

J. M. FLEMING.
RAILWAY TIE AND FASTENER.
APPLICATION FILED JAN. 3, 1913.

1,060,446.

Patented Apr. 29, 1913.

Fig. 1.

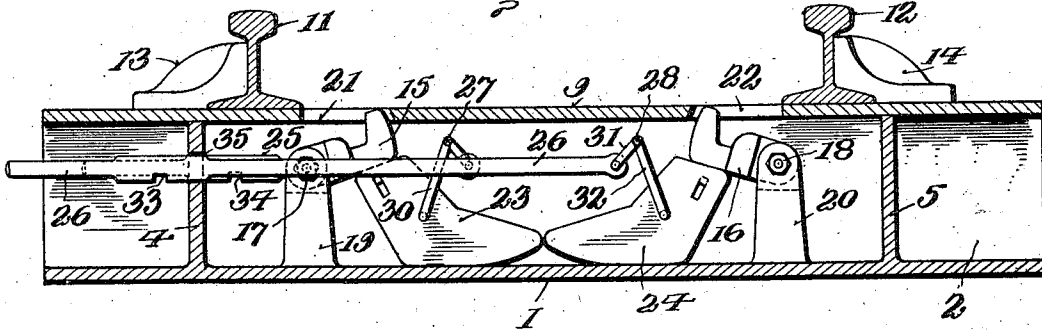


Fig. 2.

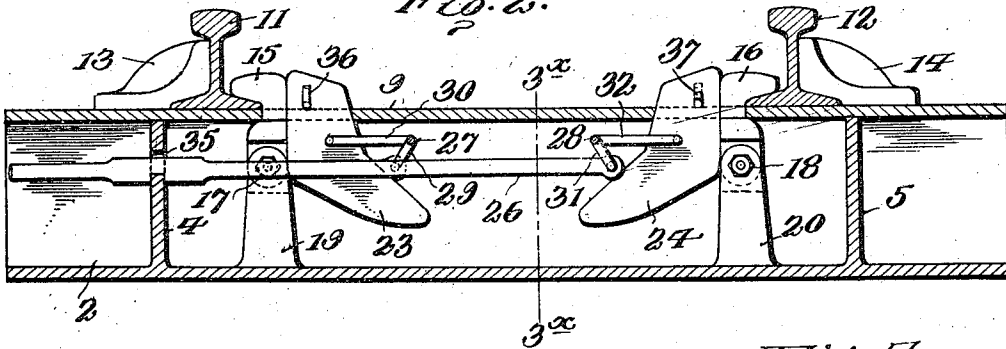
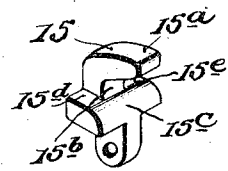
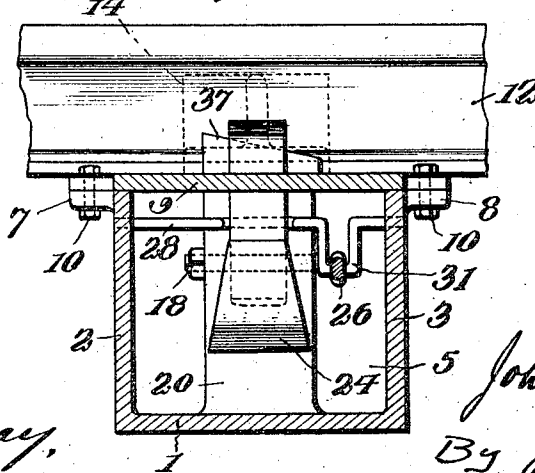


Fig. 4.

Fig. 3.



Witnesses

Walter H. Munnay,
E. J. Marshall.

Inventor

John M. Fleming
By John H. Kell
his Attorney

UNITED STATES PATENT OFFICE.

JOHN M. FLEMING, OF NEWARK, OHIO.

RAILWAY-TIE AND FASTENER.

1,060,446.

Specification of Letters Patent.

Patented Apr. 29, 1913.

Application filed January 3, 1913. Serial No. 740,059.

To all whom it may concern:

Be it known that I, JOHN M. FLEMING, citizen of the United States, residing at Newark, in the county of Licking and State of Ohio, have invented certain new and useful Improvements in Railway-Ties and Fasteners, of which the following is a specification.

The primary object of this invention is to provide an improved form of railway tie and fastener whereby the rails may be securely clamped on the ties and readily removed therefrom when desired.

In order to more fully describe my said invention, reference will be had to the accompanying drawings wherein,

Figure 1, represents a longitudinal vertical sectional elevation of one form of my improved tie and fastener, showing the clamping mechanism in the released position; Fig. 2, a similar view showing the clamping mechanism in the position in which it clamps the rails on the tie; Fig. 3, an enlarged section on line 3*-3* Fig. 2, looking in the direction of the arrow; and Fig. 4, a detail perspective view of one of the locking dogs.

My invention in the form shown comprises, among other parts, a metal tie consisting of a trough-like casting having a base portion 1, vertical sides 2 and 3, and cross-webs 4 and 5 to stiffen the structure. The upper edges of the sides 2 and 3 are provided respectively with flanges 7 and 8. The ends of the tie are open. The rails 11 and 12 are held down on this tie by fixed shoes 13 and 14 respectively and by movable clamping dogs 15 and 16. Each of these dogs is provided with a nose 15^a, the lower edge of which is adapted to engage the upper edge of the rail base; an undercut or recessed portion 15^b adapted to receive the inner edge of the rail base as well as one edge of the plate 9 upon which the rail rests, and with a shoulder 15^c adapted to fit up under the edge of the plate 9 referred to, the said shoulder extending in the form of two wings 15^d and 15^e to each side of the dog, or as most clearly shown in Fig. 4. These shoulders on the dogs not only cooperate with the noses of the dogs to securely clamp the rails and plate 9 together, but they act also as supports to the plate 9, and, therefore, as additional supports for the rails themselves.

