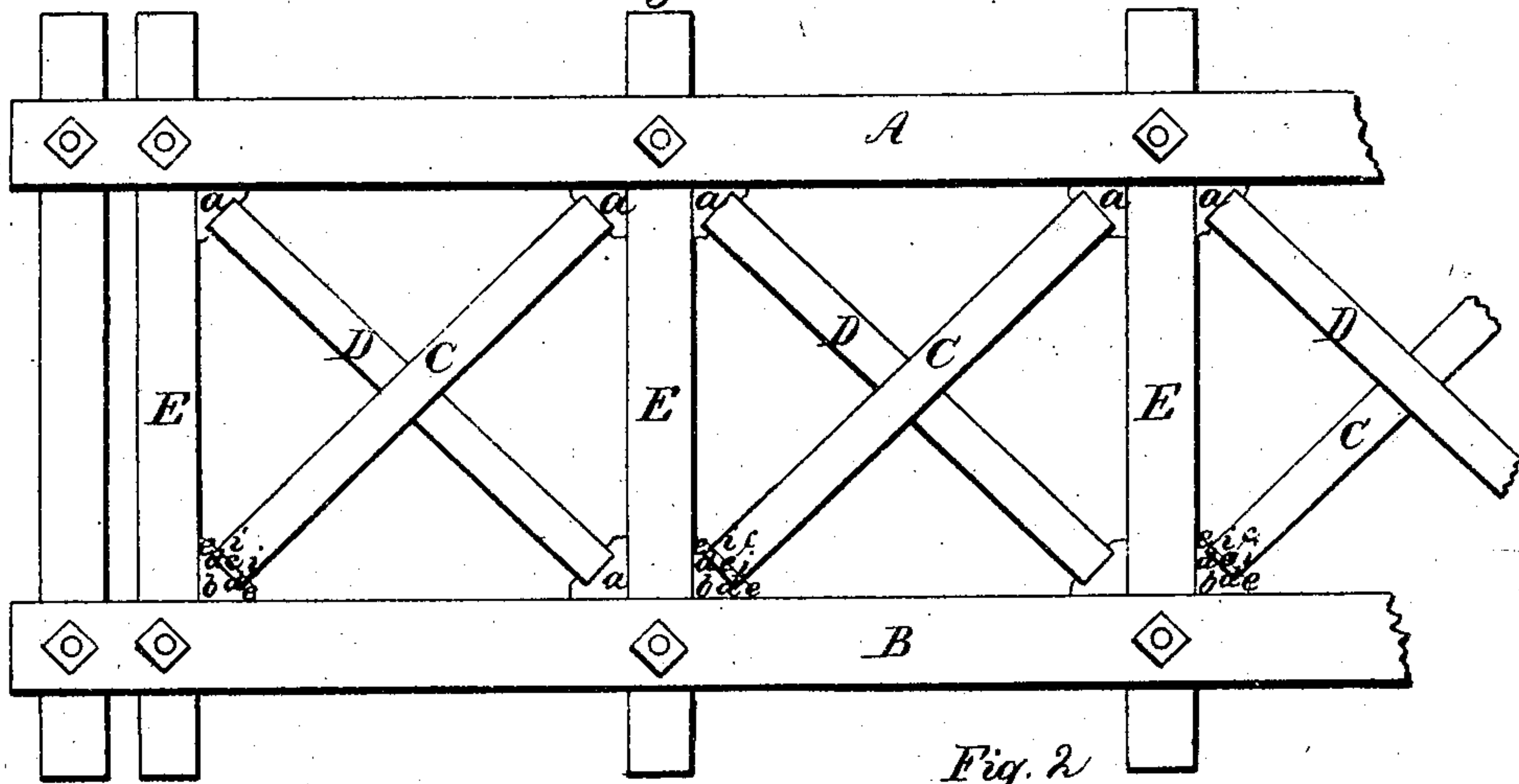


*T. B. White*  
*Truss Bridge*

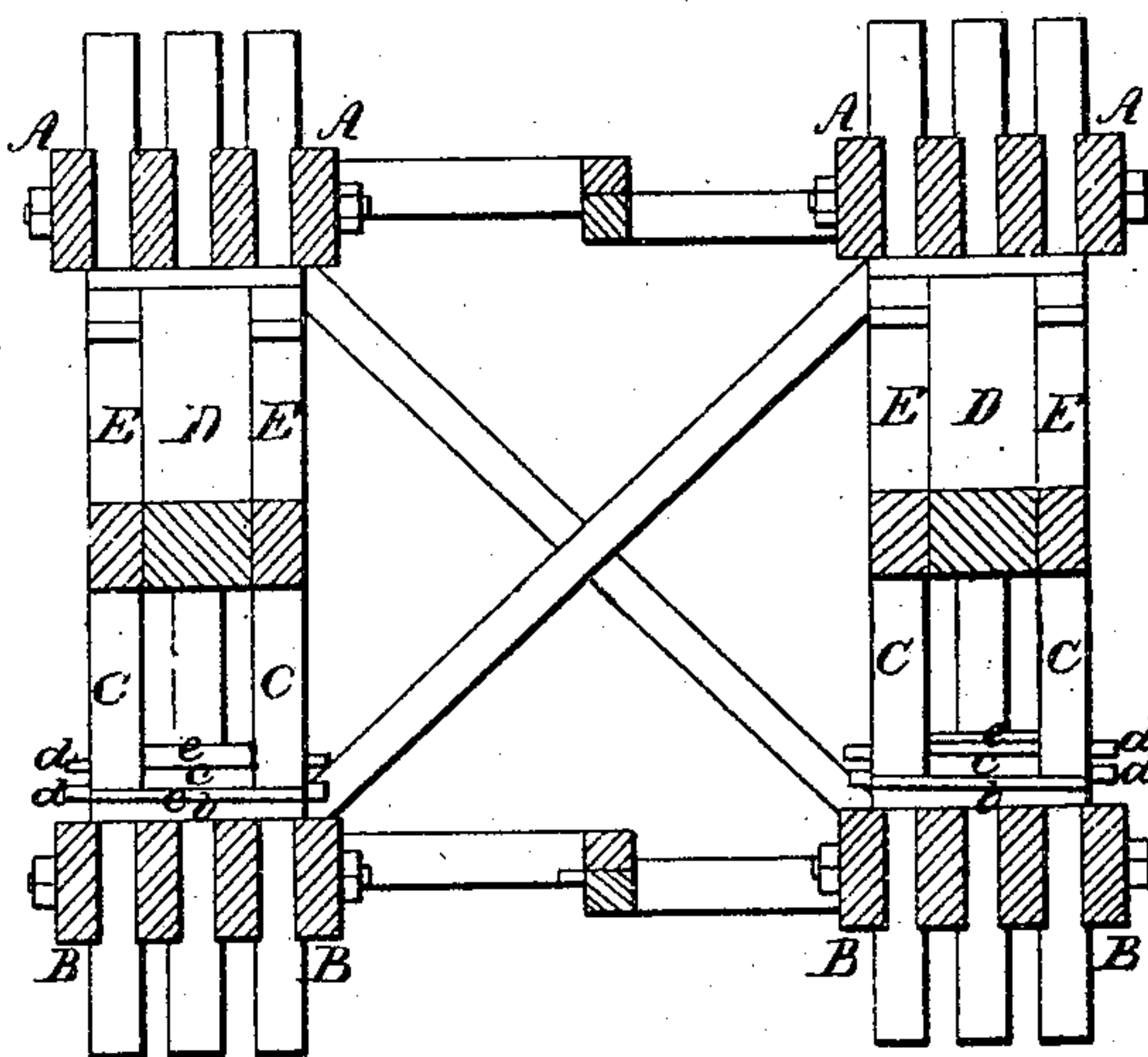
*No 20,011.*

*Patented Apr 20, 1858.*

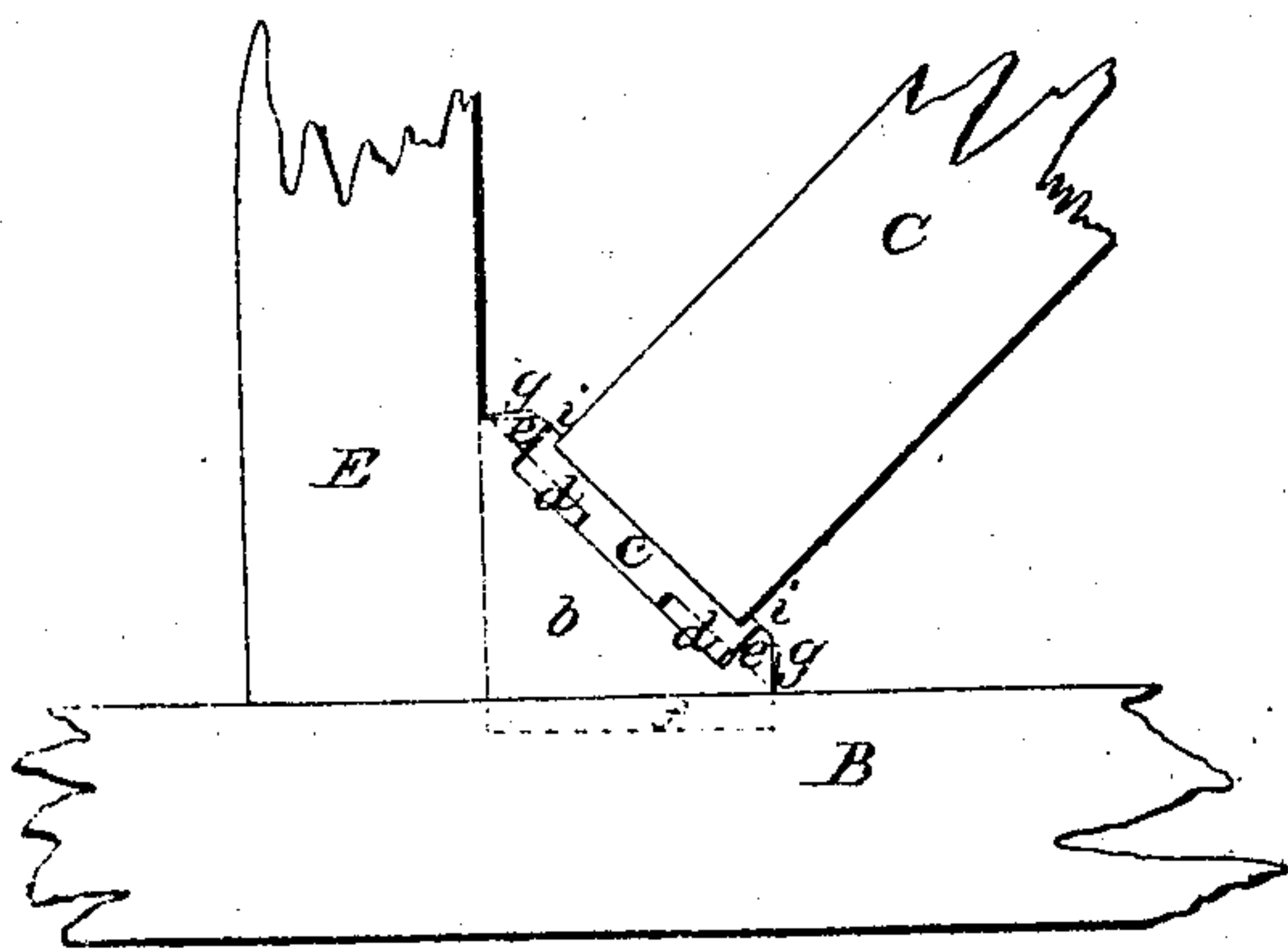
*Fig. 1*



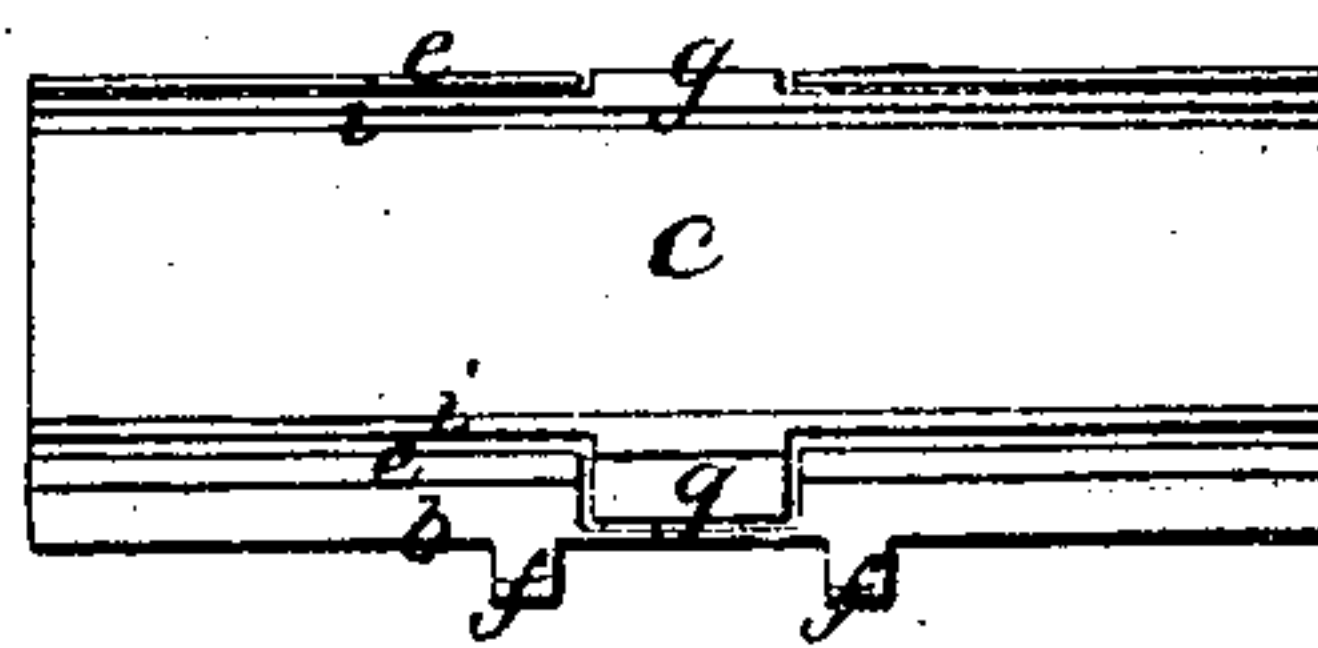
*Fig. 2*



*Fig. 3*



*Fig. 4*





# UNITED STATES PATENT OFFICE.

T. B. WHITE, OF NEW BRIGHTON, PENNSYLVANIA.

METALLIC SHOE FOR THE BRACES OF TRUSS-GIRDERS.

Specification of Letters Patent No. 20,011, dated April 20, 1858.

*To all whom it may concern:*

Be it known that I, T. B. WHITE, of New Brighton, in the county of Beaver and State of Pennsylvania, have invented a new and  
5 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  
10 drawings, forming part of this specification, in which—

Figure 1, is a side elevation of a portion of a bridge constructed according to my invention. Fig. 2, is a transverse section of  
15 the same. Fig. 3, is an enlarged side view of the double metal shoe which is applied at the lower ends of the braces. Fig. 4, is a front view of the same.

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

