

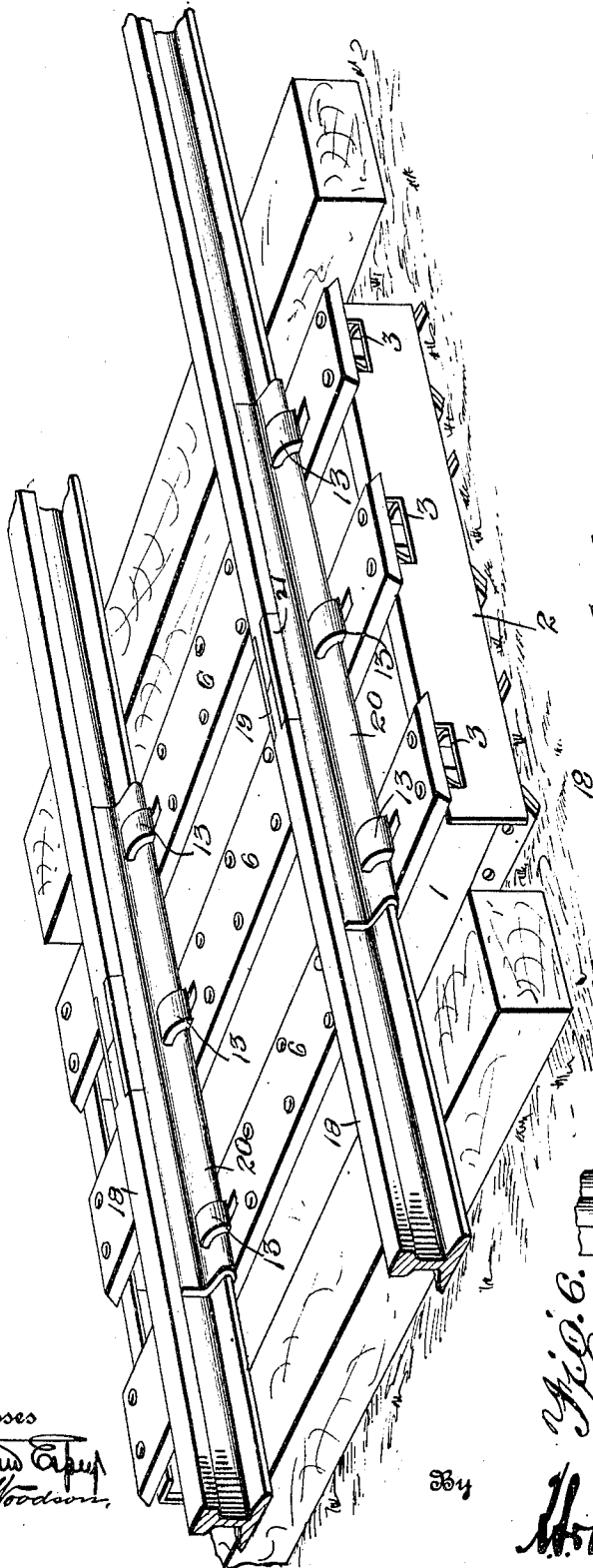
G. W. AYRES.
COMBINATION FLEXIBLE CROSS TIE AND RAIL JOINT.
APPLICATION FILED JUNE 12, 1912.

1,048,640.

Patented Dec. 31, 1912.

2 SHEETS—SHEET 1.

Fig. 1.



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Fig. 5.

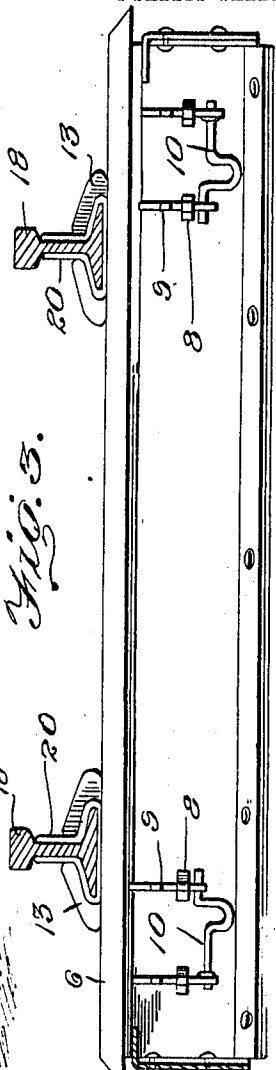


Fig. 6.

