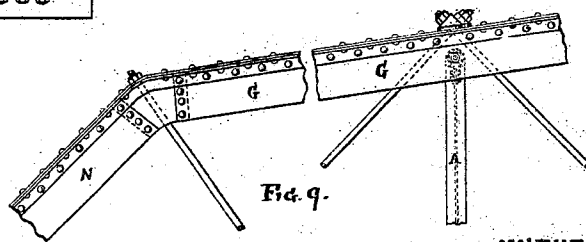
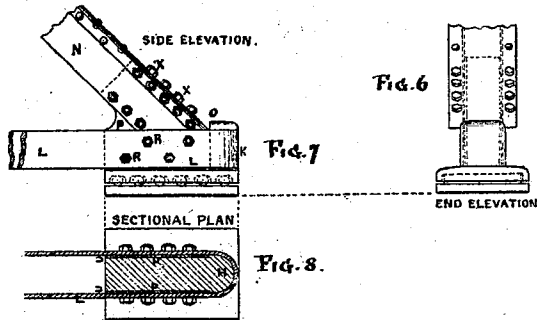
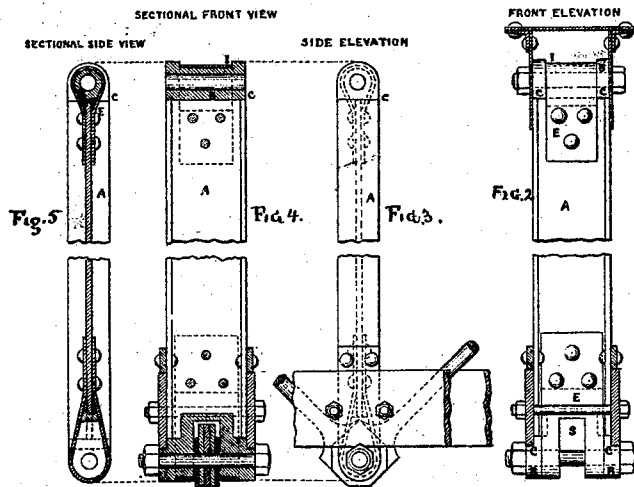
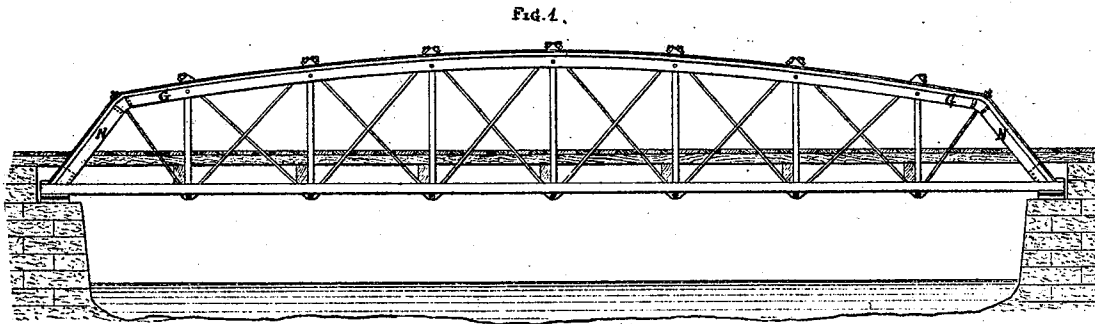


C.H. Parker,

Truss Bridge.

No. 100,185.

Patented Feb. 22, 1870



Charles H. Parker  
by his attorney  
A. H. L. K.

WITNESSES.

*W. B. ...*  
*Wm. H. ...*

# United States Patent Office.

CHARLES H. PARKER, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 100,185, dated February 22, 1870.

## IMPROVED BRIDGE.

The Schedule referred to in these Letters Patent and making part of the same.

### To whom it may concern:

Be it known that I, CHARLES H. PARKER, civil engineer, of Boston, in the county of Suffolk, and State of Massachusetts, have invented certain new and useful Improvements in the Construction of Bridges; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, in which—

Figure 1 is a side elevation of a bridge embodying my invention.

Figures 2, 3, 4, and 5 are views representing in detail the construction and arrangement of the compression member.

Figures 6, 7, and 8 are like views of the skew-back or thrust-block.

Figure 9 is a view on an enlarged scale of the upper portion of one of the end panels of the structure.

The improvements in the construction of bridges which I desire to secure by Letters Patent are as follows:

First. The first portion of my invention relates to the construction of the end panels or bays of a truss.

