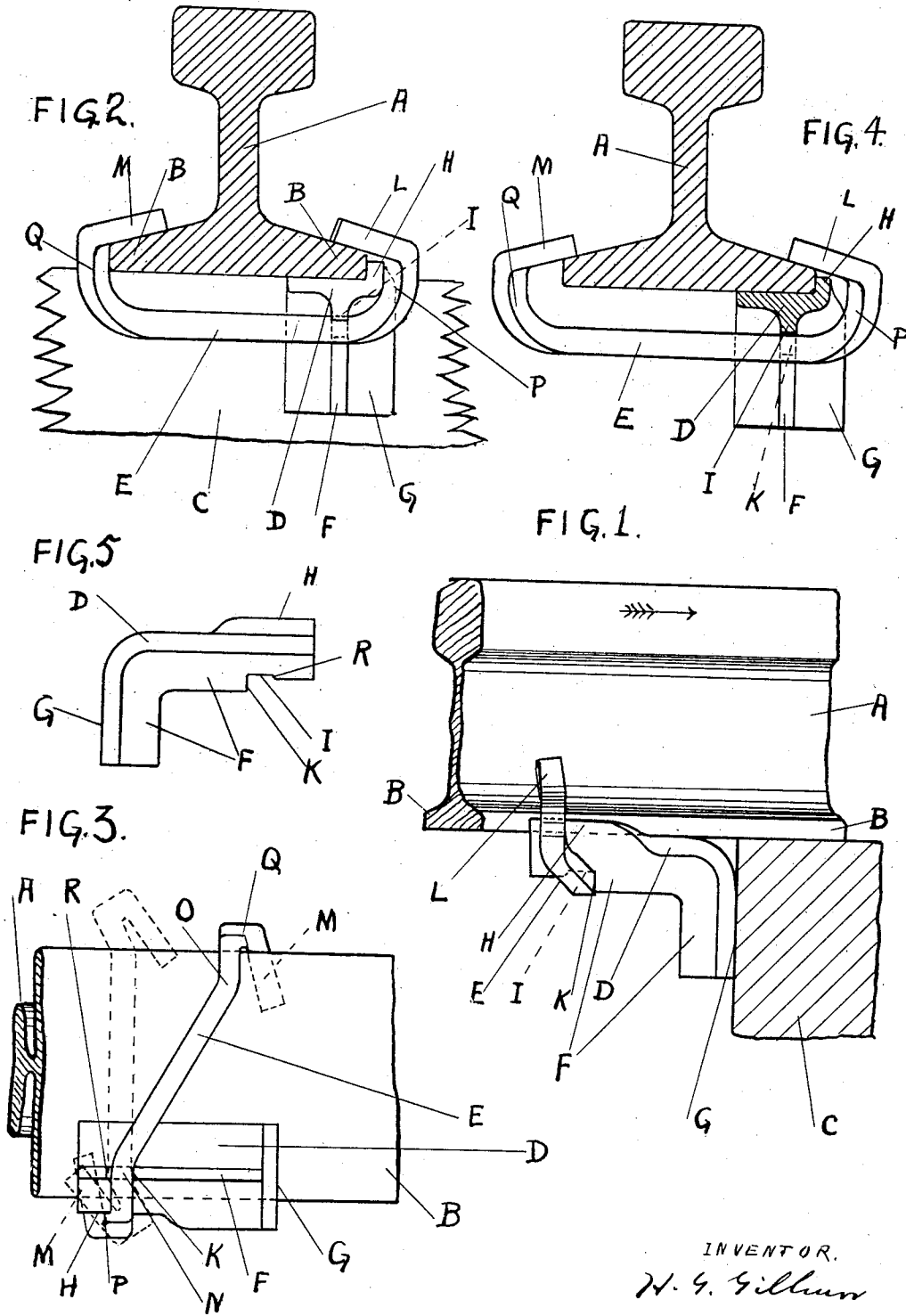


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RAIL ANCHOR.

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To all whom it may concern:

Be it known that I, HORATIO G. GILLMOR, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Rail-Anchors, of which the following is a specification.

My invention relates to a device for preventing the longitudinal creeping of the rails of railways. Such devices are commonly called rail anchors, rail stays or anti-creepers. The invention relates particularly to a device in two parts in which one of the elements is a shoe pressing against the rail bottom and the other resilient and strained when the device is applied to the rail so that retrograde movement of the rail, vibration or other accidental cause would not loosen the grip of the device upon the rail and thus diminish its holding power.

