E. W. VOGEL.

ANTICREEPER FOR RAILS.

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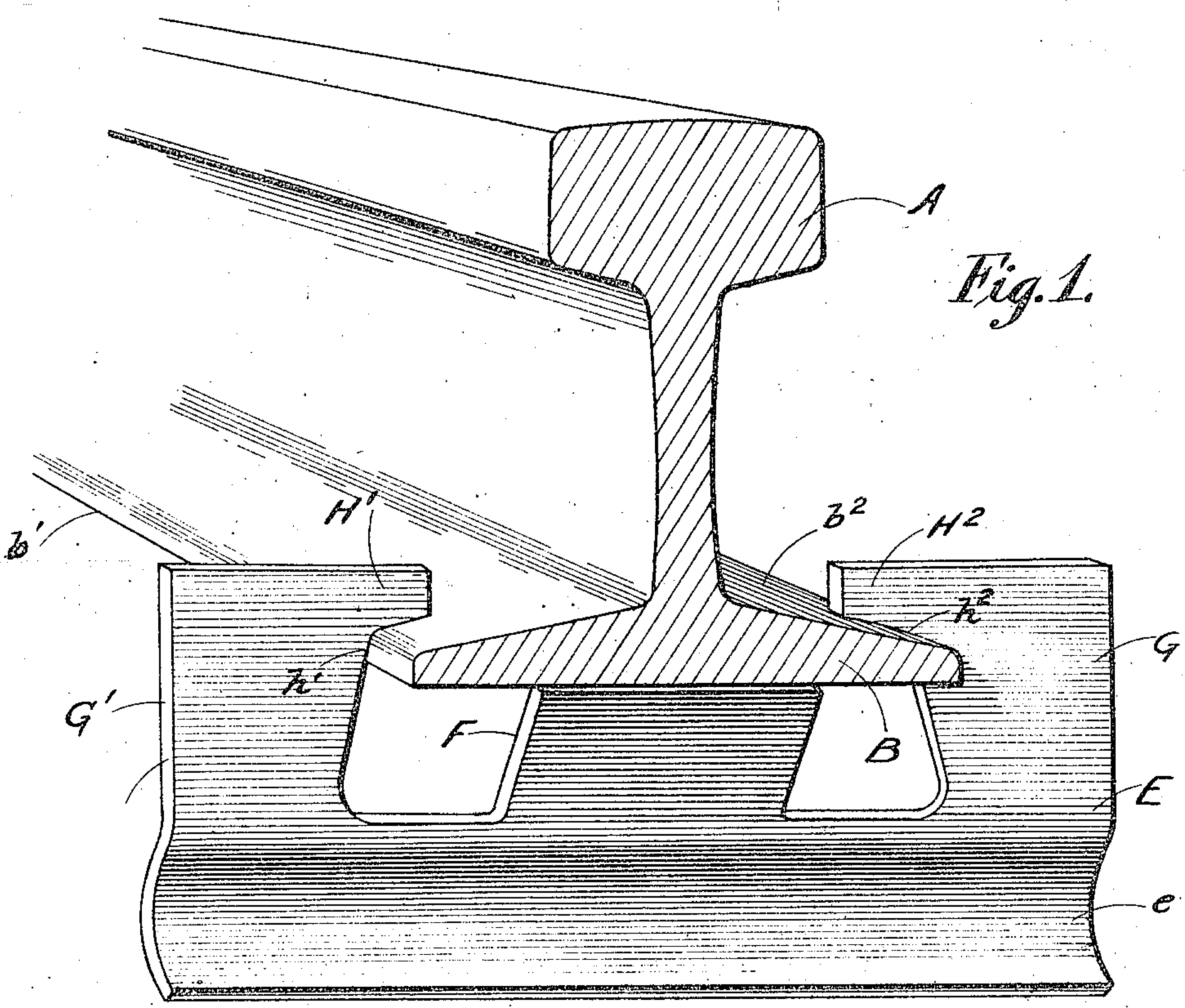

Fig. 1.

