

No. 631,618.

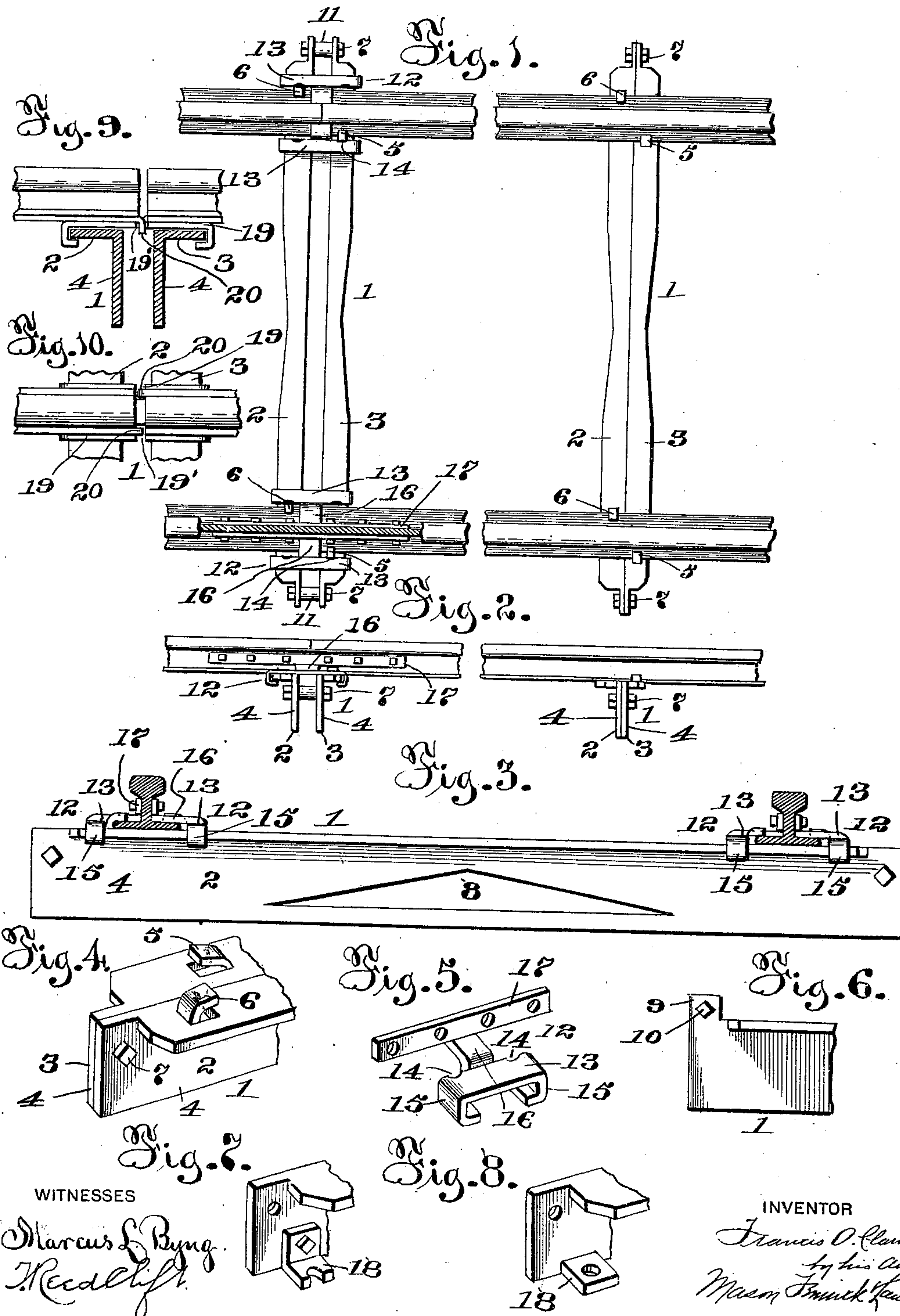
Patented Aug. 22, 1899.

F. A. CLARKSON.

RAILWAY TIE.

(Application filed May 4, 1899.)

(No Model.)





