No. 812,594. PATENTED FEB. 13, 1906.

C. M. RHODES.

RAIL JOINT.

APPLICATION FILED MAY 4, 1905.

Fig. 1.

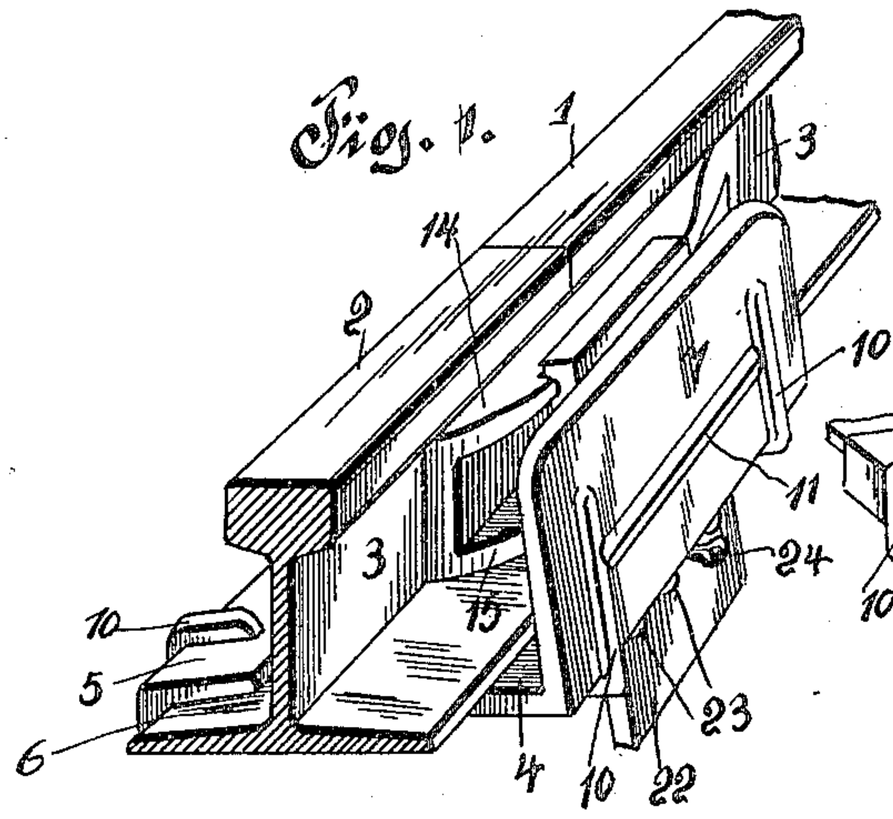


Fig. 2.

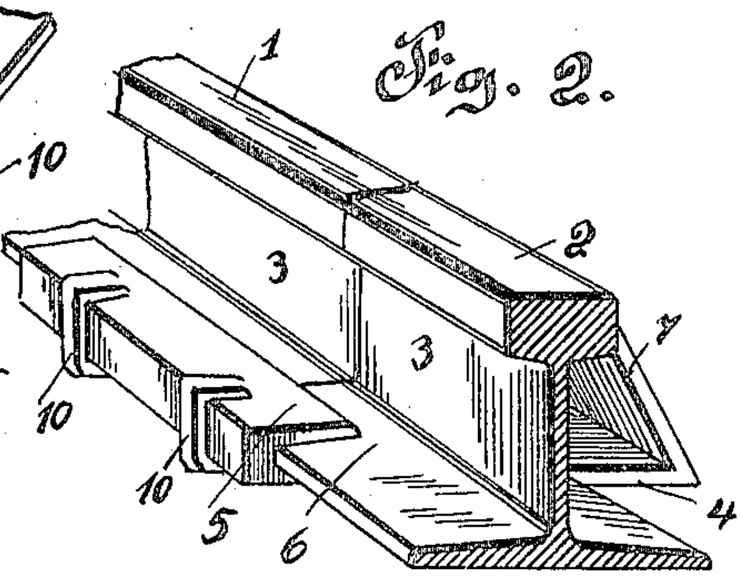


Fig. 3.