In order to make a truss with a curved top member and straight bottom member, and sloping ends that shall be capable of being altered in length within certain limits, without changing the general proportions of the truss in other respects, I have designed the end panels, or in the following manner:

The truss is composed of a curved top member, a straight bottom member, and vertical posts or compression members A, with the usual system of longitudinal diagonal rods or braces.

With the vertical post at each end of the truss I combine the fractional length of the top member and a sloping end, as seen in the drawing, the curved top member being made some fractional length of the end panel or bay, as shown at G, figs. 1 and 9, and the balance of the length of this panel or bay being composed of the sloping end N, which is riveted or otherwise secured to the curved top member G and to its point of support at its other end in any suitable manner. The advantages of this plan are, that in practice if I wish to lengthen or shorten a given length of span within certain limits, I have only to shorten or lengthen the fractional top member of the end bays or panels, or increase or decrease the slope of the ends, without in any way altering or disturbing the patterns or dimensions or proportions of the vertical posts, or of that part of the truss between the end panels; and I am thus enabled in practice to make all patterns, measurements, and plans answer for different lengths of spans within certain limits.

Secondly. The second part of my invention relates to an improvement in the construction of a wrought-iron compression member, capable also of acting with equal efficiency as a tension member. The body of this member is formed of an I-section-beam, A, either rolled or built up of plates and angles.

The ends of the I-beam A are cut to receive the cast-iron eyes B B, having shoulders c, which are fitted to and so as to rest on the ends of the flanges of the I-beam and projecting lips D D, which fit on each side of the web of the I-beam.

To join the eye to and virtually make it a part of the I-beam, I employ a strap of wrought iron, E, which passes around the outside and is recessed into the casting B at I, extending down over the lips D D to the web of the I-beam A, to which it is securely riveted.

The strap recessed into the casting, in connection with the projecting lips D D, prevents any moving of the casting from position.

The hole through the castings for a pin or rivet forms the means of connection of this member with the top and bottom members of a truss.

To form a connection with the bottom chord of a truss and the diagonals of the web, a further modification, shown in figs. 2, 3, and 4, is introduced into the lower eye. This consists in casting into the eye a slot, S, and cutting into the encircling strap E a similar slot, and then placing in this slot the eyes of the diagonals, so that by the common bolt all are held in place. By this construction I make a member which is effective in resisting both compression and tension, and is also capable of resisting effectually any lateral motion.

Thirdly. The third portion of my invention relates to an improved block or skew-back, which is used in the end panels or bays. The general form of this block is shown in figs. 6, 7, and 8. Along each side and around the end H is a recess, K, to receive the bar L, which passes completely around the thrust-block, and terminates at the ends in eyes or any equivalent instrumentalities to fasten to the chord-bars of the bridge. To form the connection with the sloping end N of the arch or top member G, the block projects into said ends. The thrust of this top member is received by a shoulder, O, cast upon the block and the upper edges of the encircling strap L.

To give additional lateral stiffness, and to more thoroughly join to the block the top member or arch, I introduce the plates P P recessed into the block, and under the encircling strap L and under the side plates of the arch or top member, the whole being fastened together by bolts or rivets R R, or any equivalent, passing through the encircling strap L, the plates P, into the block, and through the side plates of the arch

or top member G, the plate P, and into the block; and also with bolts X, or any equivalent fastening, through the top plate of the arch or top member into the block, thus binding the whole together securely. The advantages of this are, that the thrusts and pulls of the respective top and bottom members of a truss are resisted by the block, which receives from these two members only strains of compression through the medium of the encircling strap L; and the bolts, rivets, or any equivalent used to fasten said members to the block, are not called upon to resist the direct strains from the said top and bottom members.

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

1. A truss having its vertical posts or compression members fractional lengths of the curved top member, and sloping ends combined in the end panels or bays, substantially in the manner and for the purpose specified.

2. A compression member of a truss, constructed in the manner and for the purposes specified.

3. The cast-iron eye or end of the compression member of a truss, constructed with lips to fit the

web of the beam, shoulders to fit upon the flanges of the beam, and a recess to receive the encircling strap E, in the manner and for the purposes specified.

4. The thrust-block or skew-back, constructed in the manner and for the purposes specified.

5. The encircling bar or strap L, used in connection with the thrust-block, so as to hold the chord-bars of the bridge, and at the same time to partially receive the thrust of the top member of the truss, in the manner and for the purposes specified.

6. The plate P, used in the manner and for the purposes specified.

7. The combination of the top and bottom members of a truss with the thrust-block, its encircling bar or strap, and the stiffening-plate P, under the arrangement shown and described.

In testimony whereof, I have signed my name to this specification before two subscribing witnesses.

CHAS. H. PARKER.

Witnesses:

THOMAS G. BANKS,  
CADWALLADER CURRY.