No. 667,685. Patented Feb. 12, 1901.

J. H. DICKINSON.

RAILWAY JOINT.

(Application filed July 20, 1900.)

(No Model.) 2 Sheets—Sheet 1.

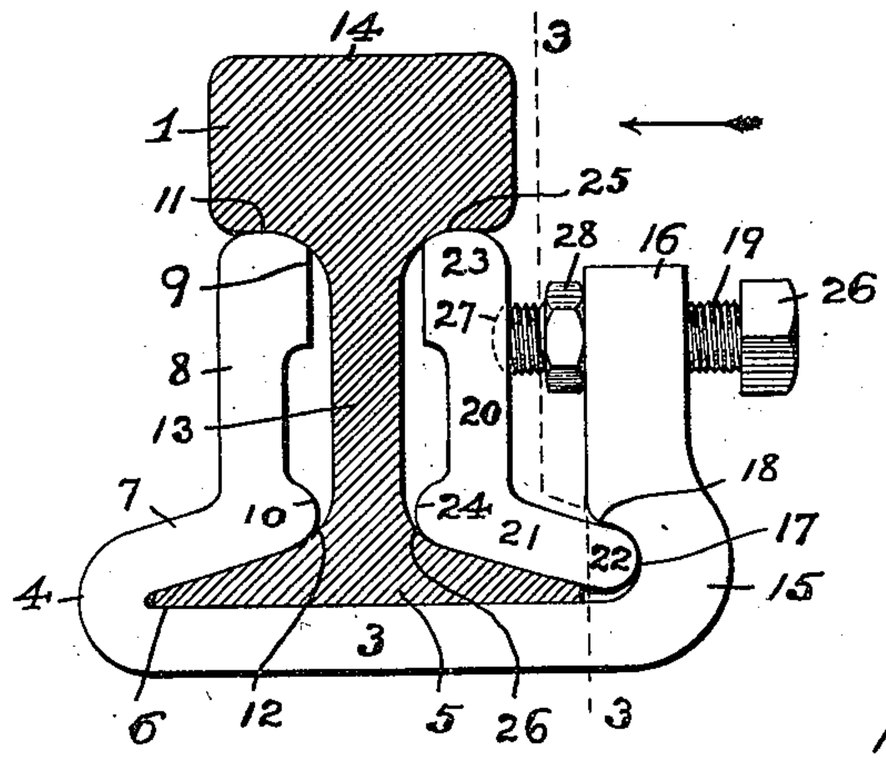

FIG. 1

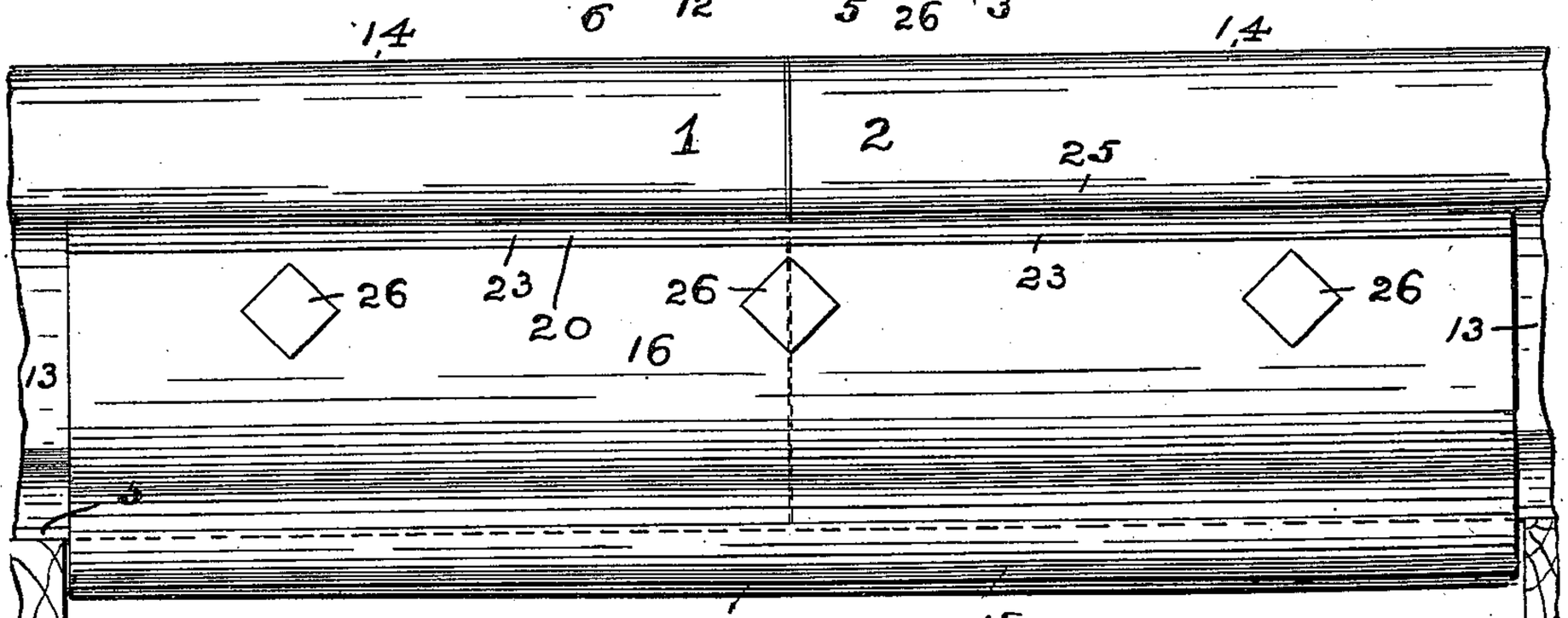

FIG. 2