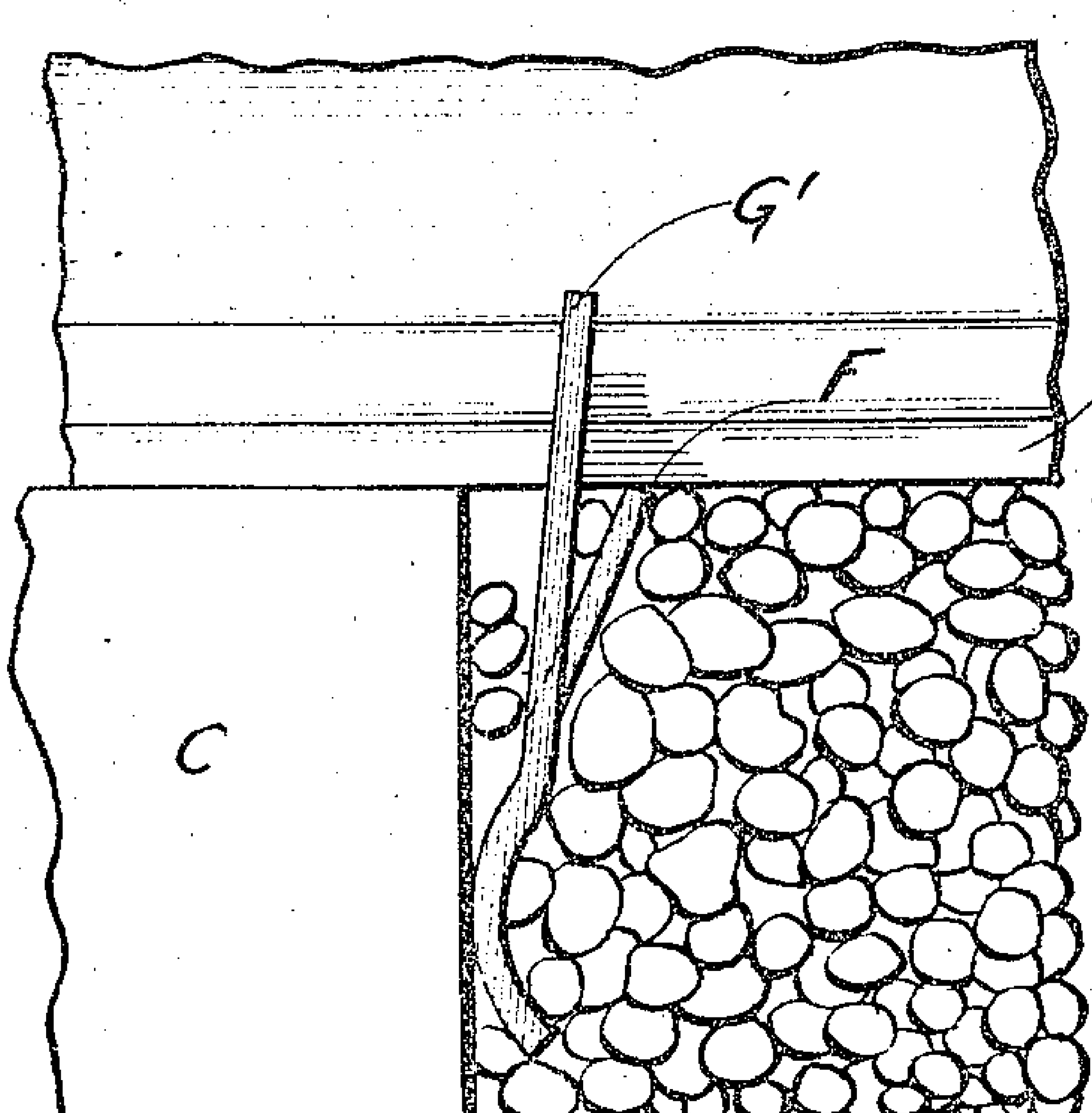

Fig. 2.

