No. 873,310. PATENTED DEC. 10, 1907.

A. F. GUSTAFSON.

RAILWAY TIE.

APPLICATION FILED MAR. 11, 1907.

Fig. 1.

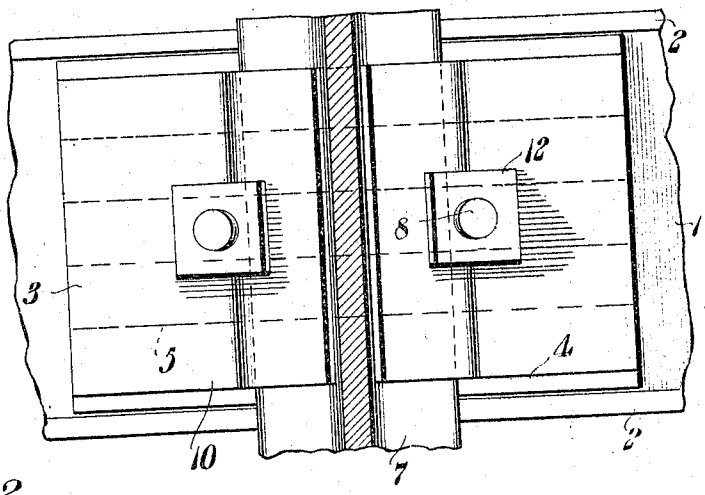


Fig. 2.

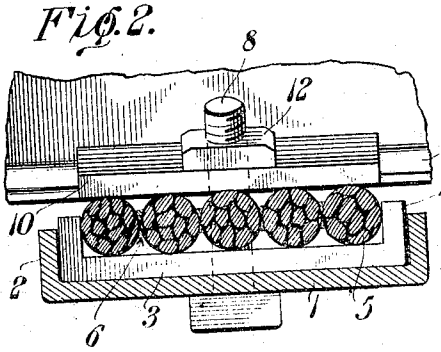


Fig. 3.

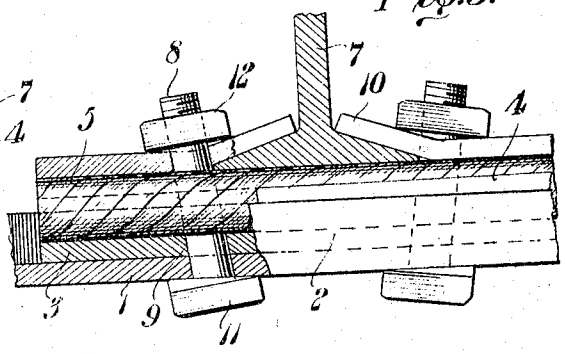
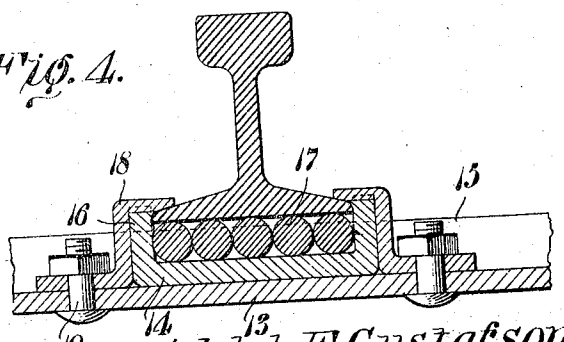


Fig. 4.



WITNESSES:

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RAILWAY-TIE.

No. 873,310. Specification of Letters Patent. Patented Dec. 10, 1907.

Application filed March 11, 1907. Serial No. 361,756.

To all whom it may concern:

Be it known that I, ADOLPH F. GUSTAFSON, a citizen of the United States, residing at Pueblo, in the county of Pueblo and State of Colorado, have invented a new and useful Railway-Tie, of which the following is a specification.

This invention relates to railway ties and its object is to provide a metallic tie of simple construction having a metallic cushion for the rails, said cushion being of a simple and durable nature.

A still further object is to provide a cushion which can be readily placed within the tie and which will be held securely against displacement.

Heretofore in the construction of metallic railway ties it has been customary to provide cushioning devices of wood or other material different from that of which the body of the tie is constructed but these cushions have been found objectionable because they are less durable than the balance of the tie and the frequent changing of the cushions becomes necessary.

The object of the present invention is to provide a cushion consisting solely of metal and which, because of its peculiar formation, constitutes an efficient cushioning means for the rails.

The invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings: Figure 1 is a plan view of a portion of a tie embodying the present improvements, the rail being shown in section thereon; Fig. 2 is an end view of a tie embodying the present improvements, a portion of a rail being shown in elevation; Fig. 3 is a view partly in front elevation and partly in section through a portion of the tie; and Fig. 4 is a longitudinal section through a tie of modified construction.

