

J. W. Murphy
Truss Bridge.

No. 11

Patented Apr 30, 1861.

Fig. 1.
32, 199.

Fig. 2.

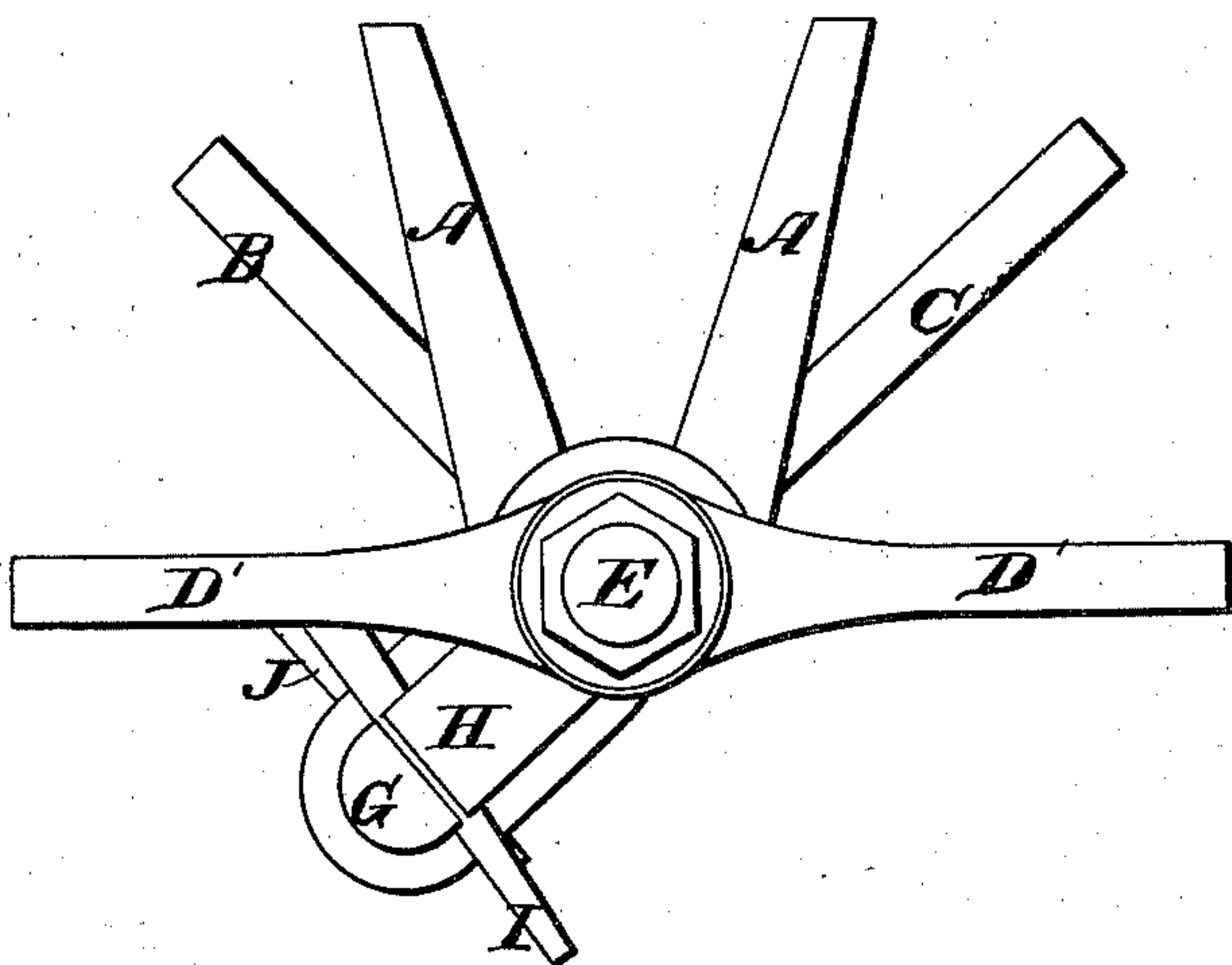
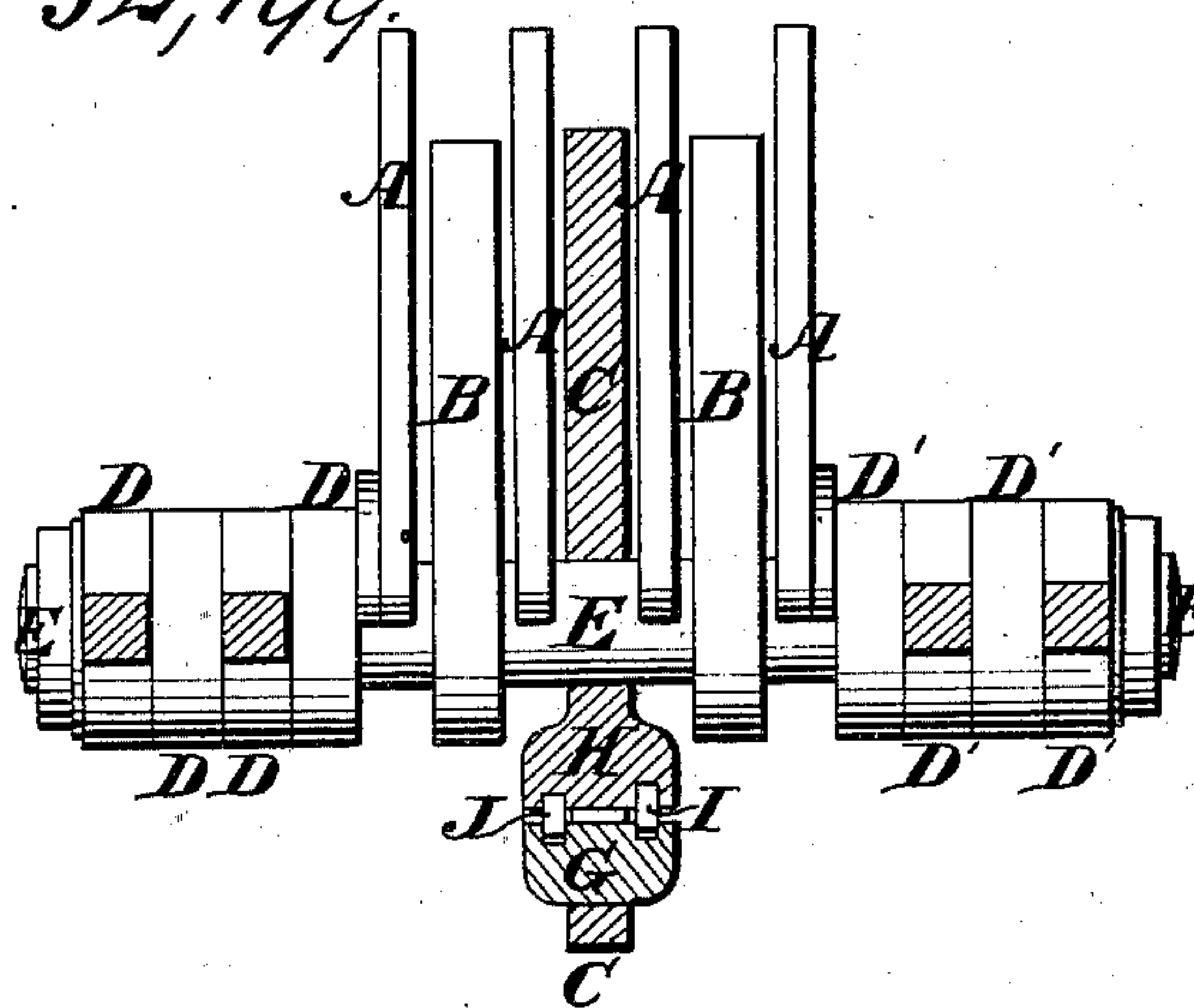


