April 18, 1939. C. F. GAILOR 2,154,931

TIE PLATE

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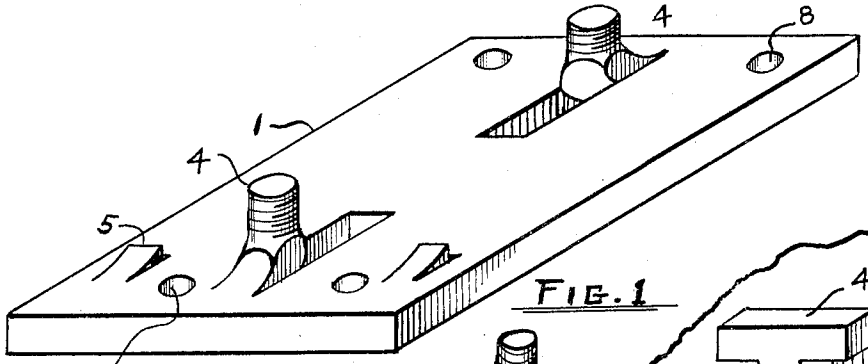


FIG. 1

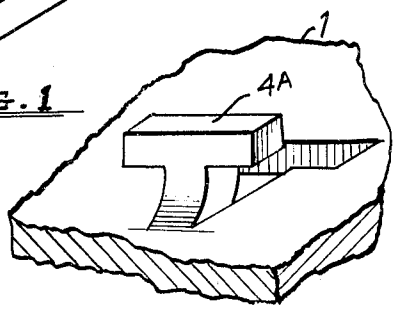


FIG. 5

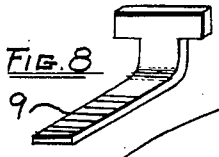


FIG. 8

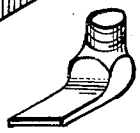


FIG. 7

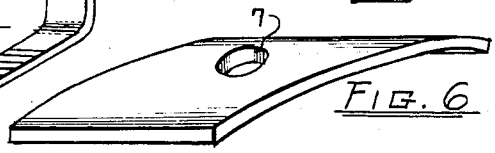


FIG. 6

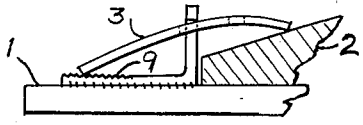


FIG. 9

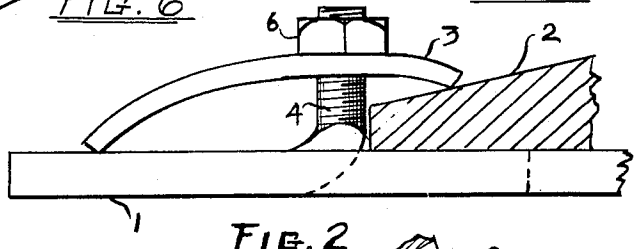


FIG. 2

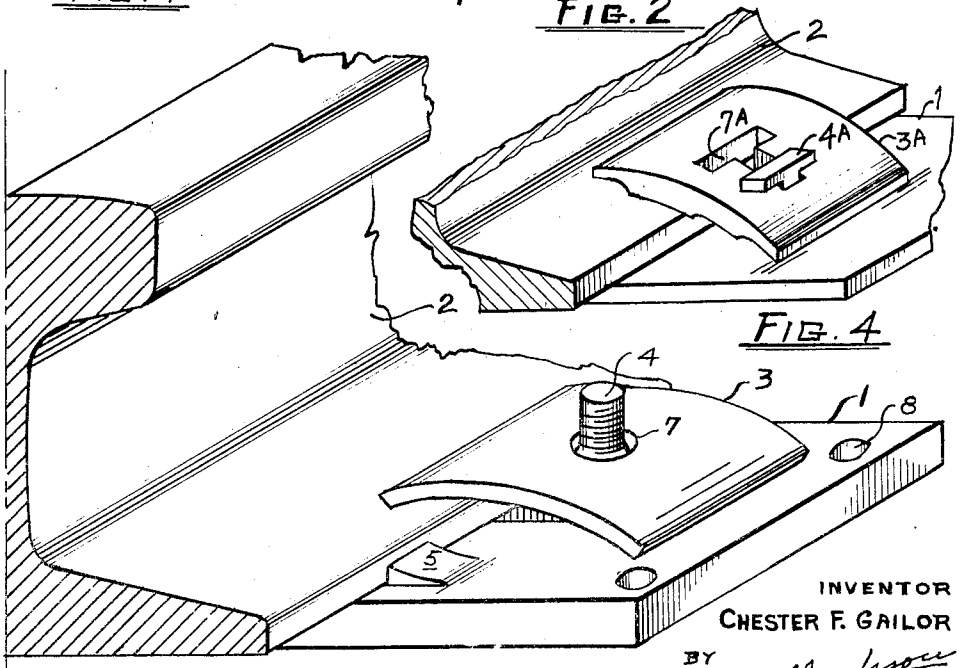


FIG. 4

FIG. 3

INVENTOR
CHESTER F. GAILOR
BY
R. P. Clarkson
ATTORNEY

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TIE PLATE

Chester F. Gailor, Brooklyn, N. Y., assignor to The Rails Company, New Haven, Conn., a corporation of Connecticut

Application July 9, 1936, Serial No. 89,715

3 Claims. (Cl. 238—304)

My invention relates to track construction and more particularly to tieplates especially adapted to facilitate the frictional clamping of rails thereto.

An object of the present invention is to provide a simple and inexpensive tieplate or rail support suitable for new construction or for replacement of present construction, and particularly devised to cheapen the cost and make simpler the task of frictionally holding rails against creeping or like movement by means of spring clips or the like, which frictionally clamp the rails to the tieplates, the latter being rigidly fastened to the ties.

A further object of this invention is to provide a punched plate form of rail support having points of superiority over the usual rolled forms of tieplates and more suitable for modern track construction, especially that in which welded rails are used.

A still further object of this invention is to provide a simple and inexpensive combination of tieplate and spring clip to firmly hold the rail in proper position, gauge and alignment, and against creeping in either direction, while permitting wave motion of the rail, thereby avoiding the use and expense of rail spikes and rail anchors.

