

(No Model.)

C. F. SMITH.
BRIDGE.

No. 245,412.

Patented Aug. 9, 1881.

Fig. 1.

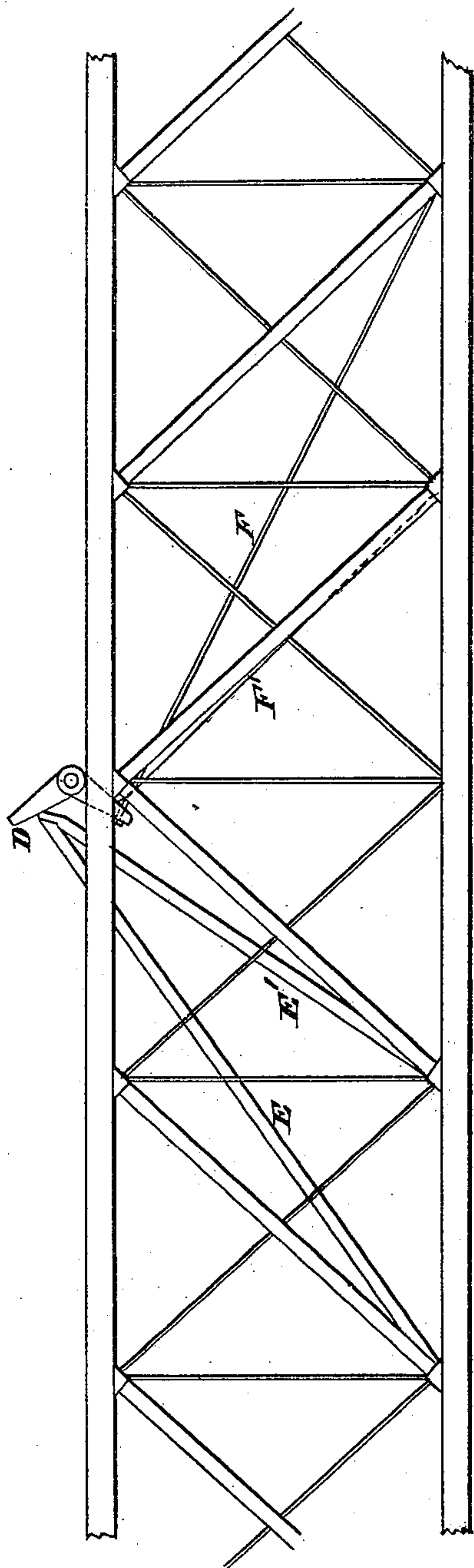
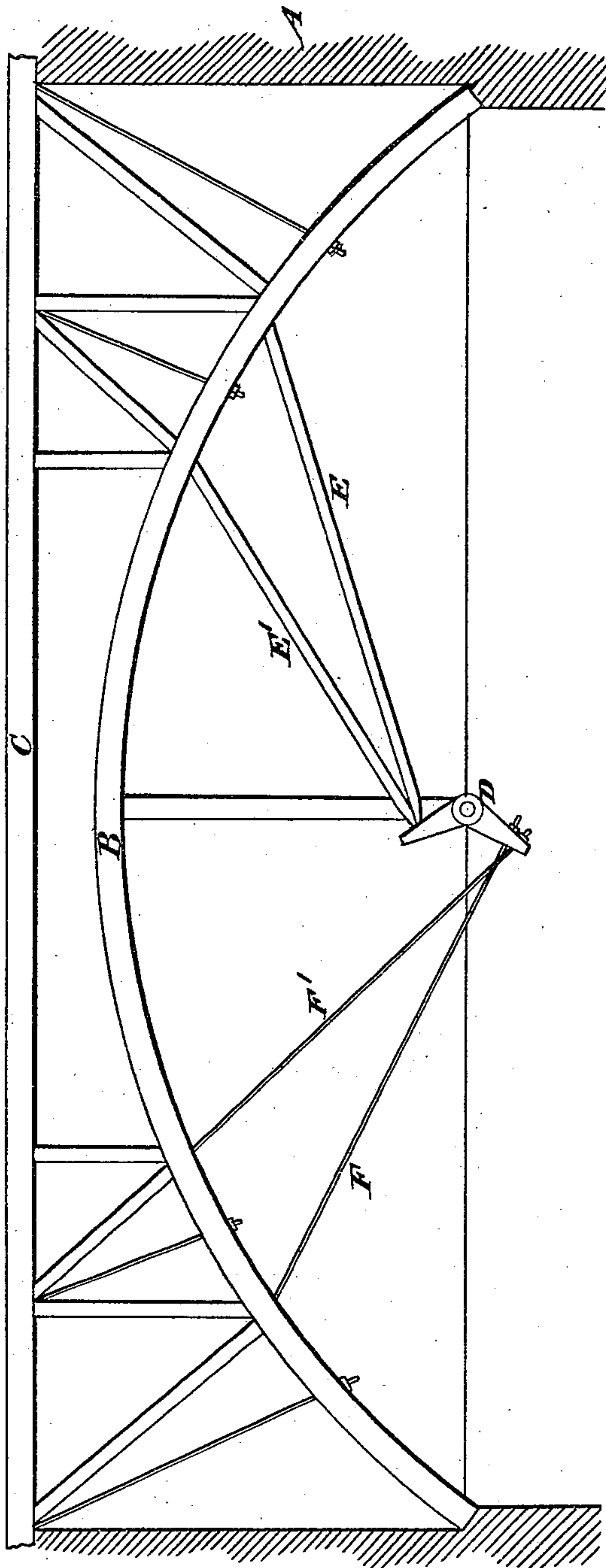


