F. A. POOR.

RAIL ANCHOR.

APPLICATION FILED MAY 20, 1919.

1,357,419. Patented Nov. 2, 1920.

3 SHEETS—SHEET 1.

Fig. 1.

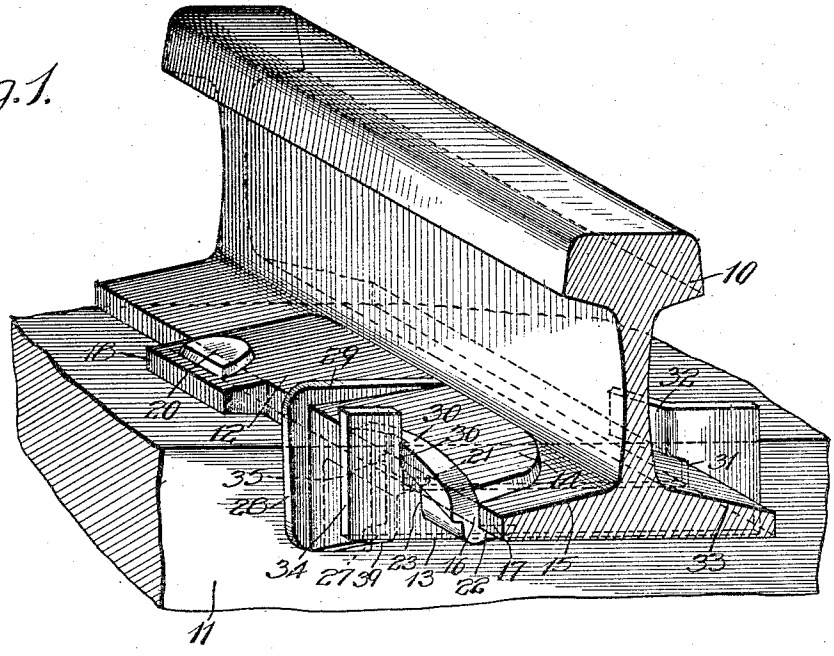
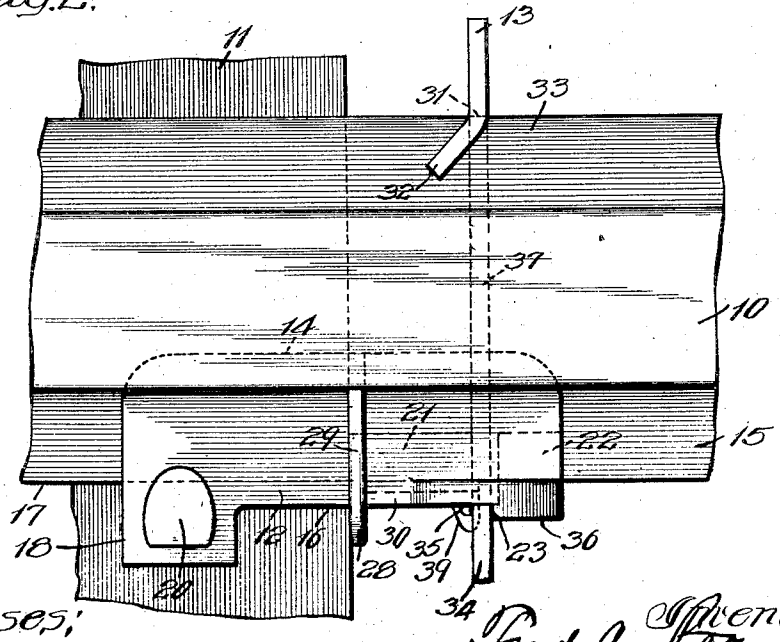


Fig. 2.



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3 SHEETS—SHEET 2.

Fig. 3.

