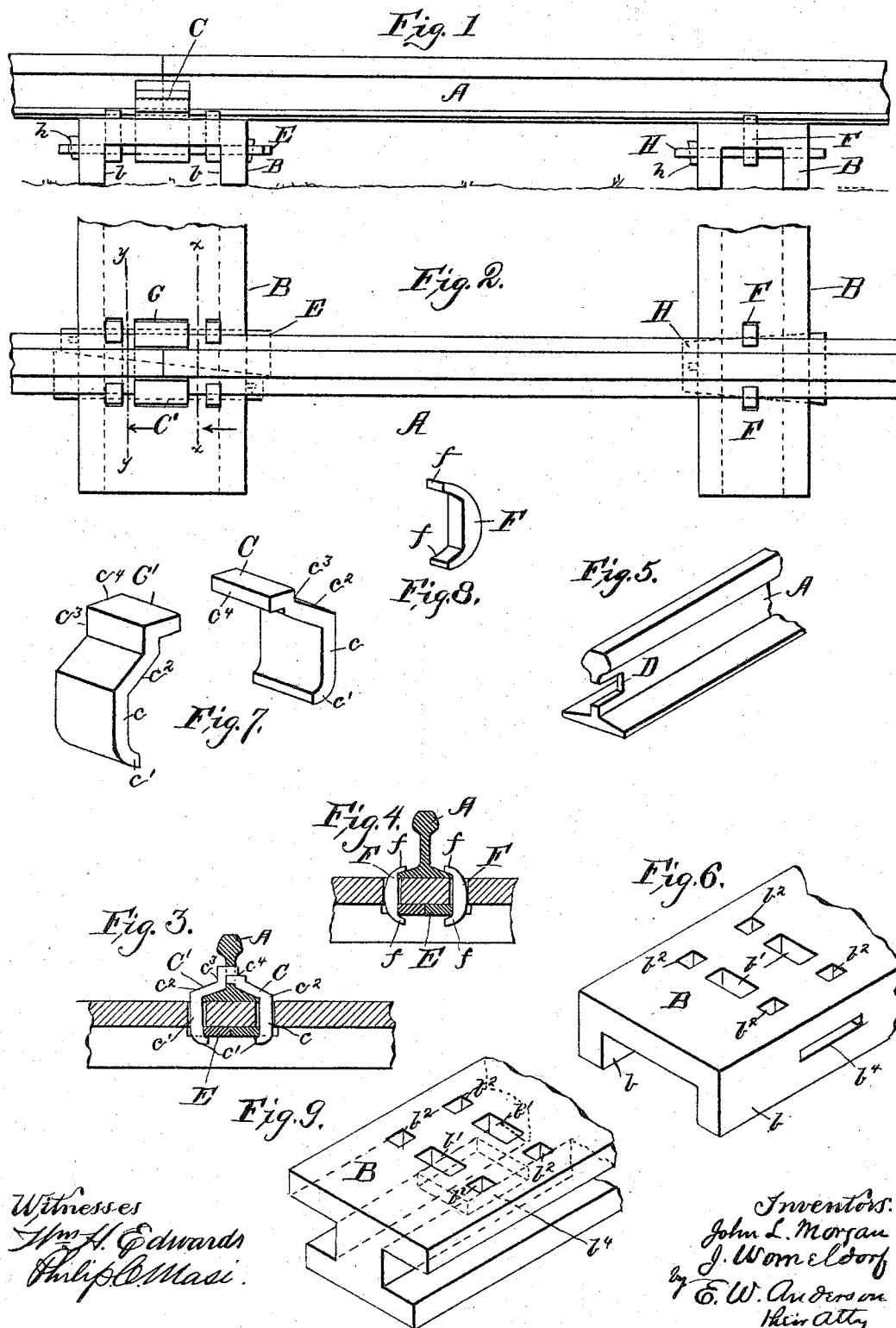


(No Model.)

J. L. MORGAN & J. WOMELDORF.
RAILWAY RAIL JOINT AND RAIL FASTENING.

No. 580,325.

Patented Apr. 6, 1897.



Witnesses
Wm. A. Edwards
Philip C. Masi.

Inventors.
John L. Morgan
J. Womeldorf
by E. W. Anderson
His Atty.

UNITED STATES PATENT OFFICE.

JOHN L. MORGAN AND JEZREEL WOMELDORF, OF DANVILLE, PENNSYLVANIA.

RAILWAY-RAIL JOINT AND RAIL-FASTENING.

SPECIFICATION forming part of Letters Patent No. 580,325, dated April 6, 1897.

Application filed August 18, 1896. Serial No. 603,119. (No model.)

To all whom it may concern:

Be it known that we, JOHN L. MORGAN and JEZREEL WOMELDORF, citizens of the United States, and residents of Danville, in the county of Montour and State of Pennsylvania, have invented certain new and useful Improvements in Railway-Rail Joints and Rail-Fastenings; and we do 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 letters of reference marked thereon, which form a part of this specification.

