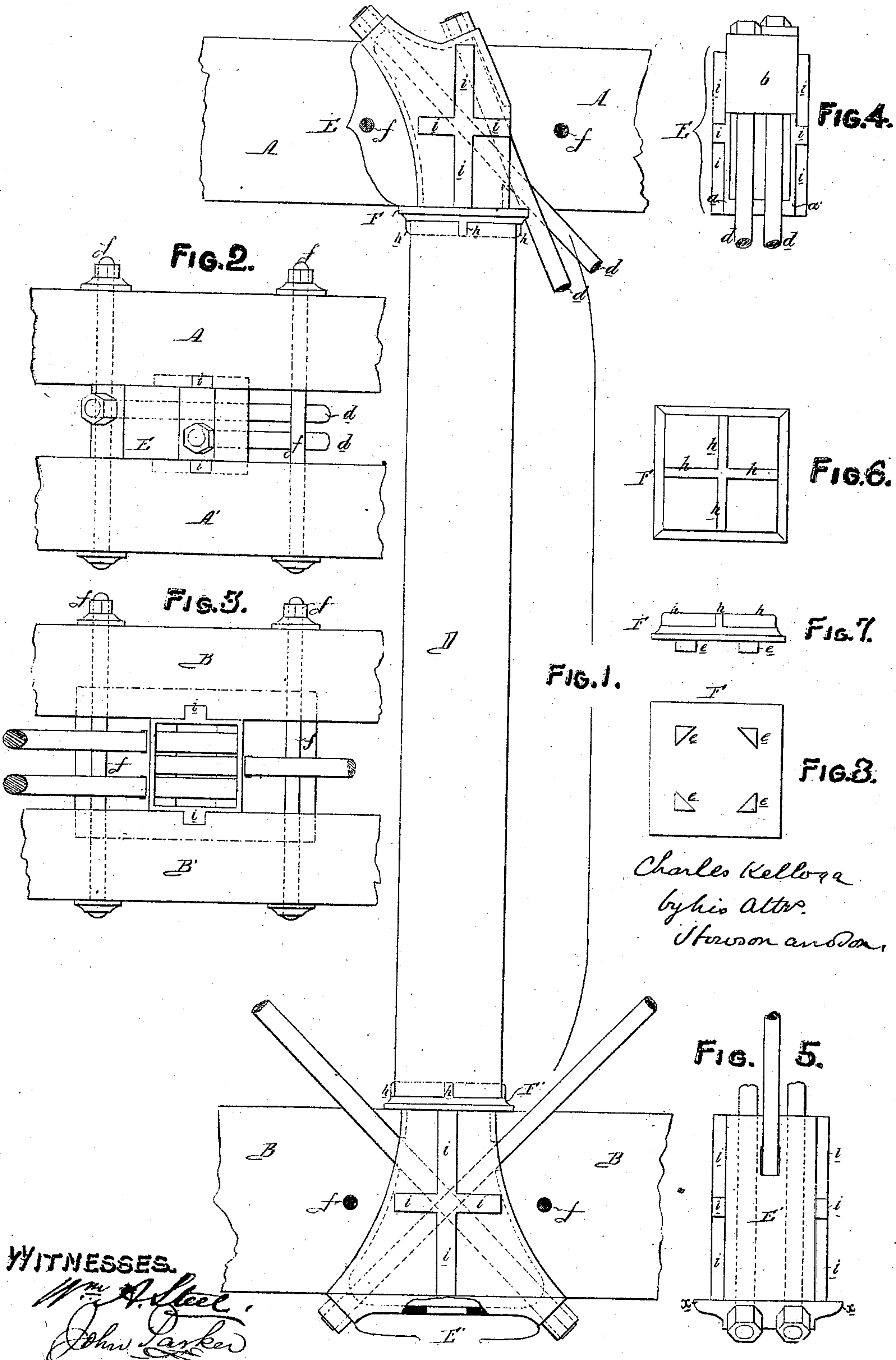


C. Kellogg, Truss Bridge.

No. 104,036.

Patented June 7, 1870.



WITNESSES.

Wm. A. Steel.
John Parker

UNITED STATES PATENT OFFICE.

CHARLES KELLOGG, OF ATHENS, PENNSYLVANIA.

IMPROVEMENT IN TRUSS-FRAME BRIDGES.

Specification forming part of Letters Patent No. **104,036**, dated June 7, 1870.

I, CHARLES KELLOGG, of Athens, county of Bradford, State of Pennsylvania, have invented an Improvement in Truss-Frame Bridges, of which the following is a specification:

Nature and Object of the Invention.

