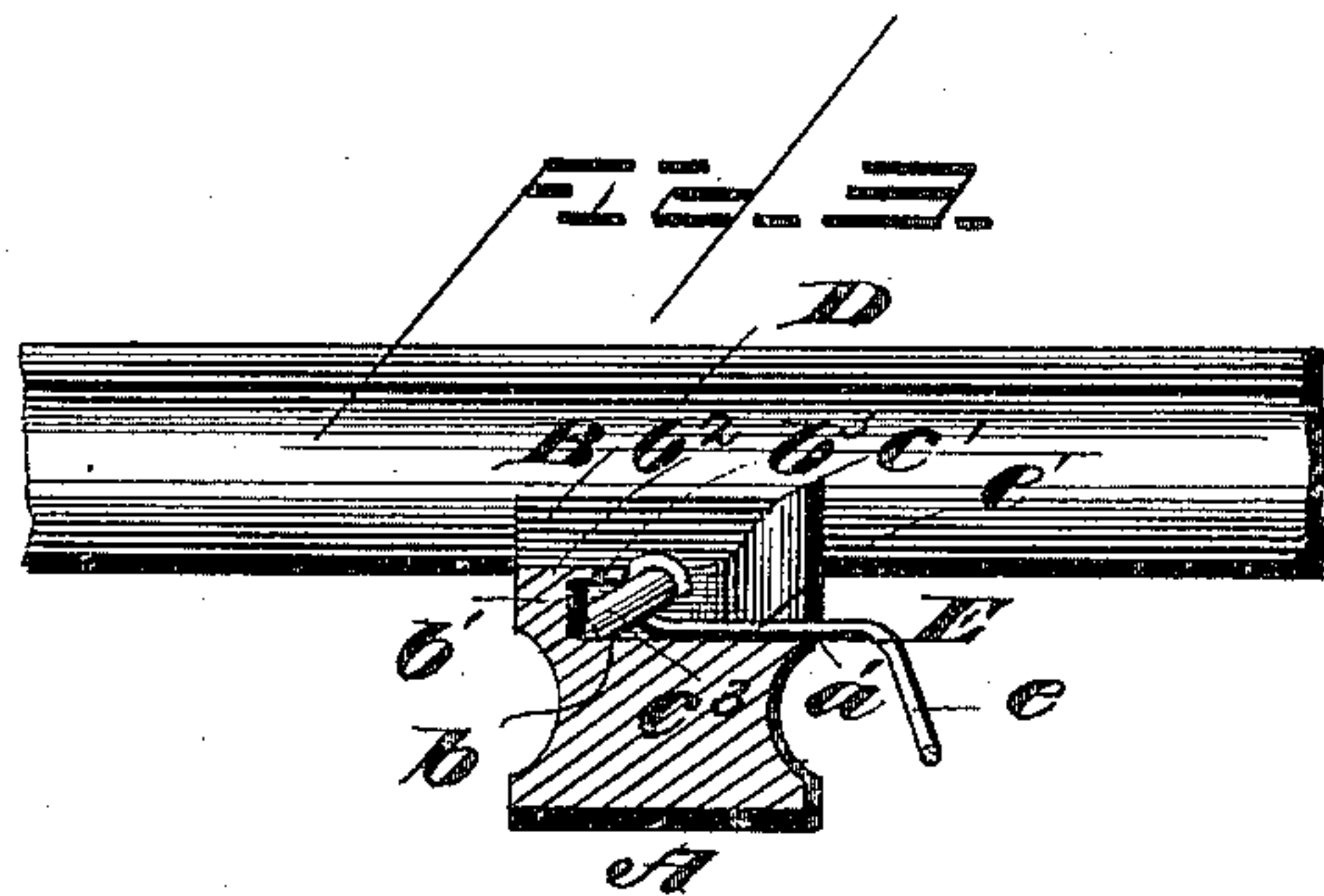
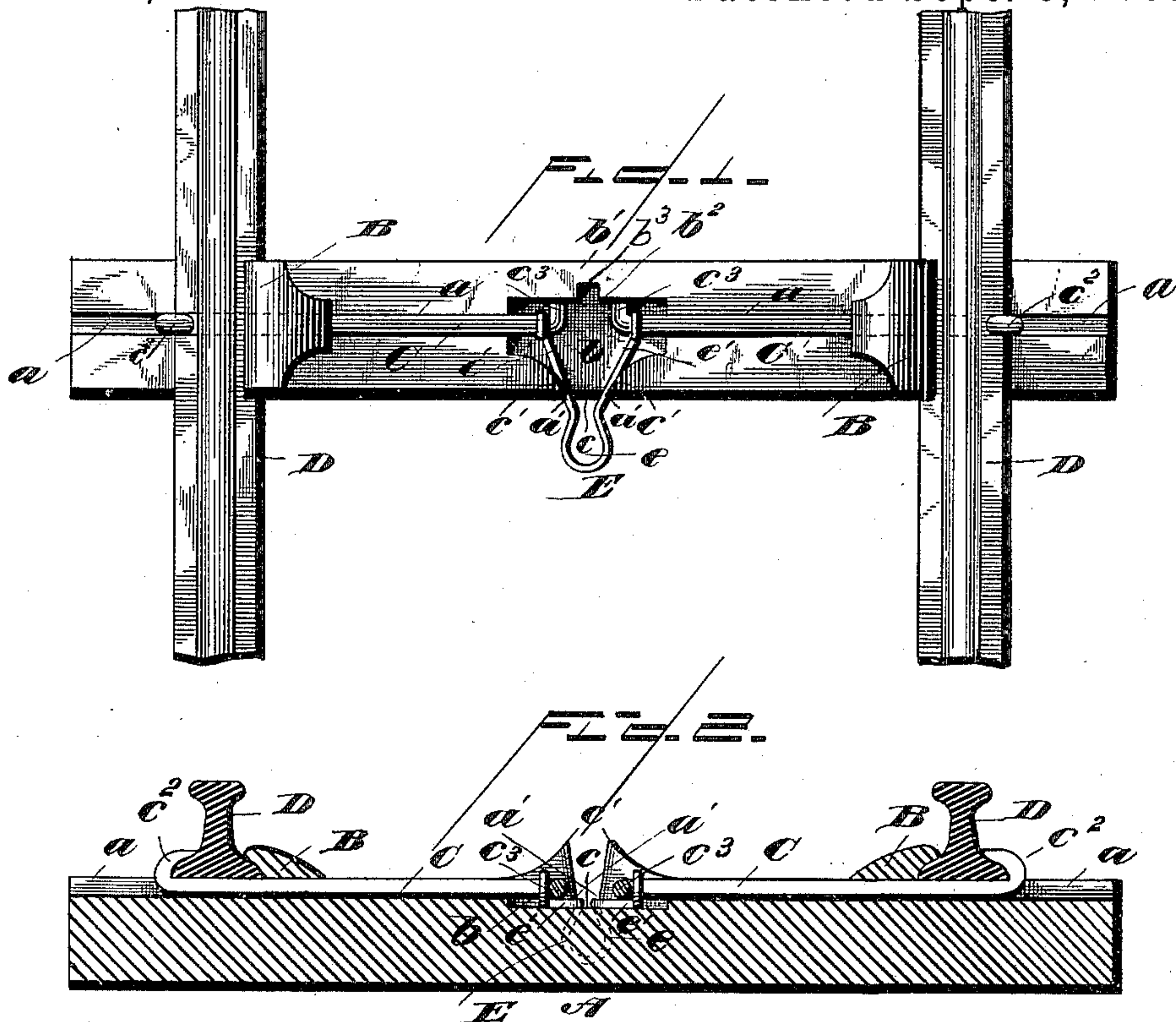


