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PATENTED SEPT. 10, 1907.

F. WECKERLY.  
MEANS FOR SECURING RAILS TO TIES.

APPLICATION FILED MAY 18, 1907.

Fig. 6.

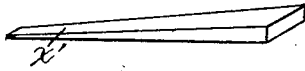


Fig. 7.

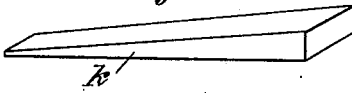


Fig. 2.

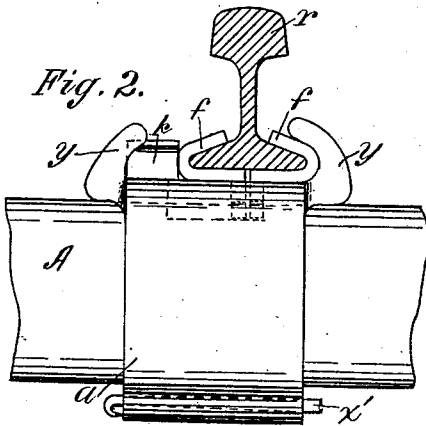


Fig. 4.

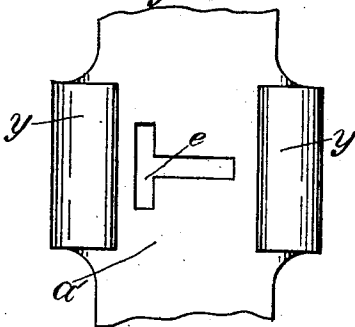


Fig. 1.

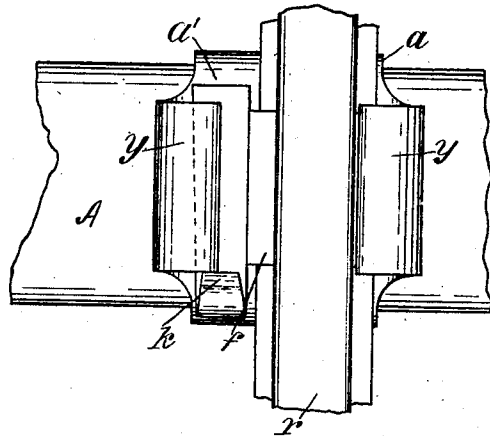


Fig. 5.

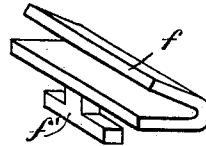
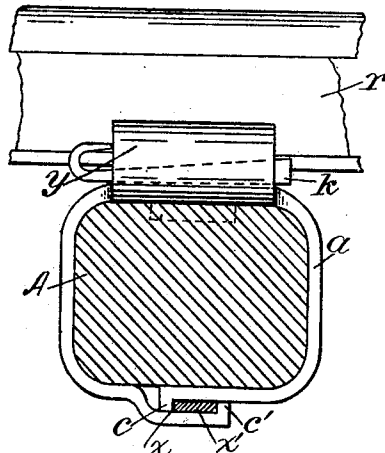


Fig. 3.



Witnesses:

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Schreiter & Mathews  
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# UNITED STATES PATENT OFFICE.

FRANK WECKERLY, OF ST. DAVIDS, PENNSYLVANIA.

## MEANS FOR SECURING RAILS TO TIES.

No. 865,665.

Specification of Letters Patent.

Patented Sept. 10, 1907.

Application filed May 18, 1907. Serial No. 374,425.

To all whom it may concern:

Be it known that I, FRANK WECKERLY, a citizen of the United States, and a resident of St. Davids, county of Delaware, and State of Pennsylvania, have invented certain new and useful Improvements in Means for Securing Rails to Ties, of which the following is a full, clear, and exact specification.

This invention relates to railroad track construction and consists of the hereinafter described improved means for securing rails to ties, the object of my invention being to provide such means readily applicable to all kinds of ties, economically feasible and yet safe, durable and obviating the known defects of such structures as were heretofore used.

My improved means for securing rails to ties or sleepers are shown in the drawings.

Figure 1 is a plan view and Fig. 2 a cross-sectional view of a railroad track showing the rails secured to a tie by my improved device; Fig. 3 is an end view of a tie with the rail secured thereto as shown in Figs. 1 and 2; Fig. 4 is a plan view of my improved rail bed ring with the rail and clamps removed; Fig. 5 is a perspective view of one of the rail clamps; and Figs. 6 and 7 are perspective views of the wedges employed for securing the rail bed ring upon the tie and for clamping the rail securely in its position.