My invention relates to improvements in truss-frame bridges having wooden chords and posts; and my invention consists, first, in box-like combination-plates of cast-iron adapted to the upper or lower chord, beams, and diagonals, substantially as described hereafter; secondly, of certain intermediate plates having on one side ribs adapted to recesses in the posts, and on the opposite side projections adapted to the open ends of the above-mentioned combination-plates, as explained hereafter.

The object of my invention is to afford simple, economical, and substantial mediums for connecting the upper and lower chords to the posts and diagonals of a truss-frame bridge.

Description of the Accompanying Drawing.

Figure 1 represents a side view of sufficient of a bridge to illustrate my improvements, the front beams of the upper and lower chords being removed; Fig. 2, a plan view of a portion of the upper chord; Fig. 3, a plan view of a portion of the lower chord; Fig. 4, an edge view of the upper combination-plate; Fig. 5, an edge view of the lower combination-plate; and Figs. 6, 7, and 8, detached views of a plate used in conjunction with both upper and lower combination-plates.

General Description.

The upper chord of the bridge is composed in the present instance of the two beams A and A', and the lower chord of the two beams B and B', and D represents one of the posts connected to the upper and lower chords through the medium of combination-plates in the manner which I will now proceed to describe.

It should be understood that the chord may consist of two, three, or more beams, and there may be one, two, or more chords, according to the size of the bridge.

The combination-plate E consists of a hollow casting composed of two cheek-pieces, *a*

and *a'*, connected together by a web, *b*, which is continued along the edges of the combination-plate, excepting where an opening is necessary for admitting the diagonals *d d*, and at the bottom, where a square opening is presented for fitting snugly over the triangular projections *e e* on a plate F, (see Fig. 8,) the said plate having on its under side crossed ribs *h h*, adapted to corresponding recesses made in the top of the post D.

There are similar crossed ribs *i i* on each side of the combination-plate E for fitting into corresponding recesses in the sides of the beams A and A' of the upper chord, as shown in Fig. 2, so that when the nuts of the transverse bolts *f f* are tightened the combination-plate is not only effectually confined between the beams of the upper chord, but rendered immovable there, owing to the penetration of the beams by the crossed ribs of the combination-plate. When the several parts of the bridge are properly fitted together the lower end of the combination-plate fits snugly to the plate F, and is prevented from moving laterally thereon by the projections *e* of the said plate, while the crossed ribs of the latter, penetrating the top of the post, render the latter an immovable part of the plate F, combination-plate E, and upper chord-beams, B and B'.

The lower end of the post D rests on a plate, F', similar to that above described, and having crossed ribs above for fitting into corresponding recesses in the bottom of the said post, and projections below for fitting in the corners of the open upper end of the lower combination-plate, E'. Although this plate differs in form from that of the upper combination-plate, owing to the diagonals and counter-diagonals which it has to receive, both plates possess the same features, the lower plate consisting of cheek-pieces connected together at the edges by a web, but discontinued at points where diagonals and counter-diagonals have to pass through it and at the top, on which the plate F' rests.

The lower combination-plate has also flanges *x x* for supporting the lower chord-beams.

In both cases the combination-plates consist of box-like castings having a square opening at one point and provided with exterior ribs for penetrating the chord-beams.

The open portion of each combination-plate

permits the coating of the interior with paint or other medium for resisting the corrosive action to which the cast-iron portions of bridges are frequently subjected, owing to many of the parts being inaccessible to the painter, while they are exposed to the action of the atmosphere.

Another advantage of these box-like combination-plates is, that while they afford most strong and substantial mediums for connecting together the chords, posts, and diagonals, they may be made comparatively light, and, owing to their open ends, may be easily cast.

In a long bridge posts of different dimensions are arranged at different points; but there will be no necessity of changing either the combination-plates or the intermediate plates $F F'$ to suit posts of different thickness, for, whatever may be the thickness of the post, all that is necessary is to cut in the heads cross-grooves to receive the cross-ribs h of the plates.

The upper combination-plate, E , is formed for the end post of a bridge and for receiving two diagonal rods from one side only; but the

upper combination-plates for intermediate posts may be precisely like the lower plate, E' , secured so as to receive diagonal rods from one direction and counter-diagonals from a contrary direction.

Claims.

1. The within-described box-like combination-plates, having external ribs $i i$, and being otherwise adapted to the upper or lower chord-beams and diagonals of a bridge, substantially as set forth.

2. The intermediate plate F , having on one side ribs adapted to the end of the post, and at the opposite side projections adapted to the open end of the above-mentioned combination-plates, as described.

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

CHAS. KELLOGG.

Witnesses:

R. C. SINSABAUGH,
C. O. HUNTINGTON.