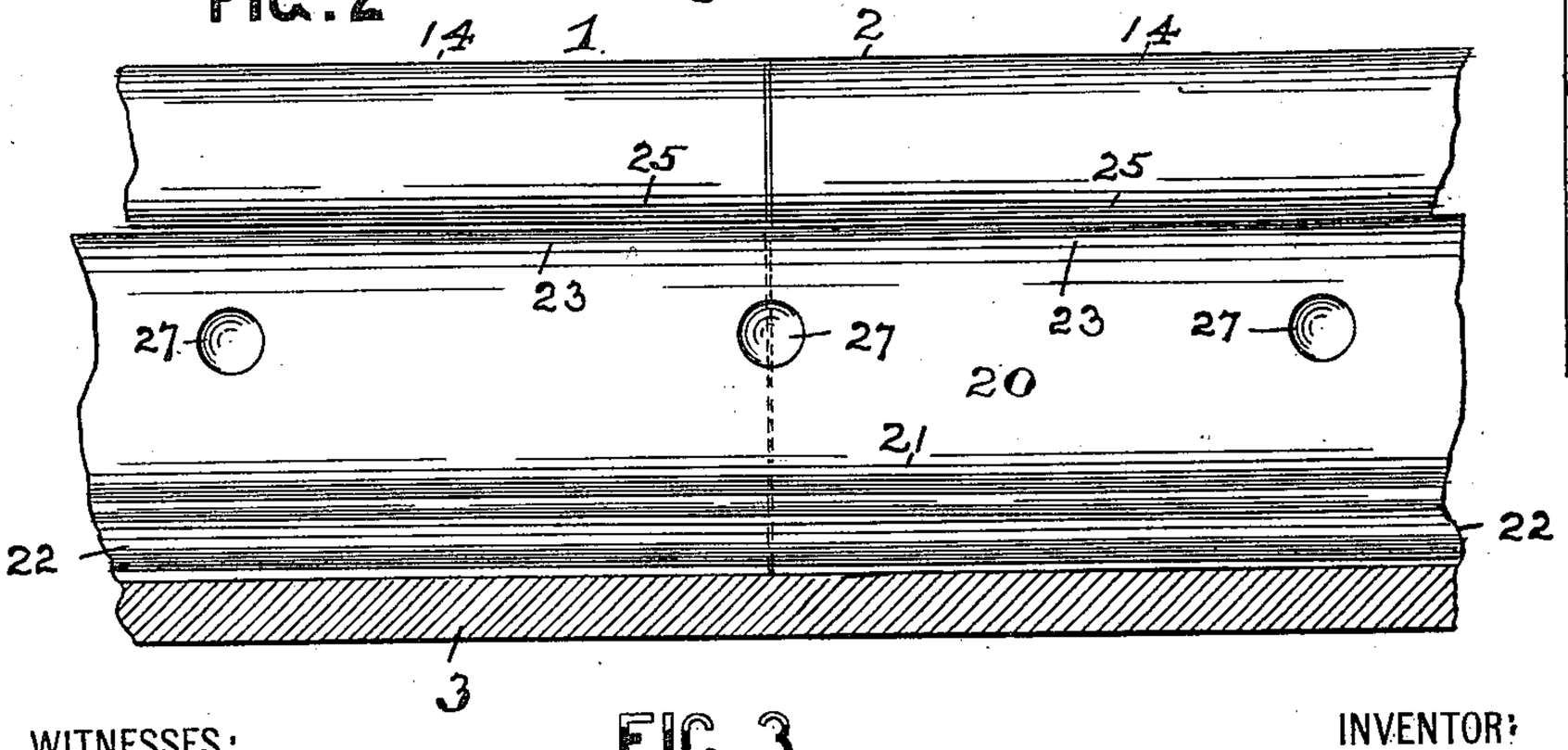

FIG. 3

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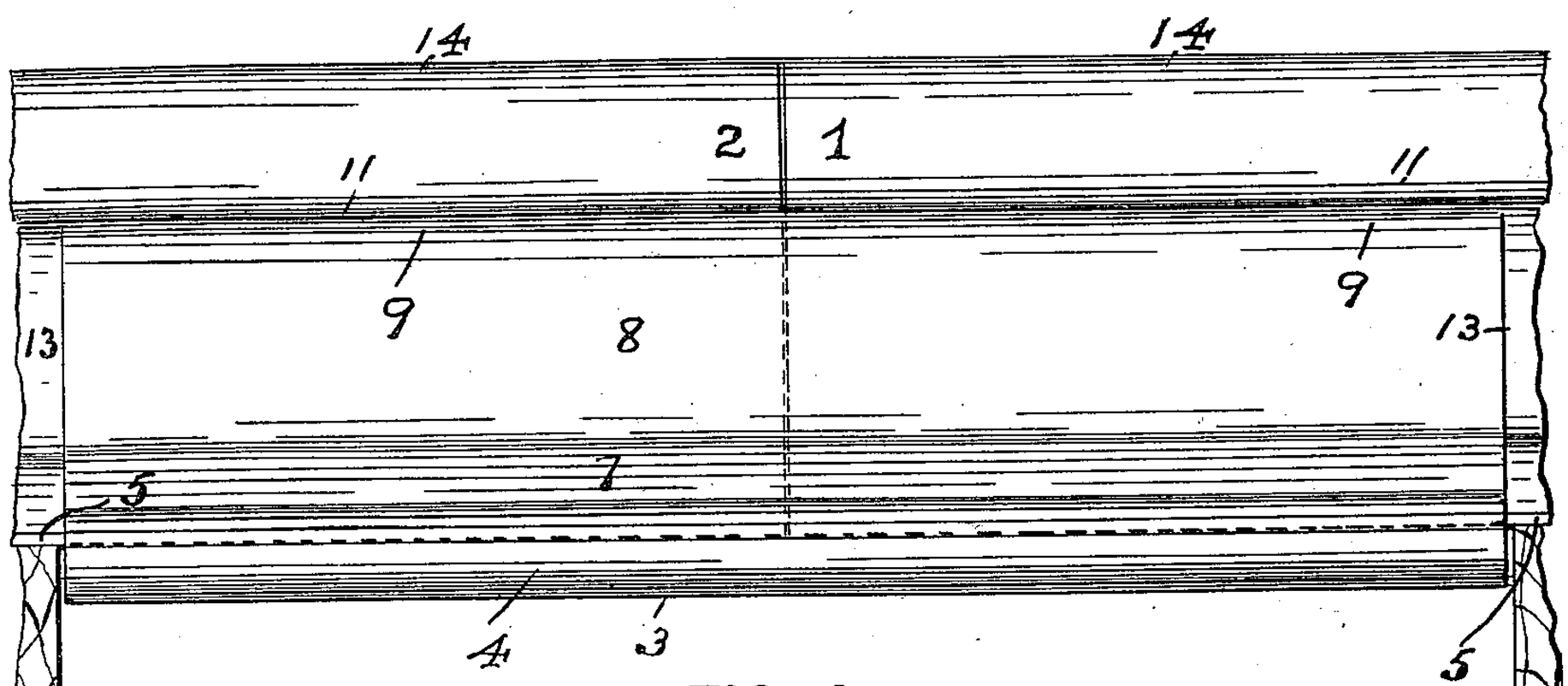