Fig. 3.

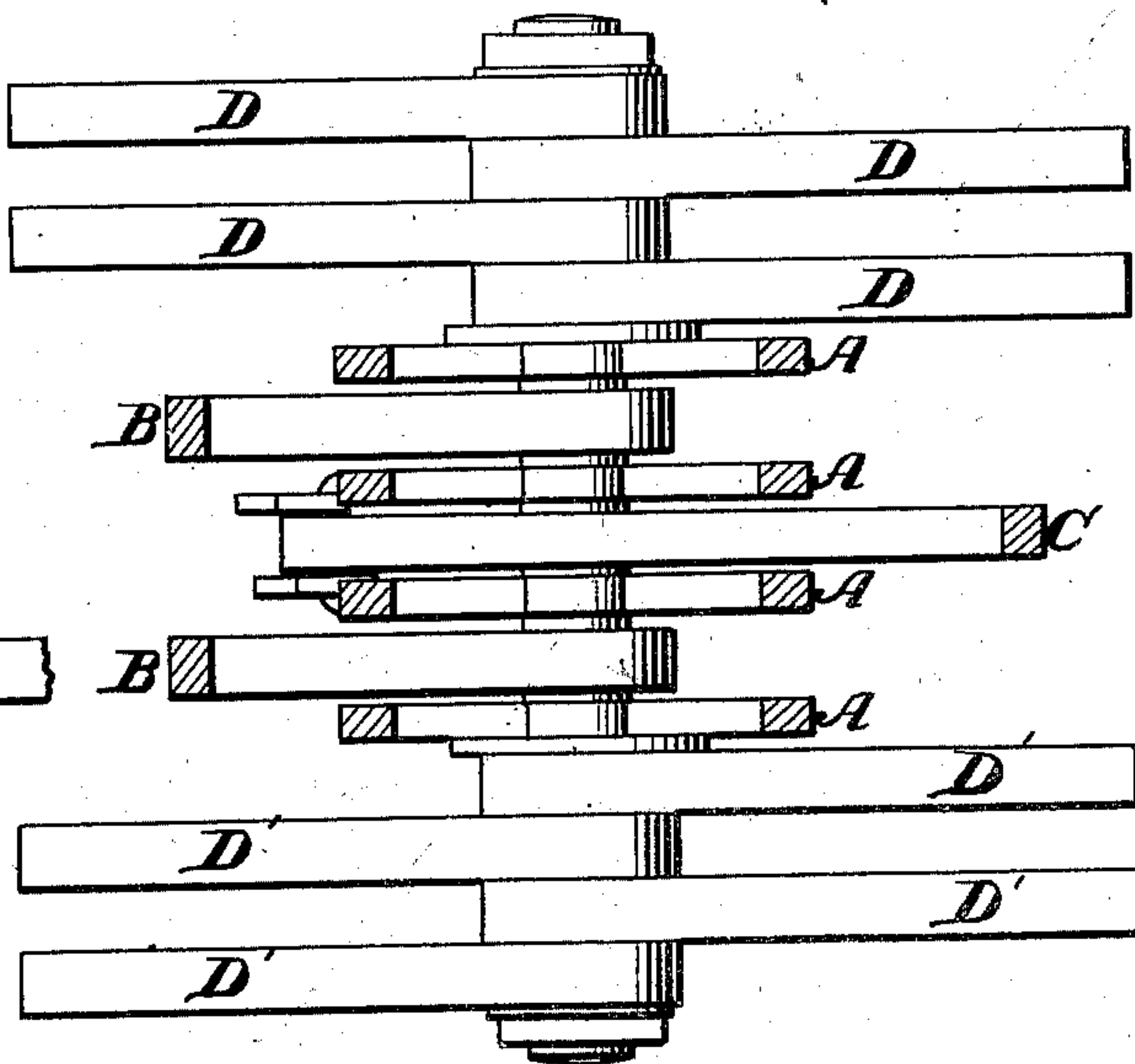
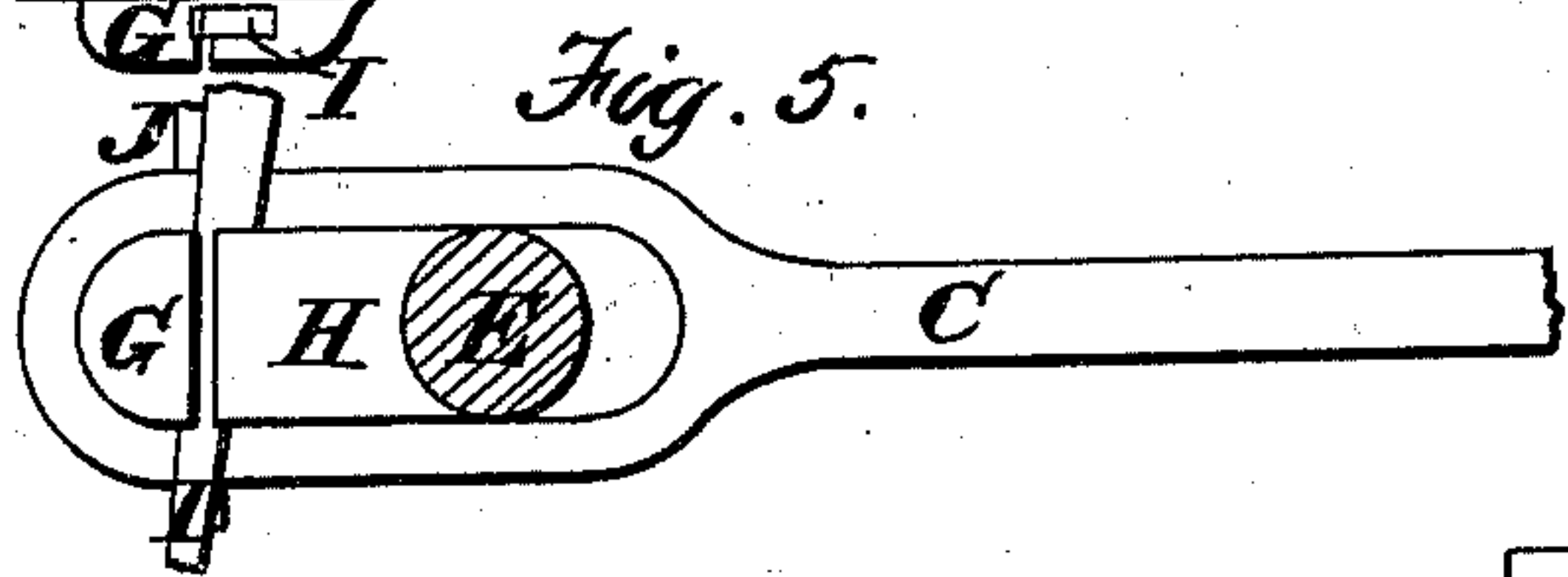


