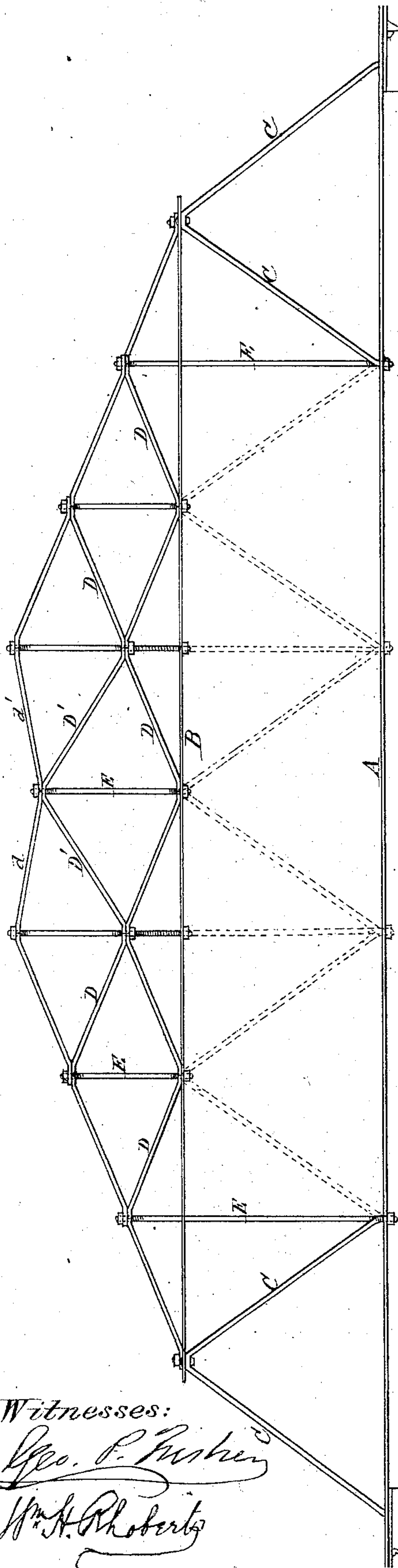


Fig. 1.

