H. REESE.

Railway-Tie.

No. 215,675. Patented May 20, 1879.

Fig. 1.

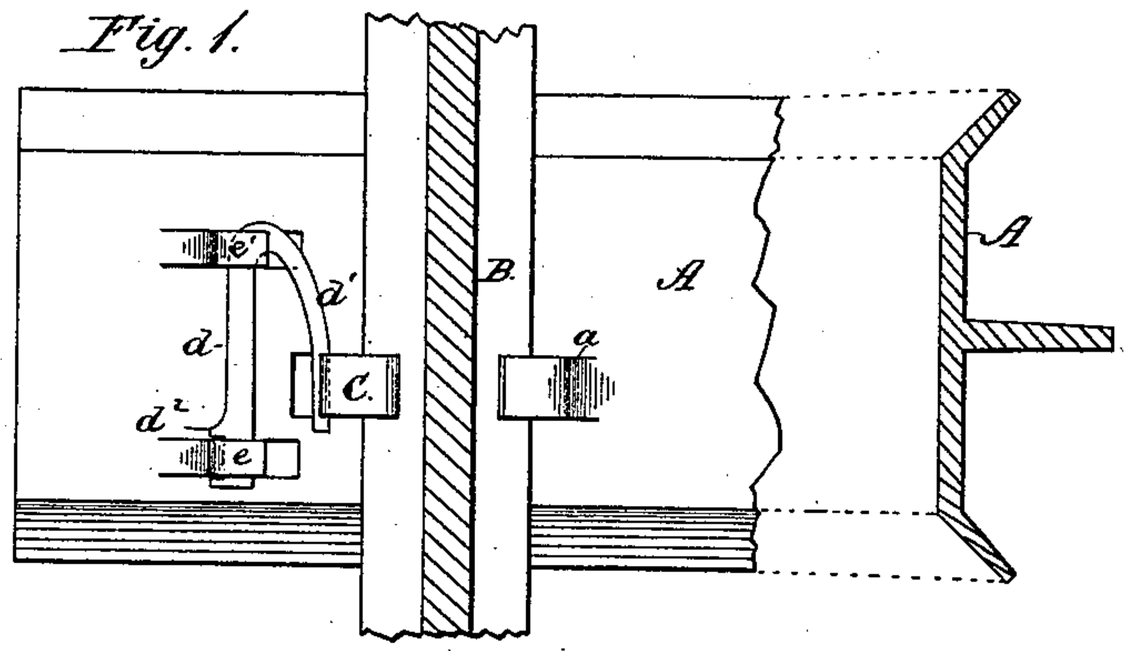


Fig. 2.

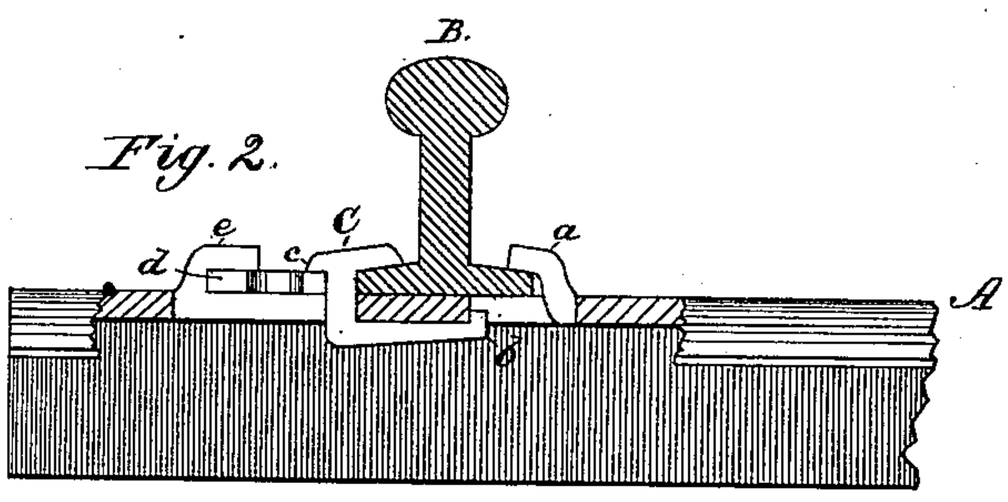


Fig. 3.

