

F. A. PRESTON.
 MEANS FOR PREVENTING THE CREEPING OF RAILS.
 APPLICATION FILED JUNE 25, 1910.

1,066,145.

Patented July 1, 1913.

Fig. 1.

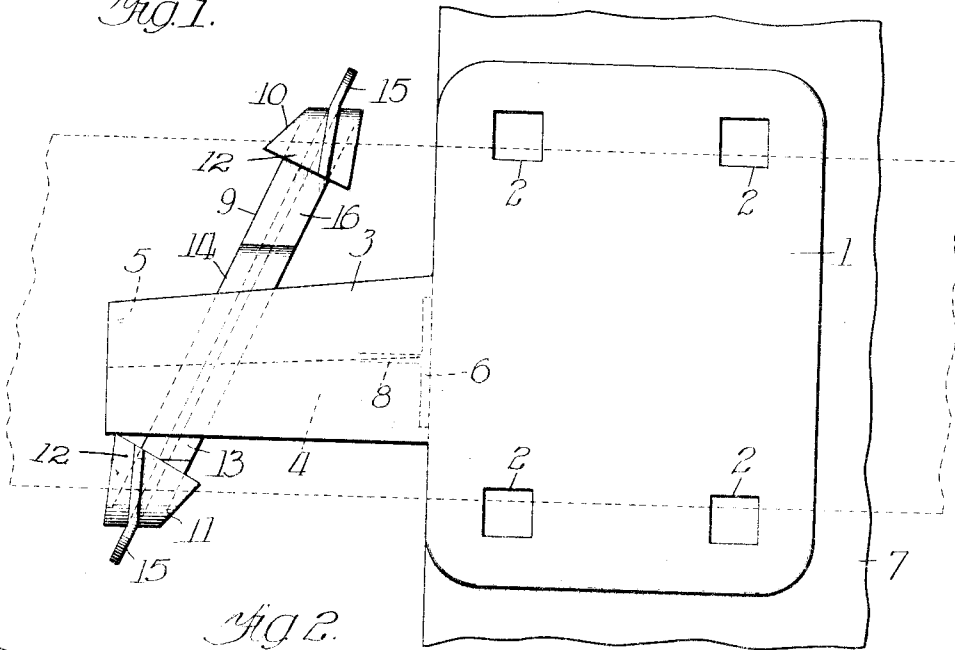


Fig. 2.

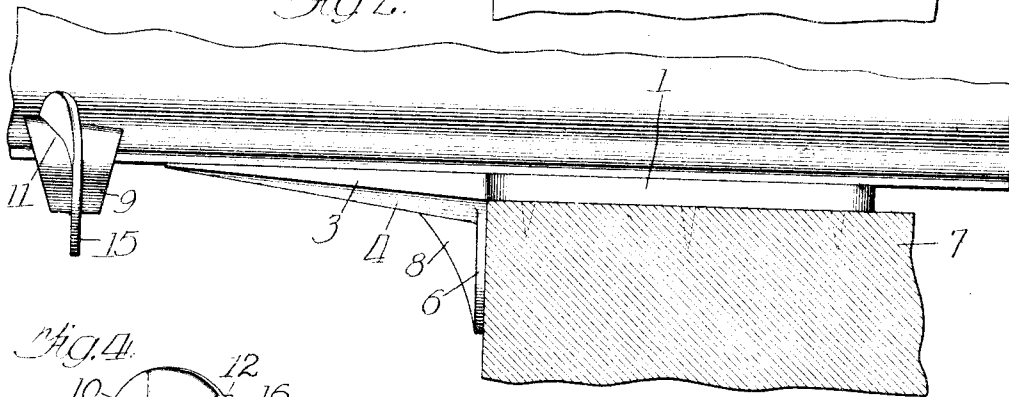


Fig. 4.