Fig. 2.



Witnesses.
A. Ruppert.
J. G. Mason

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by
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UNITED STATES PATENT OFFICE.

CHARLES F. SMITH, OF JACKSONVILLE, FLORIDA.

BRIDGE.

SPECIFICATION forming part of Letters Patent No. 245,412, dated August 9, 1881.

Application filed May 18, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. SMITH, of Jacksonville, in the county of Duval and State of Florida, have invented a new and useful Improvement in Bridges, of which the following is a specification.

My invention relates to an improvement in bridges, by which the weight is more equally divided, so as to bear equally upon different points of the structure. This is accomplished by means of an angle-block in the form of a bell-crank lever pivoted upon its center, and connected at one end with the bridge by a strut, and at the other by a tension-rod, so that pressure applied at the end of the strut shall be conveyed by the tension-rod and applied to the arch or truss at unequal distance on the opposite side of the angle-block.

In the annexed drawings, making a part of this specification, Figure 1 represents an elevation of a truss-bridge. Fig. 2 represents an elevation of an arch-bridge.

The same letters are employed in both figures in the indication of identical parts.

A A in Fig. 2 represent the abutments, and B the arch, of a wooden bridge, of which C is the track. D is the oscillating angle-block, shaped substantially as shown and centrally pivoted. Struts E E' &c., extend from the under side of the arch to an arm of the angle-block, either above or below its pivot. F and F' are tension-rods extending from the other arm of the angle-block to points in the arch corresponding with the ends of the struts E E'.

It is obvious that whatever pressure tends to depress the arch at the outer ends of any of

the struts E E' will, precisely to the same extent with the yielding of the struts, draw down, through the medium of the tension-rods F F', upon the corresponding points on the opposite sides of the arch. Similar struts and tension-rods similarly connected to an angle-block from the opposite side of the arch secure an equal distribution of the pressure of a load passing over a bridge at every point in the bridge.

Fig. 1 illustrates the application of the same principle to a truss-bridge. Whatever weight resting on the tension-rod F deflects the bridge causes its pressure to be transmitted from the angle-block D, through the struts E E', to the opposite end of the bridge.

I am aware that compensating-rods consisting of two rods and an oscillating angle-block have been used for compensating pressure, and such compensation-rods have been used for sustaining the lateral thrust upon the tops of piers; but I am not aware that they have ever been used in combination with the frame for equalizing the pressure upon different parts of arch or truss frames.

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

In combination with the truss or arch frame of a bridge, the oscillating angle-irons and struts and tension-rods or beams for distributing pressure applied on the roadway of a bridge to different parts of the arch or truss, substantially as set forth.

CHARLES F. SMITH. [L. S.]

Witnesses:

INGHAM CORYELL,
EDWIN HIGGINS.