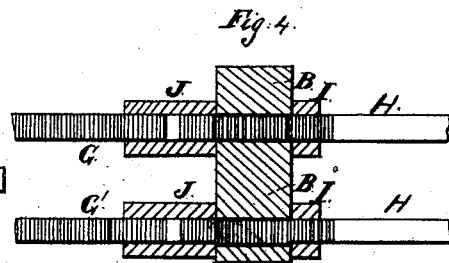
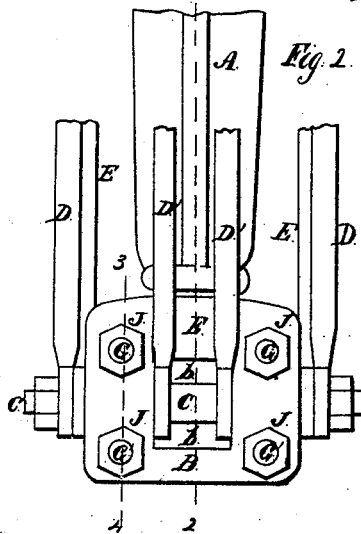
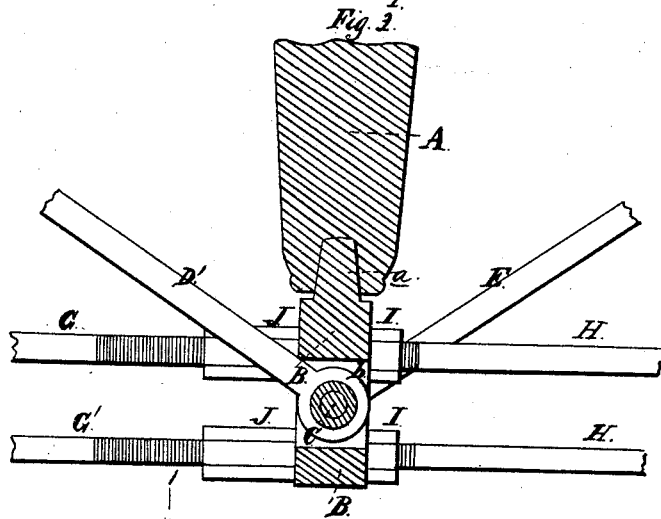
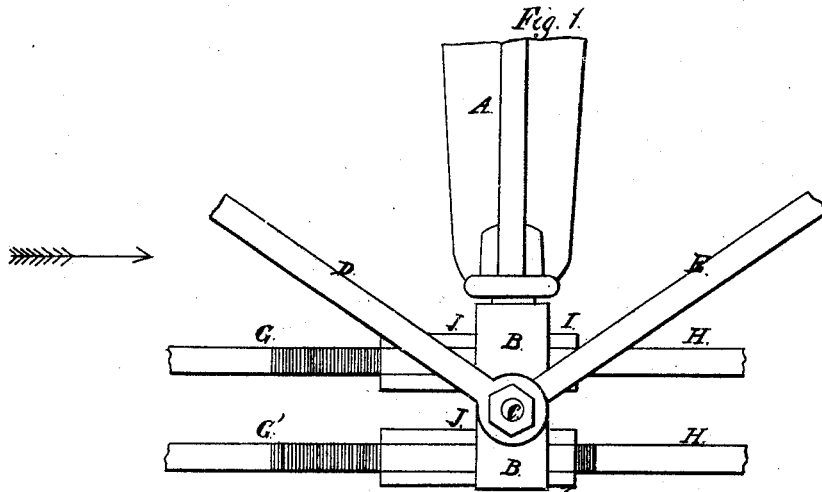


F. C. Lowthorp. Truss Bridge

N^o 17,684.

Patented Jun. 30, 1857.



UNITED STATES PATENT OFFICE.

FRANCIS C. LOWTHORP, OF TRENTON, NEW JERSEY.

IRON TRUSS-FRAME FOR BRIDGES.

Specification of Letters Patent No. 17,684, dated June 30, 1857.

To all whom it may concern:

Be it known that I, FRANCIS C. LOWTHORP, of the city of Trenton, county of Mercer, and State of New Jersey, have invented certain new and useful Improvements in the Construction of Iron Truss-Frames for Bridges; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention relates to the construction of iron truss frames for bridges, and consists in so connecting lower chord rods, verticals, diagonals, and counter diagonals to a straining plate peculiarly formed and constructed for their reception, that the said lower chord rods may be simple, light, and straight, easily connected, adjusted, and detached, free from eyes and slots for receiving keys and other expensive forged work, and that the straining plate at the same time may not be submitted to any tensile strain and may admit of being connected simply and readily to the verticals and diagonals.

The whole is designed and constructed for the purpose of forming the lower chords of truss-frame bridges in the lightest possible manner compatible with appropriate strength, and of parts more simple and portable and less expensive than have been hitherto used for a like purpose.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the drawing which forms a part of this specification: Figure 1, is a front elevation of sufficient of an iron truss-frame bridge to show my improvements. Fig. 2, a transverse section of a portion of the bridge, being a side view of Fig. 1, looking in the direction of the arrow. Fig. 3, a sectional elevation on the line 1—2, Fig. 2. Fig. 4, also a sectional elevation on the line 3—4, Fig. 2.

Similar letters refer to similar parts throughout the several views.

A is the lower portion of one of the vertical posts of the bridge and in the bottom of this post is a recess for the reception of the projection *a* on the straining plate B. Through the latter passes a pin C, to which are jointed the end of the main diagonals D, D, and D', D', and the counter diagonals E, E, the ends of the two main diagonals D', D', passing into the opening *b* of the straining plate.

Through orifices in the latter also pass the screwed ends of the lower chord rods H, onto the points of which are screwed the lengthened nuts J, J, which also serve to receive the ends of the lower chord rods G', G'.

The rods H are furnished with ordinary nuts I, I, which, together with the lengthened nuts J, J, serve to connect the opposite rods securely to the plate B.

Instead of the lengthened nuts J, J, I propose in some instances to use the ordinary well-known swivel nuts.

By the above-described mode of connecting the lower chord rods to the straining plate B, the said rods may be readily adjusted, detached and replaced, may (with the exception of their screwed ends), be perfectly plain, free from eyes, or slots for receiving keys, and other heavy and expensive forged work, thus enabling me to construct the lower chords of truss-frame bridges in a much superior manner (both as regards simplicity of workmanship, lightness of material, strength and portability of parts and ready connection of the same together) to those constructed in the usual manner.

It will be further seen that the straining plate for receiving the lower chord rods affords a simple and direct mode of attachment for the diagonals and verticals, and also that the straining plate is not submitted to that tensile strain which is unavoidable when the lower chords are attached in the usual manner.

I do not desire to confine myself to the precise form of straining plate described and illustrated, as the same may be adapted to receive a greater or lesser number of lower chord rods, or to any description or number of diagonals and verticals. But

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

The straining plate B in combination with the rods G and H when the latter are connected to the plate, substantially in the manner herein set forth, and when the said plate is arranged to receive the vertical or verticals and diagonals of iron truss-frame bridges.

In testimony whereof, I have signed my name to this specification before two subscribing witnesses.

F. C. LOWTHORP.

Witnesses:

HENRY HOWSON,
WILLIAM E. WALTON.