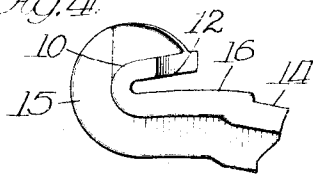
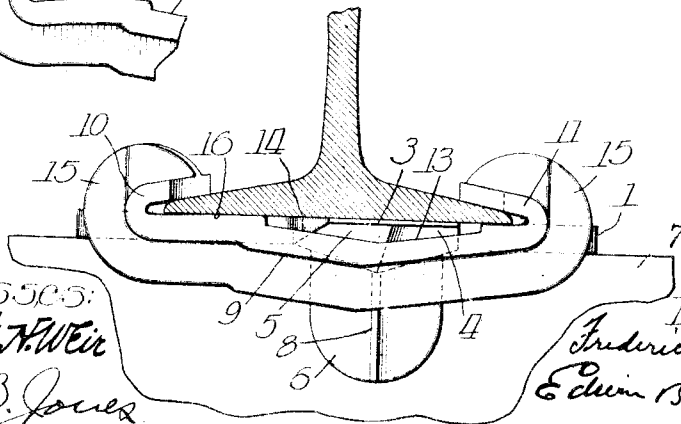


Fig. 3.



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UNITED STATES PATENT OFFICE.

FREDERICK A. PRESTON, OF HIGHLAND PARK, ILLINOIS, ASSIGNOR TO THE P. & M. COMPANY, A CORPORATION OF ILLINOIS.

MEANS FOR PREVENTING THE CREEPING OF RAILS.

1,066,145.

Specification of Letters Patent.

Patented July 1, 1913.

Application filed June 25, 1910. Serial No. 568,860.

To all whom it may concern:

Be it known that I, FREDERICK A. PRESTON, a citizen of the United States, residing at Highland Park, in the county of Lake and State of Illinois, have invented new and useful Improvements in Means for Preventing the Creeping of Rails, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to means for preventing the creeping of rails.

The object of my invention is to provide a tie plate which shall perform its usual function and in addition shall be adapted and arranged to cooperate with some means for gripping the flanges of the rail and prevent creeping thereof.

Other objects of my invention are to provide a tie plate adapted to be secured to the tie by the usual spikes and which may have in addition, means for cooperating directly with the tie itself to relieve the spikes from some, or the greater part of the shearing stresses due to the creeping tendency of the rail; to simplify the construction so as to employ only a minimum of parts to accomplish the desired ends, certain of which parts shall consist of means adapted to be readily applied to a rail and adapted to increase the grip thereon by a wedging action under the rail, upon any tendency of the rail to creep.

Other advantages will appear from the description which follows.

While my invention may be embodied in a number of concrete forms, I have illustrated in the accompanying drawings only one such form, the latter constituting a simple and effective arrangement for accomplishing the desired results.

In the drawings: Figure 1, is a plan view of the tie plate and rail anchor in position, the rail being shown in dotted outline. Fig. 2, is a side elevation of both members, with the removable member about to be driven toward the stationary member. Fig. 3, is an end elevation of the parts in assembled position. Fig. 4, is a detail.

The tie plate proper consists of a plate 1, having a plurality of holes 2, adapted to receive the usual spikes, not shown, and having preferably the usual sharp, downwardly extending ridges on its under side, although I do not limit myself to this construction.

At one end of the main plate there is arranged preferably, an extension or tongue 3, having beveled under surfaces 4 and 5, which surfaces are inclined both transversely and longitudinally, as clearly shown in Figs. 2 and 3. Extending downwardly from the same end of the tie plate, from which projects the tongue 3, there is provided a downwardly extending shoulder or arm 6 for engagement with a side of the cross-tie 7, on which the plate 1 is secured, and reinforced preferably by a flange 8. This downwardly extending arm is preferably arranged substantially in alinement with the tongue 3, although I do not limit myself to this construction. It should be noted that the tongue 3 is preferably located a slight distance to one side of the longitudinal axis of the tie plate for a purpose hereinafter specified. The tie plate may be made in two forms, right hand and left hand constructions being provided, although in this application one form only is illustrated, the principal of operation being identical with either form.

