(No Model.) 2 Sheets—Sheet 1.

W. B. DODDRIDGE.

SPLICE JOINT FOR RAILWAY RAILS.

No. 560,897. Patented May 26, 1896.

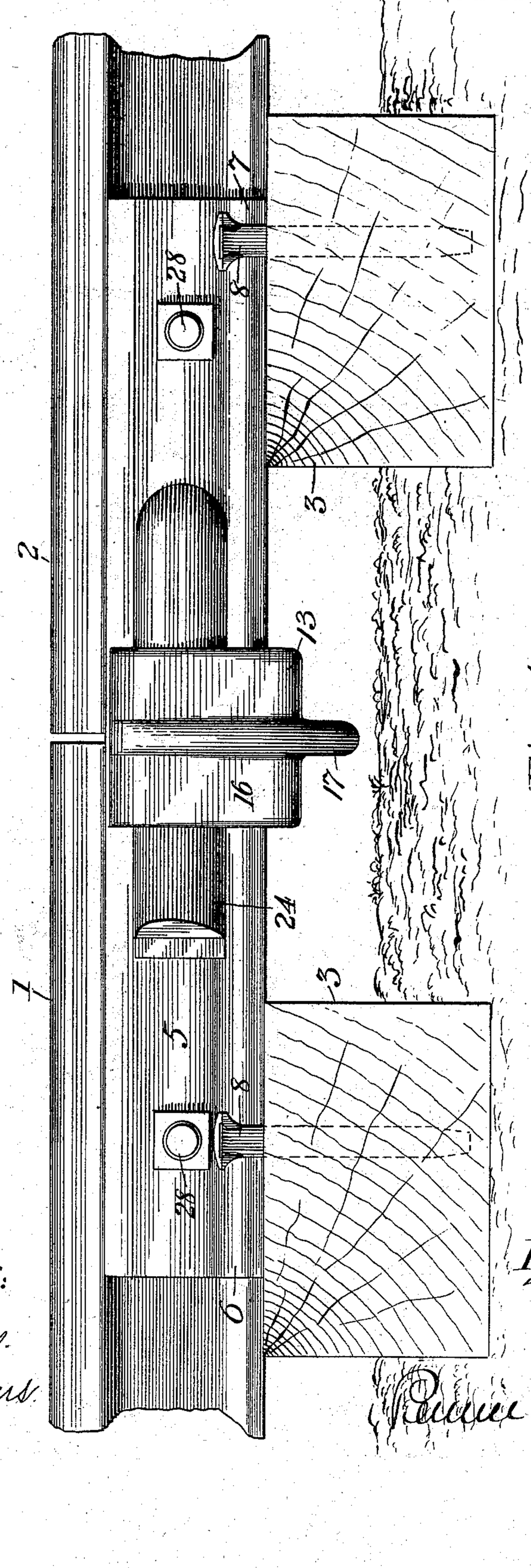

Fig. 1.

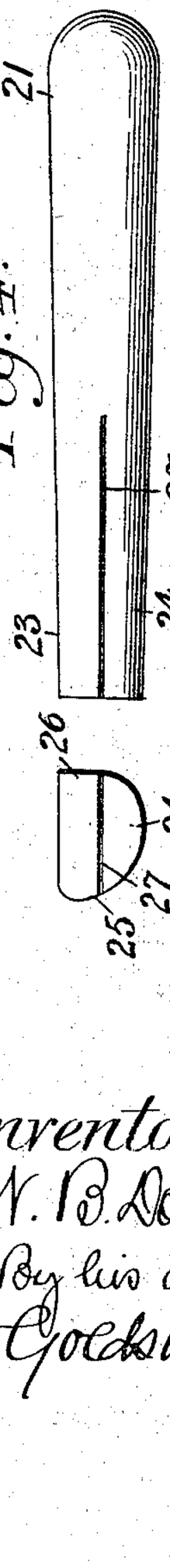

Fig. 4.

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(No Model.) 2 Sheets—Sheet 2.

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SPLICE JOINT FOR RAILWAY RAILS.

No. 560,897. Patented May 26, 1896.

Fig. 2.

