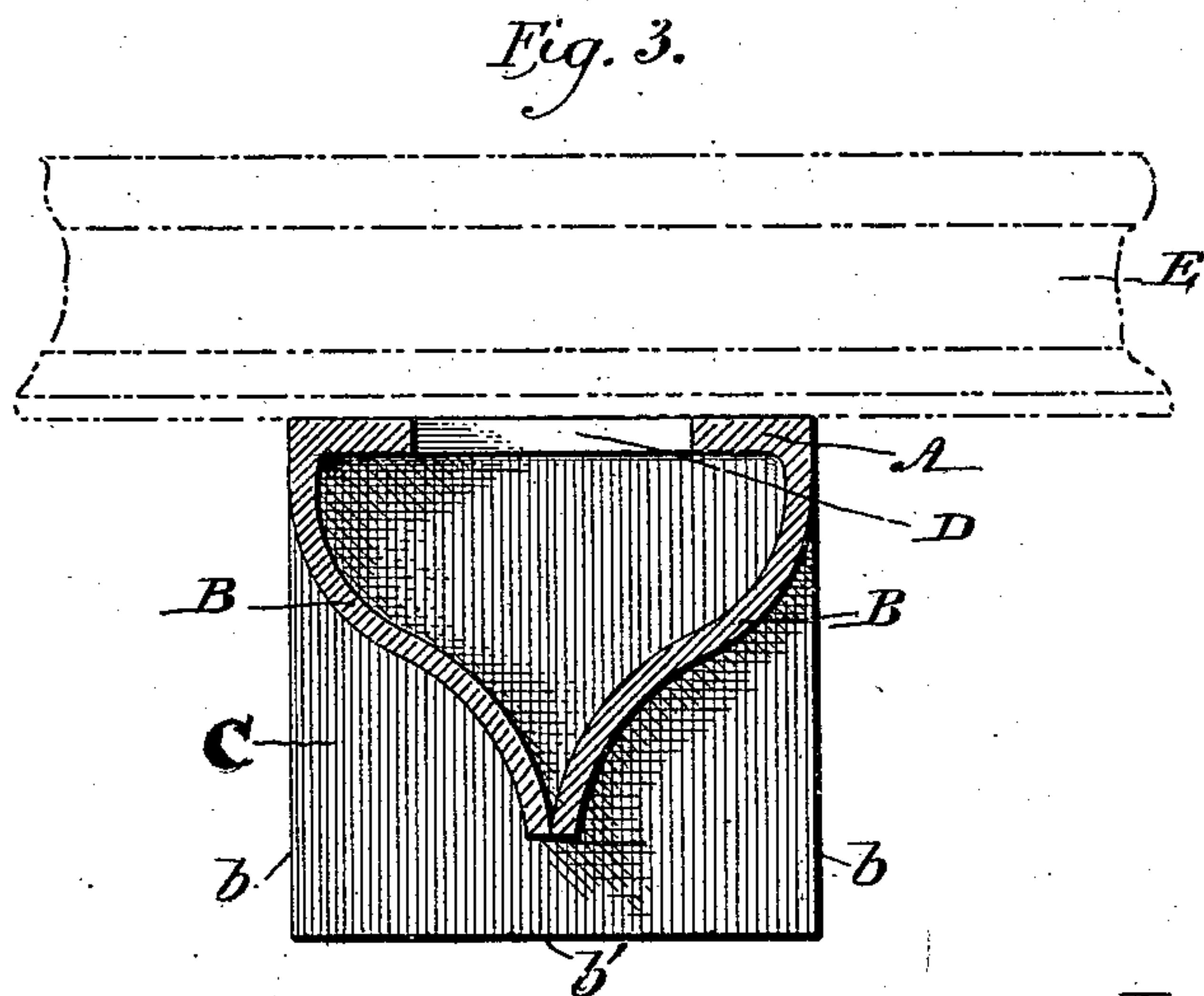
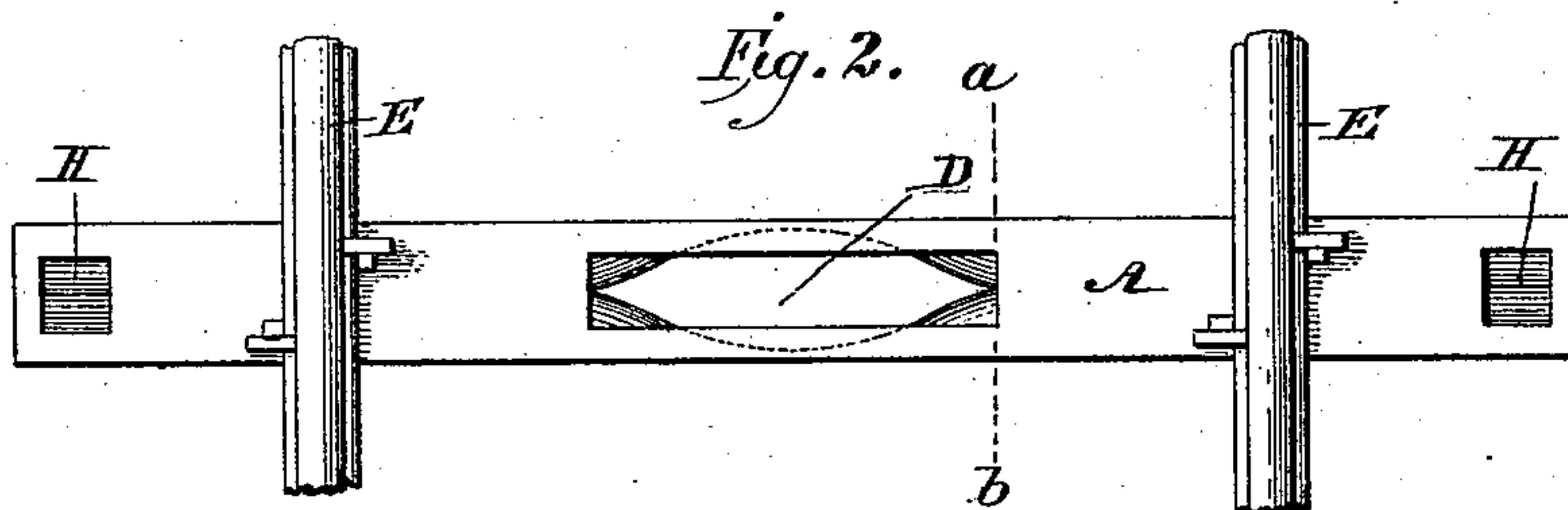
