(No Model.)

J. A. GREEN.

METALLIC TIE AND RAIL FOR RAILROADS.

No. 434,542. Patented Aug. 19, 1890.

FIG. 3.

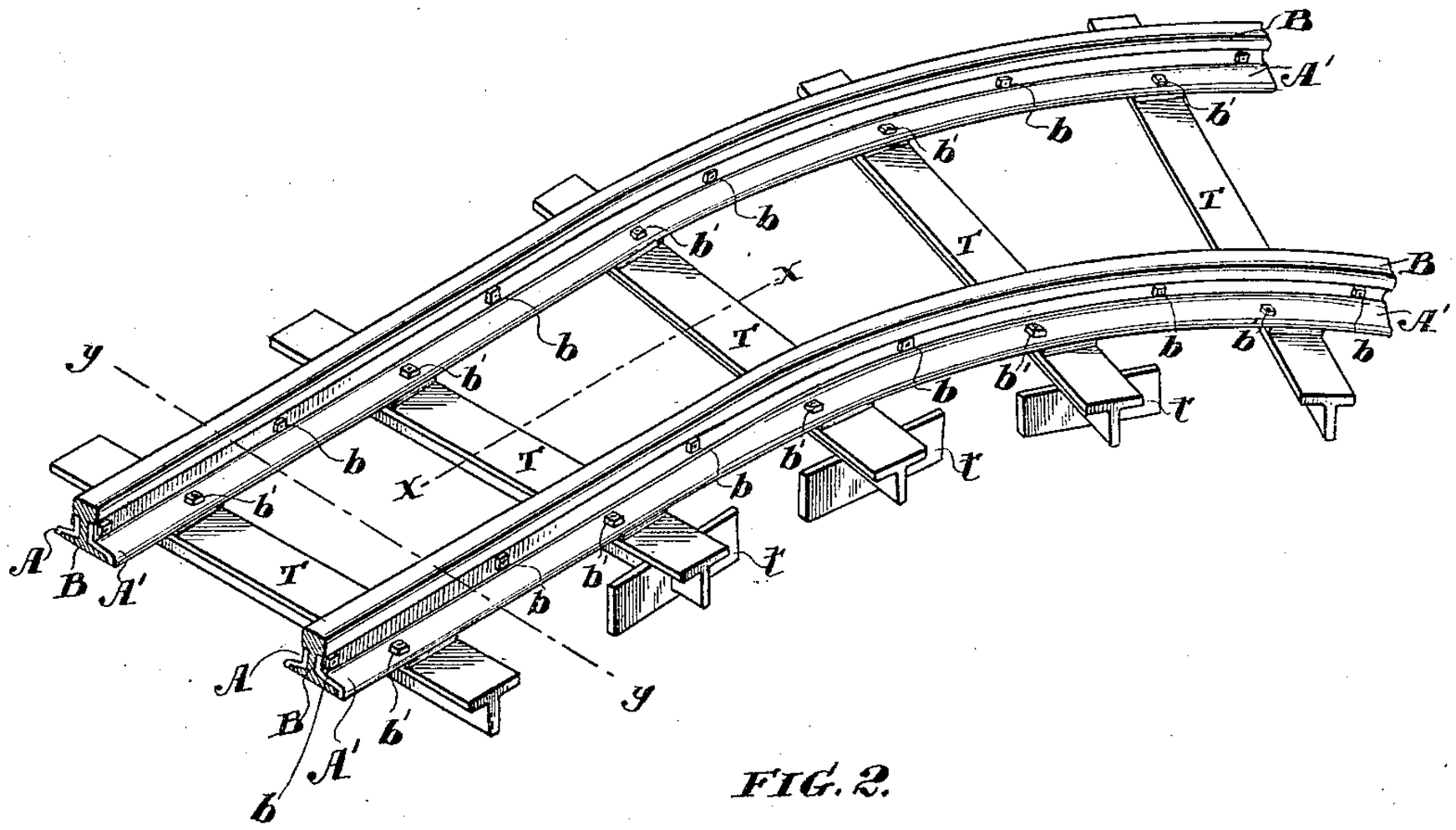


FIG. 2.

