A. Mc Guffie.

Suspension Bridge.

No. 34,311. Patented Feb. 4, 1862.

Fig. 2.

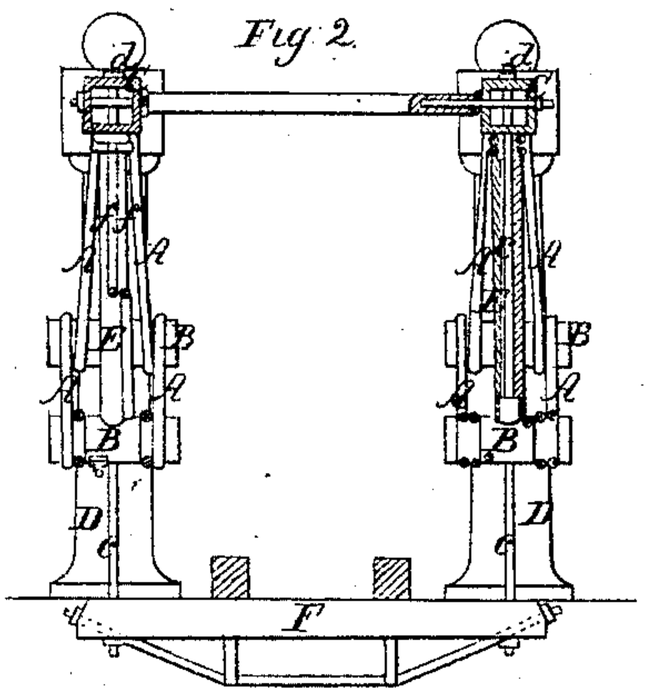


Fig. 4.

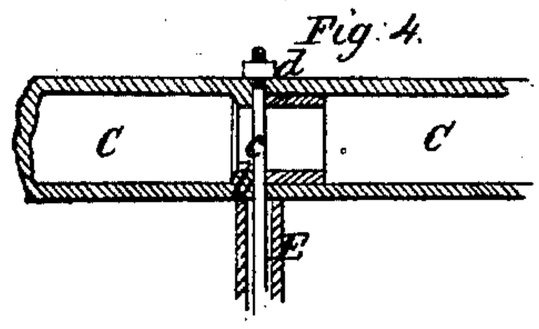


Fig. 1.

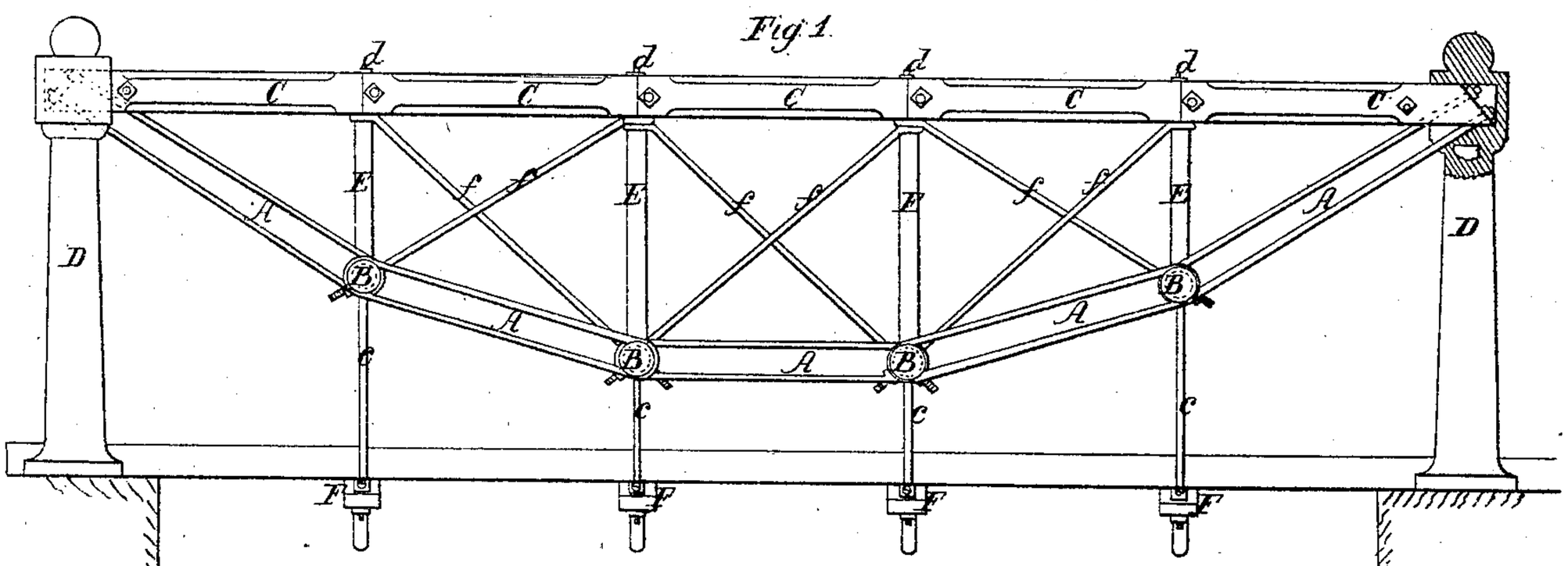
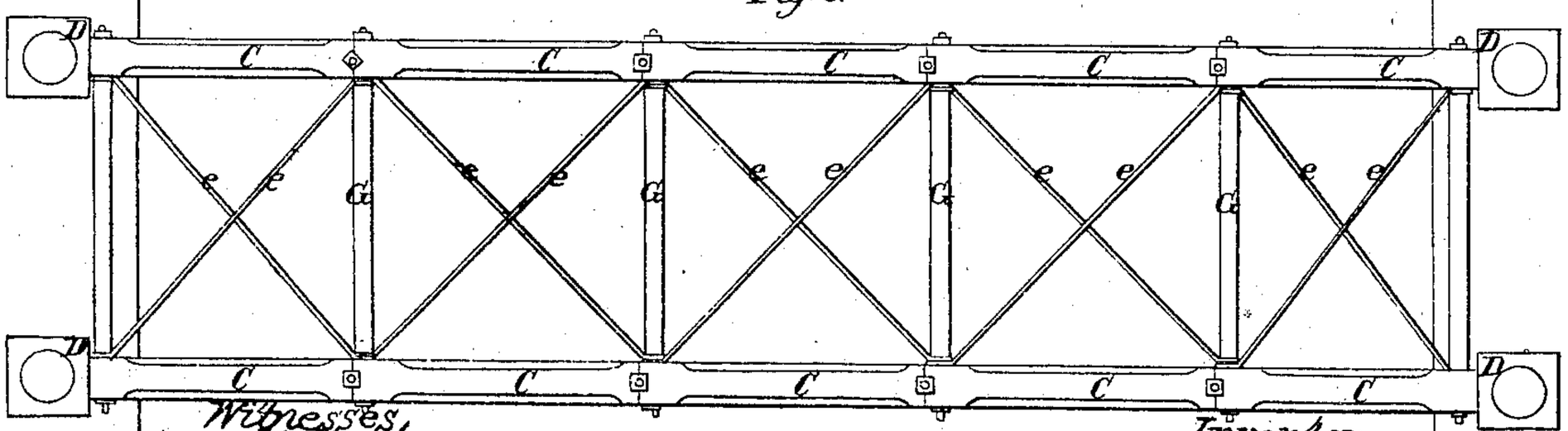


