

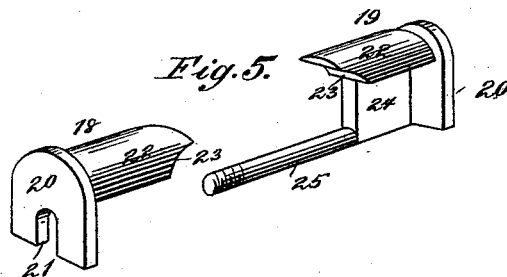
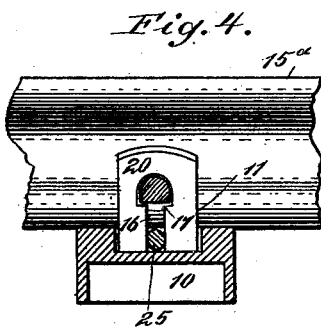
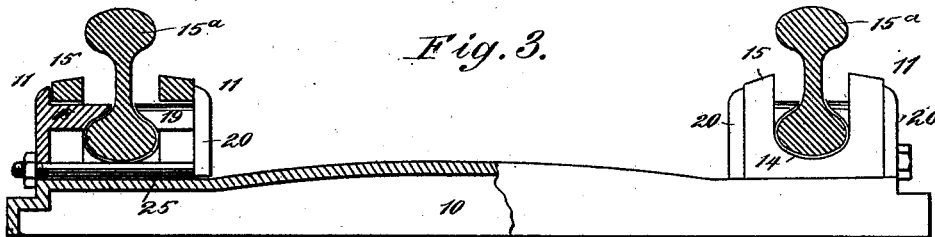
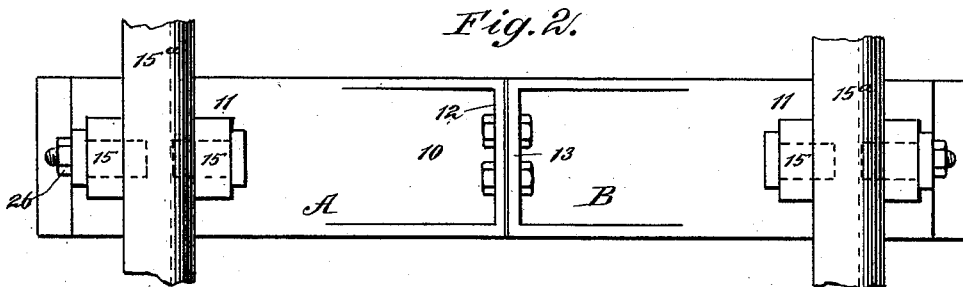
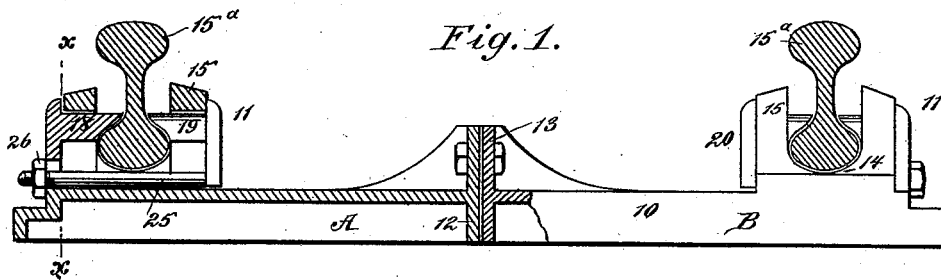
(No Model.)

2 Sheets—Sheet 1.

I. BROWN.
RAILROAD TIE AND CHAIR.

No. 420,674.

Patented Feb. 4, 1890.



WITNESSES:

W. M. Twitchell.
C. Sedgwick

INVENTOR:

I. Brown

BY

Munn & Co.

ATTORNEYS.

