

H. McCONAUGHY.
RAILROAD TIE AND FASTENING THEREFOR.
APPLICATION FILED FEB. 5, 1909.

932,409.

Patented Aug. 24, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

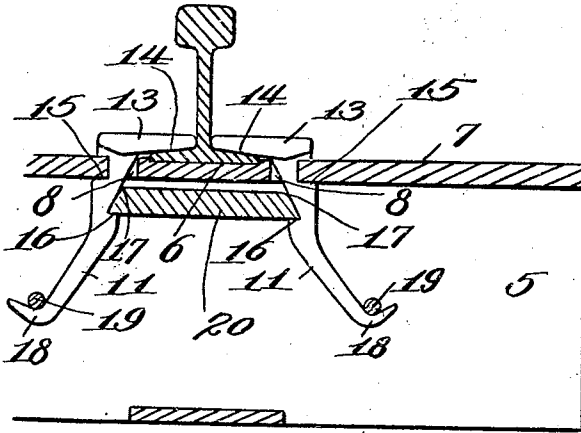


Fig. 2.

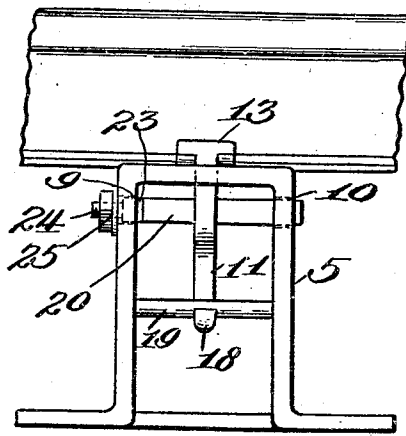


Fig. 3.

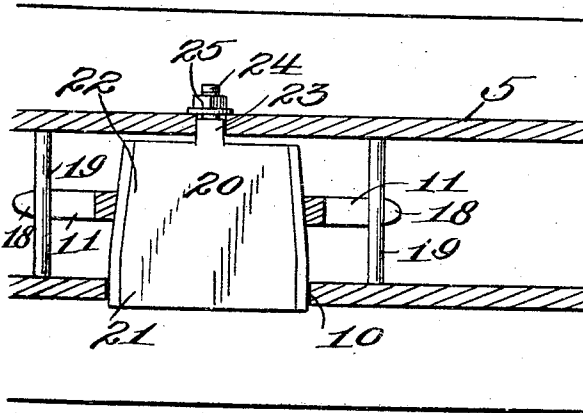


Fig. 4.

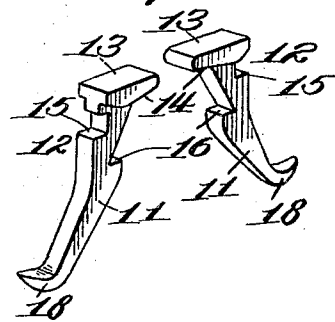
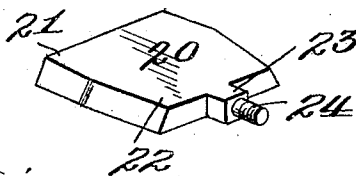


Fig. 5.



Witnesses:

W. B. Kester
J. B. Kester

Inventor
Hugh McConaughy

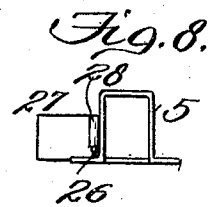
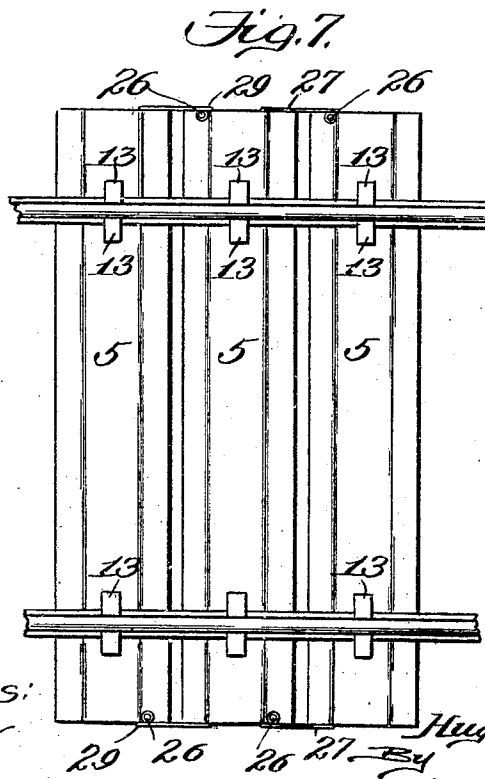
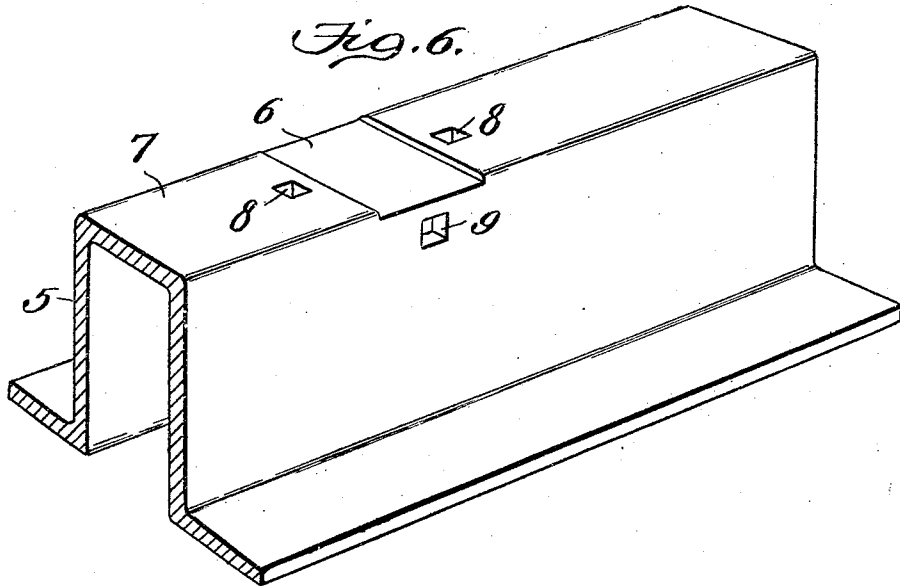
By
James L. Norris

Att'y.

H. McCONAUGHY.
RAILROAD TIE AND FASTENING THEREFOR.
APPLICATION FILED FEB. 5, 1909.

932,409.

Patented Aug. 24, 1909.
2 SHEETS—SHEET 2.



Witnesses:
Ed. Kessler
W. Kessler

Inventor
Hugh M. Conaughy
James L. Norris
Atty.

UNITED STATES PATENT OFFICE.

HUGH McCONAUGHY, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF TO GEORGE R. BARKER, OF CLEVELAND, OHIO.

RAILROAD-TIE AND FASTENING THEREFOR.

932,409.

Specification of Letters Patent. Patented Aug. 24, 1909.

Application filed February 5, 1909. Serial No. 476,201.

To all whom it may concern:

Be it known that I, HUGH McCONAUGHY, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful
5 Improvements in Railroad-Ties and Fastenings Therefor, of which the following is a specification.

This invention relates to railroad ties and
10 fasteners, and the primary object of the same is to provide a simple and durable tie construction having fastening means removably held thereby and readily associated in
15 clamping relation to the rails seated on the tie and thereby dispense with bolts or other similar securing means and render it possible to disengage the rails from a tie and replace the same or substitute other rails as
20 conditions may require.

A further object of the invention is to provide simple and effective means in connection with railroad ties for maintaining the
25 ballast in proper position between the ties with material advantages in the roadbed structure.

With these and other objects and advantages in view, the invention consists in the construction and arrangement of the several
30 parts which will be more fully hereinafter specified.

