

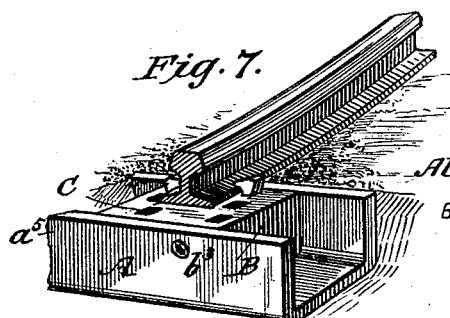
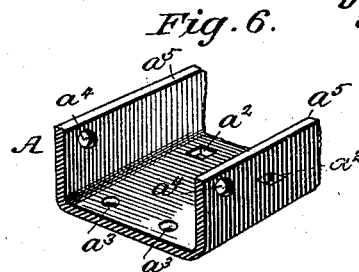
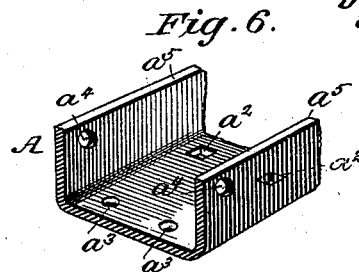
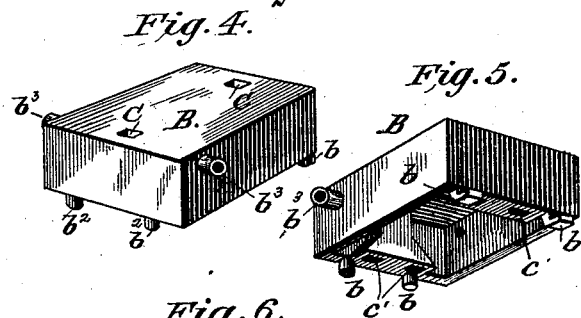
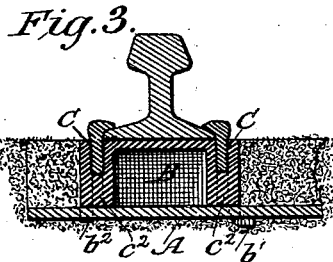
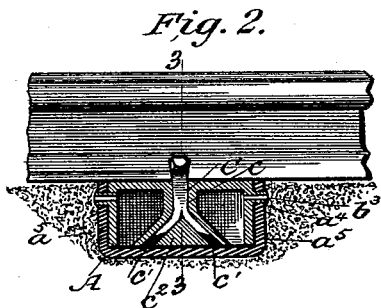
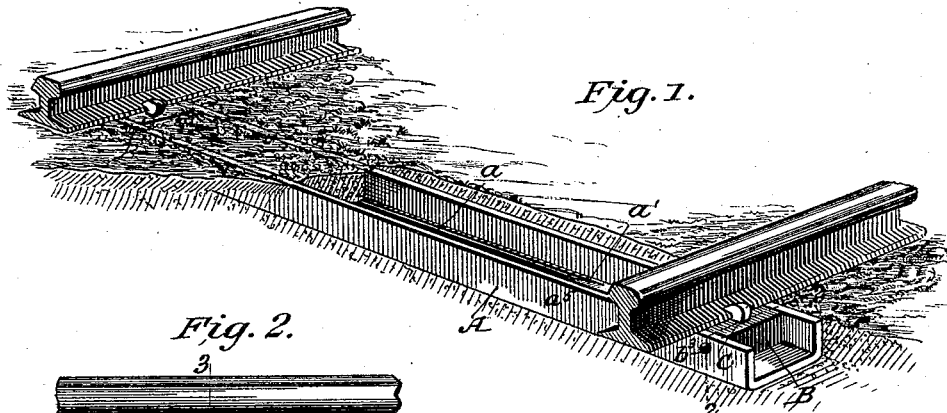
(No Model.)

2 Sheets—Sheet 1.

A. E. ROBERTS.
METALLIC RAILROAD TIE.

No. 494,029.

Patented Mar. 21, 1893.



WITNESSES:
Fred G. Dieterich
W. D. Blondel

INVENTOR:
Albert E. Roberts
BY *Wm. T. G.*
ATTORNEYS

(No Model.)

2 Sheets—Sheet 2.

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Fig. 8.

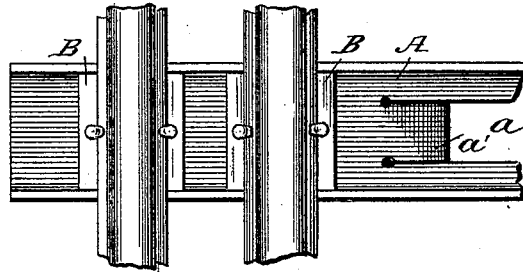


Fig. 9.