FIG. 4

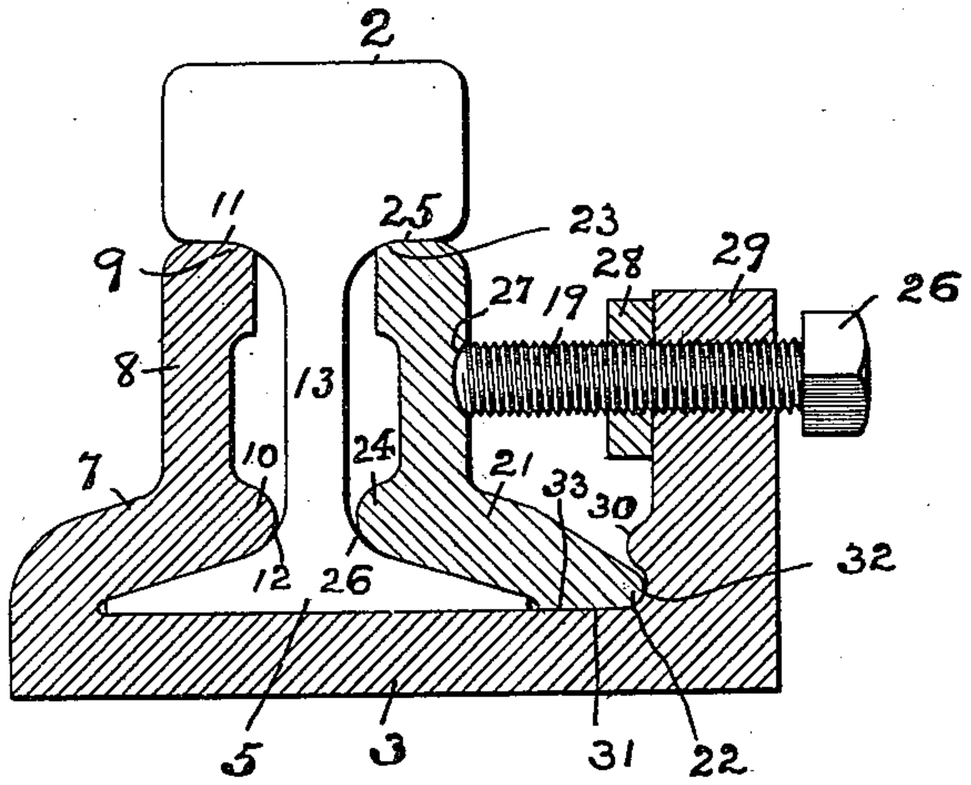

FIG. 5

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UNITED STATES PATENT OFFICE.

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RAILWAY-JOINT.

SPECIFICATION forming part of Letters Patent No. 667,685, dated February 12, 1901.

Application filed July 20, 1900. Serial No. 24,261. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. DICKINSON, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Railway-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, reference being had to the accompanying drawings, and to numerals of reference marked thereon, which form a part of this specification.

This invention has reference to a novel form of railway-joint which shall be of a simple construction, shall be reliable, and which will at all times maintain a perfect joint in which the set-screws employed will always remain tight.

This invention has for its principal object to provide a railway-rail joint for properly supporting the abutting ends of two rail-sections, and, furthermore, to provide a rail-joint in which the necessity of providing the rail-sections with bolt-holes is entirely obviated.

The invention has for its further object to provide a rail-joint in which the ends of the rail-sections are properly supported from beneath and in which the strain sidewise shall be taken up, thereby preventing the spreading or enlargement of the ends of the rails, and, furthermore, to prevent the rail to play up and down, and thus completely avoiding the battering of the rails at the joint and the rattle thereof and also preventing a constant wear of the parts in contact.

The invention has for its further object to provide a railway-joint of a simple and economical construction in which the several parts have been reduced to a minimum and which can be readily put in position and is suited to any kind of rails.

The invention therefore consists in the novel railway-joint hereinafter fully described and also in the several novel arrangements and combinations of the parts thereof, all of which will be set forth more in detail in the accompanying specification and then finally embodied in the clauses of the claim, which form a part of this specification.

