

No. 862,472.

PATENTED AUG. 6, 1907.

E. HAMILTON.  
MEANS FOR SECURING RAILS TO RAILROAD TIES.  
APPLICATION FILED SEPT. 24, 1906.

Fig. 1.

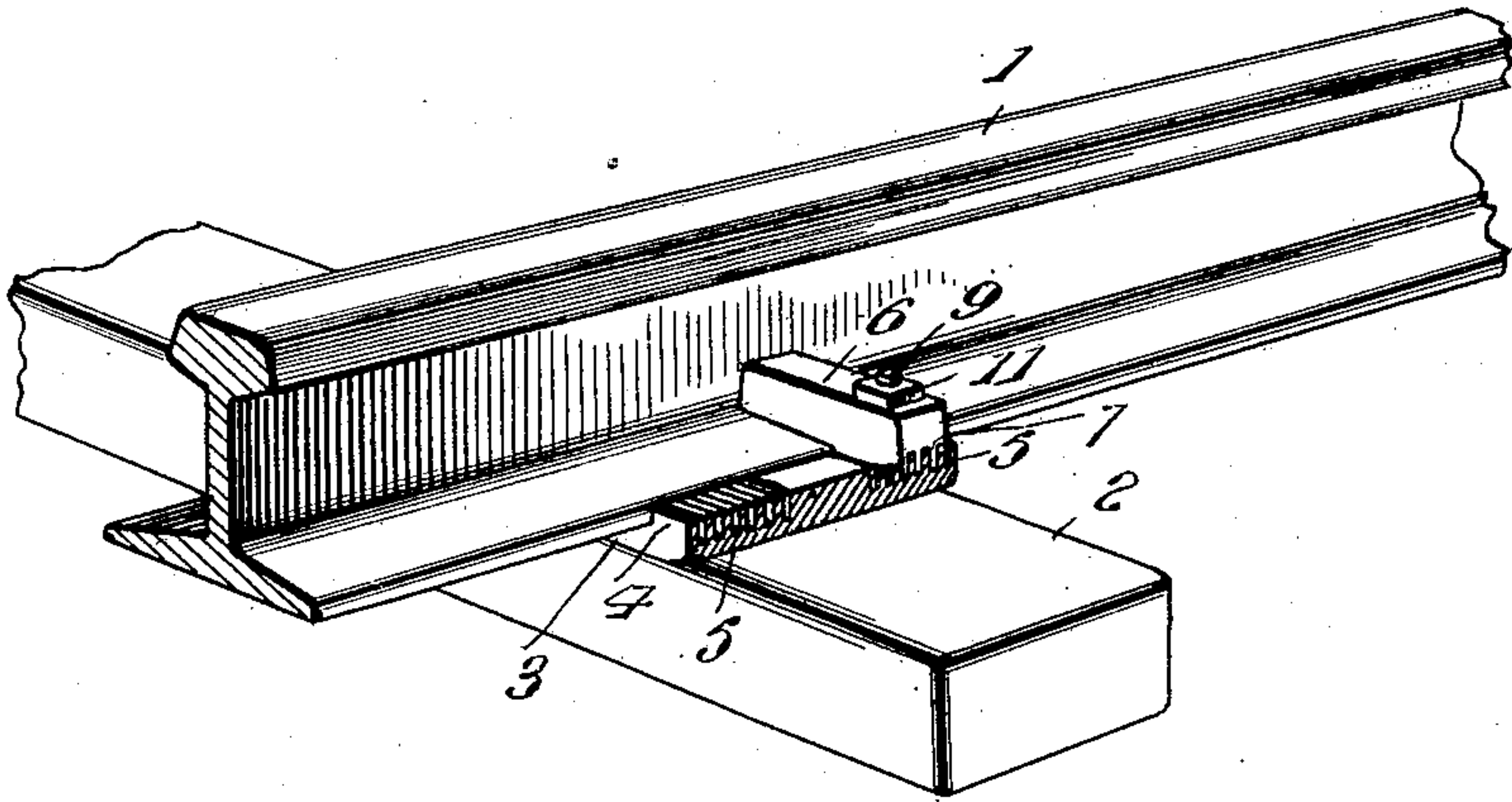


Fig. 2.