The primary object of my invention is to provide a rail anchor comprising a plurality of co-engaging elements which together grip the rail and are so constructed and arranged that forward or creeping movement of the rail produces the co-action of the elements whereby the tendency of the rail to creep is self-checked, one of the elements being subjected to opposing torsional forces, whereby the grip of the device upon the rail is affected.

A further object of the invention is to provide a rail anchor of the type in which a rail base engaging shoe is held to and pressed upon the rail base by a transverse bar which is reversible and may be applied with either end engaging the rail base engaging shoe. Reversibility of the transverse bar in a device of this character is an advantage in that it simplifies the application of the device to the rail and reduces the possibility of incorrectly applying the device.

A further object of the invention is to provide a rail anchor which will be inexpensive to manufacture, strong and durable and at the same time light in weight. Weight is an important consideration both in the cost of manufacture and the cost of transportation.

The invention is illustrated in one em-

bodiment in the accompanying drawings in which:

Figure 1 is a side elevation showing the device in operative position upon the rail a portion of which and a cross section of a tie are shown.

Fig. 2 is an elevation showing the rail in cross section.

Fig. 3 is a plan view of the device in operative position upon the rail, viewed from below the rail bottom looking up, and showing in dotted lines one position assumed by the transverse element while being applied to the rail.

Fig. 4 is an elevation, showing one of the positions assumed by the parts while the device is being applied to the rail, the rail being shown in section.

Fig. 5 is a side elevation of the rail base engaging shoe.

Like characters of reference designate like parts in the several figures of the drawing.

Referring to the drawing, A designates a railroad rail having a base flange B resting upon and supported by cross ties, one of which is designated by C.

The rail anchor illustrated consists of two co-engaging elements, a tie abutting rail base engaging element or shoe D and a transverse element or yoke E.

The tie abutting rail base engaging element or shoe D may be formed from a rolled T shaped bar having a rib F. This bar cut to suitable length has one end turned to form the tie abutting portion G. A portion of one edge of the body of the bar is flanged as at H to form a shoulder adapted to engage one vertical edge of the rail base B. A portion of the rib F is cut away near one end of the shoe D so as to form the seat I and a shoulder or face K and a shallow shoulder R.

The transverse element or yoke E is adapted to extend around the base of the rail and has an arm or jaw L adapted to engage the upper surface of the rail base B at one side of the rail and a like arm M adapted to engage the upper surface of the rail base B at the other side of the rail. The two ends of the transverse element or yoke

E are alike so that the device may be applied with either end engaging the shoe D. The arms L and M are at an angle to the body of the transverse element or yoke E and the transverse body portion of the yoke E is bent at N and at O so as to form portions either of which is adapted to engage with the shoulder K on the shoe D. In the drawing, Fig. 3, the shoulder N is shown so engaged with the shoulder K of the shoe D.

In applying the device to the rail one arm either L or M is hooked over the rail base and the yoke E is moved transversely until the other arm may be brought into engagement with the top of the rail base at the opposite side of the rail. The position of the yoke will then be about as indicated by the dotted lines in Fig. 3. With the yoke in this position the shoe D is placed with the shoulder K engaging the portion N of the yoke E and the yoke and shoe move forward (that is in the direction indicated by the arrow in Fig. 1) until the tie engaging portion G of the shoe D is in engagement with the face of the tie C, and will occupy about the positions shown in Fig. 4. The parts, when in this position in relation the one to the other are loose so that they may be readily moved upon the rail. With the shoe held up against the rail base by the person making the application of the device, the yoke E will be out of engagement with the seat I as illustrated in Fig. 4. The yoke E is then moved transversely and angularly upon the rail so that the portion P of the yoke E is brought into contact with the portion H of the shoe D and the arms L and M of the yoke E are moved upon the rail base. The angular movement of the yoke E brings the arms L and M to higher positions upon the top of the rail base B and causes the yoke E to be drawn vertically. This movement brings the body of the yoke E into contact with the seat I upon the shoe D and further angular movement of the yoke E upon the rail base sets up opposing torsional forces which act upon the yoke E and cause the yoke E to exert a strong vertical pressure of the yoke E upon the shoe D, causing the shoe D to press upwardly upon the rail base B and the arms L and M of the yoke E to press downwardly upon the upper surface of the rail base B. The yoke E and shoe D thus co-act to exert strong vertical gripping pressures upon the rail base B. The angular movement of the yoke E upon the rail base also causes the yoke E, the portion P of which is engaging the portion H of the shoe D, to exert a pull transverse to the rail whereby the portion H of the shoe D is caused to press strongly against the vertical edge of the rail base. It will thus be seen that the rail base B is firmly gripped both transversely and vertically between the yoke

