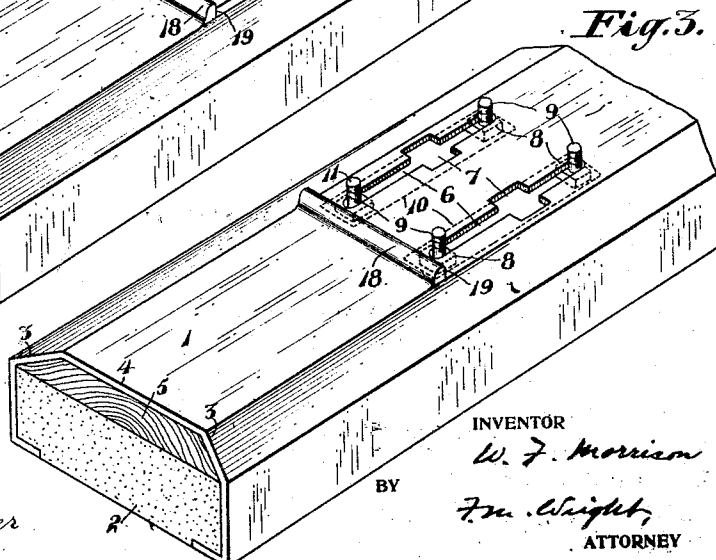
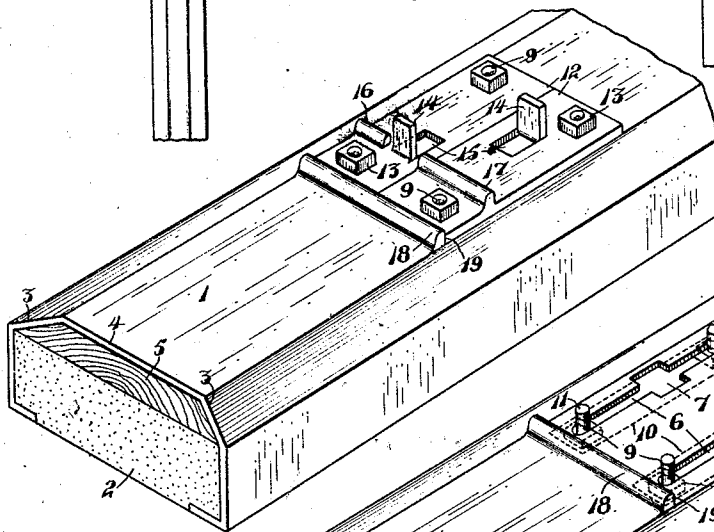
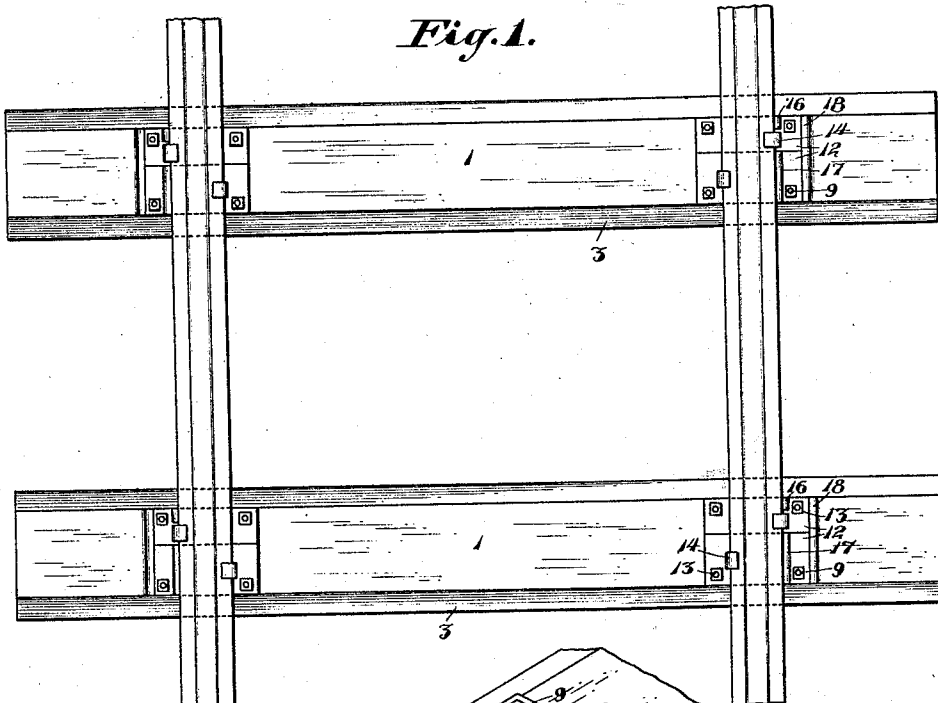


W. F. MORRISON.
STEEL AND CONCRETE RAILWAY TIE.
APPLICATION FILED NOV. 1, 1911.

1,021,845.

