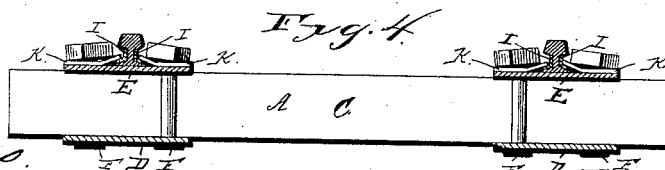
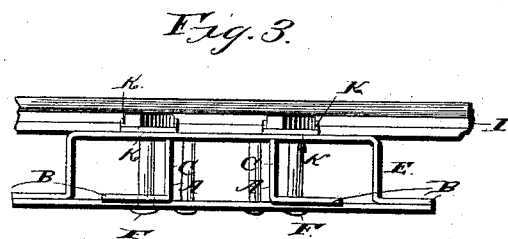
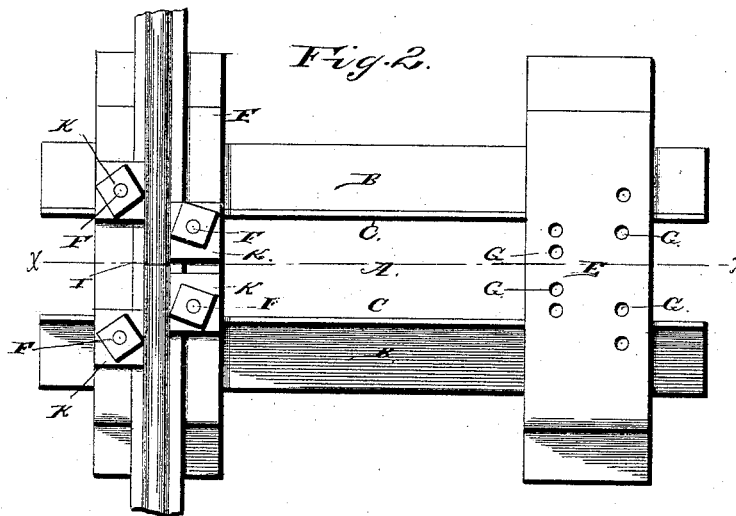
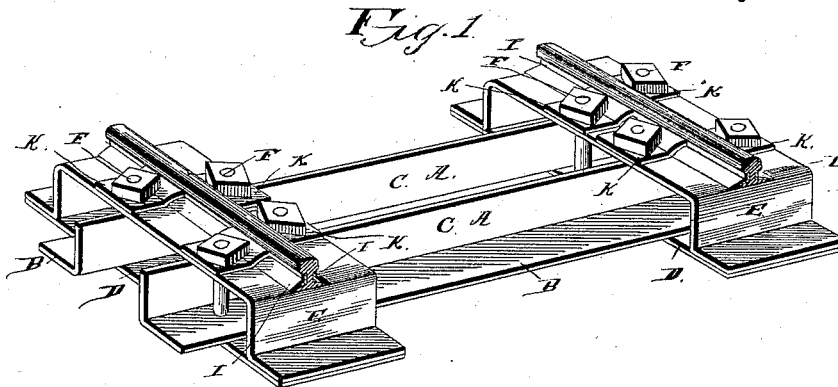


(No Model.)

D. Y. WILSON.
RAILWAY CROSS TIE.

No. 385,492.

Patented July 3, 1888.



Witnesses,

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UNITED STATES PATENT OFFICE.

DAVID Y. WILSON, OF GUM TREE, ASSIGNOR OF ONE-HALF TO ROBERT L. McCLELLAN AND S. PARK RUTHERFORD, OF COCHRANVILLE, AND JOHN ESSIG AND SOBACIUS CROMLEIGH, OF PARKESBURG, PENNSYLVANIA.

RAILWAY CROSS-TIE.

SPECIFICATION forming part of Letters Patent No. 385,492, dated July 3, 1888.

Application filed March 8, 1888. Serial No. 266,510. (No model.)

To all whom it may concern:

Be it known that I, DAVID Y. WILSON, a citizen of the United States, residing at Gum Tree, in the county of Chester and State of Pennsylvania, have invented a new and useful Improvement in Railway Cross-Ties, of which the following is a specification.

My invention relates to an improvement in railway cross-ties; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a cross tie embodying my improvement, showing the manner of securing the track-rails thereto. Fig. 2 is a top plan view of the same, one of the track-rails being removed. Fig. 3 is an end elevation of the same, and Fig. 4 is a vertical sectional view taken on the line *xx* of Fig. 2.

A represents a pair of angle-bars of suitable length, which have their bottoms B and inner sides, C, arranged at right angles to each other. The said angle-bars are arranged parallel and at a suitable distance apart—say from twelve to eighteen or more inches.

D represents a pair of base-plates, which are arranged transversely under the angle-bars A, near the ends of the latter, and are of suitable length and width. The ends of the said base-plates project beyond the outer sides of the angle-bars, and said base-plates form bearing-surfaces of considerable area at the ends of the tie, and thereby maintain the latter firmly on the railway-bed and serve to prevent the same from sinking when a train passes over it.

