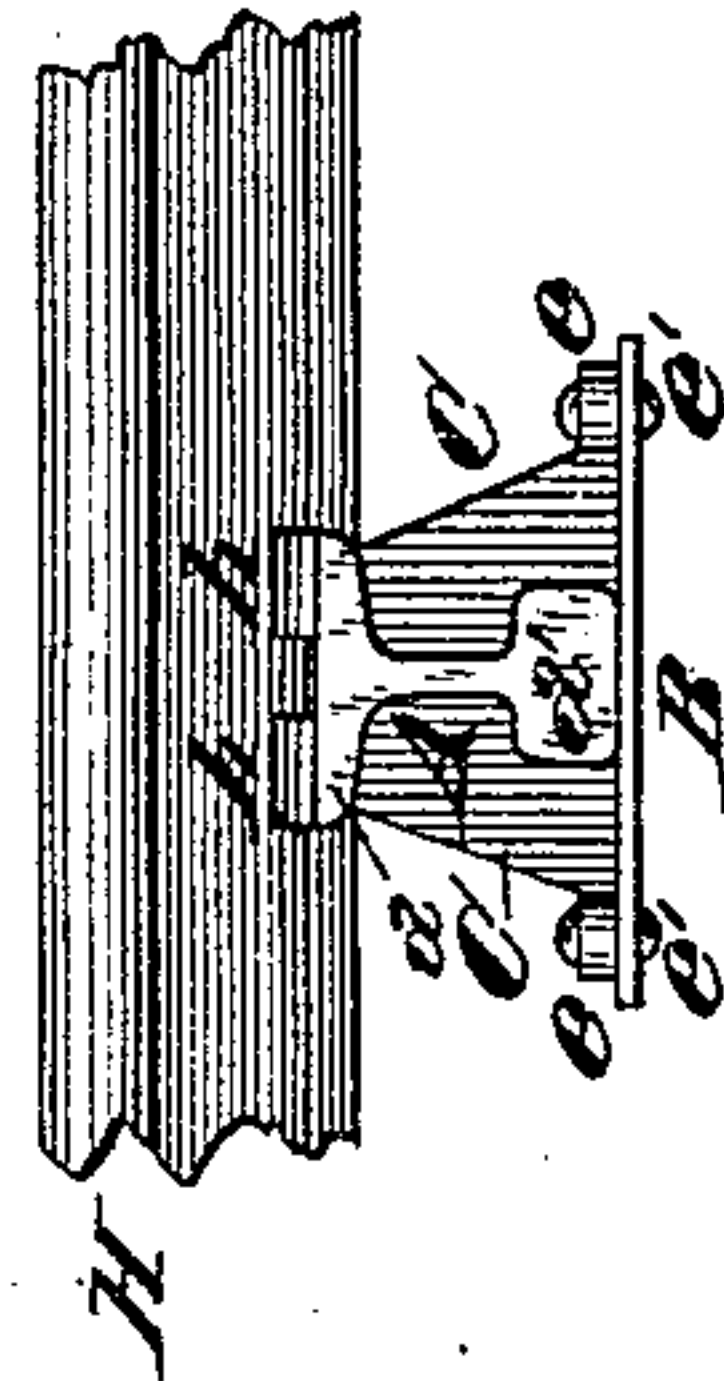
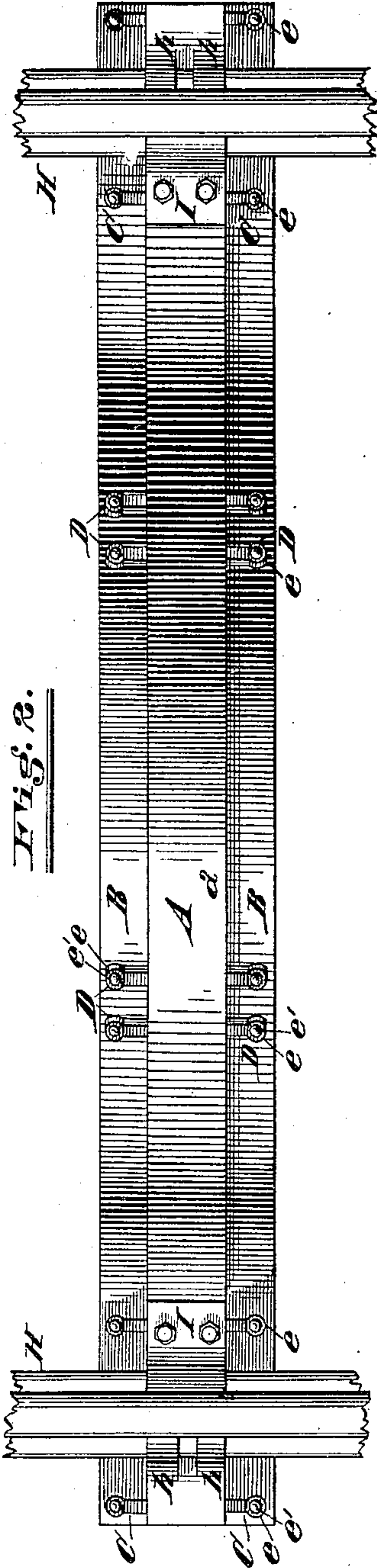
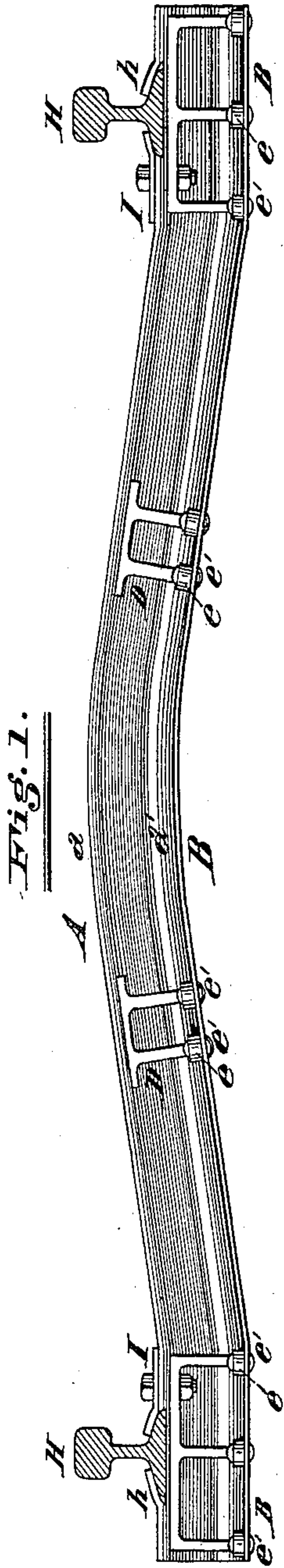


