E. S. & C. G. MICHAEL.

RAILWAY TIE.

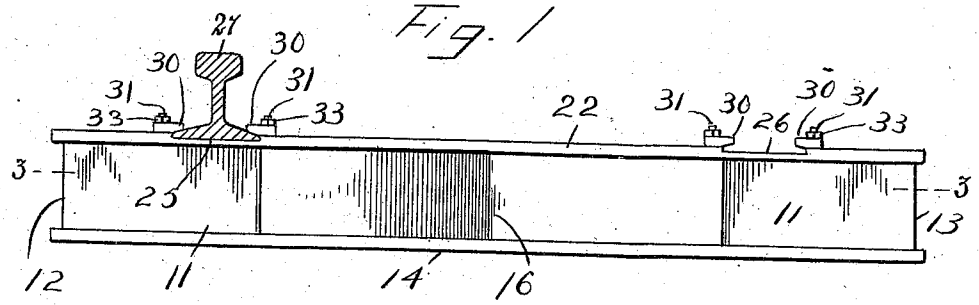
APPLICATION FILED APR. 29, 1908.

924,563.

Patented June 8, 1909.

2 SHEETS—SHEET 1.

Fig. 1



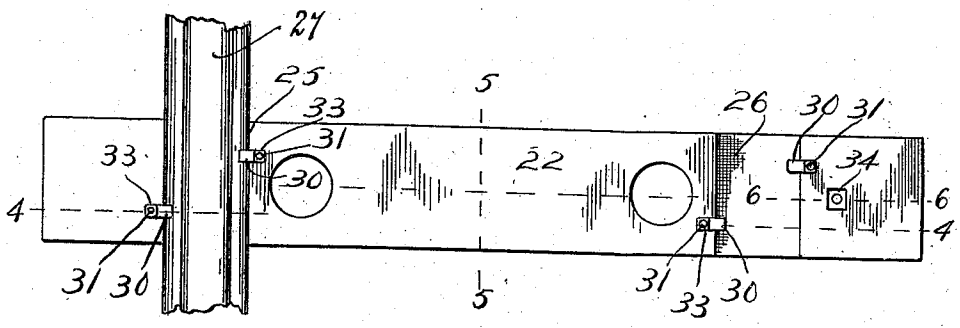


Fig. 2.

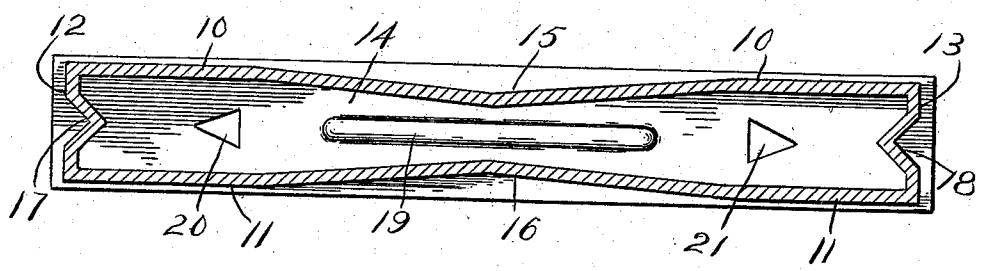


Fig. 3.

Witnesses

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2 SHEETS—SHEET 2.

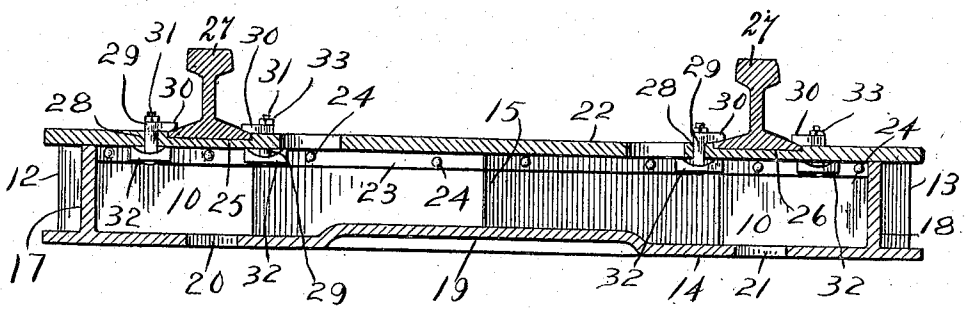


Fig. 4

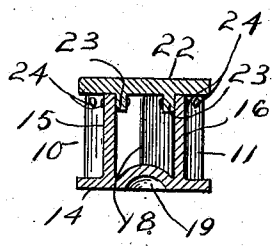


Fig. 5.

