

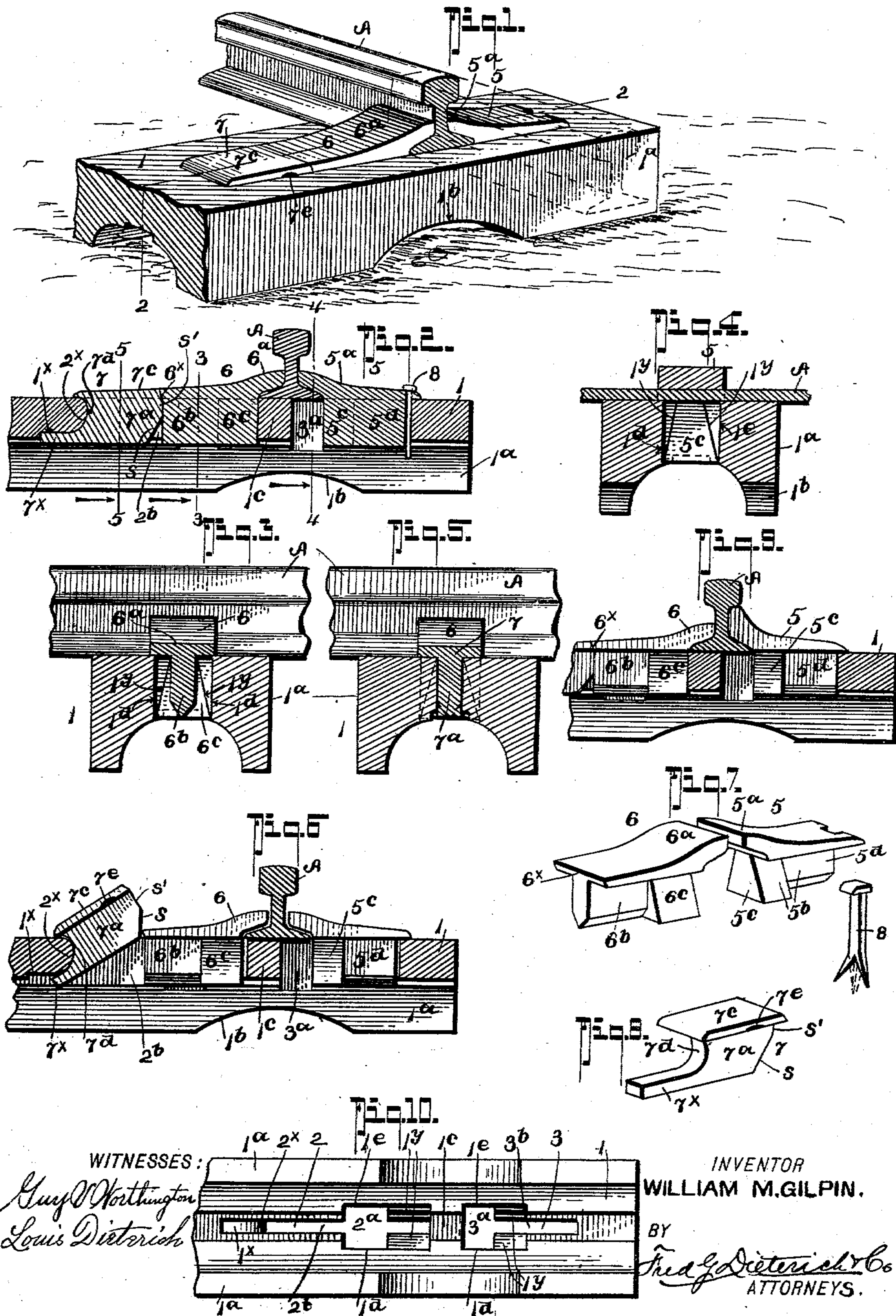
No. 694,737.

Patented Mar. 4, 1902.

W. M. GILPIN.
COMBINED METALLIC TIE AND RAIL CLAMP.

(Application filed Dec. 27, 1901.)

(No Model.)



UNITED STATES PATENT OFFICE.

WILLIAM M. GILPIN, OF THOMAS, WEST VIRGINIA.

COMBINED METALLIC TIE AND RAIL-CLAMP.

SPECIFICATION forming part of Letters Patent No. 694,737, dated March 4, 1902.

Application filed December 27, 1901. Serial No. 87,436. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. GILPIN, residing at Thomas, in the county of Tucker and State of West Virginia, have invented a new and Improved Combined Metallic Tie and Rail-Clamp, of which the following is a specification.

My invention relates to improvements in that class of metallic ties having the rail-clamp devices forming a coöperative part thereof for fastening the rails to the ties; and the said invention seeks to provide a means of the character described capable of being conveniently and quickly applied for use for holding the rails rigidly and securely in the proper position and capable of being quickly dissembled for the removal of the rail and which may be again used with the same ease as before.

