F. KIRCH.

TIE FOR RAILWAY RAILS.

APPLICATION FILED SEPT. 18, 1914.

1,132,354.

Patented Mar. 16, 1915.

3 SHEETS—SHEET 1.

Fig. 1.

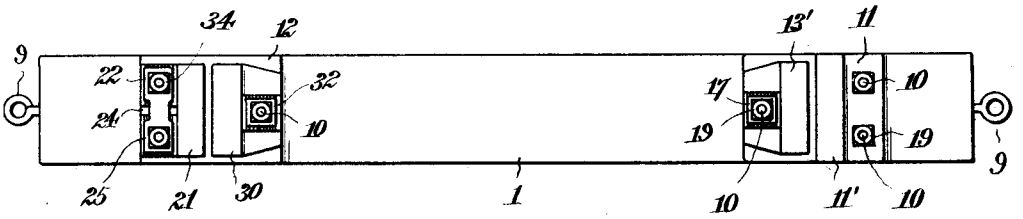


Fig. 2.

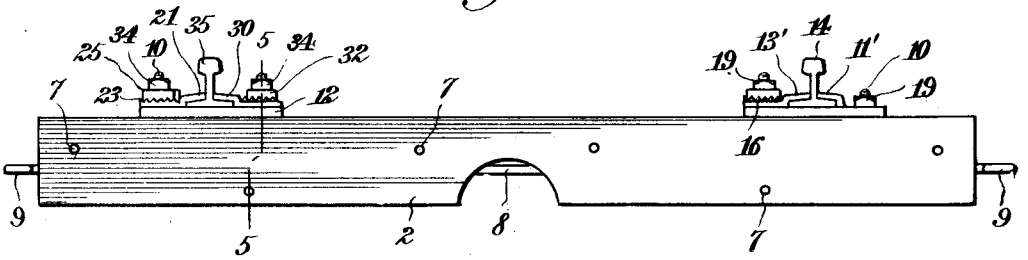


Fig. 3.

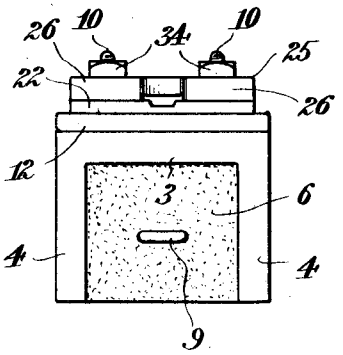
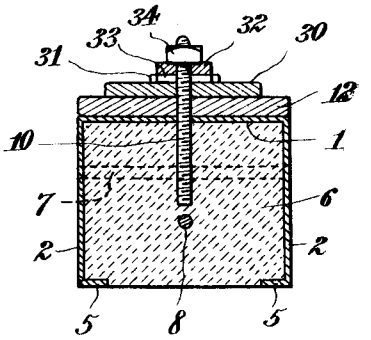


Fig. 5.



Witnesses

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3 SHEETS—SHEET 2.

Fig. 4.

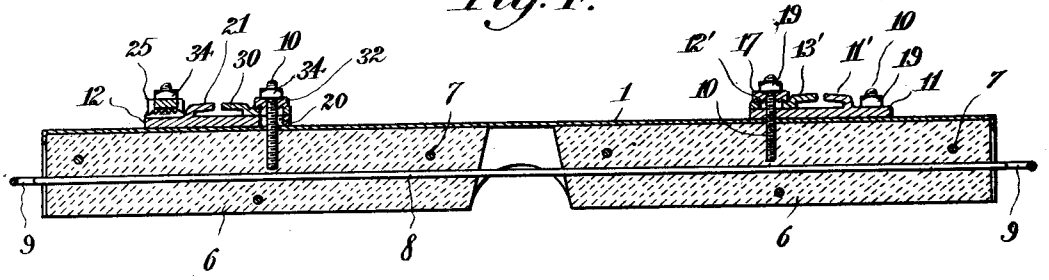


Fig. 6.