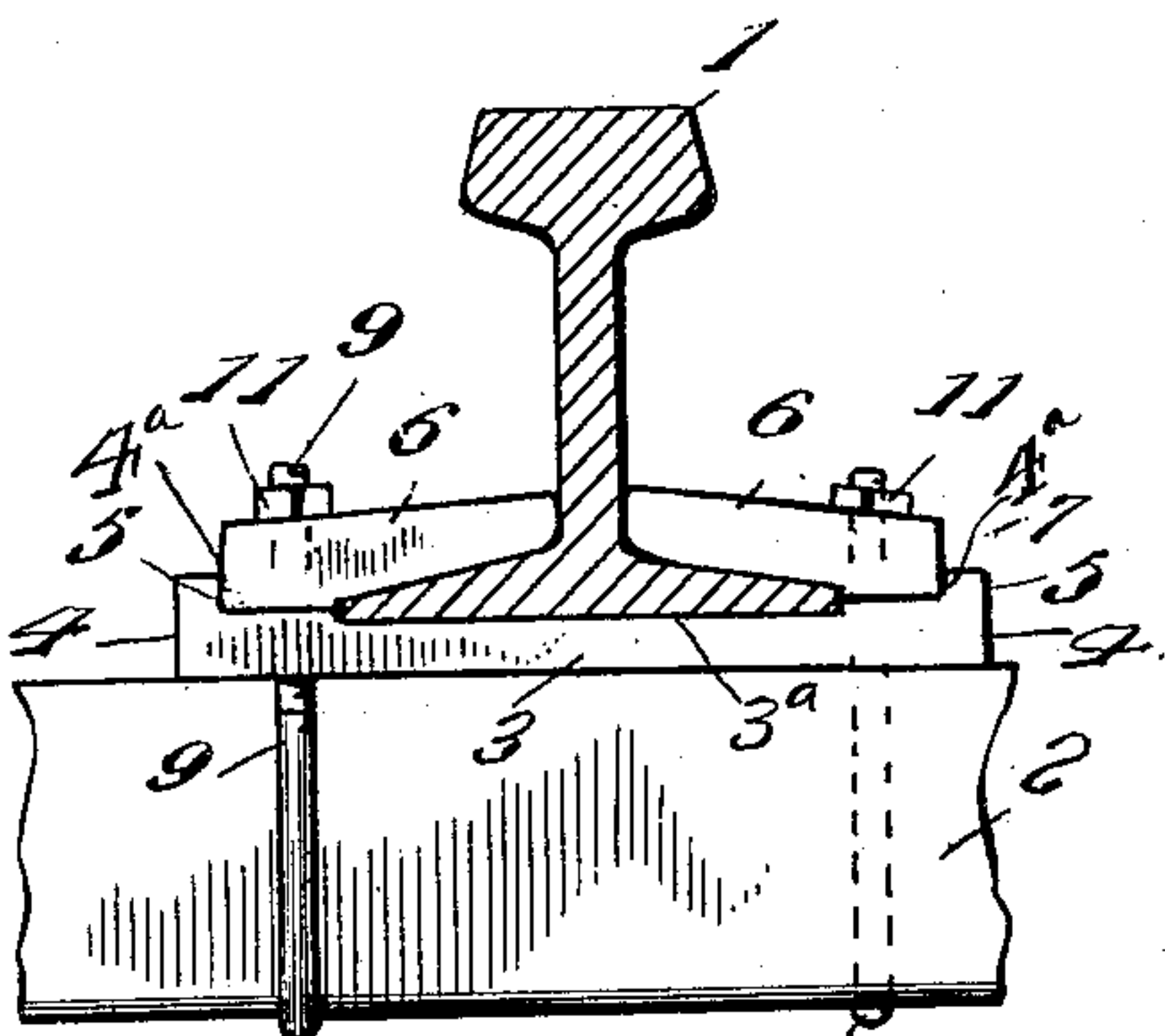


Fig. 3.