# UNITED STATES PATENT OFFICE.

FRANCIS A. CLARKSON, OF DULUTH, MINNESOTA.

## RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 631,618, dated August 22, 1899.

Application filed May 4, 1899. Serial No. 715,583. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS A. CLARKSON, a citizen of the United States, residing at Duluth, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Railway-Ties; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in metallic ties for railroads; and it consists of certain novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and claimed.

In the accompanying drawings, Figure 1 represents a top plan view of my improved tie, showing the means of attachment to the rails. Fig. 2 is a side elevation of the same. Fig. 3 represents a cross-section through the track, one of the ties being shown in side elevation. Fig. 4 represents a detail perspective view of one end of a tie, showing the lugs for engaging the flanges of the rail. Fig. 5 represents a perspective view of the chair or fastening for holding the rail-joint. Fig. 6 represents a detail view of one end of a tie, showing the binding-bolt elevated. Fig. 7 represents a modified form of the end of a tie as adapted for bridges, and Fig. 8 represents another modified view of the same. Fig. 9 is a side elevation of a modified construction for preventing the rails from creeping, the tie being shown in section; and Fig. 10 is a top plan view of the same.

1 in the drawings represents my improved tie, which is formed of two longitudinal beams 2 and 3, preferably angle-bars made of suitable metal, said angle-bars being formed with horizontal flanges at top to form a broad bearing-surface for the rails, and vertical body portions 4 4. The horizontal flanges of the angle-bars are provided with lugs 5 6, which are struck up from the flanges of the said bars, as shown in Fig. 4, or may be formed in any other suitable manner, said lugs being adapted to engage the flanges of the rails. The vertical body portions 4 bear against each other and are secured together at their ends by means of bolts or rivets, as 7, each body portion being provided in the center with an aperture 8, as shown in Fig. 3, which grips

the earth placed about the tie to firmly hold the same in position. As seen in Fig. 6, the binding-bolt 10 may be elevated, so that the same can be more readily reached than if placed near the ground to permit an attendant to easily tighten or loosen the bolt in case of wreck or as may be desired. For this purpose I form a lug or projection, as 9, on the ends of the body portions 4, which projection extends above the plane of the tie and is formed with an aperture through which bolt 10 may be passed. The angle-bars 2 3 preferably taper from end to center for a purpose as will be hereinafter described.

Where rail-joints occur, it is desirable to separate the vertical body portions of the angle-bars, as seen in Fig. 2 of the drawings, and in order to accomplish this I interpose a spacing-washer, as 11, between the ends of the angle-bars and pack earth solidly around the members of the tie to hold the same rigidly in place. I also employ at these points a chair or fastening, as 12, to further brace the ends of the angle-bars and form a connecting means for the rails. This chair or fastening consists of a horizontal portion 13, which is preferably notched, as at 14, to accommodate the lugs 5 6 on the angle-bars and formed with downwardly and inwardly extending ends, as 15, adapted to engage the flanges of the ties, and also with a side projection, as 16, embracing the base-flange of the rail. This projection 16 is provided with a fish-plate 17, having holes through which bolts are adapted to be passed in the usual manner. When it is desired to remove the chair on the inside of the rail, it is simply necessary to loosen the bolts in the fish-plate and slip the chair down the tapering angle-bar until it can be lifted off. If it is desired to remove the chair on the outside of the rail, it can be easily done by loosening the bolts in the fish-plate and taking the chair off and a new one inserted or the old one repaired and replaced. This chair also presents "creeping" of track over ties. While I prefer to use the wider ties at the joints, it will be apparent that the narrow ones could be used at these points. So, also, while the narrower ones may be used at the joints, as just stated, yet I prefer to employ them on the intermediate portions of the track.



In order to secure the ties to bridges, I preferably construct the same as shown in Figs. 7 and 8, where the ends of the angle-bars are formed with lugs 18, which may be notched and bolted to the bridge structure, or may be apertured or formed integral with the angle-bars in any suitable manner. Any number of these lugs may be used at points along the length of the tie.