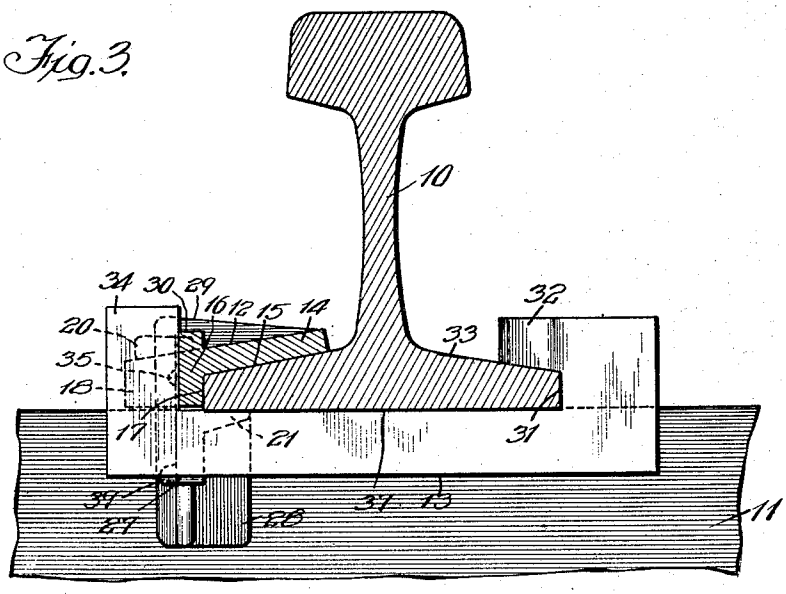
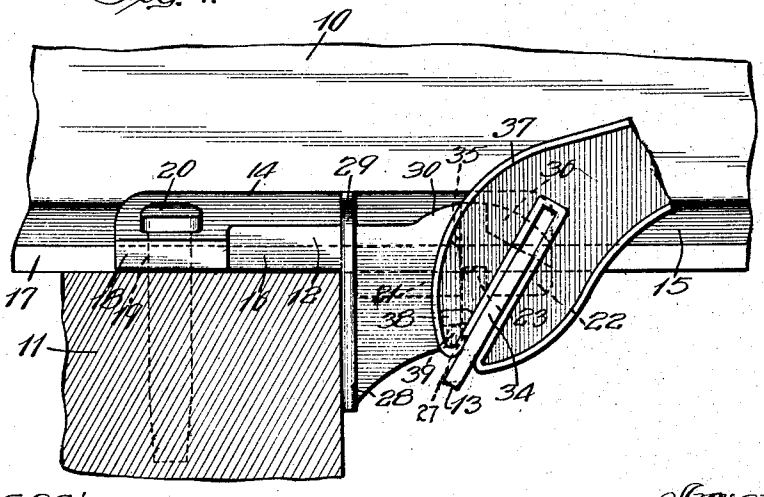


Fig. 4.



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3 SHEETS—SHEET 3.

Fig. 5.

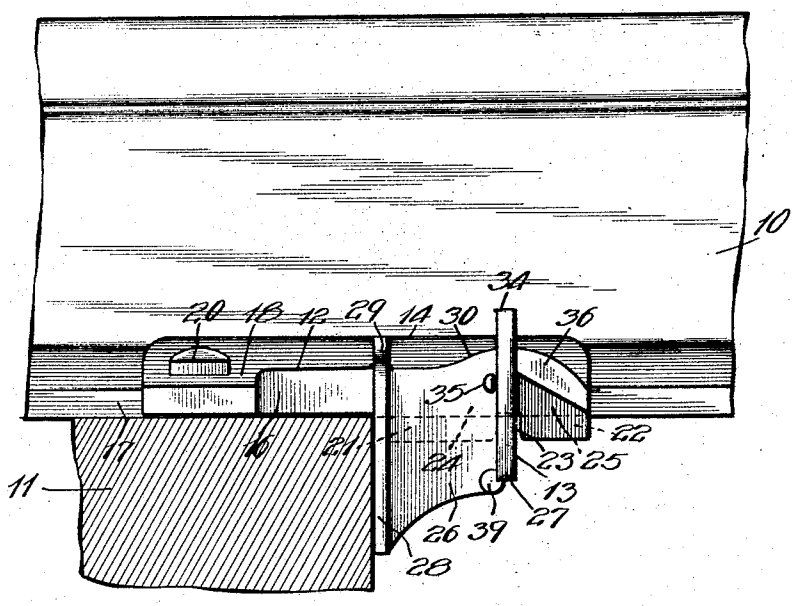


Fig. 6.