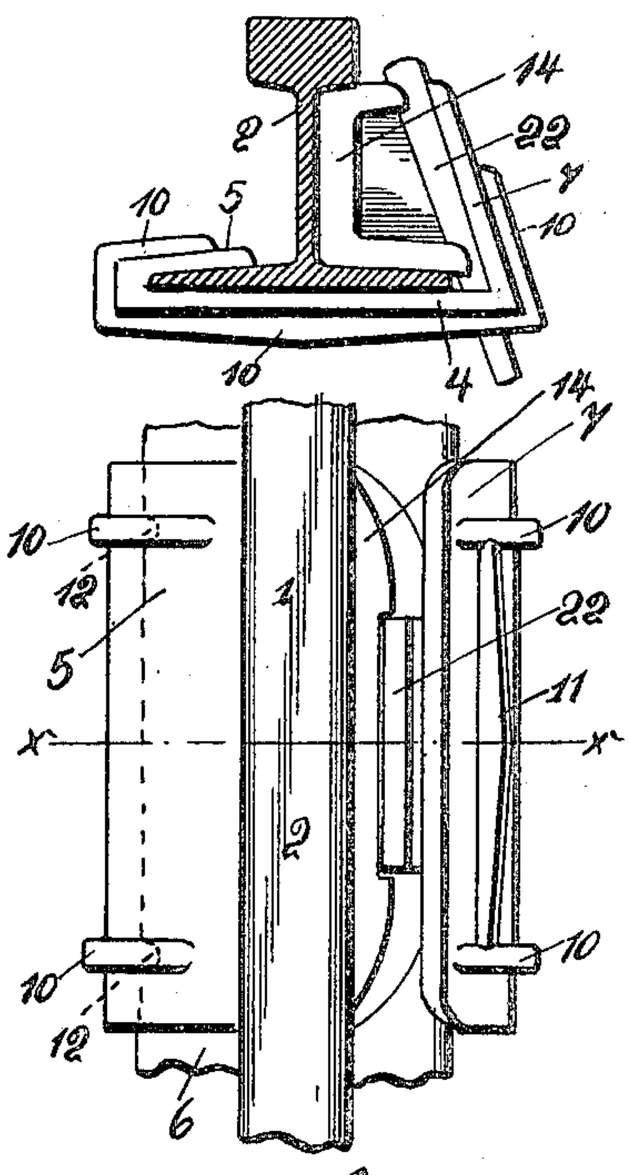


Fig. 5

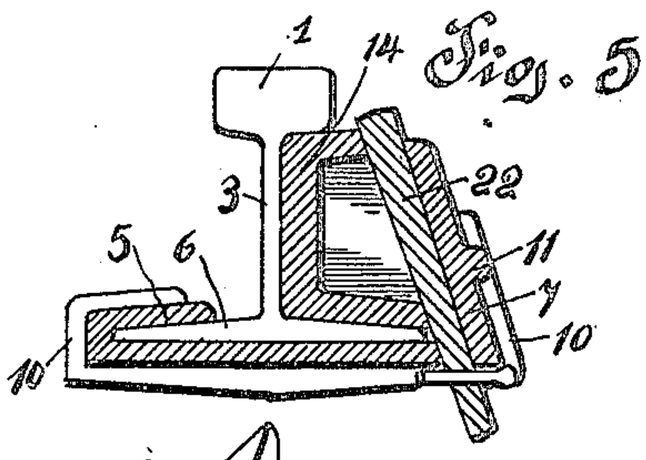


Fig. 6

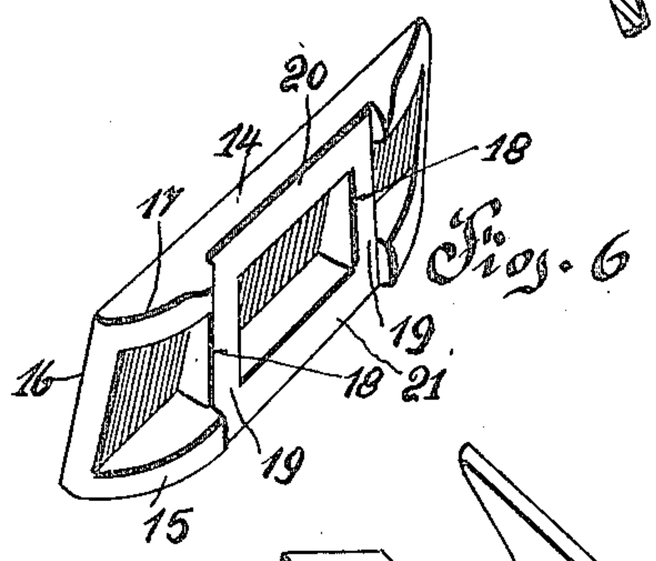


Fig. 7

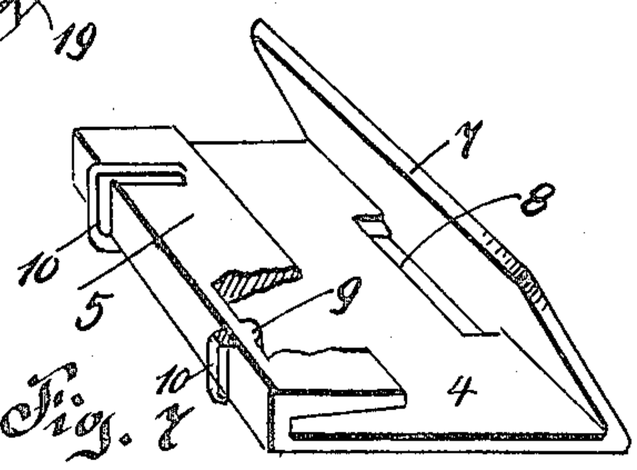
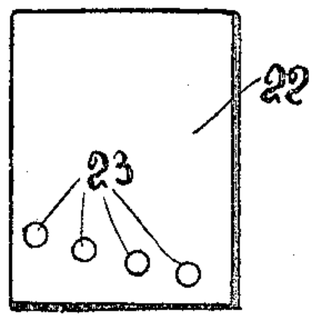


Fig. 8



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UNITED STATES PATENT OFFICE.