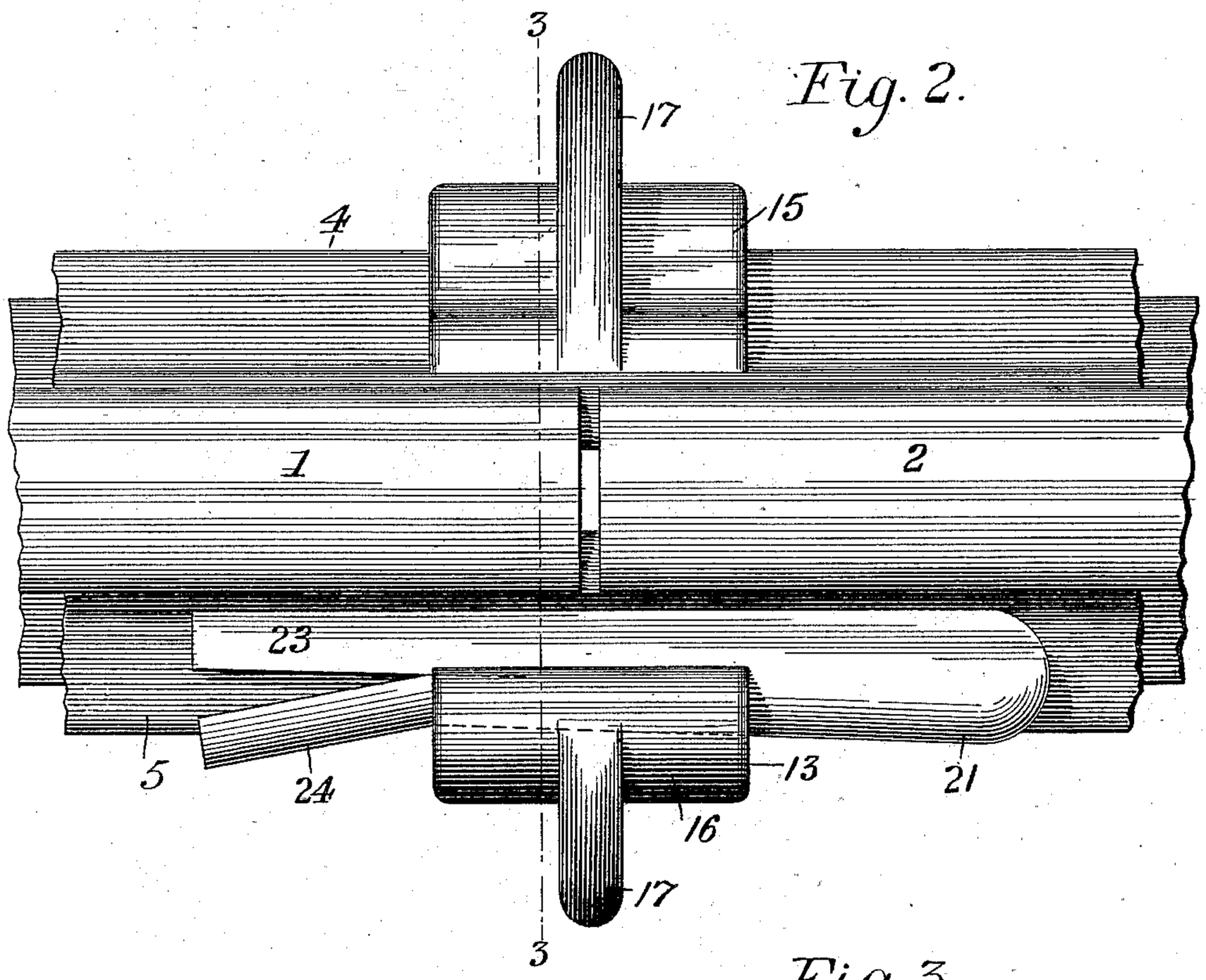
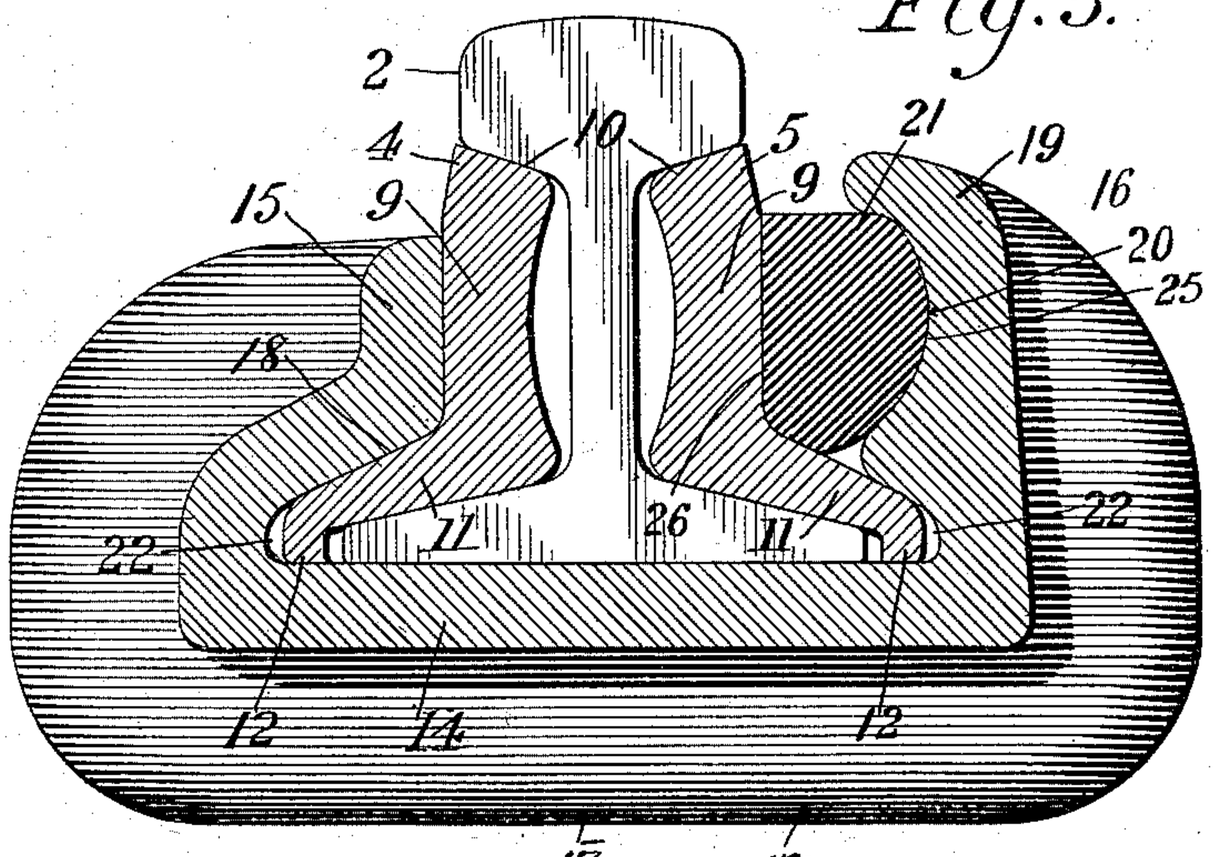


