M. F. BONZANO.

METALLIC TIE.

APPLICATION FILED JAN. 13, 1909.

940,500. Patented Nov. 16, 1909.

Fig. 1.

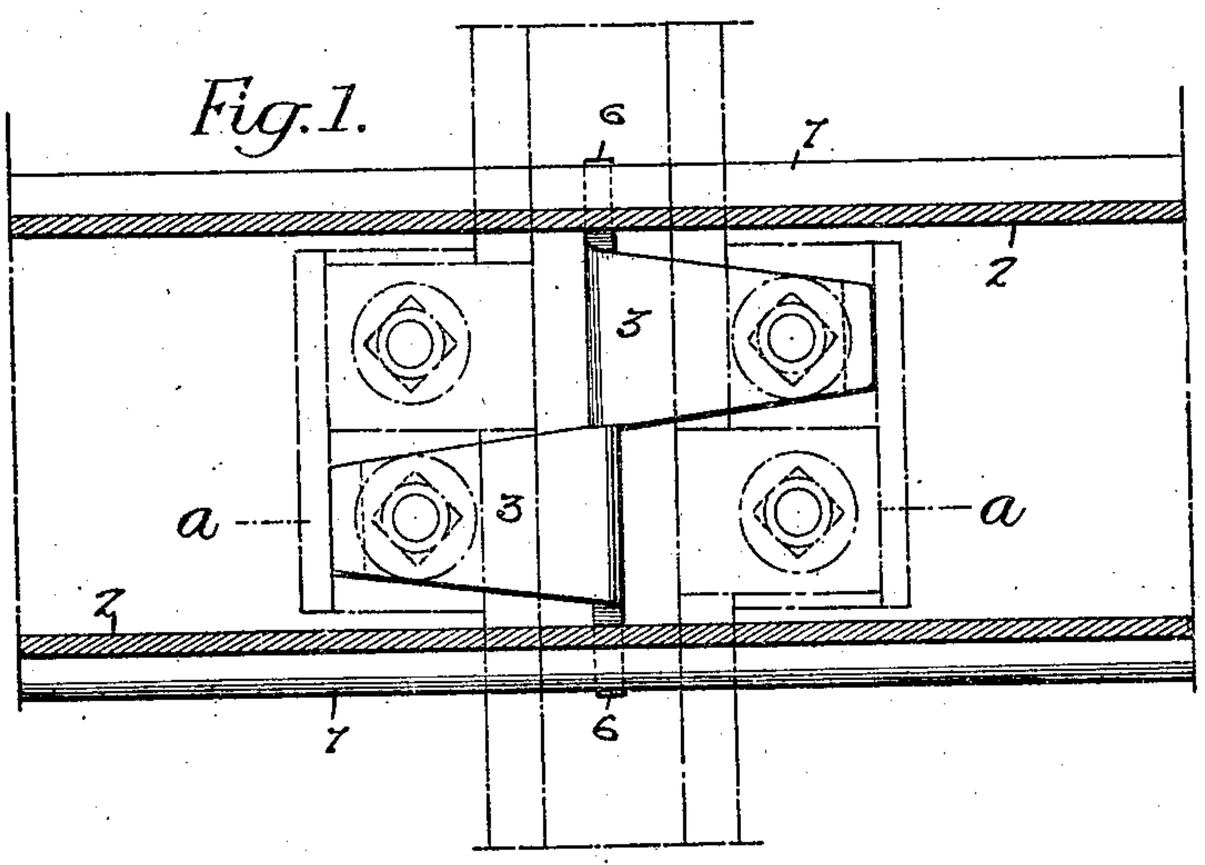


Fig. 2.