The rail gripping member may be of various suitable forms and is shown in the present instance as a one piece construction in the form of a yoke 9, having integral clip members 10 and 11 at opposite ends thereof, and having preferably widened ends 12 adapted to firmly grip the flanges of the rail, the opening of at least one of the jaws or clip members being slightly smaller than the corresponding rail flanges so as to furnish a driving fit thereon. The yoke has a depressed or cut away portion, the faces 13, 14 of which are preferably inclined both longitudinally and transversely to correspond to the double beveled surfaces 4 and 5, of the under side of the projecting tongue 3. Reinforcing ribs 15, 15 are shown in connection with the jaws 10 and 11, these ribs having their extremities deflected as shown particularly in Fig. 1, to give strength where it is most needed, although I do not limit myself to this construction.

One end of the yoke 9 is preferably curved or provided with a crown 16, for the purpose of causing the yoke as a whole to more firmly grip the flanges of the rail when the jaws are sprung into place, as will hereinafter be described.

The distance between the inner angles of the jaws 10 and 11 is considerably greater

than the width of the rail to which the yoke is to be applied, in the form illustrated. This permits the yoke to be placed under the rail, approximately at right angles thereto, with the jaw 11 embracing one flange of the rail. In this position, the other jaw 10 may be forced or sprung up until it just clears the other flange of the rail, whereupon it is driven by side blows until it catches on said flange or it may be made to engage said flange in other ways. This clip member could be caused to pass above the flange of the rail, leaving a considerable clearance, if it were not for the crown 16, which in the form illustrated necessitates the forcing or springing of said member over said flange just far enough to clear it. By driving the yoke around to a diagonal position with respect to the length of the rail, it is apparent that the clip members 10 and 11 will ride up along the upper surfaces of the rail flanges, thereby preventing the yoke from dropping from the rail. In driving the yoke to this diagonal position, the clip member 10, riding up on the rail flange, causes the crown 16 to bring considerable pressure to bear against the under side of the rail, thereby springing the yoke downwardly and effecting a very firm hold of said yoke, which distortion is possible owing to the fact that this form of yoke is preferably made of malleable iron, cast steel, or similar material having some ability to yield.

Before driving the yoke around to its extreme diagonal position on the rail, it is driven longitudinally of the rail toward the tie plate 1, until the projecting tongue of said plate enters the recessed or cut away portion and wedges itself firmly therein, under the rail. The yoke may now be firmly driven to its extreme diagonal position on the rail and made to ride down as far as possible on the beveled under surfaces 4 and 5 of the tongue 3. In this position, creeping of the rail will be prevented by the firm gripping or pinching of the jaws or clips 10 and 11 on the flanges of the rail, due to the driving fit and to the crown, movement of the yoke as a whole being prevented by the wedging connection under the rail, and movement of the tie plate as a whole being prevented by the downwardly extending arm 6 which abuts against the side of the tie, and by the spikes which take up part of the thrust. I do not desire, however to limit myself to this diagonal position for the yoke, as it may be otherwise located and otherwise sprung into place.

The tongue 3 is not wide enough to completely fill the recessed portion of the yoke 9 and maintains its hold thereon entirely through the frictional engagement of its under or wedging surfaces, which co-act with the beveled surfaces of the yoke. This

wedging engagement is effective preferably at one side of the center line of the tie plate as a whole, inasmuch as the projecting tongue 3 is located a little to one side of the center of the tie plate, as previously pointed out, and inasmuch as the recessed or cut away portion of the yoke 9 is also located a corresponding distance to one side of the middle of the yoke. As a result of the above off-set arrangement, any tendency of the rail to creep, after the parts are once in their assembled position, will cause said yoke to tend to twist or turn still farther with respect to the rail, thereby increasing its frictional hold thereon, by virtue of the driving fit of the jaws, and will also cause an increased wedging action under the rail. I do not limit myself to this twisting action however.

Owing to the fact that the jaws 10 and 11 have preferably a driving fit on the flanges of the rail, they will maintain their hold independently of the wedging action of the tongue 3, so that when the rail undergoes a rearward movement, as sometimes occurs, said yoke will be drawn back with the rail, but will maintain its hold on the flanges, so that upon a return forward movement of the rail, the yoke will again engage the tongue of the tie plate and prevent further creeping.

I desire not to limit myself to the form illustrated or to the details of construction shown and described, as it is obvious that other forms and other details may be devised which will embody the broad features of the invention and which will fall within the scope of the various appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is:—

1. A rail anchor comprising means for gripping the rail base and additional cooperating means co-acting with a tie to resist creeping, said cooperating means being held between said rail and said tie.

