

No. 803,864.

PATENTED NOV. 7, 1905.

J. WARREN.
METAL RAILWAY TIE.
APPLICATION FILED JULY 12, 1905.

Fig. 1.

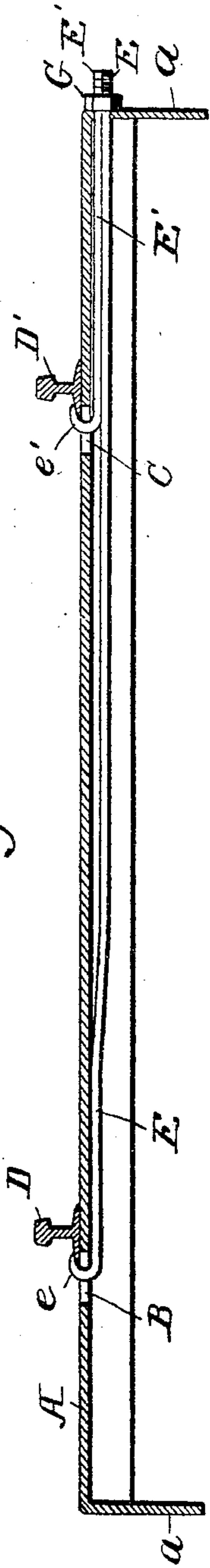


Fig. 2.

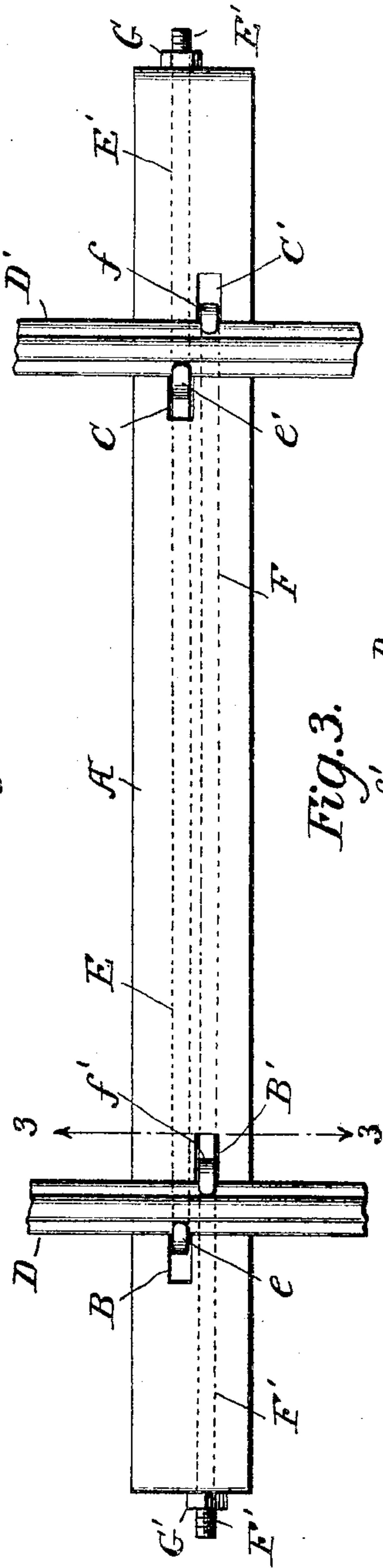
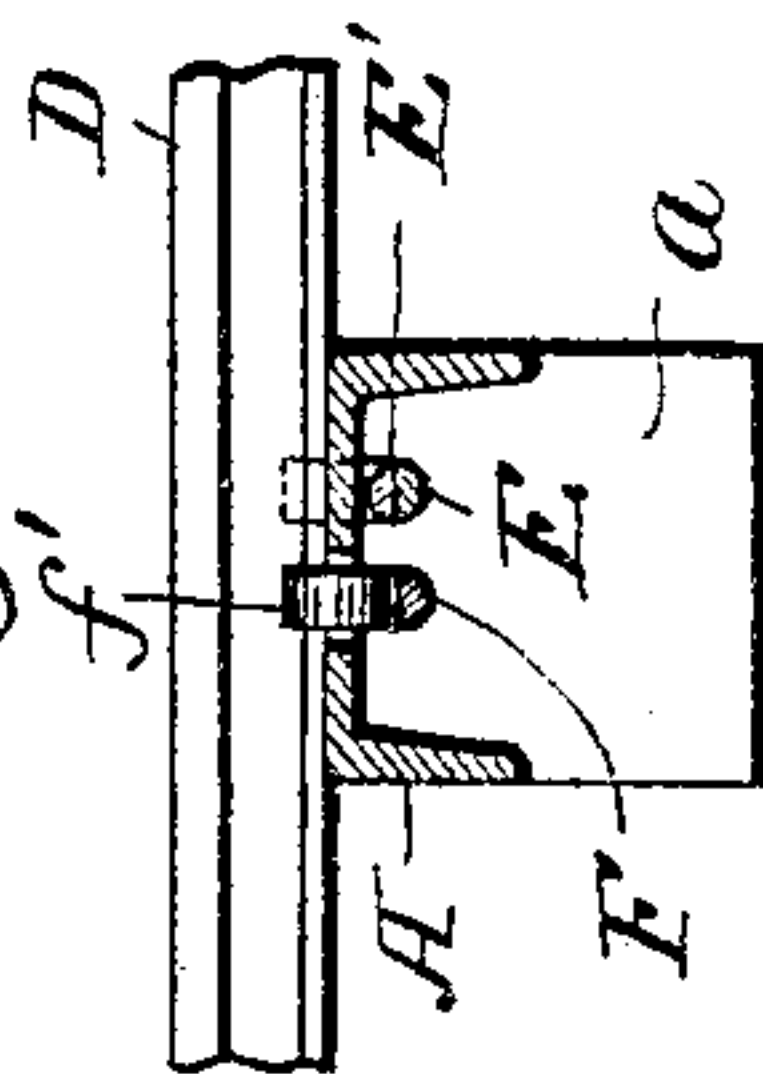


