(No Model.)

J. M. SPAULDING.

RAIL FASTENER.

No. 568,173. Patented Sept. 22, 1896.

Fig. 1.

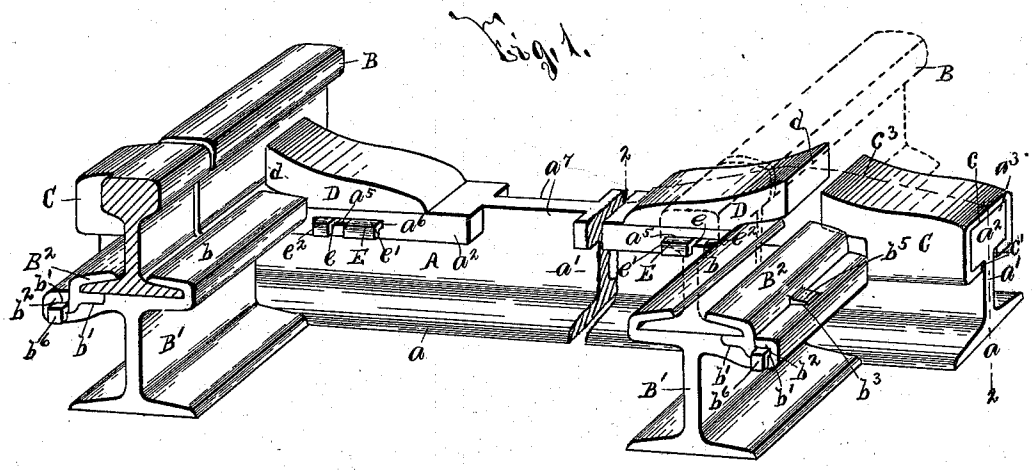


Fig. 2.

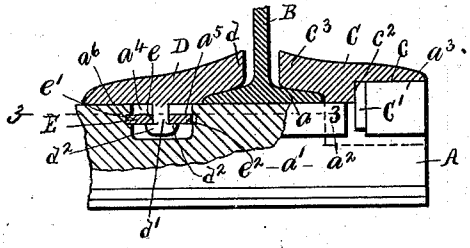


Fig. 3.

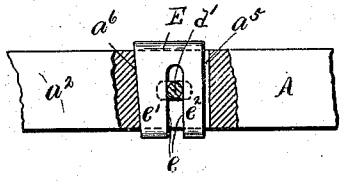


Fig. 4.

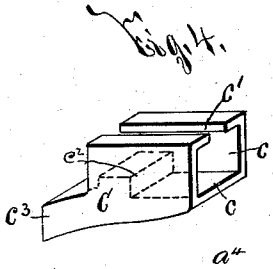


Fig. 5.

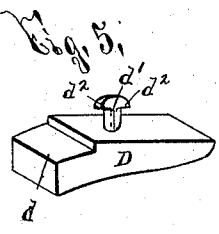
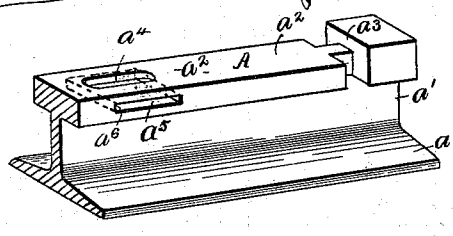


Fig. 6.



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UNITED STATES PATENT OFFICE.

JAMES M. SPAULDING, OF SYRACUSE, NEW YORK, ASSIGNOR TO HELEN E. SPAULDING, OF SAME PLACE.

RAIL-FASTENER.

SPECIFICATION forming part of Letters Patent No. 568,173, dated September 22, 1896.

Application filed April 17, 1896. Serial No. 587,958. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. SPAULDING, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Rail-Fasteners, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to certain new and useful improvements in rail-fasteners, and has for its object the production of a strong, durable, and simple device for easily, quickly, and adjustably securing a rail to a tie without necessitating the use of bolts, screws, or any of the devices commonly used for this purpose, and to this end it consists, essentially, in the peculiar construction and novel combination, arrangement, and adaptation of the railway-tie and the clamping devices, all as hereinafter fully described, and pointed out in the claims.

In describing this invention reference is had to the accompanying drawings, forming a part of this specification, in which like letters indicate corresponding parts in all the views.

Figure 1 is an isometric view of portions of a railway-tie, rail-fastening devices embodying my invention, and a pair of rails operatively secured to the tie, one of the rails being indicated by dotted lines. Fig. 2 is a vertical section, partly in elevation, taken on line 2 2, Fig. 1. Fig. 3 is a horizontal section, partly in elevation, taken on line 3 3, Fig. 2. Figs. 4 and 5 are isometric views of the detached clamping devices for securing the rail to the tie, and Fig. 6 is an isometric view of one end of a detached tie.

A represents a tie, B B suitable rails, and C D clamping devices for securing the rails to the ties.

The tie A is preferably T-shaped in cross-section, and consists of a base portion a, an upright web a', and a top portion a^2, formed somewhat thicker than the web a' and provided with a flat upper face. The top portion a^2 is formed with integral lugs a^3, projecting upwardly from its opposite ends, longitudinally-arranged sockets a^4, of greater length than width, extending downwardly from its upper face and arranged at the inner sides of the lugs a^3 in proximity thereto, transverse slots a^5, communicating with the sockets a^4 and having inclined inner edges a^6, and suitable cut-outs or grooves a^7, extending from the side edges of said top portion to the web a'.

