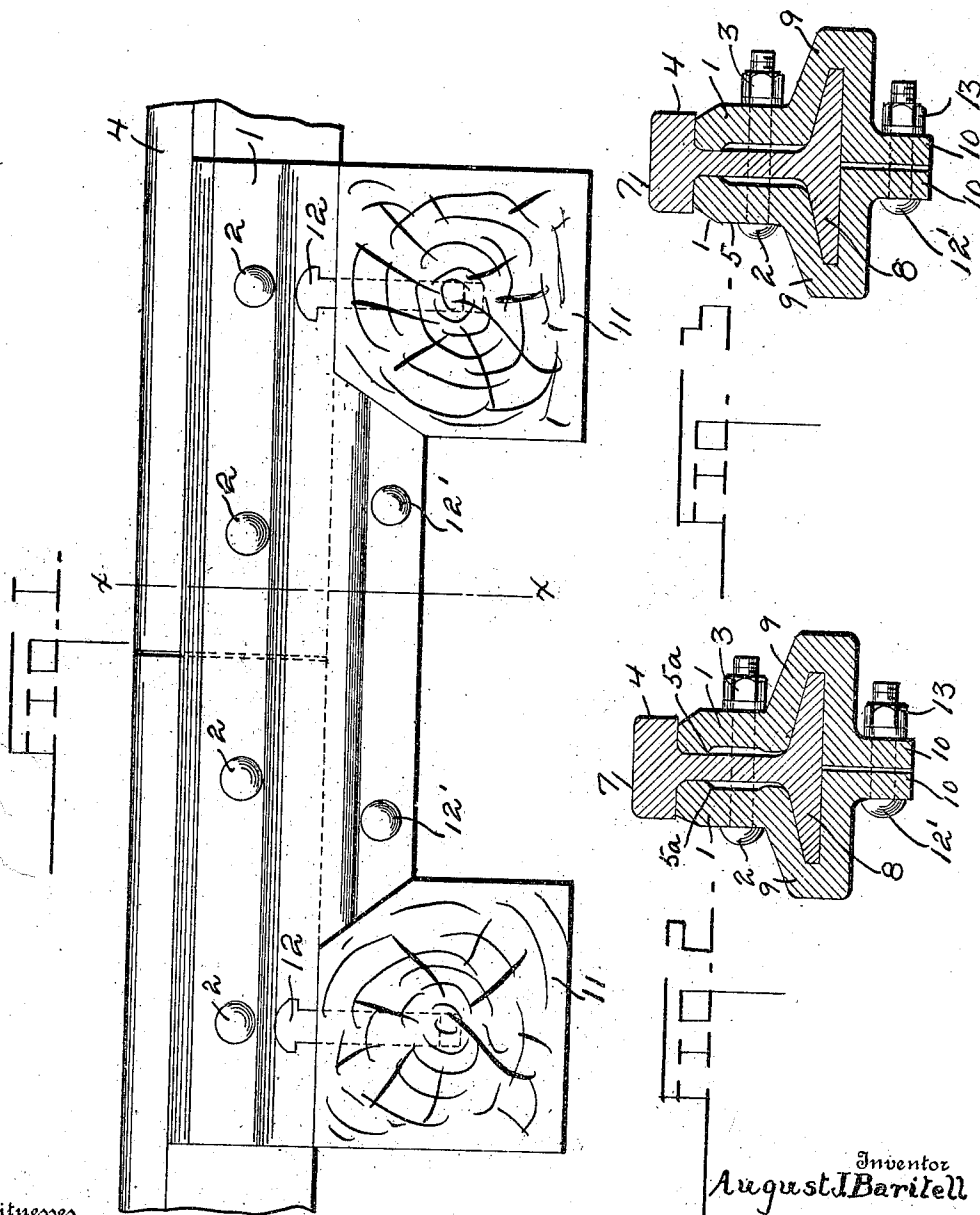


A. J. BARITELL.
RAIL JOINT.
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Patented Aug. 9, 1910.



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AUGUST J. BARITELL, OF MORGANTOWN, WEST VIRGINIA.

RAIL-JOINT.

966,419.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, AUGUST J. BARITELL, a citizen of the United States, residing at Morgantown, in the county of Monongalia and State of West Virginia, have invented certain new and useful Improvements in Rail-Joints, of which the following is a specification.

This invention relates to railway rail joints, and has for its object to provide an improved joint so constructed and arranged that the meeting ends of railway rails will be held firmly in alinement and against lateral relative movement, and against depression at their junction, the joints performing three useful functions in the provision of but one form of plate, which functions have long been recognized as desirable in the art, but which have heretofore been only accomplished in separate devices, also each function supplements the others in adding to the stability of a trackway.

The invention has for a further object to provide a railway rail joint of this character which will be simple and economical in construction and durable.

Other objects and advantages will be apparent from the following description, and it will be 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 is a side elevation of a rail joint constructed in accordance with this invention, Fig. 2 is a vertical cross section thereof on the line $x-x$ of Fig. 1, Fig. 3 is a cross section of a modified form of the fish plates which I employ in carrying out the invention.