The nature of my invention consists in the combination with the diagonal braces in a truss girder, in the manner shown, of a metal female shoe constructed with two open  
25 grooves, one running at right angles to the other, and a male shoe constructed with a narrow central tongue or shoulder on its under side and two lateral lugs, ears or stops, one on each edge, and with that portion of  
30 its under surface which is not occupied by the tongue, beveled. With this simple arrangement in truss girders for bridges, the diagonal braces can be set up by the introduction of wedges between the male and  
35 female shoes, without danger of crushing the end of the braces or liability of their getting out of place or having a chance to play laterally or longitudinally, so as to give the girder any amount of camber or to raise it  
40 in case of setting too low.

The truss represented is of a kind which is well known and serves as well as any other to illustrate the application of my invention which is applicable to trusses of many kinds.

45 A, A, are the upper string-pieces; B, B, the lower string pieces; E, E, posts; C, C, braces, and D, D, counterbraces. The counter-braces D, D, and the upper ends of the braces C, C, are fitted to steps *a, a*, of  
50 hard wood or metal of a form not differing from the steps applied in other trusses, but at the feet of the braces C, C, are applied the double metal shoes and wedges, the pe-

culiar construction and combination of which with truss bracing as shown, constitute my invention. These shoes are formed of cast-iron, each in two parts *b, c*, the lower part *b*, of which is formed substantially like the steps commonly employed to fit in the angles between the lower string  
60 pieces and the posts, but is made wider, in order that it may receive between its flanges, *e, e*, the upper part, *c*, which is likewise provided with flanges, *i, i*, between which the feet of the braces, C, C, are received. The  
65 lower face of the part, *c*, is grooved as shown in Fig. 3, to receive the wedges, *d, d*, which are driven in to wedge up the braces as required to raise the girder. Each shoe extends all across the whole of one set of  
70 string pieces, and in order to keep it in place, tongues, *f, f*, may be cast upon the back or bottom of the lower part, *b*, as shown in Fig. 4, to enter the spaces between the posts or the string pieces, and tongues,   
75 *g, g*, may be cast on the sides of upper part, *c*, to enter notches which are made in the flanges, *e, e*, of the lower part, *b*, as shown in the same figure.

In setting up the braces the driving up of the wedges should be commenced at the outer braces next the abutments or piers, and proceeded with toward the center of the span.

Any space left between the parts *b*, and *c*,  
85 of the shoe between the wedges, after wedging up, may be filled up with thin pieces of iron to prevent settling in case of the slipping of the wedges.

I do not claim double shoes irrespective of  
90 the mode of constructing and combining the same with truss bracing, but

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

The combination with the diagonal braces  
95 C, C, in a truss girder, of the peculiarly constructed metal male and female shoes *b, c*, and wedges *d, d*, substantially as specified for the purpose of setting up the braces to give camber to, or raise the girder, as herein  
100 set forth.

T. B. WHITE.

Witnesses:

JOSEPH R. MARTIN,  
B. B. CHAMBERLIN.