S. R. HOLT.

Bridge-Truss.

No. 215,223. Patented May 13, 1879.

Fig. 1.

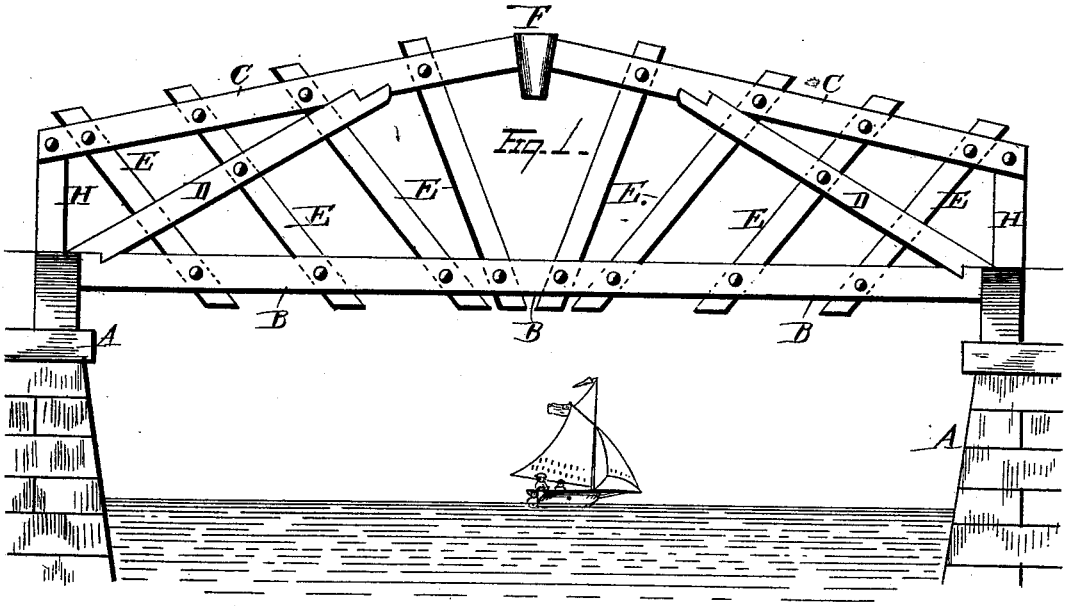



Fig. 2.

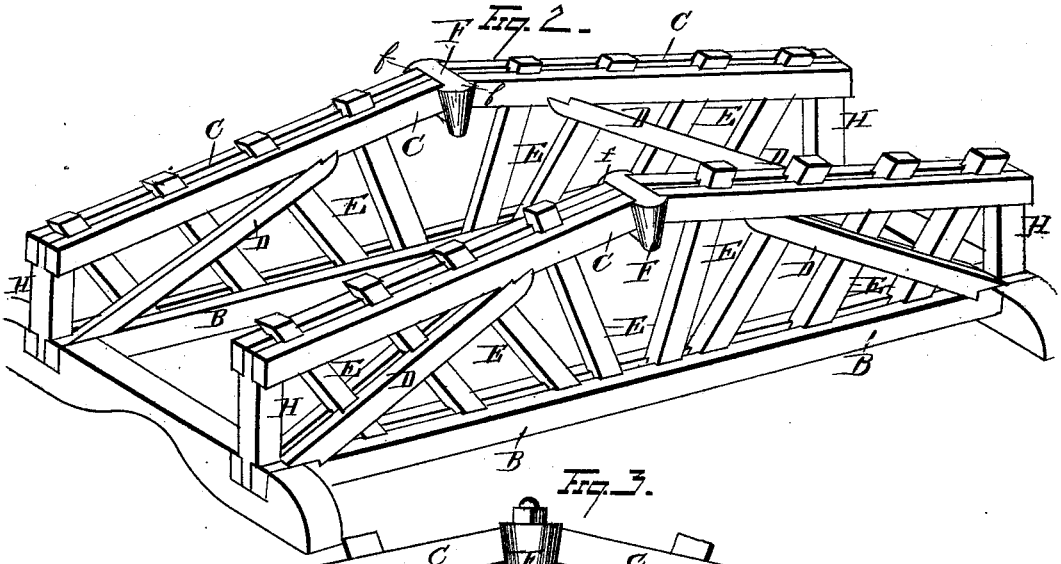
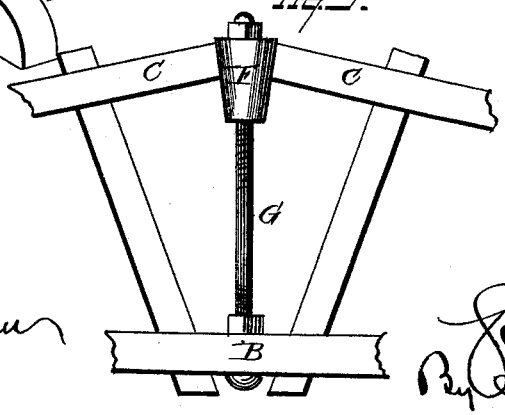



Fig. 3.