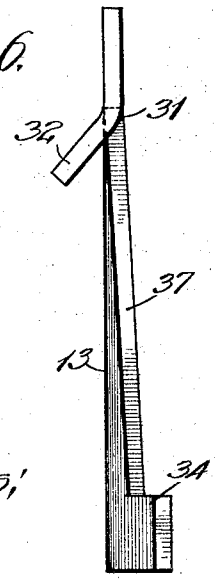
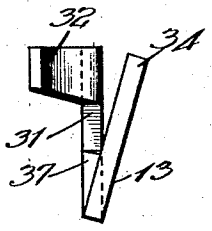


Fig. 7.



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UNITED STATES PATENT OFFICE.

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RAIL-ANCHOR.

1,357,419. Specification of Letters Patent. Patented Nov. 2, 1920.

Application filed May 20, 1919. Serial No. 298,484.

To all whom it may concern:

Be it known that I, FRED A. POOR, 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 Rail-Anchors, of which the following is a specification.

My invention relates to a rail anchor of the general type having a spring steel element adapted to be strained when the device is applied to the rail. The principal object of the invention is to provide an improved rail anchor of the above character which may be readily and conveniently applied to a rail so as to resist the tendency of the rail to creep longitudinally whether it occurs in one direction or the other. In this connection, the invention contemplates a device which will be inexpensive to manufacture and which may be firmly secured in its operative position without requiring adjacent cross-ties to be arranged in any particular spaced relation with respect to each other at the point where the device is applied to the rail. A rail anchor of the above character is particularly suitable for use on single track roads where the traffic, running in opposite directions, tends to move the rails sometimes in one direction and sometimes in the other.

The invention consists in the novel arrangements, constructions and combination of parts, hereinafter described and claimed for accomplishing the above mentioned objects and such other incidental objects as will appear from the following description of a preferred embodiment of the invention.

The preferred embodiment of my invention is illustrated in the accompanying drawings, wherein like characters of reference designate like parts and wherein:

Figure 1 is a view in perspective of a rail anchor constructed in accordance with my invention applied to a rail;

Fig. 2 is a plan view of the same,

Fig. 3 is a cross section taken through the anchor device and rail; the spring yoke of the device being shown in elevation for the purpose of clearness.

Fig. 4 is a side view of the device illustrating the manner in which it is secured to the rail,

Fig. 5 is a view similar to Fig. 4, showing the parts of the device in their operative position,

Fig. 6 is a plan view of the spring member shown in the preceding figures, and

Fig. 7 is a detail edge view of the spring member shown in Fig. 6.

Referring to the drawings, 10 designates a railroad rail and 11 one of the cross-ties on which the rail is supported. The preferred embodiment of the invention consists of a shoe member 12 adapted to engage one edge of the rail base and a spring yoke member 13 which engages the opposite edge of the rail base and has an interlocking engagement with the shoe member whereby a firm gripping action is obtained on opposite edges of the base flange. The shoe member is preferably formed with a relatively long upper lip 14 which engages the inclined surface 15 of the base flange of the rail and with a vertical portion 16 which extends along and bears against the vertical edge 17 of the rail base throughout the entire length of the shoe. A lug 18 is formed at one end of the shoe and is formed with a square aperture 19 adapted to receive a railroad spike 20 with which the shoe may be firmly secured to the top face of the tie. The vertical web 16 of the shoe is preferably made with a vertical dimension somewhat less than the thickness of the base portion 17 so that the lip 14 will not be held out of engagement with the rail by reason of the web 16 and the lug 18 bearing against the tie when the shoe is applied to a rail having a base flange of minimum thickness. The forward end of the shoe is formed with flanges 21, 22, which are spaced apart, as indicated at 23, to provide a recess into which the spring yoke 13 fits when it is interlocked with the shoe member, as will be more fully described hereinafter. The flanges 21, 22, extend under the rail base and coöperate with the upper lip 14 and vertical flange 16 to provide jaws 24, 25, which fit over one edge of the base flange of the rail on opposite sides of the spring yoke 13. With this jaw construction it will be obvious that the shoe member may be constructed so as to be driven on the rail so as to provide a wedging engagement. In this event, the web 16 would preferably stand a short distance away from the vertical edge 17 of the base flange. The vertical flange 16 preferably extends below the lateral flange 21 as indicated at 26 so as to rigidify the structure and is formed with a ledge 27 adapted to