CHARLES M. RHODES, OF STEUBENVILLE, OHIO.

RAIL-JOINT.

No. 812,594. Specification of Letters Patent. Patented Feb. 13, 1906.

Application filed May 4, 1905. Serial No. 258,818.

To all whom it may concern:

Be it known that I, CHARLES M. RHODES, a citizen of the United States of America, residing at Steubenville, in the county of Jefferson and State of Ohio, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in rail-joints, and relates more particularly to a novel form of splice-bar or fish-bar adapted to be used in connection with the confronting ends of two rail-sections to rigidly and firmly retain said rail-sections in engagement with one another.

The primary object of the invention is to dispense with the use of nuts and bolts and the employment of novel means for bracing and retaining the confronting ends of two rail-sections in close proximity to one another, permitting of the expansion and contraction of the rails without causing them to become disjoined or out of alinement with one another.

The invention aims to provide novel means for supporting and bracing two rails, whereby they will withstand the stresses and strains exerted by the rolling-stock when passing over the joint. In this connection I have devised a novel form of base-plate and fish-bar which can be easily and quickly placed in engagement with the confronting ends of two rails and readily removed at any time it is desired to renew the rails or reposition the same.

To this end the invention finally consists in the novel construction, combination, and arrangement of parts, which will be hereinafter more fully described and then specifically pointed out in the claims, and, referring, to the drawings accompanying this application, like numerals of reference designate corresponding parts throughout the several views, in which—

Figure 1 is a perspective view of the confronting ends of two rail-sections, illustrating my improved rail-joint in position. Fig. 2 is a similar view, the confronting ends of the rail-sections being viewed from the opposite side of that illustrated in Fig. 1. Fig. 3 is a vertical sectional view of a rail, illustrating my improved joint in end elevation. Fig. 4 is a top plan view of my improved rail-joint. Fig. 5 is a vertical sectional view taken on the line x x of Fig. 4. Fig. 6 is a perspective view of the fish-bar used in connection with my improved joint. Fig. 7 is a perspective view of a base-plate used in connection with my improved joint, said plate being partly broken away; and Fig. 8 is a front elevation of a wedging-plate used in connection with my improved rail-joint.

In the accompanying drawings I have illustrated the confronting ends of two rail-sections 1 and 2, and it will be observed that in the web portions 3 3 of these rail-sections the ordinary apertures have been entirely eliminated, thereby dispensing with the conventional form of bolt and nut commonly used to secure splice-bars to the web portions of the rails.

To support and brace the rails 1 and 2, I employ a base-plate 4, the one edge of which is provided with an overlying flange 5, adapted to embrace the one side of the base portion 6 of the rails 1 and 2. The opposite side of the base-plate 4 is bent upwardly at an acute angle to the base-plate to provide a side wall 7, which is adapted to support and brace a portion of my improved rail-joint. The base-plate 4 adjacent to the side wall 7 is provided centrally of its length with an oblong slot 8, the object of which will be presently described. The base-plate 4 has its one edge provided with vertically-disposed ribs or lugs 9 9, which lie between the overlying flange 5 and the base-plate 4, this construction being clearly illustrated in Fig. 7 of the drawings. The base-plate 4 and its angularly-disposed wall and overlying flange are strengthened and braced by ribs 10 10, arranged upon the exterior sides of the base-plate and preferably at each end thereof. The ends of the ribs 10 10, carried by the angularly-disposed wall 7, are connected by a longitudinally-disposed rib 11, which is adapted to strengthen said wall and at the same time provide means whereby the base-plate can be manipulated and gripped when it is desired to carry the same.

The base portions 6 upon one side of the rails 1 and 2 are notched or cut away, as indicated at 12 12, whereby these edges of the rails 1 and 2 can be, after they have been placed upon the base-plate 4, moved into engagement with the vertically-disposed ribs or lugs 9 9, which will prevent the rails 1 and 2 from separating longitudinally upon the base-plate 4.