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM B. DODDRIDGE, OF ST. LOUIS, MISSOURI.

SPLICE-JOINT FOR RAILWAY-RAILS.

SPECIFICATION forming part of Letters Patent No. 560,897, dated May 26, 1896.

Application filed October 17, 1895. Serial No. 565,952. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. DODDRIDGE, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Splice-Joints for Railway-Rails; 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.

My invention relates to improvements in splice-joints for railway-rails, and more particularly to that class of such joints in which the supporting and locking mechanism is applied to the rails at a point between the ties to form a suspension-joint.

It is well known that the ordinary splice-joint fastenings are objectionable for the reason that they necessitate the formation of numerous bolt-holes through the web or girder of the rails and through the splice-bars, thus weakening these parts where strength is most desired, and for the further reason that the nuts employed in connection with the transverse bolts are loosened by the jar of travel and frequently displaced, thus impairing the joint. To obviate these defects, certain forms of clamps have been devised, which extend below the base of the rails and upwardly on either side thereof to embrace the girder or web of the rail and the splice-bars.

My invention consists in an improved construction of trussed clamp and means coacting therewith for effecting a secure joining of the ends of the rails without the use of bolts, nuts, springs, or other mechanical devices, which are expensive in initial cost and liable to injury or displacement when subjected to the wear and tear of service.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of a railway splice-joint embodying my improvements. Fig. 2 is a plan view of the same. Fig. 3 is a transverse section, and Fig. 4 shows a side view and an end view of the split locking-key hereinafter referred to.

The numerals 1 and 2 indicate the rails secured upon the ties 3, so that their ends meet between the ties.

The splice-bars 4 and 5 are arranged as shown, one on either side of the joint, and preferably with their ends 6 and 7 resting upon the ties 3, to which they are secured by spikes 8. Each of these splice-bars is angled in cross-section and consists of a vertical portion 9, having a beveled upper edge 10 to fit snugly under the flanged head or tread of the rail, and an inclined base 11, resting upon the base of the rail, as clearly illustrated in Fig. 3, and extending beyond the foot of the rail and provided with a depending edge flange 12, which rests upon the bottom of the clamp 13. This clamp is preferably a single steel casting, having a horizontal base 14 to receive the foot of the rail and the edge flanges 12 of the splice-bars, and upwardly-extending sides 15 and 16, that embrace the splice-bars 4 and 5. The clamp is also provided with a reinforcing-rib 17, extending entirely around the base and sides thereof at a central point and serving to brace and strengthen the joint transversely.