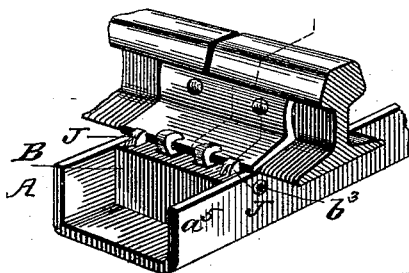


Fig. 10.

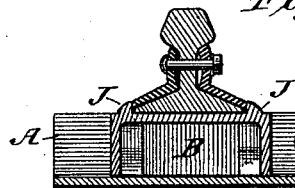


Fig. 11.

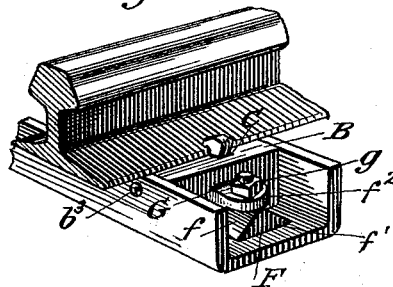
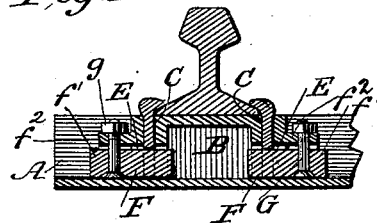


Fig. 12.



WITNESSES:
Fred G. Dieterich
W. D. Blondel

INVENTOR:
Albert E. Roberts
BY *Munn & Co.*
ATTORNEYS

UNITED STATES PATENT OFFICE.

ALBERT E. ROBERTS, OF NORWALK, OHIO.

METALLIC RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 494,029, dated March 21, 1893.

Application filed March 2, 1892. Serial No. 423,805. (No model.)

To all whom it may concern:


Be it known that I, ALBERT E. ROBERTS, residing at Norwalk, in the county of Huron, State of Ohio, have invented a new and Improved Metallic Railroad-Tie, of which the following is a specification.

My invention has for its object to provide a strong and enduring railroad tie that will absolutely prevent the spreading of the rails, and which can be readily used at all points where cross ties are needed.

It furthermore has for its object to provide a tie of this character which can be manufactured at a small cost, which can be quickly placed in position, and in which the spikes as they are driven have their ends automatically clamped to the seat block so as to prevent drawing.

With other minor objects in view, all of which will hereinafter be fully set forth, my invention consists in the peculiar combination and arrangement of parts, all of which will hereinafter be fully described in the specification and then pointed out in the claims, reference being had to the accompanying drawings, in which

Figure 1 is a perspective view of my improved cross tie, as in use. Fig. 2 is a sectional side elevation taken on the line 2—2 of Fig. 1. Fig. 3 is a cross section thereof taken on the line 3—3, Fig. 2. Figs. 4 and 5 are perspective views of the seat block. Fig. 6 is a detail perspective view of a portion of the tie or base plate. Fig. 7 is a perspective view of one of the seat blocks used to secure the curved rail sections. Fig. 8 illustrates the application of my invention in a manner hereinafter specifically referred to. Fig. 9 is a perspective view and Fig. 10 a cross section of the seat block constructed for use at the meeting ends of the rails. Figs. 11 and 12 are respectively a perspective, and a sectional view, of a modified form of the seat block hereinafter referred to.

Referring to the accompanying drawings, A indicates the base or tie bar which is formed of a steel plate  shape in cross section, it being longitudinally apertured as at a, and formed with downwardly and inwardly bent flanges a' whereby it is the more securely held from longitudinal movement when properly

balanced. Near the outer ends this base plate has apertures a² and a³ in its bottom and apertures a⁴ in its side flanges near the top, and on such ends are held the rail or seat blocks B, such blocks being secured on such base plates preferably in the manner shown, which consists in providing the inner ends of the blocks with locking lugs b, which are passed through the apertures a², the horizontal extensions b' of which project under the base plate (see Fig. 3) and with stud projections b², which fit the apertures a³, such connections preventing sidewise and longitudinal play of the seat blocks on the base plate.

As a simple and effective means for holding the seat blocks rigid and from vertical movement such blocks are formed with lateral lugs b³, which are adapted when the side flanges a⁵ of the plate A are sprung out, to be fitted into the apertures a⁴, their outer ends being upset and riveted, after the said side flanges resume their normal position against the seat blocks.

In practice it is preferred to form the lugs b³ with central apertures which extend through the ends of the blocks B, which are hollow as shown, and preferably formed of malleable cast metal. By providing the apertures as stated nutted bolts can be passed through such apertures to hold the blocks to the base plates, the bolt fastenings being however only necessary after the rivet heads of the lugs have been worn away or after the spring clamp fastening formed by the side flanges of the base plate should accidentally become loose or defective. It is obvious however, that other equivalent mechanical devices may be employed for holding the blocks from the several movements stated without departing from the present invention, and I therefore do not limit myself to the precise arrangement of the locking parts as shown.