Fig. 4.



Fig. 5.



Witnesses.

Chas. Houston.
Charles E Foster—

Inventor

Henry Howson
Atty for J. W. Murphy

UNITED STATES PATENT OFFICE.

JOHN W. MURPHY, OF PHILADELPHIA, PENNSYLVANIA.

MODE OF ADJUSTMENT OF TRUSS-FRAMES OF BRIDGES.

Specification of Letters Patent No. 32,199, dated April 30, 1861.

To all whom it may concern:

Be it known that I, JOHN W. MURPHY, of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Metallic Truss-Frame 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 has for its aim the ready means of adjusting the counter diagonal rods without resorting to screws, nuts, and other more or less insecure fastenings heretofore used for resisting the tensile strain on the rods in this class of bridges.

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 accompanying drawing which forms a part of this specification, Figure 1 is a transverse section of sufficient of a truss frame bridge to illustrate my improvements, Fig. 2 a side view of Fig. 1, Fig. 3 a plan view and Figs. 4 and 5 detached views showing the end of the counter diagonal rod.

Similar letters refer to similar parts throughout the several views.

A A A represent the lower ends of four ribs of a cast iron post or vertical, B B two main diagonals, C the counter diagonal, D D one set of lower chord rods, D' D' the opposite set of chord rods, and E the bolt or pin to which the whole of the rods as well as the verticals are connected. These verticals have at their lower ends recesses adapted to the pin E, no fastening being necessary, as the strain of the diagonals tends to maintain the pin in its proper position within the said recesses. The ends of the lower chord rods D, D, and D', D', as well as the ends of the main diagonals B, B have plain eyes adapted to receive the pin.

In constructing the truss frame bridge the lower chord rods and the main diagonals are made of the exact length required there being no necessity for the application of any adjusting devices if this exactitude is properly maintained throughout, hence the use of plain rods with plain eyes in the present in-

stance. With the counter diagonals however the case is different as it is necessary to adjust these rods to a limited extent in erecting the bridge. As a means of adjusting the rods in this class of bridges screw couplings, nuts, and different arrangements of keys have been resorted to and applied in such a manner as to sacrifice strength and security in attaining the desired adjustment. It is well known that screws are at the best but uncertain mediums for resisting the tensile strain to which the rods of truss frame bridges are subjected, and when the rods are pierced for the admission of adjusting keys they are rendered in some degree weaker. To avoid these objections I forge on the lower end of each counter diagonal an elongated eye seen in Fig. 5 within which I fit two metal blocks G and H, the rounded end of the former fitting snugly to the lower end of the eye and the upper end of the block H being adapted to fit to and bear against the pin E, there being space enough between the latter and the upper end of the elongated opening to allow for a limited adjustment of the rod. A portion of both blocks projects on each side of the rod as seen in Fig. 4 and in the projections are cut the ways for the reception of the keys I and J one of which is situated on one side and the other on the opposite side of, and close to the rod so as to maintain the blocks in their proper lateral position. It will be evident that these keys afford the means of the nicest adjustment without detracting from the solidity and integrity of the eye.

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

The elongated eye on the end of the counter diagonal rod C, its two blocks G and H and the two keys I and J, the whole being arranged as and for the purpose herein set forth.

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

JNO. W. MURPHY.

Witnesses:

HENRY HOWSON,
JOHN WHITE.