Another object of this invention is to provide means for tensing and restraining a rail fastening clip without injury to the tie below the tieplate, thus prolonging the life of the tie.

With the foregoing and other objects in view as will be apparent to one skilled in the art as the description proceeds, my invention resides in the combination and arrangement of parts and in the details of construction described in this specification and particularly pointed out in the appended claims. I intend no limitation other than those of the claims when fairly interpreted, it being understood that changes in the particular embodiment of my invention may be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawing, Fig. 1 is illustrative of a form of tieplate embodying features of my invention; Fig. 2 represents a part sectional fragmentary illustration illustrative of the combination of a rail holding clip and the tieplate of Fig. 1; Fig. 3 is a perspective view further illustrative of the combination of a rail holding clip and the tieplate of Fig. 1; Fig. 4 is a view similar to that of Fig. 3 illustrating a modification; Fig. 5 is a fragmentary view illustrative of a modified detail of the tieplate of Fig. 1; Fig. 6 illustrates the spring clip shown in Figs. 2 and 3; Figs. 7 and 8 illustrate details of separate lugs; and Fig. 9 is a fragmentary detail similar to Fig. 2 illustrative of the application of the lug of Fig. 8.

Like reference characters indicate like parts throughout the drawing.

In a preferred embodiment of my invention, a suitable plate 1 (Fig. 1), not necessarily of even thickness, is provided with upstruck and preferably threaded lugs 4, 4, or T-head lugs 4A (Fig. 5), spaced to provide a rail seat between them and, if desired, so positioned as to prevent material side movement of a rail 2 seated thereon (Fig. 2) and thus act to maintain gauge, but preferably accompanied on one side at least, by one or more shoulder blocks 5, 5, also upstruck from the body of plate 1 and having alignment on the inner face with the edge of the rail seat.