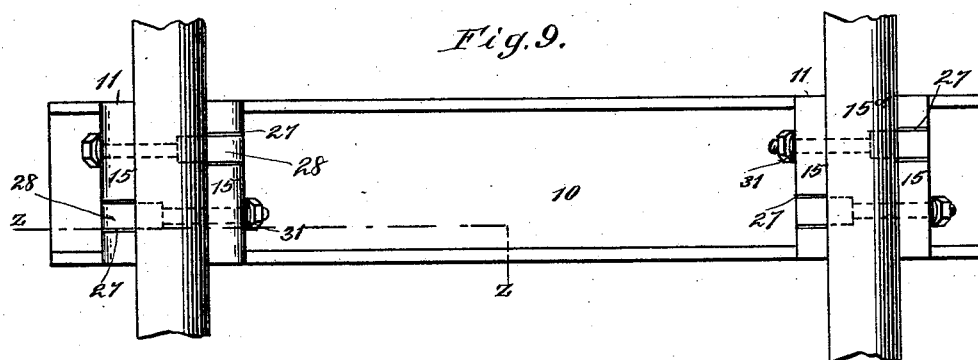
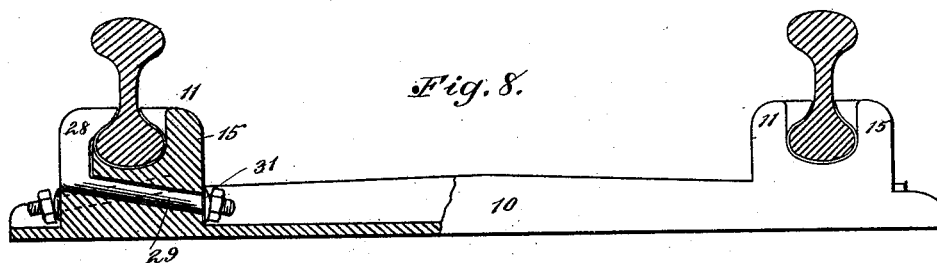
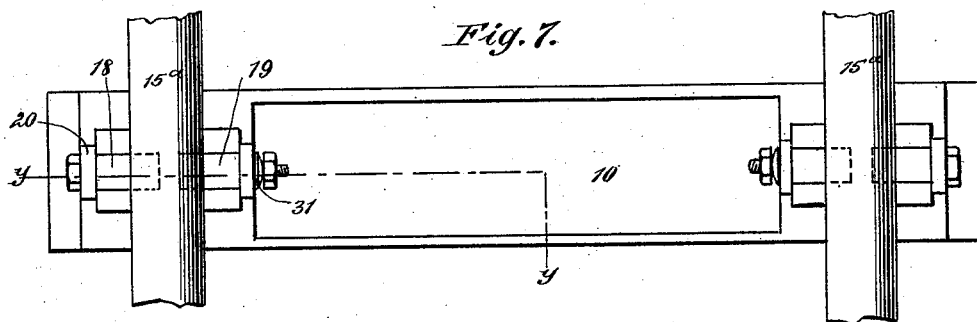
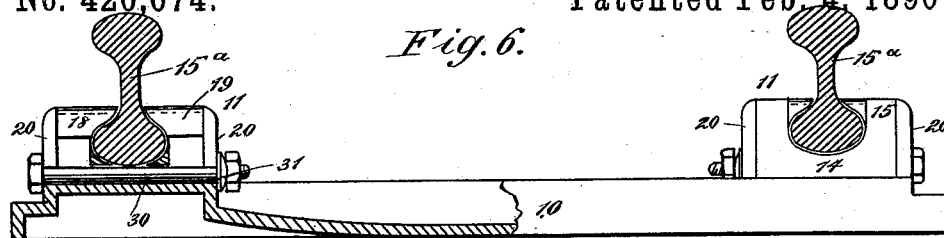
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UNITED STATES PATENT OFFICE.

ISAAC BROWN, OF SWATARA, PENNSYLVANIA.

RAILROAD TIE AND CHAIR.

SPECIFICATION forming part of Letters Patent No. 420,674, dated February 4, 1890.

