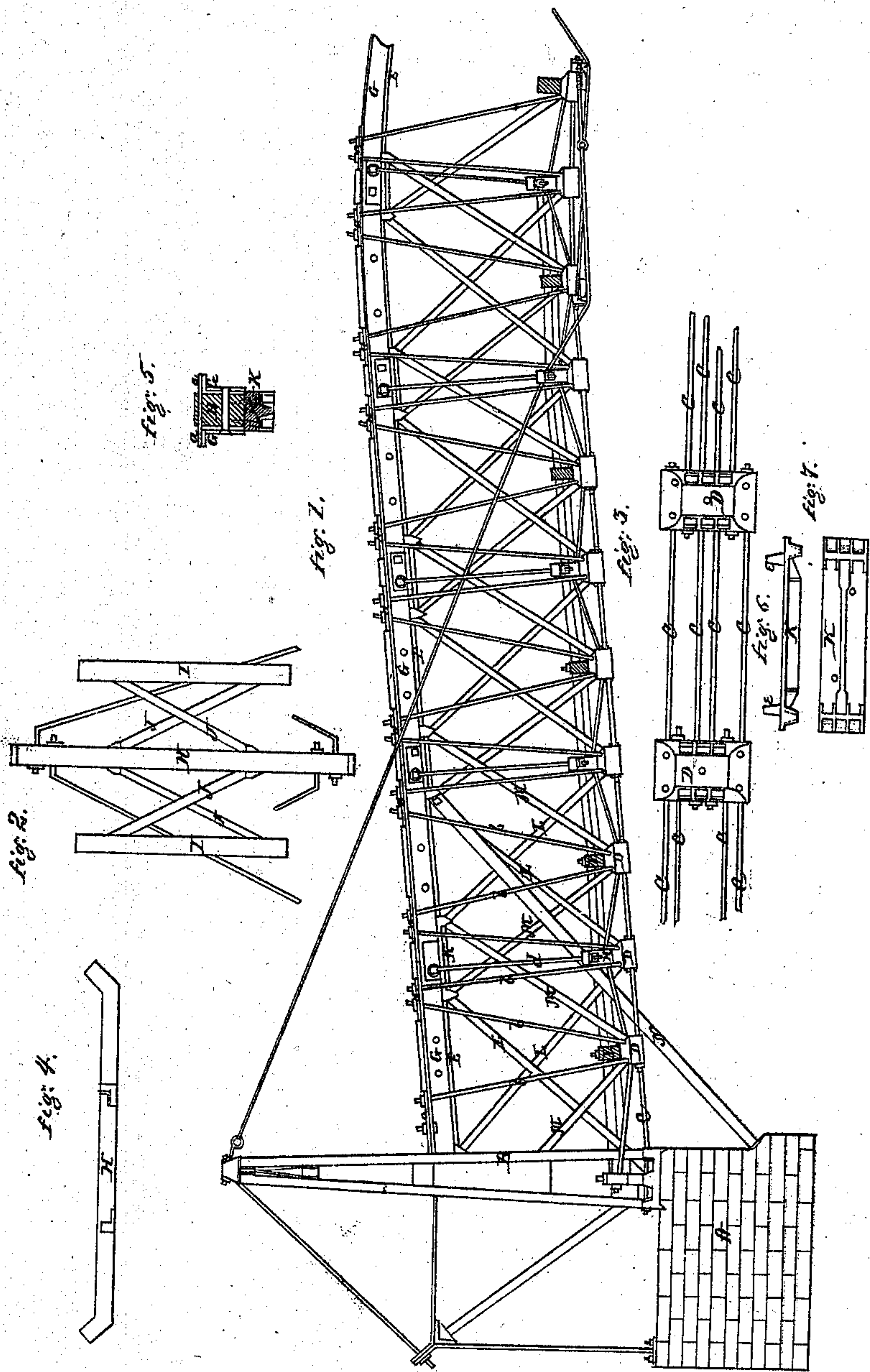


*J. Seebold,*  
*Truss Bridge.*

*No. 105,497.*

*Patented July 19, 1870*



*Witnesses,*  
*Ed. Dwyer,*  
*A. H. Hare*

*Inventor,*  
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# United States Patent Office.

JACOB SEEBOLD, OF KANTZ, PENNSYLVANIA.