It will be noticed by reference to Figs. 2 and 3 that the seat block has its spike apertures C formed of a straight upper portion c and reduced downwardly extending forked portions c' c', which project diagonally at right angles to each other, whereby a fixed angular abutment c² is formed, the apex of which projects up centrally of the straight portion c of the spike hole.

As shown in Figs. 2 and 3 the abutments c^2 are cast integral with the ends of the seat block, but in some cases especially so at curves, crossings or at stations it is desirable to form such abutments of detachable sections adjustably held so as to be brought into a more tight frictional contact with the forked ends of the spike. To this end the seat block is formed with a Λ groove E in its lower face, (see Figs. 11 and 12), in which are held the Λ abutment blocks F, the tapering edges f of which are parallel with the angular faces of the Λ groove E, the intermediate spaces forming the spike aperture portions in which the split ends of the spike fit when forced in the spike aperture; and to form a tight clamp for such ends, bolts G are secured to the projecting ends f' of the blocks F, the upper ends of which pass through apertured lugs f^2 on the seat block and are provided with nuts g, which nuts when screwed on the threaded ends of such bolts G serve to draw up the abutments F against the split ends of the spikes, thereby absolutely preventing any danger of such spikes being drawn out by the constant wear and jar of the several parts. It will also be noticed that by providing an abutting member centrally of the spike aperture, a simple and effective means is provided which serves to spread the ends of the split spike and force it into the diagonal aperture extensions thereby thoroughly clamping them and providing an increased frictional surface therefor.

In Fig. 7 I have shown one of my seat blocks formed with a series of spike apertures which are arranged step like, in pairs, such construction admitting of their ready use for attaching the curved rail sections thereto in a manner clearly understood from the drawings.

In Fig. 8 I have shown the parallel rails of two track sections secured to the tie plate, a separate seat block being used for each rail. In this connection it should be stated that at crossings, switches and the like, the tie plate A may be made of a sufficient length to extend under all of the track sections switches &c., it being formed with a sufficient number of apertures a^2 a^3 a^4 , whereby the required number of seat blocks can be readily attached thereto.

By constructing a railroad tie in the manner described and shown, a simple and very effective tie is provided as the \square bar effectually serves to hold the seat blocks from spreading, dispensing as it were with the use of any additional tie rods or braces.

When used at the meeting ends of the rails, the seat block is formed with integral lugs J J, which lap the lower ends of the fish plates and serve to hold them up against the head of the rail, effectually serving to prevent the usual rattling noise incident to most fish plates, the lower ends of such plates being forced into a tight frictional contact with the

said lugs, when the spikes are driven, which hold the rails and plates to the seat block in a manner clearly understood from Figs. 9 and 10 of the drawings.

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

1. A metallic railway tie, having a metal seat block provided with spike sockets formed at their lower ends with angular enlargements, and angular detachable abutments projected into such enlargements, substantially as and for the purpose described.

2. In a metallic railway cross tie, in combination, a \square shaped cross tie or base plate having lock apertures, a metal seat block having lock studs engaging such apertures, and formed at its opposite ends with spike sockets bifurcated at their lower ends, substantially as shown and described.

3. In a metallic cross tie, the combination with the cross tie or base plate, of a metal seat block having spike sockets at its opposite ends ending at their lower ends in angular enlargements extending through the sides of the seat blocks and removable angular abutment members adapted to be fitted in such enlargements substantially as and for the purpose described.

4. A metallic railroad tie provided with a seat block having spike apertures formed at their lower ends with angular enlargements, and angular abutments fitting in such enlargements and vertically adjustable therein, as and for the purpose described.


5. In a metallic railroad tie, the combination with a base plate, of seat blocks secured therein having longitudinal Λ openings in their lower faces, spike apertures opening at their lower end into the Λ openings, the detachable and adjustable Δ blocks fitting in such Λ openings and means for adjustably securing such Δ blocks, as and for the purpose described.

6. In a metallic railroad tie the combination with the \square shaped base plate, of a seat block movable longitudinally on said plate and locking devices for holding such block to its adjusted position on said \square plate, substantially as shown and described.

7. The combination in a metallic railroad tie, with a \square shaped base plate having apertures in its side flanges, of seat blocks held between such flanges and formed with lateral lugs adapted to fit the apertures in the said side flanges when spread apart, substantially as and for the purpose described.

8. In a metallic railroad cross tie, the combination with the rail, the fish plates and the metallic cross tie or base plate, of a hollow seat block having spike apertures at its opposite ends and projecting lugs at such ends arranged to lap the lower edge of the tie and fish plates, and the spikes, all arranged substantially as shown and described.

9. In a metallic railway tie, the combina-

tion with the  shape cross tie having a series of apertures in its sides and bottom and the rail, of a hollow seat block having projecting lugs on its sides and lower edges adapted to fit the apertures in the said cross tie and formed at its opposite ends with spike apertures forked at their lower ends, and the split spikes all arranged substantially as and for the purpose described.

ALBERT E. ROBERTS.

Witnesses:

FRED G. DIETERICH,
SOLON C. KEMON.