L. J. FINDLAY.

METALLIC RAILWAY TIE.

APPLICATION FILED JUNE 16, 1910.

1,033,791.

Patented July 30, 1912.

2 SHEETS—SHEET 1.

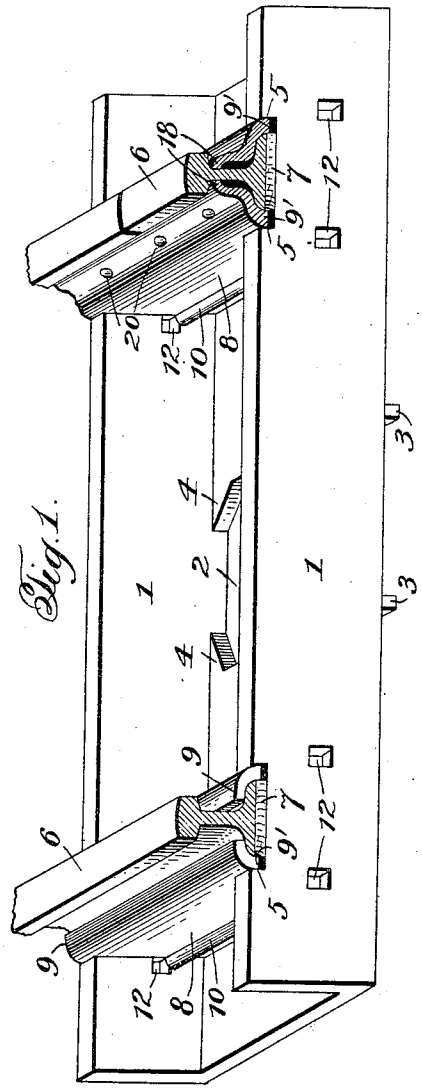

Fig. 1.

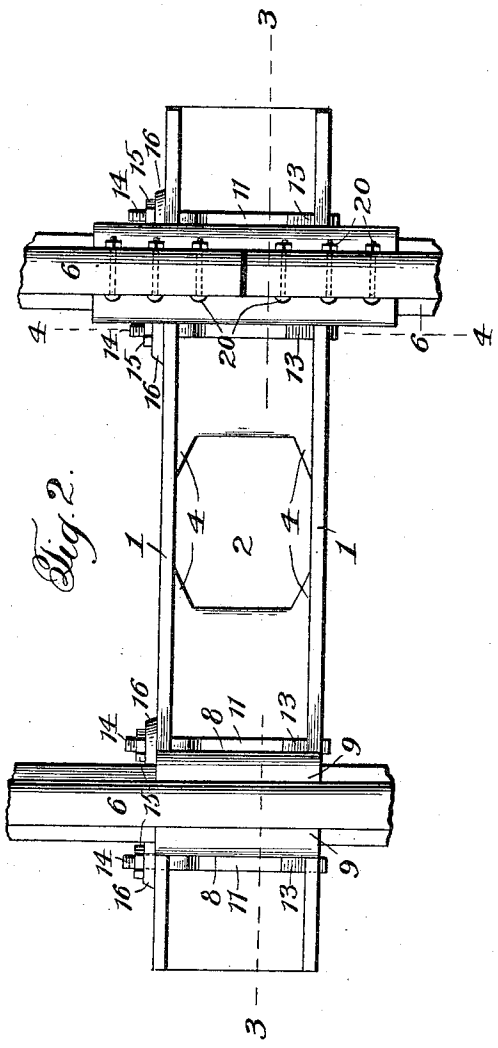

Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 3.

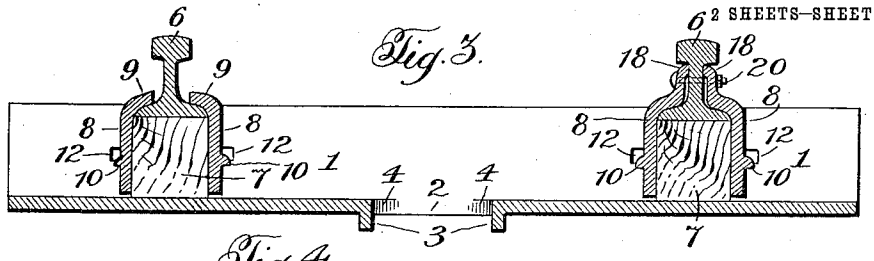

Fig. 4.