The shoes 13 and 14 consist each of a cast-

ing integral with or rigidly secured in any desired way to the top plate 9 of the tie, and are adapted to engage the base and web of the rails as shown.

The dogs 15 and 16 are hinged by means of bolts 17 and 18 respectively, on lugs or uprights 19 and 20 cast on the base of the tie, and the heads of these dogs are adapted to swing into the locking position through openings 21 and 22, respectively, in the plate 9.

The dogs 15 and 16 are operated, respectively, by tumblers 23 and 24, and the latter are operated respectively by horizontally movable arms or bars 25 and 26, connected to said tumblers by rock shafts 27 and 28 respectively. These rock shafts are provided each with two off-sets or crank sections 29, 30 and 31, 32. The crank sections 30 and 32 carry the tumblers, while the sections 29 and 31 are pivotally connected respectively to the ends of the operating arms 25 and 26.

When the clamping mechanism is in the released position, as shown in Fig. 1, the tumblers 23 and 24 rest upon the base of the tie, while the dogs 15 and 16 rest upon the upper ends of the tumblers. When it is desired to operate the dogs to send them into the clamping position, the bar 25 is pulled to the left, while the bar 26 is pushed to the right, Fig. 1. These operations rock the cranks 30 and 32 upward, raising the tumblers, which in turn push the clamping dogs into the positions shown in Fig. 2. In these positions of the tumblers, a flat vertical face of each lies directly up against the back of each clamping dog, while an opposite face of each tumbler abuts against the top plate 9 of the tie where the said plate forms a wall of the openings 21 and 22. The tumblers are locked in this position in two ways. This locking is effected in one way by providing the bars 25 and 26 with notches 33 and 34, respectively, which are caused to engage with web 4 where the latter forms one of the walls of an opening 35, through which the said bars pass. The tumblers are locked in another way by wedge keys 36 and 37 which pass transversantly through the tumblers and engage with the top of the plate 9. It will be observed that these tumblers are so proportioned or shaped that those of their faces which are designed to abut against the dogs in the locking position, travel vertically when the cranks op-

erating the tumblers are moved to raise them. This is effected by the proper distribution of the weight of the tumblers on each side of their connection with the cranks. In the specific form shown, each of these tumblers is somewhat in the shape of a shoe, the toe portions of which act to counter-balance the tumblers in the manner stated.

It will be seen from the foregoing description that when the dogs are locked in the position shown in Fig. 2, there is not any likelihood that the rails will become displaced. Not only do the dogs securely hold the rails from vertical displacement and act as vertical supporting braces therefor, but they are rigidly braced by means of the tumblers from any possibility of displacement transversantly of the rails.

While I have herein described but one specific embodiment of my said invention, it will be understood that the same is susceptible of modification without departing from the spirit of the invention. It should also be understood that I do not limit the application of my improved clamping mechanisms to the special style of tie shown, since there are many other forms of tie with which it may be used.

What I claim is:

1. The combination with a railway cross-tie, of a clamping dog hinged within the tie and adapted to engage the base of the rail, a tumbler adapted to raise the dog into the clamping position and to form a chock against the back of the dog when the dog is in the clamping position, and means to operate said tumbler.

2. The combination with a railway cross-tie, of a clamping dog hinged below the rail and adapted to engage the base thereof, a tumbler adapted to raise the dog into the clamping position and to form a chock against the back of the dog when the dog is in the clamping position, means to operate said tumbler and means to lock said tumbler in the clamping position.

3. The combination with a railway cross-tie, of a clamping hinged dog adapted to engage the base of the rail, a tumbler adapt-

ed to raise the dog into the clamping position and to form a chock between the back of the dog and a portion of the tie when the dog is in the clamping position, a shaft having a crank portion on which said tumbler is mounted, and means to rock said shaft to operate said tumbler.

4. The combination with a hollow metal railway cross-tie, of a pair of clamping dogs hinged within the tie and adapted to engage the base of the rails, a tumbler for each of said dogs adapted to raise said dogs into the clamping position and to form each a chock between the back of a dog and a portion of the tie when the dog is in the clamping position, a shaft for each of said tumblers having a crank portion on which the tumbler is mounted, means to rock said shafts to operate said tumblers, and means to lock said tumblers in the clamping position.

5. The combination with a railway cross-tie, of a clamping dog below the rail and adapted to engage the base of the same, a tumbler adapted to raise the dog into the clamping position and to form a chock against the back of the dog when the dog is in the clamping position, means to operate said tumbler, and a shoe rigidly secured to the top of the tie and adapted to engage the rail base on the opposite side thereof from said dog and to cooperate with said dog to secure said rail to said tie.

6. The combination with a railway cross-tie and the track rails carried thereby, of a pair of clamping dogs hinged below the rail bases and each having a shoulder extending to each side of the dog to form two wings or lugs and adapted to rest beneath the base to form a support therefor when the dogs are in the locked position, the base of the rail being clamped between the head of the dog and the said shoulder.

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

JOHN M. FLEMING.

Witnesses:

B. F. McDONALD,
ESTELLA MURPHY.