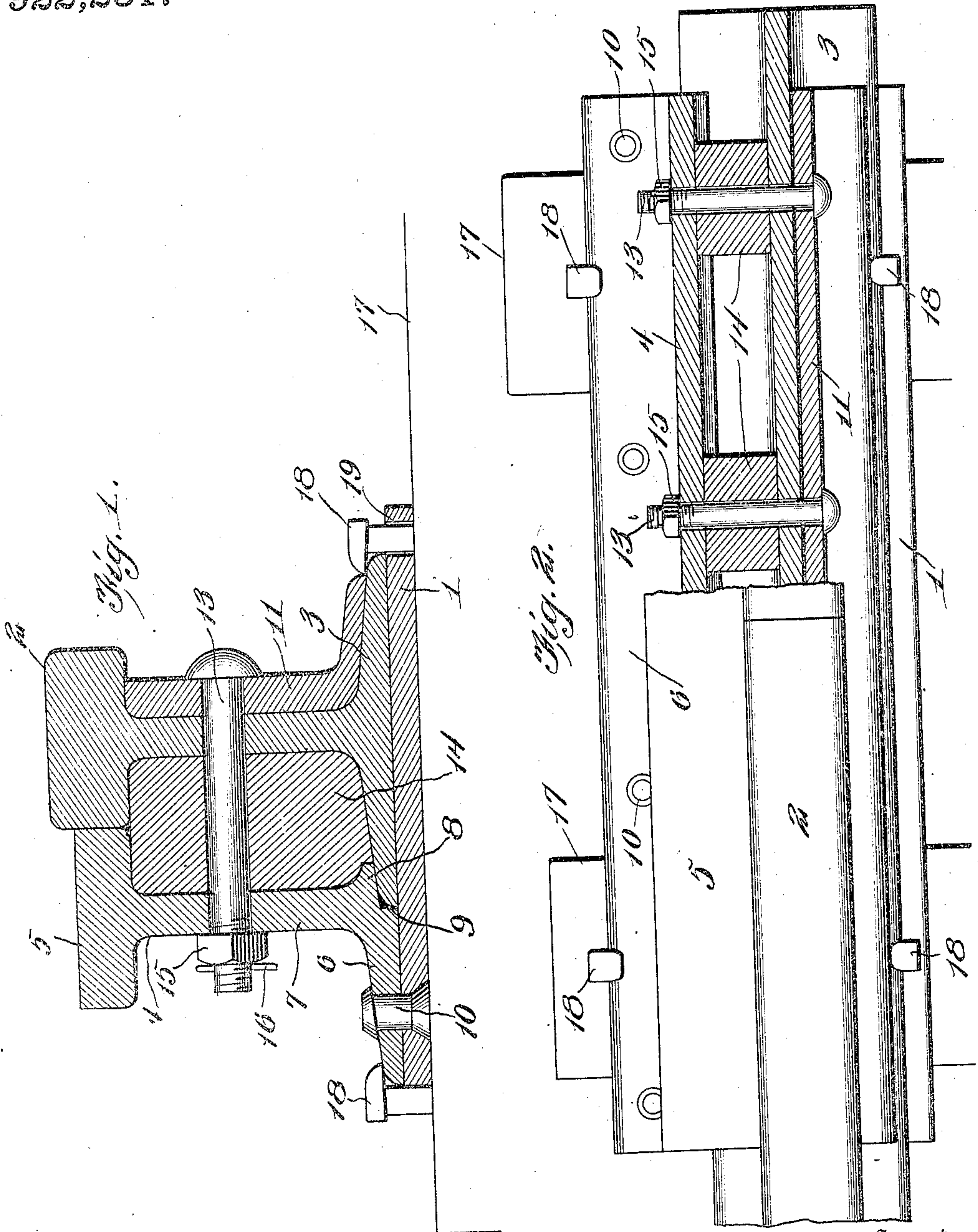


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RAIL SPLICE AND BRACE.  
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# UNITED STATES PATENT OFFICE.

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## RAIL SPLICE AND BRACE.

No. 922,231

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that I, ROSCOE L. ABERNATHY, a citizen of the United States, residing at East St. Louis, in the county of St. Clair and State of Illinois, have invented new and useful Improvements in Rail Splices and Braces, of which the following is a specification.

The invention relates to an improvement in rail splices and braces designed particularly for connecting and bracing the meeting ends of railroad rails.

The main object of the present invention is the provision of a railbrace and splice in which an auxiliary rail is utilized as a brace and splice member, a chair plate being connected to the auxiliary rail to underlie the base flanges of the track rails.