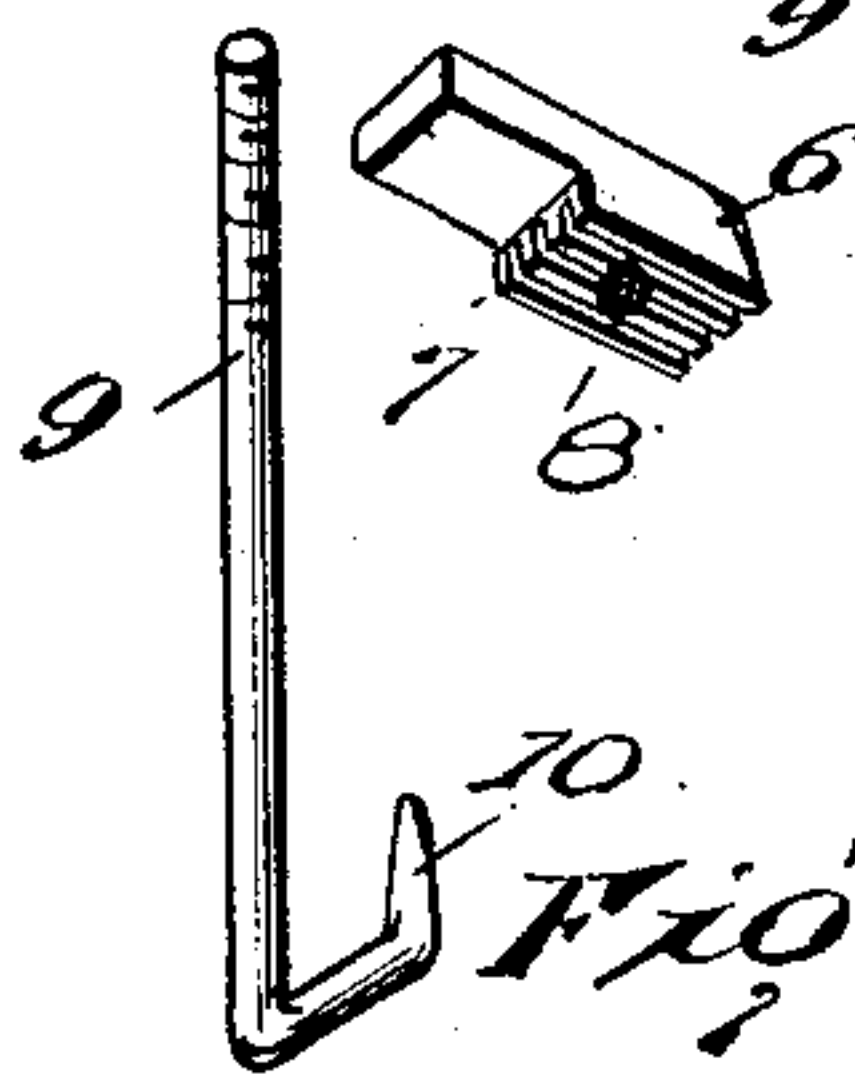
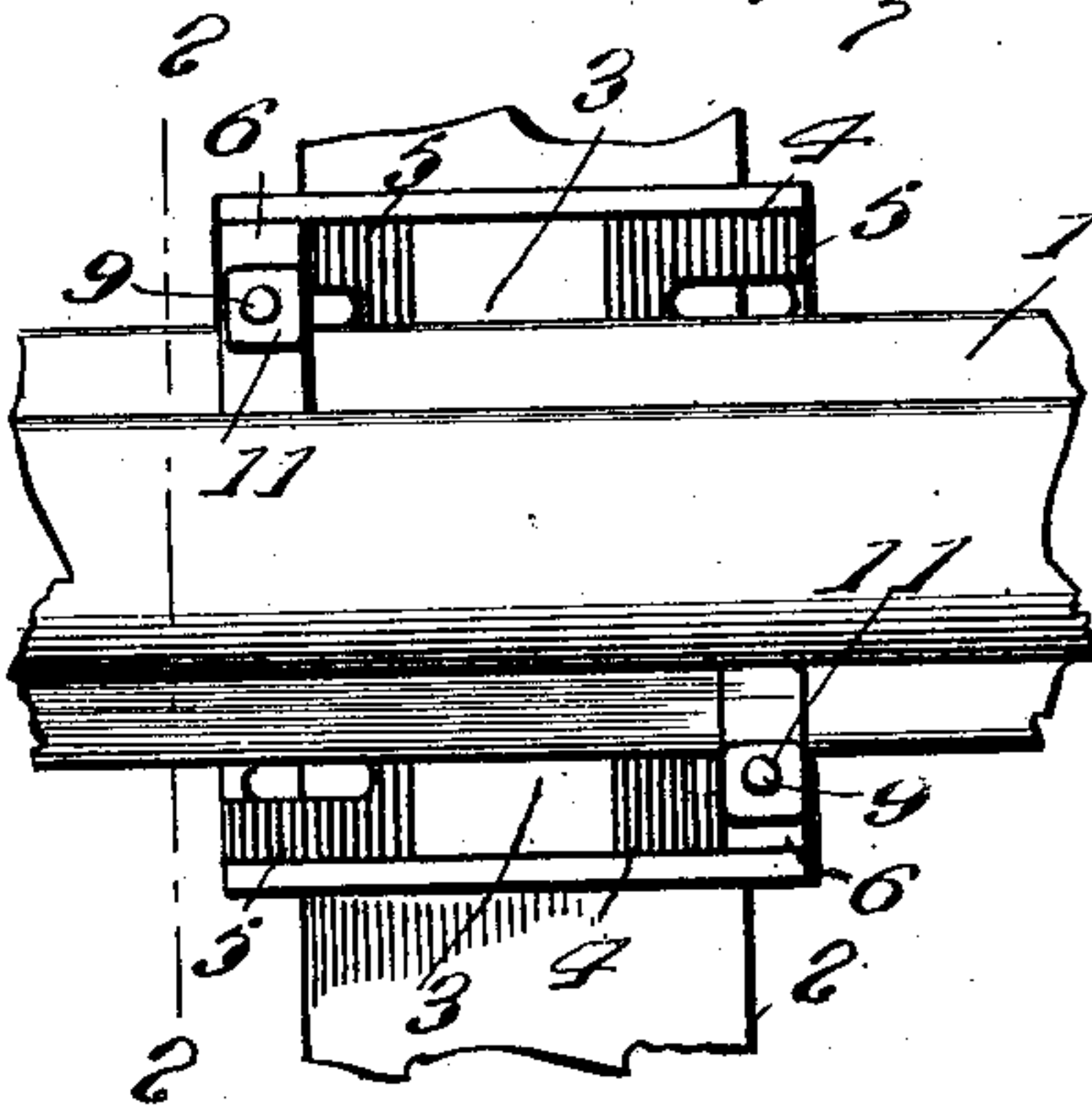