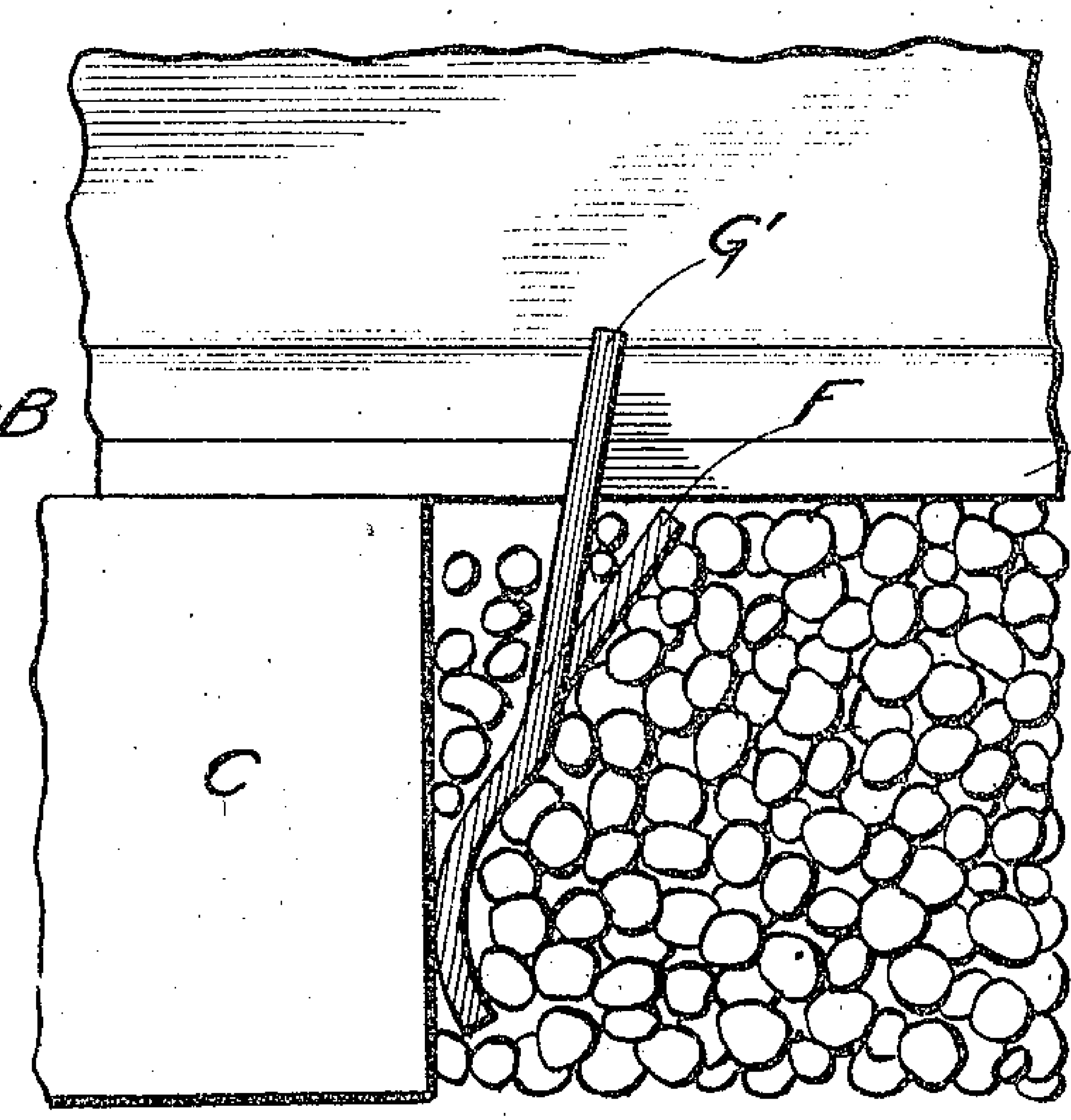

Fig. 3.

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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; and 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 trafic in the opposite direction, or by contraction of the rail.

