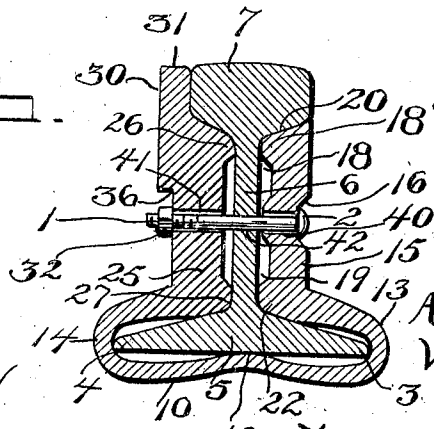
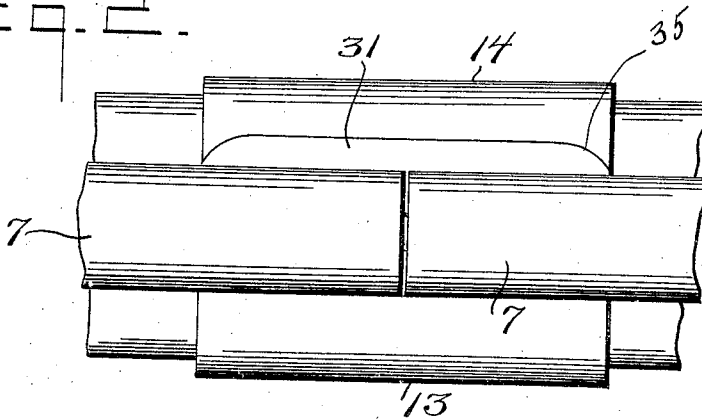
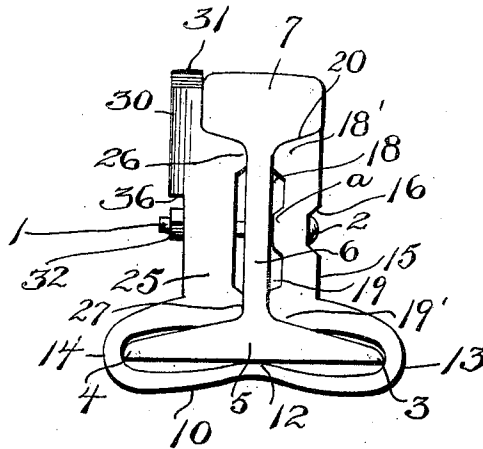


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RAIL-JOINT.

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980,892.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, ALFRED F. COYNE and WILLIAM BARNHART, citizens of the United States, residing at Menard, in the county of Randolph and State of Illinois, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification.

This invention has relation to certain new and useful improvements in rail joints.

The primary object of our invention is to provide a combined rail chair and fish plate.

Another object is to provide a rail joint arranged to receive the meeting ends of two rails, the joint including two fish plate forming members held in yielding spaced relation to be clamped upon the rail end to firmly engage the rails to prevent any lateral or vertical movement of the rail ends within the joints.

A most important object of the invention is to provide a chair member having a rail engaging plate at one side adapted to form a tread-bridge at the junction of engaged rails, whereby wheels will be prevented from pounding and distorting the abutting rail ends.

With the above and other objects in view the present invention consists in the combination and arrangement of parts as will be hereinafter more fully described and particularly pointed out in the appended claim, it being understood that changes in the specific structure shown and described may be made within the scope of the claim without departing from the spirit of the invention.

In the drawings forming a part of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 shows an end view of a rail provided with our improved rail joint. Fig. 2 shows a top view. Fig. 3 shows a transverse sectional view through one of the connecting bolts.

As is well known by all those skilled in the art to which this invention relates, the pounding of the car wheels, as they pass over the meeting ends or rail joints, is extremely objectionable as it causes a shock and jar ruinous to both the rail bed and rolling stock. In our invention we overcome the objection to the rail joint as usually constructed, in that we employ a combina-

tion rail chair, fish plate and bridge made of a single piece.

In the drawings the numeral 5 designates the base, 6 the web and 7 the head or tread of a railway rail of conventional construction. In providing a secure holding means for the meeting ends of the rails, we employ a preferably steel member including the concavo-convex bottom 10, to provide a middle lengthwise running rail supporting surface 12, upon which the base 5 of the rail rests. Curving from each side of this concavo-convex bottom are the convergibly held top flanges 13 and 14 of increasing thickness, these flanges being arranged to firmly bind upon the edges 3' and 4 of the rail base 5.