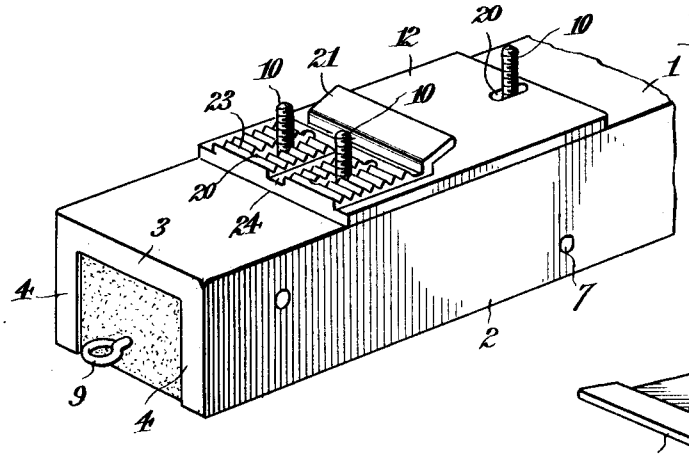
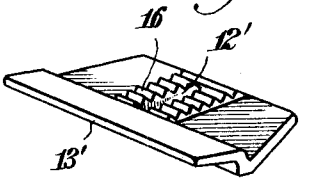


Fig. 7.



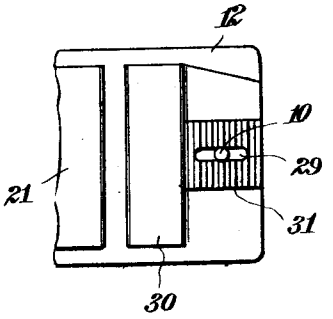


Fig. 8.

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3 SHEETS—SHEET 3.

Fig. 9.

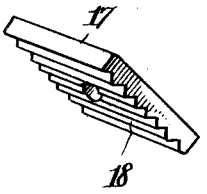


Fig. 10.

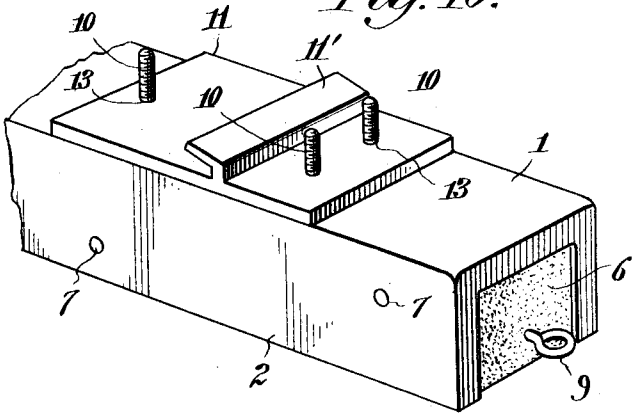


Fig. 11.

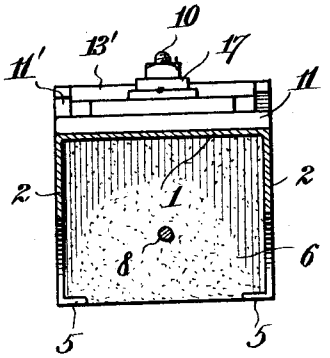
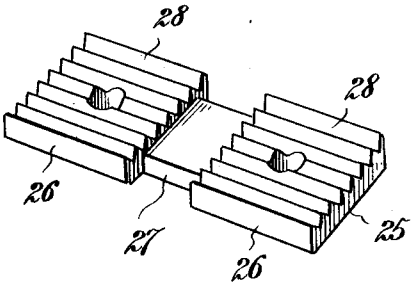


Fig. 12.



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UNITED STATES PATENT OFFICE.

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TIE FOR RAILWAY-RAILS.

1,132,354. Specification of Letters Patent. Patented Mar. 16, 1915.

Application filed September 18, 1914. Serial No. 862,398.