E and shoe D when the parts are in the operative position shown in Figs. 1, 2 and 3. The angular movement of the yoke E necessary to the tightening of the parts upon the rail may be effected by driving the portion Q of the yoke E forward with a maul or some other suitable instrument.

It will readily be understood that if, with the parts in the operative position, shown in Figs. 1, 2 and 3, there should be any tendency of the rail to move forward it will be resisted by the tie which is in engagement with the tie engaging portion G of the shoe D. Generally the forced angular movement of the yoke E in applying the device will have produced such gripping of the rail as will effectually prevent forward movement of the rail under creeping stresses. Should this, however, not be the case, it will readily be understood that if creeping movement occurs the arm M of the yoke E will be carried forward with the rail so that further angular movement of the yoke E will be produced, and this further angular movement will automatically increase both the transverse and the vertical gripping pressure exerted by the yoke E and the shoe D upon the rail base, so that the creeping movement will thus be self-checked.

The yoke E is resilient and strained during the application of the device being subject both to torsional strain and to vertical bending strain. It will thus be evident that should there be any reverse or backward movement of the rail the parts will be carried with the rail and the tie abutting portion G of the shoe D will be drawn away from engagement with the face of the tie C. If, during such reverse or backward movement of the rail the tie engaging portion G of the shoe D should be held, as for example by being frozen in the ballast, the shoulder R upon the shoe D will effectually hold the shoe D and the yoke E so as to prevent such movement of the shoe D with relation to the yoke E as would result in disengagement of the parts and the resiliency of the yoke E will prevent the gripping pressures of the parts upon the rail base for being affected by such reverse movement. The resiliency of the yoke will likewise prevent any loosening of the parts upon the rail base by reason of vibration of the rails or any of the other accidental causes tending ordinarily to produce loosening of devices of this character upon the rail.

While I have shown and described the invention in one embodiment, modifications might be made without departure from the principles of the invention, therefore, I do not wish to be understood as limiting the invention to the particular construction, arrangement and devices shown and described except so far as these limitations are spe-

cifically set forth in certain of the claims herein.

I claim and desire to secure by Letters Patent:

- 5 1. An anticreeper, comprising a rail base engaging shoe and a transverse bar held in engagement with and pressed up against said shoe by the vertical resultant of torsional stresses.
- 10 2. A shoe for rail anchors, formed from a T shaped rolled bar, one end of which is bent to form a tie engaging portion.
3. A rail base engaging element for rail anchors formed from a T shaped rolled bar having one edge of the body thereof flanged to form a rail base edge engaging portion and one end of said bar bent to form a tie engaging portion.
4. An anticreeper for rails, comprising a rail bottom engaging part provided with a bearing seat and with means for giving said part a fixed position in the road-bed in opposition to the tendency of the rail to creep and a yoke engaging said bottom engaging part beneath the rail base and having terminal gripping jaws formed on said yoke for holding said part to the rail base, said yoke being adapted to be moved angularly upon the rail after being applied thereto whereby the said bottom engaging part is pressed upwardly against the rail bottom.
5. A rail stay, comprising two co-engaging rail clamping elements, one of which is adapted to bear against the tie and the other to be free therefrom; said elements being constructed so that they have pivotal engagement one with the other and that when the free member is moved angularly in relation to the rail the rail base is gripped both transversely and vertically between the said rail clamping elements.
6. A rail anchor, comprising a rail bottom engaging shoe and a member bent to form a body portion adapted to engage said shoe and end arms for engaging the top surfaces of the rail base on either side of the rail, whereby to secure said rail anchor to the rail base, the said shoe and the said member cooperating to grip the rail base between them when said member is forcibly moved angularly upon the rail base.
7. A rail anchor, comprising two co-engaging rail clamping elements, one of which is adapted to bear against the tie and the other to be free therefrom; said elements being constructed so that they have pivotal engagement with each other and that they exert both vertical and transverse gripping pressure upon the rail base when one of said elements is moved angularly in relation to the other of said elements and the rail base.
8. A rail anchor, comprising a rail embracing element extending around the base of the rail and a rail base engaging member which intervenes between the bottom on one side of the rail base and said rail embracing element and is pressed vertically and transversely against the rail base when said element is moved angularly in relation to the rail base and said member.
9. A rail anchor, comprising a rail embracing element extending around the base of the rail and a rail base engaging member having a tie abutting portion, said member engaging said rail embracing element underneath and at one side of the rail base and being pressed transversely and vertically against the rail base when said element is forcibly moved angularly in relation to the rail base.
10. A rail anchor, comprising a rail embracing element extending around the base of the rail and a rail base engaging shoe which lies under the base of the rail and between one end of said rail embracing element and the side of the rail base and is held rigidly against the bottom and one side of the rail base by forces set up when said rail embracing element is moved angularly upon the rail base.
11. An anticreeper, comprising a rail embracing element extending around the base of the rail and a member having a tie engaging portion which member intervenes between one side and the bottom of the rail base and said rail embracing element and is pressed up against the bottom of the rail base by forces set up when said rail embracing element is forcibly moved angularly upon the rail base.
12. An anti-creeper, comprising two co-engaging, rail-clamping elements, one of which is adapted to bear against a tie on one side of the rail base and one of which is a reversible crossbar, either end of which may engage the rail base and the tie-engaging element.
13. A rail anchor, comprising a yoke member adapted to extend around the base of the rail, and a shoe provided with a tie engaging portion, adapted to be embraced between said yoke and the rail base and to be pressed up against the bottom of the rail base when said yoke is forcibly moved angularly upon the rail base.
14. A rail anchor, comprising a reversible yoke member adapted to extend around the base of the rail and a shoe provided with a tie engaging portion adapted to be embraced by said yoke and to be pressed up against the bottom of the rail base when said yoke member is forcibly moved angularly upon the rail.
15. An anticreeper, comprising a rail base engaging shoe adapted to engage one side of the rail base and a reversible cross bar, either end of which may be engaged with said shoe, so engaging the said shoe and the rail base that angular movement of said cross bar in relation to the rail base and

said shoe will affect the gripping action of the device.

16. A rail anchor, comprising a yoke, and a shoe formed from a T shaped rolled bar bent to form a tie abutting flange, embraced by said yoke and pressed up against the rail base by the upward resultant of torsional stresses.

17. A rail anchor, comprising a rail base engaging shoe, a transverse bar held in engagement with and pressed up against said shoe by the vertical resultant of torsional stresses and means for giving one end of said bar a fixed position in the road-bed and for maintaining the other end thereof in spaced relation to a tie.

18. A rail anchor, comprising a rail base engaging shoe having a seat on the under side thereof and a tie abutting flange and a yoke having a portion arranged to bear upon said shoe underneath the rail base and a pair of terminal jaws adapted to rigidly engage the top of the rail base when said yoke is forcibly moved angularly upon the rail base to affect the gripping action.

19. A rail anchor, comprising a member formed from a T shaped rolled bar flanged to engage one side of the rail base and bent to provide a tie engaging flange, and a yoke adapted to extend around the base flange of the rail and said member so as to press said member up against the bottom and transversely against the side of the base of the rail.

20. An anticreeper, comprising a member

formed from a T shaped rolled bar having one end bent to form a tie engaging portion, and a yoke adapted to extend around the base flange of the rail and said member so as to press said member up against the bottom of the base flange of the rail.

21. A rail anchor, comprising a member adapted to engage the bottom of the rail base and provided with a tie engaging flange and a bearing seat, and a yoke adapted to extend around the base flange of the rail and said member so as to press said member up against the bottom of the rail base, said member and said yoke so engaging the one with the other that longitudinal movement of the rail in relation to said member will produce angular movement of said yoke about a vertical axis and thereby automatically increase the grip of the device upon the rail.

22. An anticreeper, comprising a shoe engaging the bottom and one side of the rail base and provided with a bearing seat and a tie engaging portion, and a yoke embracing the rail base and said shoe and pressing said shoe up against the bottom and transversely against the side of the rail base, said rail and said shoe so engaging the one with the other that longitudinal movement of the rail in relation to said shoe will produce angular movement of said yoke about a vertical axis and therefore increase the gripping action of the device upon the rail base.

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