WITNESSES

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN BRIDGE-TRUSSES.

Specification forming part of Letters Patent No. **215,223**, dated May 13, 1879; application filed October 3, 1878.

*To all whom it may concern:*

Be it known that I, SAMUEL R. HOLT, of Worthington, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Bridge-Trusses; 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.

My invention relates to a new and useful improvement in bridge-trusses, though it is clearly well adapted for roof-trusses and for similar purposes.

My invention consists in forming the truss with an upper compression-chord and a lower extension-chord, the upper chord, formed of two straight portions, coming together against a wedge at the center as an apex, thence declining somewhat to the ends of the bridge. A brace on either side of the apex and beneath the upper chord receives the strain and communicates it to the ends of the lower straining-chord. Tie-rods or straining members, of iron or wood, unite the upper and lower chords, and are inclined from the upper chord downward toward the center of the bridge, as will be hereinafter more clearly set forth and claimed.

In the drawings, Figure 1 is a side view of a bridge-truss embodying the features of my invention. Fig. 2 is a perspective view of my completed bridge without the flooring. Fig. 3 is a variation, showing the wedge-block secured to the lower chord by tie-rods.

A are the buttresses of the bridge. B is the lower chord. C C constitute the upper chords. D D are braces, which communicate the strains of compression from the upper chord and convert them into strains of extension upon the lower chord. E represents straining members, extending from the upper chord to the lower chord, whereby the weight upon the lower chords is distributed along the upper chords. These straining members are preferably of wood, though it is apparent they may be of iron; so also the upper and lower chords and the braces D may all of them be of iron, though I prefer them to be of wood. The straining members E are inclined inward toward the center from their points of attachment to the top chord. This structure gives greater stability to the bridge than if they were vertical from top to bottom.

F F are wedges interposed between the ends of the sections which constitute the top chord. They are preferably provided with flanges *f*, in order to hold them securely in place and impart lateral stiffness to the chord.

Now, it is apparent that when the parts of this truss are put together they may be framed loosely, and then every member be put upon a strain, and the whole structure tightened up and stiffened by simply inserting the wedge F and forcing it snugly down in its seat. The effect of this wedge, also, when it is driven down, is to raise somewhat the center of the lower chord, causing it to bow upward slightly from the ends to the center, thus giving to the truss any desired camber.

As a general rule it will not be necessary to secure the wedge, except to drive it snugly in position; but, if desired, the wedges may be connected by tie-rods G (shown in Fig. 3) to the lower chord. This may also serve as a means for forcing the wedges farther down if at any time the bridge should, by wear or shrinkage, require tightening up.

H are end posts, for forming a suitable finish to the ends of the bridge.

If the bridge is made of timber the straining members E should be suitably framed between the parts composing the upper and lower chords and braces D.

It is apparent that this truss may be employed with equal advantage as a roof-truss, or any other like places.

Having thus described my invention, what I claim is—

1. In a truss, the combination, with an upper sectional chord and an adjusting-wedge interposed between the abutting ends of its sections, of straining members which incline from their points of connection with the sectional chord downward and toward the center of the truss to their respective points of connection with the lower chord, substantially as set forth.

2. In a truss, the combination, with an up-

per sectional chord and an adjusting-wedge interposed between the abutting ends of its sections, of braces which incline from their points of connection with the sectional chord downward and toward the ends of the truss to their respective points of connection with the lower chord, substantially as set forth.

3. In a truss, the combination, with an upper sectional chord and an adjusting-wedge interposed between the abutting ends of its sections, of braces which incline from their points of connection with the sectional chord downward and toward the ends of the truss to their respective points of connection with the lower chord, together with straining members which incline from their points of connection with the sectional chord downward and toward the center of the truss to their respective points of connection with the lower chord, substantially as set forth.

4. The combination, with a truss consisting of a lower straining member and upper compression member, consisting of two sections, coming together at the middle of the truss, braces D, and tie or straining members E, of wedges F, located between the inner ends of the compression members, whereby the structure may be stiffened up, substantially as and for the purposes described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

SAMUEL R. HOLT.

Witnesses:

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A. W. LINCOLN.