Referring to the figures by characters of reference, 1 is the body of a tie the same consisting of an elongated metal plate having upstanding side flanges 2. In the form of the invention shown in Figs. 1, 2 and 3 an inner holder is disposed within the tie and consists of a base plate 3 designed to rest snugly upon the bottom of the tie and having upstanding side flanges 4 designed to extend above the side flanges 2. Disposed longitudinally within the holder is a series of parallel cushioning members 5 each of which is made up either of a section of metal cable or of a short metal rod. In either event, the sections are preferably of the same length as the holder and soldered together along their contacting portions as shown at 6. The rail 7 is designed to rest upon these cushioning members and to extend transversely thereof and may be clamped upon the members by means of bolts 8 which extend through openings 9 in the plates 1 and 3 and through rail engaging plates 10 designed to be clamped by the bolts upon the cushioning members 5 and the base flanges of the rail. It will be noted by referring to Fig. 3 that the bolts are inclined and that their heads 11 have their inner faces beveled so as to rest snugly upon the bottom of the plate 1. It is therefore apparent that when the bolt is secured as by means of nuts 12 it will be impossible for the heads 11 to rotate. Moreover, the angular rail engaging plates 10 are designed to bear against opposite edges of the nuts so as to hold them against rotation when the nuts have been tightened upon the bolts. As the cushioning members 5 are soldered together longitudinal displacement thereof is prevented. As the cushion is made up of connected substantially cylindrical sections extending transversely of the rail and as each section is formed with a plurality of twisted metal wires such as ordinarily used in the formation of a steel cable it is apparent that said sections will constitute an efficient cushion for the rail when the same is subjected to the pressure of cars passing thereover. It is of course apparent that as each cable section is made up of a plurality of wires as shown particularly in Figs. 2 and 3 small spaces will be formed between the wires of each section and when the section is subjected to a heavy weight these wires will be compressed and when the weight is removed they will tend to return to their normal positions. The large number of wires embodied in each section thus constitute a yieldable support of considerable strength each wire being in effect a coiled spring.

Instead of arranging the cushioning sections transversely beneath the rail they can be disposed longitudinally thereunder as shown in Fig. 4. With this construction the tie 13 is similar to the tie 1 and the holder 14

is interposed between the flanges 15 of the tie. This holder has side flanges 16, the ends of which abut against the flanges 15 and the base of the rail is designed to fit between the flanges 16 and to bear upon the longitudinally extending sections 17 which may consist of lengths of suitably shaped yieldable metal cable or metal rods placed side by side. Flanges 15 and 16 of course prevent displacement of the cushion members 17 and when the rail is in position upon said cushion members they are absolutely held against removal. The rail is designed to be held in place by fastening plates 18 which lap the base flanges of the rail and abut against the side flanges 16. The bases of these plates are bolted to the tie 13, as shown at 19.

An important feature of this invention is the fact that in the constructions shown in Figs. 1 to 3 inclusive, the rail and the securing plates prevent dirt, etc., from falling between the cushion members and filling the spaces therebetween, while in the construction shown in Fig. 4 the rail and the flanges 15 and 16 serve the same purpose.

It will be seen that a tie constructed in accordance with this invention is a very simple and durable device and after the cushioning members have once been placed in position they will last as long as the balance of the tie.

What is claimed is:

1. The combination with a metallic tie and a holding device thereon; of a plurality of parallel solid metallic rail supporting devices within the holder.

2. The combination with a metallic tie; of a plurality of solid cylindrical metallic cushioning devices upon the tie, and means for holding said devices against displacement.

3. The combination with a metallic tie; of a plurality of solid cylindrical metallic cushioning devices upon the tie, and means for protecting the spaces between said devices from the admission of dirt, etc.

4. The combination with a metallic tie; of a plurality of solid cylindrical metallic cushioning devices upon the tie, and a rail secured upon and supported by said devices, said rail constituting a protecting means for the devices.

5. The combination with a metallic tie; of a holding device thereon, parallel solid cylindrical metallic rail supporting devices upon the tie, means for preventing displacement of said devices, and a rail secured upon and supported by said devices, said rail constituting a guard to prevent the admission of dirt between the devices.

6. The combination with a metallic tie having side flanges upstanding therefrom; of a holder secured between the flanges and having upstanding flanges, parallel solid cylindrical rail cushioning devices interposed between and retained by the flanges of the tie, and means for securing a rail upon the cushioning devices.

7. The combination with a metallic tie having upstanding side flanges; of a holder between said flanges and having upstanding side flanges, parallel solid cylindrical rail cushioning devices within the holder and retained against displacement by the flanges, a rail upon and supported by the cushioning devices and constituting a closure for the spaces therebetween, and means engaging the tie for securing the rail upon the cushioning devices.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ADOLPH F. GUSTAFSON.

Witnesses:

SAMUEL S. MADDOX,

WILLIAM BARBER.