(No Model.)

G. A. BUTLER.

COMBINED RAILROAD TIE AND LOCK.

No. 590,253. Patented Sept. 21, 1897.

Fig. 1.

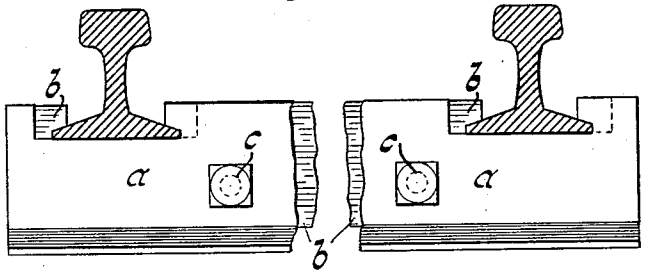


Fig. 2.

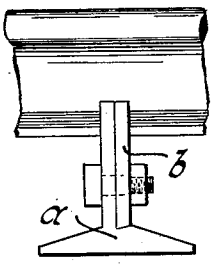


Fig. 3.

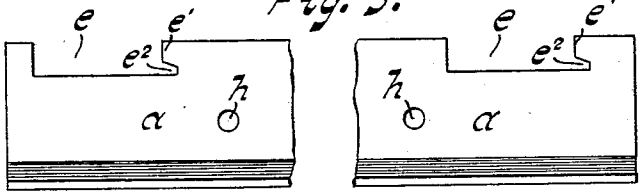


Fig. 4.

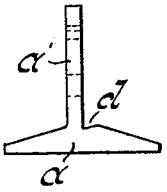


Fig. 5.

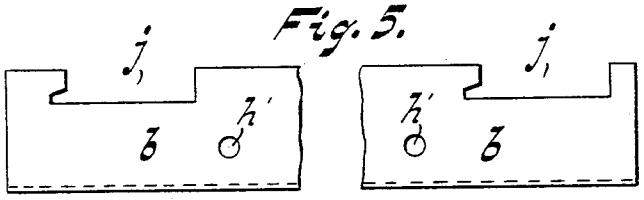


Fig. 6.

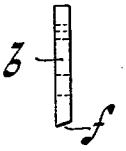


Fig. 7.

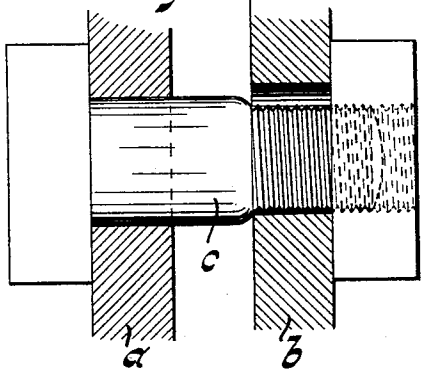
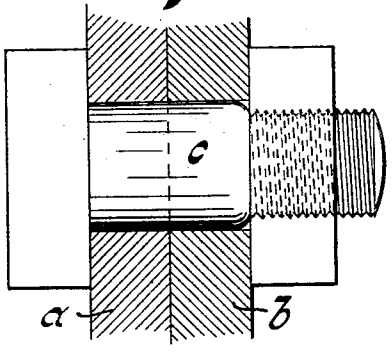


Fig. 8.



Witnesses
A. W. Kurz
Harry Calhoun

George A. Butler Inventor

By Schreiter, Van Iderstine & Mathews, his Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE A. BUTLER, OF YONKERS, NEW YORK, ASSIGNOR OF ONE-HALF TO CHARLES HENRY BIDDENGER, OF SAME PLACE.

COMBINED RAILROAD-TIE AND LOCK.

SPECIFICATION forming part of Letters Patent No. 590,253, dated September 21, 1897.

Application filed December 1, 1896. Serial No. 614,084. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. BUTLER, a citizen of the United States, and a resident of Yonkers, county of Westchester, and State of New York, have invented a certain new and useful Combined Railroad-Tie and Lock, of which the following is a full, clear, and exact specification, reference being had to the accompanying drawings, wherein—

Figure 1 is an elevation of my combined railroad-tie and lock, the rails being shown in section; Fig. 2, an end view thereof. Fig. 3 is a front elevation, and Fig. 4 an end view, of the tie; Fig. 5, an end elevation, and Fig. 6 an end view, of the locking-plate; and Figs. 7 and 8 are enlarged details showing the construction and application of the draw-bolts used in construction of my combined railroad-tie and lock.