To all whom it may concern:

Be it known that I, FREDRICK KIRCH, a citizen of the United States, residing at Billings, in the county of Yellowstone and State of Montana, have invented new and useful Improvements in Ties for Railway-Rails, of which the following is a specification.

The present invention relates to improvements in the construction of ties for railway rails as well as to means for sustaining the rails upon the tie.

In carrying out my invention it is my purpose to provide a tie formed from an outer shell of metal and fillers of plastic material arranged within and disposed at the ends thereof, whereby the central portion of the tie will be rendered yieldable.

A further object of the invention is to construct a tie of this class to include an outer casing formed from a sheet of metal which has its top, its ends and its bottom edges flanged inwardly to provide for the reception of plastic material, said material being arranged adjacent the ends of the said metal, and the sides of the said metal and central portion thereof being cut and rounded toward its top at the terminal of the end of the plastic member, means being arranged transversely of the tie to secure the plastic members within the shell and a reinforcing rod extending centrally and longitudinally through the said plastic members and having its ends provided with eyes to serve as a reinforcement as well as means whereby the said tie may be handled from its ends.

A still further object of the invention is to provide a tie with a rail securing means, the same being longitudinally adjustable to compensate for the various gages of tracks.

Other objects and advantages of the devices will appear as the nature of the improvement is more fully understood, reference being had to the accompanying drawings in which:

Figure 1 is a top plan view o the tie constructed in accordance with the present invention, Fig. 2 is a side elevation of the same, Fig. 3 is an end elevation of the same, Fig. 4 is a central longitudinal sectional view through the same, Fig. 5 is a transverse sectional view on the line 5—5 of Fig. 2, Fig. 6 is a detail perspective view looking toward one end of the tie with the tie plate arranged thereon, the securing nuts as well as the rail engaging clip being removed, Fig. 7 is a detail perspective view of the rail engaging clip, Fig. 8 is a detail plan view showing the rail engaging clip upon the plate, Fig. 9 is an inverted perspective view of the toothed washer which co-acts with the rail engaging clip, Fig. 10 is a detail perspective view looking toward the opposite end of the tie, the rail plate being in position, but the rail engaging plates being removed, Fig. 11 is a transverse section taken approximately centrally through the tie, Fig. 12 is a perspective view looking toward the bottom of the twin washer employed upon the rail plate.

In constructing the tie I take a flat sheet of suitable metal and by a suitable machine bend or roll the same to provide a flat top 1 and right angular sides 2. I also bend inwardly the ends of the top and sides, as indicated by the numerals 3 and 4. I recess the central portions of the sides, forming the same, from their lower edges, with arch-shaped cut-away portions or openings, while the lower edges of the sides from the said openings to the ends are inturned, as indicated by the numerals 5. The bent or inturned portions 3, 4 and 5 are arranged opposite the arch-shaped cut-away central portion of the sides and serve as pockets for the reception of cushion members 6. The members 6 are preferably constructed of plastic material, and are firmly embedded within the pockets provided between the top, sides and bent portions of the metal sheet, and if desired. the plastic material may be reinforced in a preferred manner. Passing transversely through the sides 2 as well as through the cushion members 6 are securing elements 7, which are arranged in staggered relation with each other, so that the sides 2 cannot spread away from the cushion 6 and also so that the cushions 6 will be more effectively retained in the metal

shell. Extending longitudinally through the cushion members 6 is a rod 8. This rod is preferably arranged near the lower face of the tie, and its ends project beyond the ends of the tie, and the said ends are formed of eyes 9, the said eyes being disposed horizontally with respect to the tie. The eyes 9 provide means whereby a suitable tool or instrument, such as a hook or pinch bar, may engage therewith so that the tie may be properly placed with the least amount of physical exertion.

