

Z. King. Truss Bridge.

N^o 58,266.

Patented Sep. 25, 1866.

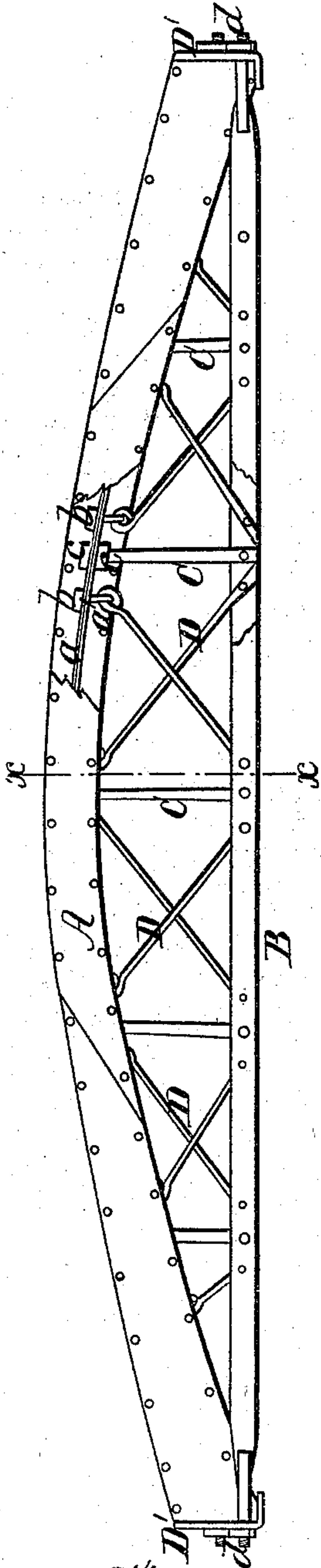


Fig. 1

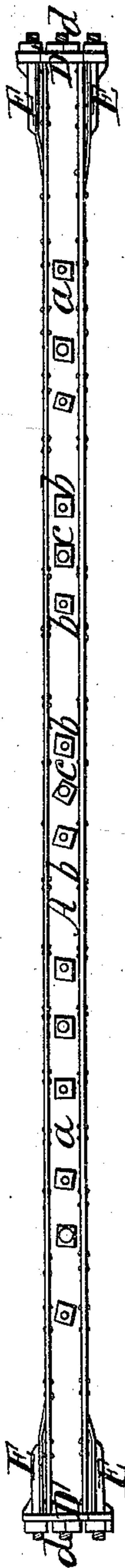


Fig. 2



Fig. 3



Fig. 4



Fig. 5

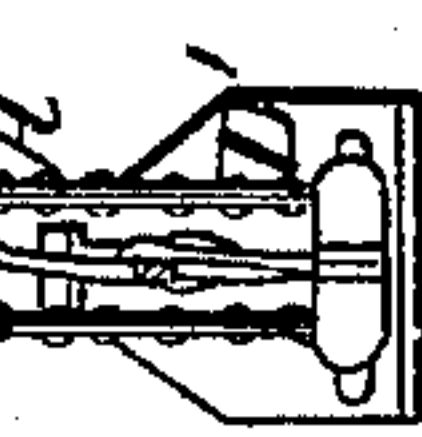


Fig. 6

Witnesses;
W. H. Burrage
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Inventor;
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UNITED STATES PATENT OFFICE.

ZENAS KING, OF CLEVELAND, OHIO.

IMPROVEMENT IN BRIDGES.

Specification forming part of Letters Patent No. 58,266, dated September 25, 1866.

To all whom it may concern:

Be it known that I, Z. KING, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Bridges, being an improvement on a patent granted to P. M. Frees and myself October 1, 1861; and I do hereby declare that the following is a full and complete description of the construction of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view. Fig. 2 is a top view. Fig. 3 is a view of a portion of the under side. Fig. 4 is a transverse section in the direction of the line *x x*. Fig. 5 is an end view. Fig. 6 is a detached section, that will be referred to in the description.

Like letters of reference refer to like parts in the several views.

My improvement relates to the manner of constructing bridges, as hereinafter described.

In the drawings, A represents the upper chord, and B the lower chord or stringer. To these chords are connected suspension-rods C and braces D.

The upper chord, A, is formed of sections, the inside pieces, *a a*, being of a rectangular form, as shown in Fig. 6, which is a cross-section of the chord A. These pieces abut together, and the sides of the chord are lapped close to the piece *a* and riveted to said pieces, as shown.

It is designed to have the bridge made up of sections formed of plates firmly secured and riveted together, so as to form a span of any practical length.

The cord or stringer B is composed of two pieces. The ends of the rods C and braces D are flattened and riveted between these pieces, the rivets passing through the chord, or braces and chord. The upper end of these braces is connected to the upper chord by means of an eye *a'*, that is attached to said chord by means of the nut *b*, and the end of the braces hook into the eyes *a*, forming a hook and eye, the rods C being connected to the chord by means of nuts *c*, one above and one below the part *a* of the chord, a portion of

the chord being broken away in Fig. 1 to show the connection.

The chord A is wider at the ends than in the center, as shown, thus giving it more strength; or the arch may be of the same width at the ends as at the center. The ends abut against the foot-plate D', which is of the shape shown. To the plate D' is connected the chord or stringer B by means of nuts *d*. The ends of the upper chord are curved down, as shown, and come against the foot-plate D', as stated.

The two pieces of the stringer B part, and one passes over the side of the chord A to the plate, and the other piece passes round the other side, each terminating in bolts E E, and is connected to said plate by nuts *d*, as before stated, and shown in Fig. 3, being a view of a portion of the under side.

Between the pieces of the stringer B is a rod, B', that is united at *d* to the stringer and passes along to the foot-plate, to which it is connected by means of a screw-nut.

The braces D, being connected by a hook and eye, allow the truss or bridge thus connected to expand or contract, according to the changes of the weather. The joints being loose, they can expand without breaking, and the nuts at the end of the plate D', that connect the stringer B and bolt B', can be loosened or tightened, according to the changes of the weather. If the chord A contracts it can be loosened by means of said nuts, or it can be tightened, if desired; and if more tension is desired to be given to the truss, it can be given by means of the nuts, and by this means the floor can be raised if it sags.

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

The chord B, with the rod B', so that the point of connection *d'* of said chord and rod, the chord shall enter the plate D' at an angle, in combination with the counter and main braces, thereby rendering the structure less liable to fracture, the whole being constructed as and for the purpose as herein described.

Witnesses:

ZENAS KING.

W. H. BURRIDGE,
E. E. WAITE.