The rail bed ring *a* is a band of suitable dimensions preferably rolled of steel material; its ends formed with interlocking, recessed flanges *c* and *c'*, and when the band is bent, conformably to the tie *A*, there is formed, between the recessed flanged ends, an opening *x*, into which the flat thin wedge *x'* (shown in Fig. 6) is driven to tighten the ring upon the tie. Wedge *x'* is tapered to a thin edge and made of soft iron so that when driven in as explained, its thin tapered end may be bent over as shown in Fig. 2 to prevent its withdrawing and to increase the security of its hold under all conditions. Other means may be used for securing together the ends of the band. It is however not necessary to tighten the band very strongly upon the tie, as owing to its width and conformity to the tie the band will securely withstand every strain upon it in either direction and safely resist spreading of the rails. Upon this band *a* and as an integral part thereof, the rail bed plate *a'* (see Fig. 4) is produced. This rail bed consists of a thicker and wider portion of the band so located that it will rest upon the upper surface of the tie, when the band is applied thereto, and of flanges *y* produced by up-bending the longitudinal edges of the widened portion of the band. By thus up-bending the edges the rail bed plate is formed into a dovetailed groove, sufficiently wide to accommodate the clamp *f*. Only one jaw of the clamp *f* may be used with the foot of the rail *r* between its jaws and the wedge *k*, when driven in to clamp the rail in its place.

The flange *y* on the outer side of the track may be

enlarged to reach over the foot of the rail *r* and then only one jaw of the clamp may be used on the other side. The rail bed plate would then be made correspondingly narrower. Such construction would be suitable for ties not supporting the joints of the rails or for light tracks.

A T-shaped slot, designated *e* in the drawings, is made transversely to, and approximately in the center of, the rail bed plate *a'* for the anchors of clamps (see Fig. 5) for which purpose the body of the tie is correspondingly recessed. One jaw of the clamp *f* is shown in perspective view in Fig. 5. The jaws of clamps *f* are conformed to the foot of the rail and each is provided with an anchor *f'* for securing it to the rail bed plate. The horizontal bar of the anchor corresponds in size with the head of the slot *e* and the shank with the width of its transverse portion. Both jaws of the clamps are alike and may be formed to inclose also the web of the rail. The same form of clamps may be used for rail joints. For such use the jaws of the clamps are made of the required length and the fish plates should be preferably made integral with the jaws of the clamp.

Wedges *k* are fitted into the space between the clamp and the flange *y* of the rail bed plate. They are also made of soft iron and provided with a head on one end, whereas their other end is tapered to a comparatively thin point. When the rail is set in, and clamped by driving in the wedge the thin point of the wedge is bent against the clamp to hold it securely in place. Bed plates for switches are constructed similarly with the consideration for their requirements and are affixed to the ties in the same manner.

My improved means for securing rails to ties is used in constructing a railroad track as follows:—The ties to be used are marked according to the gage and recesses for the clamp anchors made. The anchors *f'* of clamps *f* (see Fig. 5) interlock with the rail bed plate *a'*, and it is necessary to recess the ties *A* for a distance corresponding to the length of the T-shaped slot *e* to permit the inserting of the clamps and setting them in position as shown in Fig. 2, when the ties have been marked and recessed. The bands with the rail bed plates are set thereon in proper position and secured thereon by driving the wedges *x'* as explained. When setting the rail bed plates, care must be taken that they are set with the heads of slots *e* toward the inside of the track. Next the clamps *f* are set in the slots and the rails are set, gaged, and after they have been brought in correct alinement the wedges *k* are driven. Small deviations in gage or alinement, as may occur, are corrected and then the rails fixed in place by wedging the clamps.

The construction of my improved means for securing rails to ties is devised with the object in view to avoid the use of bolts and spikes and to secure the rails to the ties in such manner as will render the tampering with the track greatly more difficult if not wholly impossible.

The fastening of the rail bed plate to the tie is effected on the bottom thereof and cannot be removed unless the whole tie is removed from the track and turned around. It is otherwise not accessible. The tapering and bending over of the ends of wedges  $x'$  absolutely frustrates every attempt to withdraw them. The same circumstance prevents the withdrawing of the wedges  $k$ ; moreover the softness of the material and the tapering of their ends renders it impossible to drive them back, and even if that could be accomplished by would-be wreckers, the rails would still remain safely in their place supported against spreading by the flanges  $y$  of the rail bed plate and the secure hold of the band  $a$  upon the tie.