Figure 1 is a side elevation showing the invention applied. Fig. 2 is a similar view in plan. Fig. 3 is a section on line *xx*, Fig. 2. Fig. 4 is a section on line *yy*, Fig. 3. Fig. 5 is a detail perspective view of the joint portion of one of the rail-sections. Fig. 6 is a similar view of a portion of one of the cross-ties. Fig. 7 is a perspective view of the clamps *C C'* detached. Fig. 8 is a detail view of one of the clamps *F*, and Fig. 9 is a detail perspective view showing a modified view of the cross-tie.

This invention is designed to provide a railway-rail joint and rail-fastening which will afford simple but reliable and efficient means for the purpose; and the invention consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims.

Referring to the accompanying drawings, the letter *A* designates the rails of a surface, elevated, or other railway, and *B* the cross-ties upon which said rails are supported and to which they are secured. Said ties are to be of metal and may be of the hollow or flanged form shown in Figs. 1, 2, 3, 4, and 6, or of *T* form, such as illustrated in Fig. 9. The flanged form shown in Fig. 6 consists simply of a flat plate having at each edge a depending flange *b*. Where a joint is to be made upon a tie, the latter must be made somewhat wider than the intermediate ties, as indicated, in order to provide a proper support therefor.

Formed through the plate portion of each joint-tie are central openings *b'*, one upon

each side of the rail-sections, directly opposite the joint thereof and adjacent to the lateral edges of the rail-bases, while to each side of said central openings are similar but smaller openings *b²* upon opposite sides of the rail-sections.

C C' designate a pair of opposed joint-clamps, each of which is formed with a vertical portion *c*, having at its lower end an inwardly-projecting hook or dog *c'* and at its upper end an inwardly-inclined portion *c²*, shaped to seat closely upon the base-flange of the rail and terminating in a vertical portion *c³* and an inwardly-bent lip *c⁴*. The two clamps are counterparts of each other, except that the one *C'* has a somewhat longer vertical portion *c³*, in order that when they are applied to each and to the joint its lip *c⁴* will overlie the corresponding lip of the clamp *C*, as shown in Fig. 3. The abutted end portions of the rails are slotted longitudinally in the web, as indicated at *D D*, to receive the overlying lip *c⁴*. These clamps are inserted through the openings *b'*, one upon each side of the joint, with their hooks or dogs *c'* extending down between the flanges *b*. Their inclined portions *c²* fit closely the respective base-flanges, and their lips *c⁴* overlie each other and the said base-flanges at the bottom of the slots *D*. They are clamped upon the rail-sections and secured by means of a double key *E*, one part of which is driven through openings *b⁴* in the flanges *b* from each side, with their lateral edges engaging and impinging upon the hooks or dogs *c'* of the respective clamps *C C'*, thereby spreading the lower portions of said clamps and forcing their upper portions into clamping contact with the rail-sections. Said clamps are made of sufficient width to lap over to a considerable extent to each side of the joint, in order to give them an extended grip upon the rail-sections.

Inserted through the smaller openings *b²* above referred to are rail-clamps *F*, which consist each of a short piece of metal having a hook or dog *f* at each end, that at the upper end being arranged to engage the base-flange of the rail, while that at the lower end is designed to be engaged by the same key which locks the clamps *C C'*. The said key,

therefore, when driven to its seat locks the two clamps C C' and the four clamps F, taking an equal bearing upon all and rigidly securing the joint. Along the line of the rails, 5 immediately of the joints, we prefer to employ similar dogs in lieu of the ordinary spikes, they being seated and secured in the same manner as those at the joints, except that a single key H is employed instead of 10 the double key E. In order to prevent said key or wedge from becoming unseated by the jar of passing trains or from other causes, pins h may be driven through its ends, and the double key may be secured in the same 15 manner. By driving out the keys the clamps can be quickly removed. It will be noted that these dogs are perfectly reversible both end for end or from right to left side of the rail.

20 With a T form of tie, such as above referred to, the openings for the clamps are made through the upper flange of the rail, and the key-seat is formed through the neck or web portion. (See Fig. 9.)

25 Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination in a railway-rail joint, with the metallic tie, having openings formed 30 therethrough, of the rail-sections, having the corresponding open slots in their web portions at the joint ends, the pair of clamps inserted through said openings, one at each

side of said sections, said clamps having inwardly-bent portions at their upper ends 35 which engage the base-flanges of said sections, and also enter the said slots, and a keying device which engages the lower portions of each of said clamps, together with auxiliary rail-fastenings upon each side of the said clamps, 40 substantially as specified.

2. The combination in a railway-rail joint, of the metallic tie formed with vertical and with laterally-extending openings, of the rail-sections having abutted, slotted ends, the 45 main clamps C, C', having their upper portions shaped to fit the bases of said sections and formed with lips which engage the slotted ends thereof, one upon the other, the lower portion of said clamps having hooks or 50 dogs, the auxiliary fastenings F, formed with hooks or dogs at their upper ends which also engage the said base-flanges, and with similar hooks or dogs at their lower ends, and the double locking-key inserted through the lateral opening or openings of the tie and en- 55 gaging the hook or dog portions of both the main clamps and the auxiliary fastenings, substantially as specified.

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

JOHN L. MORGAN.

JEZREEL WOMELDORF.

Witnesses:

EDGAR L. RANCK,

CHAS. C. FISHER.