10 In Figs. 9 and 10 another means for preventing the creeping of the track is shown. As illustrated in these figures, this means is shown as applied to rail-joints. In this construction I employ a plate, as 19, which is  
15 placed directly beneath the rails and has its ends turned downwardly and inwardly to grip the angle-iron bars of the tie. This underlying plate is formed at or near its center with a notch or notches, as seen at 19'. The end  
20 of each rail is provided with a downwardly-turned lug 20, which is adapted to enter the notch in the plate 19. While I have shown and described this construction as being used at rail-joints, yet it will be apparent that I  
25 may use a similar construction at intermediate points along the rails. At these points instead of forming a lug at the end of each rail I stamp the lug from the flange of the rail, said lug entering the notch in the under-  
30 lying plate in the same manner as above described.

It will be seen from the foregoing description that my tie is of a simple, yet strong and durable, construction and is inexpensive. It  
35 will also be noticed that the chair or fastening may be easily removed for repair and replaced again without difficulty or a new chair secured in place, and also that the binding-bolts are sufficiently high to render them  
40 easily accessible for tightening or loosening the same in case of wreck or otherwise. My construction also provides an adequate dirt-gripping device, and in case of necessity the ties can be much more readily removed from  
45 the ground than other ties employing lugs for gripping the flanges of the rails. It will also be observed that the rails can be easily taken out of engagement with the ties and replaced or a new rail inserted. This is accomplished  
50 by simply unloosening the nuts on the ends of the angle-bars and on the fish-plate and sliding the said bars so that the lugs on the same do not engage the flanges of the rails, and the rail may be taken out. When it is  
55 desired to insert the rail again, the angle-bars are forced back into position, with the lugs on their horizontal flanges engaging the flanges of the rails and locked in position by tightening the nuts on the angle-bars and the fish-  
60 plate.

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

65 1. A railway-tie consisting of angle-iron bars placed side by side having their hori-

zontal flanges uppermost and their vertical flanges adapted to engage the ground, lugs provided on said horizontal flanges for engaging the flanges of the rails, and a chair for securing the rails to the said tie, substantially  
70 as described.

2. A railway-tie consisting of angle-bars having horizontal flanges and vertical body portions, the horizontal flanges being upper-  
75 most and the vertical body portions being spaced apart and secured at their ends, a washer interposed between the ends of the angle-bars, lugs stamped out of the material constituting the horizontal flanges, for engag-  
80 ing the flanges of the rails, and a chair or fastening formed with a horizontal portion and a fish-plate, the construction being such that the chair or fastening will engage the ends of the angle-bars and the rails, substantially as  
85 described.

3. A railway-tie consisting of angle-bars having horizontal flanges and vertical body portions, the horizontal flanges being upper-  
90 most and their vertical body portions adapted to engage the ground, lugs or projections formed on the ends of the angle-bars and provided with apertures, said lugs being elevated above the plane of the tie, means on the said horizontal flanges for engaging the flanges of  
95 the rails, and a chair or fastening comprising a horizontal portion formed with downwardly and inwardly turned ends and with a fish-plate provided with apertures, the construc-  
100 tion being such that the chair or fastening can be readily removed for repair, substantially as described.

4. In combination with an angle-iron tie, of means for preventing the creeping of the rails thereon, comprising a plate placed beneath  
105 the rails at their joints and adapted to engage the angle-iron bars of the tie, said plate being provided with notches, and projections cut from and integral with the flanges of the rails, said projections being adapted to enter the  
110 notches on the said plate, substantially as described.

5. In combination with an angle-iron tie, of means for preventing the creeping of the rails thereon, comprising a plate placed beneath  
115 the rails and having its ends turned downwardly and inwardly to engage the edges of the angle-iron bars of the tie, said plate being provided with notches on opposite sides thereof, and lugs or projections stamped from the  
120 flanges of the rails, which lugs are adapted to enter the notches of the said underlying plate, the construction being such that the rails cannot be moved longitudinally, substantially as described.

In testimony whereof I hereunto affix my  
125 signature in presence of two witnesses.

FRANCIS A. CLARKSON.

Witnesses:

JAMES T. WATSON,  
JOHN H. BOYLE.