The invention is clearly illustrated in the accompanying drawings, in which—

Figure 1 is an end view of one form of railway-joint embodying the principles of my present invention, the rail being represented in vertical cross-section. Fig. 2 is a face view of the outer side of the railway-joint and the ends of two abutting rail-sections held in place by the joint. Fig. 3 is a similar view of the parts represented in said Figs. 1 and 2, but a portion of the joint being represented in vertical section, said section being taken on line 3 3 in said Fig. 1 and the set-screws being omitted; and Fig. 4 is a face view of the inner side of the railway-joint. Fig. 5 is a vertical cross-section of a railway-joint of a slightly-modified form of construction, but still embodying the leading features of my present invention, the section being taken in a vertical plane at the joint of two abutting rail-sections.

Similar numerals of reference are employed in all of the said above-described views to indicate corresponding parts.

In the said drawings, 1 and 2 indicate the abutting ends of two rail-sections, which are of the ordinary construction.

The railway-joint illustrated more particularly in Figs. 1 to 4, inclusive, consists, essentially, of a base-plate or main body 3, which extends under and beyond the ends of the abutting rail-sections and forms a sufficient chair or support therefor, substantially as illustrated. As shown, the said base-plate or chair 3 is provided at one side with a curved portion 4, which extends around the edge 6 of the foot-base 5 of the rail and then extends in an inward direction, as at 7, and is provided with an upright portion 8. These parts 7 and 8 thus form a suitable angle bar or plate, which is provided with the enlargements or projections 9 and 10 at the top and bottom, respectively, and which are made to fit in the curved parts 11 and 12 of the foot-base 5 and the web 13 and the web and the tread 14 of the rail, as clearly represented in said Fig. 1. The said base-plate or chair 3 is also provided along its opposite longitudinal edge with a curved portion 15 and an upwardly-extending angle-plate 16, which is provided with any suitable number of screw-threaded

holes for the reception of set-screws 19, substantially as and for the purpose to be hereinafter set forth. The said angle-plate 16 and the said curved portion 15, owing to their arrangement, form a longitudinal receiving-socket 17, bound at the top of the curved edge portion 18. Resting upon the inclined surface of the foot-base 5 is the footpiece 21 of an angle plate or bar 20, said footpiece 21 having its longitudinal edge 22 arranged in the recessed or socketed portion 17 and its upper edge in bearing engagement with the curved edge portion 18, as illustrated. The said angle plate or bar 20 is also provided at the top and bottom, respectively, with enlargements or projections 23 and 24, which are made to fit in the curved parts 25 and 26, respectively, of the tread and web and the web and foot-base of the rail-section.

As illustrated in Fig. 2 of the drawings, I prefer to use with my novel construction of railway-joint three set-screws 19, which are deemed sufficient to securely hold the several parts of the joint in position around and against the sides of the abutting rail-sections; but of course it will be understood that I may employ but two set-screws, one for each rail-section, or I may prefer to use more than three of such set-screws. When these set-screws 19 are screwed in position by means of their heads 26, the end of each set-screw can be made to rest firmly and securely in a slight depression or socketed portion 27, which socketed portions or depressions 27 are arranged in the face of the angle plate or bar 20 substantially in the manner represented in Fig. 3. From an inspection of Fig. 1 it will be evident that when the set-screws or bolts 19 are screwed up the parts of the angle plate or bar 20 and the several parts of the upright portion 8 will closely hug the several portions of the abutting rail-sections, and the tendency of the edge portion 22 of the part 21 being in an upward direction this edge will cause an upward pressure against the surface portion 18 of the recess 17, connected with the part 15 of the chair 3, and hence the said chair and foot-base 5 of the rail-section will be all the more tightly drawn together and securely held in position. When the parts have all thus been properly adjusted and secured in their operative holding positions, the set-screws can be locked against turning by ordinary lock-nuts 28, as will be clearly evident. Should the various parts of the rail-joint become loose from the continuous use, they can be easily and quickly tightened by simply screwing up the set-screws 19 and locking them in position by means of the lock-nuts 28. The form of rail-joint represented in said Figs. 1 to 4, inclusive, is made from rolled steel, the base 3 and parts 7 and 8 being rolled in the positions shown, but the parts 15 and 16 being rolled out straight and then what is termed "bulldozed" into the shape represented in Fig. 1.

The several parts of the rail-joint being made from rolled steel, they can be cheaply made and have this advantage, that the parts when curved as hereinabove specified receive great spring-like action, and thereby more readily hug the surfaces of the several parts of the rail-sections. Furthermore, owing to the arrangement of the base-plate or chair 3 and the portions 8 and 20 tightly closed down against the sides of the web 13 of the rail-sections the angle bars or plates are firmly held between the foot-base and the tread of the rail and prevent the rail from battering and the joint from rattling, thereby further avoiding all wearing of the parts in contact and also avoiding the displacement of nuts and bolts.