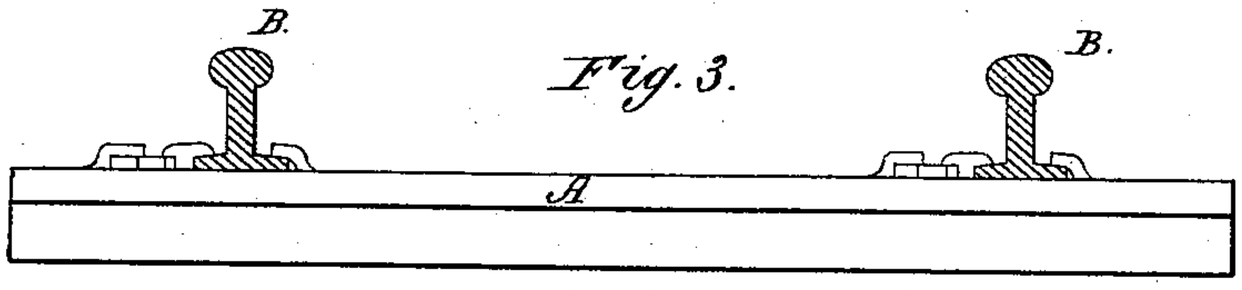
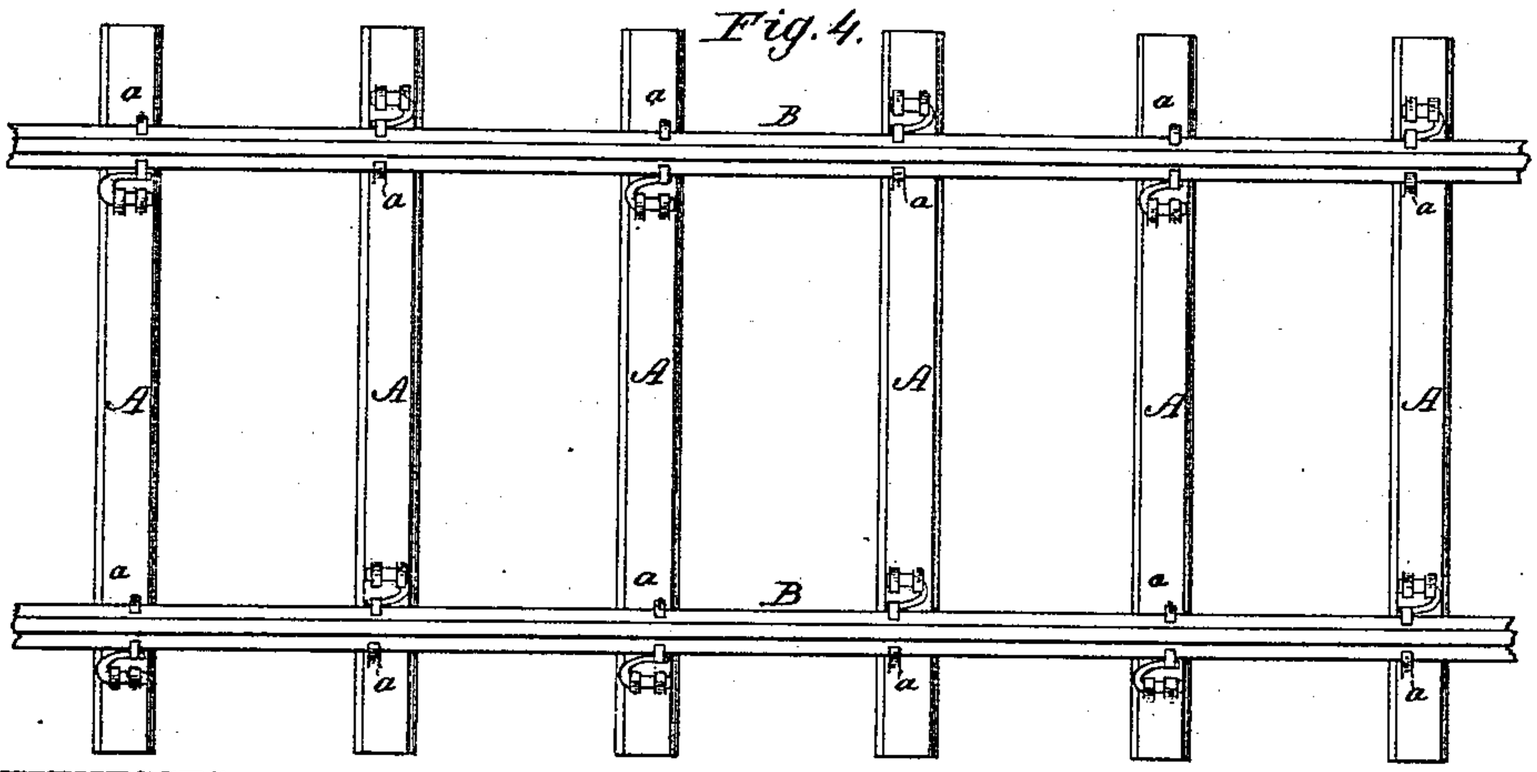


