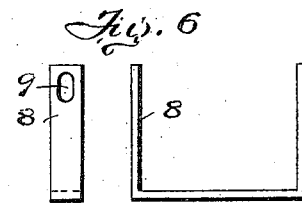
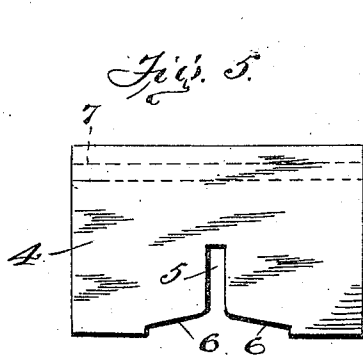
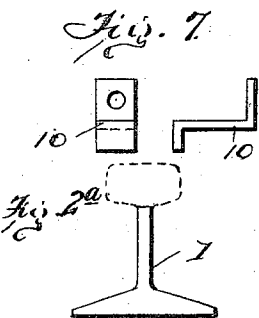
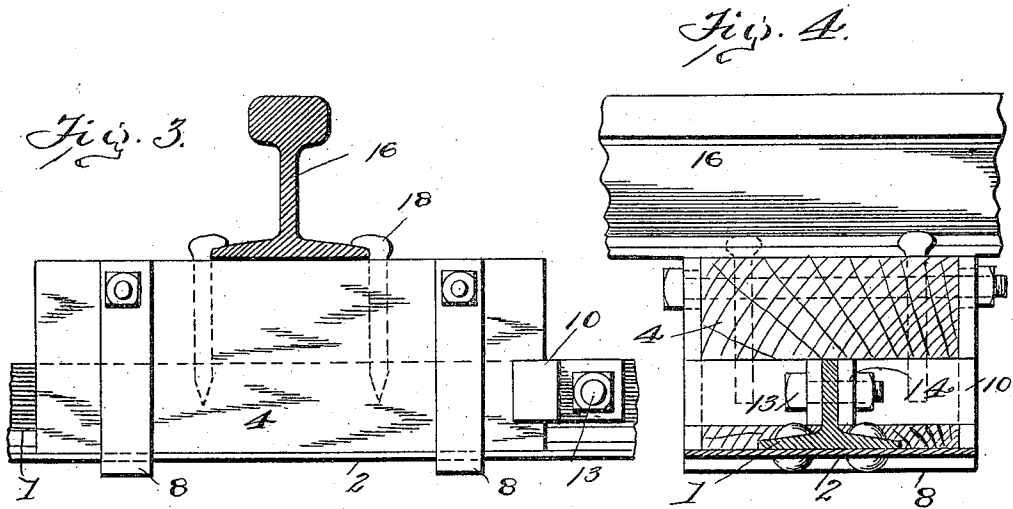
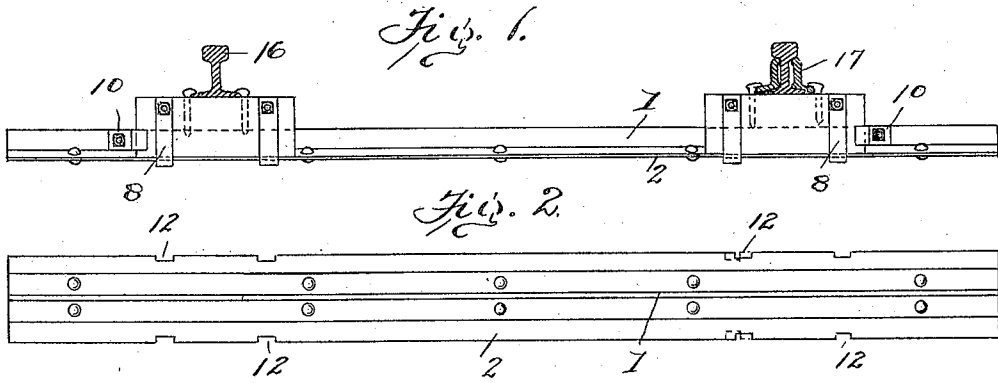


No. 819,977.

PATENTED MAY 8, 1906.

C. BUHRER.
METALLIC RAILWAY TIE.
APPLICATION FILED MAR. 12, 1906.

2 SHEETS—SHEET 1.



Witnesses
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W. L. Hyslop.

