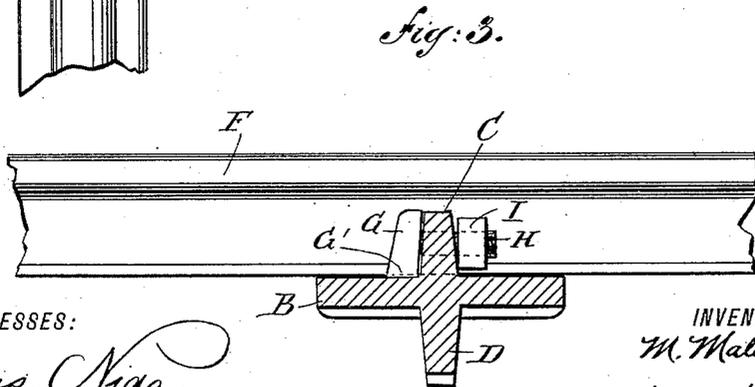
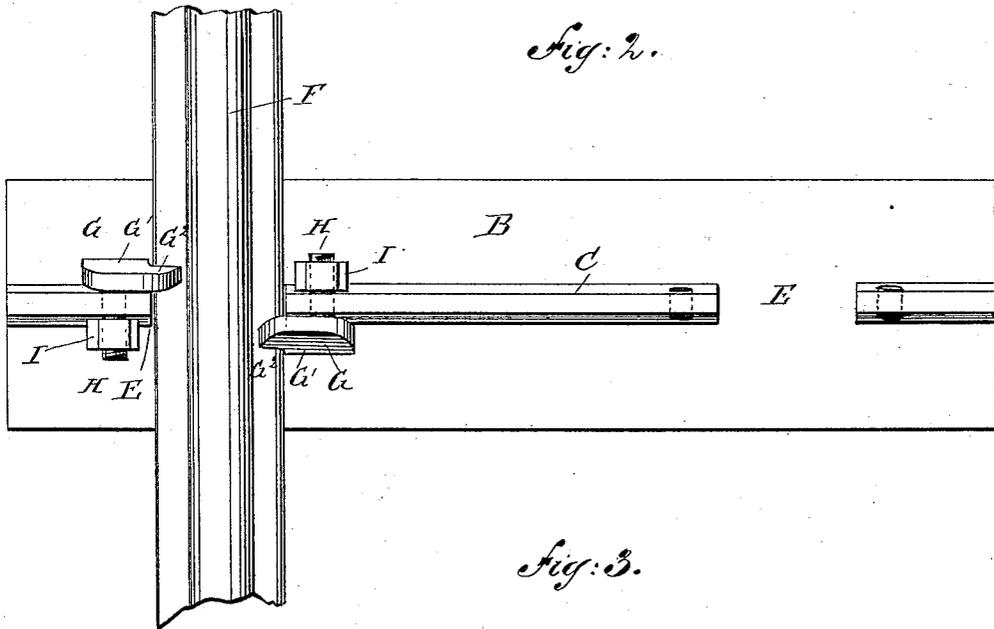
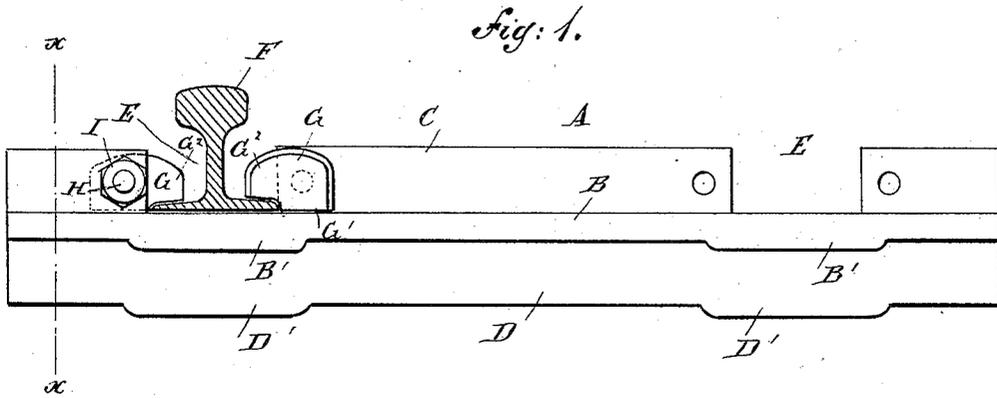


(No Model.)