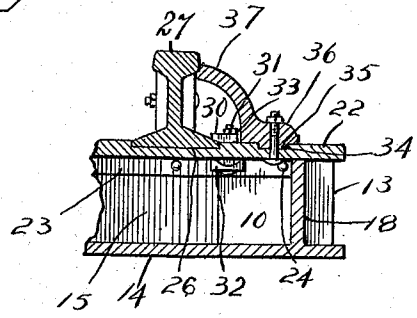


Fig. 6.

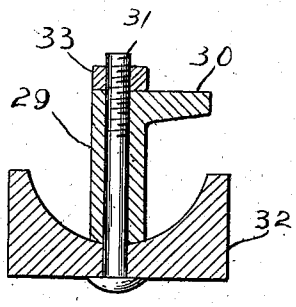


Fig. 7.

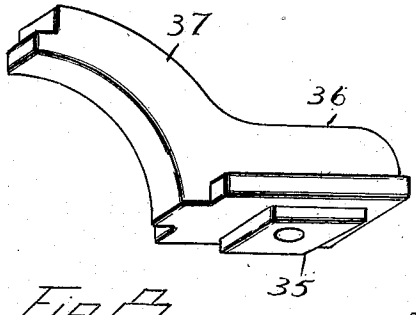


Fig. 8.

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UNITED STATES PATENT OFFICE.

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RAILWAY-TIE.

No. 924,563. Specification of Letters Patent. Patented June 8, 1909.

Application filed April 29, 1908. Serial No. 429,911.

To all whom it may concern:

Be it known that we, ELMER S. MICHAEL and CLARENCE G. MICHAEL, citizens of the United States, residing at Fort Hill, in the county of Somerset, State of Pennsylvania, have invented certain new and useful Improvements in Railway-Ties; and we 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 railway ties, and more particularly to metal railway ties, and has for its object to improve the construction and produce a tie of this character which will not "creep" either longitudinally of the track or transversely thereto, and which will not be lifted by the action of the frost, or other force which has a tendency to elevate the tie, and which will also be effectually prevented from settling into the roadbed.

With these and other objects in view the invention consists in certain novel features of construction as hereafter shown and described and then specifically pointed out in the claims, and in the drawings illustrating the preferred embodiment of the invention.

Figure 1 is a side elevation, and—Fig. 2 is a plan view with a section of the rail connected thereto. Fig. 3 is a longitudinal view in section on the line 3—3 of Fig. 1. Fig. 4 is a longitudinal section on the line 4—4 of Fig. 2. Fig. 5 is a transverse section. Fig. 6 is a section on the line 6—6 of Fig. 2. Fig. 7 is an enlarged detail of the rail clamp. Fig. 8 is a perspective view from beneath of the rail brace.

The improved device comprises a body member formed with spaced sides 10—11, ends 12—13, and a bottom 14, the bottom projecting beyond the sides and ends and providing an encompassing flange around all the sides of the body, as shown. Formed in the sides 10—11 intermediate the ends thereof are relatively long depressions 15—16 preferably of flat V-shape, while similar depressions 17—18 are formed in the ends 12—13 the end depressions being preferably with sharper angles than the side depressions.

Formed in the bottom 14 of the body is a longitudinal recess 19, while apertures 20—21, preferably triangular, are formed through the bottom 14. The depressions 15—16 and 17—18 receive the tamping material which bears against the sides of the body while the same tamping material also bears against the projecting flanged portion of the body 14, and also enters the recess 19 and passes through the apertures 20—21. By this means it will be obvious that the tamping material firmly supports the body, the tamping material which enters the side depressions 15—16 serving to effectually prevent longitudinal movement of the tie, or movement transversely of the rails, while the depressions 17 firmly support the tie from movement longitudinally of the rails or of the roadbed, while the recesses 19 and the apertures 20—21 serve to prevent either lateral or longitudinal movement of the tie, as will be obvious. The flanged portion of the bottom 14 bearing beneath the tamping material also serves an important purpose in preventing the tie from being lifted by the action of frost or other like power, while at the same time the area of the tie is materially increased and the tendency to be depressed correspondingly decreased.