Fig. 3.



Witnesses
J. G. Stinkel
B. C. Rust.

Inventor
James Warren
Foster Freeman Watson
Attorneys

UNITED STATES PATENT OFFICE.

JAMES WARREN, OF WASHINGTON, PENNSYLVANIA.

METAL RAILWAY-TIE.

No. 803,864.

Specification of Letters Patent.

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Application filed July 12, 1905. Serial No. 269,350.

To all whom it may concern:

Be it known that I, JAMES WARREN, a citizen of the United States, residing at Washington, Washington county, State of Pennsylvania, have invented certain new and useful Improvements in Metal Railway-Ties, of which the following is a specification.

My invention relates to means for connecting and securing railway-rails to ties, and has for its object to provide improved means for accomplishing this purpose; and to these ends my invention consists in the various features of construction and arrangement of parts having the mode of operation and accomplishing the results substantially as hereinafter more particularly set forth.

Referring to the accompanying drawings, in which I have shown a preferred embodiment of my invention, Figure 1 is a longitudinal vertical section of a railway-tie and portions of rails with my improved means for securing the rails to the ties. Fig. 2 is a plan view of the same, and Fig. 3 is a transverse section on the line 3 3 of Fig. 2.

In the growing use of metallic ties for railroads in order to provide a satisfactory tie and means for fastening the rails thereto that will meet the requirements of practical use the construction must be simple, made up of as few parts as possible, and so made as to be capable of adjustment for different sizes or sections of rails and for different gages.

It is the object of my present invention to provide such a construction and one that will meet the above requirements, and I will now proceed to set forth the preferred embodiment of my invention whereby I accomplish these results.

Referring to the drawings, A represents the body of the tie, which is of metal, such as iron or steel, and may be of various shapes and is shown in the form of a heavy channel-plate. The ends *a* are bent down for a greater or less distance, which not only aids in preventing any lateral motion of the track or longitudinal motion of the tie when once laid and secured in place, but also furnishes an abutment for the fastening device. This plate is provided with a number of openings B B' C C', shown in the form of oblong slots and arranged in two parallel lines, preferably on either side of the central longitudinal line of the plate and also arranged in position adjacent the position of the rails D D', and these

openings are of a sufficient length to permit of a certain amount of adjustment of the rails with relation to the same.

