

A. B. CATON & E. A. CARTER.
METAL TIE.
APPLICATION FILED OCT. 17, 1910.

992,643.

Patented May 16, 1911.

Fig. 1.

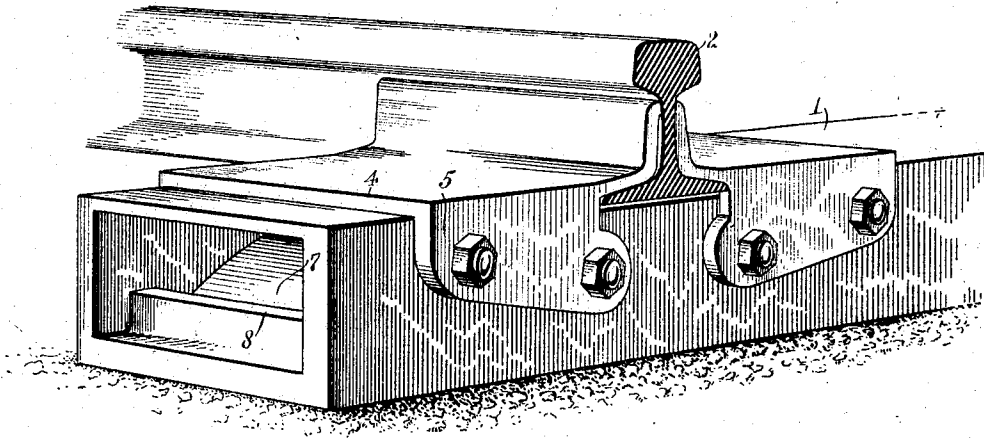


Fig. 2.

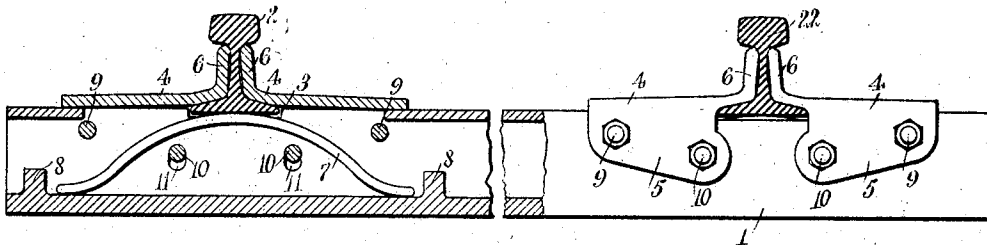
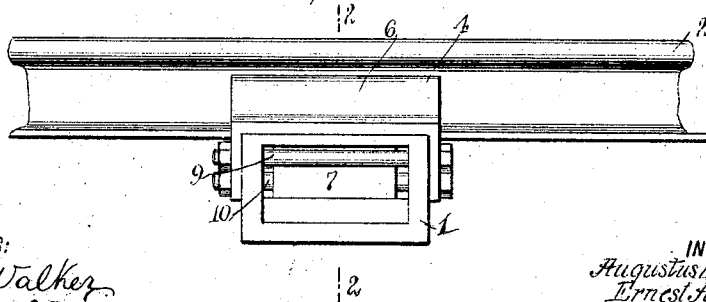


Fig. 3.



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AUGUSTUS B. CATON AND ERNEST A. CARTER, OF CAMDEN, TEXAS.

METAL TIE.

992,643.

Specification of Letters Patent.

Patented May 16, 1911.

Application filed October 17, 1910. Serial No. 537,407.

To all whom it may concern:

Be it known that we, AUGUSTUS B. CATON and ERNEST A. CARTER, both citizens of the United States, and residents of Camden, in the county of Polk and State of Texas, have invented a new and Improved Metal Tie, of which the following is a full, clear, and exact description.

This invention relates to an all-metal tie to take the place of the wooden ties now in use and give the same resilience with increased durability.

An object of this invention is to provide a railroad tie which will be simple in construction, inexpensive to manufacture, and with which it will be difficult for the rails to spread or to be tampered with.

A further object of this invention is to provide a railroad tie having a connection with the rails, such that the latter have a limited vertical movement resisted by resilient members.

These and further objects, together with the construction and combination of parts, will be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a perspective view; Fig. 2 is a transverse view partly in section on the line 2—2 of Fig. 3; and Fig. 3 is a fragmentary view in elevation.