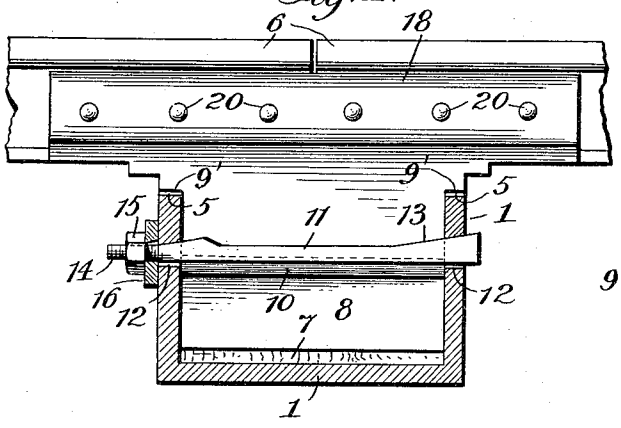

Fig. 5

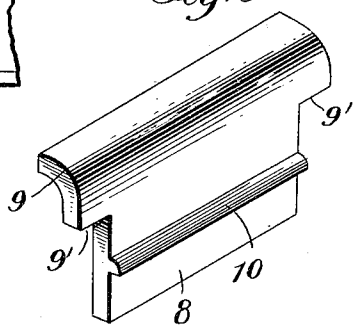

Fig. 6.

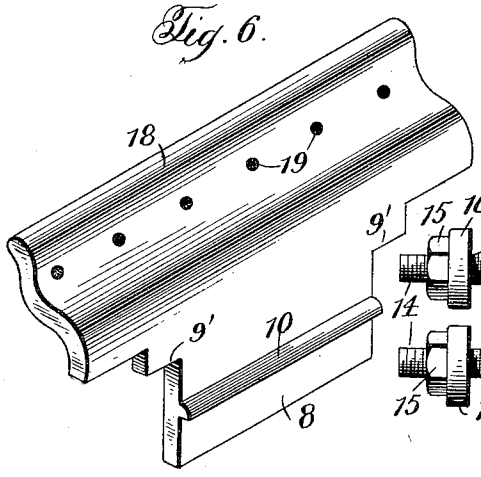

Fig. 7.

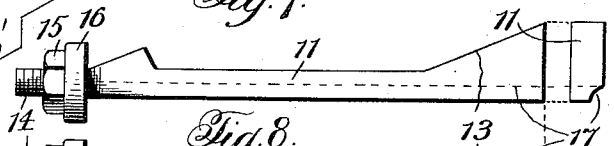

Fig. 8.

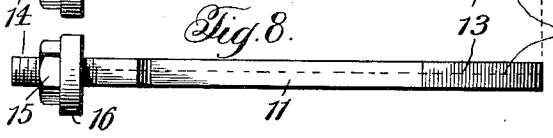

Fig. 9.

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UNITED STATES PATENT OFFICE.

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METALLIC RAILWAY-TIE.

1,033,791. Specification of Letters Patent. Patented July 30, 1912.

Application filed June 16, 1910. Serial No. 567,266.

To all whom it may concern:

Be it known that I, LEON J. FINDLAY, a citizen of the United States, residing at Salt Lake City, in the county of Salt Lake and State of Utah, have invented certain new and useful Improvements in Metallic Railway-Ties; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in railway ties, and is more particularly related to ties of the metallic type.

The object of the present invention is the provision of a metallic tie embodying in its construction simple and efficient means by which to firmly and positively anchor the rails, and thereby prevent the latter creeping, and at the same time to associate the rails in such relation to the supporting base of the tie as to preclude lateral movement of the rails.

A further object of the present invention is to provide a metallic railway tie having an improved form of locking means for the plates which clamp the rails, whereby the latter may be readily engaged by said plates and held firmly therein, the construction of the locking means being such as to cause the plates to snugly fit the rails under the influence of the adjustment of said means.

Having these general objects in view, and others which will appear as the nature of the improvements is better understood, the invention consists substantially in the novel construction, combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the appended claims.