In order to secure the rails, as well as to adjust them in proper relation to each other and to the tie-bars, I provide what may be termed "two-part fastening-bars," the two parts of the bars being capable of being adjusted with relation to each other, and the bars being also capable of adjustment with relation to each other. Thus in the drawings E E' represent the two parts of a fastening-bar, and each part is provided with a head or hook *e e'*, which are adapted to pass through the openings B and C, for instance, in the tie and to grasp or bear upon one side of the feet of the rails D D', and these heads or hooks are so shaped as to tend to hold the rails in close relation to the top of the tie-bar, as well as to adjust the rails laterally with relation to the bar, as hereinafter pointed out. These two parts, as E E', are united by a single securing device, and in the present instance I have shown a nut G, adapted to fit the screw-threaded ends of the two-part fastening-bar, the two parts of the bar being of half-round metal or being drawn down to half-round metal near their threaded ends, and being correspondingly threaded, so as to be embraced by the single fastening device or nut. It will be understood that by removing the nut the two parts E and E' may be moved longitudinally with relation to each other, so that their ends *e e'* will be at the desired distance apart, and then the securing device or nut being applied to the threaded ends the two-part bar will practically form a single unit and will be capable of being adjusted longitudinally on the tie. In the present instance the threaded end of the two-part bar passes through an opening in the downwardly-projecting portion *a* of the tie-bar. In actual use of course there is a plurality of two-part fastening-bars, as E E' and F F', respectively, having heads or hooks *e e'* and *f f'*, and each two-part bar is secured together by a single securing device or nut G'.

In applying my improved fastening device its use and advantages will be largely understood by those skilled in the art, and it may be said in general that the distance between any two corresponding points of two rails of any size or section is always equal to the gage of the track at that particular point, and if

the feet of all the rails are of the same width it is only necessary to adjust the two parts of the fastening-bar so that their hooks or heads *e e'* will engage the feet of the respective rails, and then the nut can be applied to secure the two parts together. If, however, rails of different sizes or widths or having different widths of feet are used, it will be seen that the two parts of the bars can be properly adjusted with relation to each other to grasp these feet and hold the rails at the proper gage, and then the nut can be applied to secure the parts of the bar in proper position. When, however, it is desirable to vary the gage of a track—as, for instance, in connection with curves where it is generally desirable to secure the rails a little farther apart than on the straight portions of a track having the same standard gage—it will be seen that the two parts of the fastening-bar can be adjusted in proper relation to each other and then be secured together so as to constitute and move as a unit.

In practice it is preferable to place two of the two-part fastening-bars in connection with each tie-bar, one of the fastening-bars having hooks or heads engaging the feet of the rails on one side and the other engaging the feet of the rails on the other side, and the threaded ends of the fastening-bars will extend through the downwardly-projecting portions *a* of the tie-bars at opposite ends thereof. In this way it will be seen that by simply loosening one nut or fastening device of one of the fastening-bars and tightening the fastening device of the other fastening-bar the rails can be adjusted with relation to the tie-bars so as to secure an absolutely straight track and at the same time retain an accurate gage between the rails. The same is true when the fastening devices are used in connection with curves in the track—that is to say, the rails may be moved laterally with relation to the side bars and still maintain their relations to each other and to the standard gage.

While I have shown a single nut as a securing means for the two parts of the fastening-bar, it is evident that other forms of fastening devices may be used, and these fastening devices may also act as adjusting devices for adjusting the tie-bars with respect to the tie-plate.

What I claim is—

1. In a device of the character described, a two-part fastening-bar each part having an en-

gaging head, and a single securing device uniting the two parts, substantially as described.

2. In a device of the character described, a two-part fastening-bar each part having an engaging head, and having half-round portions and a single nut securing the two parts together, substantially as described.

3. In a device of the character described, the combination with a tie-plate having openings and adapted to support the rails of a two-part fastening-bar having engaging heads for the rails, and a single securing device uniting the two parts together and serving as an adjusting device for the fastening-bar, substantially as described.

4. In a device of the character described, the combination with a tie-plate having openings and adapted to support the rails, of fastening-bars each having heads adapted to project through the openings and engage the rails on opposite sides of their feet, and adjusting devices for said fastening-bars arranged at opposite ends of the tie-plate, substantially as described.

5. In a device of the character described, the combination with a tie-plate having openings and having abutments at its ends, of a pair of fastening-bars each fastening-bar comprising two parts having engaging heads, and securing devices uniting the two parts, said securing devices also serving as adjusting devices whereby the two parts of the fastening-bars may be adjusted with relation to each other and the two bars be adjusted with relation to each other, substantially as described.

6. In a device of the character described, the combination with a tie-plate having two series of openings in its upper surface and having bent ends forming abutments, of a pair of fastening-bars each bar comprising two parts having heads adapted to engage the same side of the two rails and to be adjusted with relation to each other, securing devices for securing the two parts in their adjusted relation, and means for adjusting the two bars from opposite ends of the tie-plate, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES WARREN.

Witnesses:

FRANK T. OTLEY,
VICTOR F. SHAFER.