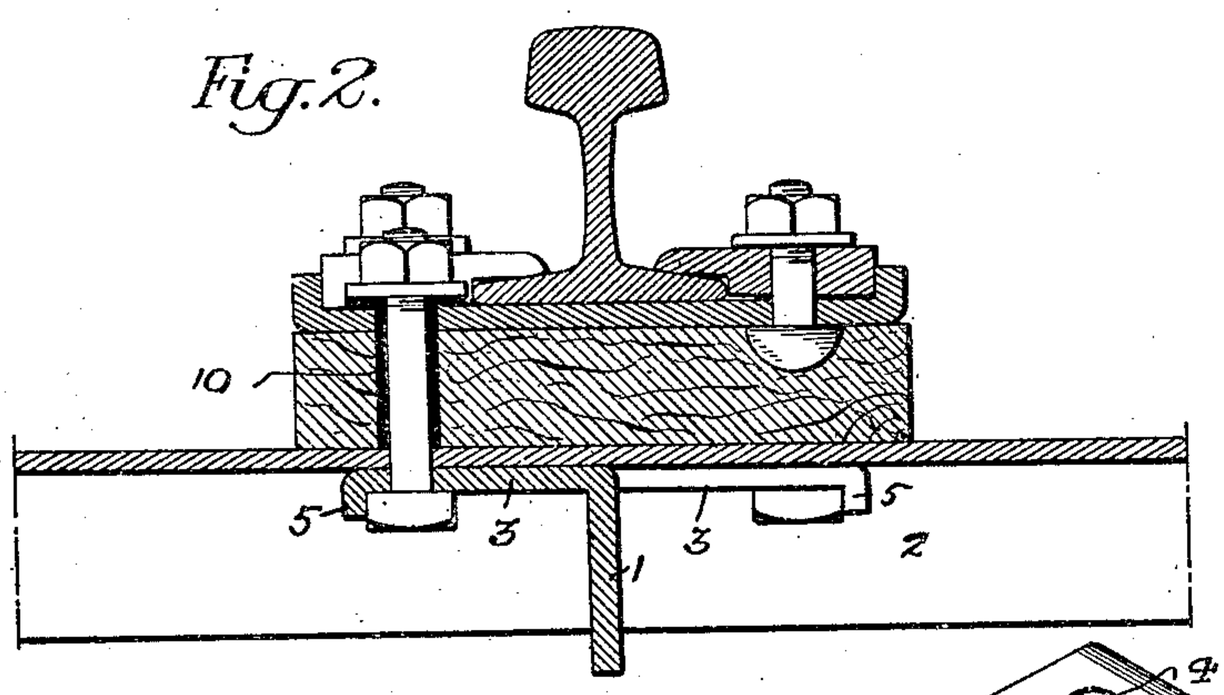


Fig. 3.

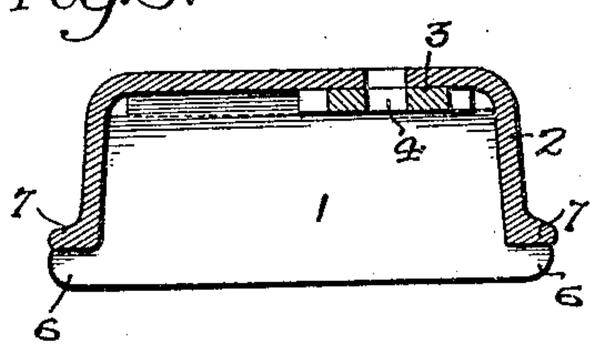


Fig. 4.

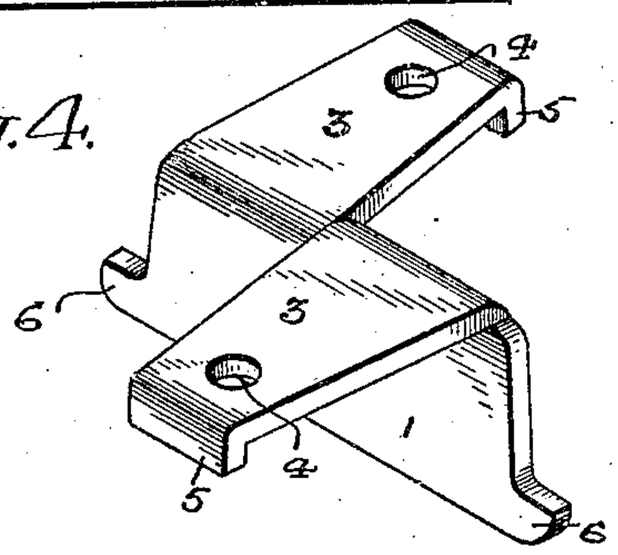


Fig. 6.