*Letters Patent No. 105,497, dated July 19, 1870.*

## IMPROVEMENT IN BRIDGES.

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, JACOB SEEBOLD, of Kantz, in the county of Snyder and State of Pennsylvania, 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 drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the construction and arrangement of a bridge, as will be hereinafter 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 view of a portion of my bridge;

Figure 2 is a plan view of a part of the bottom of the bridge;

Figure 3 shows a portion of the bottom chord;

Figure 4 is a side view of one of the iron beams in the bottom of the bridge;

Figure 5 is a transverse vertical section through the top chord;

Figure 6 is a side view of a casting placed on the under side of the top-chord; and

Figure 7 is a bottom view of the same.

A represents the abutment of the bridge, upon which are placed two pillars, B B, suitably braced and secured for supporting the ends of the top and bottom chords of the bridge.

The bottom chord of the bridge is composed of rods, C C, and castings, D D, arranged in the following manner:

To the lower end of each pillar B are secured four rods, C C, by means of nuts on their inner ends.

Two of these rods pass through the first casting, D, and are secured by nuts. The other two not only pass through the first casting, but also through the second, where they are, in turn, secured by nuts.

To the first casting two other rods are secured, which pass through the second and fasten to the third, and so on throughout the entire length of the chord. At each casting two rods end and two rods commence, there being thus four rods between all the castings, which are placed any suitable distance apart.

It will readily be seen that, with this construction of the bottom chord, if a rod should be broken or otherwise injured, it can readily be replaced without disturbing the rest of the chord, and the rods may be shortened or lengthed by means of the nuts, as may be desired.

The top chord of the bridge is composed of timber,

E, lined or covered on the outside with L-shaped iron bars or rails, G, secured by bolts, as shown in fig. 5, care being taken to form broken joints with said iron bars.

At suitable intervals iron plates or castings, *a*, are let into the top of the timber E, and rest upon the projecting flanges of the bars or rails G G.

Through these plates or castings inclined rods or braces, *b b*, pass downward to the castings D, on the bottom chord, and secured at both ends by nuts, as shown.

Across the two bottom chords, on the top of every other casting, D, is laid a metal bar, H, secured, by bolts, to the same, and extending a suitable distance beyond the bottom chords, where its ends are turned up, as shown in fig. 4.

The ends are then braced by rods, *d d*, to the top chord.

On top of the other castings, between the metal beams H, are secured wooden cross-beams, I, which are braced by horizontal cross-braces, J J, to the iron beams H.

The top and bottom chords are further braced in the following manner:

At equal intervals on the under side of the top chord E G, above the metal bars H H, are placed castings, K K, the construction of which is fully shown in figs. 6 and 7, the projecting lugs *e e*, on their upper sides, being inserted in recesses formed in the timber E, to hold the casting in position until the braces are put in place.

From each side of the casting D, which supports the metal bar H, a brace, L, extends to the nearest end of the casting K.

Immediately beyond and from each side of the other castings D, which support the wood beams I, a brace, M, extends to the furthest end of the casting K on each side.

The braces L and M are so arranged that they are double toward the center of the span, thereby imparting greater strength to the bridge.

Other braces, N, also pass from a suitable point on the top chord to the abutment A, as shown in fig. 1.

For further security of the bridge, a wire rope, P, passes on each side of the top chord, its upper end being secured in suitable manner at the upper end of the pillar B, and its lower end passing under a casting, R, and secured to a similar casting, as shown in fig. 1, said castings being placed near the center of the span under the bottom chord, and held in place by the tension of the ropes P P. Both ends of the rope P are tightened by nuts, as required.

A bridge thus constructed can be repaired, when



necessary, in any of its parts without building any additional frame-work for supporting the balance of the bridge.

The bottom chord, C D, may be used both on metal and wooden bridges.

Having thus fully described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the rods C C and castings D D, forming the bottom chord of a bridge, when arranged substantially as herein set forth.

2. In combination with the bottom chords C D, the metal beams H H, wooden beams I I, and cross-braces J J, constructed and arranged substantially as shown and described.

3. The arrangement of the castings K K and braces L L and M M, for bracing and connecting the top and bottom chords of a bridge, substantially as herein set forth.

4. The inclined rods or braces b b, connecting the castings a a, on the top chord E G, with the castings D D of the bottom chord, in combination with braces L M and casting K, substantially as shown and described.

5. The combination of the top chord E G, bottom chord, C D, beams H and I, cross-braces J, castings K, braces L and M, rods b b and d, castings a a, and with or without the wire ropes P P, and castings R, all constructed and arranged substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing, I have hereunto set my hand this 30th day of May, 1870.

JACOB SEEBOLD.

Witnesses:

EDWARD FORRY,  
CHARLES BROUSE.