J. C. DENHAM.

RAILWAY RAIL TIE AND FASTENING.

APPLICATION FILED MAR. 5, 1909.

929,403.

Patented July 27, 1909.

2 SHEETS—SHEET 1.

FIG. 1.

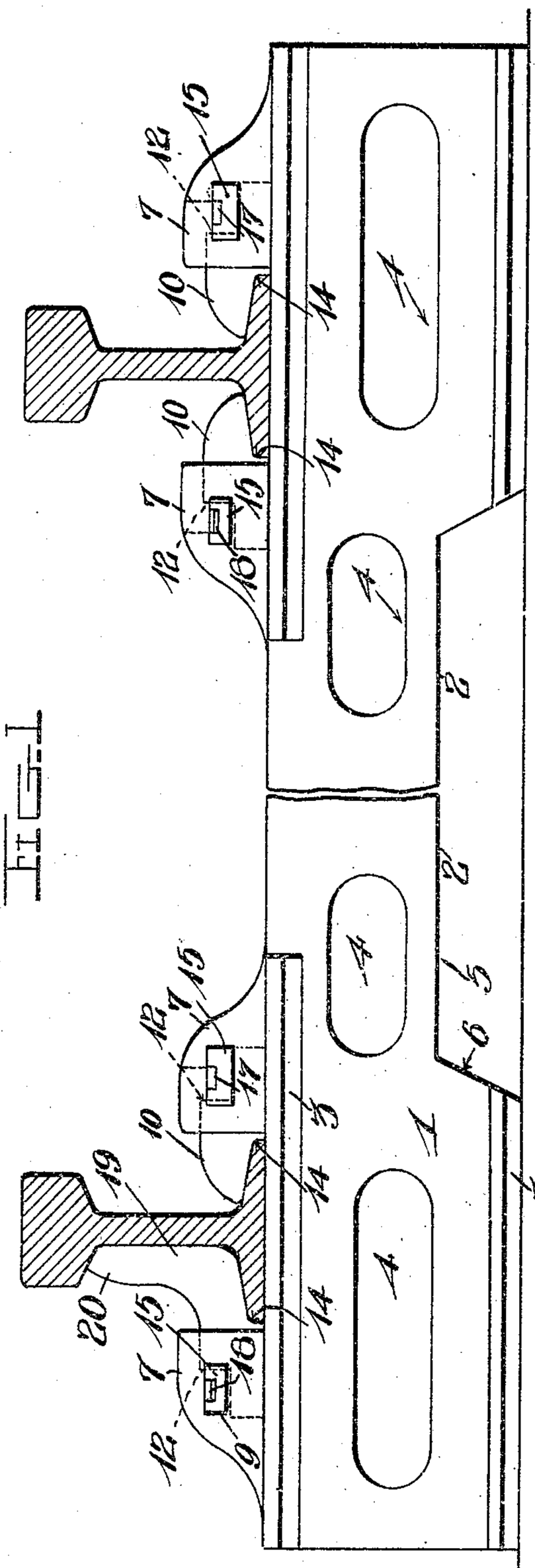
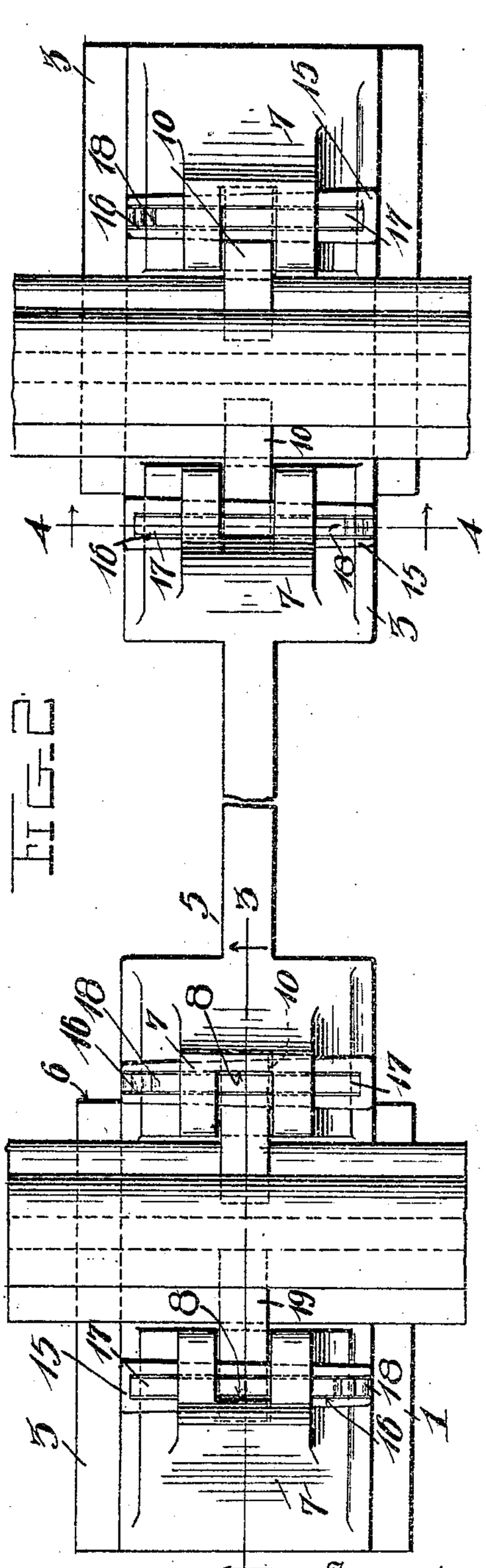