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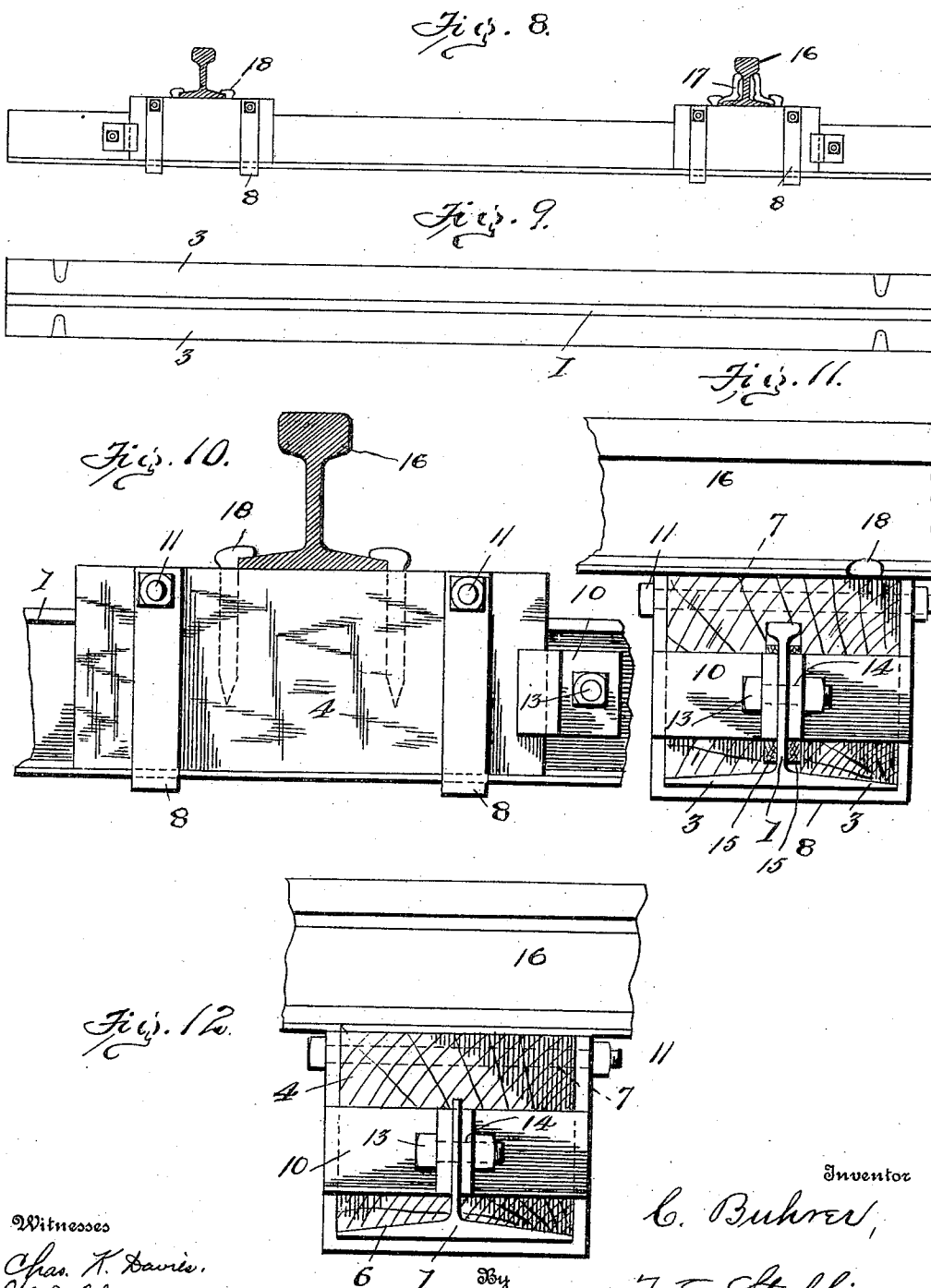
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UNITED STATES PATENT OFFICE.

CASPER BUHRER, OF SANDUSKY, OHIO.

METALLIC RAILWAY-TIE.