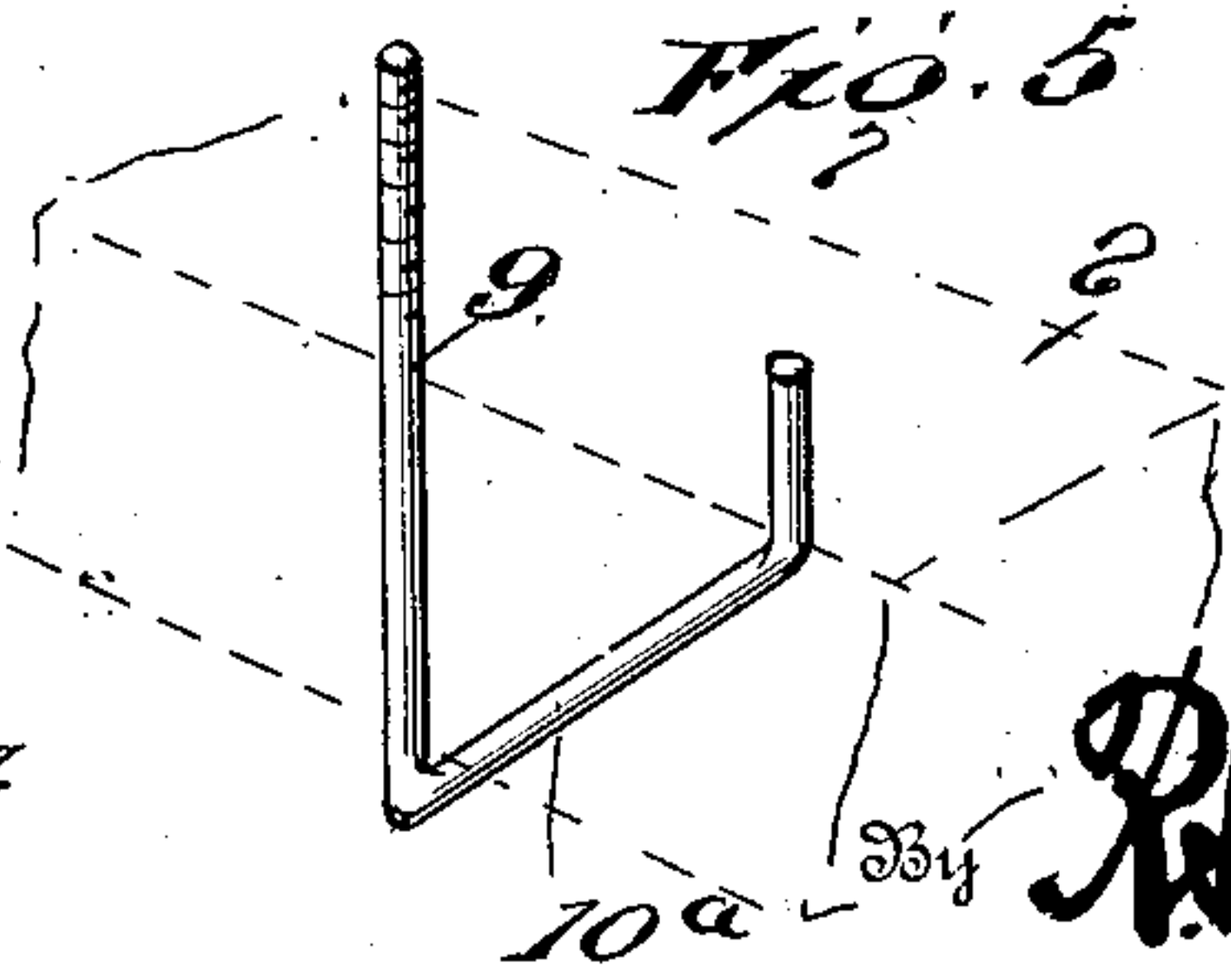