The rail joint constructed and arranged in accordance with this invention comprises a pair of fish plates or splice bars 1 secured by means of bolts 2 and nuts 3 to the abutting ends of rails 4. Each fish plate 1 is formed with the vertical or web portion 5 overlapping the meeting ends of the rails 4. The vertical portion is centrally recessed or away from the rail web, thus providing the shoulder 5^a at the top inclining inwardly and upwardly from the web 5. As illustrated, the vertical portion 5 engages snugly between the head 7 and base flange 8 of the rails, the

intermediate vertical portion lying in spaced relation with the web. As will be explained, this snug engagement between the head and flange of the rail is essential. The fish plate is further formed with the inclined flange 9 at its lower edge which extends over the base flange 8 of each rail and overlaps the same, extending beneath the base of the rail to a point spaced from the central plane of the web of the rail forming a chair and having its inner edge bent downward centrally over a portion of its length to form a vertically depending flange 10. A V-shaped recess is thus formed for the reception of one flange 8 of the rail. The lower end portions of the plates are cut away to a spaced distance from the adjacent ends of the fish plates, the ends of which are adapted to rest upon adjacent ties 11 and are secured thereto by spikes 12, the depending flanges 10 having their ends abutting against the ties 11. The flanges 10 are secured together in any suitable manner as for example, by means of bolts 12' and nuts 13. By means of the flanges 10 wedged between the ties 11, creeping of the rails is prevented, and the rail joint, as a whole, is held against endwise thrust due to the passage of trains over the meeting ends of the rails. By having the fish plates 1 each formed, as described, in one piece, the construction of the rail joint is simplified, affording a small number of joints and bolts, and rendering the rail joint more durable and easily assembled.

In Figs. 2 and 3 it will be seen that the vertical portion 5 contacts with the web only at its upper portion by means of the shoulder 5^a, the engagement of the base flanges 8 of the rail between the opposed V-shaped passages in the plates, serving to hold the lower portions of the rails in secure registration and against vertical movement relatively. By this means, the device is made adaptable to rails having flanges of various widths and thicknesses, and its application more efficient, by enabling the rigid clamping of the flange of the rail so that there will be no loose play between the base of the rail and the fish plates.

From the foregoing description it will be seen that the construction of the angle bars employed for connecting the meeting ends of the rail in Fig. 3 are somewhat modified to that shown in Fig. 2, the lower shoulder forming the inner contacting surfaces of

said bars with the web of the rail being dispensed with, leaving that portion of the fish plates in a yielding position in respect to the rail.

- 5 In similar devices dependence has usually been placed upon snug engagement of the vertically extending portion of the fish plates between the lower portion of the tread or head of the rail and the upper surface of the flange, whereby the rail ends are held 10 securely in horizontal alinement. Under such construction, with a slight variation in the thickness of the engaged parts of the rails, which might be due either to corrosion 15 or to blows or wear of machinery used in the making of the rails, the rails would not be securely held against lateral displacement, relatively, and the plates might not fit between the flange and the rail head with 20 sufficient tightness to hold them in accurate horizontal registry. Also, such devices usually have to be made in special sizes for different sizes of rails.
- 25 The present device is adapted to use with various sizes of rails, and as will be appreciated is not dependent upon the wedging of its vertical portions between the flange and head of the rail for retention of the rails against relative lateral displacement.
- 30 It will be seen that should the distance between the head and flange of the rail be too great for the wedging of the vertical portion therebetween, the shoulder 5^a will serve with ample security to hold the rail in secure 35 registry against lateral displacement by positive engagement against the opposite sides of the webbed portion of the rail. The tight adjustment of the nuts 3 will insure the snug engagement of the flange 9 upon 40 the upper surface of the rail flange, at the same time that the shoulders 5^a are brought into forceful engagement upon the opposite sides of the web, and the shoulders will collapse under clamping action of the securing 45 bolts, forcing the lower edge of the vertical

portion downward against the flange, whereby the rail ends will be held in rigid vertical alinement. The subsequent adjustment of the nuts 13 upon the bolts engaged through the flanges 10 will draw the chair portions 50 inward and force them upwardly in firm engagement with the base of the rail thus serving to hold and truss the rail ends securely against vertical displacement relatively.

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What is claimed is:

In combination with oppositely disposed ties having inclined surfaces extending from the upper edges thereof to a suitable distance above the lower surfaces of the ties, of 60 a rail joint comprising a pair of angular bars adapted to be secured to the meeting ends of the adjacent rails, flanges forming a part of said bars and depending therefrom the lower edges of which are parallel 65 to the basal oppositely projecting portions of said bars, the latter being properly constructed and arranged and adapted to lie in close relation to one another throughout their entire length, the opposite ends of said 70 flanges being inclined to correspond with the inclined surfaces of the ties and in direct contact therewith along their entire meeting surfaces, with the remaining portions of the 75 angle bars resting in direct contact with the upper surfaces of the ties leading from the inclined surfaces formed thereon, and means for removably connecting the said depending flanges, whereby the angle bars together with the rails attached thereto are 80 rigidly held between the adjacent ties and partially supported by the contacting inclined ends of the flanges and the correspondingly inclined faces of the ties.

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

AUGUST J. BARITELL.

Witnesses:

EDWARD G. DONLEY,
JOHN L. HATFIELD.