

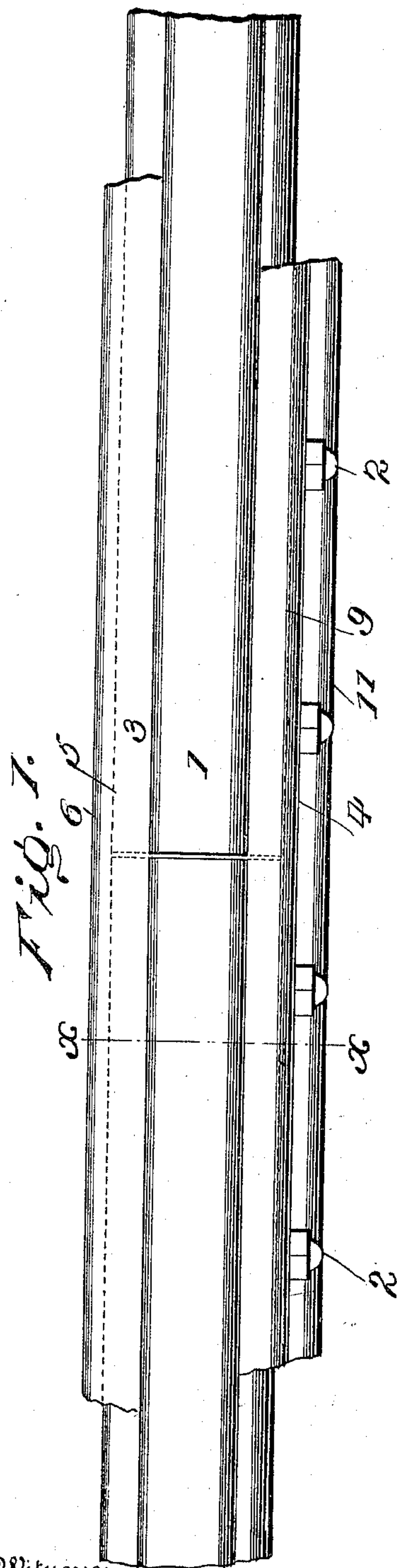
No. 638,290.

Patented Dec. 5, 1899.

H. F. SMITH.
RAIL JOINT.

(Application filed Aug. 14, 1899.)

(No Model.)



Witnesses

John Smith
Design of Matthews

Fig. 3.

