(No Model.)

R. MORRELL.

RAILWAY FASTENING FOR METALLIC TIES.

No. 457,500. Patented Aug. 11, 1891.

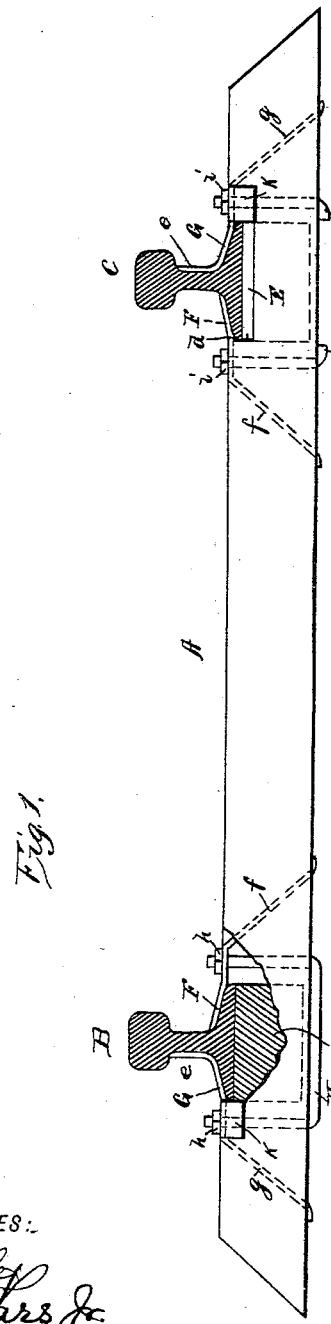

Fig. 1.

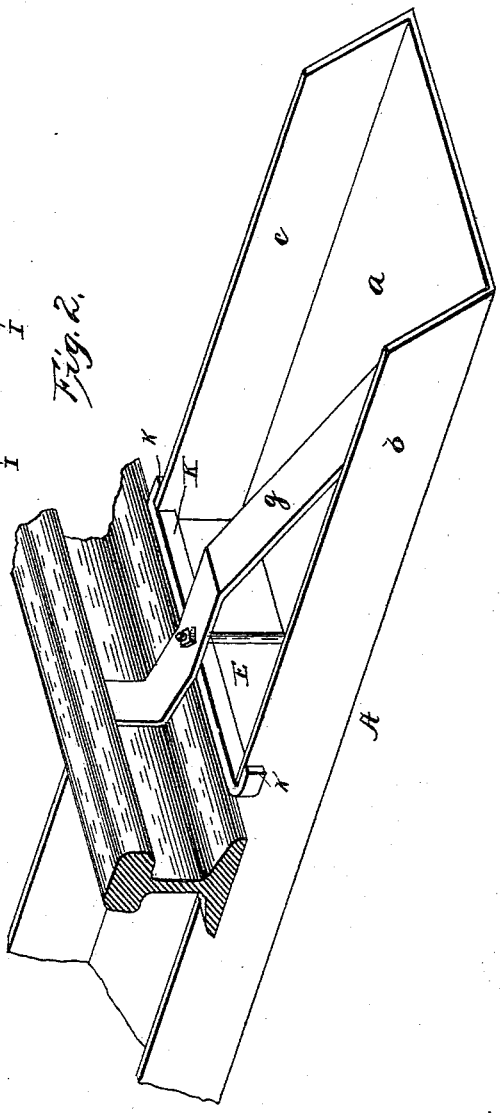

Fig. 2.

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RAILWAY-FASTENING FOR METALLIC TIES.

SPECIFICATION forming part of Letters Patent No. 457,500, dated August 11, 1891.

Application filed January 19, 1891. Serial No. 378,320. (No model.)

To all whom it may concern:

Be it known that I, ROBERT MORRELL, a citizen of the United States, residing at Summit, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Railway-Fastenings for Metallic Ties; and I do 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to fastenings for rigidly securing railway-rails to metallic ties, and has for its object to furnish an improved rail-fastening which will securely hold the rail down and against side-thrust under strain, but which shall be generally improved, rendering it cheap, durable, effective, and easy of application or removal.

With this object in view my invention consists in the improved construction, arrangement, and combination of parts hereinafter fully described, and afterward specifically pointed out in the subjoined claims.

In the accompanying drawings, Figure 1 is a view in side elevation of my improved rail-fastening in place, the rail being shown in transverse section, part of the tie being broken away to show the base-block and bolts of different construction shown in each fastening. Fig. 2 is a detail perspective view of one end of a tie with one of my improved fastenings in place.

Like letters of reference mark the same parts wherever they occur in the various figures of the drawings.

Referring to the drawings by letters, A is a metallic railway-tie having base *a* and sides *b c*, bent upward at right angles thereto. This tie is provided in each side, near the end thereof, at a distance apart from center to center equal to the gage of the railway, with notches *d*, in which rails B C rest. Within the trough of the tie under the rails B C are placed blocks D E, of wood or any other suitable material, upon which the rails rest, thus avoiding metallic contact and relieving the edge of the side in the notches of the weight of the rail.

F G are clips resting upon the flanges of the base of the rail and which are held down to clamp the rail by suitable bolts H I I. The bolt H is a U-bolt, extending with its bow under the tie, while the bolts I I are hook-bolts, their hooked ends passing through holes in the base of the tie and engaging the edge of said holes. Suitable nuts are provided, engaging the threaded ends of said bolts, said nuts being marked *h i i*. The clips F G are extended backward and downward, as at *f g*, the ends of said extensions passing through holes in the base of the tie and forming inclined braces to prevent all sidewise displacement of the rails. The clips G, which are shown on the outer sides of the rails, have extensions *e*, which lie against and support and strengthen the webs of the rails against outward displacement, and whose upper ends rest under and assist in supporting the heads of the rails.

While I have shown such extensions *e* only on the outside clips, I desire it to be understood that they may be provided on the inside clips, if thought desirable or beneficial.

I have shown how either U-bolts or hook-bolts may be used with this fastening, and may here remark that ordinary headed bolts may also be used; but I especially prefer the hook-bolt, for the reason that some difficulty would be encountered in removing an ordinary headed bolt or a U-bolt when it should be deemed necessary for purposes of repair. This is entirely obviated in the use of the hook-bolts I I. By removing the clips and nuts the hook-bolts may be turned downward, freeing their hooks from the holes in the tie and permitting their easy removal. They may be inserted again with equal ease.

The notches *d* in the sides of the tie in which the rails rest are made longer than the width of the base of the rail, and a bar K is laid in said notch in position to receive the outward side-thrust of the rail, giving an extended bearing and preventing injury to either rail or tie. The ends *k* of said bar are bent outside of the tie to prevent the bar from jarring out of the notches. The outer fastening-bolt I passes down just outside of this bar K, as shown best in Fig. 2.

Having thus fully described the construction, operation, and advantages of my inven-

tion, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In combination, the tie having bolt-holes in its base and notches in its sides, a bed-block, a rail resting in the notches and on the bed-block, clips resting on the flanges of the base of the rail and having their outer ends inclined down and passed through holes in the base of the tie, one of said clips having an upward extension resting against the web and under the head of the rail, and bolts for securing the clips, as set forth.

2. In combination, the notched tie, the bed-block, the rail resting in the notches and upon the bed-block, the clips having their ends inclined downward through holes in the base of the tie, and the hook-bolts passing through the clips and the base of the tie and engaging the under sides of the base about the bolt-holes, as set forth.

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

ROBERT MORRELL.

Witnesses:

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