(No Model.) 2 Sheets—Sheet 1.

J. H. LYNCH.

RAILWAY TIE.

No. 462,717. Patented Nov. 10, 1891.

Fig. 1.

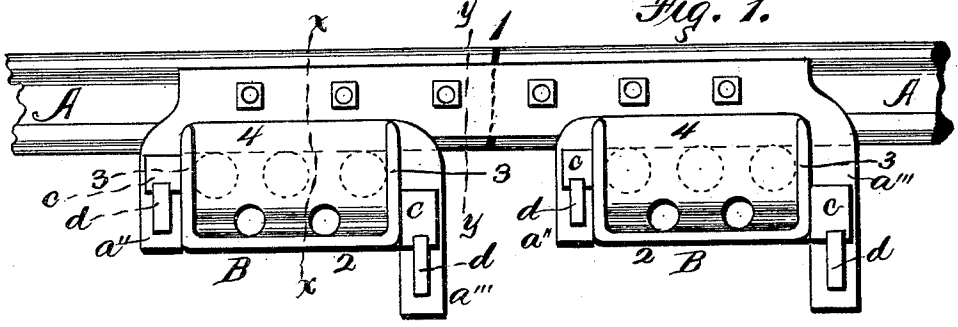


Fig. 2.

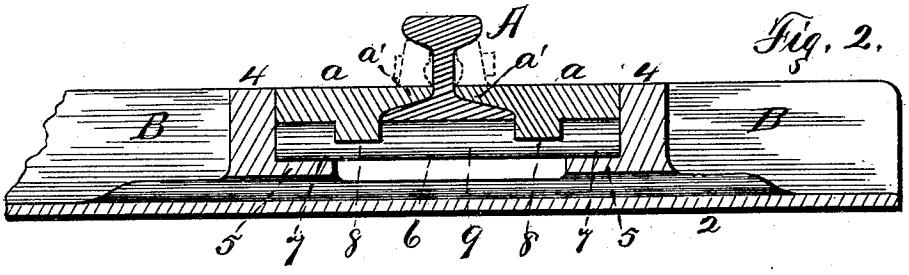


Fig. 3.

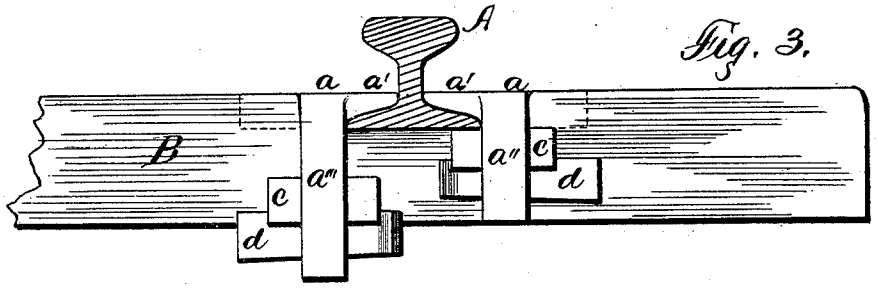
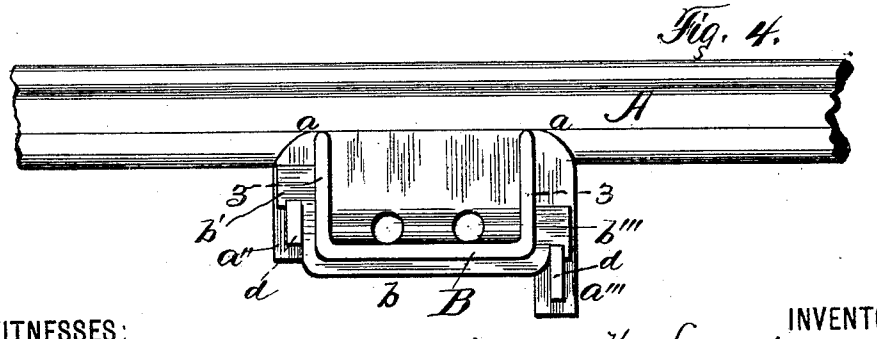


Fig. 4.



WITNESSES:
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

J. H. LYNCH.

RAILWAY TIE.

No. 462,717. Patented Nov. 10, 1891.

Fig. 5.

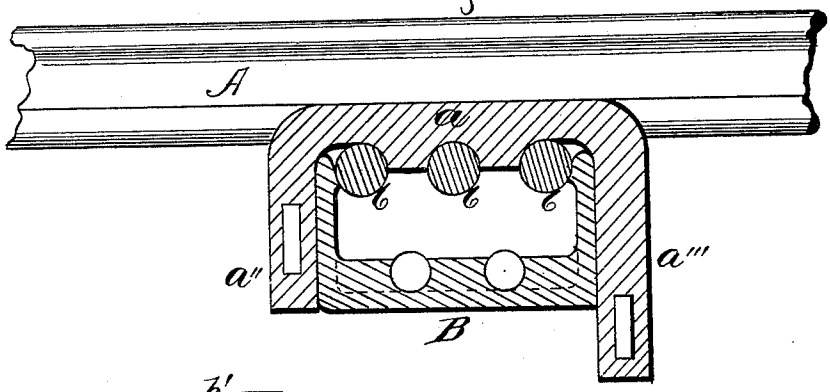


Fig. 6.