The top 22 of the tie bears upon the upper edges of the sides 10—11 and the ends 12—13, and is preferably provided with depending flanges 23 which enables the top to be secured firmly to the sides and ends by rivets represented at 24. The top 22 is provided with transverse recesses 25—26 to receive the tie flanges of the rails indicated at 27, the recesses 25—26 being spaced apart to correspond with the "gage" of the rails or the distance apart between their treads.

Formed through the top 22 adjacent to the recesses 25 are apertures 28, the apertures being preferably square and adapted to receive standards 29 having projecting upper ends 30 to bear over the tie flanges, the standards 29 having longitudinal perforations to receive the clamp bolts 31, the clamp bolts passing through clips 32 bearing beneath the top 22 and likewise provided with an aperture to receive the bolts 31, the bolts being secured in place by clamping nuts 33 bearing upon the upper ends of the standards. By this simple means, it will be obvious that a very strong clamp device is provided for securing the rails to the tie, and which may be tightened in event of their becoming loosened by simply setting up the nuts 33. As many of these clamp devices may be employed as required, but generally two for each tie will be sufficient, as shown.

Formed in the upper face of the top 22,

near one end is a shallow recess 34 having a central aperture leading through the top 22 and fitting in this recess is a projection 35 on a base portion 36 of a curve brace 37, the latter bearing by its free end against the side of the head portion of the rail, and also underneath the same. The members 36—37 are employed only at curves, and upon the outer rails of the curves, which are subjected to a very severe lateral strain, and require to be firmly braced.

The strains upon the curve members are very largely longitudinally of the tie, and the projecting portion 35 therefore receives the brunt of these longitudinal strains, and thus relieves the clamp bolt by which the curve brace is connected to the tie from strains. This is an important feature of the invention and adds materially to its utility and efficiency. The tie is preferably formed from cast steel, but may be of pressed steel if preferred.

With the device thus constructed it will be obvious that a very efficient, durable and strong tie is produced, which will not be displaced by the impact of the traffic passing over the roadbed, as the tie structure is firmly supported from movement in any direction, either laterally or longitudinally of the roadbed, as before described.

The device may be inexpensively manufactured, and of any required thickness or strength to correspond to the weight of traffic which passes over it.

The tie structure will be about the usual size which is eight feet long over all and about eight or ten inches square transversely, but these dimensions may be varied, it is obvious, without affecting the principle of the invention, and it is not therefore desired to limit the invention to any particular dimensions, or to any particular kind of material.

The apertures 20—21 are an important feature of the invention and materially assist in retaining the tie in position, as the ballast material enters these apertures when the tie is "tamped", and thus assists in anchoring the tie.

The improved tie may be employed for supporting switches by simply increasing its length, as is common with ordinary wood ties, and it will be obvious therefore that the improved tie may be employed in any locality where wood ties can be used.

What is claimed, is:—

1. A metal railway tie comprising a hollow body, a top detachably connected to the body and with transverse recesses to receive the base flanges of the rail, said top having apertures adjacent to said recesses, clamp devices comprising standards extending through said apertures and projecting at one side to bear over the tie flange of the rail, clips extending beneath the top of the tie, and clamp bolts extending through said standards and the clips and with clamp nuts bearing upon the top of the standards.

2. A metal railway tie comprising a body, a top formed upon said body and provided with transverse recesses to receive the tie flanges of the rails, and with a cavity near one end, means for detachably connecting said top to the body, means for clamping said rail to said top, and a curve brace comprising a base member having a depression engaging the recess in said top and with a projecting brace bearing against the head of the adjacent rail.

3. A metal railway tie comprising a hollow body having depressions in the sides and ends, a top detachably connected to the body and with transverse recesses to receive the base flanges of the rails, said top having apertures adjacent to said depressions, clamp devices comprising standards extending through said apertures and projecting at one side to bear over the tie flange of the rail, clips bearing beneath the top of the tie, and clamp bolts extending through said standards and the clips and with clamp nuts bearing upon the top of the standards.

4. A metal railway tie comprising a hollow body having depressions in the sides and ends to receive the tamping material, a top formed upon said body and provided with transverse recesses to receive the tie flanges of the rails, and with a cavity near one end, means for detachably connecting said top to the body, means for clamping said rail to said top, and a curve brace comprising a base member having a depression engaging the recess in said top and with a projecting brace bearing against the head of the adjacent rail.

In testimony whereof, we affix our signatures, in presence of two witnesses.

ELMER S. MICHAEL.
CLARENCE G. MICHAEL.

Witnesses:
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MATILDA ALTFATHER.