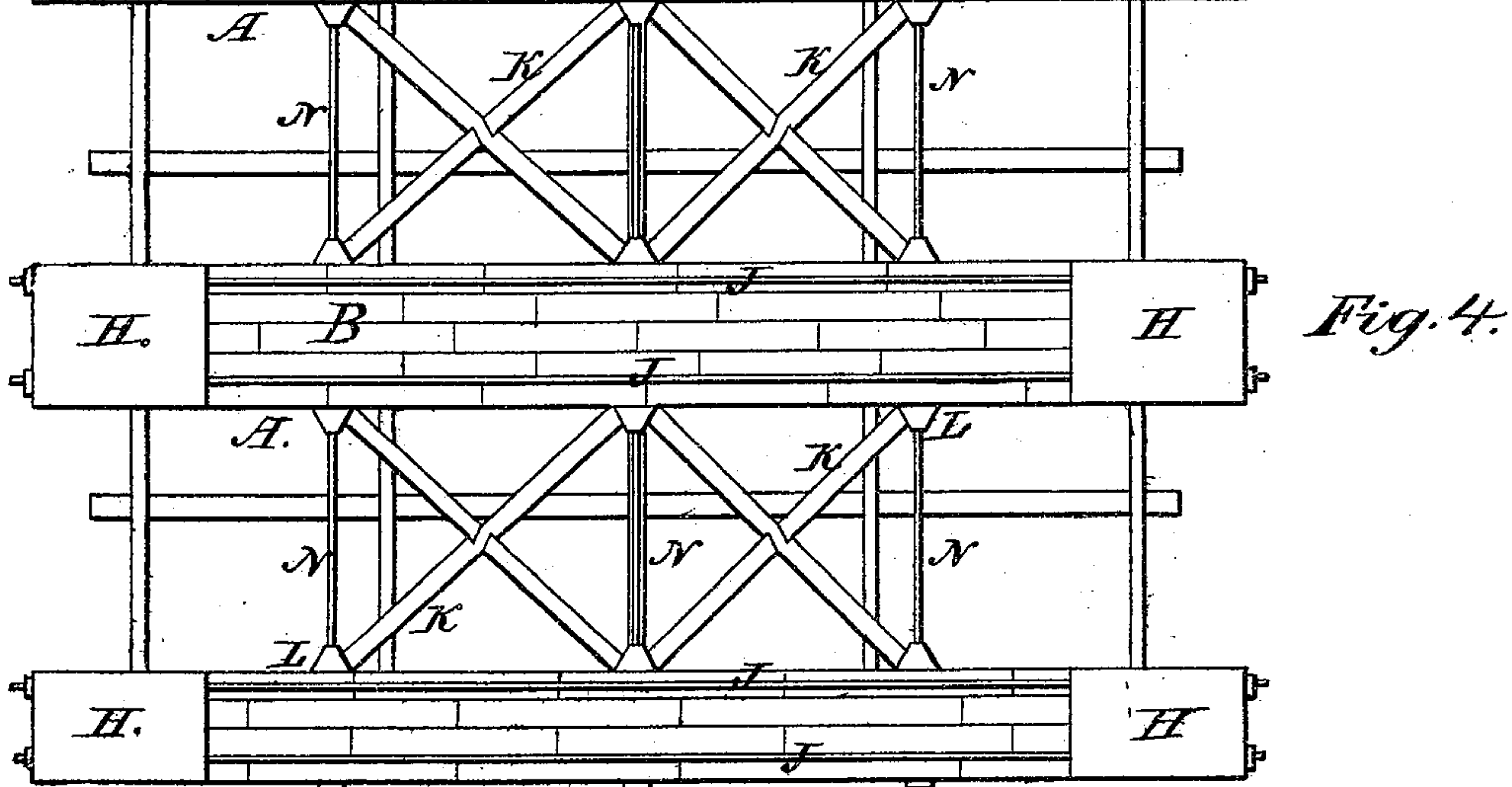
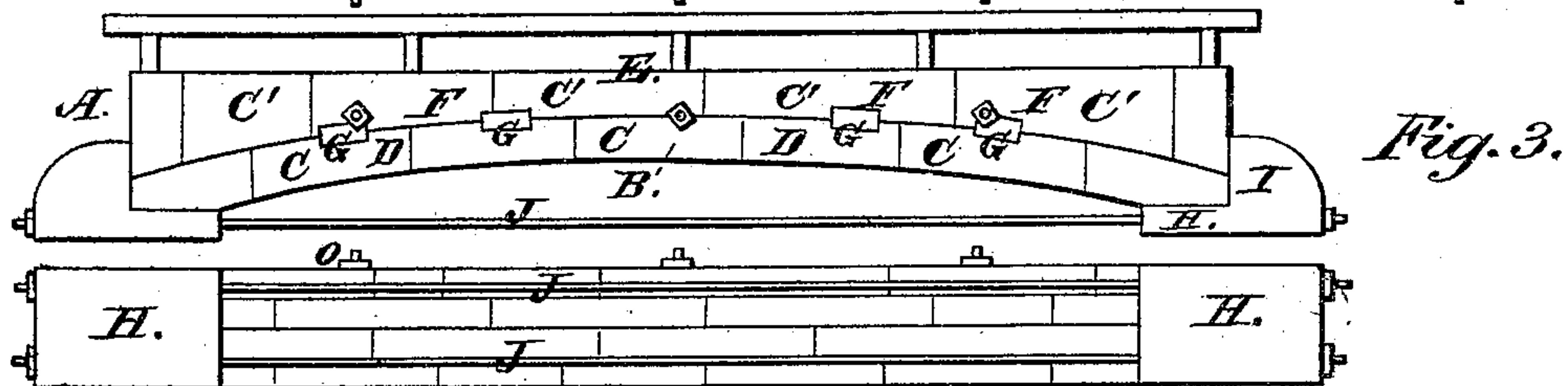
