Aug. 7, 1928. 1,680,131

J. CORL

RAILWAY TIE PLATE

Filed Nov. 10, 1927

Fig. 1.

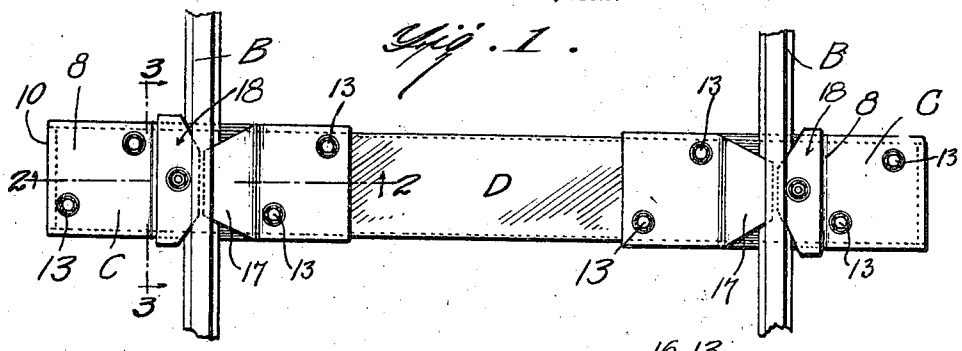


Fig. 2.

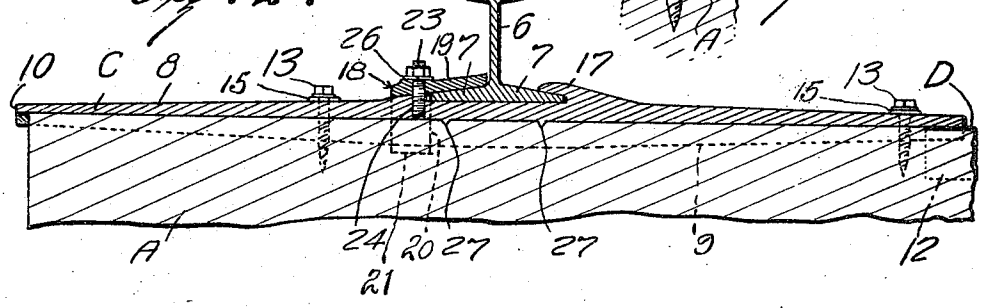


Fig. 5.

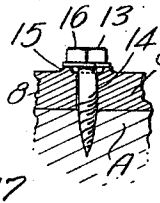


Fig. 3.

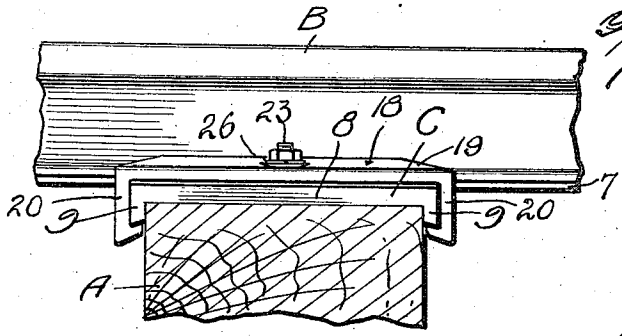


Fig. 4.

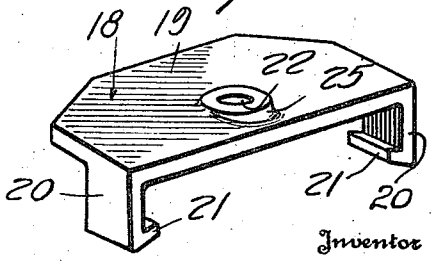
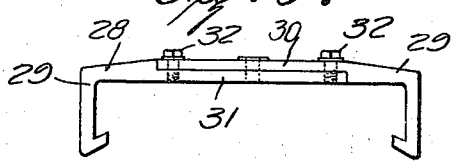


Fig. 6.



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UNITED STATES PATENT OFFICE.

JACOB CORL, OF MOUNT IDA, VIRGINIA.

