

(No Model.)

E. SAMUEL.
RAILWAY CROSS TIE.

No. 410,933.

Patented Sept. 10, 1889.

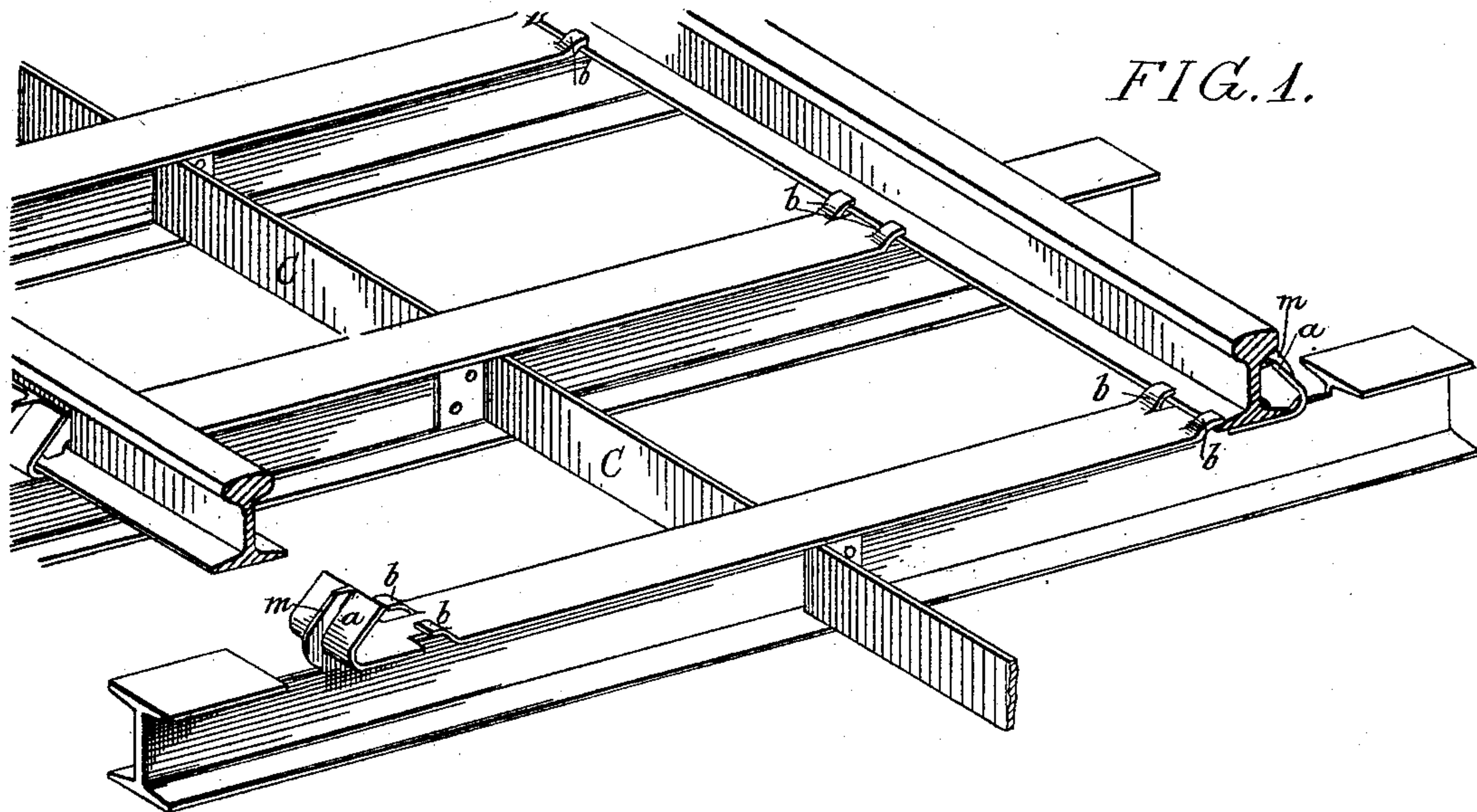


FIG. 2.



FIG. 3.

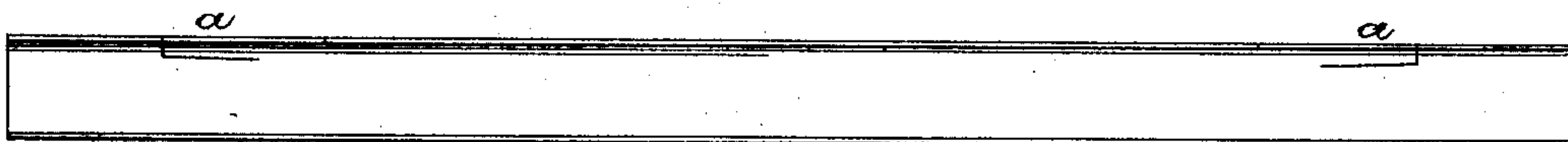


FIG. 4.

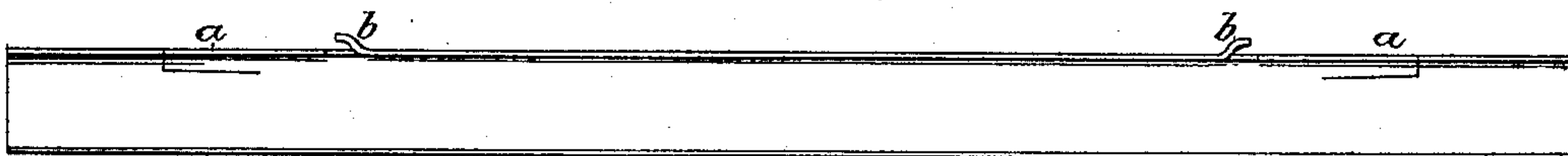


FIG. 5.