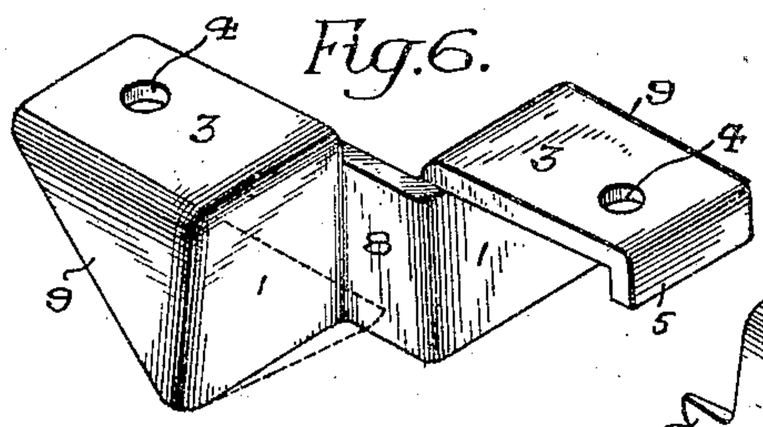
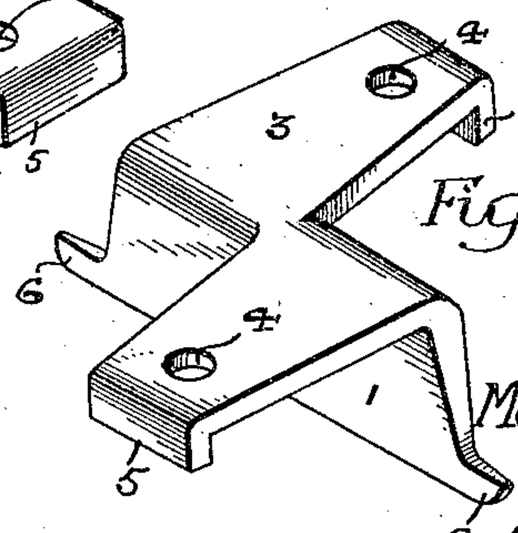


Fig. 5.



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UNITED STATES PATENT OFFICE.

MAXIMILIAN F. BONZANO, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO PENN RAILROAD TIE COMPANY, OF CAMDEN, NEW JERSEY, A CORPORATION OF NEW JERSEY.

METALLIC TIE.

940,500. Specification of Letters Patent. **Patented Nov. 16, 1909.**

Application filed January 13, 1909. Serial No. 472,119.

To all whom it may concern:

Be it known that I, MAXIMILIAN F. BONZANO, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Metallic Ties, of which the following is a specification.

My invention relates to metal ties; and the object of my invention is to provide bracing means for the walls of the same, which bracing means are preferably confined to the tie by the bolts employed for securing the supporting means for the rails thereto. The bracing means further serve as an anchor for the tie, in that they provide walls for the formation of boxes to retain ballast beneath such tie.

My invention is fully shown in the accompanying drawing, in which:

Figure 1, is a sectional plan view of a tie, showing the application of my improved anchor brace and ballast box former thereto; Fig. 2, is a longitudinal sectional view on the line *a*—*a*, Fig. 1, showing the anchor secured to the tie by the bolts of the rail supporting means; Fig. 3, is a cross sectional view of the tie showing the brace-plate in place; Fig. 4, is a perspective view of the bracing member shown in Figs. 1, 2 and 3, and Figs. 5 and 6, are perspective views of modified devices embodying my invention.