In its general nature my invention comprehends a metallic tie for its rail-engaging surface provided with slotways extended lengthwise thereof under the rail, a pair of opposing clamp members slidably held within the slotways to engage and clamp the opposite rail-clamp flanges, and a combined wedge lock or key adapted to coöperate with the key and under normal conditions to firmly hold the two clamp-plates in a tight rail engaging and clamping position and from accidental loosening or separation during ordinary uses, means being also included for conveniently taking up wear on the clamp-plates.

In its more subordinate features my invention consists in certain details of construction and peculiar combination of parts, all of which will hereinafter be explained, and specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of a rail-tie equipped with my improved rail-clamping devices. Fig. 2 is a longitudinal section thereof, taken practically on the line 2 2 of Fig. 1. Fig. 3 is a transverse section on the line 3 3 of Fig. 2. Fig. 4 is a similar view on the line 4 4 of Fig. 2. Fig. 5 is a like section on the line 5 5 of Fig. 2. Fig. 6 is a longitudinal section illustrating the manner in which the opposing clamp-plates are forced home to their rail-clamping position and how the lock and wedge member is fitted in place.

Fig. 7 is a detail view of the two opposing clamp members. Fig. 8 is a similar view of the combined wedge and lock piece. Fig. 9 is a detail view of one end of the tie. Fig. 10 is a detail view illustrating a slightly-modified construction of the outer rail-clamp member, hereinafter referred to.

In the drawings, 1 designates a metal tie having the usual U-shape form in cross-section to provide for the convenient filling of the ballast close up against the under side of the top or rail-bearing surface of the tie, the reason for which will presently appear, and to facilitate the filling of the ballast between the pendent portions 1^a of the tie said portions may be cut out, as indicated by 1^b in Fig. 1. At each end the tie 1 has its top provided with two longitudinally-disposed slots 2 3, which are in alignment, but disposed one at each side of the solid or rail-bearing portion 1^c, which is located between the adjacent ends of the two slots, as best shown in Fig. 10. Each of the slots 2 3 is of a substantial T shape, with the head or laterally-extending parts 2^a 3^a adjacent the rail-bearing portion 1^c of the ties and the reduced portions 2^b 3^b extended outward from the said portion 1^c. At the head portions 2^a 3^a the tie has side walls 1^d 1^e, extended vertically downward to a point below the undercut guide-surfaces 1^x, adjacent the lower edges of the shank portion of the two slots, as shown. The slot 3 coöperates with the outer member 5, the peculiar construction of which is best shown in Fig. 7, by reference to which it will be noticed it consists of an upper or head portion 5^a, whose parallel edges are extended laterally of the pendent or shank portion 5^b, whereby to straddle and cover the slot in which the member 5 seats and slides. The shank of the member 5 comprises a front dovetailed lug 5^c, whose base is of a slightly less width than the head part 5^a and of a size to snugly pass down into the cross part 3^a of the slot 3. The side walls of the tie under the part 3^b are suitably inclined to engage with the dovetailed lug 5^c when the member 5 is slid back into its operative position, as indicated in Fig. 4. The member 5 also includes the narrow shank portion 5^d, which engages the restricted part of the slot 3, as shown.

6 designates the opposing clamp member,

which has substantially the shape of member 5, its narrow portion 6^b being made to snugly engage the walls of the restricted or shank part of slot 2. The slot 2 is, however, of a greater length than slot 3 to admit of the insertion of the combined wedge and lock member 7, the peculiar construction of which and its coöperation with the clamp-plates 5 and 6 forms the essential feature of my invention. The outer edge 6^x of the head 6^a of the member 6 is beveled or undercut, the reason for which will presently appear.

So far as described the manner in which the clamp members 5 and 6 are adjusted to clamp the rail is explained as follows: The member 5 is first fitted into slot 3, with its dovetailed end pushed into the head or laterally wide end part 3^a of the slot 3 until its head portion 5^a lies flush on the tie, when it (the member 5) is slid back to bring its dovetailed lug into engagement with the correspondingly-shaped walls of the slot 3, which are made to coact with the said dovetailed lug and which hold the member 5 from moving up out of the slot 3. The rail A is then placed in position, after which the member 6 is fitted into the slot 2, its dovetailed part 6^b being first pushed down into the enlarged part 2^a of the said slot, after which the member 6 is slid back to engage the interlocking walls of the slot, that holds the said member 6 from moving up out of the slot 2. The two members 5 and 6 are then adjusted to bring their rail-clamping ends to engage the rail-flanges, as shown in Fig. 6, after which the wedge or locking-key 7 is fitted in place. The member 7 comprises a pendent or body portion 7^a, adapted to fit and slide in the narrow portion of the slot 2, and a head 7^c, having a width similar to the heads of the members 5 and 6. The member 7 also has a notched seat 7^d for engaging the outer edge of the slot 2, the upper part of which edge is slightly beveled, as at 2^x, for a purpose presently explained. The member 7 is also formed with a rearwardly-extending stem 7^x on its lower edge for engaging a longitudinally-extending seat 1^x in the under side of the tie-top, as clearly seen in Fig. 2, and the front edge of the member 7 has two surfaces s s', disposed at an obtuse angle to each other. Assuming the parts to be in the position shown in Fig. 6, in fitting the member 7 in place it is fulcrumed on the outer edge of the slot 2, the bevel 2^x of which permits the member 7 to assume the inclined position shown, and when in the said position the edge s engages the outer edge of the head of the member 6. Down pressure or tap with a hammer on member 7 will cause said member, by reason of its inclined surface engaging the member 6, to force said member and also member 5 home and to firmly grip the rail, it being obvious that as the upper end of the part s passes the edge of the member 6 the member 7 will then close down to the position shown in Fig. 2, with its beveled part s' in engagement with the under-

