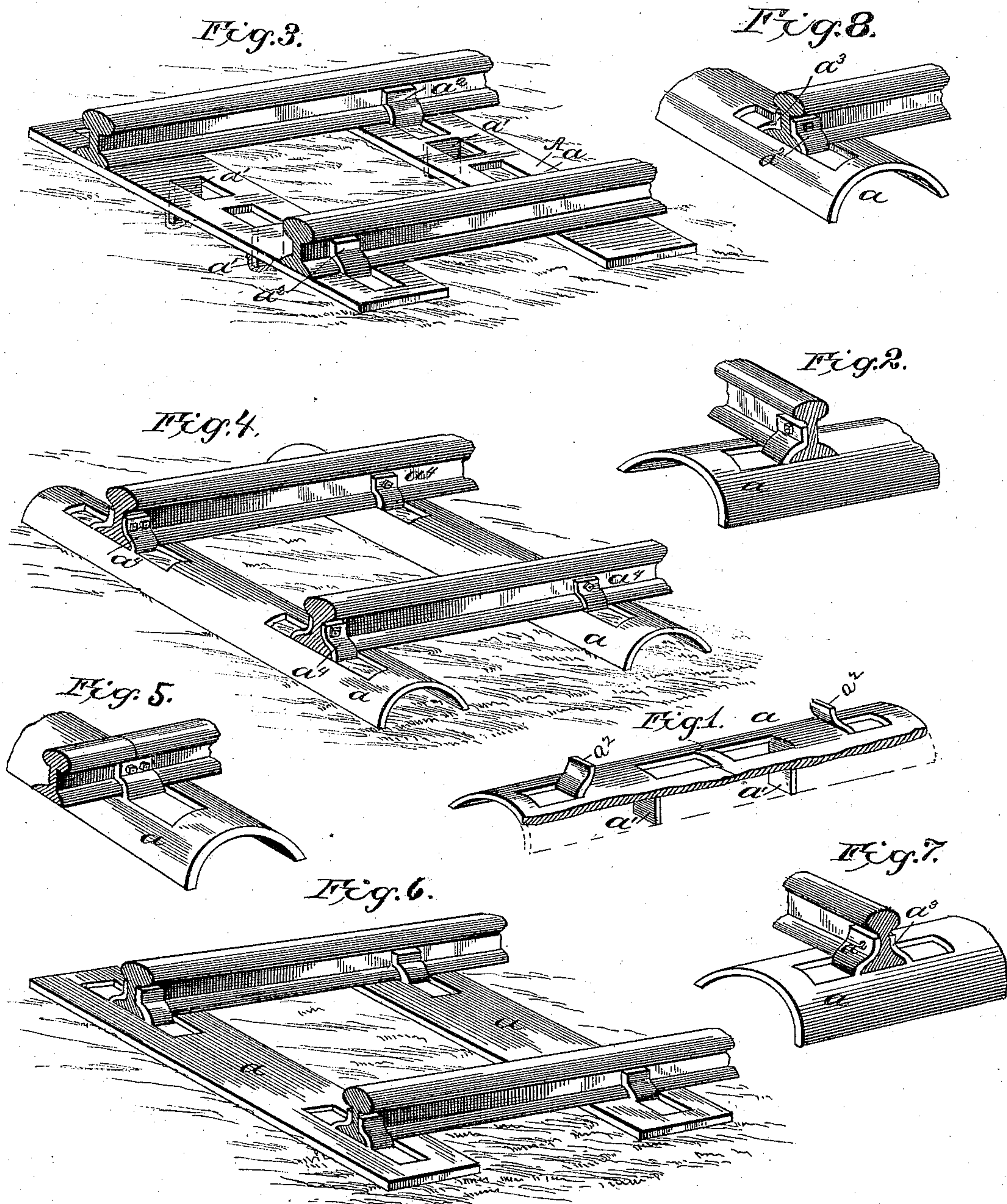


(No Model.)

C. H. SAYRE.
METALLIC RAILROAD TIE.

No. 344,011.

Patented June 22, 1886.



WITNESSES:

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METALLIC RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 344,011, dated June 22, 1886.

Application filed October 21, 1885. Serial No. 180,488. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. SAYRE, of Utica, in the county of Oneida and State of New York, have invented certain new and useful Improvements in Metallic Railroad-Ties; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

My invention relates to a metallic railroad-tie; and it consists in the construction of the same and the combination of various parts, as hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a section of my improved railroad-tie. Fig. 2 is a section view of the tie and rail. Fig. 3 is a perspective view of ties of a modified construction and the rails thereon. Fig. 4 is a perspective view of ties and rails of my improved construction. Fig. 5 is a section view of a tie and rails, showing construction of my improved fish-plate joint. Fig. 6 is a perspective view of my improved ties of the modified construction and sections of rails held thereon. Fig. 7 is an end view of a rail and a sectional side view of the tie. Fig. 8 is another view of the same.