(No Model.)

J. H. COFFMAN.
RAILROAD TIE.

No. 369,591.

Patented Sept. 6, 1887.



Witnesses:
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UNITED STATES PATENT OFFICE.

JACOB H. COFFMAN, OF PHILADELPHIA, PENNSYLVANIA.

RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 369,591, dated September 6, 1887.

Application filed March 28, 1887. Serial No. 232,769. (No model.)

To all whom it may concern:

Be it known that I, JACOB H. COFFMAN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Railroad-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 and figures of reference marked thereon, which form a part of this specification.

This invention pertains to improvements in railroad sills or ties, the same having for its object to improve the laying of railroad-tracks, involving the ready putting down of the rails and the ready removal and renewal of an impaired or worn-out rail; and the invention consists in the peculiar combination of devices and novel construction and arrangement of parts, as will be hereinafter fully set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a plan view of my improved railroad sill or tie, with the rails in position thereon. Fig. 2 is a longitudinal section thereof; and Fig. 3 is a cross-section of the same, the section being taken contiguously to the connection of the lever-spring with the sliding half-rods.

In the embodiment of my invention I employ a sill or tie, A, which is duplicated at the usual intervals throughout the proposed track, as ordinarily practiced in putting down the sills or ties. In the upper surface of the sill A are two longitudinal channels or grooves, *a a*, extending from the ends thereof, and terminating in a deep recess or cavity, *b*, at or about the center of the sill or tie. Near the ends of the tie or sill the longitudinal channels or grooves *a a* may connect with vertical passages (not shown) opening through the lower side of the tie or sill, in order to discharge or pass off therefrom water resulting from snows or rain-falls, and thus prevent formation of ice that would otherwise occur from standing water. The rear wall of the recess or cavity *b* is closed by a block, *b'*, which, as shown in Fig. 3, may be made integral with the tie; or, if desired, this block can be made separate from the tie and removably fitted in

an opening formed in the rear side of the tie and communicating with the recess. This block *b'* is provided at its upper inner edge with a horizontal extension or plate, *b²*, which consequently overhangs the recess or cavity a short distance. The forward or inner edge of the plate or extension *b²* of said block is provided with a central passage, *b³*, opening inward, the function of which parts will appear farther on.