In the drawings: Figure 1 is a longitudinal vertical section of a portion of a tie showing a rail in cross-section thereon and embodying the features of the invention and
35 illustrating the fastening devices in securing association with the base of the rail. Fig. 2 is an end view of the improved tie and fastening means showing a portion of a rail thereon. Fig. 3 is a horizontal section
40 through the tie and fastening means taken in a plane immediately below and close to the top of the tie. Fig. 4 illustrates detail views of the fastening means or rail clamping dogs. Fig. 5 is a detail perspective
45 view of an expanding means or wedge plate which engages the fastening means or rail clamping dogs. Fig. 6 is a perspective view of a portion of the tie with the fastenings and rail removed. Fig. 7 is a top plan view
50 of a plurality of ties showing the rails thereon and ballast retainers at the ends of the same. Fig. 8 is an end elevation of one of the ties as shown by Fig. 7 and showing the ballast retaining means operatively associated therewith.
55

The tie consists of an arched body 5 preferably formed from steel and struck up into shape by suitable means, and having thereon at a proper gage seats 6 which are formed by slightly countersinking the closed
60 top 7 of the tie to receive the bases of the rails which extend transversely over the ties. Adjacent to the seats and formed in the top 7 are angular openings 8, one on each side of the seat. In the one side of the
65 tie an angular opening 9 is formed and positioned below the center of one terminal of each seat, and in the opposite side is a dovetailed slot 10. The openings 8 have the shanks 11 of fastenings or clamping dogs 12
70 inserted therethrough, each fastening or clamping dog having an upper clamping head 13 projected a greater distance inwardly than outwardly therefrom and having its under side beveled as at 14 to bear
75 on the upper surface of the base of the rail, as clearly shown by Fig. 1. Each shank 11 projects downwardly and extends outwardly at an incline with relation to its head 13 and has an outer step or shoulder 15 and an
80 inner shoulder 16 at a lower point than the shoulder 15, the inner edge of the shank from the shoulder 16 upwardly to the head being inwardly inclined as at 17. The lower end of each shank 11 is reduced and struck
85 up or shaped to form a hook 18 to fit under a cross-brace or rod 19 extending from one side of the tie to the opposite side of the same and also operating to strengthen the tie, there being two of these cross rods which
90 are disposed in horizontal alinement at equal distances with relation to a central plane taken vertically through each seat 6. The openings 8 are large enough to permit the ready insertion of the shanks 11 of the
95 fastening means or clamping dogs, and before the latter are set or caused to engage the base flange of the rail and the cross rods 19 the shanks 11 have a loose movement in the said openings 8.
100

The expanding means for the shanks of the fastening means or clamping dogs consists of a plate 20 which has opposite beveled edges or is dovetailed and also formed with an enlarged extremity 21 which snugly
105 fits within the dovetailed opening 10 and a longer reduced extremity 22 which passes between the shanks 11 and engages the shoulder 16, the extremity 22 by its reduced construction gradually expanding the shanks
110

11 and drawing the heads 13 of the fastening means or clamping dogs into close engagement with the opposite sides of the base of the rail. The inclined inner edges 17 of the shanks correspond to the opposite edge bevels of the expanding means as just explained, and the latter may be tightly driven in between the shanks from the exterior of the tie; and to secure the expanding means in fixed position relatively to the shanks 11 the reduced extremity of the plate 20 has at the center a lug 23 terminating in a screw-stem 24, the lug and stem being inserted into and through the opening 9, and after the parts of the expanding means are thus positioned or as shown by Fig. 3, a nut and washer 25 are applied to the screw-stem 24 to hold the expanding means or the plate 20 tightly drawn into positively engaging position with relation to the shanks 11 to resist loosening by vibration. When the expanding means is introduced and drawn between the shanks 11 as just specified, the hooks 18 at the lower ends of the shanks are drawn tightly against the rods 9 and the fastening means or clamping dogs will be thus held in immovable position.

At any time desired the nuts and washers 25 may be detached from the screw shanks 24 to release both rails, or if it be desired to release only one rail it is obvious that the one expanding means or plate 20 will be loosened. In either event, the expanding means or plates 20 may be drawn outwardly from the ties and the fastening means or clamping dogs loosened and the heads thereof thrown over or away from the base of the rail or rails, or the said fastening means or dogs may be removed from the tie through the openings 8. The resistance to upward movement or displacement of the dogs is set up by the shoulders 15 bearing against the under side of the top of the tie, and that portion of the heads 13 extending outwardly beyond the upper outer edges of the shanks 11 forms with the shoulders seats to receive the outer end walls of the openings 8, and when the fastening means or clamping dogs are set and have their hooked ends 18 in firm engagement with the cross-rods 19, a rigid assemblage is provided.