Passing vertically into the cushion members as well as through the upper plate or top 1 of the tie are threaded members 10, two of which being disposed adjacent each end of the tie and in a line with each other and one being disposed intermediate each end pair of members 10. Arranged upon the top or upper face of the tie adjacent the ends thereof are plates 11 and 12 respectively. The plate 11 is provided with round openings 13 which receive the members 10 at the end of the tie upon which the said plate 11 is arranged. The plate, adjacent its outer edge, and that engaged by the pair of spaced threaded members 10 is integrally formed with a transverse rail engaging lip 11′, while the remaining threaded member 10 is adapted to be received within an elongated opening 12′ provided in a rail engaging clip 13′. The clip has its inner edge flanged to engage with the base flange of a rail 14, and the upper face of said clip is provided with a central enlargement 15 surrounding its elongated opening 12′, the upper face of said enlargement being provided with transverse teeth 16.

The numerals 17 designate a washer member, the same having a bolt opening and its lower face provided with teeth 18 which are adapted to co-act with the teeth 16 of the clip 13′, when the clip is adjusted longitudinally toward the rail 14, it being understood that the enlarged elongated opening 12′ permits of the said adjustment of the clip. Nuts 19 engage all of the members 10, the inner nut 19 contacting with the washer 17 and forcing its teeth 18 into engagement with the teeth 16 upon the enlarged portion 15 of the clip 13′. The second plate 12 is provided with elongated openings 20 through which the three bolts or threaded members 10 upon this side of the rail pass. The plate 12 adjacent its outer end and forward of its pair of bolt receiving openings 20 is formed with a rail engaging lip 21, the said lip being provided upon an elevated portion 22 of the said plate and the said elevated portion is formed with transverse teeth 23, the said teeth being disposed to the opposite sides of the pair of openings 20 which pass through the elevated or thickened portion 22. A longitudinally extending depression or channel 24 is formed upon the upper face of the elevated portion 22, dividing the series of teeth 23. A twin bolt or washer 25 is provided for engaging the bolts 10 through the openings in the elevated or lip portion of the plate 12. This washer member 25 comprises two heads 26—26 connected by a web 27, and the heads are provided with bolt openings, while the web in the reduced end has its underface arranged centrally above the heads, while the undersfaces of the heads are formed with transverse teeth 28 which are adapted to co-act with the teeth 23. The remaining bolt or threaded member 10 passes through an elongated opening 29 in a rail engaging clip 30, the said clip being substantially similar to the clip 13′, having an enlargement 31 through which the walls of the openings 29 centrally pass.

The numeral 32 designates a washer or nut having its underface provided with teeth and a bolt opening, so that the same may be passed over the bolt 10 to bring its teeth into engagement with the teeth 31 of the clip 30. Nuts 34 are screwed upon all of the members 10, so that a rail 35 will be securely retained between the lip and clip and the plate as well as the clip sustained against movement upon the tie.

From the above description, taken in connection with the accompanying drawings, the simplicity of the device as well as the advantages thereof will, it is thought, be perfectly apparent to those skilled in the art to which such invention appertains without further detailed description.

Having thus described the invention, what I claim is:

1. A composite tie including a rectangular metal casing comprising a top and sides, the said top and sides having their ends inturned, the sides having their edges inturned, the said sides centrally cut-away, cushion members arranged within the metal shell opposite the central cut-away portion thereof, and means for securing the cushion members within the metal casing of the tie.

2. A tie comprising a shell formed from a sheet of metal including a top and sides, said sides being centrally cut-away, cushion blocks within the metal casing to the opposite sides of the cut-away portions thereof, means for securing said blocks within the casing, said means including a longitudinally arranged rod extending through the blocks adjacent the lower faces thereof and projecting beyond the casing, and the said projecting ends being formed with eyes.

3. A tie including an outer casing formed from a sheet of metal bent to provide a top and right angular sides, the edges of the sides and top being inturned, cushion members comprising plastic elements arranged

within the outer casing of the tie opposite the central portion thereof, transverse members for securing the cushion members to the outer casing of the tie, a longitudinal member passing through the cushion members having its ends formed with eyes for securing casing upon the cushion members.

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

FREDRICK KIRCH.

Witnesses:
RICHARD H. SANDERSON,
BERNARD KIRCH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."