Application filed April 25, 1889. Serial No. 308,573. (No model.)

To all whom it may concern:

Be it known that I, ISAAC BROWN, of Swatara, in the county of Schuylkill and State of Pennsylvania, have invented a new and Improved Metallic Railroad Tie and Chair, of which the following is a full, clear, and exact description.

My invention relates to an improvement in metallic railroad ties and chairs, and has for its object to provide a combined tie and chair of simple, light, and durable construction capable of use in connection with either T or "bull" rails.

A further object of the invention is to provide a tie and chair from which the rail may be expeditiously and conveniently removed, or wherein the tie may be as readily detached from the rail when occasion demands.

The object of the invention is also to provide a means whereby the rails may be effectually held in contact with the tie and prevented from being pushed out of gage or place.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

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

Figure 1 is a side elevation of the tie, partly in section. Fig. 2 is a plan view of the same. Fig. 3 is a side elevation of a slightly-modified form of tie. Fig. 4 is a section on line *xx* of Fig. 1. Fig. 5 is a perspective view of two opposed key-clamps adapted for insertion in the chairs and for contact with the rails. Fig. 6 is a side elevation of another modification, broken away on line *yy* of Fig. 7. Fig. 7 is a plan view of the tie illustrated in Fig. 6. Fig. 8 is a side elevation of a further modification, broken away on line *zz* of Fig. 9; and Fig. 9 is a plan view of the tie illustrated in Fig. 8.

In carrying out the invention the tie 10 and the chairs 11, which are preferably integral, are constructed of metal—for instance, cast or wrought iron—and the said tie may be made in two sections A and B, as shown in Figs.

1 and 2, or in a single piece, as illustrated in the other figures.

When made in two sections, the tie may be advantageously used in yards and in places where, owing to the close proximity of a number of tracks, it is difficult to introduce or withdraw from beneath the track a full-length tie.

In order to make the tie as light as possible consistent with the necessary strength, it is made to comprise a horizontal body portion provided at its sides and ends with a vertical flange, which body portion may be either flat, convex, or concave upon its upper face, as illustrated in Figs. 1, 3, and 6.

When the tie is made in two sections A and B, as shown in Figs. 1 and 2, the body is flat, and each section is provided with a downwardly and an upwardly extending flange 12 and 13, integral with its inner end, the said flanges of each section being held in rigid contact by bolts or their equivalents.

At each end of the tie, upon the upper face of the body, a chair 11 is formed, comprising a base-section 14, slightly raised above the body of the tie, and a post 15, projected upward from each end of the base, the distance between each two opposed posts being such as to neatly accommodate the flange of the rail 15^a.

When a T-rail is employed, the bottom of the chairs between the posts is flat, and when a bull-rail is used said surface is concaved to accommodate the cylindrical head of the rail, as illustrated. A key-hole slot 16 is produced in each post of the chair, the said slots being in longitudinal alignment and formed by intersecting an upper semicircular transverse opening with a vertical opening, as shown in Fig. 4, whereby shoulders 17 are obtained, the vertical opening extending in the form of a groove longitudinally across the base of the chair.

Key-clamps 18 and 19 are provided for insertion into the respective key-hole slots of the chairs, which clamps are illustrated in detail in Fig. 5. The clamp 18 comprises a head 20, having a slot 21 in its lower end and a horizontal body portion 22, semi-cylindrical in cross-section, integral with the inner face of the head near its upper end, the cylindrical

surface being uppermost. In the under straight face of the body at its free end a recess 23 is produced, which recessed portion, when the clamp is inserted into the chair, is adapted to contact with the flange of a T-rail and the side surface of the under head of a bull-rail, as shown in Figs. 1 and 3, the extreme free end of the clamp contacting with the web of the rail. It will be understood that the form of the recess 23 may be varied to accommodate the clamp to different styles of rails. The clamp 19 is similar in construction to the clamp 18, except that the slot in its head is omitted and a shank 24 is projected downward from the under face of the body at the rear of the recess 23, and is also integral with the head, and a horizontal rod 25 is formed integral with the lower inner edge of the shank and has a threaded extremity.