The invention will be described in the following specification, reference being had particularly to the accompanying drawings, in which:—

Figure 1 is a transverse sectional view through a splice and brace connection constructed in accordance with my improvement. Fig. 2 is a plan of the same partly in section.

Referring particularly to the accompanying drawings, my improved rail splice and brace comprises a base plate or chair 1, preferably a flat plate of sufficient length to underlie the meeting ends of the railroad rails 2 and extending some distance in each direction beyond the juncture of said rails. The chair plate is also of materially greater width than the base flanges 3 of the main rails, as clearly shown in Fig. 1. In conjunction with the chair plate 1 I utilize what I term a brace rail 4, which rail except in the particulars hereinafter noted is of the same sectional configuration as the main rail. The brace rail differs from the main rail in having its tread portion 5 of somewhat less height than the tread portion or ball of the main rail and in dispensing with one of the lateral extensions of the base flange, having but a single extension or base flange 6 arranged wholly at one side of the web 7 of the brace rail, the opposing side of the web in alignment with the flange extension 6 being formed with a comparatively narrow extension 8, which, together with the base flange in alignment with the web 7, is undercut to provide a recess 9, all as clearly shown in Fig. 1. The undercut portion 9 of the brace rail extends throughout the length of said rail, and

is designed to receive and fit one edge of the base flange 3 of the main rail. The brace rail is secured to the chair plate 1 through the medium of rivets 10 countersunk in the under surface of the chair plate to avoid projection, the brace rail being arranged to dispose the free edge of its flange 6 in alignment with one edge of the chair plate.

In use the brace and splice connection of this improvement is applied to the main rails so as to dispose the brace rail and chair plate equally extended beyond the meeting juncture of the rail ends to be braced. In this position the chair plate will underlie the meeting ends of said rails and the base flange extensions on one side of said rails will be engaged in the undercut recess 9 of the brace rail. The relatively inner edge of the tread portion 5 of the brace rail will snugly abut the proximate surfaces of the tread portions 2 of the main rails, thereby effectively bracing the rails at the base flanges and tread portions.

In conjunction with the joint described I use an ordinary fish plate 11 to be secured to the relatively outer side of the tread portion of the main rails, in the usual manner. The fish plate 11 and rails are secured in place by bolts 13 extending through said plates and through the respective web portions of the main and brace rails, and between the web portions of said rails and corresponding in number to the number of bolts used I provide blocks 14, preferably of steel or the like, which are of a sectional contour to snugly fit the space between the brace and main rails, bearing thereby against the web portions of the brace and main rails beneath the respective tread portions and on the base flanges, the bolts 13, of course, passing through the block or filler 14. The bolts 13 are preferably secured by the nuts 15 which after being properly seated are held against movement by ordinary cotter pins 16 passing through the bolts. The chair plate 1 is designed to rest upon spaced ties 17, and be secured by ordinary rail spikes 18 engaging said plate and the ties, the relatively inner edge of the plate being preferably extended beyond the proximate edge of the base flange of the main rails and formed with apertures 19 to receive the particular spikes at this point.

The construction described provides a rail brace and connection which is particularly effective in that it braces every portion of



the rail, and is further of essentially economic construction in that any worn rails will be effective in service as the brace rails, the sole requirement being the elimination of one brace flange extension and a slight reduction in the height of the tread or ball of such rail to avoid interfering with the passage of wheels which may be worn or grooved by use.

10 The construction described provides a support for the base flanges of the rails and also a lateral brace to prevent independent movement of the ball portions of the rails, whereby the meeting ends of the rails are in effect  
15 as rigid as any other portion of the track.

Having thus described the invention what is claimed as new, is:—

In combination with the end portions of adjacent railway rails of usual construction  
20 comprising base and tread portions and an intermediate web, a base plate underlying the rail ends and projecting upon opposite sides to engage and rest upon ties, and having openings near one edge, a brace rail of  
25 less height than the main rails and comprising a web, a tread and an outer base flange

secured to an edge portion of the base plate, the opposing sides of the tread portions of the brace and main rails touching, and the inner lower portion of the brace rail having  
30 a longitudinal recess to receive the outer edge of the base portions of the main rails, and having a lateral extension to overhang said main rail base portions, filling pieces between the brace and main rails, a fish plate  
35 arranged upon the opposite side of the main rails, bolts connecting the brace and main rails, the filling pieces and the fish plate, and spikes for securing the parts to the ties, one set of spikes passing through the openings of  
40 the base plate and operating by a wedge action upon the adjacent base flange of the main rails to force the opposite base flange into the said longitudinal recess and beneath the overhanging extension of the brace rail.  
45

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

ROSCOE L. ABERNATHY.

Witnesses:

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