Fig. 4.

Fig. 5.



Witnesses

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# UNITED STATES PATENT OFFICE.

ERASTUS HAMILTON, OF CHICAGO, ILLINOIS.

## MEANS FOR SECURING RAILS TO RAILROAD-TIES.

No. 862,472.

Specification of Letters Patent.

Patented Aug. 6, 1907.

Application filed September 24, 1906. Serial No. 335,920.

*To all whom it may concern:*

Be it known that I, ERASTUS HAMILTON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Means for Securing Rails to Railroad-Ties, of which the following is a specification.

The object of this invention is to provide a substitute means for those most commonly in use at the present time for securing rails to the ties of the roadbed in a substantial and effective manner.

The means comprising the invention eliminates the necessity for using spikes by which to attach the rails to the ties of a railroad track and contemplates the provision of peculiar mechanism for adjusting the action of the parts by which the rails are held in position on the ties, other novel mechanism being also included in the invention as will be pointed out more clearly hereinafter and finally claimed.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of rail securing means embodying the invention, the outer end of the bed-plate being broken away and shown in section. Fig. 2 is a sectional view taken on the line 2—2 of Fig. 3. Fig. 3 is a top plan view. Fig. 4 is a detached perspective view of the tie bar and the clamp plate. Fig. 5 is a perspective view showing a modified form of tie bar.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Specifically describing the invention as illustrated the numeral 1 designates a rail of ordinary form which is mounted upon railroad ties 2 of the type commonly in use. Resting directly upon each tie 2 beneath the rail 1 is a bed-plate 3, the opposite longitudinal edge portions of which are formed with vertical flanges 4 provided with a plurality of notches forming a plurality of projections 5 located near the opposite extremities of each of the flanges. The rail 1 is seated upon the bed-plate 3 between the flanges 4 thereof and clamp plates 6 are used to secure the rail upon the bed-plate and to the tie above which said bed-plate may be arranged. The clamp plates 6 are of peculiar form, being provided upon the under sides thereof with longitudinal ribs 7, and each clamp plate has an intermediate vertical opening 8 adapted to receive the upper threaded portion of a tie bar 9. Each tie bar 9 embodies the upper threaded shank portion above mentioned and an offstanding hook 10 at its lower end, the latter being adapted to engage beneath the tie and to be embedded in the bottom portion of the latter. Nuts or adjustable members 11 are threaded upon the upper portions of the tie bars 9.