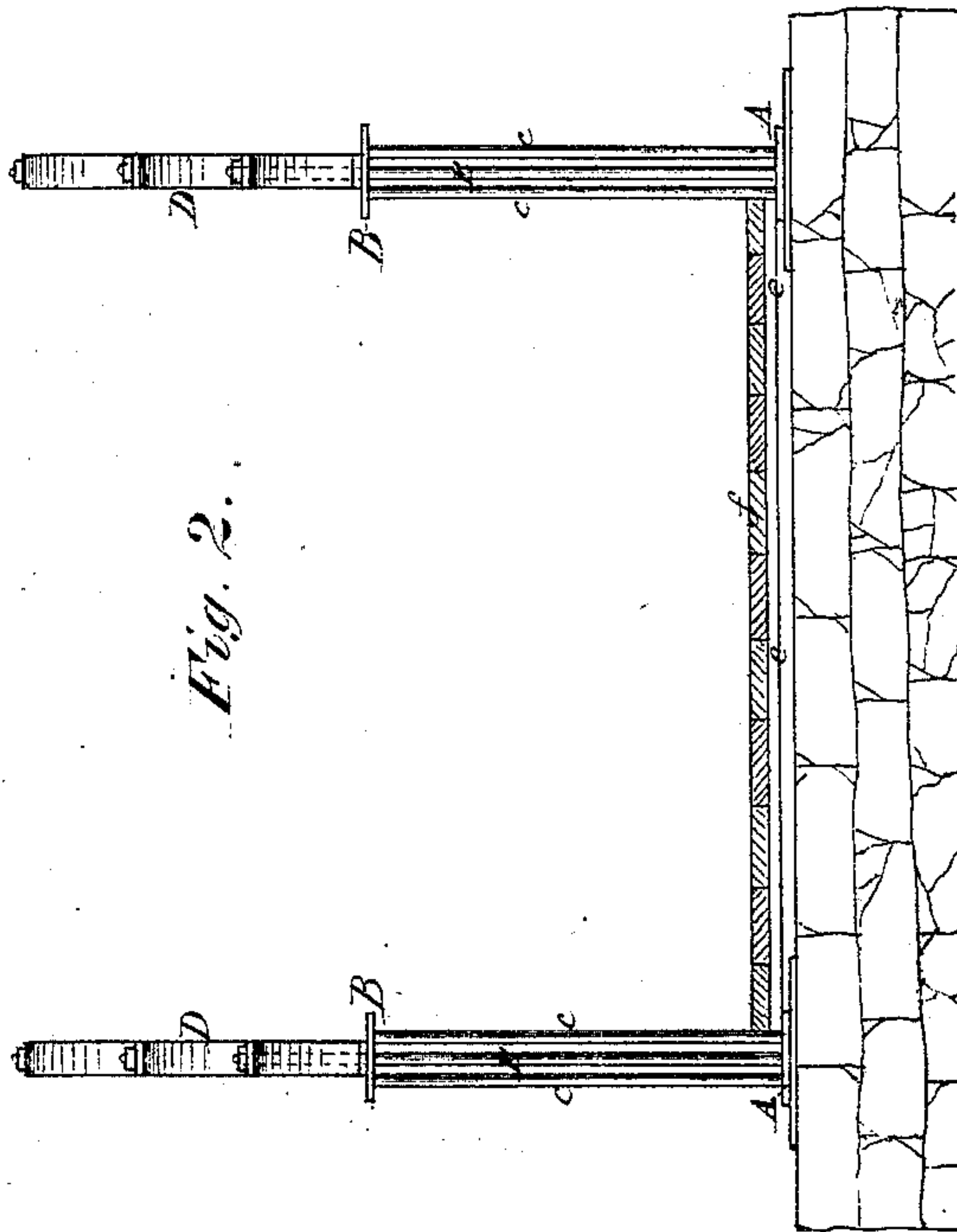


Witnesses:
Geo. P. Fisher
Wm. H. Roberts

J.B. Tracy.
Impt. in Bridges.

No. 121,556.
Patented Dec. 5, 1871.

Fig. 2.



Inventor.

Joseph B Tracy

UNITED STATES PATENT OFFICE.

JOSEPH B. TRACY, OF LINCOLN, DELAWARE.

IMPROVEMENT IN BRIDGES.

Specification forming part of Letters Patent No. 121,556, dated December 5, 1871.

To all whom it may concern:

Be it known that I, JOSEPH B. TRACY, of Lincoln, in the county of Sussex and State of Delaware, have invented an Improvement in Bridges, of which the following is a specification:

My invention relates to devices for giving additional stiffness to the top chord of a bridge; and it consists in a combination of braces and bolts, whereby the strain caused by the weight put upon the bridge is equalized and the upper and lower chords and the braces are made to bear their proper proportions, the effect of the braces and bolts being to arch both chords and consequently to give additional strength thereto.

To enable others skilled in the art to make and use the same, I will now proceed to more particularly describe it, reference being had to the accompanying drawing.

Figure 1 represents a side elevation of my invention. Fig. 2 is an end view of the same.

Like letters in the drawing refer to like parts.

A represents the lower chord, fastened to or resting on the abutments *a a'* at each end. B is the upper chord, made of a flat bar or bars of iron, which are held in place by the usual posts C C, made of double bolts *c c* in this case, and these may be continued the whole length of the chords, as shown in dotted lines. On the upper side, and bolted to the upper chord B, is a succession of braces, D D, of an inverted shape, and the ends of each succeeding one is bolted to the center of the previous one, and the bolts E E pass through them and the chord B, holding them in position. The bolts E may run down through the lower chord A, if desired. The center brace D' D' is made at a more acute angle than the rest, and the ends of the ones

marked *d d'*, resting upon it, and made at a less acute angle, thus forming the key to the whole structure. By this succession of braces it will be readily seen that the chords are tightened and drawn up in the center in the shape of an arch, and the more the bolts are screwed up the higher will the chords be raised in the center. If desired, the braces may be of flat, angle, or round iron, or plates of iron riveted together, and thus strength be obtained to any desired amount. To the lower chords A are attached the cross-girders *e e*; to these the planking or flooring *f*. If it is desired to increase the span of the bridge all that is necessary is to increase the number and size of the braces, and it will be readily understood that a bridge of immense strength and span can be built in the manner described, this system of double and inverted braces affording the means of making a very strong bridge, of light weight, and with a small expenditure of labor; it being only necessary to cut and bend the braces to their proper forms, and to drill the holes for the reception of the bolts.

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

The combination of the chords A and B, inverted braces D D', and bolts E, the parts being constructed and arranged substantially as and for the purposes set forth.

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

JOSEPH B. TRACY.

Witnesses:

C. G. FISHER,
H. A. BERRAS.

(21)