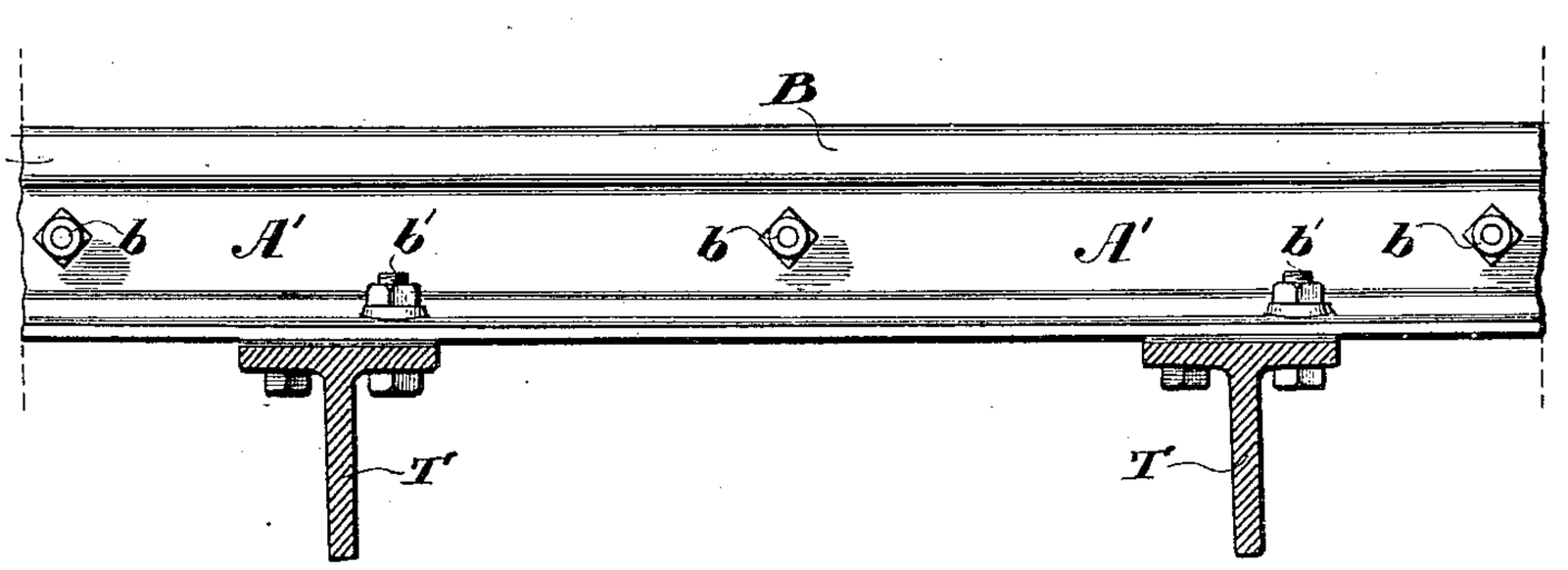
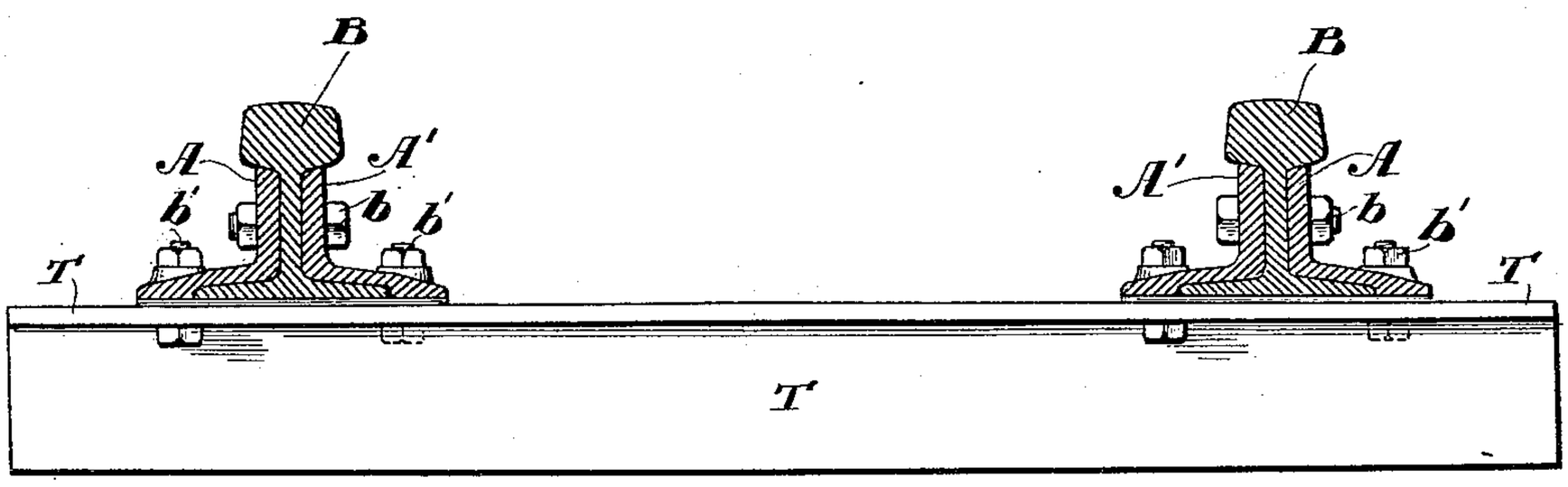