No. 819,977.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed March 12, 1906. Serial No. 305,581.

To all whom it may concern:

Be it known that I, CASPER BUHRER, a citizen of the United States, residing at Sandusky, in the county of Erie and State of Ohio, have invented new and useful Improvements in Metallic Railway-Ties, of which the following is a specification.

The object of my invention is the production of a metallic railroad-tie which shall be provided with supports and preferably cushioned for receiving the track-rails, said supports or cushioned supports when used to be of such construction and formation that they can be detached and new ones substituted without removing the tie from the road-bed.

Heretofore in the use of metallic ties and where the rails rested directly upon them, and especially when the track-ballast or earth was frozen in winter, the construction has proven to be too rigid, so that the rails have worn excessively and in some instances, perhaps, become broken by the blows and weight of trains passing over the same. My purpose is to obviate the objections appertaining to such rigid constructions by providing cushions which will allow the rail to yield slightly under impact and when supporting trains of normal weights.

My invention consists in certain novelties of construction and combinations and arrangements of parts, as hereinafter set forth, and specified in the claims.

The accompanying drawings illustrate several examples of the physical embodiment of my improvements constructed according to the best modes I have so far devised for the practical application of the principles.

Figure 1 is a view of one tie in side elevation with the rails resting thereupon and in section. Fig. 2 is a top plan view of Fig. 1 with the rails and rail supports or cushions removed. Fig. 2^a shows the end of an old track-rail, the head of which (shown in dotted lines) is to be removed, the part remaining to constitute part of the base of the tie. Fig. 3 is an enlarged view of a part of the tie and a support. Fig. 4 is an end view of Fig. 3. Fig. 5 is an end view of a support or cushioning-block of yielding material removed from the base. Fig. 6 shows side and end views of a block-clamp. Fig. 7 illustrates one of the tie-clamps. Figs. 8, 9, 10, 11 show a tie wherein the base-piece consists

of a bulb-iron or a metallic beam I-shaped in cross-section. Fig. 12 shows the end of a tie wherein the base-piece is a I-iron.

Referring to the several views, the numeral 1 designates the base or metallic part of the tie. In Figs. 1, 2, 3, 4 this base may be made by cutting off the head of an old track-rail and riveting to the flanges of the same a wide plate 2, said plate when desired to be fashioned from the cut-off head of the rail by heating and rolling.

In Figs. 8 to 11 the metallic base 1 consists of a bulb-iron rolled to shape and having wide flanges 3 3 at the bottom.

In Fig. 12 the base consists of a I-iron with wide flanges.

Adjacent the ends of the base-piece are located the supports of yielding material or wooden blocks 4. Each block is preferably integral and has a slot 5 to receive the web of the base, beveled surfaces 6 6 to match the top beveled surfaces of the flanges of the base each side of the web, and holes 7 7 for bolts.

Each block is secured to the base by metallic rectangular block clamps or straps 8, having elongated holes 9 in the ends, and by angular tie-clamps 10, each having its ends reversely bent and with a hole through one end.

The block-clamps encircle the base and two sides of a block, and the free ends of each clamp are united by bolt 11, passed through the hole 7, as shown. In Fig. 2 the edges of the base-plate are recessed, as at 12, to form seats for the clamps, so they cannot move longitudinally of the base.

The angular tie-clamps are secured to the web of the base-piece by a bolt 13, passed through a hole 14 in the web and the holes in the ends of the clamps. One of these clamps is located each side of the web and its free end hooked over the vertical corner of the block. The tie-clamps prevent longitudinal movement of the support or block outwardly toward the ends of the tie, and the block-clamps prevent splitting of the wooden blocks, as well as serving the purpose of securely fastening the block to the base-piece.

In Figs. 8, 9, 10, wherein a bulb-iron is used as a base-piece, it is found convenient to groove the cushioning support or block, as shown, making the groove of substantially the width of the bulb at the top of the base-

piece and then inserting shims 15 each side of the web.

In the several figures the numeral 16 designates the track-rails; 17, the joint-plates, and 18 the spikes driven into the wooden blocks.