To retain the rail-sections 1 and 2 in en-

gagment with the lugs or ribs 9 9 and also in engagement with the overlying flange 5, I have devised a fish-bar 14, which is clearly illustrated in Fig. 6 of the drawings. This fish-bar is preferably provided with a base portion 15, corresponding in angularity to the top surface of the base portion 6, while the one side 16 of the fish-bar conforms to the vertical sides of the web portions 3 3 of said rails. The vertical sides 16 of the fish-bar upon its upper edge is provided with an outwardly-extending ledge or flange 17, which is adapted to support the heads or treads of the rails, and in order to support the outwardly-extending ledge or flange I provide the fish-bar with vertically-disposed ribs 18 18, having angularly-disposed sides 19 19, and the ledge or flange 17 and the base portions 15 are cut away, as indicated at 20 and 21, to provide surfaces alining with the angularly-disposed sides 19 19 of the ribs 18 18. When the fish-bar 14 is placed in engagement with the rails 1 and 2, the angularly-disposed sides of the bar are adapted to coincide or lie in a plane parallel with the angularly-disposed wall 7 of the base-plate 4, and to lock the bar in engagement with the rails 1 and 2 I employ a wedging member or plate 22, which is substantially V-shaped in cross-section and is provided in its lower edge with a plurality of apertures 23, which are arranged transversely of the wedging member or plate 22 and at an angle to the lower edge thereof, the object of which will be presently described. A key or split pin 24 is employed to lock the wedging-plate 22 in engagement with the bar 14 and the base-plate 4, the split pin being placed in one of the apertures 23 beneath the base-plate 4.

The space existing between the overlying flange 5 and the angularly-disposed wall 7 permits of the rails 1 and 2 being placed upon the base-plate 4 and moved into engagement with the vertical ribs or lugs 9 9, at which time the fish-bar 14 can be readily placed in engagement with the rails 1 and 2 by moving the same in between the rails and the angularly-disposed wall. When the fish-bar 14 has been positioned opposite the wall 7, the wedging member is driven downwardly through the slot 8, the surface of the wedging plate or member engaging the angularly-disposed side of the bar 14 and the wall 7, and when the wedging-plate has been driven home the split pin or key 24 is placed in the aperture 23 lying nearest the underneath surface of the base-plate 4, whereby the wedging-plate will be firmly locked in position. The angular disposition of the apertures 23 23 permits of the wedging-plate being tightened or farther driven into the base-plate 4 should the fish-bar become loose in connection with the rails 1 and 2. The construction of the wedging-plate also permits of rails of variable weights being used, which consequently have thicker web portions that would necessitate the moving of the fish-bar 14 into closer proximity to the angularly-disposed wall than if a narrow web-portioned rail was used.

It will of course be understood that my improved rail-joint is adapted to be positioned between two ties, the ends of the base-plate 4 preferably resting upon ties, whereby the rail will be firmly supported upon a suitable road-bed.

I do not care to confine myself to the specific shape of the fish-bar illustrated nor to the contour of the base-plate 4, and various other changes may be made in the details of constructions without departing from the general spirit and scope of the invention.

What I claim, and desire to secure by Letters Patent, is—

1. The combination with two rail-sections adapted to be joined together, of a base-plate, said base-plate having an overlying flange, an angularly-disposed wall carried by one edge of said base-plate, said base-plate having a slot formed therein adjacent to said wall, lugs carried by said base-plate and adapted to engage the bases of said rails, a fish-bar interposed between the web portions of said rails and said angularly-disposed wall, a wedging member mounted between said fish-bar and said wall, the lower end of said member having a plurality of apertures formed therein, and a split key adapted to be inserted in one of said apertures, substantially as described.

2. The combination with two rail-sections, of a base-plate adapted to support said rails, an angularly-disposed wall carried by said base-plate, a fish-bar interposed between the web portions of said rail and said wall, a wedging member mounted between said fish-bar and said wall, the lower end of said wedging member extending beneath said base-plate and having a plurality of apertures formed therein, means to retain the one edge of said base-plate in engagement with the bases of said rails, and means to retain said wedging member in engagement with said bar and said wall, substantially as described.

3. In a rail-joint, a rail-chair comprising a base-plate, having one end bent upward and inwardly to form an overlying flange extending in a plane parallel with the base-plate, a wall carried by the opposite side edge of said base-plate and extending upwardly therefrom at an acute angle, a fish-bar adapted to be placed between the rails received in said chair and said angularly-disposed wall, and having a recessed outer face, and a wedge-plate fitting in said recessed outer face and extending through an opening provided therefor in the base-plate, substantially as described.

4. In a rail-joint, the combination with the chair receiving the rails, and having an angularly-disposed wall along one side edge, of a

fish-bar engaging the rail-webs and fitting between the tread and base of said rail and having a recessed outer face, and a wedge-bar fitting in said recessed face between the fish-bar and the angularly-disposed wall and extending through an opening in the base of said chair substantially as described.

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

CHARLES M. RHODES.

Witnesses:
HUGH P. MCGAVAN,
JOSEPH MORROW.