FIG. 1.



WITNESSES:

Reese M. Fleischmann

J. Henderson

INVENTOR:

James A. Green,

By his Attorney

Horace Pettit

UNITED STATES PATENT OFFICE.

JAMES A. GREEN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS TO THOMAS McDONOUGH AND LEWIS McDOWELL, BOTH OF SAME PLACE.

METALLIC TIE AND RAIL FOR RAILROADS.

SPECIFICATION forming part of Letters Patent No. 434,542, dated August 19, 1890.

Application filed March 19, 1890. Serial No. 344,463. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. GREEN, of the city of Philadelphia, and State of Pennsylvania, have invented a certain new and useful Improvement in Metallic Ties and Rails for Railroads; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification.

My invention has relation to railroad rails and ties; and it consists in a railroad-track composed of two rails and metallic ties, each of the said rails consisting of substantially three longitudinal sections, and each having a center T-piece resting upon the metallic ties for supporting the weight of the train passing thereon, and two longitudinal metallic supporting and securing plates provided on each side of the said center T-piece throughout its entire length, which said plates are bolted to the metallic ties and secured together to the center T-piece by horizontal bolts, as hereinafter particularly described.

The object of my invention is to provide a safe and secure system of rails for railroads in combination with metallic ties, which may readily and easily be secured thereto, at the same time forming a most durable system of railroad.

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

Figure 1 is a cross-sectional view of the rails bolted to the metallic tie. Fig. 2 is a longitudinal view of rail, showing the metallic ties in cross-section. Fig. 3 is a perspective view of my improved combined rail and ties on a curve, showing short longitudinal sections secured to the ends of some of the ties, for purposes hereinafter described.

A A′ represent the longitudinal guard-rails or supporting-plates secured to either side of the center T-piece or T-rail B, and firmly fitted and secured against the neck of the rail on either side thereof and over the foot of the T-piece, the whole being bolted together by the bolts *b*, and secured to the metallic tie T by means of the bolts *b′*. The set of two rails is in this manner secured firmly to the metallic tie T near the ends thereof at the usual distance apart.

In my improved combined rail and metallic tie great strength is obtained in the combination described by reason of the construction described, and the liability of the rails spreading is reduced to a minimum.