E represents a pair of bridge-plates, which are arranged transversely over the upper edges of the vertical inner sides of the angle-bars, and are of suitable length and width and have their ends turned down and secured upon the projecting ends of the base-plates D. In the said base-plates and bridge-plates are made aligned vertical openings, which are arranged on the inner and outer sides of the vertical inner sides of the angle-bars, and through the said openings and through similar openings which are made in the lower sides of the an-

gle-bars extend bolts F, the function of the said bolts being to clamp the base and bridge plates firmly on the ends of the angle-bars, and thereby secure the same together. On those ties which are to be used for laying curves the bridge-plates E are further provided with openings G, which are arranged between the openings hereinbefore described, for the purpose to be hereinafter set forth.

The method of securing the track-rails to the cross-ties is as follows: The meeting ends of the track-rails are arranged over the bridge-plates, so that the joint between the rails is about midway between the angle-bars, and fish-plates I, of the usual construction, are bolted to the meeting ends of the rails, thereby connecting the latter firmly together, and clips K are secured on the bridge-plates by the same bolts which serve to secure the bridge and base plates and the angle-bar together, the said clips having their inner sides bearing upon the base-flanges of the rails or fish-plates. Suitable locking devices may be employed for locking the nuts to the said bolts, so that the parts of the tie and the ends of the rail will not become loose. These nut-locking devices are not illustrated nor more fully described herein, as they may be of any of the well-known forms and form no part of my present improvement.

It will be observed by reference to the drawings that an open space is left in the center of the cross-bars, between the angle-bars and the base and bridge plates thereof, and, further, that the base-plates serve to normally support the tie at a slight distance above the ground, so that all the pressure occasioned by the weight of passing trains is exerted on those portions of the tie which are immediately over the base-plates, the intervening or central portion of the tie being entirely relieved of pressure. By this means the tie is caused to set solidly on the road-bed and is prevented from rocking thereon.

The usual ballast employed on railroad-beds serves to prevent the tie from moving longitudinally or laterally and maintains the same rigidly in place.

When a curve is formed in a railway-track, the ties which support the said curved portion of the track are necessarily arranged radially, with their inner ends nearer together than their outer ends, and the track-rails are necessarily caused to lie upon the ties in a slightly-oblique direction instead of at right angles thereto, as when the track is straight. On very short curves this oblique angle formed by the rails on the bridge-plates of my tie may be such as to prevent the clips hereinbefore described from bearing snugly against the sides and bases of the rail, when said clips are secured on the upper ends of the bolts F, and in order to obviate this difficulty I provide the bridge-plates with the openings G, hereinbefore described, so that the clips may be secured to the said bridge-plates by separate bolts, and caused to bear snugly against the base-flanges and sides of the rails.

In manufacturing my improved railway-ties I propose to use the common bridge-irons for the bars A, and to use boiler-plate iron for the base and bridge plates; but said angle-bars and base and bridge plates may, if preferred, be made of cast-iron without departing from the spirit of my invention. A railway-tie thus constructed is cheap and simple, and is of maximum strength and minimum weight, and, owing to the width of the space between the bars A and the wide bearing-surfaces for the rails formed by the bridge-plates E, my improved ties may be arranged farther apart when building a railroad than the ties now in common use without injury to the solidity or strength of the track.

When the cross-tie is to be used in a railway-switch, a third base-plate and bridge-plate will be bolted to the upper and lower sides of the bars A, at the center of the same, or at any other desired point in the length of the tie, so as to enable the side-track rails to be secured also on the tie, as will be readily understood.

Having thus described my invention, I claim—

1. The combination of the parallel angle-bars A, having the horizontal lower sides, B, and vertical inner sides, C, the base-plates arranged transversely under the ends of the angle-bars, the bridge-plates arranged transversely over the ends of the angle-bars, and having their ends bent downward and outward and bearing on the projecting ends of the base-plates, and the bolts F, extending through the base and bridge plates and through the lower sides of the bars, and securing said bars and base and bridge plates together, substantially as described.

2. The combination of the parallel bars A, arranged at a suitable distance apart, the base-plates arranged transversely under the ends of said bars, the bridge-plates arranged transversely over the ends of said bars and the bridge-plates, the bolts F, connecting the said base and bridge plates together and clamping the same to the bars A, the said bridge-plates being further provided with the openings G between the bolts, for the purpose set forth, substantially as described.

3. The combination of the parallel angle-bars A, arranged at a suitable distance apart, the base-plates arranged transversely under the ends of said bars, the bridge-plate arranged transversely over the ends of said bars, the bolts connecting the base and bridge plates together and bearing against the opposing sides of the vertical portions of the angle-bars, and the bolts connecting the base and bridge plates together bearing against the outer sides of the vertical portions of the angle-bars, and extending through the horizontal or base portions of said angle-bars, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

DAVID Y. WILSON.

Witnesses:

J. H. SIGGERS,

R. J. MARSHALL, Jr.