In lieu of making the rail-joint of rolled steel, as hereinabove set forth, the rail-joint may be a malleable-iron casting. In that case the base-plate or chair 3 of the joint is provided with a straight upright portion 29 of sufficient thickness to withstand any undue strain, and said portion 29 is provided along its lower edge with a projection 30, which with the flat and extended surface 31 of the chair 3 forms a receiving-socket 32 for the end portion 22 of the angular part 21 of the angle plate or bar 20, substantially as illustrated in Fig. 5 of the drawings. When made in this manner, the said angular part 21 is provided with a flat surface 33, which is made to rest directly upon the part 31 of the chair 3, the said parts thereby forming a seat for the lower angular portion of the said angle bar or plate 20 to securely retain it in its operative position and lock or hold the parts firmly against the sides of the rail-sections when the set-screws are tightened in the manner hereinabove set forth.

Of course I am aware that some slight changes may be made in the several arrangements and the details of construction of the various parts as herein set forth and as illustrated without departing from the scope of my invention. Hence I do not limit my invention to the exact arrangements and combinations of the parts as herein described and illustrated in the accompanying drawings, nor do I confine myself to the exact details of the construction of the various parts.

Having thus described my invention, what I claim is—

1. A railway-joint, comprising a base-plate, forming a chair for the rail, provided with an upwardly-extending angle bar or plate at one side of the base-plate for engagement with one side of the rail, and provided on the other side with an upwardly-extending retaining-flange and a receiving-socket in said retaining-flange, all combined with a second angle plate or bar having an edge portion arranged in said receiving-socket, and means for forcing the upper part of said second angle plate or bar against the side of the rail, and jamming the edge portion of said second angle

plate or bar in holding engagement with said receiving-socket, substantially as and for the purposes set forth.

2. A railway-joint, comprising a base-plate, forming a chair for the rail, provided with an upwardly-extending angle bar or plate at one side of the base-plate for engagement with one side of the rail, and provided on the other side with an upwardly-extending retaining-flange and a receiving-socket in said retaining-flange, all combined with a second angle plate or bar having an edge portion arranged in said receiving-socket, and set-screws arranged in screw-holes in said retaining-flange for forcing the upper part of said second angle plate or bar against the other side of the rail, and jamming the edge portion of said second angle plate or bar in holding engagement with said receiving-socket, substantially as and for the purposes set forth.

3. The herein-described railway-joint, comprising a base-plate or chair 3, an inwardly and upwardly extending angle bar or plate formed integral with said base-plate or chair, and enlargements or projections 9 and 10 on said angle bar or plate for engagement with the side of the rail, an upwardly-extending retaining-flange formed integral with said base-plate or chair, and provided with a recessed or socketed retaining portion 17, a second angle bar or plate having a portion thereof in retaining engagement with said recess or socket in said retaining-flange, and enlargements or projections 23 and 24 on said second angle bar or plate, and means connected with said retaining-plate for forcing the upper portion of said second angle bar or plate against the side of the rail, and cause the edge 22 of said angle bar or plate to bind with the socketed portion of said retaining-plate, substantially as and for the purposes set forth.

4. The herein-described railway-joint, comprising a base-plate or chair 3, an inwardly and upwardly extending angle bar or plate formed integral with said base-plate or chair, and enlargements or projections 9 and 10 on said angle bar or plate for engagement with the side of the rail, an upwardly-extending retaining-flange formed integral with said base-plate or chair, and provided with a recessed or socketed retaining portion 17, a second angle bar or plate having a portion thereof in retaining engagement with said recess or socket in said retaining-flange, and enlargements or projections 23 and 24 on said second angle bar or plate, and set-screws arranged in screw-holes in said retaining-flange for forcing the upper part of said second angle bar or plate against the side of the rail, and cause the edge 22 of said angle bar or plate to bind with the socketed portion of said retaining-plate, substantially as and for the purposes set forth.

In testimony that I claim the invention set forth above I have hereunto set my hand this 7th day of July, 1900.

JOSEPH H. DICKINSON.

Witnesses:

FREDK. C. FRAENTZEL,

GEO. D. RICHARDS.