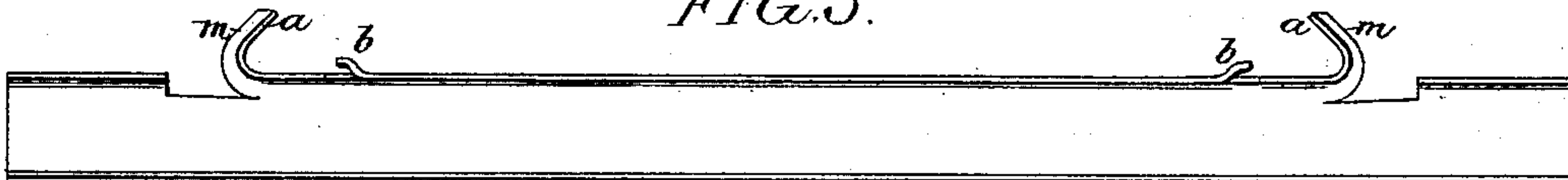
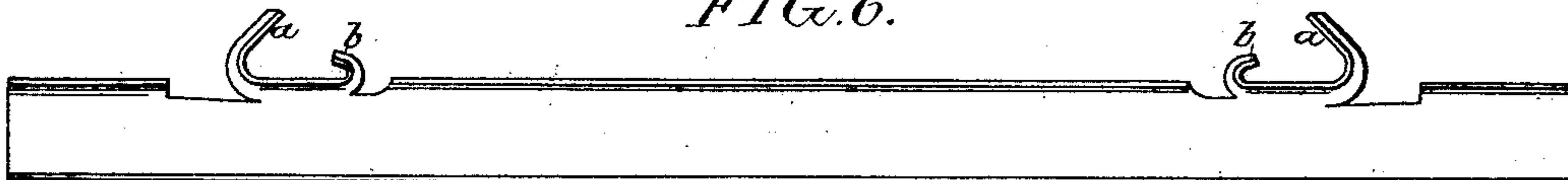


FIG. 6.



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EDWARD SAMUEL, OF PHILADELPHIA, PENNSYLVANIA.

RAILWAY CROSS-TIE.

SPECIFICATION forming part of Letters Patent No. 410,933, dated September 10, 1889.

Application filed June 12, 1889. Serial No. 314,003. (No model.)

To all whom it may concern:

Be it known that I, EDWARD SAMUEL, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Railway Cross-Ties, of which the following is a specification.

The object of my invention is to construct a combined cross-tie and chair for railway-rails from one piece of rolled metal of the shape commercially known as "shapes" or "beams." This object I attain in the following manner, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view showing the rails applied to the cross-tie. Figs. 2, 3, 4, and 5 are diagrams showing the different stages in the formation of my improved combined cross-tie and chair, and Fig. 6 is a view illustrating a modification.

In carrying out my invention I preferably employ what is commonly known as an "I-beam" and cut it to the length required for the cross-tie, as shown in Fig. 2. I then separate portions of the web of the beam, as shown in Fig. 3, leaving lips *a a* to be afterward bent into the form shown in Fig. 5. I then slit the upper flanges of the I-beam, and from these flanges strike up retaining-lugs *b b* for the inner portions of the rails, as shown in Fig. 4, after which the portions *a a* are bent to the form shown in Fig. 5, thus forming lips, between which and the rail are inserted suitable wedges or other fastening devices, as shown in Fig. 1. About the center of the cross-tie I secure the bent end of a connecting-strip *C*, extending from tie to tie, for the purpose of preventing lateral movement of the ties when in place on the ground; or the strips may be independent of each other, each strip being of such length as to permit of the connection of the strip of one tie to that of the next for the same purpose. Thus one tie prevents sidewise movement of the other, and so on throughout the entire series.

Instead of forming lugs *b* for bearing on the inner flange of the rail, as shown in Fig. 5, the tie may be slitted, as shown in Fig. 6, in which case both the upper flange and a portion of the web are cut so as to permit the turning up of lips like the outer lips *a*. This weakens the tie, however, to such an extent

that it is preferred in all cases to use the form of lugs shown in Fig. 5.

The retaining-lips of the rails may be bent to any desired form to correspond with the special fastenings for securing the rail to the chair. As a portion of the web of the beam is attached to each portion of the upper flange, which is turned up to form the outer retaining-lips, these lips have central stiffening-ribs *m*, whereby their rigidity under strain is much enhanced.

Although I have shown the cross-tie as composed of an I-beam, it will be evident that other forms of beam may be employed, as shown and described, for instance, in a separate application filed by me and bearing even date herewith, and that the cross-tie may be made of two or more pieces secured together without departing from my invention.

I claim as my invention—

1. A combined cross-tie and chair made of rolled shape or beam iron or steel, having a web and top plate, and having the web partly severed, and that portion of the top plate thus freed bent in the direction of the length of the beam, so as to form a rail-retaining lip, substantially as set forth.

2. A combined cross-tie and chair made of rolled shape iron or steel, having bent portions forming retaining-lips for the inner flanges of the rails, and having other bent portions forming outer retaining-lips for the rails, said outer bent portions being composed of the top flanges of the beam and portions of the web, substantially as described.

3. The combination of a combined cross-tie and chair made from rolled shape or beam iron or steel, and having bent portions forming pockets for the rails, with angle-pieces secured to the web of the rail and serving to prevent its lateral movement, substantially as specified.

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

EDWD. SAMUEL.

Witnesses:

LOUIS KOPPENHOEFER,
HARRY SMITH.