Referring more particularly to the separate parts of the device, 1 indicates a tie, which is constructed of any suitable metal, such as cast steel or malleable cast iron, and is adapted to support, together with a plurality of others, track rails 2. The track tie 1 preferably is hollow, and is provided at each end thereof, a slight distance in from the ends, with parallel recesses 3 located in each side of the tie. The top of the tie itself is also preferably cut away at this point, to permit access to the interior thereof. Within the recesses 3, the track rails 2 are adapted to be inserted, and are each held in position by a pair of braces 4. It will be noted that these braces are in the form of channels having a body portion, from which extend downwardly on each side, flanges 5, which engage the sides of the tie and prevent any twisting movement relative to the tie. These

braces are also provided with flanges 6, which extend upwardly from the body portion and engage the track rail on each side of the web above the base of the rail.

For the purpose of resiliently supporting the rail 2, and thus doing away with the rigid connection which is generally found in metallic ties, there is provided a bow-spring 7 in the form of an arch, having each end bearing on the inner side of the bottom of the tie, and providing a rest at the top of the arch for the track rail. Lugs 8 are provided in the tie to form an inclosure for the spring 7, preventing it from working out from under the rail. These lugs, however, are located a distance apart somewhat greater than the length of the spring, under normal conditions, so as to permit the spring to lengthen when compressed by a weight on the track rail.

The braces 4 are secured to the tie 1 by means of bolts 9 and 10, which pass through suitable openings in the sides of the tie. It will be noted that the openings through which the bolts 9 pass are perfectly circular, and allow for no movement other than a pivotal movement. The openings through which the bolts 10 pass, however, are elongated slightly in a vertical direction, as indicated at 11, so as to permit a vertical movement of the inner ends of the braces 4. It will thus be seen that the braces 4 have a swinging movement about the pivot bolts 9, and a vertical movement at the points where the bolts 10 are located. The amount of vertical movement permitted by the elongated slots 11 is practically one-half that permitted by the recesses 3, so that at no time will the track rails 2 be in danger of slipping out of the recesses.

In assembling the device, the track rail is placed in position and the braces 4 applied and secured to the tie by means of the bolts 9 and 10. The rail is then permitted to rise the distance allowed for by the slots 11, so that it can be depressed the same amount when a load is placed thereon.

It will thus be seen that there is provided a simple and efficient tie, which will resiliently support the track rails in such a manner that they cannot be readily tampered with or spread.

While we have shown one embodiment of our invention, we do not wish to be limited to the specific details thereof, but desire to

be protected in various changes, modifications and alterations which may come within the scope of the appended claims.

Having thus described our invention, we claim as new and desire to secure by Letters Patent:—

1. The combination with a tie, having recesses adjacent each end in the sides thereof, of track rails engaging said recesses, a spring for supporting each of said track rails, and braces for securing said rails to said tie, having a limited vertical movement.

2. The combination with a tie, of track rails supported on said tie in spaced relation, resilient members for supporting said track rails, and braces for securing said track rails to said tie, said braces having a limited vertical movement relative to said tie.

3. The combination with a metallic tie, of track rails supported on said tie, springs for resiliently supporting said track rails, braces for each of said track rails, and bolts for securing said braces to said track ties, some of said bolts having a limited vertical movement relative to said tie.

4. The combination with a tie, of a track rail adapted to be supported by said tie, a spring for resiliently supporting said track rails, lugs on said tie adapted to maintain said spring beneath said track rail, and means for securing said track rail to said tie.

5. The combination with a tie, of a track rail adapted to be supported by said tie, a

spring for resiliently supporting said track rail, lugs on said tie adapted to maintain said spring beneath said track rail, and means for securing said track rail to said tie, said means comprising a plurality of braces, and bolts for securing said braces to said tie, some of said bolts having a limited vertical movement relative to said tie.

6. The combination with a tie, of a resilient member in said tie, a track rail supported by said resilient member, and a brace for securing said track rail to said tie, said brace having a pivotal connection with said tie at one end and a sliding connection with said tie at its other end.

7. The combination with a metallic tie having recesses in each side, adjacent each end thereof, of track rails located in said recesses, a spring for supporting each of said track rails, lugs on said tie for maintaining said spring beneath said track rails, braces for securing said track rails to said tie, and means for securing said braces to said tie, adapted to permit a limited vertical movement of said braces.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

AUGUSTUS B. CATON.
ERNEST A. CARTER.

Witnesses:

J. A. HANNER,
W. E. SANDERS.