Jan. 15, 1929. 1,698,975

H. G. WARR

RAIL ANCHOR

Filed Dec. 22, 1927

Fig. 1.

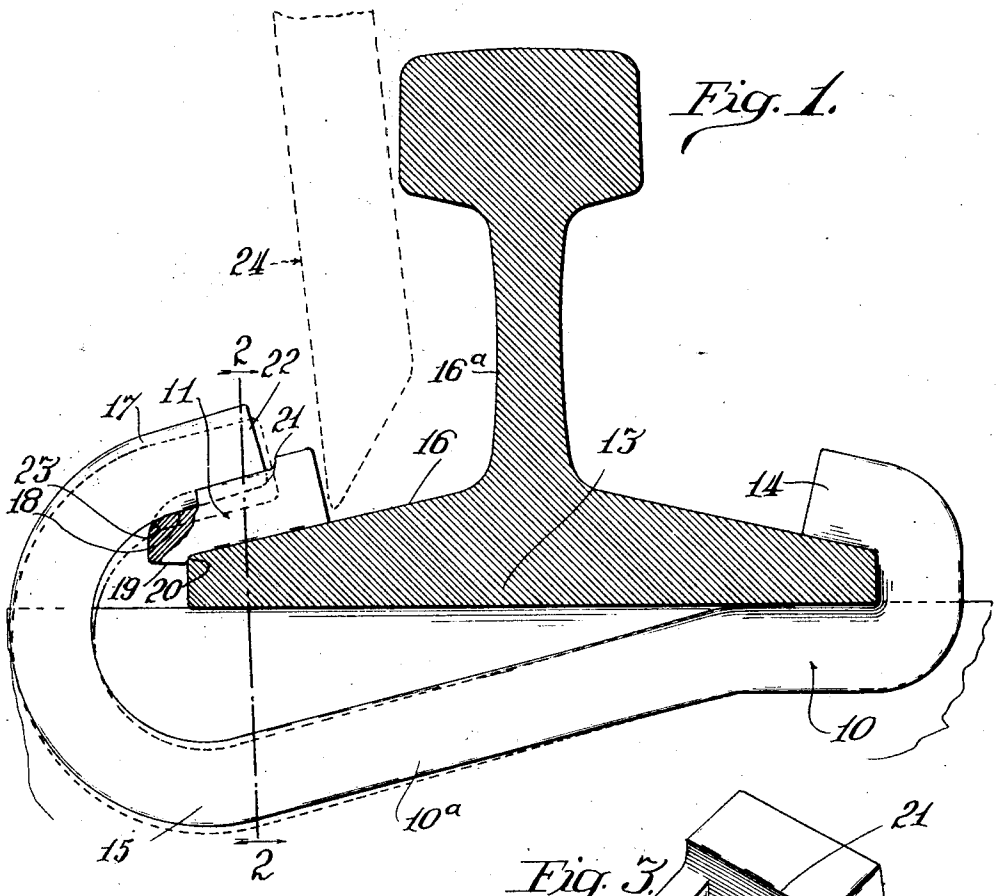


Fig. 3.

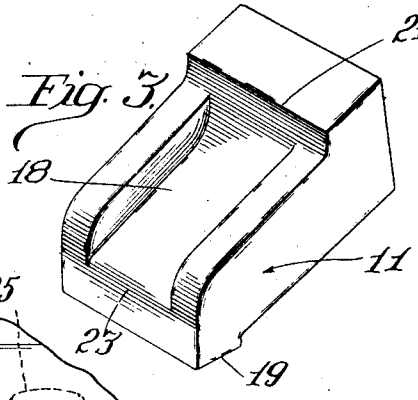
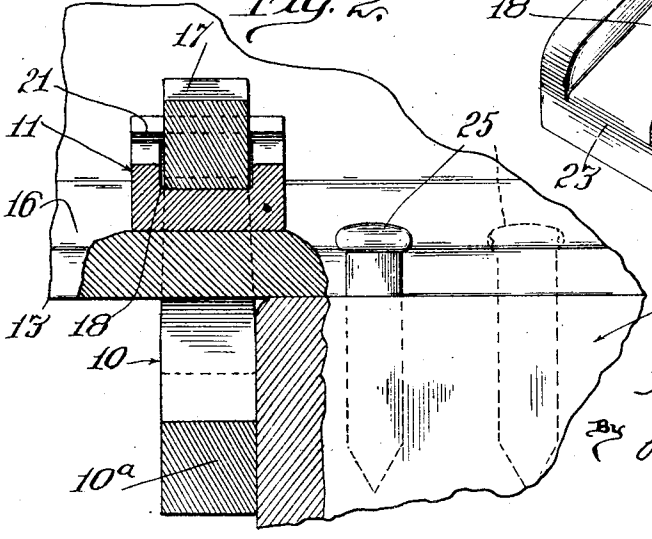


