F. C. LOWTHORP.

Metallic Post or Girder for Truss-Bridges.

No. 159,194. Patented Jan. 26, 1875.

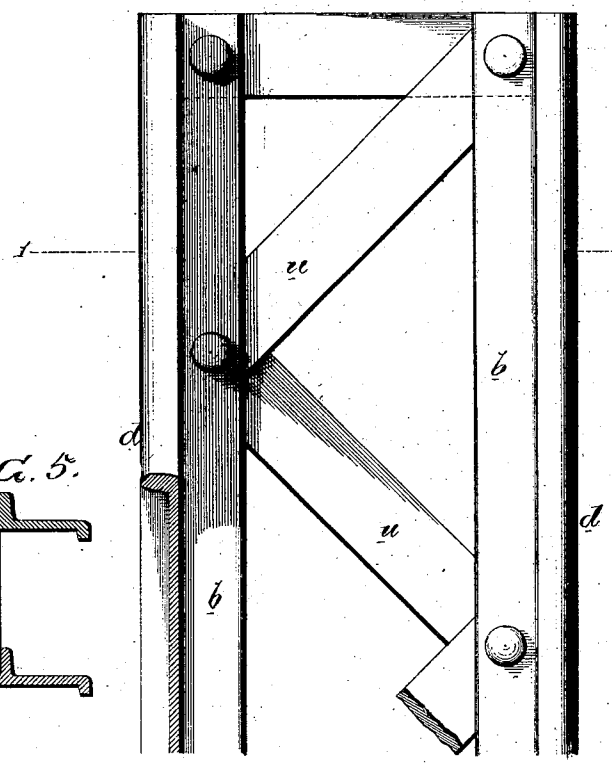


FIG. 4.

FIG. 5.

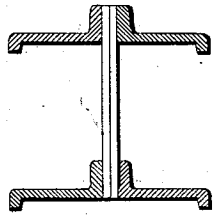
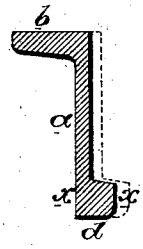


FIG. 1.



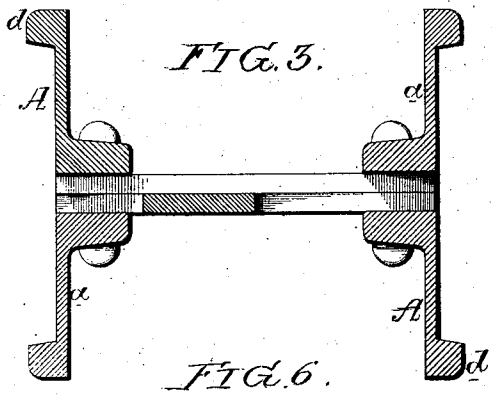
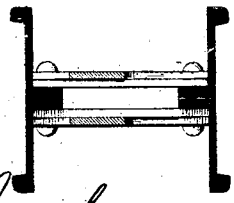


FIG. 3.

FIG. 2.

FIG. 6.



Witnesses. Harry Smith.
Thomas McElwain

F. C. Lowthorp
by his Attys
Howson and Sons

UNITED STATES PATENT OFFICE.

FRANCIS C. LOWTHORP, OF CHAMBERSBURG, NEW JERSEY.

IMPROVEMENT IN METALLIC POSTS OR GIRDERS FOR TRUSS-BRIDGES.

Specification forming part of Letters Patent No. 159,794, dated January 26, 1875; application filed December 21, 187[illegible].

To all whom it may concern:

Be it known that I, FRANCIS C. LOWTHORP, of Chambersburg, Mercer county, New Jersey, have invented certain Improvements in Iron Posts or Girders, of which the following is a specification:

The object of my invention is a post or compression member for truss-frame bridges, and for other structures; and this object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1 is a section of the angle-bar used in making the improved post; Fig. 2, a section of a modified bar for the same purpose; Fig. 3, a section of the post; Fig. 4, a front view of the same, showing the diagonal connections; Fig. 5, a section of a cross-strut of a truss-frame bridge; and Fig. 6 a modification.

The angle-bar A, Fig. 1, has a web, *a*, which may be varied in thickness, according to the duty which it has to perform as a part of a compression member of any structure, and at one edge of the web is a flange, *b*, of appropriate thickness, and always of sufficient depth to receive suitable bolts or rivets, the opposite edge being thickened at *d*. It will be seen that the web of this bar can be readily varied in thickness by the adjustment of the rolls, the flange *d* increasing in depth between the points *x x* as the web *a* is increased in thickness. Whatever may be the thickness of the web, the flange *d* should always present a bulky mass of metal compared with the web, and this will always be the case whether the web is thick or thin. When the web is thin, for instance, as shown in Fig. 3, the flange *d* is much thicker than the web, and when the latter is increased in thickness, as represented by dotted lines in Fig. 1, the flange *d*, although not increased in depth, has such increased thickness imparted to it as to insure the desired massiveness. The two flanges *b* and *d* may be on the same side of the web, as shown in Fig. 2, instead of being on opposite sides; or, if desired, there may be a flange, *d*, on both sides of the web, but in most cases I prefer a bar of the sectional form shown in Fig. 1. Figs. 3 and 4 represent the section and front view of a post or the section and plan of an upper chord of a bridge. It is composed of four of the above-described angle-bars, combined with diagonal connecting-bars, in a manner so clearly shown in the drawing as to need no detailed description.

It will be evident to those familiar with truss-frame bridges that, in constructing a post, the connecting-bars *u* may be readily arranged for the passage of the main and counter diagonals.

In Fig. 3 it will be observed that the connecting-plates *u* are placed between the adjoining flanges *b* of each pair of bars, but in the modification, Fig. 6, the adjoining flanges *b* are situated between the bars, either plan being adopted, as circumstances may suggest. A continuous plate or plates may be substituted for the connecting-bars.

When the angle-bars have to be combined to form the upper vertical cross-strut of a truss-frame bridge, I prefer to arrange them in the manner shown in Fig. 5, so that no lodgment may be presented for water or snow.

I claim—

A post or compression member composed of the within-described angle-bars, combined with connecting bars or plates *u*, as specified.

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

F. C. LOWTHORP.

Witnesses:
JNO. A. BELL,
HARRY SMITH.