FIG. 2.



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2 SHEETS—SHEET 2.

FIG. 3

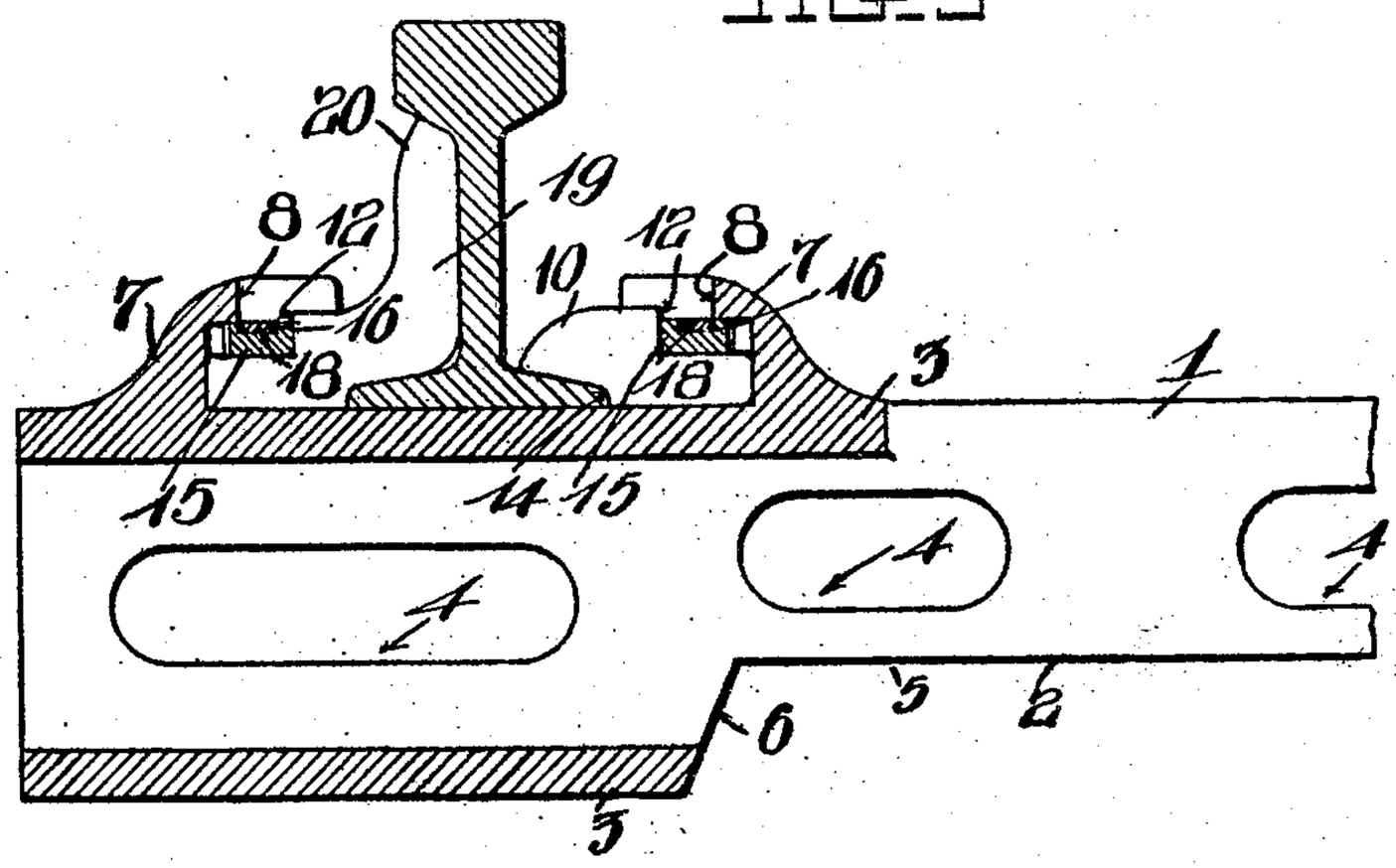


FIG. 4

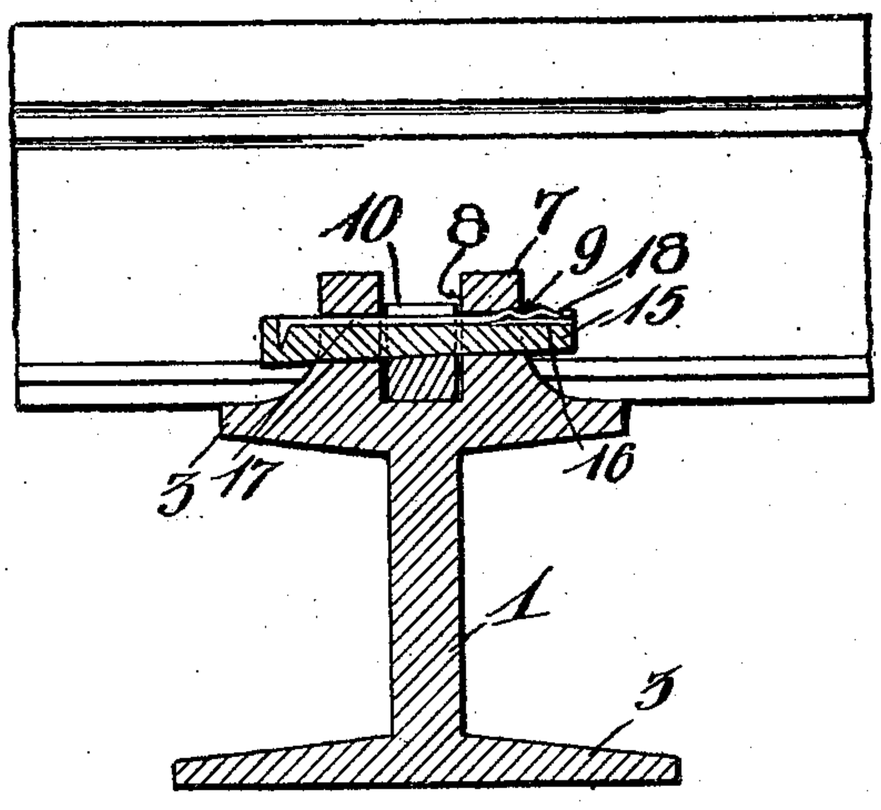


FIG. 5

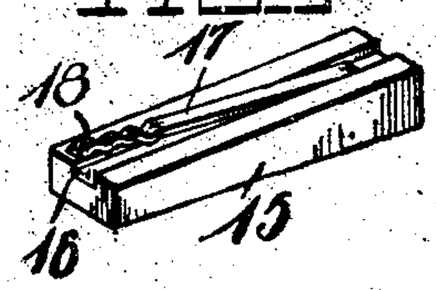


FIG. 6

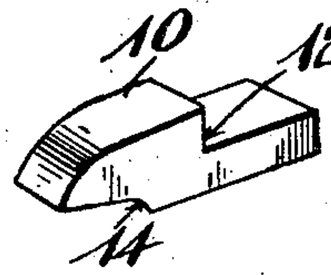
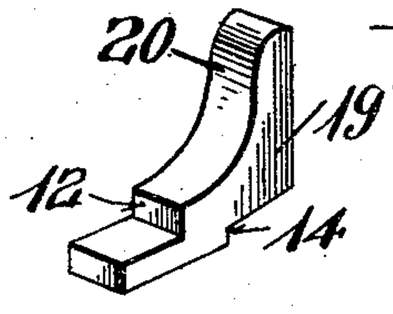


FIG. 7



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UNITED STATES PATENT OFFICE.

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RAILWAY-RAIL TIE AND FASTENING.

No. 929,403. Specification of Letters Patent. Patented July 27, 1909.

Application filed March 5, 1909. Serial No. 481,252.

To all whom it may concern:

Be it known that I, JAMES C. DENHAM, a citizen of the United States, residing at Americus, in the county of Sumter and State of Georgia, have invented certain new and useful Improvements in Railway-Rail Ties and Fastenings; and I 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.

This invention relates to improvements in railway ties and rail fastening devices.

The object of the invention is to provide a railway rail tie having means formed thereon to firmly secure a rail thereto and means to prevent a lateral movement of the tie.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a side view of the tie constructed in accordance with the invention and having my improved rail fastening devices applied thereto; Fig. 2 is a top plan view of the same; Fig. 3 is a vertical, longitudinal, sectional view of one end of the tie taken on the line 3—3 of Fig. 2 and showing the rail fastening devices as employed in connection with a curved track; Fig. 4 is a transverse vertical sectional view on the line 4—4 of Fig. 2; Fig. 5 is a detail perspective view of one of the wedges for the rail fastening devices; Fig. 6 is a perspective view of one of the fasteners; and Fig. 7 is a similar view of one of the combined rail braces and fastening devices.