15 I claim as my invention:—

1. Means for securing rails to ties comprising a band, bent upon the tie; means for securing together the ends of the band; a rail bed plate, approximately midway between the ends of the band, and means for securing the rail to the bed plate.
2. Means for securing rails to ties comprising a band, bent upon the tie; means for securing together the ends of the band; a rail bed plate, approximately midway between the ends of the band; flanges on the rail bed plate, and means for securing the rail thereto and against the flanges of the rail bed plate.
3. Means for securing rails to ties comprising a band, bent upon the tie; means for securing together the ends of the band; a rail bed plate, approximately midway between the ends of the band; a clamp for the rail and means for securing the clamp to the rail bed plate.
4. Means for securing rails to ties comprising a band, bent upon the tie; means for securing together the ends of the band; a rail bed plate, approximately midway between the ends of the band; a T-shaped slot in the bed plate; a clamp of two jaws conforming to the foot of the rail, and means for securing the clamp to the rail bed plate.
5. Means for securing rails to ties comprising a band, bent upon the tie; means for securing together the ends of the band; a rail bed plate, approximately midway between the ends of the band; a stationary flange on the rail bed plate; a movable flange; means for attaching the movable flange to the rail bed plate and means for rigidly securing the rail between the movable and the stationary flange.
6. Means for securing rails to ties comprising a band, bent upon the tie; means for securing together the ends of the band; a rail bed plate, approximately midway between the ends of the band; a stationary flange on the rail bed plate; a T-shaped slot in the rail bed plate; a movable flange; an anchor, fitted into the T-shaped slot, on the movable flange; and means for rigidly securing the rail between the movable and the stationary flange.
7. Means for securing rails to ties comprising a band, bent upon the tie; means for securing together the ends of the band; a rail bed plate, approximately midway between the ends of the band; flanges on the rail bed plate; a T-shaped slot in the rail bed plate; a movable flange; an anchor, fitted into the T-shaped slot, on the movable flange and a wedge between the stationary and the movable flanges.
8. Means for securing rails to ties comprising a band, bent upon the tie; means for securing together the ends

of the band; a rail bed plate, approximately midway between the ends of the band; flanges on the rail bed plate; a T-shaped slot in the rail bed plate; a clamp for the rail; an anchor, fitted into the T-shaped slot on the clamp, and a wedge, between the clamp and the flange of the bed plate.

9. Means for securing rails to ties comprising a band, bent upon the tie; means for securing together the ends of the band; a rail bed plate, approximately midway between the ends of the band; flanges on the rail bed plate; a T-shaped slot in the bed plate; a clamp of two jaws conforming to the foot of the rail; anchors, one on each jaw of the clamp, fitted into the T-shaped slot, and a wedge between the clamp and the flange of the bed plate.

10. Means for securing rails to ties comprising a band, bent upon the tie; interlocking flanges, one on each end of the band; the flanges of the band forming, when interlocked, an opening, a tapered wedge fitted into the opening; a rail bed plate, approximately midway between the ends of the band, and means for securing the rail to the bed plate.

11. Means for securing rails to ties comprising a band, bent upon the tie; interlocking flanges, one on each end of the band; the flanges of the band forming, when interlocked, an opening, a tapered wedge fitted into the opening; a rail bed plate, approximately midway between the ends of the band; a clamp for the rail, and means for securing the clamp to the bed plate.

12. Means for securing rails to ties comprising a band, bent upon the tie; interlocking flanges, one on each end of the band; the flanges of the band forming, when interlocked, an opening, a tapered wedge fitted into the opening; a rail bed plate, approximately midway between the ends of the band; flanges on the rail bed plate, and means for securing the rail to the bed plate and against the flanges of the bed plate.

13. Means for securing rails to ties comprising a band, bent upon the tie; interlocking flanges, one on each end of the band; the flanges of the band forming, when interlocked, an opening, a tapered wedge fitted into the opening; a rail bed plate, approximately midway between the ends of the band, a stationary flange on the rail bed plate; a T-shaped slot in the rail bed plate; a jaw, conforming to the foot of the rail; an anchor, fitted into the T-shaped slot on the jaw, and means for rigidly securing the rail between the jaw and the flange of the rail bed plate.

14. Means for securing rails to ties comprising a band, bent upon the tie; interlocking flanges, one on each end of the band; the flanges of the band forming, when interlocked, an opening; a tapered wedge fitted into the opening; a rail bed plate, approximately midway between the ends of the band, flanges on the rail bed plate; a T-shaped slot in the rail bed plate; a jaw, conforming to the foot of the rail; an anchor, fitted into the T-shaped slot on the jaw.

15. Means for securing rails to ties comprising a band, bent upon the tie; interlocking flanges, one on each end of the band; the flanges of the band forming, when interlocked, an opening; a tapered wedge fitted into the opening; a rail bed plate, approximately midway between the ends of the band, flanges on the rail bed plate; a T-shaped slot in the rail bed plate; a clamp for the rail; an anchor, fitted into the T-shaped slot on the clamp, and a wedge, between the clamp and the flange of the bed plate.

Witnesses:

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