When the rail is seated in the chair, the clamp 19 is inserted into the key-hole slot of the inner post, the rod 25 being made to pass through the base-groove out through the key-hole slot in the outer post. The clamp 18 is now inserted into the slot of the outer post, and a lock-nut 26 is screwed upon the threaded end of the pin to a contact with the head of said clamp 18 until both clamps firmly bear against the rail.

If in practice it is found desirable, the rail may be made to rest upon a cushion, preferably formed of elastic material.

In order that the rail need not be raised very high to remove the tie, the posts of the chair may be so shortened that a portion of the cylindrical surface of the clamp-body will be exposed, as illustrated in Figs. 6 and 7.

In the modification illustrated in Figs. 8 and 9 the opposed posts of the chairs are provided near opposite ends with a vertical recess 27, and each recess is intersected by a diagonal bore produced in the base of the chair, as shown in Fig. 8, one bore being inclined in an opposite direction to the other. The clamps employed consist of a hook or claw-shaped body 28, adapted to clamp the flange of the rail, and a pin 29, threaded at its outer end, projected at an inclination downward from the lower end of the body. The pin of one clamp is passed down through the recess 27 in one post until the claw or hook contacts with the rail, and a nut is then screwed upon the projecting end of the pin. The other clamp is inserted in the recess in the opposed post and secured also by a nut, the pin passing down through the bore in the chair. In this form of device it will be observed that a clamp is made to bear firmly against each side of the rail at each chair.

If in practice it is found desirable, both clamps may be made similar to the clamp 18 and united by a bolt 30, independent of the clamp, as shown in Figs. 6 and 7, and a spring-washer 31 may be used in connection with the lock-nuts.

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

1. The combination of a tie provided with chairs at its ends, comprising a base and spaced recessed or slotted posts, key-clamps adapted to enter the slots or recesses of the posts and contact with the rail, and rods or bolts for locking the key-clamps in position, substantially as herein shown and described.

2. The combination, with a metal railroad-tie, of chairs integral therewith, comprising a base, and spaced, recessed, or slotted posts projected from the base, key-clamps adapted to enter the slots or recesses of the posts, and threaded rods or bolts connecting the opposed clamps of the chairs, substantially as shown and described.

3. The combination, with a tie provided with spaced and slotted posts at each end, of the key-clamps 18 and 19, each formed of a head 20 and a horizontal body portion 22, the head 20 of the clamp 18 being slotted at 21, and the clamp 18 provided with the shank 24, depending from the body portion, and the rod 25, having a screw-threaded end, projecting from said shank, substantially as herein shown and described.

4. The combination, with a metal railroad-tie, of chairs integral therewith, comprising a base having a bore therein, and posts projected from said base, provided with a key-hole slot, a clamp adapted to enter each post-slot, consisting of a head, a horizontal body secured to the head, having a recessed under face, and a bolt or pin connecting the two opposed clamps, substantially as shown and described.

5. The combination, with a metal railroad-tie, of chairs integral therewith, comprising a base having a bore therein and posts projected therefrom, the said posts being provided with a key-hole slot, a pair of key-clamps adapted to enter the post-slots of each chair, consisting of a head, a semi-cylindrical body integral with the head, having a recess upon its under face, and a bolt or threaded pin integral with one clamp and adapted to pass through the head of the other, substantially as shown and described.

6. In a combined metal tie and chair, the combination, with the sides of the chair, having aligning key-hole slots therein, of key-clamps adapted to enter said slots, consisting of a head and a semi-cylindrical horizontal body projected from the head, having a recess in its under face at its inner end, and a bolt or threaded rod uniting the two opposed clamps, substantially as shown and described.

ISAAC BROWN.

Witnesses:

JAMES LYNN,

JOHN MCGOVERN.