In the drawings—Figure 1 is a perspective view of a metallic railway tie constructed in accordance with and embodying the principles of the present invention. Fig. 2 is a top plan view thereof. Fig. 3 is a longitudinal sectional view of the tie. Fig. 4 is a transverse sectional view on the line 4—4, Fig. 2. Fig. 5 is a detail perspective view of one of the intermediate clamping plates. Fig. 6 is a similar view of one of the terminal plates employed at the rail joint. Fig. 7 is a detail elevation of the clamping member. Fig. 8 is a plan view thereof. Fig. 9 is an end elevation of the construction illustrated in Figs. 7 and 8.

Referring in detail to the accompanying drawings, the numeral 1 designates the supporting base of the tie. This is substantially U-shaped in cross-section, and is formed of metal. The central portion of the base 1 is provided with an opening 2, and at the ends of said opening are located depending flanges or ribs 3 designed to enter the ground, and afford a means for holding the base in engagement therewith. The corners of the opening 2 are cut at an incline, as designated at 4.

Adjacent each end of each side of the base 1 is a recess 5, the recesses of each side being alined with the recesses of the other side, and these recesses receive the rails 6, in a manner to be presently described.

Extending transversely of the base 1, and disposed in alinement with the recesses 5, are supporting blocks 7, which blocks are preferably formed of wood arranged with the grain substantially in a vertical direction in order to obtain the greatest strength, but it is obvious that the grain of the wood may be arranged otherwise, and it is upon these blocks 7 that the rails 6 rest.

For holding the rails 6 upon the blocks 7 at points intermediate of the ends of the rails, a pair of clamping plates 8 is employed. The upper edge of each of these plates is provided with a curved head 9 designed to rest upon and engage the base flange of the rail, a pair of these plates being employed with each tie, at each end thereof, and the plates of each pair being arranged at opposite sides of the rail. Each of the plates 8 has its ends cut away to form shoulders 9′, and said shoulders are designed to fit within the recesses 5, as clearly illustrated in Fig. 1. The depending portion of each of the plates 8, or that portion which lies between the shoulders 9′, is of such length as to snugly fit between the sides of the base 1, as illustrated in Fig. 4, and by reason of this snug fitting of the plates 8, it is manifest that movement of the plates in a direction cross-wise of the base 1 is prevented.

In order to lock the plates 8 in engagement with the rails, the outer side of each of these plates is provided with a longitudinally-extending rib 10, the upper surface of which is curved or rounded, said ribs being arranged on the depending portions of said plates, and these ribs 10 are engaged by clamping members 11. The clamping members 11 are fitted in alined openings 12

formed in the sides of the base 1, said members extending crosswise of the base, and each of said members 11, adjacent each of its ends, is provided with an inclined wedge face 13. The upper edges of the openings 12 are also inclined in order to correspond to the inclined faces 13 of the clamping-members 11, and by reason of this construction it will be seen that as the clamping members are drawn through the openings 12 the wedge faces thereof will cause a downward vertical movement on the clamping members, and the latter, bearing upon the ribs 10, will exert downward pressure or thrust on the clamping plates 8. One end of each of the clamping members 11 is screw threaded, as at 14, said threaded ends receiving nuts 15 which rest against washers 16, and by the adjustment of said nuts it will be seen that the clamping members 11 may be drawn into proper engagement with the clamping plates. To facilitate engagement of the members 11 with the plates 8 the lower inner edge of each of the members 11 is cut away, as at 17, said cutaway portions coinciding with the formation of the ribs 10, and thereby exerting a free sliding movement of the clamping members upon said ribs.

The same general construction above described is employed at the meeting ends of the rails 6, but the clamping plates, at such points, are provided with flanges 18, to provide fish-plates, said flanges being perforated, as at 19, to receive the usual bolts 20. Otherwise, the construction of the clamping plates at the rail terminals is the same as those employed at points intermediate the ends of the rails.