The inner face of the side 15 of the clamp conforms to the contour of the splice-bar against which it rests, having the inclined inner face 18 to rest upon the upper surface of the base 11 of the splice-bar, and then rising vertically to fit snugly against the outer face of the vertical portion 9 of the splice-bar. The opposite side 16 of the clamp rises vertically from the base to a point 19 near its upper edge, where it extends inwardly toward the adjacent splice-bar. The inner face of the side 16 is grooved or hollowed out longitudinally to form a seat 20 for the locking-wedge 21, and is also formed with a short inclined inner face 22 to rest upon the upper surface of the base 11 of the splice-bar 5.

The locking-pin 21 is tapering in form and at its smaller end 23 is split longitudinally to form a locking-arm 24. The recess 20 in the clamp may be slightly shallower at one end than at the other and gradually deepen to constitute, in connection with the outer face of the splice-bar, a wedge-shaped seat for the pin 21. In Figs. 3 and 4 the peculiar construction of this locking-pin is illustrated. Its outer side 25 is of convex form to fit the seat 20 of the clamp, while its inner side 26 is a plane surface corresponding to the outer face of the splice-bar against which it rests.

The application of the parts above described will be apparent. After the clamp 13 is adjusted upon the meeting ends of the rails the

splice-bars are forced into place and secured to the ties by the spikes 8. The key or locking-pin is then applied and firmly driven into its seat, the locking-arm 24 being bent outwardly to the position shown in Figs. 1 and 2 by the insertion of a suitable tool into the slit 27 during the driving of the key to place. It will be observed that my improved clamp and wedge key are applicable to the ordinary angle splice-bars in common use and no alteration or modification of either the rails or bars is required.

The split key is easily applied and serves to firmly clamp the bars to the rails, and the whole constitutes a strong and durable joint. If desired, the ends of the splice-bars may be further secured by bolts 28, as shown in Fig. 1.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a suspension splice-joint for railway-rails, the combination with the rails and overlapping splice-bars, of a clamp comprising a base to receive the foot of the rails, and the base-flanges of the angled splice-bars, said clamp having upwardly-extending sides embracing the bars, one of said sides extending inwardly and upwardly to conform to the contour of one of the bars and the other being concaved on its inner face, and projecting inwardly over and in contact with the upper surface of the base-flange of the other bar and a split wedge or key adapted to be driven into said seat to clamp the parts; substantially as described.

2. In a suspension splice-joint for railway-rails, the combination with the rails and the overlapping splice-bars, of a clamp comprising a base upon which the rails and base-flanges of the bars rest, and upwardly-extending sides 15 and 16, the side 15 conforming to the contour of the splice-bar on one side of the joint, and extending inwardly and upwardly to rest upon the base and vertical portion of said bar and the side 16 being provided with the longitudinal groove or recess 20, and having an inward projection below said recess, said projection resting upon the upper surface of the base-flange of the adjacent splice-bar and a split key or wedge tapering lengthwise and having on one side a plane face 26 conforming to the contour of the splice-bar in the opposite side of the joint, its opposite side 25 being convex to adapt it to fit the concave seat 20 of the clamp, substantially as described.

3. A suspension-joint for railway-rails, consisting of the combination with rails the ends of which meet between two ties, of splice-bars overlapping and joining the rail ends, and secured at their respective ends to the ties by spikes, a clamp comprising a base extending under the rails and upwardly-projecting sides embracing the splice-bars, one of said sides conforming to the contour of the bar on that side of the joint, and the other being grooved or recessed on its inner side, and projecting inwardly over and in contact with the upper surface of the base-flange of the adjacent bar and a split key or wedge tapering lengthwise and having a flat inner face, and a rounded or convex outer face, the clamp being provided with the central reinforcing-rib 17 extending entirely around its bottom and sides; substantially as described.

4. A clamp for railway splice-joints consisting of a single casting having a horizontal base, a vertical side 15, having a plain inner face to fit against the splice-bar on one side of the joint, and a vertical side 16, the latter having the longitudinal groove or recess 20 on its inner face, and having an inward projection below said recess, said projection resting upon the upper surface of the base-flange of the adjacent splice-bar and a central reinforcing-rib 17 extending around the bottom and sides of the clamp, in combination with a key tapering lengthwise and split at its smaller end to form a locking-arm 24, said key being provided with a plane inner face 26 to fit against the splice-bar on the opposite side of the joint, and a convex outer face to fit the groove or recess 20; substantially as described.

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

WILLIAM B. DODDRIDGE.

Witnesses:

EDWARD F. GOTHA,

FRANK W. IRLAND.