E. W. VOGEL.

ANTICREEPER FOR RAILS.

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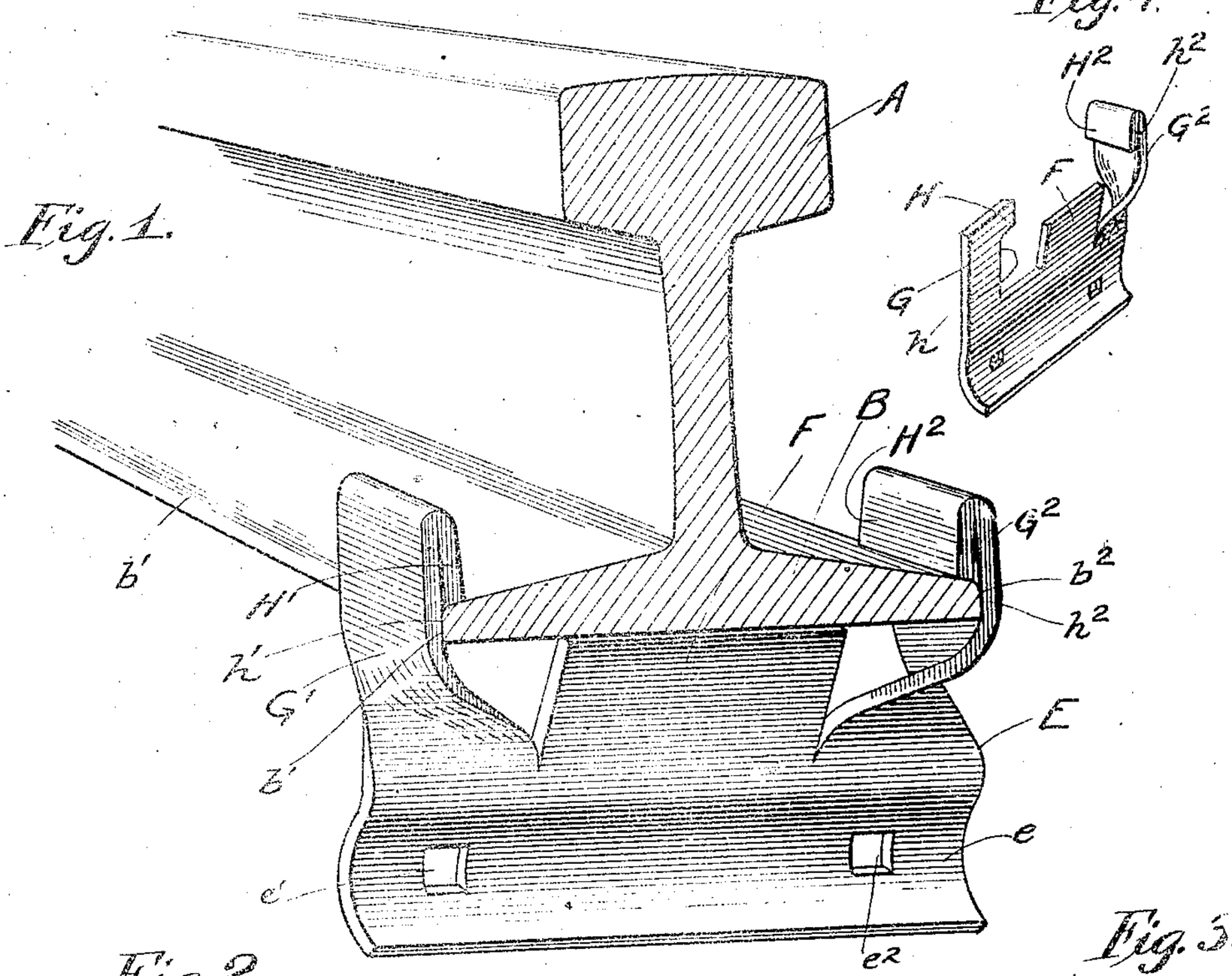
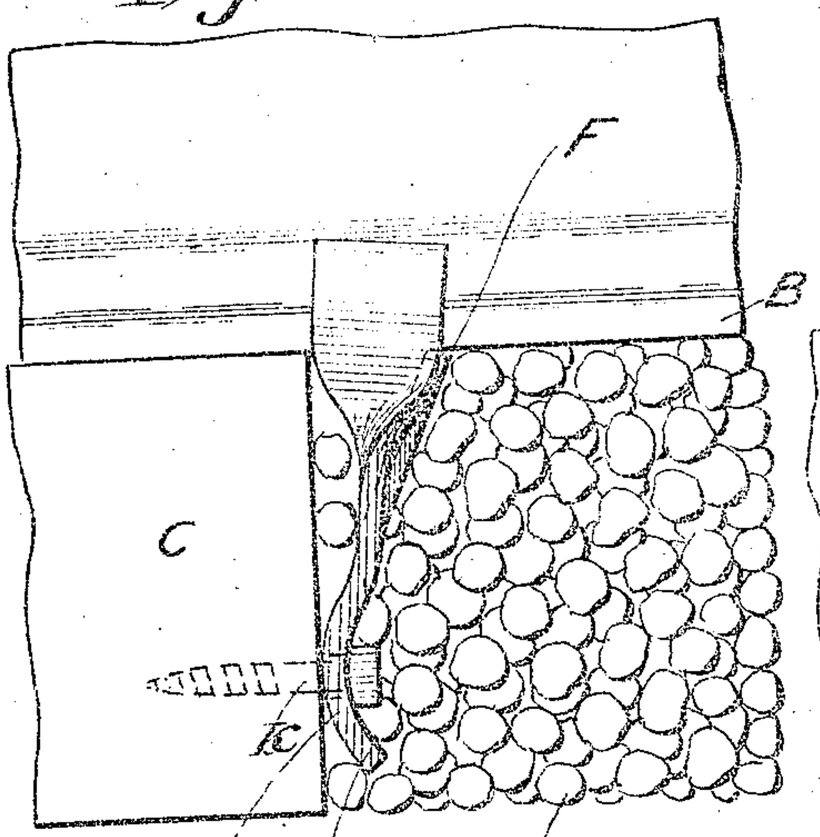


