

UNITED STATES PATENT OFFICE.

LOUIS C. GERKIN, OF FARINA, ILLINOIS.

RAIL-FASTENER AND TIE.

1,046,171.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, LOUIS C. GERKIN, a citizen of the United States, residing at Farina, in the county of Fayette and State of Illinois, have invented certain new and useful Improvements in Rail-Fasteners and Ties, of which the following is a specification.

This invention relates to improvements in railway rail fasteners and ties, and has for one of its objects to improve the construction and increase the efficiency and utility of devices of this character.

Another object of the invention is to provide an improved rail fastener adapted to be tightened in event of working loose without removing the rail or disturbing the tie.

Another object of the invention is to provide an improved device including a concrete tie having the rail fastening devices embedded therein and with reinforcing members to prevent fracture of the tie under abnormal strain.

With these and other objects in view, the invention consists in certain novel features of construction as hereafter shown and described, and then specifically pointed out in the claim, and in the drawings illustrative of the preferred embodiment of the invention, Figure 1 is a plan view of a portion of a rail with one of the improved tie and rail-fastening devices applied; Fig. 2 is a side elevation of one of the improved ties and the rail-fastening devices with the tie and rail in section on the line 2—2 of Fig. 1; Fig. 3 is a section on the line 3—3 of Fig. 1; Fig. 4 is a detached perspective view of a portion of one of the rail fasteners; Fig. 5 is a view similar to Fig. 1 illustrating a modification in the construction; Fig. 6 are perspective views representing the modified fastening devices illustrated in Fig. 5.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The improved device comprises a tie represented conventionally at 10 formed of concrete or like material and provided with a plurality of longitudinally extending metal reinforcing members 11. Any required number of the reinforcing members may be employed, but generally four will be used, as shown, and each formed from a section of a bar twisted to produce irregular faces as shown and embedded in the tie at suitable

distances apart when the latter is constructed. By this means the material of the tie which is molded when in a plastic state, enters the interstices or hollows of the reinforcing members and thus firmly anchors the latter within the tie. By this simple means the tie is reinforced and strengthened and all tendency to fracture under abnormal strains prevented.

At the point where the rails, represented conventionally at 12, are located, the tie is provided with rail fastening devices each comprising tapered blocks or studs 13, either connected to a single base member 14, as shown in Figs. 1, 2 and 3, or with a separate base 15 for each tapered stud, as shown in Fig. 5. The studs 13 extend through the tie and terminate at its upper face, while the bases 14 or 15 as the case may be, are embedded in the lower face of the tie, as shown. By this means the studs are firmly anchored within the tie and extend entirely through the same. Each of the studs 13 is provided with a threaded bore extending entirely through the same, as shown.

When the fastening device illustrated in Figs. 1, 2, 3 and 4 is employed, the studs 13 will preferably be located obliquely to the longitudinal plane of the tie so that the threaded bores of the studs come opposite the edges of the tie flanges of the rails 12 as shown in Fig. 1, and when the structure shown in Fig. 5 is employed, the studs will be located in the same relative position with the bases 15 lying parallel to each other.

The threaded bores of the studs are designed to receive holding bolts comprising threaded stocks 16 to engage the threaded bores and with lateral heads 17 to engage over the tie flanges of the rail as shown. Each of the heads 17 is provided with a wrench-receiving projection 18 to enable the bolts to be turned "home" and thus hold the rails firmly to the tie. By this simple means it will be obvious that in event of the bolts working loose, they can be readily tightened by simply applying a wrench to the projections 18 and without removing the rail from the tie, or disturbing the tie. In event of the breakage or impairment of any of the parts, they can be readily detached, and a new one inserted without discarding the remainder of the devices.

The studs 13 with their bases 14 or 15 as the case may be, are preferably of cast steel or other suitable metal and of sufficient

strength to withstand the strains to which they will be subjected.

Having thus described the invention, what is claimed as new is:

5 A railway tie comprising a cement body, a plate embedded in the lower face of the tie, tapered studs of less diameter than the width of the plate and rising from the plate near its ends, said studs being of less length
10 than the thickness of the tie and provided with longitudinally extending threaded bores

whereby portions of the tie material extend over the smaller ends of the studs, and rail flange engaging members fitting in said bores.

In testimony whereof I affix my signature¹⁵ in presence of two witnesses.

LOUIS C. GERKIN. [L. S.]

Witnesses:

C. M. ANGLIN,
J. D. HIEFT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."