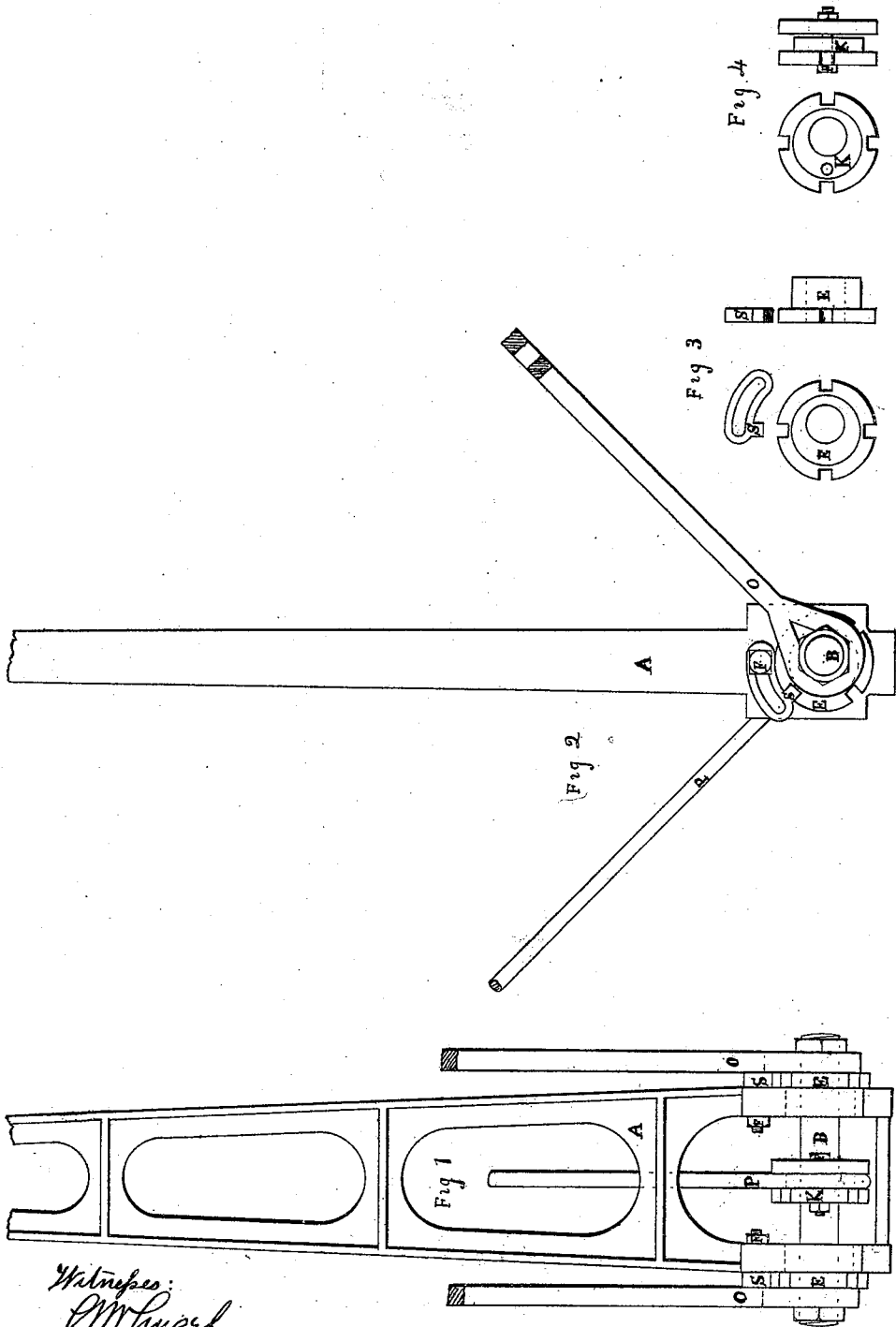


W. Johnson,

Truss Bridge.

No. 109,028.

Patented Nov. 29, 1870.



Witnesses:  
A. M. Angel  
C. M. Angel

# United States Patent Office.

WILLIAM JOHNSON, OF LAMBERTVILLE, NEW JERSEY.

Letters Patent No. 109,628, dated November 29, 1870.

## IMPROVEMENT IN TRUSS-BRIDGES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM JOHNSON, of the town of Lambertville, in the county of Hunterdon and State of New Jersey, have invented a new and useful Improvement in Iron Bridges; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing making a part of this specification.

My invention is applicable chiefly to iron bridge-trusses composed of an upper and lower chord, diagonal rods, and upright posts, and is designed to obviate the necessity for screw-nuts upon the diagonal rods, in order to adjust the bridge, substituting therefor eccentrics, thereby insuring a greater degree of safety and also economy in the construction of iron bridges.

It is well known that nuts are liable to work off from screw-bolts, and to the extent of such liability are a source of danger; also, in point of economy, where screw-nuts are used, the rods must be much larger than necessary to sustain the load, or the ends of the rods must be upset or enlarged for the nuts to compensate for the depth of the thread, which operation of upsetting is not only very expensive, but the quality of the iron is more or less injured thereby.

By the method here adopted, eyes are formed at both ends of the diagonal rods, as well as the lower chords; said eyes or loops pass around pins in the upper chord and foot of posts, the holes in said posts being of sufficient size to admit the insertion of eccentrics around the pins. Said eccentrics are provided with notched flanges, by means of which they are turned upon the pins.

A lock or stop is employed to prevent the eccentrics in the posts from working back when once the bridge is adjusted.

The counter diagonals fit upon eccentrics on the pins by which they are tightened. Said eccentrics are made with a loose disk or flange, through which a bolt passes, for the purpose of clamping the eccentric to the rod, and thereby prevent its working back to loosen the rod.

In the accompanying drawing—

Figure 1 is a face or front view of the upright post,

pin, eccentrics, stops, and diagonal rods, as seen from the end of the truss or bridge.

Figure 2 is an edge or side view of the same.

Figure 3 is a detached view of the eccentrics and stops attached to the upright posts.

Figure 4 shows the eccentric for counter diagonal.

The several letters in all the figures refer to the same parts.

A is the upright post of truss.

B, the pin.

E E, the eccentrics in post.

S S, the locks or stops.

K, the eccentric for counter diagonal.

O O, main diagonal rods.

P, the counter diagonal rods.

F F F are the bolts for securing eccentrics.

The operation is as follows:

The eccentrics passing through the posts and around the pins are first placed in such position as to shorten the relative distance between the upper and lower chords, so as the more conveniently to get the several parts together. After the truss is connected throughout, the post eccentrics are then turned to increase the distance between the upper and lower chords, thereby adjusting the truss in position and bringing an equal strain upon all the main diagonal rods. The lock-stops are then bolted to the posts, securing the eccentrics firmly against any tendency they might have to move back and lower the truss. The counter diagonals are then adjusted to their proper bearing, and secured by means of the eccentrics and bolts passing through them.

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

1. The eccentrics E E and K, in combination with post A, pin B, and diagonals O O P, arranged in the manner and for the purpose specified.

2. The lock-stops S S and bolts F F F, when combined and arranged in the manner and for the purpose substantially as described and set forth.

WM. JOHNSON.

Witnesses:

A. W. ANGEL,

C. W. ANGEL.