M. MALONEY.  
RAILROAD TIE.

No. 395,447.

Patented Jan. 1, 1889.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

MICHAEL MALONEY, OF IRONTON, OHIO.

## RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 395,447, dated January 1, 1889.

Application filed March 19, 1888. Serial No. 267,642. (No model.)

*To all whom it may concern:*

Be it known that I, MICHAEL MALONEY, of Ironton, in the county of Lawrence and State of Ohio, have invented a new and Improved Railroad-Tie, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved metallic railroad-tie, which is very simple and durable in construction, permits an easy placing or removing of the rail, and very securely holds the rail in place.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of the improvement with one rail in place. Fig. 2 is a plan view of the same, and Fig. 3 is a sectional end elevation of the same on the line *x x* of Fig. 1.

The improved railroad-tie A is made of metal, preferably of rolled iron or Bessemer steel, having a cross-shaped cross-section. The horizontal flanges B of the railroad-tie A are adapted to rest on the bed of the railroad-track, and from the middle of the flanges B extends upward a flange, C, and opposite this flange C, extending downward, is the flange D, which also passes into the bed of the railroad-track. In the flange C are formed two openings, E E, sufficiently large to permit the bases of the rails F to pass into said openings, so that the bases of the said rails rest on top of the flanges B. On the under side of the latter, in line with the openings E, are formed the offsets B', and like offsets D' are formed on the lower edge of the flange D, also in line with the openings E. The offsets B' and D' on the railroad-tie A prevent a sidewise displacement of the tie, as the said offsets embed themselves firmly in the bed of the railroad-track.

The rails F are held in place on the tie A by means of the heads G, of bolts H, passing through the top flange, C, and each secured to the same by a nut, I, preferably of hexagon shape. The heads G of the bolts H are each provided with a straight bottom edge, G', which rests on top of the flange B, and said

head G is also provided with an offset, G<sup>2</sup>, slightly beveled and fitting on the top of the base of the rail F. The inner face of the head G rests against the side of the flange C.

The metallic railroad-tie A is placed on the substantial bed of the railroad-track with the bolts H and their heads G removed. The rails F are then placed in the openings E with the bases of the rails resting on top of the flanges B, as is plainly shown in the drawings. The bolts H are then inserted through their respective openings in the flange C, so that the projections G<sup>2</sup> of each head G rest on top of the base of a rail, F. The nuts I are then screwed on the outer ends of the bolts H and against the flange C, so that the heads G are securely held on the railroad-tie A by being pressed against the side of the flange C, their bottom edges G' resting on top of the flanges B. The projections G<sup>2</sup> then fit snugly on the top of the base of the rail F, whereby the latter is securely held in place on the railroad-tie A.

It is understood that two bolts, H, are used for each rail F on each tie A, and the said two bolts H are preferably placed in opposite directions to each other, as is plainly shown in Figs. 1 and 2.

It will be seen that the metallic railroad-tie A is very strong and simple in construction, and when embedded in a stone or gravel ballasted track will last a long time.

It will further be seen that the two rails forming the track are prevented from slipping sidewise as the bases of the rails rest against the ends of the flange C in the openings E, at the same time being prevented from moving longitudinally by the heads G of the bolts H. It will further be seen that the heads G of the bolts H are free from strain, and hence are not liable to break, or the nuts I on the said bolts to work loose. The horizontal flanges B are designed to give strength to the tie and at the same time hold it firmly on the ballasted road-bed, and also to prevent longitudinal moving or action of the entire track. The top flange, C, strengthens the tie and prevents spreading of the track-rails, and at the same time serves to hold the bolts H, which fasten the rails to the railroad-tie.

It will also be seen that the openings E on the railroad-tie A prevent the rails from sag-

ging or inclining to one side, thereby protecting the rail from splitting and being sheared by the action of the car-wheels.

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

1. The combination, with a metallic railroad-tie made cross shape in cross-section and having openings in its top flange and offsets on its horizontal flanges, and a downwardly-extending flange, of a bolt secured to the top flange and having a head projecting on the

base of the rail, substantially as shown and described.

2. A railroad-tie made cruciform in cross-section and formed with offsets B' D' on the lower face of its flanges B and on the lower edge of its flange D, the upper flange, C, having rail-receiving recesses, substantially as set forth.

MICHAEL MALONEY.

Witnesses:

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