Fig. 2.



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RAIL ANCHOR.

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My invention relates to rail anchors and has for its principal object to provide an improved two-piece anchor device which may be readily applied in various operative positions on the base of a rail so as to abut against a cross tie without interfering with the spikes or other devices employed for attaching the railroad rail to the cross tie.

Another and more specific object is to provide an improved two-piece anchor device consisting of a rail base embracing yoke and a wedge member adapted to be forced between the rail and the yoke, which members are so formed and applied as to prevent the yoke from being skewed to a diagonal position across the rail or otherwise displaced or distorted longitudinally of the rail by the force used in applying the wedge member.

Another object is to provide an improved two-piece anchor consisting of a yoke and wedge, in which the yoke and wedge members are so formed and applied as to provide positive locking shoulders for preventing movement of the members longitudinally of the rail or transversely of the rail in a direction to loosen the grip of the device on the rail base. In this connection I contemplate a wedge member which is forced transversely of the rail to its applied position and which, when it reaches its applied position, automatically interlocks with the rail and with the yoke member of the anchor.

The invention is illustrated in a preferred embodiment in the accompanying drawings, wherein:

Fig. 1 is a sectional view, taken through a railroad rail showing a rail anchor constructed in accordance with my invention applied to its operative position on the base flange of a rail.

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1 looking in the direction of the arrow and showing the manner in which the yoke portion of the anchor device bears against an adjacent cross-tie, and

Fig. 3 is a view in perspective of the form of the wedge member shown in Figs. 1 and 2.

The embodiment of the invention shown in the drawing consists preferably of a spring metal yoke 10 and a wedge member 11 adapted to be forced transversely of the base 13 of the rail into wedging engagement between the said base and said yoke. The yoke member is formed at one end with a small hook portion providing a jaw 14 adapted to grip one edge of the rail base. This end of the yoke is preferably so formed that the jaw 14 bears against the top inclined surface of the rail base and the body portion of the yoke grips the bottom surface of the rail base. The other end of the yoke is formed with a relatively large hook portion, which extends below the bottom surface of the rail base to provide a tie abutting portion 15 and extends also above the upper surface 16 of the base flange to provide a jaw portion 17. The distance between the under-surface of the jaw 17 and the top surface 16 of the rail base is normally such that when the wedge member 11 is forced transversely of the rail between the said jaw and rail base, the large hooked end of the yoke is flexed upwardly and outwardly, as indicated in Fig. 1; the dotted lines shown in this figure indicating substantially the normal position of the yoke before the wedge member 11 is driven to its applied position and the full lines show the condition of the anchor after it has been flexed. Preferably the body 10 of the anchor extends downwardly from the rail base at a point between the vertical center of the rail and the edge of the flange engaged by the jaw 14 so as to provide in effect a relatively long lever portion 10^a. With this construction it will be seen that by the upward flexing of the jaw 17 and lever portion 10^a a lever gripping action will be exerted on the rail base through the jaw portion 14 in addition to the wedging grip of said jaw.

