

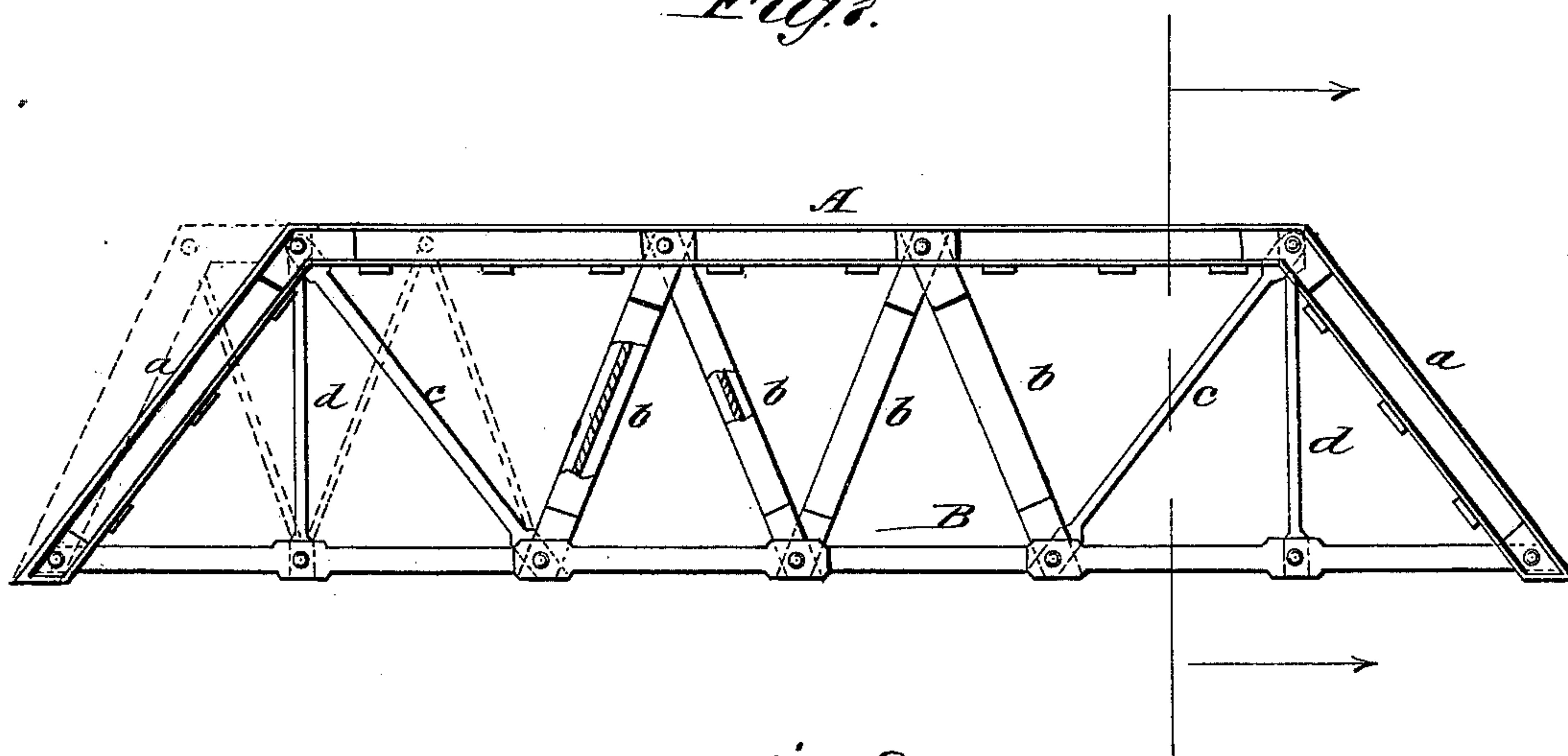
(No Model.)

