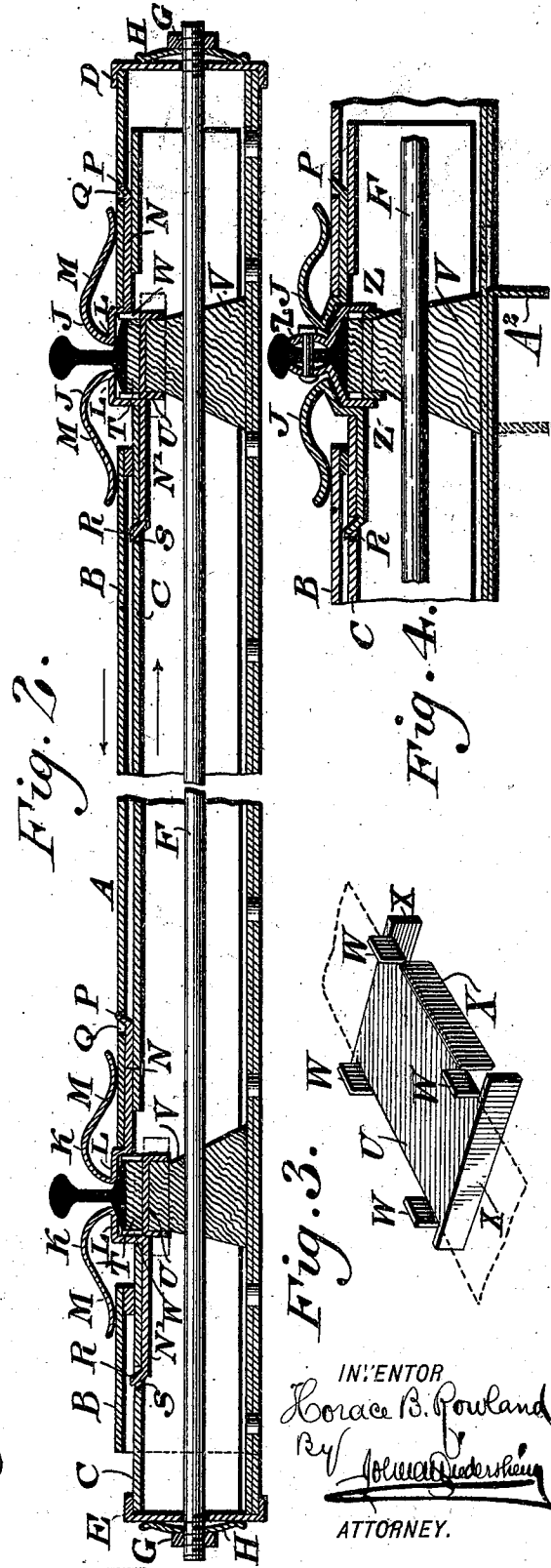
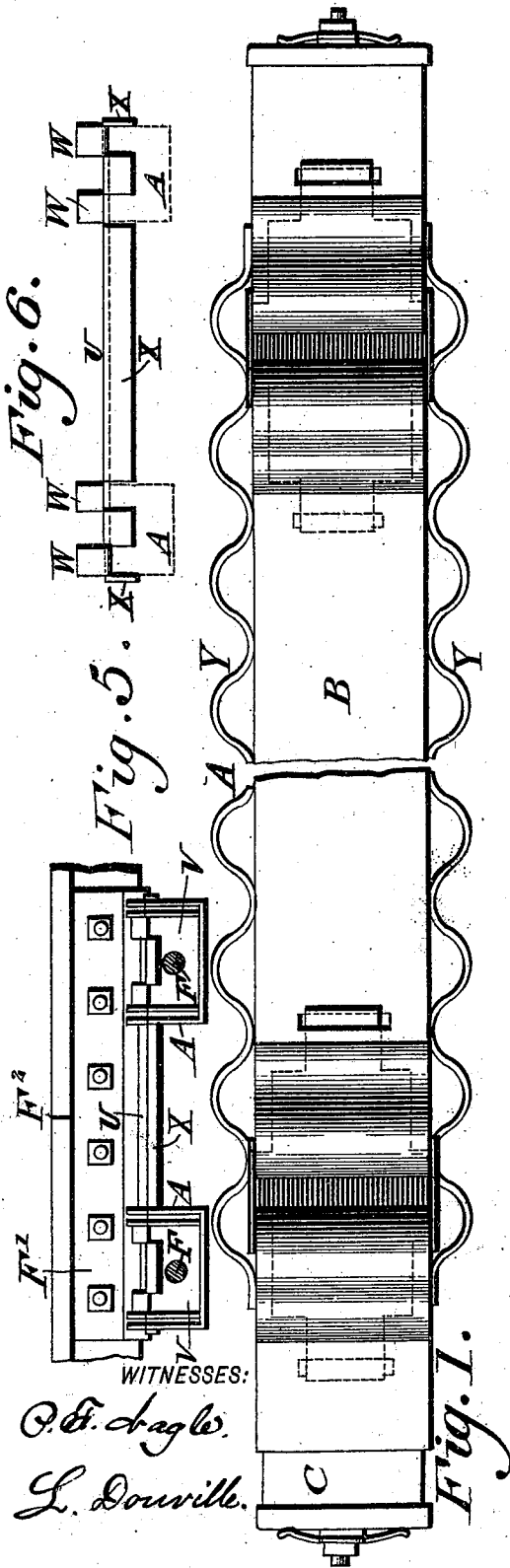


