J. C. Briggs.
Truss Bridge.

No. 38,653. Patented May 26, 1863.

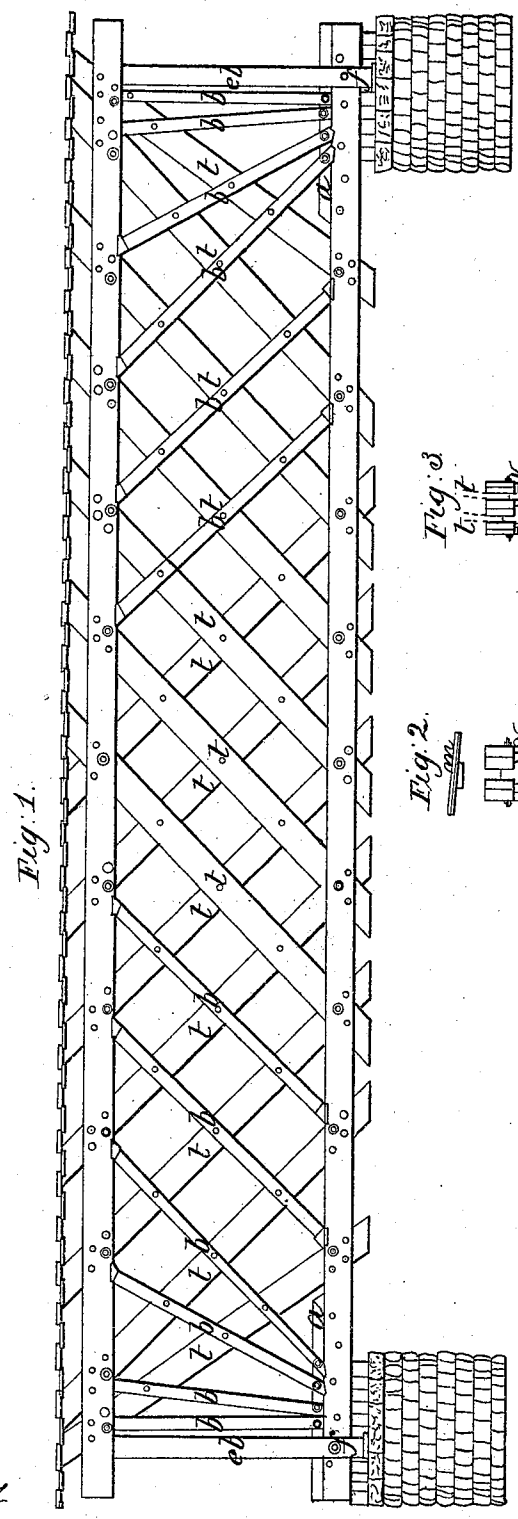


Fig. 1.



Fig. 5.

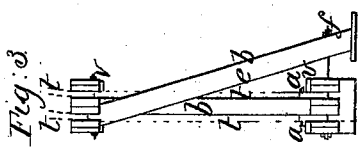


Fig. 3.

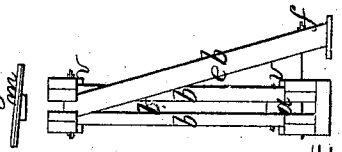


Fig. 2.



Fig. 6.



Fig. 4.

Witnesses
C. E. Savry
E. L. Savry

Inventor
John C. Briggs

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN C. BRIGGS, OF CONCORD, NEW HAMPSHIRE.

IMPROVEMENT IN BRIDGES.

Specification forming part of Letters Patent No. **38,653**, dated May 26, 1863.

To all whom it may concern:

Be it known that I, JOHN C. BRIGGS, of Concord, in the county of Merrimack and State of New Hampshire, have invented certain Improvements in Bridge Construction; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and the letters of reference marked thereon.

My bridge in its general features is of the kind called "lattice." It has three thicknesses of timber at each crossing of ties and braces. I therefore denominate it "triple lattice." Away from the abutments and piers the braces and ties are equally inclined in opposite directions and at about the angle of forty-five degrees. The braces *b b*, Fig. 1, are footed upon the chords top and bottom, and away from the abutments and piers bevel-blocks *v v* are used for this purpose. These are of a length equal to the thickness of the chords, and are notched into the chords an inch or so. These blocks are similar to those used in the Pratt & Howe patent bridges. The ties *t t* pass through the chords top and bottom, and are secured to the same by transverse bolts and pins through the chords. In passing from one end of the bridge to the other the ties and braces of this bridge are not interchangeable, as in the Towns lattice-bridge, but the ties and braces occupy the sames spaces on or in the chords at each end of the bridge, so that the braces, if extended to the middle of the span would meet in the same space at the top, and the ties in the same space at the bottom of the bridge. In my bridge I leave out the braces after they come together at the top, at the middle of the span, or within one panel of it, as shown by Fig. 1; and the ties are continued along by halving them together at their crossings or by using plank of half thickness till they meet also at the top of the bridge. (See claim 1.)

The above description of the bridge admits of two forms of end section, as shown by Figs. 2 and 3—one, Fig. 2, in which the braces *b b* are in pairs, with a space, *t*, for the ties between them, and another, Fig. 3, in which the ties *t t* are in pairs, with a space for braces *b* between them. In the first form, Fig. 2, each chord is composed of two strings, with one space for ties. In the second form, Fig. 3, each chord is composed of three strings, with two spaces for ties. At each end of the lower chords, in the spaces left for ties, over and extending a little in front of the abutments or piers, are planks *a a*, filling the space and coming up a few inches above the chord and secured in their places by pins through the chord. To this plank the feet of the braces resting on the abutment are secured by bolts, as represented by Figs. 1, 2, 3. (See claim 3.)

Figs. 4 and 6 represent a longitudinal section through a rib, *r*, of the roof of the bridge, showing a cross-section of the boarding upon the rib. The roof-boards are laid lengthwise in the direction of the water-shed. A little block—say, one-half inch thick—is laid under the edges of the boards. They are then nailed at the middle, drawing the middle of the board down, so as to form of each board a shallow trough for the water to run in and turn it away from the joints. The boards may be laid edges together, as shown by Fig. 6, or with every other board as a batten, as shown by Fig. 4. These boards I cover with a coating of composition, made of slaked lime, mortar, sand, and coal-tar.

To hold my bridge in position vertically, I use end braces *e b e b* going into the tie-spaces at the top with a tenon, and standing on the masonry at the bottom outside the lower chord and tied to the lower chord by the adjusting-bolt *f f*. By means of this bolt the foot of the end brace can be drawn toward the chord or slacked away from it. With this brace on each side of the end of a bridge it can be adjusted vertically with great exactness and held in that position. (See claim 4.)

I do not claim of itself the interlocking or crossing of inclined ties in the middle of the span, because I am aware that inclined ties cross each other to some extent in the Hall patent bridge; but

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

1. The interlocking or crossing of inclined ties in the middle part of a span, combined with inclined braces, essentially as described, and shown by the drawings.

2. The pieces *a a*, combined with the braces and chords, as described.

3. The method described of laying roof-boards by putting a block under each edge of the board and drawing down the middle with nails, so as to form a shallow trough of each board.

4. The combination of the end braces, *e b e b*, with the chords and adjusting-bolts *f f*, essentially as described.

JOHN C. BRIGGS.

In presence of—
C. E. SAVORY,
E. S. SAVORY.