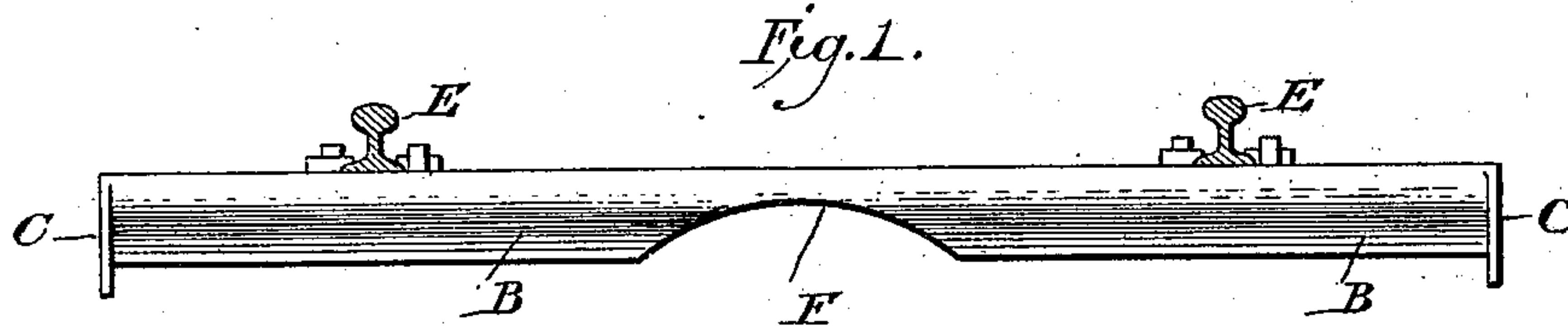