The strength of the rail is greatly augmented by the construction of the longitudinal supporting-plates A A′, which supporting-plates extend and are provided along the entire length of the rail. The T-rail itself is not directly secured to the tie, but indirectly through the medium of the supporting-plates A A′, which provide a broader base than the foot of the T-rail and rigidly clamp the rail to the tie.

I preferably employ a metallic tie having the shape of a T, which allows the stem to be buried in the ballast or road-bed, and of a broad cross-surface, upon which the rail may rest and be secured. At the same time by this construction the bolts *b′* may be readily inserted through the head of the tie from below before being passed through the shoe of the supporting-plate and secured by the nut turned on the screw-thread from above. I also provide near the ends of the metallic tie, when desired, a short cross-section *t*, as shown in Fig. 3, to prevent the tie T and the rails secured thereon from shifting from side to side where there is any lateral strain, as in a curve.

The principal merit in my invention resides in the great strength which is obtained in the combination, the rails composed of the combined parts described secured together by the bolts *b* being much stronger and more capable of resisting great strain than a rail in one piece of the size of the combined parts, and the method of securing the combined rail to the tie renders it immovable on the tie and capable of resisting any force which the securing-bolts *b′* can withstand. It will be seen that the longitudinal guards or supporting-plates A A′, upon which practically there is no wear, may be used for new T pieces or rails B, as the old ones may from time to time wear.

Having thus described my invention, what

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

1. A railroad-track consisting of two rails and metallic ties, each of said rails consisting of substantially three longitudinal sections, each rail having a center T-piece resting upon the metallic ties and supporting the direct weight of the train passing thereon, and two longitudinal metallic supporting and securing plates of a thickness about equal to that of the neck of the center T-piece and provided on each side of the said center T-piece throughout its entire length underneath the head of the said center T-piece, which said plates are bolted to the metallic ties and secured together to the center T-piece by horizontal bolts, substantially as hereinbefore set forth and described.

2. A railroad-track having two rails and metallic T-iron ties, to which the said rails are secured at the proper distance, each of said rails composed of three longitudinal sections secured together and to the metallic T-iron tie—viz., a center rail with base resting upon said metallic ties, metallic securing-plates A A′, each of a thickness about equal to that of the neck of the center T-rail secured on each side thereof underneath the head of said rail for the purpose of strengthening and supporting the same, said sections secured together by transverse bolts *b*, in the manner substantially as hereinbefore set forth and described.

3. A railroad-track composed of metallic T-shaped ties, two rails secured to said metallic tie by bolts *b′*, each of said rails composed of a center T-rail B, with its base resting upon said metallic tie, and narrow longitudinal securing-plates A A′, extending the entire length of said center rail B underneath the head thereof, said plates secured to said metallic tie, as described, securing and supporting said center rail B, the sections of each of said respective rails of the said track secured together by transverse securing-bolts *b*, substantially as described.

4. A railroad-track having two composite rails, each having a broad base or securing-flange and a substantially straight vertical neck or supporting-rail proper, each of said rails composed of three longitudinal metallic sections B A A′, said sections secured together by transverse bolts *b*, forming a substantially solid vertical rail, the line of said securing-plates in cross-section being within the line of the head of the rail, as described.

5. A railroad-track composed of metallic T-shaped ties T, two rails secured to said metallic ties by bolts *b′*, each of said rails composed of a center T-rail B, with its base resting upon said metallic tie, and longitudinal metallic securing-plates A A′, extending the entire length of said center rail B, said securing-plates in cross-section being underneath and within the lines of the head of the rail B, said plates secured to said metallic tie, as described, securing and supporting said center rail B, the sections of each said respective rails of the said track secured together by transverse securing-bolts *b*, and cross-pieces *t*, secured to the metallic tie beneath the bottom of the rail and transversely to the line of the tie, substantially as hereinbefore set forth and described.

In witness whereof I have hereunto set my hand this 18th day of March, A. D. 1890.

JAMES A. GREEN.

Witnesses:

WM. L. NEVIN,

HORACE PETTIT.