2. An anti-creeping device comprising means for frictionally engaging opposite flanges of a rail, additional means, under the rail, cooperating with said first means and with the side of an adjacent tie for resisting the creeping of said rail, said second means having a portion secured between said rail and said tie.

3. A rail anchor comprising means for gripping the rail base and means located between said rail and an adjacent tie, said second means having a wedging portion cooperating under the rail with said first means and having a downwardly extending portion adapted to engage the side of said tie.

4. An anti-creeping device comprising means for frictionally engaging the opposite flanges of a rail, and wedging means

under said rail coöperating with said first means and having a downwardly extending portion adapted to engage the side of a tie and having an additional portion extending
5 between said tie and said rail.

5. A combined tie plate and rail anchor comprising a plate located between the tie and the rail, and means for gripping the rail flanges, said plate having a portion coöperating directly with said means to prevent creeping.
10

6. A combined tie plate and rail anchor comprising a plate located between the tie and the rail and secured in place, and means
15 for frictionally gripping the rail flanges, said plate having a wedging portion coöperating with said means under the rail to prevent creeping.

7. A combined tie plate and rail anchor
20 comprising a plate located between the tie and the rail, and means for gripping the rail base, said plate having a tapering portion adapted to wedge said means to the rail and having also a projection for engaging the side of said tie.
25

8. A tie plate and rail anchor comprising a plate resting on a tie and supporting the rail, said plate having a tapering extension lying beneath the rail base and having also
30 positive means for engaging said tie, a yoke extending beneath the rail and having integral jaws adapted to grip the rail flanges, said yoke having a depressed portion adapted to coöperate with said tapering extension.
35

9. A rail anchor comprising a plate adapted to support a rail out of contact with a tie, said plate having downwardly extending means for engaging the side of said tie,
40 having also a tapering extension extending longitudinally of the rail, a yoke comprising an integral member having jaws for gripping the rail flanges and having a depressed portion with inclined surfaces corresponding to said tapering extension, said depressed portion being adapted to receive
45 said extension, whereby said yoke may be secured against longitudinal movement by the wedging action of said tapering extension beneath the rail.
50

10. A rail anchor consisting of two parts, one part adapted to act as a tie plate located between the rail and a tie, said part having
55 a downwardly extending shoulder for engagement with the side of said tie and hav-

ing also a projecting portion having under surfaces inclined both longitudinally and transversely, the other part comprising a yoke having integral jaws adapted to firmly grip the rail flanges, said yoke having its
60 upper portion cut away to match the double beveled under surface of said projecting portion, whereby longitudinal movement of said yoke and said rail is prevented by the wedging engagement of said coöperating
65 surfaces.

11. A rail anchor comprising a tie plate, a tapering portion integral with said tie plate but extending parallel with said rail at one side of the longitudinal axis thereof, means
70 adapted to grip the rail flanges and having a recessed portion at one side of the center thereof adapted to coöperate with said tapering portion to produce a wedging beneath the rail, whereby longitudinal movement of said rail tends to turn said yoke
75 with respect to said rail.

12. A tie plate having a rigid, tapering, wedging projection, extending substantially horizontally therefrom.
80

13. A tie plate having a wedge shaped element projecting therefrom in substantially the plane of said tie plate, and having also a downwardly extending arm.

14. A tie plate having a tapering portion
85 extending substantially at right angles thereto, and located at one side of the center line of the rail, a downwardly extending shoulder adapted to engage the side of a cross-tie, and a reinforcing flange integral
90 with said shoulder and said portion.

15. A rail anchor comprising a yoke having integral rail gripping jaws and having a cut-away portion at one side of the middle of said yoke, said cut-away portion having
95 a plurality of inclined faces.

16. A yoke for a rail anchor comprising a bar extending beneath a rail, integral jaws on said bar for gripping the rail flanges, said bar having a crowned portion for increasing the gripping of said jaws and having also a cut-away portion for coöperating with a wedge.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.
105

FREDERICK A. PRESTON.

Witnesses:

GEO. B. JONES,
E. R. KING.