The bracing means forming the subject of my present invention may be made of sheet metal pressed into shape, or it may be of cast metal. As shown in the drawings, it comprises a partition or bracing member extending between the side walls of the tie and approximately directly underlying the rail. In its broadest aspect, such structure comprises a diaphragm or wall extending between the side walls of the tie, and it may be straight or laterally offset as desired. Of whatever form, it has portions laterally offset and underlying the top of the tie; such portions being constructed for engagement with or apertured for the passage of bolts of any approved form of support mounted on the tie to receive the rails. These portions are further designed to engage the bolt heads and prevent the latter turning when the rail supports are being set in place.

As shown in Figs. 1, 2, 3 and 4, the bracing structure consists of a plate 1 lying beneath the top and between the side walls of a metallic tie 2 of channel form, said plate having horizontal projecting portions 3 at its top which are apertured at 4 for the passage of bolts and have depending projections 5 to engage the heads of said bolts. The plate 1 extends downwardly below the side walls of the tie and has hooked portions 6 underlying the feet 7 of the same.

In lieu of a pressed metal structure, such as shown in Figs. 1, 2 and 3, I may employ the cast metal structure, shown in Fig. 5, which is of substantially the same contour as the structure shown in Figs. 1, 2 and 3, and designed to perform the same function.

In order to perform the functions of a ballast retainer, it may be desirable to offset portions of the wall of the structure forming the subject of my invention, and in Fig. 6 I have shown a form of pressed metal structure, the wall 1 of which is offset at 8 between the side walls of the tie. This member is provided with the usual horizontally projecting portions 3 apertured for the passage of the bolts of the rail supporting means, and also has side wings 9 which lie against the side walls of the tie and fill the space between the same. These wings may be disposed in the manner indicated in full lines, or, if desired, one of them may be turned, as shown by dotted lines, on either side. These wings may also be secured to the side walls of the tie if desired.

The supporting means for the rail may be insulated from the tie and the diaphragm brace by means of a sleeve 10 of non-conducting material as illustrated in Fig. 2.

I claim:

1. The combination, with a metallic tie having a top and side walls and a support for the rail, of a diaphragm extending between said walls and located beneath the rail, horizontally disposed wings carried by said diaphragm, and securing means for said support, said wings of the diaphragm being apertured for the passage of the bolts of said securing means.

2. The combination, with a metallic tie, of a diaphragm or web extending between the side walls of the same, having horizontal wings disposed in opposite directions and apertured for the passage of securing means for a rail support mounted on said tie.

3. The combination, with a metallic tie, of a diaphragm or web extending between

the side walls of the same and having horizontal wings disposed in opposite directions and apertured for the passage of securing means for a rail support mounted on said tie, said web also having hook portions for engagement with the lower portion of the side walls of the tie.

4. The combination, with a metallic tie, of a diaphragm extending between the side walls of the same, said diaphragm having horizontal wings disposed in opposite directions and apertured for the passage of bolts, and depending shoulders carried by said wings for engagement with the heads of said bolts to prevent movement of the latter.

5. The combination, with a metallic tie of channel shape, of a separate web or diaphragm extending between the side walls of the tie beneath the rail, said web having hooked portions to engage the side walls of the tie.

6. The combination with a metallic tie of channel shape, of a separate web or diaphragm extending between the side walls of the tie beneath the rail, the wall of said web being laterally offset.

7. As a new article of manufacture, a vertically disposed diaphragm or web for use between the side walls of metallic ties, said diaphragm contacting with said side walls and having hooks at its lower portion to engage the under edge of said side walls.

8. As a new article of manufacture, a diaphragm or web for use between the side walls of metallic ties, said diaphragm having horizontal wings disposed in opposite directions underlying the top of the tie and apertured for the passage of bolts, said wings having depending shoulders for engagement with the heads of such bolts.

9. As a new article of manufacture, a diaphragm or web for use between the side walls of metallic ties, said diaphragm having horizontal wings disposed in opposite directions underlying the top of the tie and apertured for the passage of bolts, depending shoulders carried by said wings for engagement with the heads of said bolts to prevent movement of the latter, and hooks to engage the under edge of the side walls of said tie.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

MAXIMILIAN F. BONZANO.

Witnesses:
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