Secured to the extremities of the ties, as clearly shown by Figs. 7 and 8, are upstanding pintles or fulcrum rods 26, and removably applied to said pintles are end closures 27 consisting of metal plates having vertically disposed knuckles 28 to receive the pintles 26, the said knuckles being located adjacent one extremity of each plate and thereby permitting one end 29 of each plate to project over and contact with a part of the end of the tie carrying the pintle, there being one pintle on each tie end and in reverse positions on opposite ends of the tie, as shown by Fig. 7. When the end closures

or plates 27 are applied they immovably extend across and close the spaces between the ties. When the ballast is introduced between the ties it is held from slipping outwardly at opposite ends by coming in contact with the end closures 27, and such ballast will thereby be rendered more effective and its use economical. At any time when it is desired to replace the ballast or remove the same, the end closures may be readily detached. The closures are preferably formed from pieces of sheet steel, and by the alternate attachment thereof as shown it will only be necessary to apply a pintle to one end of each tie.

The improved tie and fastening will materially reduce the cost of maintaining a railroad bed in practical condition in view of the durability of each tie and the fastening means associated therewith for engaging the rails. Furthermore, the rails by the particular fastening means explained will be held down in positive and firm connection with each tie, but capable of easy detachment when necessary.

What is claimed is:

1. A hollow railroad tie having top rail seats with openings adjacent thereto on opposite sides of the same, clamping means inserted through the said openings and having shanks depending into the tie below the top of the latter and terminating above the bottom of the said tie, expanding means interposed between the clamping means close to the top of the tie, and resistance means extending transversely across the tie above the bottom of the said tie and engaging the upper portions of the lower terminals of the shanks of the clamping means, the lower terminals of the shanks of the clamping means being forced under and drawn upwardly against the resistance means by the expanding means.

2. A railroad tie having rail seats with openings adjacent thereto and on opposite sides of the same, clamping means removably inserted in said openings and having shanks depending within the tie, the clamping means being provided with upper heads to engage the base flanges of the rails, and expanding means removably inserted between the shanks of the clamping means and cross-rods secured to the tie for engagement by the lower ends of the shanks of the clamping means.

3. A railroad tie having rail seats with openings at opposite sides thereof, clamping means removably and loosely inserted in the said openings and having shouldered shanks depending within the tie and terminating at their lower ends in hooks, the upper ends of the clamping means being formed with heads to engage the base flanges of the rails, and expanding means movably introduced between the shanks of

the clamping means and cross-rods secured in the tie for engagement by the lower hooked ends of the shanks.

4. A railroad tie having a rail seat with openings at opposite sides thereof, the opposite sides of the tie respectively having a dovetailed slot and an angular opening therein immediately below the seat, headed clamping dogs having shanks removably inserted through the openings adjacent to the seat and projecting into the tie, the shanks of the clamping dogs being shouldered, cross-rods secured to the tie for engaging the lower ends of the shanks, a wedge plate inserted through the said dovetailed opening in the tie between the shanks of the clamping dogs and having a reduced extremity terminating in a lug and screw stem which project into and through the opening in the opposite side of the tie, and means for engaging the screw stem to hold the wedge plate in fixed adjusted position, the wedge plate engaging a portion of the shoulders of the shanks.

5. A railroad tie having a rail seat with openings adjacent to opposite sides thereof, the tie also having a dovetailed opening and an angular opening in its opposite sides respectively under the seat, headed clamping dogs having shanks loosely and removably inserted through the openings adjacent to the rail seat and provided with inner shoulders, cross-rods held by the tie to engage the

lower ends of the shanks of the clamping dogs, and an expanding means consisting of a wedge plate reduced at one extremity and provided with central fastening means at its reduced extremity, the wedge plate being inserted through the dovetailed opening and engaging the inner shoulders of the shanks of the clamping dogs to secure the latter in fixed position.

6. A railroad tie having a vertically disposed closure plate removably attached to one end and of such length as to extend across to the end of the adjacent tie, the lower edge of the closure plate being disposed above the under side of the bases of the ties with which the plate coacts to terminally close the space between the adjacent sides of two ties to hold the ballast in place, a portion of the said plate adjacent to its point of attachment to the end of the one tie extending over and bearing against the outer portion of the said tie end to prevent outward movement of the plate, the plate being separably applied to the tie and movable vertically to disengage the same.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HUGH McCONAUGHY.

Witnesses:

LAWRENCE E. YAGGI,
GEORGE BARKER.