cut end of the head 6^a and with its stem 7^d engaging the seat 1^x in the tie, as clearly shown in said Fig. 2. The parts are then in a firm and rigid connection and held from accidental displacement or from being separated by ordinary efforts. By reason of the bevel coacting faces of the members 6 and 7 pressure from below against the dovetailed end of member 6 will cause its outer end to tilt or bear down on the front edge of member 7, and thereby keep it firmly in place, the said member 7 being also held in place by a ballast bearing against the stem portion 7^d thereof. In case of wear of the several parts to such an extent that the fastening devices will move slightly lengthwise of the slots the lost motion thereof can be readily taken up by inserting a wedge 8, having a split leg, as shown in Fig. 2, and to provide for conveniently separating the clamp members the opposite edge of the member 7 is formed with undercut portions 7^e for the insertion of a crowbar or other lever device for prying up the member 7. When used on curves, the outer clamp members 5 have their rail-engaging end made to extend up to bear against the head of the rail, as shown in Fig. 9.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the advantages of my invention will be readily apparent. It will be noticed that in the use of the same the necessity of bolts and lock-nuts are dispensed with, and the several parts are coöperatively arranged so that when forced down into a locked position they cannot become loosened or readily separated. By removing the wedge or lock member 7 the other parts can be quickly spread and removed from engagement with the rail and the tie.

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

1. The combination with the rail and a metallic tie therefor, said tie having a pair of T-slots, one at each side of the rail-seat; of a pair of opposing clamp members, detachably and longitudinally slidably held in said slots, and having head portions for interlocking with the under walls of the tie, whereby to hold the said clamp members from vertical movement, and a detachable wedge or key co-operating with the clamp members, substantially as shown and described.

2. The combination with the tie 1, having a pair of oppositely-extending T-slots, having undercut side walls; of clamp members each consisting of a head portion, adapted to straddle the tie-slots, a beveled lug adapted to pass through the head or enlarged part of the slots and engage with the undercut or beveled side walls, and a pendent shank for engaging the restricted or shank portion of said slots, and means for forcing the clamp members into a gripping contact with the rail and holding them locked to such position, substantially as shown and for the purposes described.

3. The combination with the rail, and the tie, said tie being slotted longitudinally, opposing rail-clamping members 5 and 6, longitudinally slidable in the tie-slots, and held from vertical movement therein when adjusted to a clamping position, the member 6 having its outer edge undercut; of the locking member 7 having a recess to seat on one edge of the slot, two beveled surfaces s s' for coacting with the member 6, substantially as shown and for the purposes described.

4. The combination with a hollow metallic railroad-tie longitudinally slotted on its upper face, said slot having lateral enlargements, the under face of the tie at points adjacent the said enlargements having vertical walls, and undercut or beveled walls adjacent the other parts of the slot; of the members 5 and 6 each comprising a head 6^a , a pendent dovetailed lug 6^c , a narrow shank 6^b , and rail-engaging portions, and means for sustaining the said members 5 and 6 interlocked with the tie and the rail, substantially as shown and for the purposes described.

5. The combination with the longitudinally-slotted metallic tie, the rail, the opposing rail-clamp members 5 and 6, longitudinally slidable on the tie-slot, and the detachable wedge-block and locking member 7, arranged substantially as shown; of the key 8 having

a split leg and adapted to be entered between the outer end of the clamp member 6 and the adjacent end of the slot in which the said member 6 fits, for the purposes specified.

6. In a metallic railroad-tie and rail-fastener means, the combination with the tie having longitudinal slots 2 and 3, each formed with an enlargement or head 2^a 3^a , straight walls 5^c 6^c , and undercut or beveled walls 5^d and 6^d , and a seat 1^x at the outer end of slot 2; of the clamp members 5 and 6, each consisting of a head portion, a pendent lug dovetailed in cross-section, to cooperate with the beveled or undercut walls of the slots in which they fit, and narrow shank portions to engage the narrow parts of the tie-slots, the head portions thereof having rail-flange-engaging portions, and the member 6 having its outer edge undercut, the lock or wedge member 7 having a head 7^c , a shank 7^a having a seat 7^d , and a stem 7^x adapted to fit the tie-seat 1^x , the front edge of the member 7, having surfaces s s' , disposed at an obtuse angle, all being arranged substantially as shown and for the purposes described.

WILLIAM M. GILPIN.

Witnesses:

W. V. HORNER,
HOMER CESSNA.