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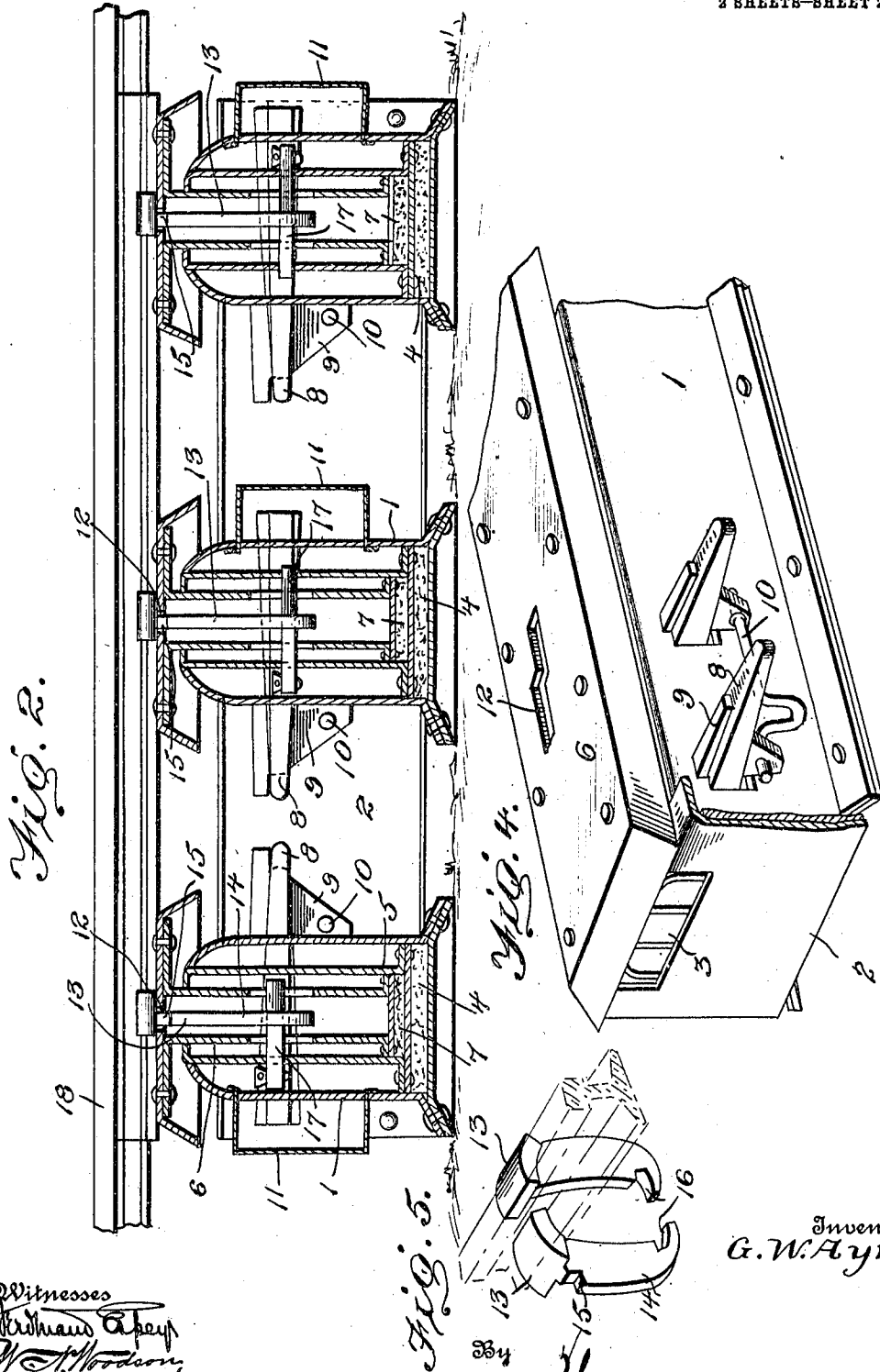
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

GEORGE W. AYRES, OF ROLLA, MISSOURI, ASSIGNOR OF ONE-HALF TO JAMES ELLIS WALKER, OF ROLLA, MISSOURI.

COMBINATION FLEXIBLE CROSS-TIE AND RAIL-JOINT.

1,048,640.

Specification of Letters Patent.

Patented Dec. 31, 1912.

Application filed June 12, 1912. Serial No. 703,290.

To all whom it may concern:

Be it known that I, GEORGE W. AYRES, citizen of the United States, residing at Rolla, in the county of Phelps and State of Missouri, have invented certain new and useful Improvements in Combination Flexible Cross-Ties and Rail-Joints, of which the following is a specification.

This invention relates to combined flexible cross ties and rail joints and has for its object to provide a durable structure adapted to effectually support track rails in proper position with relation to each other.

With the above object in view the structure includes a set of casings fixed with relation to each other, and each one of which is adapted to receive a tie. The ties are constructed from metal and are provided with clamping members adapted to secure the base flanges of the rails. Means are provided for securing the ties in position in the casings.

In the accompanying drawing Figure 1 is a perspective view of the combined flexible cross tie joint; Fig. 2 is a vertical sectional view of the same; Fig. 3 is a transverse sectional view of the same; Fig. 4 is a perspective view of a portion of the same; Fig. 5 is a perspective view of clamping members used in conjunction with the tie; Fig. 6 is a top plan view of part of one of the rails showing the clamping members in position thereon.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

The combination flexible cross tie and rail joint includes a series of metallic casings 1 which are connected together at their ends by strips 2. The strip 2 at one end of the casings 1 is provided with openings 3 through which the base portion of a tie may be passed when the tie is put in position in the casings.