It will be observed that the wooden blocks rest upon and fit the top or beveled surfaces of the flanges at the sides of the web of the base-piece and that the flanges take the greater part of the superimposed weight; that the block-clamps anchor the blocks to the base and prevent the splitting of the wood by the spikes, and that the tie-clamps prevent the outward movement of the blocks when subjected to thrusts from the flanges of the car-wheels.

While I have shown the blocks or rail-supports consisting of wood, I may use other material, either simple or of composite structure, for the same purpose. The broad idea is the provision of rail-supports in connection with the shapes of metallic base-pieces shown, and it is preferred that the blocks be cushioned.

Various modifications may of course be introduced without constituting substantial departures.

What I claim is—

1. A railway-tie comprising a metallic base having a web and two bottom flanges, rail-supports of yielding material slotted to receive the web of the base, and means for securing the said supports to the base.

2. A railway-tie comprising a metallic base having a web and two bottom flanges, rail-supports of yielding material slotted to receive the web of the base and having beveled surfaces 6, 6, to match the top beveled surfaces of the flanges, and means for securing the said supports to the base.

3. A railway-tie comprising a metallic base having a web and two bottom flanges, rail-supports of yielding material slotted to receive the web of the base, means for securing the said supports to the base, and means for preventing the outward longitudinal movements of the supports relative to the base.

4. A railway-tie comprising a metallic base having a web and two bottom flanges, rail-supports of yielding material slotted to receive the web of the base, and clamps passed beneath the base and extended up the sides of the supports and secured by bolts.

5. A railway-tie comprising a metallic base having a web and two bottom flanges, rail-supports of yielding material slotted to receive the web of the base and having bolt-holes, and clamps 8 passed beneath the base and extended up the sides of the supports and held by bolts passed through the ends of the clamps and the holes in the supports.

6. A railway-tie comprising a metallic base

having a web and two bottom flanges, rail-supports of yielding material slotted to receive the web of the base, means for securing the supports to the base, and clamps secured to the base and bearing against the supports to prevent longitudinal movements of the supports.

7. A railway-tie comprising a metallic base having a web and two bottom flanges, rail-supports of yielding material slotted to receive the web of the base, means for clamping the supports to the base, and angular tie-clamps 10 secured to the web by bolt 13 and the free ends of the clamps hooked over the vertical corners of the supports.

8. A railway-tie comprising a metallic base having a web with two bottom flanges and a wide metallic plate riveted to the flanges, rail-supports slotted to receive the web of the base and means for securing the supports to the base.

9. A railway-tie comprising a metallic base having a web with bottom flanges and a wide metallic plate riveted to the flanges, cushioned rail-supports resting upon the flanges and disposed each side of the web of the base, and means for clamping the supports to the base.

10. A railway-tie comprising a metallic base having a web and bottom flanges and a wide metallic plate riveted to the flanges, rail-supports located each side of the web and resting upon the flanges of the base, and clamps for securing the supports to the base; said wide metallic plate being provided with seats for the clamps.

11. A railway-tie comprising a metallic base made by cutting off the head of an old track-rail with a wide metallic plate riveted to the flanges, rail-supports disposed each side of the web and resting upon the flanges of the base, and means for securing the supports to the base.

12. A railway-tie comprising a metallic base made by cutting off the head of an old track-rail with a wide metallic plate riveted to the flanges, rail-supports of yielding material disposed each side of the web and resting upon the flanges of the base, and clamps for securing the supports to the base.

13. A railway-tie comprising a metallic base with a web and two bottom flanges, rail-supports each consisting of a block of wood slotted to receive the web of the base, and clamps for securing the supports to the base.

14. A railway-tie comprising a metallic base with a web and two bottom flanges, rail-supports each consisting of a block of wood slotted to receive the web of the base and having beveled surfaces to fit the beveled surfaces of the flanges of the base, and clamps for securing the supports to the base.

15. A railway-tie comprising a metallic
base with a web and two bottom flanges, rail-
supports of yielding material located each
side of the web and resting upon the flanges
5 of the base, and clamps for securing the sup-
ports to the base consisting of metallic straps
passed beneath the base and secured by bolts;
whereby a support may be withdrawn from

the base without removing the tie from the
road-bed.

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

CASPER BUHRER.

Witnesses:

L. D. MINOR,

GEO. E. REITER.