(No Model.)

H. B. ROWLAND.
RAILWAY TIE AND FASTENING.

No. 502,639.

Patented Aug. 1, 1893.



UNITED STATES PATENT OFFICE.

HORACE B. ROWLAND, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF
ONE-THIRD TO JACOB I. BOTHWELL, OF SAME PLACE.

RAILWAY-TIE AND FASTENING.

SPECIFICATION forming part of Letters Patent No. 502,639, dated August 1, 1893.

Application filed June 29, 1892. Serial No. 438,405. (No model.)

To all whom it may concern:

Be it known that I, HORACE B. ROWLAND, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Railway-Ties and Fastenings, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a railway tie formed of metal, provided with fastenings for the rail, as hereinafter described the same operating in opposite directions to force the cheek pieces or clamps against the rail, as will be hereinafter set forth.

It also consists of a novel seat for the cushion on which the rail is supported, the same being adapted to embrace the rail and said cushion, as will be hereinafter fully set forth. Figure 1 represents a top or plan view of a railway tie and fastening embodying my invention. Fig. 2 represents a longitudinal section thereof. Fig. 3 represents a perspective view of a seat for the rail. Fig. 4 represents a longitudinal section of a modification. Figs. 5 and 6 represent side elevations of parts to be hereinafter referred to.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings:—A designates a metallic cross tie which consists of two tubes B and C, which are fitted to each other telescopically, and adapted to move in opposite directions. To the ends of said tubes are attached respectively, the caps D and E, through which passes the rod F, which is connected with said caps by means of nuts G, and spring-washers H, which are fitted on said rod, the washers being interposed between said nuts and caps.

J and K designate the cheek pieces or clamps for the rail, the same being formed of shoulders L, which rest on the bases of the rails, the laterally projecting heads M, which rest on the outer tubes B, and the laterally projecting bases N and N'. The bases N extend freely between the tubes B and C, and have at their outer ends the lips P, which project upwardly and enter openings Q in the outer tube B. The bases N' extend un-

der the tube C, and have on their outer ends the lips R, which project upwardly and enter openings S in said tube C, it being noticed that the tubes have openings therein below the rails to receive the portions of the cheek pieces below the shoulders L thereof, and also to receive the upper ends of wooden cushions T on which the rails are seated, and the metallic bed plates U on which said cushions are sustained, said plates being supported on wooden blocks or standards V, which rest on the bottom of the tie as most clearly seen in Fig. 2. The rod F passes through the blocks V, and the latter are widened downwardly, thus affording increased bases and strength.