(No Model.)

I. W. FLECK.  
Railway Cross Tie.

No. 240,987.

Patented May 3, 1881.



Attest  
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# UNITED STATES PATENT OFFICE.

ISAAC W. FLECK, OF CHATTANOOGA, TENNESSEE.

## RAILWAY CROSS-TIE.

SPECIFICATION forming part of Letters Patent No. 240,987, dated May 3, 1881.

Application filed February 1, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, ISAAC W. FLECK, a citizen of the United States, of Chattanooga, in the county of Hamilton and State of Tennessee, have invented certain new and useful Improvements in Railroad Cross-Ties, of which the following is a specification.

My invention relates to an improved railroad-tie.

10 It consist, first, of an arched iron beam with top and bottom flanges supported by brackets corresponding in general contour to the ordinary I-beam of commerce.

15 The second part of my invention consists of a combination of sections forming the arched beam, one of said sections being an ordinary railroad-rail firmly bolted to the sectional parts in the manner hereinafter set forth and shown in the drawings making a part of the same.

20 In the accompanying drawings, Figure 1 is a longitudinal elevation of my improved tie, showing the rails of the track in transverse section and secured thereon. Fig. 2 is a plan view of the same. Fig. 3 is an end view.

25 The preferred plan of making my improved tie is in the use of old rails, which are cut off a proper length and then bent or arched in the required form. The object of the arch is to accommodate the tie to a crowning road-bed. In the use of iron ties resting on the ground it is very important to have the water drain off of the road-bed rapidly, so as to have the road-bed as dry as possible, so that the tie will be less likely to sink into the earth. The arch of the tie is essential to secure the proper road-bed for an iron tie. The drawings show the arch-tie made of a common T-headed rail.

35 A represents the rail; *a*, the bottom flange of the rail, and *a'* the head of the rail. B represents a plate of iron which is united to the head of the rail by means of iron brackets or chairs C D, which are preferably made of cast-iron, having eyes *e*, through which bolts or rivets *e'* are inserted, to unite the rail A to the bed or flange *c*.

45 The inner edges of the brackets C D corre-

spond in shape to the abutting face of the rail A, so that when each pair of brackets are riveted or bolted in place the parts are firmly united.

50 H H represent the rail resting on the ties A. The drawings show them united in the following manner: *h* represents a clamp, which is formed by turning up a piece of the flange of the rail. I represents a removable clamp, which is bolted upon the inner flange of rails H. Both clamps can be made like clamps I, and bolted over the flanges of rails H. The lower faces of these clamps should correspond in form to the contour of the top of the flanges of rails H.

I-beam iron may be used to form my arched tie, and brackets of any form adapted to stiffen and support the flanges; and the rails H may be fastened to the ties by means of clamps in the same manner as shown in the annexed drawings, such a tie being covered by the first clause of claim herein; or an T-shaped beam may be united to a wide flange, B, to form the bottom of the tie, in the same manner as shown in the drawing representing the T-shaped railroad-rail, such a tie being embraced in the second clause of claims herein.

75 Having thus shown and described my invention, what I claim is—

1. An iron railroad-tie formed of I shaped iron the flanges of which are supported by brackets, the central part of the tie being arched or bent, all substantially as herein set forth.

2. A railroad cross-tie composed of an arched I-beam composed of the T-rail A, bottom flange, B, brackets C D, and fastening-clamp I, substantially as herein set forth.

85 In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ISAAC W. FLECK.

Witnesses:

R. R. MURPHY,  
THOS. B. JONES.