RAILWAY-TIE PLATE.

Application filed November 10, 1927. Serial No. 232,346.

This invention relates to new and useful improvements in railway tie plates.

It is a well known fact that the available supply of tie timber has been reduced to such an alarming extent that means must be provided for greatly enhancing the life of the wooden ties or some substitute tie must be created.

It is also a well known fact that rails are generally secured to the wooden tie through the medium of spikes which are driven into the tie at points immediately adjacent to the edges of the base flanges of the rails. As a result of these spikes being driven into the wooden tie, the rain water and snow gravitate into the openings around the spikes and cause a rapid deterioration of the tie to occur. As a result of the tie becoming deteriorated along and under the rails, the rails very soon become loose and the track is rendered uneven, resulting in the early removal of the affected tie.

Among the several objects of my invention are to provide a tie plate construction which will not only cover the upper surface of the entire tie but which will prevent water and snow from gravitating into the tie; to provide a tie plate in which the rail fastening means do not enter the tie, together with means for fastening the plate to the tie at points remote from the rail fastening means, and to provide a tie plate which is extremely simple in construction, is therefore cheap to manufacture, durable in operation, and will function to eliminate deterioration of the tie by water or snow.

With these and other objects in view which will more fully appear, the nature of the invention will be more clearly understood by following the description, the appended claims, and the several views illustrated in the accompanying drawings.

In the accompanying drawings:

Figure 1 is a plan view of a railway tie and tie plate constructed in accordance with my invention,

Figure 2 is an enlarged longitudinal sectional view taken on the line 2—2 of Figure 1,

Figure 3 is a transverse sectional view taken on the line 3—3 of Figure 1,

Figure 4 is a perspective view of the preferred form of rail clamp,

Figure 5 is an enlarged detailed sectional view of one of the fastening means between the tie plate and the tie, and

Figure 6 is a view in elevation showing a modified form of rail clamp.

Like reference numerals designate corresponding parts throughout the several figures of the drawings.

Referring to the accompanying drawings, A indicates a wooden tie and B—B indicate the rails, each rail being of standard construction and including a head 5, web 6, and base flanges 7—7. The rails B are seated upon the tie plates C—C which are positioned on the upper surface of the tie A.

Each tie plate C is formed from a single casting and includes a base 8 and depending side flanges 9—9. The plates C are positioned on the tie so as to lap over the associated end, as indicated at 10 in Figures 1 and 2. The tie plate C extends on opposite sides of the associated rail B and the depending flanges 9—9 extend downwardly along the sides of the tie A. The tie plates C—C are spaced apart, and in order to protect the intermediate portion of the tie from exposure to the elements, I have provided a cover D which may be of sheet metal such as galvanized iron or the like. This cover D extends under the inner edges of the tie plate C and is provided with depending side flanges 12—12 which extend downwardly along the sides of the tie.

Each tie plate C is rigidly secured to the tie by means of lag screws 13 which are located at points remote from the adjacent rail B. Each of these lag screws passes downwardly through an opening 14 formed in the base 8 of the tie plate and thence downwardly into the tie for engagement with the latter. The upper surface of the base 8, around each opening 14, is formed with an angular rib 15 for engagement by the head 16 of the lag screw. The angular rib 15 forms a guard against the entrance of water into the opening 14 and the head 16 of the screw by its engagement with the angular rib 15, serves to further exclude water from entering said opening 14.

In order to securely fasten the associated rail B to the tie plate C, I have formed the base 8 of the plate with an integral lip 17 which engages one of the base flanges 7 of the rail. In order to firmly attach the other base flange 7 to the tie plate, I have provided a clamp 18 which is of inverted U-shaped construction. This clamp includes a top 19, depending legs 20—20, and fingers 21—21 which extend inwardly from the lower ends of the legs 20 for respectively engaging the under edges of the depending flanges 9—9 of the tie plate. As shown in Figure 3, the under edges of the flanges 9—9 of the tie plate are under-cut or beveled, and the fingers 21—21 extend upwardly at the same angles. The lower edges of the flanges 9—9 of the tie plate directly under the rail B extend in a horizontal plane, whereas the top 19 of the clamp extends inwardly in diverging relation. In other words, the fingers 21—21 and the top 19 are disposed in diverging relation so as to properly position the clamp onto the inclined upper face of the base flange 7 of the rail. This diverging relation causes the clamp when slid into rail engaging position to have a wedging action so as to tightly engage the base flange of the rail and securely retain the latter in direct contact with the upper surface of the tie plate C.