Fig. 4.



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IMPROVEMENT IN RAILWAY-TIES.

Specification forming part of Letters Patent No. **215,675**, dated May 20, 1879; application filed January 29, 1879.

To all whom it may concern:

Be it known that I, HENRY REESE, of Baltimore city, State of Maryland, have invented a new and Improved Railway-Tie; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of a portion of a tie with its lugs and fastenings, showing, also, in horizontal section, the relation of the rail. Fig. 2 is a sectional view of the same, taken in the direction of the length of the rail. Fig. 3 is a cross-section of the track. Fig. 4 is a plan view of the track.

My invention relates to certain improvements in railway-ties of the general form patented by me May 11, 1875, in which a T-shaped wrought-iron tie is provided with locking devices adapted to hold the rails.

My present invention consists in a track formed by rails and ties, in which the two permanent clamping-lugs of any one tie project in the same direction but are arranged upon the opposite side of the rail from the permanent lugs of the next tie, together with locking devices, whereby certain important advantages are secured, as hereinafter described, and also in the peculiar locking devices which co-operate with the permanent clamping-lugs to hold the rails more securely.

In the drawings, A represents a T-shaped railway-tie, made of wrought-iron, with a central pendent bracing-flange, and with its edges dipping downwardly. In this tie are formed the permanent lugs *a*, cut from the thickness of the metal and turned up, as shown.

B is the rail, whose base extends upon one side beneath the permanent upturned lug *a*, and whose base upon the other side is clamped by special locking devices. These consist of a clamp, C, having a toe, *b*, that enters the slot left by the upturning of the permanent lug *a*, and having a shoulder, *c*, beneath which a special form of spring locking-bar is seated. This clamp, as provided with the toe *b*, I do not claim in this application, as it is embodied in an application for a patent which was allowed me October 28, 1878.

The spring locking-bar consists of a rigid bar of metal, *d*, having a notch, d^2, in one end, that seats itself about a lug, *e*, formed on the tie, which bar extends to another lug, *e'*, and thence is returned or bent upon itself in the form of a spring, d^1, which rests beneath the shoulder of the clamp C. This locking-spring $d\ d^1$ being all made in one piece prevents any rattle or noise between the parts, and, while the notch in its end prevents accidental displacement, its curved section, by its elasticity, holds the clamp tightly against the rail to securely hold the latter between the same and the permanent lug *a*. These spring-locking devices may be either upon the inside of the rail or upon the outside of the rail, as shown in Fig. 3.