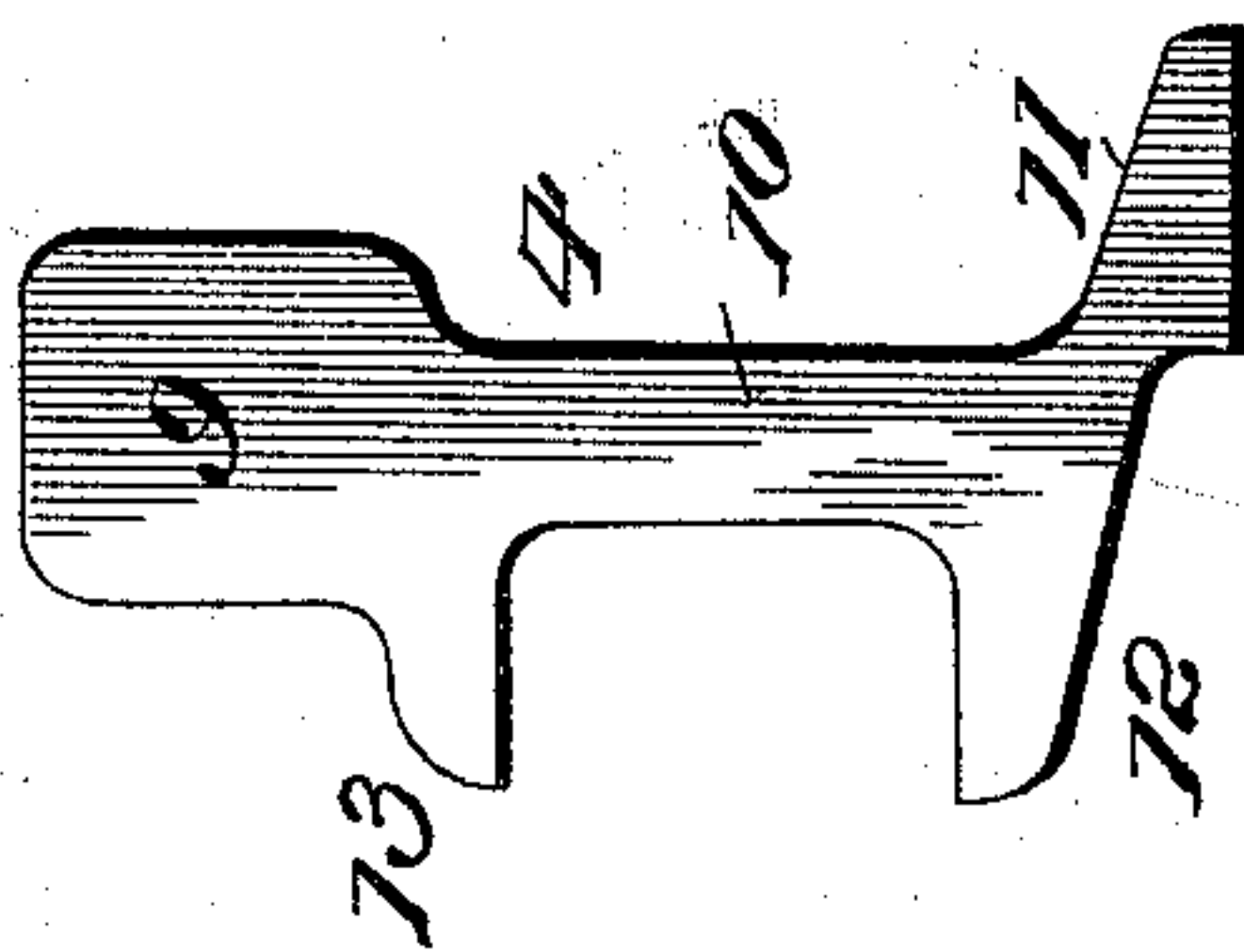
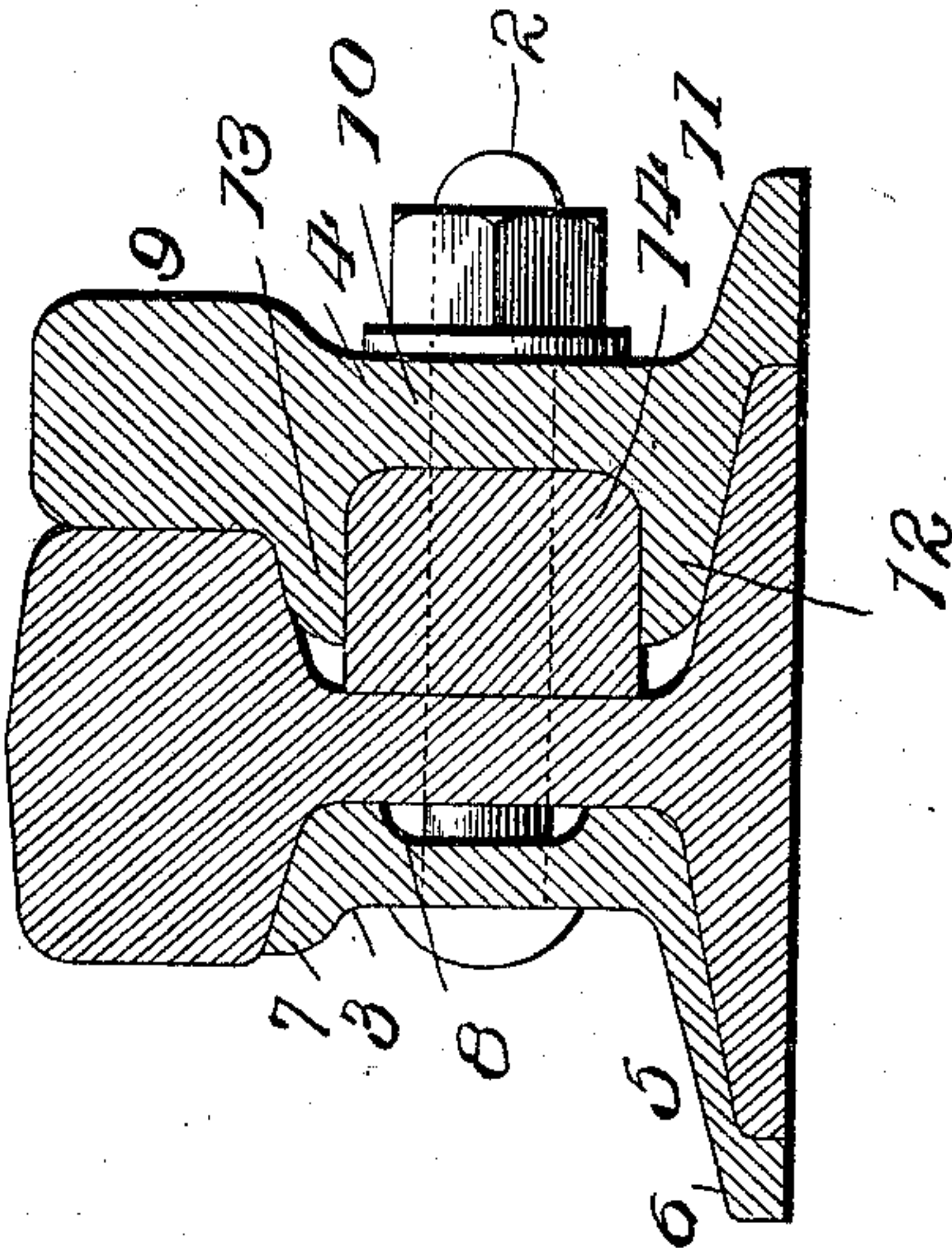


Fig. 2.