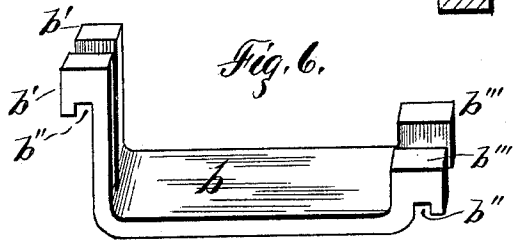
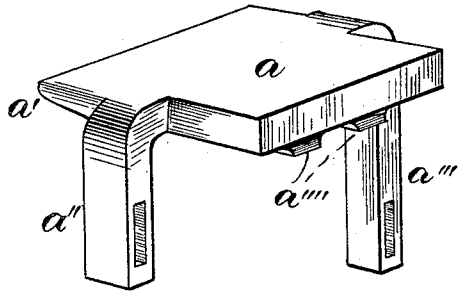


Fig. 8

Fig. 8.a.

Fig. 7.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES H. LYNCH, OF ADDISON, NEW YORK.

RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 462,717, dated November 10, 1891.

Application filed April 16, 1891. Serial No. 389,175. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. LYNCH, of Addison, in the county of Steuben, in the State of New York, have invented new and useful Improvements in Railway-Ties, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to railway-chairs and rail-fastenings designed to be used in connection with metallic ties, both to support the rail thereon and secure the rail thereto.

My object is to produce an improved tie and chair and rail-support in the tie combined with a locking mechanism to securely hold the rail in place without the aid of spikes by gripping the flanges either in conjunction with fish-plates or without them, at the same time providing means to permit the creeping of the rails from longitudinal expansion and contraction, and also a rail-lock embracing or surrounding the tie.

My invention consists in the several novel features of construction and operation hereinafter described, and which are specifically set forth in the claims hereunto annexed.

It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of the rail and an end elevation of the tie and of the rail-lock. Fig. 2 is a vertical sectional elevation on the line X X in Fig. 1 transverse to the rail and longitudinal to the tie. Fig. 3 is a vertical sectional elevation transverse to the rail on line Y Y in Fig. 1. Fig. 4 is a side elevation showing the tie and chair applied to a rail between its ends. Fig. 5 is a vertical section along the edge of one flange of the rail of the tie and chair, omitting the lower section of the lock. Fig. 6 is an isometrical elevation of the lower section of the rail-lock. Fig. 7 is a like view of one of the chair-sections, which is also the upper lock-section, showing the arm extending down upon the chair-section to engage with the arms upon the lower section. Figs. 8 and 8^a are, respectively, edge and front elevations of one of the keys used to lock the sections together and to cause the chair-sections to grip the flanges of the rail.

A A in Fig. 1 represent parts of two abutting rails meeting at 1, and B B are the ties, one on each side of the joint. These ties each consist of a trough having a flattened and solid bottom 2, vertical side walls 3, transverse partitions 4, and transverse ledges or shelves 5, which ledges are provided with concavities which receive part of the cylindrical ends of the rail-supporting bars 6. These bars have cylindrical ends 7, transverse notches 8, and a central cylindrical portion 9 of a length substantially equal to the width of the bottom of the rail, as shown in Fig. 2. I usually use two or more of these bars, especially adjacent to a rail-joint.

The rail-lock and chair proper consist of three main parts—the flange gripping-plates *a a*, the inverted saddle *b*, and the wedges *d*, connecting the saddle and the grip-plates. Each grip chair-plate consists of a body adapted to fit between the partitions 4, is provided with a lip *a'*, beveled to properly fit upon the flange of the rail, with side arms *a''* and *a'''*, each provided with a transverse mortise, as shown, and it is further provided with parallel ribs *a''''*, with concavities between adapted to fit over the bars 6, and also into the notch 8 thereon.

The saddle *b* consists of a metallic plate having upon one of its ends a pair of upward arms *b'* parallel to each other and each provided with a notch *b''* in its lower face, and having upon its other end a pair of upward arms *b'''*, each provided with a notch *b''* in its lower face. The space between these pairs of arms is sufficient to freely receive the body of the tie therein, and these arms are of such length that their notches will coincide with the upper portions of the mortises in the side arms *a''* and *a'''* upon the chair-plates.

In Figs. 1 and 3 I show lugs *c*, cast or secured onto the outer faces of the vertical walls 3, each having a notch in its lower edge and so adjusted that when the chair-plates are put into the tie and onto the cross-bars therein and the rail-flanges the side arms *a''* and *a'''* will fit over outside of the side walls 3 of the tie, and when the wedging-keys *d* are inserted through the mortises therein they will partly lie in the notches in said lugs *c*, so that the keys will draw the chair-plates down tightly upon the rail-flanges and upon and in the cross-bars and lock the rail to the tie without a bolt or spike being used.

When I use the saddle *b*, the arms upon the

chair-plates come down between the arms upon the saddle, and the wedges inserted into the mortises and notches will operate to clamp the rail to the tie by drawing the chair-plates down upon the tie and pulling the saddle up under against the bottom of the tie. It will also be seen that I can use fish-plates, as shown in Fig. 2, if desired, either separate from or integral with the chair-plates.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with a railway-tie provided in its upper face with a seat for the rail and the rail-chair and the rail seated therein, of a sectional chair seated in said seat on each side of the rail and lapping onto the flanges of the rail and provided with arms straddling the tie on top and an inverted saddle straddling the lower face of the tie, and means to secure the chair-sections and saddle together.

2. A combined rail-chair and lock comprising chair-sections engaging with the rail-flanges and partially surrounding the tie from above, and an inverted saddle for each chair-section partially surrounding the tie from below, and means to secure the chair-sections and saddles together, in combination, as set forth.

3. A combined rail-chair and lock comprising a tie having lugs upon its sides, chair-sections engaging with the rail-flanges and partially surrounding the tie, and means for securing the chair-sections to the lugs upon the tie, in combination, as set forth.

In witness whereof I have hereunto set my hand this 30th day of March, 1891.

JAMES H. LYNCH.

In presence of—
H. P. DENISON,
H. A. CARHART.