(No Model.)

A. G. E. WESTMACOTT & J. P. HUTCHINSON.
METALLIC RAILWAY TIE.

No. 471,582.

Patented Mar. 29, 1892.



Witnesses:
Chas. H. Nolan
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UNITED STATES PATENT OFFICE.

ALEXANDER G. E. WESTMACOTT AND JAMES PEMBERTON HUTCHINSON, OF
NEWTOWN, PENNSYLVANIA.

METALLIC RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 471,582, dated March 29, 1892.

Application filed April 7, 1891. Serial No. 388,007. (No model.)

To all whom it may concern:

Be it known that we, ALEXANDER G. E. WESTMACOTT, a subject of the Queen of Great Britain, and JAMES PEMBERTON HUTCHINSON, a citizen of the United States, and both residing at Newtown, Bucks county, Pennsylvania, have jointly invented certain new and useful Improvements in Metallic Railway-Ties, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

Our invention relates to metallic railway-ties, and has for its object the construction of an economical and efficient metallic cross-tie for use in railway construction, the improvements consisting in the construction and arrangement and combination of parts, as hereinafter set forth.

In the accompanying drawings, in which similar letters of reference refer to like parts in the several views, Figure 1 is a side elevation of our improved metallic tie. Fig. 2 is a top view thereof, and Fig. 3 a cross-sectional view through the line *a b* of Fig. 2.

A, Fig. 2, represents the flat top or rail surface of our improved metallic tie, which is of a proper length to suit the gage of the railway and upon which rest the rails *E E*, which rails are secured to the flat top of the tie by any mode of fastening the bases of rails to metallic ties. The sides *B B* (see Fig. 1) extend the length of the flat top *A* of the tie, and these sides are provided with openings *F*, at or about their longitudinal centers, which openings are preferably produced by cutting away a portion of the metal from the lower portion of the sides of the tie. The sides *B B* are bent toward each other until they meet, and are preferably given a curved shape, as shown in Fig. 3—that is to say, the sides *B B*, the depth of which is denoted by the lines *b b*, extending to the base-line *b'*, are given first an outward and then an inward curvature toward each other until the said sides *B B* meet along their bases, except where cut out in middle opening *F* in a vertical plane passing longitudinally through the center of the tie. Extension-pieces *C C*, (see Fig. 1,) projecting longitudinally from the flat top *A*, are

bent down at right angles with the top surface of the tie, as shown in said Fig. 1, so that the end view thereof will be substantially as shown in the cross-section, Fig. 3. Openings in the top surface *A* are provided, as at *D*, in the center and, as at *H H*, at either end, as shown in Fig. 2, the center opening *D* being shown in the cross-section, Fig. 3, these openings being provided in order that when the tie is placed in position on the ground ballast may be introduced therein and packed within the hollow portion of the tie in order to give solidity thereto. The tie being thus in position on the ground, the lateral openings *F*, (see Fig. 1,) in addition to economy of metal in the construction of the tie, will enable ballast to be worked under and inside of the hollow portion thereof, the packing of which ballast inside and under the curved longitudinal sides *B B* adding to the solidity of the tie and preventing longitudinal motion thereof, which latter feature is aided largely by the bent-over ends *C C*. (Shown in Fig. 1. This inward curvature of the sides *B B* produces thus a hollow tie, within which ballast may be packed as aforesaid, and owing to the form of the base of the tie produced by the inward curvatures of its two sides toward each other, enables the tie to rest solidly upon supporting external ballast, while the form of the sides also produces a sufficiently elastic top surface *A* as a base for the rails resting thereon and preventing a disintegration of the metal and a loosening of the fastenings, which would otherwise be the case from the hammering of the wheels of the rolling-stock on a too solid surface.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A hollow metallic tie consisting of a continuous flat top surface provided with openings therein and with longitudinal sides inclined inwardly toward each other and meeting at their bases, substantially as described.

2. A hollow metallic tie consisting of a flat top surface and with longitudinal sides inclined inwardly toward each other and meeting at their bases and with vertical end pieces of rectangular form, substantially as described.

3. A hollow metallic tie consisting of a flat
top surface with openings therein and with
longitudinal sides inclined inwardly toward
each other and meeting at their bases and pro-
5 vided with lateral openings in the same, sub-
stantially as described.

4. A hollow metallic tie consisting of a flat
top surface with openings therein and with
longitudinal sides inclined inwardly toward
10 each other and meeting at their bases and pro-
vided with lateral openings in the same and

vertical end pieces of rectangular form, sub-
stantially as described.

In testimony whereof we have hereunto af-
fixed our signatures this 28th day of March, 15
A. D. 1891.

ALEXANDER G. E. WESTMACOTT.
JAMES PEMBERTON HUTCHINSON.

Witnesses:

JOHN R. NOLAN,
H. T. FENTON.