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 provided with inwardly extending lugs H^1 and H^2 at their upper ends which overlie the upper surface of the rail base adjacent the side edges thereof. The inner surfaces of the members G^1 and G^2, immediately below the lugs H^1 and H^2, are 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 on the members G^1 and G^2 is slightly less than the transverse width of the rail base, so that when the anchor is in position they will resiliently grip the rail base in a transverse plane.

It will be observed from reference to Fig. 2 that the members G^1 and G^2 slightly incline upwardly away from the adjacent tie C, not however to the same extent as does the central member F.

The manner of applying and the operation of my improved rail anchor are as follows: The device is placed in a substantially horizontal position below the rail base adjacent a tie, the ballast being removed sufficiently for this purpose. The device is then moved laterally, so that one of the projecting lugs H^1 or H^2 overlies the adjacent side of the rail base. The space between the lower portions of the inner surfaces of the members G^1 and G^2 is sufficiently wide so that after one of the lugs H^1 or H^2 has been engaged with the adjacent side of the rail base, the anchor may be moved relatively to the rail base in a direction to permit the other inwardly projecting lug H^1 or H^2 to overlie the adjacent side of the rail base. The anchor is then oscillated so as to assume a position substantially as indicated in Fig. 3 in which the members G^1 and G^2 have been drawn downwardly relative to the rail base into such position that the portions h^1 and h^2 on the inner edges of the members G^1 and G^2 will resiliently grip the base of the rail in a transverse direction. The anchor is then driven toward the adjacent tie until the tie-abutting member *e* rests against the vertical surface of the tie and serves as a fulcrum about which the anchor is oscillated toward the tie a sufficient distance for the upper edge of the central member F to tightly press against the under-surface of the rail base.

Any tendency of the rail to creep toward the tie C imparts a corresponding tendency to rock the anchor about its fulcrum against the tie. Such tendency of the anchor to rock causes the upper edge of the central member F to more tightly grip the under-surface of the rail base, and the lower edges of the lugs H^1 and H^2 to be forced downwardly into tighter gripping engagement with the upper surfaces adjacent the sides of the rail base. Any tendency, therefore, of the rail to creep toward the tie results in the anchor being more tightly clamped to the rail base, and hence more forcibly resists 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-surface of the base, and hence an angular edge on the central member F is forced against the under-surface of the rail base. The inclination of the pair of members G^1 and G^2 away from the tie also results in the lower surfaces of the lugs H^1 and H^2 presenting angular edges to the surfaces of the rail base which they engage. The resilient gripping of the rail base transversely by reason of the distance between the portions h^1 and h^2 on the inner surfaces of the members G^1 and G^2 being spaced apart a distance slightly less than the transverse width of the rail base, insures the oscillation of the anchor toward the tie when the rail tends to creep in that direction.

After the anchor has been properly adjusted to the rail base and the tie, the ballast D is then 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.

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 to resiliently grip in a transverse direction the opposite sides of the base of a rail and having inwardly projecting lugs overlying the rail base, and a member to engage the undersurface of the rail base at a point farther from the engaged tie than the engagement of said lugs with the rail base.

2. 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, a tie-abutting member, and a central member 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.

3. An integral rail anchor formed of a single piece of plate metal and comprising a tie-abutting member, a pair of spaced members directly secured to and projecting upwardly from the opposite ends of said tie-abutting member to extend around the opposite side edges of the rail base, and a central member projecting upwardly from said tie-abutting member and directly secured thereto intermediate of the connections therewith of the members of said pair to engage the undersurface of the rail base at a point farther from the tie than the engagement of said pair of members with the rail base.

4. A rail anchor formed of a single piece of plate metal and comprising a tie-abutting member, a pair of spaced members projecting upwardly directly from the opposite ends of said tie-abutting member to extend around the opposite side edges of the rail base, and a central member projecting upwardly from said tie-abutting member intermediate of and in an inclined direction with respect to the members of said pair, the upper horizontal edge of said central member being adapted to engage the base of the rail in a transverse plane farther from the tie than the plane of engagement of said pair of members with the rail base.

In testimony whereof, I have subscribed my name.

EUGENE W. VOGEL.

Witnesses:
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