Patented Apr. 2, 1912.



WITNESSES

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WILLIAM F. MORRISON, OF COWELL, CALIFORNIA.

STEEL AND CONCRETE RAILWAY-TIE.

1,021,845.

Specification of Letters Patent.

Patented Apr. 2, 1912.

Application filed November 1, 1911. Serial No. 657,972.

To all whom it may concern:

Be it known that I, WILLIAM F. MORRISON, a citizen of the United States, residing at Cowell, in the county of Contra Costa and State of California, have invented new and useful Improvements in Steel and Concrete Railway-Ties, of which the following is a specification.

The object of the present invention is to provide an improved concrete railway tie which will very securely hold the rails in their proper positions to prevent them from spreading, and in which said rails if not in proper positions will be automatically adjusted to said positions by the movement of trains thereon.

A further object is to provide a tie from which the rails can be readily removed and new rails substituted.

In the accompanying drawing, Figure 1 is a plan view of two of my improved ties with the rails laid thereon; Fig. 2 is an enlarged perspective view of an end of a tie; Fig. 3 is a similar view of said end, the plates being removed.

Referring to the drawing, 1 indicates a metallic longitudinal casing, the lower portion of which is rectangular in form, and is filled with concrete 2, while the upper portion has sloped or beveled edges 3, between which and the upper side 4 of the casing a block 5 of wood is supported upon the concrete 2. Said wooden block 5 thus forms a cushion, reducing the effect of shocks or jars before they reach the concrete body, so that the concrete is rendered less liable to crack or break from said shocks.

The upper side 4 of the casing, near each end thereof, is formed with a transverse upwardly extending rib 18 having a vertical inner shoulder 19, and in said upper side 4 there are formed, near said ribs and adjacent to the beveled edges 3, two longitudinal slots 6, each of which at its center is enlarged, as shown at 7, to receive the heads 8 of bolts 9, the upper surface of the wooden block 5 being recessed, or cut away, as shown at 10, to allow said heads to slide longitudinally therein, so that the stems of said bolts can move in said slots to the ends thereof. In this position the upper ends 11 are adapted to pass through apertures in plates 12, of which I provide, for each end of the tie, two, placed side by side, with their outer ends abutting

against the vertical shoulder 19 of the rib 18, as clearly shown in Fig. 2, each plate being secured to the casing of the tie by nuts 13 screwed upon the upper ends 11 of the two bolts in the corresponding slot 6. However, should said plates not have been placed originally in proper position they will, by the outward thrust of the train transmitted to them as hereinafter described, be moved outward so that their outward ends abut against said shoulder 19.

Each plate 12 is formed with a lug or lip 14, cut out therefrom, as shown at 15, the lug of one of said plates being adjacent to one end thereof, and the lug of the other plate being adjacent to the opposite end. Before the rails are laid upon the ties said lugs extend upwardly, as shown in Fig. 2, but, when said rails have been so laid, they are bent downwardly one over each flange of the rail. The function of said lugs is merely to hold the flange of the rail down to the plate, and I do not rely upon them principally, if at all, to prevent the rails from spreading. To resist the rail-thrust, said plates are formed with shoulders 16, 17, which are in line with each other and also with that one of the two lugs 14 which is intended to engage the outer flange of the rail. Said shoulders 16, 17, thus receive the direct outward thrust on the rails, and transmit it to the plates 12, and it is then received by the shoulder 19 and transmitted to the casing 1.

To detach the rails from the plates for the purpose of substitution or otherwise, the nuts 13 are unscrewed from the bolts 9, whereupon the plate having the outer lug, that to the left in Fig. 2, can readily be withdrawn from the rail. The other plate can also be withdrawn, as it is then comparatively easy to depress the plate from the rail, or raise the flange of the rail from the plate.

I thus provide a railway tie of extreme strength and durability which will, much better than ties as at present constructed, prevent the rails from spreading, with which the rails will automatically adjust themselves in the proper position for use, and with which the rails can readily be taken up and replaced when desired.

I claim:—

A railway tie comprising a suitable body, a casing around said body having near each end an abutment, a plate upon said casing

also having an abutment, means for securing said plate to said casing while permitting it to slide longitudinally therein, and so that the end of said plate abuts against
5 said abutment, said plate being formed with means for securing thereto the flange of a rail in contact with said abutment on the plate.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses. 10

WILLIAM F. MORRISON.

Witnesses:

GILMORE HURSTON,
MARTIN SPRINKMAN.