My invention relates to railroad appliances for securing rails to the bed of a railroad; and it consists of the hereinafter-described combined railroad-tie and lock adapted to support the rails and to hold them securely in position in relation to the track and also in relation to each other and not requiring any other implements usually employed in such construction.

My combined railroad-tie and lock consists only of three members—namely, of the tie proper, marked in the accompanying drawings with the letter *a*, the locking-plate *b*, and the bolts *c*. Tie *a* is an approximately T-shaped beam rolled of steel. The foot of the beam is longer on one side, as shown in Fig. 2, and closely adjoining the vertical part of the body of the tie is formed a slide *d*, slightly inclined toward the vertical part, serving to receive the locking-plate when inserted in position.

In the upward-extending web *a'* are provided slots *e*, (shown in Fig. 3,) set apart correspondingly with the required width of the track, conforming on one side with the shape of the foot of the rail and cut vertically downward on the opposite side. The projecting points *e'* of the slots are slightly shorter and the notches e^2 somewhat deeper than the foot of the rail. Lock-plate *b* is constructed in like manner and provided with similar slots *j*, shaped, however, oppositely to those in the tie. Its lower edge *f* is shaped correspondingly to fit into the slide *d* of the tie.

Both the tie and the locking-plate are provided with corresponding holes *h* and *h'*. The construction of the tie and of the locking-plate is such that the slots and holes can be produced in both with the same die.

The bolts *c*, used for screwing the locking-plate to the tie, are shown in Figs. 7 and 8, respectively. Their threaded ends are reduced in diameter, and the shoulder thus formed is slightly tapered and rounded.

It has been stated above that the slots in the tie and in the locking-plate conform to the shape of the foot of the rail, except that the projections *e'* are somewhat shorter and the notches e^2 somewhat deeper. This is done for the purpose of giving the lock what I call a "draw."

When the rails are set in the tie and the locking-plate slid in its place, it will be found that the holes for the bolts *c* will not exactly fit, owing to the above-described particular construction of the slots. This is done purposely to insure a tight grip and fit of the tie and locking-plate on the foot of the rail, which is obtained by forcing the bolts into their respective holes and eventually assisting by a strike of a hammer on the end of the locking-plate. The shoulders of the bolts *c*, when forced in their respective holes, will slide on the edge of the hole of the tie, forcing itself and thereby also the locking-plate in proper position. In this manner both rails will be securely locked in the tie.

The shape of the lower edge *f* of the locking-plate *b*, and the corresponding shape of the slide *d*, provided in the tie *a*, is for the purpose of insuring a proper and secure connection between the tie and the locking-plate.

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

1. A combined railroad-tie and lock composed of a beam having a flat base and a vertically upward-projecting web, provided with slots conforming on one side with the shape of the foot of the rail and cut vertically downward on the opposite side, these slots being set apart correspondingly with the required gage of the track, a locking-plate provided with similar slots shaped oppositely to the slots of

the beam and adapted to be inserted in the slide provided in the base alongside of the beam and secured thereto by bolts passing through corresponding holes in the tie and in the locking-plate.

2. The combination with a railroad-tie composed of a beam having a flat base and a vertically upward-projecting web, provided with slots conforming on one side with the shape of the foot of the rail and cut vertically downward on the opposite side, of a locking-plate provided with similar slots shaped oppositely to the slots of the beam and adapted to be inserted in the slide alongside of the beam and secured thereto by bolts passing through corresponding holes in the tie and in the locking-plate.

3. In a combined railroad-tie and lock the combination with a beam having a flat base and a vertically upward-projecting web, provided with slots conforming on one side with the shape of the foot of the rail and cut vertically downward on the opposite side, these slots being set apart correspondingly with the required gage of the track, a locking-plate provided with similar slots shaped oppositely to the slots of the beam and adapted to be inserted in the slide provided in the base alongside of the beam the tie and the locking-plate being provided with corresponding bolt-holes, of bolts having their threaded ends reduced in diameter and the shoulder thus formed slightly tapered and rounded for the purpose of drawing the opposite projections of the slots tightly upon the foot of the rails.

In witness that I claim the improvements described in the foregoing specification I have signed my name in the presence of two subscribing witnesses.

GEORGE A. BUTLER.

Witnesses:
J. P. SANDERS,
GEO. RAYNER, Jr.