The bed plates are each provided with upwardly projecting lips W, between which the flange of the rail is confined, and the downwardly projecting flanges X which embrace the top of the block V, and prevent shifting of said plate, the rail thus being firmly and reliably supported in vertical direction. It will be seen that when the nuts G are tightened against the caps D and E, the tubes are drawn in opposite directions. The tube B moving say to the left, bears against the lips P of the tails N of the cheek pieces, and thus forces the shoulders of the latter tightly upon the bases of the rails on one side thereof. The tube C moving say to the right, bears against the lips R of the tails N' of the cheek-pieces, and thus forces the latter upon the opposite side of the bases of the rails, thus firmly holding the rails in position. The spring washers H prevent dead pressure of the nuts on the caps, and provide elasticity to permit expansion and contraction of the tubes in the longitudinal direction thereof. When the parts wear away, the nuts G are properly rotated, and the respective portions may be tightened, and when the nuts are rotated in the opposite direction, the caps may be displaced, and the several parts separated. When the nuts G are loosened, the cheek pieces are so relieved that a rail may be removed by raising it or by lowering the tie, and the rail may be replaced by a similar action, the cheek pieces readily separating, after which, they may return to their normal positions, and the nuts

are again tightened, the result being the same as hereinbefore stated. The heads M of the cheek pieces provide elasticity for the same, it being noticed that the bases of the rails are inclined upwardly, and as the action of the bolt F is brought to bear on cheek pieces M, they are forced against the rail and ride upon the inclined portion, thus forcing the rail firmly down upon the cushion, and making a firm and solid fastening, and also furnishing elasticity which will take up any wear, and also allow for expansion and contraction in the rail. Owing to the spring-washers H, the cheek pieces maintain the gage, even when the parts wear or change by contraction or expansion, it being noticed that the openings in the two tubes or shells where the cheek pieces enter, primarily produce the gage for the tracks, as said openings are produced uniformly in all of the ties.

In Fig. 5, I show the employment of a fish plate F' for the joint F² of adjacent rails.

In Fig. 6, the bed plate U is shown as of increased length, so as to extend from and be connected with two adjacent ties.

In Fig. 4, A² designates a lip which is punched out of the tie and projected downwardly, so as to form an anchor which may be embedded in the ground and engage with the ballast, or it may be employed to embrace the end of a wooden tie employed on a bridge. On the sides of the tie are corrugated plates Y of serpentine or curved shape, the same increasing the width of the tie, and interlocking with the ballast, thus firmly anchoring the tie.

In Fig. 4, I show fish plates Z interposed between the cheek pieces and rail, without, however, producing different results.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A railway tie formed of tubes fitted to each other telescopically, and each engaging with a cheek piece, said tubes being movable in opposite directions, whereby the cheek pieces are clamped to the rail, substantially as described.

2. A railway tie formed of tubes fitted to

each other telescopically, and each engaging with a cheek piece, a rod connected with the ends of said tubes, and means for forcing said tubes in opposite directions, substantially as described.

3. In a railway tie, tubes fitted to each other telescopically and cheek pieces each connected with one of said tubes, a rod attached to the ends of said tubes, and a nut on the rod, for connecting the tubes and forcing the cheek pieces in opposite directions against the rail, substantially as described.

4. In a railway tie, cheek pieces formed of shoulders, and tails, and tubes which engage with said tails and are movable in opposite directions, thus forcing the cheek pieces against the rail, substantially as described.

5. A railway tie formed of tubes fitted to each other telescopically, a tightening rod connecting said tubes a nut on said rod, and a spring washer interposed between said nut and the adjacent end of one of the tubes, substantially as described.

6. In a railway, a metallic cross tie consisting of tubes fitted telescopically, means substantially as described for closing said tubes on each other, clamps formed of laterally projecting heads adapted to rest on the outer tube, shoulders resting on the base of a rail, and laterally projecting bases, one of said bases extending freely between said tubes, and having a lip projecting upward through an opening in the outer tube, and the other base being under the inner tube and having a lip entering an opening in said tube, said parts being combined substantially as described.

7. In a railway, a metallic cross tie formed of telescoping tubes having openings below the rail, cheek pieces with shoulders thereon, wooden cushions on which the rail is seated, metallic plates supporting said cushions, and standards supporting said plates, said parts being combined substantially as described.

HORACE B. ROWLAND.

Witnesses:

JOHN A. WIEDERSHEIM,
R. H. GRAESER.