In order to secure the clamp 18 in position, I have provided the top 19 thereof with an opening 22 adjacent the outer edge thereof, and extending downwardly through this opening is a bolt 23 having a threaded shank 24 for engaging a correspondingly threaded opening in the base 8 of the tie plate. It is to be observed that the lower end of this bolt terminates above the under face of the tie plate, and consequently this bolt does not enter or engage the wooden tie A.

An angular rib 25 is formed on the upper surface of the top 19 around the opening 22 for preventing the entrance of water into said opening. A lock washer 26, of any suitable construction, is interposed between the rib 25 and the head of the bolt 23 and serves not only to secure the bolt against turning in the reverse direction, but also cooperates to close the opening 22 against the ingress of water.

In order to prevent the plate C from endwise movement on the tie, I have provided the under surface, directly under the rail seat, with one or more transversely disposed ribs 27, which readily project into the upper surface of the tie by the weight of a train passing over the rails.

From the foregoing, it will be observed that the means for fastening the rail to the tie is disposed intermediate the means for fastening the plate to the tie, and consequently there is no danger of injuring the tie directly under the rail.

In Figures 6, I have shown a modified form of clamp plate, and have indicated the entirety by the numeral 28. This plate 28 is of the same general construction, but instead of being cast as a single unit is formed by two sections 29—29 having overlapping portions 30 and 31 which are secured together by bolts 32—32.

It is of course to be understood that the details of structure and arrangements of parts may be variously changed and modified without departing from the spirit and scope of my invention.

I claim:

1. The combination with a wooden railway tie, of spaced tie plates supported on the tie and covering the end portions thereof, rails secured to the plates, and a sheet metal covering disposed on the tie intermediate the plates and having the opposite edges disposed under said plates.

2. The combination with a wooden railway tie, of spaced metal tie plates supported on the tie and covering the end portions thereof, means for securing the rails to the plates, and means on opposite sides of the rail securing means for securing the plates to the tie, said rail securing means terminating above the tie, whereby the tie adjacent the rails will be devoid of rail anchoring means.

3. The combination with a wooden railway tie, of spaced metal tie plates supported on the tie and covering the end portions thereof, means for securing the rails to the plates, and means on opposite sides of the rail securing means for securing the plates to the tie, said rail securing means including a bolt terminating above the tie, whereby the tie adjacent the rails will be devoid of rail anchoring means.

4. The combination with a wooden railway tie, of spaced tie plates supported on the tie and covering the end portions thereof, each plate including a base extending on opposite sides of the rail and depending longitudinal flanges, and means for securing each rail to its tie plate including a clamp slidable longitudinally of the tie and engageable with the lower edges of the plate flanges and with the base flange of the rail, and means for securing the clamp to the tie plate.

5. The combination with a wooden railway tie, of spaced tie plates supported on the tie and covering the end portions thereof, each plate including depending longitudinal flanges, and means for securing each rail to its tie plate including a clamp slidable longitudinally of the tie and engageable with the plate flanges and with the base flange of the rail, and a bolt for securing the clamp to the tie plate, the lower end of the bolt being disposed above the tie.

6. The combination with a wooden railway tie, of spaced tie plates supported on

the tie and covering the end portions thereof, each plate including depending longitudinal flanges and depending transversely disposed ribs, and means for securing each rail to its tie plate including an inverted U-shaped clamp having a base for engaging the base flange of the rail and inwardly extending fingers for engaging the lower edges of the flanges of the tie plate, and means for securing the clamp to the tie plate.

In testimony whereof I hereunto affix my signature.

JACOB CORL.