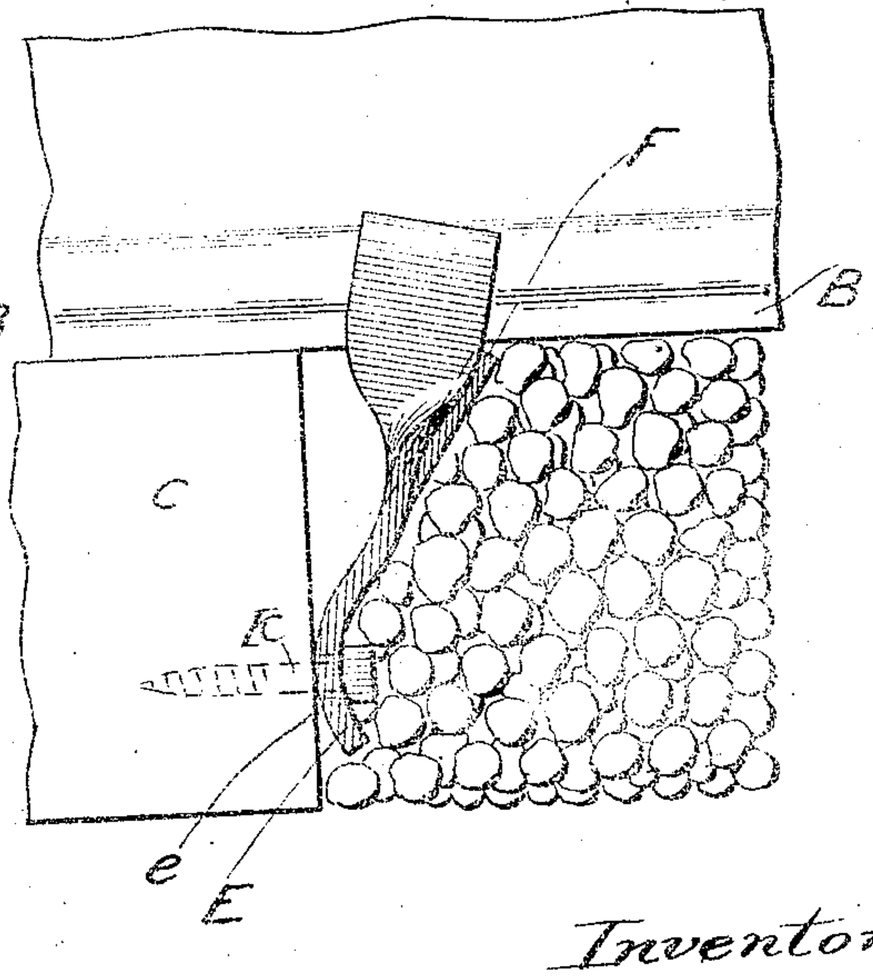
Fig. 1.

Fig. 4.

Fig. 2.

Fig. 3.