support the lower edge of the spring yoke. A tie abutting flange 28 is connected with the flanges 26, 21, and is adapted to bear against one of the vertical faces of the tie. 29 designates a reinforcing rib which extends over the top lip 14 of the shoe and 30 is a reinforcing rib extending longitudinally of the shoe and adapted to reinforce the same at points above the recess 23. By constructing the shoe member of my invention so that it may be firmly secured to the top face of a tie and at the same time bear against the vertical face thereof, the shoe may be made relatively short so as to add to its rigidity and at the same time require less metal in its construction than is necessary in the forms of devices which engage more than one tie. This feature effects a material reduction in the manufacturing cost of a device of this character without sacrificing the advantage of a device adapted to resist the tendency of the rail to creep in opposite directions.

The yoke 13 is preferably made of spring steel and is formed at one end with a jaw 31 which engages the edge of the rail base opposite the jaws 24—25 of the shoe 12 and is formed with an angularly disposed hook 32, which is forced into biting engagement with the inclined surface 33 of the rail base when the yoke is interlocked with the shoe 12. The yoke is formed at the other end with an enlargement 34 which seats at its lower edge on the ledge 27. The upper end of the enlargement fits between lugs 35—36 formed on the shoe. The portion 37 of the yoke which extends under the base of the rail is preferably given a slight set or twist so that in order to move the enlargement to its operative position between the lugs 35—36 it will be necessary to spring the yoke from its normal set position such as shown in Figs. 6 and 7.

When applying the yoke 13 to its interlocking position with the shoe 12 as indicated in Figs. 1, 3 and 5 the yoke is subjected to a torsional strain by twisting the same from its normal set position, as indicated in Fig. 4, to the position indicated in Fig. 5. This twisting operation may be accomplished by any suitable means, such for example, as the claw-bar or wrench 37 which may be applied over the enlargement 34 as shown in Fig. 4. 38 designates a boss on the wrench which is adapted to engage a projection 39 on the shoe so as to provide a fulcrum or leverage point for the wrench while springing the yoke from its normal position as indicated in Fig. 4, to its operative position as indicated in Fig. 5. The yoke 13, in addition to being twisted, is raised so that when in its operative position the upper end of the enlargement 34 extends into the space between the lugs 35—36. By bending the yoke 13 in the above manner, the jaw end of the yoke is rocked rearwardly, so that the angularly disposed lip 32 of the jaw 31 will exert a downward pressure against the upper surface of the rail base.

The tendency which the spring yoke has to return to its normal, or twisted, position exerts a spring pressure against the lug 36. This pressure prevents the vibration of the rail from dislodging the yoke from its seat on the ledge 27, and appreciably lessening its effective grip on the base flange of the rail. The spring yoke when interlocked with the shoe member, preferably extends at substantially right angles to the shoe, so that any longitudinal movement of the rail in either direction tending to change the relation of these members will increase the grip of the device on the rail base.

While I have illustrated my invention in one specific embodiment, it will be obvious that modifications in structure might be made without departing from my invention. I, therefore, do not wish to limit myself to the specific structures shown and described except in so far as expressly so limited in the appended claims.