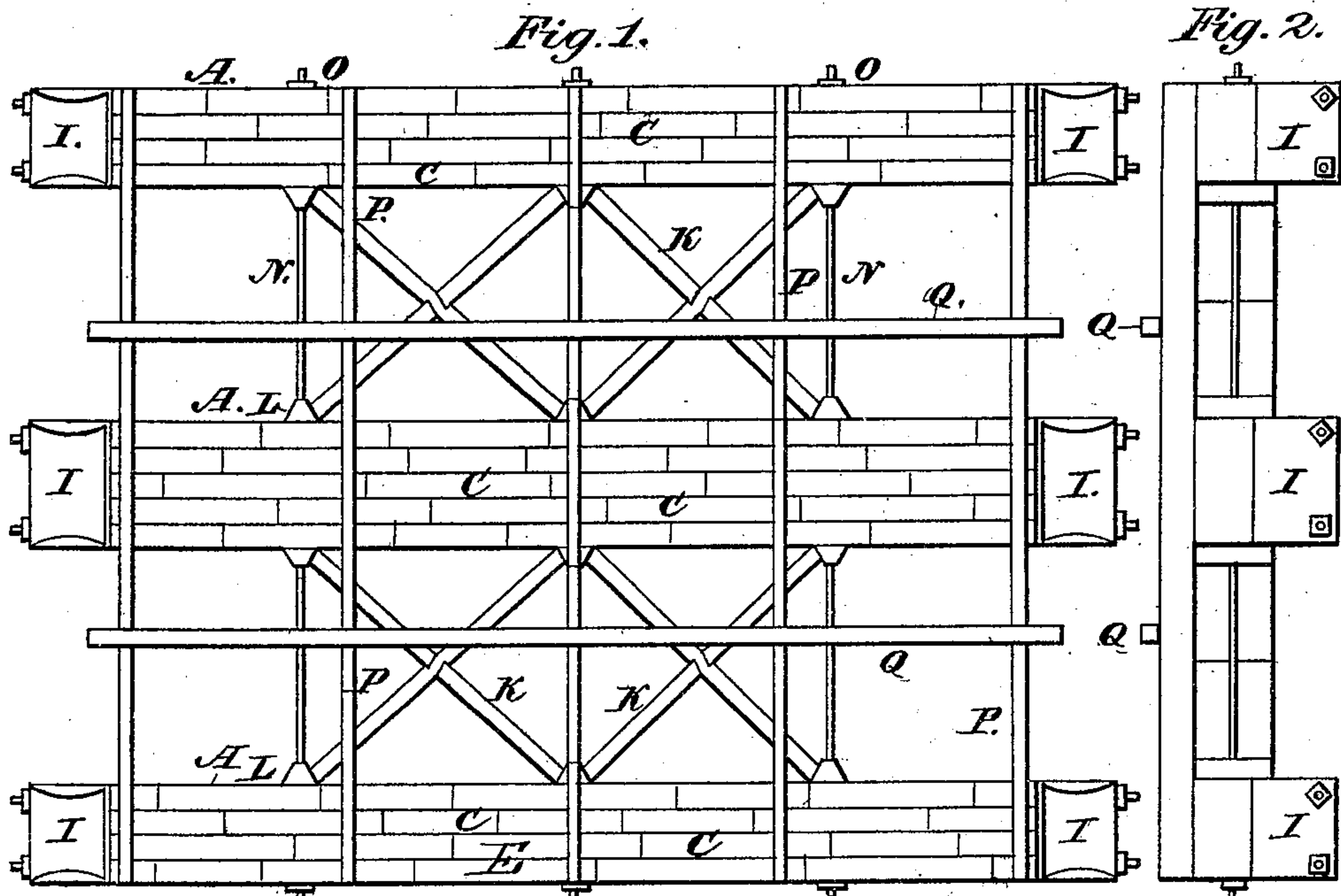