Plate 1 may be suitably provided with openings 8, 8, in order that said plate may be secured to a tie as by screw spikes or the like, positioned in said openings. It will be apparent that punching of suitable openings 8, 8, and the striking up from the plate of shoulder blocks 5, 5, where required, and of lugs 4, 4, or lugs 4A, 4A, may be accomplished in a single operation on a suitable press, and lugs 4, 4, may thereafter be threaded.

In use a plate 1 is accompanied by a spring fastener or clip 3, preferably slightly bowed, and provided with a through opening 7, and a restraining member is provided such as a suitable nut 6 (Fig. 2) adapted to take on and coact with threaded lug 4 to tense the clip 3.

A rail 2 is positioned between lugs 4, 4, and is supported on plate 1 which itself normally rests on a cross tie to which it is fastened as hereinbefore mentioned. A portion of the rail support or tieplate 1 projects beyond the rail base on each side (Figs. 2 and 3). On each side of the rail a spring clip 3 preferably overlies the base of rail 2 and rests on the projecting portion of plate 1 and a lug 4 on that side extends through the clip opening 7 and projects above the clip 3 (Fig. 3). Preferably a nut 6 is threaded on lug 4 (Fig. 2) above clip 3 in this embodiment of my invention and by further turning of the nut 6 the resilient clip 3 is forced yieldingly against the rail base and frictionally engages the rail base which thereby is pressed more firmly against the rail seat of the support plate 1 and frictionally engages said plate. A pressure of 2000–3000 pounds may readily be exerted on the rail base by each clip and this

amount is ample to prevent creeping, there normally being up to 52 clips to the rail length or 6,000 or more clips to the mile of rail.

Where it is not desired to rely wholly or in part on the clip holding lug 4 itself to maintain gauge, such lug may be spaced away from the rail edge and one or more shoulder blocks 5, 5, may be used on either or both sides of the rail seat and the rail butted against them (Fig. 3) to prevent side movement or buckling of the rail. The lug 4 will act to position the clip 3 and prevent movement of the clip longitudinally of the rail 2.

In the modifications of Figs. 4 and 5, a T-head lug 4A is preferably provided integral with the plate 1 and the preferred form of spring clip 3A may be provided with a T-shaped or other suitable slot 7A so that it may be slipped over the lug 4A and driven over the base of the rail 2, the inclined surface of the rail base acting with the overhanging head of lug 4A to wedge the clip 3A and tense it. As the plate 1 is normally soft compared with the more or less hardened spring plate 3A, the lower back contacting edge of the clip 3A will dig into the metal of the plate 1 and the clip will be retained in position, lifting of the rail 2 by passing traffic tending to anchor the clip firmly.

In some instances I may prefer to form the clip retaining lugs 4 or 4A separately, as illustrated in Figs. 7 and 8 respectively, and weld or otherwise fasten them to the top surface of the tieplate 1 (Fig. 9). In this instance, if a T-head lug is provided (Fig. 8) I may and preferably do serrate or groove the top surface 9 thereof to act as a restraining means or ratchet for the lower back contacting edge of the spring clip 3.

Where it may be desired to maintain a comparatively uniform stiffness and strength throughout the length of the clip, as 3A (Fig. 4) I may regulate the thickness thereof to compensate for such weakening as necessarily occurs when the opening, as 7A, is punched therein.

What I claim is:

1. As an article of manufacture a rail support comprising a plate provided with a plurality of through openings for reception of securing members and a pair of threaded members formed from the body of the plate and bent upwards therefrom and spaced to provide a rail seat between them.

2. In track construction, the combination with a rail and a support therefor below said rail and projecting on one side thereof, of a resilient clip overlying the base of said rail and resting on said projecting portion of said support and provided with an opening, a portion of the body of said support being bent upwardly out of the plane of the remainder and extending through and above said opening, and a nut threaded means above said clip adapted to force said clip into yielding engagement with said rail base.

3. In track construction, the combination with a rail and a support therefor, of a spring clip overlying the base of said rail and provided with a through opening, shoulder members integral with and upstruck from the body of said support and means to tense said clip comprising a portion of said support upwardly bent and projecting through said clip opening, said portion being provided with threads and a detent member threaded on said portion above said clip.

CHESTER F. GAILOR.