Inventor

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His

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UNITED STATES PATENT OFFICE.

HARRY F. SMITH, OF RICHMOND, VIRGINIA, ASSIGNOR OF ONE-HALF TO
GEORGE J. HOOPER, OF SAME PLACE.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 638,290, dated December 5, 1899.

Application filed August 14, 1899. Serial No. 727,184. (No model.)

To all whom it may concern:

Be it known that I, HARRY F. SMITH, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Rail-Joints; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to rail-joints between the sections of railroad-rails, the object being to provide a firm bond between the rails and bars at the point of greatest leverage, to preserve the ordinary form and means of bolts for connecting the parts, and to provide a rigid support for the wheels in passing over the ends of the rails adjacent to the joint.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and the drawings hereto attached.

While the essential and characteristic features of the invention are necessarily susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a top plan view of a railroad-rail joint embodying the invention. Fig. 2 is a cross-section on the line X X of Fig. 1. Fig. 3 is an end view of the plate or bar.

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

The rail 1 is of ordinary cross-sectional outline, being of T form, and the bonding is effected by bolts in the ordinary manner passing through transverse openings formed in the end portions of the rails and the connecting-bars 3 and 4, placed upon opposite sides of the joint. The bar or plate 3 comprises a base-flange 5 to overlie the base-flange or lateral foot extension of the main rail and a projecting portion 6 to rest upon the ties beyond the longitudinal edge of the foot of the main rail. The body portion of the plate 3 extends from the head of the main rail to the adjacent base-flange, and its upper portion has a lateral

extension 7 underlapping the head of the main rail, so as to give additional strength both vertically and laterally. A channel 8 is formed in the inner face of the plate 3 about midway of its upper and lower edges, thereby enabling the edge portions of the plate to obtain a firm bearing against the side of the web portion of the main rail adjacent to the head and foot thereof.

The bar or plate 4, located upon opposite sides of the joint, comprises a head 9, a web 10, an outer base-flange 11, an inner base-flange 12, and an upper inner reinforcing-flange 13, the latter conforming to the slope of the under side of the head of the main rail and serving, in conjunction with the base-flange 12, to brace the main rail against vertical thrust and pressure. The outer base-flange 11 is adapted to rest upon the ties of the road-bed and brace the main rail against lateral stress and prevent overturning thereof when a heavily-loaded train is passing thereover and exerts a lateral pressure against the main rail. The inner base-flange 12 is in a higher plane than the flange 11 and overlaps the base-flange of the main rail. The under face of the flange 12 inclines or slopes to correspond with the inclination of the base-flange of the main rail, so as to secure a snug fit thereon. The outer faces of the companion flanges 13 and 12 converge toward the main rail and act in the capacity of a wedge, thereby bracing the head of the main rail against perpendicular pressure. As clearly shown, the web 10 of the bar 4 acts directly in vertical line with the outer edge portion of the base-flange of the main rail, thereby causing the weight imposed upon said connecting-bar to be transmitted to the outer edge portion of said base-flange, whereby the best results are attained. The flanges 11 and 12 project to about an equal distance from opposite sides of the web 10. The head 9 of the bar 4 bears against the side of the head of the main rail, and its top side comes flush with the top side of the main rail, so as to support the wheels of the cars when passing over the joint, thereby preventing the ends of adjacent rails yielding under the weight of the passing train and obviating the pounding commonly experienced when the wheels are passing over the

joints and which pounding action is detrimental to the rolling-stock and rails, as well as causing discomfort and annoyance to the passengers.

5 The plates or bars 3 and 4 are located upon opposite sides of the main rail and extend from the joint in opposite directions to any desired distance. The web of the main rail and the webs of the connecting bars or plates
10 are formed with transverse openings in coincident relation to receive the connecting-bolts 2. The bar 4 is placed with reference to the main rail so as to occupy the outermost position, thereby sustaining the rail against lateral thrust, as well as perpendicular pressure.
15 The space inclosed between the webs of the main rail and the bar 4 and the flanges 12 and 13 is preferably filled with a wooden strip 14, although any noise-deadening material may
20 be employed, wood giving the best results because of its lightness and cheapness.

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

25 In a rail-joint, a plate and a bar arranged upon opposite sides of the rail and bolted thereto, the plate fitted against the web of

the rail and having its inner face longitudinally channeled, an upper lateral extension underlapping the head of the rail and having a base-flange overlapping the foot of the rail 30 and adapted to rest upon the ties, and the bar having a vertical web in line with the outer edge portion of the foot of the rail, a head bearing against a side of the head of the rail with its top side in the plane thereof, an outer 35 base-flange to rest upon the ties, an inner base-flange overlapping the foot of the rail, and having an upper inner flange underlapping the head of the rail, the inner faces of the inner flanges being straight and parallel 40 and their outer faces correspondingly sloping and terminating in rounded edges, and a strip of wood fitting in the space formed between the straight faces of the said corresponding inner flanges, substantially as described. 45

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

HARRY F. SMITH. [L. S.]

Witnesses:

WYNDHAM R. MEREDITH,
A. C. PORTER.