Fig. 3.



Witnesses
J. W. Crumb
G. W. Reed

Inventor
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per Munn & Co

UNITED STATES PATENT OFFICE.

A. McGUFFIE, OF ROCHESTER, NEW YORK.

TRUSS-GIRDER FOR BRIDGES.

Specification of Letters Patent No. 34,311, dated February 4, 1862.

To all whom it may concern:

Be it known that I, A. McGUFFIE, of Rochester, in the county of Monroe and State of New York, have invented a new and useful Improvement in Truss-Girders for Bridges and other Structures; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation, partly in section, of a bridge constructed according to my invention. Fig. 2 is a transverse vertical section of the same. Fig. 3 is a plan of the same. Fig. 4 is a longitudinal vertical section of one of the joints of the chord of the truss.

Similar letters of reference indicate corresponding parts in the several figures.

My invention consists in the employment in combination with a catenary series of links of a chord, posts, diagonal tension braces and joint-blocks, so arranged and applied as to truss the links in the catenary line and make a very simple, light and strong girder.

To enable others skilled in the art to construct my invention I will proceed to describe it with reference to the drawings.

A, A, are the links which may be formed of bar iron doubled and having the ends welded or otherwise secured together, or of wrought iron plates having eyes formed in their ends. These are arranged in pairs, or in greater number, side by side, and connected together by the joint-blocks B, B, which consist of large round pins of cast iron and which are inserted through the links. The chain thus formed is suspended from or kept in place by the chord or horizontal brace C, which rests upon posts D, D, or other suitable supports. The connection of the chain and chord shown in the drawing is made by constructing the terminal links in the form of stirrups with screw threads on their ends passing them through the chord C, and securing them by nuts *a*, *a*, as shown in Fig. 1.

The chord C, is of cast or wrought iron of tubular structure and of either round or polygonal form and is made in sections fitted together with tenons and shoulders, as shown at *b*, in Fig. 4, or in any other suitable manner. The joints in the chord C, are situated directly over the joint-blocks B, B, of the chain and the chord is supported at the said joints by upright posts E, E, resting on the joint-blocks B, B. These posts may be kept in place by tenons fitting to the chord and to the joint-blocks B, B, or by rods *c*, *c*, passing through them and through the chord and joint blocks; and these rods *c*, *c*, secured by screws and nuts *d*, *d*, above the chord serve as hangers for the roadway bearers F, F. If these rods *c*, *c*, be not used the roadway bearers may be suspended by hangers fastened to the joint-blocks B, B.

f, *f*, are diagonal tension braces connected with the joint-blocks B, B, and with the chord C, the connection with the chord being at the tops of the posts belonging to the next joint blocks to those from which the braces start. These braces are arranged in opposite directions, crossing each other as shown in Fig. 1.

G, G, are lateral braces applied between the two chords C, C, of the bridge at the joints thereof to keep them at a proper distance apart; and *e*, *e*, are diagonal braces applied between the chords. These braces G, G, and *e*, *e*, prevent lateral movement of any of the parts.

By combining the chord, posts and braces with the catenary series of links in the manner above described to truss the said links in the true catenary line, the tendency of any one part of the girder to sink more than another is prevented, for a load rests at one point the weight of the whole truss is tending to operate against it, and counteract the tendency to depression at that point.

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

1. The combination with the catenary series of links A, A, of a chord C, joint-blocks B, B, posts E, E, and diagonal braces *f*, *f*, the whole arranged substantially as herein specified.

2. And I also claim the joint-blocks B, B, serving the three purposes of connecting the links A, A, supporting the joints of the chord and connecting the diagonal braces *f*, *f*, with the chain of links substantially as herein specified.

A. McGUFFIE.

Witnesses:

JAS. H. ELLIS,

H. McGUFFIE.