Extending upwardly from the top flange 13 is the fish plate forming section 15 having the gain or groove 16 of a width and depth to receive the head 2 of an ordinary bolt. In order to insure a firm contact of the plate forming section 15 with the web 6 of the rail, we provide the same upon the inner face with the grooves 18 and 19 running parallel with the gain 16. The upper and lower shoulders 18' and 19' respectively, are thus formed and an intermediate shoulder *a*, which is offset outwardly from the plane of the inner surfaces of the shoulders 18' and 19' a distance of about one eighth of an inch. This shoulder is located directly inward of the groove 16, and contacts with the central portion of the web after the upper and lower shoulders have been firmly pressed thereagainst, as will be readily understood. The upper edge 20 of this fish plate forming section is arranged to lie in firm engagement with the under surface of the rail head while the line 22 forming the edges of this fish plate section is of a length to firmly engage the upper portion of the rail base 5, as disclosed in Fig. 3.

Extending from the top flange 14 is the fish plate and bridge forming section 25, which has its inner face gained to provide the two extending contact flanges 26 and 27 arranged to be brought into firm engagement with the upper and lower portions of the rail web 6. The upper edge of this fish plate forming section 25 is provided with the thickened offset tread-bridge portion 30 arranged to engage against the side of the head 7 and presenting the supporting sur-

face 31, and shoulder 36, upon the outer side of the plate, the securing nut 32 upon the securing bolts 1 being arranged to be hooded and shielded by the shoulder 36. As disclosed in the top view the ends of the portion 30 are rounded as shown at 35, so that in the replacing of a car which has run off of the rails the wheel flanges will be fended outward and prevented from shearing off the securing nuts.

In Fig. 1 we have shown one of our rail joints as slipped upon the end of a rail and disclosing the normal position of the fish plate forming sections 15 and 25. These members are normally held in a divergent yielding spaced relation permitting the rail joints being readily slipped upon or off the rail ends in the operation of securing or removing these combined fish plate and rail chair forming joints.

The section 15 is provided with a plurality of bolt apertures 40, while the section 25 is provided with the bolt receiving aperture 41, within which the securing bolts are removably held. The openings 40 and 41 are slightly larger than the bolt opening 42 within the rail web 6, so that these securing bolts 1 may be readily introduced previous to the operation of clamping the divergently held fish plate forming sections against the web of the rail.

In use, the device which is approximately a sleeve, is slipped over the end of one of the rails, and the abutting rail then disposed to register therewith after which the sleeve is slipped outwardly to dispose the junction of the rails centrally of its length. The bolts 1 are then engaged through the inner plate 15, through the usual openings in the web and each threaded portion projecting through the plate 25. As the nuts are tightened upon the bolt, the lower portions of the chair are drawn upwardly and inwardly, pressing against the edges 3 and 4 of the rail base, and then being drawn inwardly with the shoulder of the outward plate contacting against the web, the upper portions 20 and 26 of the respective plates being brought into supporting engagement with the base of the head 7. The bridge portion 30 is

brought closely against the outer side of the head, the upper surface 31 being in a common plane with the upper surface of the head 7 and adapted to support car wheels as they pass the joint.

A rail joint constructed according to our invention is simple and inexpensive in construction and both durable and efficient in operation, and the adjustment of a member upon the rail ends may be made with ease, accuracy and despatch.

It will be noted that the bridge portion 25 is thickened to a considerably greater extent than the opposite side of the chair, so that it will have a maximum strength for the support of rolling stock passing thereover.

Having thus described our said invention, what is claimed is:

A rail joint comprising a single member, the body portion of said member being adapted to incase the base portions of the meeting ends of the rails, said body portion being bent to contact with the edges of said base portions, and with said base portions at a point directly below the web of the rails, flanges formed integral with said body portion, one of said flanges having its edge portion flush with the tread of the rail, said flange being provided with a squared extension, a plurality of projections formed upon said flanges, two of said projections being adapted to contact with the web at points adjacent the base, and two of said projections being adapted to contact with said web at points adjacent the tread, a bolt passing through said web and said flanges, one of said flanges being provided with a centrally depressed portion for engaging said web and protecting the head of said bolt, a nut carried by said bolt, said nut lying directly beneath the squared extension formed on one of the flanges.

In testimony whereof we affix our signatures, in presence of two witnesses.

ALFRED F. COYNE.
WILLIAM BARNHART.

Witnesses:

E. A. RHEA,
J. A. GORSUCH.