Witnesses:

C. C. Burnap

Henry A. Parker

Inventor:

Eugene W. Vogel

By Sheridan, Wilkinson & Scott, Att'ys

UNITED STATES PATENT OFFICE.

EUGENE W. VOGEL, OF CHICAGO, ILLINOIS, ASSIGNOR TO CHICAGO RAILWAY SIGNAL & SUPPLY CO., A CORPORATION OF ILLINOIS.

ANTICREEPER FOR RAILS.

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To all whom it may concern:

Be it known that I, EUGENE W. VOGEL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Anticreepers for Rails, of which the following is a specification.

My invention relates in general to means for preventing the creeping or longitudinal movement of railroad rails, and more particularly to improvements in devices known as anti-creepers, or rail anchors.

It is well known that the passage of trains over railway tracks tends to shift the rails longitudinally in the direction of the movement of the trains.—When the trains run in opposite directions on the same tracks the tendency of the rails to creep in one direction is compensated by their tendency to creep in the opposite direction, but when the trains run only in one direction, as is the case with double track roads, the creeping or shifting of the rails is so considerable as to be dangerous unless prevented.

Anti-creepers are primarily for use on double track railroads, in which their principal function is to prevent creeping in one direction only. It however frequently happens that there is sufficient traffic even on double track roads in a direction opposite to the normal traffic to produce a creeping in a reverse direction to that resisted by the anti-creepers. Such reverse creeping, as well as the contracting of the rails in cold weather, tends to disengage the anti-creepers from their locked relation between the rails and adjacent tie, so that when traffic is resumed in the normal direction the anti-creepers are ineffective to prevent creeping. It is therefore desirable that an anti-creeper should be so constructed, and have such an engagement with the rail, that it will prevent creeping in the normal direction after the rail has crept in a direction reverse to that of the normal, or after contraction of the rail has occurred.

The primary object of my invention is to provide an anti-creeper, or rail anchor, which when applied will effectively resist the creeping tendency of the rails; and which will be simple in construction, inexpensive in manufacture, and durable in use.

A further object of my invention is to provide a rail anchor the effectiveness of which to prevent creeping of a rail in one direction will not be impaired by the creeping of the rail in a reverse direction, but which during the creeping of the rail in the reverse direction will remain in such relation to the tie and rail that it will immediately prevent creeping when traffic is resumed in the normal direction, or after the rail has contracted.

A still further object of my invention is to provide a rail anchor which will resiliently grip a rail transversely of its base, so that any tendency of the gripping portion of the rail to creep toward an adjacent tie will oscillate the anchor about its fulcrum against the tie and cause the anchor to rigidly grip the rail and prevent its movement toward the tie.

A still further object of my invention is to provide a rail anchor formed of a single piece of plate metal, such as heat-treated steel, which will under all conditions rigidly lock a rail against creeping toward an adjacent tie.

My invention will be more fully disclosed hereinafter with reference to the accompanying drawings, in which the same is illustrated as embodied in a convenient and practical form, and, in which,—

Figure 1 is a perspective view of my improved anchor in position upon a rail; Fig. 2 is a side elevational view, the portions of the rail, tie, and ballast adjacent the anti-creeper being shown; Fig. 3 is a view similar to Fig. 2 showing the position of the anchor after the rail has crept in a reverse direction either by traffic in the opposite direction, or by contraction of the rail; and Fig. 4 is a perspective view of a modified embodiment of my invention.

Similar reference characters are used to designate similar parts in the several figures of the drawings.

Reference letter A indicates a railroad rail, and B the base thereof.

C is a tie upon which the rail is supported.

D indicates the ballast in which the ties are embedded.

E designates my improved rail anchor which is preferably made of a single piece of plate metal, such for instance as heat-treated steel.

e designates the lower portion of the anti-creeper, which is preferably convex toward the adjacent tie, so that the tie will not be injured by the forcible engagement therewith of the anti-creeper. Projecting upwardly from the tie-abutting portion *e* is a member F, which engages the under-surface of the base of the rail. The member F inclines upwardly away from the adjacent tie C.