In laying the track in accordance with my present invention, (see Fig. 4,) I cause the spring locking-bar of one set of ties to be on one side of the rails and the spring locking-bar of the alternate set of ties to be upon the opposite side of the rails, so that the permanent lugs *a* are made to alternate upon the opposite sides of each rail. The object of this arrangement is that the rails shall be held with absolute firmness by the permanent lugs on each side, the same effect practically being produced as if said permanent lugs were on opposite sides of the rail at each fastening. This arrangement also prevents any possibility of an alteration of the gage, and also the necessity for extreme care in laying the rails, as it is only necessary that the lugs *a* in the manufacture of the ties should be placed a distance apart equal to the gage of the road, and as they cannot change this distance the gage must always be unaltered.

A track once laid with this arrangement of ties is a solid and substantial structure, not liable to any alteration, or at least to more than the minimum of wear from the passage of trains.

The absence of any accidental change of gage, it will be seen, reduces the proportion of accidents, while another important advantage is the freedom from danger of the rails being tampered with by malicious persons—in fact, the absolute security from any such interference.

In the arrangement of the ties and rails just described I do not, of course, limit my invention to any particular form of spring, as my in-

vention comprehends any form of spring that co-operates with the permanent lug *a* to hold the rail, and yet is removable to permit the rail to be seated in its place.

In practice I prefer the form of spring locking-bar shown; but even this I may modify with good results. For instance, instead of making the spring detachable from the clamp C, it may be made in one piece with the clamp C, to produce the same effect.

In the use of my invention, also, I do not limit myself to any kind of material, either in the construction of the ties or other parts, although my invention has special value in connection with wrought-iron ties, as described.

Rubber springs may also be used in the place of the metal one, and the ties may be made of any other form better adapted to the purpose.

In defining my invention still more clearly, I would state that I am aware that a railway-track has been laid in which the permanent lugs of one tie are arranged upon the opposite side of the rail from the permanent lugs of the next tie, as in Patent No. 210,774; but in such case the permanent lugs of any one tie project in opposite directions—*i. e.*, the permanent lugs of each tie either both project inwardly to the center of the track or else both project outwardly from the center. This arrangement forms no part of my invention, and I fully disclaim the same.

The distinctive and valuable feature of my invention, then, depends not upon the mere alternation of the permanent lugs upon the opposite sides of the rails, but upon said alternate arrangement when both of the permanent lugs of one tie project in the same direction—*i. e.*, one inward and the other outward with respect to the center of the track.

The distinctive advantages which are secured thereby are as follows: First, the ties are all alike, and but one pattern of the same is required, the interlocking effect being produced by reversing the alternate ties end for end; secondly, variations in the width of the rail-base involves no alteration in the tie nor change in the gage; thirdly, the track is easily laid by laying the rails upon one set of the ties whose lugs all point in one direction, and then adjusting the alternate ties endwise up to the said rails, so that their lugs, which all point in the opposite direction, co-operate with the oppositely-pointing lugs to secure the rails.

Having thus described my invention, what I claim as new is—

1. A railway-track composed of rails, cross-ties having permanent lugs, and locking devices, with the permanent lugs of one set of ties pointing in one direction and arranged upon one side of the rails, and the permanent lugs of the alternating set of ties pointing in the opposite direction and arranged upon the opposite side of the rails, substantially as shown and described, and for the purpose herein set forth.

2. A set of wrought-iron cross-ties having permanent lugs *a*, with the permanent lugs of one set of alternate ties pointing in the same direction with each other and arranged upon opposite sides of the rails from the permanent lugs of the other set of ties, as described, in combination with the rails and spring-locking device, substantially as set forth.

3. The combination, with the shouldered clamp C and the lugs *e e'*, of the spring-locking bar *d d'*, seated against the lugs *e e'*, and then returned upon itself, so as to bear against the clamp, as described.

HENRY REESE.

Witnesses:
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