In the adjustment of the clamping plates, it will be obvious that as the clamping members 11 are drawn through the openings 12, by the proper manipulation of the nuts 15, the wedge faces 13 coöperating with the inclined sides of the openings 12 will cause downward pressure on the ribs 10, and this pressure not only clamps the upper ends of the plates upon the base flanges of the rails, but also crowds the plates in a lateral direction against the side edges of said flanges, and into engagement with the supporting blocks 7. Hence, the rails are firmly held upon said blocks, and inasmuch as the clamping plates fit snugly between the sides of the base 1, creeping of the rails is prevented. Moreover, as the heads of the plates, and likewise the rails, fit within the recesses 5, the plates bearing against the ends of said recesses, it will also be seen that lateral movement of the rails is likewise prevented. Obviously, ballast is filled in the base 1 and around the same, in the usual manner. It will also be observed that the bore of the washer 16 is provided with an inclined portion, similar to the inclined sides of the openings 12, whereby the washer may conform to the inclined wedge surfaces of the clamping members 11, and thus facilitate movement of the clamping members through the washers.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is:

1. In a metallic railway tie, a supporting base, clamping plates associated therewith and provided with means for engaging a rail, said plates being also provided with longitudinally-extending ribs, and clamping members associated with said base and engaging the ribs of the clamping plates to impart to the clamping plates a downward thrust when said clamping members are adjusted, whereby to lock the clamping plates in engagement with the rail.

2. In a metallic railway tie, a supporting base, clamping plates associated therewith and provided with means for engaging a rail, clamping members also associated with said base and having wedge portions cooperating with the base to move said members in a downward direction, means for adjusting the clamping members, and means interposed between said clamping plates and clamping members and coöperating with the latter to impart to the clamping plates a downward thrust upon adjustment of the clamping members, and thereby lock the clamping plates in engagement with the rail.

3. In a metallic railway tie, a supporting base, clamping plates associated therewith and provided with means for engaging a rail, clamping members also associated with said base and having wedge portions coöperating with the base to move said plates in a downward direction, said plates also having longitudinally-extending ribs the surfaces of which are rounded, said ribs being engaged by said clamping members to impart a downward and lateral thrust to the clamping plates upon adjustment of the clamping members, whereby to lock said clamping plates in engagement with the rail, and means for adjusting the clamping members.

4. In a metallic railway tie, a substantially U-shaped supporting base, clamping plates associated with said base and provided with means for engaging a rail, said clamping plates also having depending portions extending within the base and provided with longitudinally-extending ribs, clamping members arranged transversely of said base and movable in a vertical direction thereon, said members coöperating with said longitudinally-extending ribs to impart a downward thrust to the clamping plates when adjusted, and means for adjusting the clamping members.

5. In a metallic railway tie, a substantially U-shaped supporting base, clamping

plates associated with said base and provided with means for engaging a rail, said clamping plates also having depending portions extending within the base and provided with longitudinally-extending ribs, clamping members arranged transversely of said base and provided with inclined wedge faces for moving said members in a downward direction, said members coöperating with said longitudinally-extending ribs to impart a downward thrust to the clamping plates when adjusted, and means for adjusting the clamping members.

6. In a metallic railway tie, a supporting base, supporting blocks associated with said base and upon which the rails are designed to rest, clamping plates also associated with said base and provided with means for engaging a rail, clamping devices mounted for movement upon said base, means interposed between said clamping plates and said clamping devices for imparting to the clamping plates a downward and lateral thrust when the clamping devices are adjusted, whereby to lock the clamping plates in engagement with the rails and the supporting blocks, and means for adjusting the clamping devices.

7. In a metallic railway tie, a supporting base, supporting blocks associated with said base and upon which the rails are designed to rest, said blocks being formed of wood, and disposed with their grain in a vertical direction, whereby to seat the rails upon the end of the grain, clamping plates associated with said base and provided with means for engaging a rail, said plates also having longitudinally-extending ribs, clamping devices arranged transversely of said base and provided with inclined wedge faces for moving said members in a downward direction, said devices coöperating with said longitudinally-extending ribs to impart a downward and lateral thrust to the clamping plates when adjusted, whereby to lock the clamping plates in engagement with the rails and the supporting blocks, and means for adjusting the clamping devices.

8. In a metallic railway tie, a supporting base provided with recesses adapted to receive the rails, supporting blocks associated with said base and upon which the rails are designed to rest, clamping plates also associated with said base and constructed to fit within said recesses, said plates being provided with means for engaging the rails, and also with longitudinally-extending ribs, and clamping members associated with said base and engaging the ribs of the clamping plates, whereby to lock the latter in engagement with the rails.

In testimony whereof I affix my signature, in the presence of two witnesses.

LEON J. FINDLAY.

Witnesses:
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I. BURCH.