In the bottom of each casing 1 is placed a quantity of saw dust indicated at 4, or other similar material. This material being previously treated with creosote or other preserving agency to prevent the same from rotting. The base 5 of the tie rests directly upon the material 4, and thus the tie is cushioned in its position in the casing, and consequently possesses sufficient flexibility to properly support the track rails. Each tie

includes a head member 6 which fits in the base 5, and cushioning material 7 is interposed between the head member 6 and the bottom of the base 5. This material 7 adds still further flexibility to the structure.

Wedges 8 are passed transversely through the sides of the casings 1, the base 5 and the head member 6. Keys 9 pass through the wedges 8 and bear against the sides of the casings 1. These keys are held in the wedges 8 by means of locking rods 10 which pass through the end portions of the keys and prevent the same from moving up out of engagement with the wedges 8. Hoods 11 are detachably mounted on the sides of the casings 1 and are located over the ends of the wedges 8 and prevent the ballast from coming in contact with the said wedges and keys.

Each head member 6 is provided in its upper side and in the vicinity of its ends with an opening 12. The end portions of the openings 12 are slightly out of alinement with relation to each other, and these openings are adapted to receive clamping members 13, which in turn are adapted to grip the flanges of the track rails and hold the same in position upon the structure. Each member 13 is provided with a shank 14, and the said shanks pass through the openings 12. Each shank 14 is provided in the vicinity of its upper end with a shoulder 15 which is adapted to bear against the end of the openings 12. The shanks 14 are provided at their inner sides and in the vicinity of their lower ends with recesses 16. Wedges 17 pass transversely through the sides of the base 5 and also pass through the recesses 16, whereby the lower ends of the shanks 14 are spread and the heads of the clamping members 13 grip the flanges of the rails.

Rails 18 are provided at their ends and in their head portions with recesses 19. Plates 20 receive the end portions of the rails 18 and extend along the opposite sides of the webs of the said rails. At the recesses 19 the plates 20 are provided with extensions 21 which enter and fill the recesses 19 so that the upper surfaces of the said extensions 21 are flush with the upper surfaces of the heads of the rails. Therefore it will be seen that a flexible tie structure is provided and that the ends of the track rails will be held in proper alinement with relation to each other and cannot be bent down

in consequence of the passage of rolling stock over the same.

It will be observed that the edges of the base plates are turned downwardly at an angle so as to pack and press the material of the road-bed, and thus prevent displacement of the entire structure.

Having described my invention, what is claimed as new is:

- 10 1. A structure of the character indicated including casings, strips connecting the casings together and having openings, ties detachably mounted in the casing, cushioning means interposed between the ties and the casings, and means for securing the ties in the casing.
- 15 2. A structure of the character indicated including casings, strips connecting the casings together and having openings, ties located in the casings, a cushioning means interposed between the ties and the casings, said ties consisting of base and head portions, and cushioning means interposed between the base and head portions.
- 20 3. A structure of the character indicated including casings, strips connecting the casings together and having openings, ties located in the casings and consisting of base and head portions, and clamping members mounted upon the head portions of the ties.
- 25 4. A structure of the character indicated including casings, strips connecting the casings together and having openings, ties located in the casings and consisting of base and head portions, the head portions having openings, clamping members located in the openings of the head portions, and wedges passing through the ties and engaging the clamping members.
- 30 5. A structure of the character indicated including casings, strips connecting the casings together and having openings, ties located in the casings and consisting of base and head portions, the head portions having openings, clamping members having shanks located in the openings in the head portions of the ties, said clamping members having at their inner edges recesses and at their outer edges shoulders, and wedges passing through the ties and engaging the recesses in the clamping members.
- 35 6. A structure of the character indicated including a plurality of casings secured to-
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gether in proper relation, a tie in each casing, and rail securing means carried by each tie. 55

7. A structure of the character indicated including a plurality of casings secured together in spaced relation, each of said casings having a base and side and end walls, the lower portions of which extend outwardly and downwardly below the base to support the same above the ground, and a tie mounted in each casing. 60

8. A structure of the character indicated including a plurality of casings secured together in proper relation, and a plurality of ties, each mounted in one of said casings, each tie including a base member seated within the casing and a head member engaging the base member and extending above the casing. 65

9. A structure of the character indicated including casings, strips connecting the casings, tie bases cushioned within the casings, tie heads engaging the bases, means for detachably connecting the tie heads to the tie bases, and rail clamping means carried by the tie heads. 70

10. A structure of the character indicated including a plurality of casings connected together, a tie base cushioned in each casing, a tie head cushioned in each base and extending above the casing, the casing, base and head being provided with aligned openings, wedges passed through said openings and securing the casings, tie bases and tie heads together, and means for locking the wedges against displacement. 75

11. A structure of the character indicated including casings, strips connecting the casings, ties located in the casings and having head portions extending above the casings and provided with slots, rail clamping members extending through the slots and having recesses formed in their opposed edges, and wedges passing through the ties between the clamping members to spread the same apart, the wedges seating in the recesses of the clamping members. 80

In testimony whereof I affix my signature in presence of two witnesses. 85

GEORGE W. AYRES. [L. S.] 90

Witnesses:

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