The front side of the recess or cavity *b* has a central vertical passage or opening, *c*, in it, the bottom corner edges of which terminate in notches *a'*, while the walls of said opening or passage are symmetrically rounded or convexed upon each side of said opening or passage and recede or diverge inwardly to the inner front side of the recess or cavity.

The upper surface of the sill or tie A, at the sides of the passage or opening *c*, is curved or inclined, so as to form upward approximately spiral extensions *c' c'* at the inner top edges of said opening, thus imparting thereto cam faces or surfaces, the purpose of which will be seen hereinafter; also, upon the upper surface of the sill or tie A, short distances from its ends, and arranged transversely of the channels or grooves *a a*, are cleats or half-chairs B B, which are cast or brazed upon the said sill or tie. Said cleats or half-chairs are provided with inwardly-inclined or "undercut" holding surfaces or faces which embrace or receive the inner flanges of the rails D D.

C C are two stout solid rods disposed within the longitudinal channels or grooves *a a* in the sill or tie A, one end of each of which rods is formed with a hook, *c²*, projecting upwardly out of said grooves or channels and adapted to constitute the other halves of the rail-chairs embracing or receiving the outer flanges of the rails D D, as clearly shown, thus, together with the cleats B B, forming or comprising the rail-chairs complete.

The inner ends of the rods C C are provided with the slight lateral extensions or stops *c³ c³*, which upon the first insertion of said rods into said channels or grooves are separately passed through the passage *b³* of the part *b²*, and as the rods are slid to their proper places project in under the plate-extension *b²* of the block or tie section *b'*, and bear against the same in order to resist the tendency of the

rods to turn when clamping the rails in position and to effect the holding of the hooks of said rods in their upright normal position.

E is a lever-spring, being preferably formed of a stout spring-wire, which is looped into a convenient handle, *e*, at its outer end and then doubled or formed into flaring arms *e' e'*, the inner ends of which are looped around the inner ends of the rods C C near their stops or extensions *c³ c³*. The lever-spring is thus connected to the rods C C and disposed within the opening or passage *c*, and upon being pressed down into the said passage or opening its arms *e' e'* will be forced against the cam faces or surfaces of the passage or opening, which will force said arms toward each other and cause the hooks on the outer ends of the rods C C to clamp the rails firmly in position between the same and the cleats B B. By their reaction the arms of the lever-spring, which have thus been sprung inward and downward and lodged in the bottom corner notches, impinge therein and effect the holding of said lever-spring securely in position as against being jarred free or otherwise accidentally liberated. The releasing of the lever-spring whenever desired, in order, it may be, to remove and renew an impaired rail or rails, can be readily and easily effected simply by pulling upward upon said lever-spring, which will deprive the cleats and hooks on the outer ends of the rods of their clamping action, releasing the rails.

By the use of my invention, among other advantages attained thereby, the use entirely of spikes, separate chairs, and other appliances for securing the rails to the ties or sills is wholly dispensed with, while the laying of the tracks, including the putting down of the sills or ties and the securing of the rails, is effected with facility and expedition.

The sill or tie may be either of metal or wood, although I preferably construct the same of the former.

It will be understood that I do not limit myself to the details of the construction and arrangement of the parts as herein shown and described, since these may be readily varied without departing from the spirit of my invention.

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

1. In a railroad tie or sill, the combination, with a tie or sill having the fixed cleats or half-chairs and retaining projections, of the rods constructed to engage the rail, and a lever-spring connected with the rods and having a cam or wedging action as it is brought into its locked position in contact with the retaining projections, as and for the purpose described.

2. The railroad tie or sill having fixed half-chairs or cleats, and the retaining projections *c'*, and sliding half-chairs, together with a lever-spring having a wedging or cam locking action as it is moved in contact with the projections and clamping the said half-chairs upon the rail-flanges, substantially as and for the purpose set forth.

3. The combination, with the channeled or grooved tie or sill having the fixed cleats or half-chairs, of the sliding hook-ended rods disposed in the grooves or channels of the tie or sill, and connected to a common lever-spring, which latter is adapted to enter and be acted upon by a cam-faced passage or opening in the sill or tie, whereby the said half-chairs or cleats and hook-ended rods are caused to clamp the rail-flanges and secure the rails in place, substantially as specified.

4. The combination, with the channeled or grooved tie or sill and the fixed half-chairs or cleats, of the sliding or hook-ended rods disposed in the channels or grooves of the tie or sill, and provided at their inner ends with lateral stops or extensions arranged to project under an extension of the tie or sill section, and the looped flared-arm lever-spring connecting said rods at their inner ends and adapted to enter a cam-faced passage in said tie or sill, said passage having its bottom edges terminating in notches, substantially as and for the purpose indicated.

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

JACOB H. COFFMAN.

Witnesses:

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