In the accompanying drawings similar letters of reference refer to corresponding parts throughout the several views.

In constructing my improved railroad-tie I preferably use Bessemer steel, although any other suitable metal may be used. The material is rolled or forged to the required width, thickness, and length, and is left in substantially a semicircular tubular shape in cross-section, as indicated in Fig. 1. This form is preferable, as the same is supported upon the embankment with greater firmness than the ordinary flat tie.

It is quite obvious that the crown of my improved tie may be formed with a flat surface, or the sides may be formed with corrugations or at an angle without departing from the spirit of my invention.

a represents my improved tie.

For preventing the tie from an endwise motion when the same is in use, I provide one or

more projecting lugs, which are formed with an ordinary punch and die by cutting from the surface of the tie and bending the same downward to form a lug of the required length.

a' represent the general construction of these projecting lugs, which are turned downward for engaging the ballast of the road. Any other form of construction of these lugs may be used.

For securing the rails to the ties constructed upon my improved plan, I provide one or more upward-projecting lugs, a^2 a^2 , Fig. 1, which are formed by cutting from the tie, with an ordinary punch and die, one or more lips, which are turned upward and inward for embracing the flanges on the rails for holding the same securely to the tie. It is quite obvious that one of these projecting lips, formed as described, may be used for engaging one flange, and a suitable rail-fastening may be used upon the opposite flange by riveting or bolting the same to the ties, although I prefer that both lips be cut from the body of the tie and turned upward and inward for engaging the opposite flanges of the rail for properly securing the same to the tie, and it is quite apparent that the form and shape of these lips are unimportant, so long as they are of the required size to properly engage the flanges of the rail.

a^3 a^3 , Figs. 7 and 8, represent the lips cut and turned up for engaging the inner surface of the rail. By turning up the lips from the body of the tie, cut and formed as before mentioned, a solid bearing is left between the lips for receiving and supporting the rail.

For forming a fish-plate joint for engaging the ends of the rail and holding the same firmly to the tie and for steadying the rail during the passage of trains, I cut, form, and perforate the two projecting lips for receiving bolts, as indicated, a^4 a^4 , Fig. 4. It is quite apparent that the projecting lips may be bolted to one rail, leaving projecting end of the lips to engage the other rail, and the lips may be made sufficiently long to receive two or more bolts for forming a substantially fish-plate joint without departing from the spirit of my invention.

Figs. 3 and 6 represent railroad-ties of a modified construction embracing the general features of my improvements.

In constructing a railroad with my improved

ties the projecting lips may be perforated with one or more perforations, and the rails may also be perforated, whereby the lips may be bolted to the rail, thereby forming a substantial and reliable railroad, and one or more of the ties under each rail may be so bolted, and it is quite obvious that ordinary fish-plates may be used in connection with the projecting lips, perforated as before described, without departing from the spirit of my invention.

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

1. A metallic railroad-tie rolled or forged in a semi-cylindrical form, with one or more upward-projecting lips cut from the central portion of the tie and turned upward and inward to embrace the flanges and web on the rail, leaving the metal underneath the rails intact and solid.

2. A metallic railroad-tie rolled or forged with one or more upward-projecting lips cut from the central portion of the tie and turned upward and inward to embrace the rail flange and web, leaving the metal underneath the rails intact and solid.

3. A metallic railroad-tie rolled or forged, as described, with two upward-projecting lips cut from the central portion of the tie and turned upward and inward for engaging the rail flange and web, leaving the metal underneath the rails intact and solid.

4. The combination, in a metallic railroad-tie rolled or forged in a semi-cylindrical form

with one or more upward-projecting lips cut from the tie and perforated, with means for securing the same to one or more rail ends, substantially as described.

5. A metallic railroad-tie rolled or forged in a semi-cylindrical form, with two projecting lips forming fish-plate joints perforated and cut from the central portion of the tie and bent upward and inward to engage the opposite sides of the rail for securing the rail ends, with means for holding the two lips in contact with the opposite sides of the rail, whereby a fish-plate joint is formed, substantially as described.

6. A metallic railroad-tie rolled or forged, as described, with one or more upward projecting lips cut from the tie bent upward and inward and perforated, with means for securing the lip to the ends of the rails, whereby the same may be held rigidly.

7. A metallic railroad-tie rolled or forged, as described, with two upward-projecting lips cut from the tie and turned upward and inward, with one or more perforations therein for forming a fish-plate joint, whereby the opposite flanges of rails may be rigidly held, substantially as described.

In witness whereof I have affixed my signature in presence of two witnesses.

CHARLES H. SAYRE.

Witnesses:

EDWIN H. RISLEY,
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