C. W. WHEELER.  
Triangular Truss Bridge.

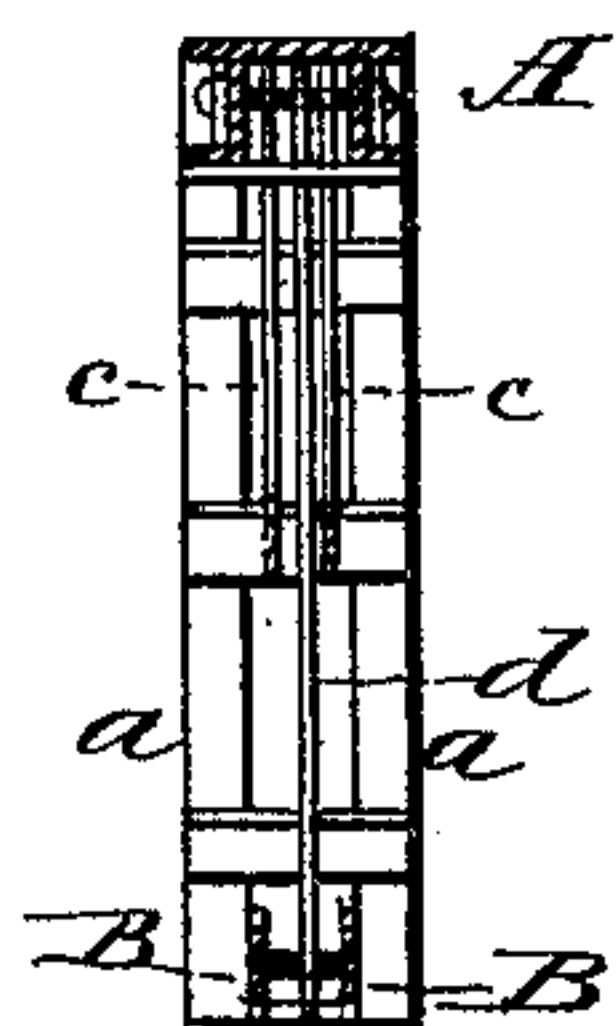
No. 231,383.

Patented Aug. 17, 1880.

*Fig. 1.*



*Fig. 2.*



WITNESSES:

*Francis McArdle.*  
*C. Seagwick*

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# UNITED STATES PATENT OFFICE.

CYRUS W. WHEELER, OF BROWNVILLE, NEBRASKA.

## TRIANGULAR-TRUSS BRIDGE.

SPECIFICATION forming part of Letters Patent No. 231,383, dated August 17, 1880.

Application filed March 29, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, CYRUS W. WHEELER, of Brownville, in the county of Nemaha and State of Nebraska, have invented a new and useful Improvement in Triangular - Truss Bridges, of which the following is a specification.

The object of my invention is to proportion the several parts of triangular-truss bridges in accordance with the maximum stress to which they are respectively liable, thereby avoiding needless expenditure of material.

The distinctive characteristic of my invention is an upper chord made shorter than the lower by the width of one panel at each end, compensating therefor by a greater inclination of the end posts, which, by their size and amount of material, are able to take the increased strain by dispensing with one diagonal post or compressive member and two main-tie diagonals at each end as non-essential members of this form of truss.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of my improved triangular truss, and Fig. 2 is a vertical transverse section.

Similar letters of reference indicate corresponding parts.

A is the upper, and B the lower, chord of the truss. *a a* are the end posts. *b b b b* are diagonal posts at the center of the truss. *c c* are the diagonal, and *d d* the vertical, tension-rods at the ends.

The top chord, A, instead of being shorter than the lower chord by half a panel at each end, is shorter by the width of a whole panel, so that the end posts, *a*, and diagonal *c* each extend over one panel, and the posts *a*, with the rods *c d*, sustain the strain borne in the old triangular truss by two compression and

two tension members. This combination saves in material in each half-truss two posts, one panel length of top chord, two diagonal ties, two verticals, and two chord-pins. This construction, in a measure, equalizes the strains as between the end of the top chord and the inclined end post.

In the ordinary construction, which for comparison I have shown in dotted lines, the strain in the top chord of the end panel is not as great as in the end diagonal post; but by giving to the end post a greater inclination, which involves also a shortening of the top chord, the strains may be equalized between the two, and consequently more evenly distributed, according to the material used.

In my truss the strain and material to meet the strain in the top chord are nearly equal to the same in the end diagonal post.

The diagonal posts *b* are formed to correspond with both the tension and thrust strains.

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

In a triangular-truss bridge, the combination, with an upper chord which is shorter than the lower chord by the width of one whole panel at each end, of end posts and vertical and diagonal tension-rods, as shown, said posts and diagonals each extending over one whole panel, the end panels of the top chord being one and one-half times the length of the middle panel-points and the intervening triangular center posts, all substantially as described.

CYRUS W. WHEELER.

Witnesses:

G. MINOR,  
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