Referring more particularly to the drawings, 1 denotes the tie which may be formed of any suitable metal and consists of a central web portion, 2, provided at its opposite ends with laterally projecting upper and lower flanges, 3; the upper flanges on opposite ends of the tie form the seat or support for the rails. The web portion, 2, of the tie is provided with a series of openings, 4, whereby the weight of the tie is reduced. In the center of the tie at its lower edge the web, 2, is cut away or recessed, shown at 5, to provide off-sets or shoulders, 6, whereby the tie is firmly anchored or secured in the road bed or ballast, thus preventing longitudinal movement of the tie and holding the rails in perfect alinement.

Formed on the upper flange of the tie adjacent to its opposite ends are pairs of fastening lugs, 7, said lugs having formed in their inner sides recesses or notches, 8, and in their opposite ends passages 9 which communicate with the notches or recesses, 8. Adapted to be engaged with the lugs 7, are rail fastening devices, 10, said devices having on one end a recess which forms a shoulder, 12. The recessed end of the fastening is adapted to be engaged with the notch 8 of the lug, 7, so that the recess in said end will aline with the passages, 9, in the ends of the lugs. On the outer ends of the fastenings, 10, are formed rail flange engaging recesses, 14, which when the fastening is in operating position in the lugs, 7, are adapted to be engaged with the flanges of the rails as shown. After the fastening devices, 10, have been arranged in the lugs, 7, and in engagement with the rail flanges in the manner described, a wedge-shaped key, 15, is inserted through the passages, 9, and the recessed portion of the fastening, 10. The keys, 15, taper from one end toward the other and are also thinner at one end than at the opposite end, so that when inserted and forced through the passages, 9, the tapered side edges of the same will come into engagement with the shoulders of the rail fastenings thus forcing said fastenings into rigid engagement with the rail flanges while the tapered bottom of the wedge, 15, will forcibly engage the lower wall of the recessed portion of the fastening thereby firmly clamping the fastening device into engagement with the top of the tie. In the upper side of the keys or wedges, 15, is formed a longitudinally disposed groove or channel, 16, in which is arranged a spring locking pawl, 17, said pawl being secured at its outer end to the adjacent end of the key while at its free end is formed a series of corrugations which provide a toothed rack, 18. The teeth formed by the corrugations will engage the side of the lugs, 7, when the key is forced through the passages, 9, therein, thereby preventing the casual withdrawing or removal of the key or wedge. When the rail has been secured by the fastening devices in the lugs on the opposite sides of the rail, at each end of the tie, the rails will be rigidly held in position.

In connection with the fastening devices, 10, on curves I preferably employ a modified construction of fastening, 19. The fastening, 19, as shown in Fig. 7 of the drawing, has in

combination therewith a rail bracing extension, 20, which, when the fastening is in position, will engage the head of the rail and thus firmly hold the same against spreading or upsetting. The combined rail fastening and brace, 19, is provided with a recessed lug engaging portion and a rail flange engaging recess similar to the other form of fastening, 10.

By means of a tie having rail fastening devices such as herein shown and described, the sections of the rail may be readily released and removed from the ties and when secured by the fastening devices will be rigidly held and braced in operative position.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention as defined in the appended claims.

Having thus described my invention, what I claim is:—

1. In a device of the character described a metallic rail tie having on its upper side slotted recessed lugs, rail fastening devices having recessed outer ends adapted to be engaged with said lugs, keys arranged in said lugs, and adapted to force said fastening devices into engagement with the rail flanges and spring pawls on said keys to hold the latter in operative engagement with the lugs and rail fastening devices.

2. In a device of the character described, a tie having formed in its lower edge a centrally disposed anchoring recess, laterally projecting flanges formed on the upper and lower edges of the tie at its opposite ends, recessed, slotted lugs formed on the top of the tie adjacent to its opposite ends, rail fastening devices comprising rail engaging portions and a recessed lug engaging portion adapted to be engaged with the recesses in said lugs, wedge-shaped locking keys arranged in the slots of said lugs and adapted to engage said rail fastening devices and to force the latter into engagement with the rail flanges and the top of the tie and spring metal pawls secured to said wedge-shaped keys and adapted to be engaged with the ends of said lugs whereby the pawls are held in an operative engagement with the lugs and the rail fastening devices.

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

JAMES C. DENHAM.

Witnesses:
I. B. SMALL,
S. R. HEYS.