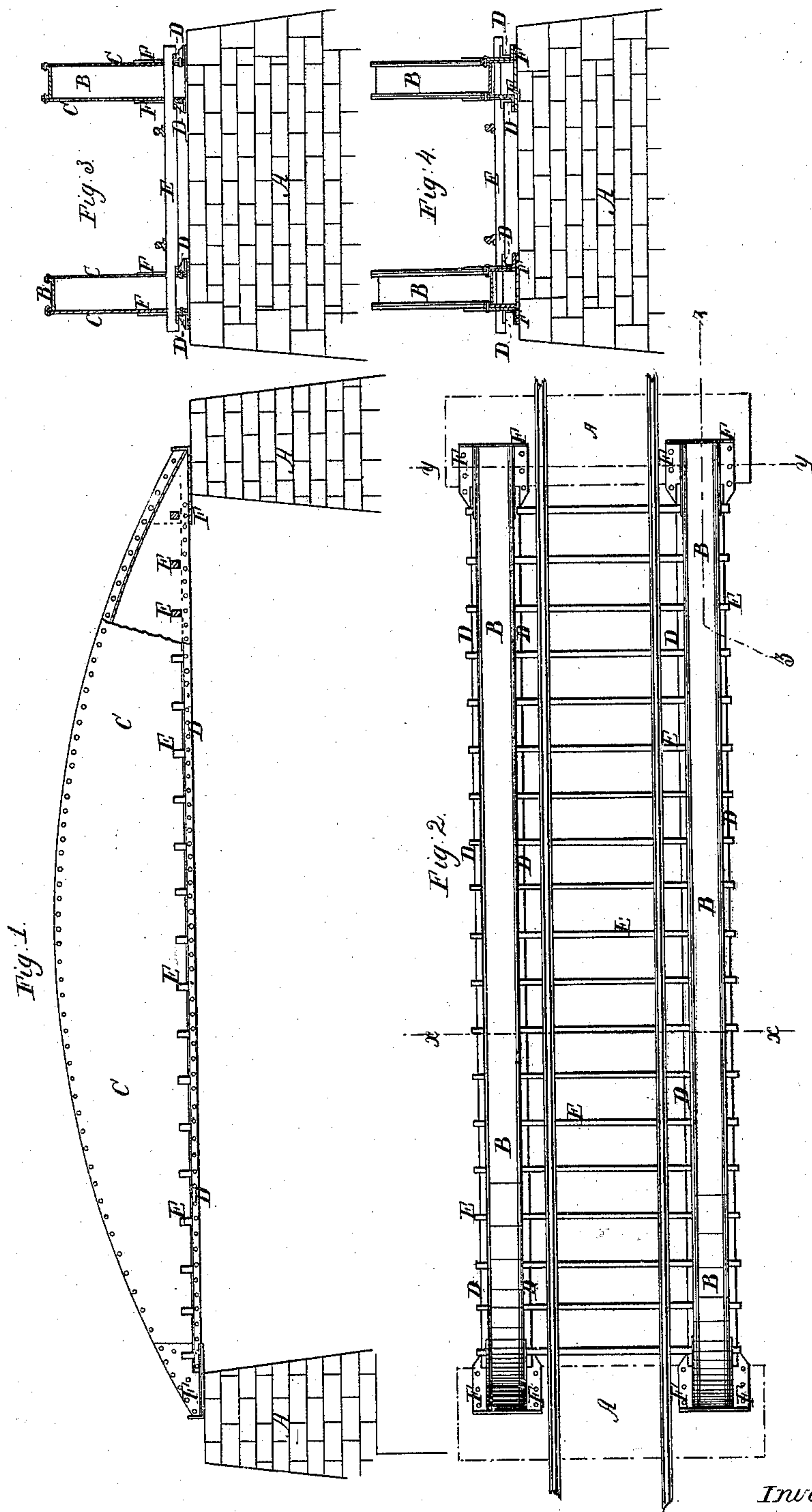


J. H. Gilbert. Truss Bridge.

N^o 58,094.

Patented Sep. 18, 1866.



Witnesses;
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UNITED STATES PATENT OFFICE.

JOHN H. GILBERT, OF ROXBURY, MASSACHUSETTS.

IMPROVEMENT IN BRIDGES.

Specification forming part of Letters Patent No. 58,094, dated September 18, 1866.

To all whom it may concern:

Be it known that I, JOHN H. GILBERT, of Roxbury, in the county of Norfolk and State of Massachusetts, have invented a new and useful Improvement in Arched Iron Bridges; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side view of my improved bridge, partly in section through the line $z z$, Fig. 2. Fig. 2 is a top or plan view of the same. Fig. 3 is a vertical cross-section of the same, taken through the line $x x$, Fig. 2. Fig. 4 is a vertical cross-section of the same, taken through the line $y y$, Fig. 2.

Similar letters of reference indicate like parts.

My invention has for its object to furnish an arched iron bridge so constructed as to produce a much stronger bridge out of a much less amount of material, and consequently at a much less cost, than has heretofore been done; and it consists of an improved arched iron bridge formed by combining the arched plates, side plates, and angle-bars with each other and with the floor-beams, as hereinafter more fully set forth.

A are the abutments, upon which the ends of the bridge rest. B are the arched plates of the bridge, which extend from one end of the bridge to the other, as shown in the drawings. The edges of these arched plates are turned up so as to form flanges, as shown in Figs. 3 and 4, and to these flanges are riveted the upper arched edges of the side plates, C.

The side plates, C, extend continuously from the arched plates B to the chord or girder line of the bridge, as shown in Fig. 1. To the

lower edges of the side plates, C, are riveted angle-bars D, to strengthen the plates and to furnish a support for the ends of the floor-beams E, as shown in the drawings. The side plates, C, are pierced just above the angle-bars D, and through the holes thus formed are passed the ends of the floor-beams, as seen in Figs. 3 and 4.

At the feet or parts of the bridge that rest upon the abutments plates F are riveted to the side plates, C, to stiffen them, and give them at these points treble the amount of iron to compensate for the exposure to the ground.

This bridge cannot deflect when subjected to a pressure unless the arched plates B kink or buckle, which cannot take place unless the side plates, C, elongate, and this elongation of the side plates is guarded against by their form and by the angle-bars D. Neither can the bridge twist or buckle laterally, for the greater the burden the greater is the tendency of the girders to remain in line until the crushing-point is reached.

The floor-beams E, passing through the sides of the bridge, furnish a very rigid bracing, and the bridge cannot be overturned by winds or freshets without first buckling the side plates, C, or breaking off the ends of the floor-beams E.

I claim as new and desire to secure by Letters Patent—

The combination of the angle-plates D, pierced side plates C, floor-beams E, and flanged arched plates B, constructed and operating substantially as described, for the purpose specified.

JOHN H. GILBERT.

Witnesses:

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