The wedge member 11 may be made of any suitable material and is formed on its upper surface with a recess 18 adapted to receive the bottom surface of the jaw 17, so as to provide an interlocking engagement of the wedge and jaw and thereby prevent any substantial relative movement of said wedge and jaw longitudinally of the rail. The outer end of the wedge is formed with a downturned shoulder portion 19 adapted to engage with the longitudinal edge 20 of the rail base flange when the wedge is driven to its operative position. The other end of the wedge is formed with a shoulder 21, which forms a stop to limit the movement of the wedge beyond its normal operative position

so as to avoid excessive distortion of the yoke and also provides a wedge for the end of the jaw 17 so as to lock the yoke against movement transversely of the rail in a direction to loosen the engagement of jaw 14 on the opposite edge of the rail base.

In operation, the yoke member is applied to the base flange of the rail by first hooking the jaw end 17 over the edge of the rail base and then engaging the jaw 14 with the opposite edge. After this preliminary engagement, the yoke may be positioned in engagement with a vertical face of the cross tie, as shown in Fig. 2, and the jaw end 14 driven transversely of the rail into firm gripping engagement with the top and bottom surfaces of the rail base. The wedge member 11 is then positioned on the surface 16 of the base flange between the web 16ª of the rail and the end 22 of the jaw 17, with a curved outer surface 23 of the wedge engaged under the lower surface of the jaw 17. The wedge may then be forced outwardly toward the longitudinal edge 20 of the rail base, by means of any suitable implement, for example, the crow-bar 24, used in the manner indicated in Fig. 1, or in such other manner as may be found convenient in practice.

By applying the wedge 11 in the manner indicated, the flexing of the yoke member is confined to the upward and outward distortion indicated in Fig. 1 and avoids displacement of the yoke longitudinally of the rail during the application of the wedge member, such as sometimes occurs in anchors having wedges driven longitudinally of the rail base. The arrangement and construction herein shown also present the advantage in that it is unnecessary to remove the spike 25 from its position adjacent the edge of the tie 26 when the anchor is applied in situations where the rail spikes are arranged in the staggered relation shown in Fig. 2. The present invention also presents a further advantage in that the yoke may be so applied that the jaw end 17 may be hooked over either edge of the rail base and the body of the yoke engaged with either face of adjacent ties, without requiring a different form of wedge member.

While I have described my invention in connection with one specific embodiment, it will be obvious that variations in construction might be made without departure from the spirit of the invention. I contemplate, therefore, all such changes in structure as come within the scope of the appended claims.

I claim:

1. A rail anchor comprising a rail base embracing member adapted to bear against a cross tie, and a wedge member adapted to be forced outwardly toward the edge of the rail base between the said embracing member and the top surface of said base to effect a tight gripping engagement of the anchor on the rail.

2. A rail anchor comprising a rail base embracing member adapted to bear against the cross tie, and a wedge member adapted to be forced transversely of the rail between said embracing member and the rail base into interlocking engagement with said yoke and rail base.

3. A rail anchor comprising a yoke member formed at one end with a jaw adapted to grip one flange of the rail base, and a wedge member movable outwardly on the top surface of the rail base to increase the grip of said jaw on the rail.

4. A rail anchor comprising a yoke member formed at one end with a jaw adapted to be driven into gripping engagement with the top and bottom surfaces of one flange of the rail base, and a wedge member movable transversely of the rail to increase the grip of said jaw on the rail base.

5. A rail anchor comprising a yoke member formed at one end with a jaw adapted to be driven into gripping engagement with the top and bottom surfaces of one flange of the rail base, and a wedge member movable into interlocking engagement with the yoke and one edge of the rail base to prevent loosening said grip by movement of said yoke or wedge.

6. A rail anchor comprising a yoke member formed at one end with a jaw adapted to be driven into gripping engagement with the top and bottom surfaces of one flange of the rail base and a wedge member movable outwardly from the web of the rail toward the longitudinal edge thereof to increase the grip of said jaw on the rail.

7. A rail anchor comprising a yoke member formed at one end with a jaw portion for gripping the top and bottom surfaces of the rail base at one side of the rail and provided at the other end with a jaw portion extending around the opposite edge of the rail base, and a wedge member movable transversely of the rail into wedging engagement between the base and said last mentioned jaw portion and into snap engagement with a longitudinal edge of said rail base.