I claim:

1. A rail anchor adapted to resist longitudinal movement of a rail in either direction comprising a rigid member having means for securing the same to one tie only and having a vertical tie abutting face and a spring member having an interlocking engagement with said rigid member and adapted to grip one edge of the base flange of the rail.

2. A rail anchor adapted to resist longitudinal movement of a rail in either direction comprising a shoe member for engaging one edge of the base flange of a rail, adapted to be secured to the top surface of a cross-tie and provided with a tie abutting portion which bears against one of the vertical faces of the said cross-tie, and means engaging the opposite edge of the rail base adapted to have an interlocking engagement with said shoe member.

3. A rail anchor adapted to resist longitudinal movement of a rail in either direction comprising a shoe member for engaging one edge of the base flange of a rail, adapted to be secured to the top surface of a cross-tie and provided with a tie abutting portion which bears against one of the vertical faces of the said cross-tie, and a spring yoke engaging the opposite edge of the rail base adapted to have an interlocking engagement with said shoe member.

4. A rail anchor adapted to resist longitudinal movement of a rail in either direction comprising a shoe member for engaging one edge of the base flange of a rail, adapted to be secured to the top surface of a cross-tie and provided with a tie abutting

portion which bears against one of the vertical faces of the said cross-tie, and a spring yoke having a hook portion which grips the opposite edge of the rail base adapted to have an interlocking engagement with said shoe member.

5. A rail anchor adapted to resist longitudinal movement of a rail in either direction comprising a shoe formed with a rail base engaging jaw, with an extension adapted to be secured to the top face of a tie and with a tie abutting portion adapted to bear against one of the vertical faces of the said tie, and a spring yoke member engaging the opposite edge of the rail base and having an interlocking engagement with the shoe; said spring yoke being adapted to be strained in its application to the rail.

6. A rail anchor adapted to resist longitudinal movement of a rail in either direction comprising a shoe member and a spring member which together embrace the base of a rail at a point intermediate two cross-ties, said shoe member being secured to one tie only and the spring member being adapted to be strained in its application to the rail.

7. A rail anchor adapted to resist longitudinal movement of a rail in either direction comprising a shoe member and a spring member which together embrace the base of a rail at a point intermediate two cross-ties, said shoe member being secured to one tie only and formed with a tie abutting portion which engages one of the vertical faces of said tie and the spring member being adapted to be strained in its application to the rail.

8. A rail anchor adapted to resist longitudinal movement of a rail in either direction comprising a shoe member and a spring member having an interlocking engagement with each other and which together embrace the base of a rail at a point intermediate two cross-ties, said shoe member being secured to one tie only and formed with a tie abutting portion which engages one of the vertical faces of said tie and the spring member being adapted to be strained in its application to the rail.

9. A rail anchor adapted to resist longitudinal movement of a rail in either direction comprising a shoe member and a spring member having an interlocking engagement with each other and which together embrace the base of a rail at a point intermediate two cross-ties, said shoe member being secured to the top face of one tie only and formed with a tie abutting portion which engages one of the vertical faces of said tie and the spring member being adapted to be strained in its application to the rail.

10. A rail anchor adapted to resist longitudinal movement of a rail in either direction comprising a shoe member and a spring member having an interlocking engagement with each other and which together embrace the base flange of a rail, said shoe member being formed with a relatively long lip adapted to be secured to one tie only, to engage the top surface of the base flange of a rail and provided with a tie abutting flange which bears against one of the vertical faces of the tie.

11. A rail anchor adapted to resist longitudinal movement of a rail in either direction comprising a shoe member and a spring member having an interlocking engagement with each other and which together embrace the base flange of a rail, said shoe member being formed with a relatively long lip adapted to be spiked to the top surface of one tie only, to engage the top surface of the base flange of a rail and provided with a tie abutting flange which bears against one of the vertical faces of the tie.

FRED A. POOR.