In the actual use of the invention, any suitable number, either two or four of the clamp plates 6, or more if necessary, may be used to attach the rail 1 to the ties of the roadbed. As shown, two clamp plates are utilized and are arranged at diagonally opposite points with respect to the bed-plate 3, being located upon opposite sides of the rail 1. The ribs upon the under sides of the clamp plates are interlocked at the outer end portions thereof with the projections 5 at one end of one of the flanges 4, while the inner end portion of each clamp plate rests upon the base portion of each end of the rail and is held in firm engagement therewith by the tie bar 9 cooperating with such clamp plate. The tie bar 9 passes through the clamp plate and the bed-plate therebeneath and the hook 10 of the tie bar engages with the under side of the tie and is held in such engagement positively and firmly by the nuts or adjustable members 11, which are screwed upon the upper threaded portions of the several tie bars. The manner of interlocking the plates 6 with the bed-plate 3 admits of adjustment of the interlocking connection in an obvious way. The clamping action of the clamp members 6 will of course be determined by the members 11 which may be readily adjusted as found necessary and desirable to obtain the best results.

It is to be noted that the bed-plate 3 has a seat 3<sup>a</sup> in the upper side thereof in which the base of the rail 1 is received, said seat being in a plane lower than the upper surfaces of the projections 5 and thus the latter form abutments engaging the longitudinal edges of the rail to prevent lateral play of the latter when subjected to great vibration, strain upon the fastening means being therefore eliminated, or reduced to the minimum.

The invention is susceptible of modification and as shown in the modified figure in the drawing the tie bars 9 are formed with offstanding hooks 10<sup>a</sup> which do not embed themselves in the under side of the tie, but which are sufficiently long to extend entirely across the bottom portion of the tie and embrace the latter irrespective of any embedding action. Under some conditions the last mentioned structure of tie bar may be desirable and can be utilized within the contemplation of the invention.

The construction of the invention as specified is extremely advantageous in that it is conducive to simplicity and is possessed of various other practical advantages incident to the actual use thereof.

It will be observed that the longitudinal edge portions of the base of the rail seated on the bed plate 3 are in abutting relation with the flanges 4. The rail is thus positioned firmly with reference to the bed plate. The tie bars 9 pass through slots in the flanges 4 and this admits of adjusting the positions of the tie



bars so that they may be moved towards one another or further apart to accommodate for ties of different widths.

Of course the invention is susceptible of application 5 to concrete, steel or like constructed ties, and the rail will of course be rigidly mounted thereon.

It is apparent that the outer ends of the projections 5 of the plate 3 terminate short of, or a small distance from, the outer edge portion of said plate. The upper 10 surface portions of the flanges 4 near the outer extremities of the projections 5 are in a plane slightly above that of the said projections thereby forming a shoulder 4<sup>a</sup> near the longitudinal edges of the said plate 3. The shoulder 4<sup>a</sup> affords a bearing for the outer end 15 portions of the clamp plates 6, whereby as the latter are fastened in operative positions they will exert a lateral pressure against the opposite side portions of the web of the rail 1 increasing the pressing and clamping action of said plates. The interlocking connection 20 between the plates 6 and the bed-plate 3 is advantageous, in that vibration or jar does not tend to

create a longitudinal or sidewise movement of the plates 6, and the tie bars are not subjected to undue strain.

Having thus described the invention, what is 25 claimed as new is:

In means of the class described, the combination of a tie, a bed-plate disposed thereon and having longitudinal flanges near its longitudinal edge portions, said flanges being provided with a plurality of projections in the 30 length thereof, clamp plates at opposite sides of the rail and having interlocking connection with the projections aforesaid, the top of the bed-plate being formed with a seat in a plane lower than the upper surfaces of the projections of the flanges above mentioned thereby forming 35 longitudinal abutments at the longitudinal edge portions of the rail preventing sidewise play of the latter, and fastening members attaching the clamp plates to the bed-plate, substantially as set forth.

In testimony whereof I affix my signature in presence of 40 two witnesses.

ERASTUS HAMILTON. [L. S.]

Witnesses:

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