J. R. DURFEE.

Bridges.

No. 142,776.

Patented September 16, 1873.



Witnesses.
M. Thompson
Joseph Forrester

Inventor.
James R. Durfee.
Per Thos. Munger,
His Attorney.

UNITED STATES PATENT OFFICE.

JAMES R. DURFEE, OF OSHKOSH, WISCONSIN.

IMPROVEMENT IN BRIDGES:

Specification forming part of Letters Patent No. **142,776**, dated September 16, 1873; application filed January 27, 1873.

To all whom it may concern:

Be it known that I, JAMES R. DURFEE, of Oshkosh, in the county of Winnebago and State of Wisconsin, have invented a new and useful Improvement in Bridges; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making part of this specification, in which—

Figure 1 is a plan view, Fig. 2 is an end view, Fig. 3 is a side view, and Fig. 4 is an inverted plan view, of the bridge.

This invention relates to that class of bridges in which the spans are formed of segmental ribs; and the improvement consists of a rib composed of a segmental portion provided with lateral notches in its convex edge, made of pieces of timber or metal nailed or bolted side to side, breaking joints, until the segmental portion has assumed the desired length and thickness, in combination with a concavo-plane portion made in a similar manner and provided with lateral notches in its concave edge, corresponding in size and location with the lateral notches in the segmental portion, and a series of keys for locking the two portions together. The invention further consists of a rib composed of a segmental and a concavo-plane portion, constructed as above described, in combination with two metallic springers provided with abutting studs and connected by metallic rods or wire ropes, for the purpose of strengthening the rib.

In the accompanying drawings, the rib A is composed of the segmental portion B, made of pieces of timber or metal C placed side to side, and, if timber, first treated to prevent decay, &c., and nailed or bolted together so as to break joints throughout. Notches D are made laterally in the convex edge of the segmental portion B, so shallow as not to weaken it. The concavo-plane portion E is made of pieces of timber or metal C', in a similar manner to the portion B. Its concave edge receives the convex edge of the portion B, their curves being equal, and prevents the latter from being straightened only to that extent which will divide the pressure equally between them.

Notches F are made in the concave edge of the portion E, corresponding in size and location with the notches D in the convex edge of the portion B. A series of keys, G, lock the portions B and E together. Metallic springers H H, having abutting studs I I, receive the ends of the rib A. Metallic rods or wire ropes J J connect the springers H H and strengthen the rib A. Three ribs, A, are used in the span shown in the drawing. Lateral braces K abut against semi-hexagonal blocks L let into vertical notches in the sides of the ribs A. Rods N, having nuts O, pass laterally through the ribs A and blocks L, and these, together with the braces K, resist the lateral pressure on the ribs A.

Upright and diagonal braces may be inserted between the rods or ropes J and the concave edge of the rib A, to increase the stability of the bridge.

Railway-ties P P and rails Q Q are placed upon the bridge; but a flooring is used in place of these when it is intended to be used as a highway-bridge.

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

1. The rib A, composed of the segmental portion B, having lateral notches D, in combination with the concavo-plane portion E, provided with lateral notches F, both constructed as described and locked together by the keys G, for the purpose hereinbefore set forth.

2. The rib A, composed of the segmental portion B, having notches D, and the concavo-plane portion E, having notches F, locked together by keys G, in combination with springers H, having studs I, connected by rods J, for the purpose hereinbefore set forth.

In testimony that I claim the foregoing improvements, as above described, I have hereunto set my hand and seal this 31st day of December, 1872.

JAMES R. DURFEE. [L. S.]

Witnesses:

W. B. FELKER,
L. E. BARNES.