G^1 and G^2 designate a pair of members projecting upwardly from the tie-abutting portion *e*, the members of such pair being spaced apart so that the base B of the rail may be received between them. The members G^1 and G^2 are formed by bending or twisting the portions of the metal on the opposite sides of the central member F into planes at right angles to the plane of the tie-abutting portion *e*, so that the portions of the members G^1 and G^2 which engage the opposite sides of the rail base extend in planes parallel to the side edges of the rail base. The upper ends of the members G^1 and G^2 are bent downwardly and inwardly to form flanges H^1 and H^2 which overlie the upper surfaces of the rail base adjacent the side edges thereof. The inner surfaces of the members G^1 and G^2, immediately below the flanges H^1 and H^2, are preferably substantially vertical, as indicated at h^1 and h^2, so as to engage the vertical edges b^1 and b^2 of the rail base throughout the height of such edges. The distance between the portions h^1 and h^2, when the anti-creeper is disengaged from the rail base, is slightly less than the transverse width of the rail base, so that when the anti-creeper is engaged with the rail, the rail base will be resiliently gripped in a transverse plane.

The manner of applying and the operation of my improved rail anti-creeper are as follows: The device is placed beneath the base of a rail adjacent a tie, with the flanges H^1 and H^2 immediately beneath and in engagement with the opposite side edges of the rail base. The device is then forced upwardly so that the members G^1 and G^2 are sprung apart sufficiently to permit the flanges H^1 and H^2 to pass upwardly above the side edges of the rail base. Immediately upon the anti-creeper being forced upwardly relatively to the rail a sufficient distance, the flanges H^1 and H^2 spring inwardly so as to overlie the upper surfaces of the rail base adjacent the side edges thereof and permit the portions h^1 and h^2 of the members G^1 and G^2 to resiliently grip the vertical edges of the rail base. The engagement of the anti-creeper with the rail base may also be effected by placing the anti-creeper beneath the rail base in a substantially horizontal position, by first engaging one of the flanges H^1 and H^2 with the corresponding side of the rail base, and then tilting the anti-creeper so as to force the opposite flange around the adjacent side of the rail base. After the anti-creeper has been engaged with the rail base, it is forced toward the adjacent tie until the transverse tie-abutting member *e* thereof bears against the vertical surface of the tie, and until the upper edge of the central member F tightly engages the undersurface of the rail base, and the lower edges of the flanges H^1 and H^2 are drawn downwardly into gripping contact with the upper surfaces of the rail base adjacent the side edges thereof.

Any tendency of the rail to creep toward the tie imparts a corresponding tendency to rock the anti-creeper about the tie as a fulcrum, through the engagement of the transverse member *e* with the vertical surfaces of the tie. Such tendency of the anti-creeper to rock causes the upper edge of the central member F to more tightly grip the under surfaces of the rail base, and the lower edges of the flanges H^1 and H^2 to be forced downwardly into tighter gripping engagement with the upper surfaces of the rail base. Any tendency, therefore, of the rail to creep toward the tie results in the anti-creeper being more tightly clamped to the rail base, and hence more forcibly resisting the movement of the rail toward the tie. The gripping engagement of the anchor with the rail base is increased by reason of the inclination of the central member F away from the tie, so that the plane of the upper edge of such central member will be at an angle to the plane of the under surfaces of the base, and hence the angular edge of the central member F is forced against the under surfaces of the rail base.

After the anchor has been properly adjusted to the rail base and to the tie, the ballast D is packed around the same, and prevents the movement of the anchor away from the tie should the rail tend to creep in a reverse direction, either through contraction or through traffic in a direction opposite to the normal. The transverse resilient gripping of the rail between the members G^1 and G^2 results in the anchor slightly rocking about its fulcrum upon the tie, and becoming slightly more inclined than normal away from the tie, as indicated in Fig. 3. Such oscillation of the anchor releases the gripping of the base between the upper edge of the central member F and the lower edges of the lugs H^1 and H^2, so that the rail may move relatively to the anchor in a direction away from the tie, the embedding of the anchor in the ballast being sufficient to overcome the resilient engagement of the members G^1 and G^2 with the side edges of the rail base. Immediately upon the rail creeping in its normal direction, due to the resumption of traffic in the normal direction, or to the expansion of the rail, the resilient

transverse gripping of the rail base insures the anchor being oscillated toward the tie, to the position shown in Fig. 2, in which the upper edge of the central member F and the lower edges of the lugs H^1 and H^2 are again brought into tightly gripping engagement with the rail base.

In Fig. 4 I have shown a modified form of my invention, in which only one of the pair of members which grip the sides of the rail base is twisted or bent into a plane at right angle to the plane of the tie-abutting portion, the other member of said pair extending in the same transverse plane as the tie-abutting member. In Fig. 4, G^2 designates the member which has been twisted so as to extend in a plane parallel to that of the rail base, while G designates the other member of the pair which projects transverse of the rail base. The member G is provided with an upwardly projecting lug H at its upper end, which overlies the upper surface of the rail base. A substantially vertical portion *h* is provided immediately below the lug H, which engages the adjacent vertical edge of the rail base. The operation of the modified form of my invention shown in Fig. 4 is similar to that above described in connection with the form of my device shown in Figs. 1, 2 and 3. In applying the form of my invention shown in Fig. 4, to the rail, the member G is preferably first engaged with the rail base, and the device then oscillated so that the flange H^2 of the other member G^2 will be forced around the adjacent side of the rail base so as to overlie the upper surface thereof.