8. A rail anchor comprising a resilient jaw member formed at one end with a jaw portion for gripping the top and bottom surfaces of the rail base at one side of the rail and provided at the other end with a jaw portion extending around the opposite edge of the rail base, and a wedge member movable transversely of the rail into wedging engagement between the base and said last mentioned jaw portion and into snap engagement with a longitudinal edge of said rail base.

9. A rail anchor comprising a spring yoke

member formed at one end with a jaw adapted to be driven into gripping engagement with the rail base at one side of the rail and at the other end with a relatively large hook portion providing a tie-engaging face and a jaw, the latter of which projects over the upper surface of the rail base, and a wedge adapted to be forced transversely of the rail into wedging engagement with the top surface of the base and the bottom surface of said last mentioned jaw.

10. A rail anchor comprising a spring yoke member formed at one end with a jaw adapted to be driven into gripping engagement with the rail base at one side of the rail and at the other end with a relatively large hook portion providing a tie engaging face and a jaw, the latter of which projects over the upper surface of the rail base, and a wedge adapted to be forced transversely of the rail into wedging engagement with the top surface of the base and the bottom surface of said last mentioned jaw; the said wedge being formed at its outer end with a shoulder adapted, when driven to its applied position, to be forced by the resiliency of the yoke into locking engagement with a longitudinal edge of the rail base.

11. A rail anchor comprising a spring yoke member formed at one end with a jaw adapted to be driven into gripping engagement with the rail base at one side of the rail and at the other end with a relatively large hook portion providing a tie-engaging face and a jaw, the latter of which projects over the upper surface of the rail base, and a wedge adapted to be forced transversely of the rail into wedging engagement with the top surface of the base and the bottom surface of said last mentioned jaw; the said wedge being formed at one end with a shoulder for engaging over a longitudinal edge of the rail base and with a shoulder for locking the yoke against movement transversely of the rail in a direction to loosen the grip of the first mentioned jaw on the rail.

12. A rail anchor comprising a spring yoke member formed at one end with a jaw adapted to be driven into gripping engagement with the rail base at one side of the rail and at the other end with a relatively large hook portion providing a tie engaging face and a jaw, the latter of which projects over the upper surface of the rail base, and a wedge adapted to be forced transversely of the rail into wedging engagement with the top surface of the base and the bottom surface of said last mentioned jaw, said wedge being formed with means providing an interlocking engagement with the last mentioned jaw to prevent relative movement of the said jaw and wedge longitudinally of the rail.

13. A rail anchor comprising a spring yoke member formed at one end with a jaw adapted to be driven into gripping engagement with the rail base at one side of the rail and at the other end with a relatively large hook portion providing a tie engaging face and a jaw, the latter of which projects over the upper surface of the rail base, and a wedge adapted to be forced transversely of the rail into wedging engagement with the top surface of the base and the bottom surface of said last mentioned jaw; the said wedge being formed with means providing an interlocking engagement with the last mentioned jaw to prevent relative movement of the said jaw and wedge longitudinally of the rail and formed with shoulders for engaging the end of said jaw and a longitudinal edge of the rail base to prevent movement of the yoke transversely of the rail from its normal rail gripping position.

14. A rail anchor comprising a yoke formed at one end with a jaw for engagement with one flange of a rail base, and means for distorting the anchor to exert a lever grip through said jaw on the rail, comprising a wedge member movable outwardly on the top surface of the rail into binding engagement between the rail base and a portion of said yoke member.

15. A rail anchor comprising a yoke member formed at one end with a jaw adapted to be driven into gripping engagement with the top and bottom surfaces of one flange of the rail base, and formed at the other end with a jaw which extends over the upper surface of the rail base flange, and a wedge member adapted to be forced into wedging position between the rail base and the last mentioned jaw to produce upward distortion of said yoke, whereby a lever gripping action is exerted on the rail base through the first mentioned jaw by the upward flexing of the yoke.

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