The rails B B are of the usual construction with beveled bases, and are preferably composed of separate sections arranged end to end and secured together by suitable fish-plates B', which it is thought unnecessary to specifically describe herein, as the same form no part of my present invention.

The clamping device C is provided with a central opening c, corresponding in size and form with the cross-section of the top portion a^2 of the tie A, and an opening c' of a width which will permit the ready passage of said clamping device over the web of the tie at the cut-outs or grooves a^7. The opposite extremities of said clamping device C are formed, respectively, with a shoulder c^2 and an extension c^3, which engages the top of the corresponding lug a^3 and the adjacent side of the rail-base, and the end face of said clamping device is normally separated from the inner face of the lug a^3 by a washer C', which may be omitted, if desired.

The clamping device D rests upon the top face of the tie A above the socket a^4, and one extremity thereof is provided with an extension d, which engages the adjacent part of the rail-base. The under face of the clamping device D is provided with a depending arm d', that projects into the socket a^4 and is movable lengthwise therein by a key E, which is arranged in the transverse slot a^5 and secures said clamping device in operative position. The lower end of the arm d' is provided with shoulders d^2 projecting from its opposite sides, and the key E, which is preferably wedge-shaped, is formed with a bifurcation e in its smaller end for receiving the arm d' and projections e' e^2 for engaging the upper faces of the shoulders d^2. The free ends of the projections e' e^2 extend beyond the slot a^5 and are bent laterally for forming shoulders to engage the adjacent face of the tie A and prevent removal of the key E.

In securing the rail to the tie the clamping device C is first passed over the web of the tie at the cut-outs or grooves a^7 and is engaged with the lug a^3. The rail B is after-

ward moved along the upper face of the tie until the outer edge of its base portion is beneath the extension c^3 and the clamping device D is passed over the web of the tie and moved along the same until it assumes its operative position. The key E is then inserted within the groove a^5 and the extremities of its projections e' e^2 are bent into operative position, whereupon the rail is firmly secured to the tie and the key E cannot be withdrawn for permitting detachment of the rail unless the ends of the projections e' e^2 are reversely bent into a horizontal plane.

The operation of my invention will now be readily understood upon reference to the foregoing description and the accompanying drawings, and it will be particularly noted that by the constructions above described the use of bolts is entirely avoided and the rails are at all times securely held against the possibility of accidental displacement.

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

1. The combination of a railway-tie having a socket extending downwardly from its upper face, a clamping device engaged with the rail and the tie and provided with a depending arm extending into the socket and having an engaging shoulder, and a key engaged with the tie and the shoulder of the arm for holding the clamping device in position, said key being provided with a bifurcation for receiving the arm, substantially as and for the purpose specified.

2. The combination of a railway-tie having a socket extending downwardly from its upper face, a clamping device engaged with the rail and the tie and provided with a depending arm extending into the socket and having an engaging shoulder, a key engaged with the tie and the shoulder of the arm for holding the clamping device in position, said key being provided with a bifurcation for receiving the arm, and with laterally-extending shoulders for normally engaging the tie and preventing removal of the key, substantially as and for the purpose set forth.

3. The combination of a railway-tie having a socket extending downwardly from its upper face, and a transverse slot communicating with said socket and having its inner edge inclined, a clamping device engaged with the rail and the tie and provided with a depending arm extending into the socket and having an engaging shoulder, said arm being movable lengthwise of the tie, and a key arranged in the slot and engaged with the shoulder of the arm for holding the clamping device in operative position, and provided with a bifurcation for receiving the arm having substantially parallel walls or edges, said key having its inner longitudinal edge inclined for engaging the inclined inner edge of the slot, substantially as and for the purpose specified.

4. The combination of a railway-tie having a socket extending downwardly from its upper face, a clamping device engaged with the rail and the tie and provided with a depending arm extending into the socket, and having engaging shoulders extending from opposite sides of its lower extremity, and a key engaged with the tie and having a bifurcation for receiving the arm, and opposite projections for engaging said shoulders, substantially as and for the purpose described.

5. The combination of a railway-tie having a socket extending downwardly from its upper face, a clamping device engaged with the rail and the tie and provided with a depending arm extending into the socket, and provided with engaging shoulders extending from opposite sides of its lower extremity, and a key engaged with the tie and having a bifurcation for receiving the arm, and opposite projections for engaging said shoulders, the outer ends of the opposite projections being provided with shoulders for normally engaging the tie and preventing removal of the key, substantially as and for the purpose specified.

6. The combination of a railway-tie having a socket extending downwardly from its upper face, and a wedge-shaped transverse slot communicating with the socket, a clamping device engaged with the rail and the tie and provided with a depending arm extending into the socket, said arm being movable in the socket lengthwise of the tie and having engaging shoulders projecting from opposite sides of its lower extremity, and a wedge-shaped key arranged in the slot and having its smaller end provided with a bifurcation for receiving the arm and opposite projections engaged with the shoulders of the arm, the outer ends of the opposite projections being provided with shoulders engaged with the tie for preventing removal of the key, substantially as and for the purpose set forth.

In testimony whereof I have hereunto signed my name, in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga, in the State of New York, this 6th day of April, 1896.

JAMES M. SPAULDING.

Witnesses:
E. A. WEISBURG,
K. H. THEOBALD.