If desired, the tie abutting member *e* may be provided with one or more holes *e'* or e^2 through which spikes K may be driven into the adjacent surface of the tie in order that the rail anchor may at all times be retained against the tie in position to be rocked relatively thereto by the creeping of the rail toward the tie.

From the foregoing description it will be observed that I have invented an improved rail anchor which is exceedingly simple in construction and easy of application, and which will at all times prevent the creeping of a rail in a given direction, and will not be rendered ineffective to prevent creeping of the rail in such direction even though the rail may temporarily creep in an opposite direction.

While I have described more or less in detail the specific embodiment of my invention herein illustrated and described, it will be understood that I do not intend to be limited thereto, as I contemplate changes in form, the proportion of parts, and the substitution of equivalents as occasion may require, or as may be deemed expedient.

I claim:—

1. A rail anchor comprising a member to engage a tie, a pair of members projecting upwardly from said tie-engaging member to extend around and transversely grip the base of a rail, one member of said pair having its greatest dimension extending longitudinally of the rail base, and a member projecting upwardly from said tie-engaging member intermediate of and disconnected from the members of said pair to engage the under surface of the rail base at a point farther from the engaged tie than the engagement of said pair of members with the rail base.

2. A rail anchor comprising a member to engage a tie, a pair of members projecting upwardly from said tie-engaging member to resiliently grip in a transverse direction the opposite sides of the base of a rail and having inwardly projecting flanges overlying the rail base, the greatest dimension of one member of said pair extending longitudinally of the rail base, and a member projecting upwardly in an inclined direction from said tie-engaging member intermediate of the connections therewith of the members of said pair to engage the under surface of the rail base at a point farther from the engaged tie than the engagement of said flanges with the rail.

3. A rail anchor comprising a fulcrum member to bear against a tie, a pair of spaced members directly secured to and projecting upwardly from said fulcrum member to engage the opposite sides of the rail base, the greatest dimension of the members of said pair extending longitudinally of the rail base, and a member projecting upwardly from said fulcrum member intermediate of and spaced apart from the members of said pair to engage the under surface of the rail base.

4. A rail anchor comprising a fulcrum member to bear against a tie, a pair of spaced resilient members projecting upwardly from said fulcrum member to transversely grip and extend over the opposite sides of the base of a rail, the portions of said pair of members which engage the rail base projecting in planes parallel to the edges of the rail base, and a member projecting upwardly from said fulcrum member intermediate of the members of said pair and in an inclined direction away from the tie into engagement with the under surface of the rail base.

5. A rail anchor formed of a single piece of plate metal and comprising a pair of transversely resilient members to engage the opposite sides of a rail base, the plane of one member of said pair extending longitudinally with respect to the side edges of the rail base, a tie-abutting member at the lower ends of said pair of members, and a central member projecting upwardly in an inclined direction from said tie-abutting

member intermediate of and disconnected from the members of said pair, with its upper edge engaging the under surface of the rail base at a point farther from the tie than the engagement of said pair of members with the rail base.

6. A rail anchor formed of a single piece of plate metal and comprising a transverse tie-abutting member, a pair of transversely resilient members extending upwardly from said tie-abutting member in planes at right angle to the plane of said tie-abutting member and resiliently engaging the opposite sides of a rail base, and a central member extending upwardly from said tie-abutting member intermediate of the resilient members of said pair and engaging at its upper edge the under surface of the rail base.

7. The combination with a railroad rail, of a tie supporting said rail, an anti-creeping device having members gripping the rail and a fulcrum member bearing against the tie, and means for pivotally securing the fulcrum member of said device to the tie.

8. The combination with a railroad rail, of a tie supporting said rail, an anti-creeping device comprising a fulcrum member bearing against the tie, a pair of spaced members directly secured to and projecting upwardly from said fulcrum member to engage the upper surface of the rail base at opposite sides thereof, and a member projecting upwardly from said fulcrum member intermediate of and disconnected from the members of said pair to engage the under surface of the rail base, and means for retaining said fulcrum member in operative relation to the tie.

In testimony whereof I have subscribed my name.

EUGENE W. VOGEL.

Witnesses:

GEO. L. WILKINSON,

HENRY A. PARKS.