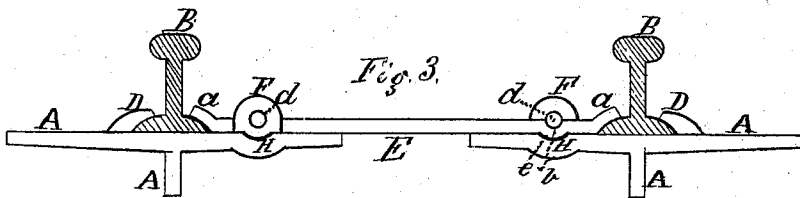
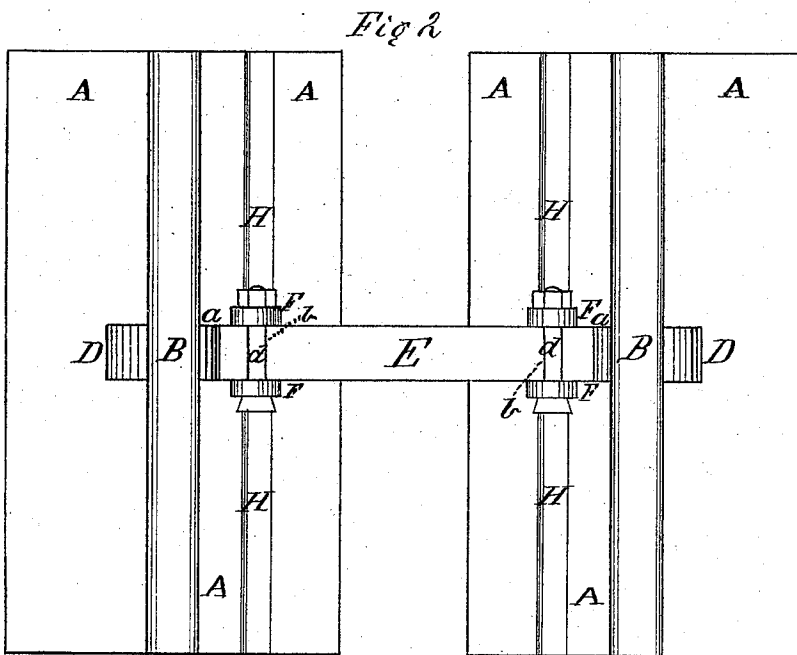
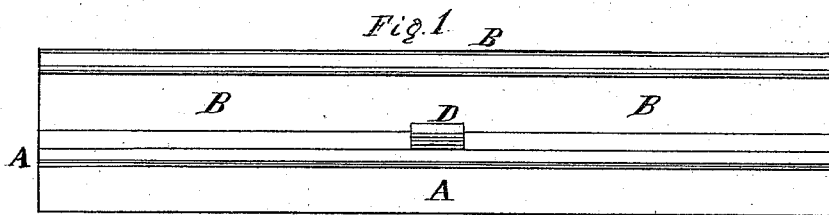


G. KEECH.
 Railway Switches.

No. 144,207.

Patented Nov. 4, 1873.



Witness
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 George Keach
 by law
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UNITED STATES PATENT OFFICE.

GEORGE KEECH, OF CENTREVILLE, MICHIGAN.

IMPROVEMENT IN RAILWAY-SWITCHES.

Specification forming part of Letters Patent No. **144,207**, dated November 4, 1873; application filed August 11, 1873.

To all whom it may concern:

Be it known that I, GEORGE KEECH, of Centreville, Michigan, have invented certain new and useful Improvements in Railway-Tracks, of which the following is a specification, reference being had to the accompanying drawings.

The invention relates to devices for mounting and securing railroad-rails; and consists in providing a bar of metal, which may be of cast-iron, each end of which is provided with a concave projection that extends upward and outward, and is conformed to receive the inner edges or flanges of the base of the rail. Sleepers of suitable width and strength are laid parallel to the rails, upon the upper side of which are fastened studs, which project upward, and which are conformed to receive the outer edges or flanges of the base of the rails, being secured in position accordingly. Upon the portion of the sleepers between the rails a channel is cut parallel to the rails, in which are secured two vertical ears, between which the bar of metal is fastened by means of a bolt, the bar being provided with a grooved arch that rests in the channel in the sleeper, and is held in place by the bolt, which is of such size that it fits the groove upon the upper side of the arch. The channel in the sleeper is of such length and depth as to permit of the ready use of the bolt, and the ears and studs are directly opposite each other. The sleepers, provided with the studs and other parts described, are placed so that, when the outer edges of the base of the rails are in the cavities of the studs, the track will be of the desired gage. The bar is then placed between the rails and bolted down, when the track will be finished. The object of the invention is to provide an effective and convenient means of constructing a railway-track, and especially to avoid the use of chairs and splices.

Figure 1 is a side elevation of a device embodying the elements of the invention. Fig. 2 is a plan view of same. Fig. 3 is a transverse vertical section of same with one of the ears F removed.

A is the sleeper, which is laid parallel to the rail B, and which is of sufficient width for the purposes hereinafter described. Near its

outer edge is secured the stud D, which projects upward and toward the rail B, being formed with the side toward the rail concave, the outer edge of the base of the rail fitting in the cavity. E is a metallic bar, provided at each end with the concave projections *a*, which extend upward and outward, and are formed to receive the inner edges of the base of the rails. Near either end of the bar E, arranged with relation to the channel H, as will more fully appear, are the grooves *b*, which form the interior sides of the arch *c*. Directly opposite the stud D are the vertical ears F, between which the bar E rests, the groove *b* coinciding with the apertures of the ears, through which the bolt *d*, which serves to hold the bar E in position, is passed, the bolt being provided with a head and nut for that purpose. H is a channel, cut in the sleepers between the rails, and parallel thereto, in which the arch *c* rests, and which facilitates the application or removal of the bolt *d*.

The sleeper A, provided with the stud D, ears F, and channel H, may be cast in metal in one piece, or it may be of wood, and the several parts attached in any usual manner. In case it is cast it will be found to be expedient to have vertical rectangular projections crossing its center at right angles upon the lower side, which will enter the ground, and thus assist in preventing a dislocation of the track.

If desired, the sleeper A may be dispensed with, and the parts applied to the ordinary cross-tie.

To set the device, the stud D is securely fixed upon the sleeper A, provided with the channel H, in which are secured the ears F. The rails A are now laid parallel to the channel H, with their outer flanges under the stud D. The bar E is now placed with its flanges *a* in contact with the inner flanges of the rail opposite the stud D, and forced down until the arch *c* enters the channel H, when the bolt *d* is passed through the ears F and groove *b*, securing the bar E in position.

To remove the device, it is only necessary to draw the bolts *d*, when the bar E may be raised, and the rails B removed, slipping their outer flanges from under the stud D.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the bar E, having the groove *b*, with the bolt *d* and ears F, substantially as shown and described.

2. The sleeper A, provided with the channel H, to receive the arch *c* of the bar E, substantially as specified.

3. The combination of the bar E, constructed with the arch *c*, groove *b*, and projections *a*, with the sleeper A, provided with the channel

H, ears F, bolt *d*, and stud D, substantially as specified.

In testimony that I claim the foregoing improvements in railway-ties, as above described, I have hereunto set my hand and seal this 5th day of August, 1873.

GEO. KEECH. [L. S.]

Witnesses:

JOHN C. JOSS,

JOHN A. J. METZGER.