Oct. 7, 1930. C. B. SHEPHERD 1,777,583

RAIL ANCHOR

Filed May 1, 1928

Fig. 1.

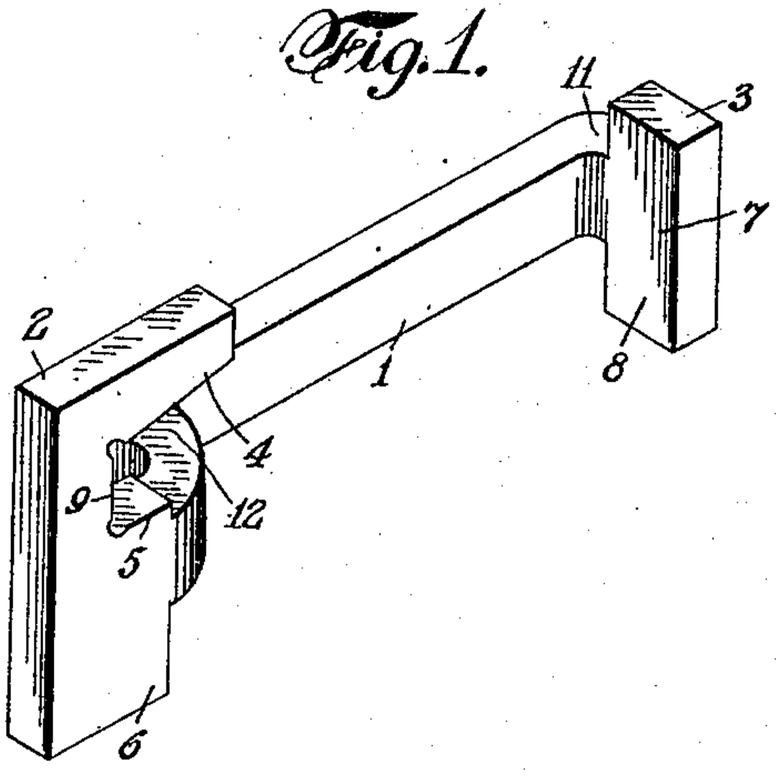


Fig. 2.

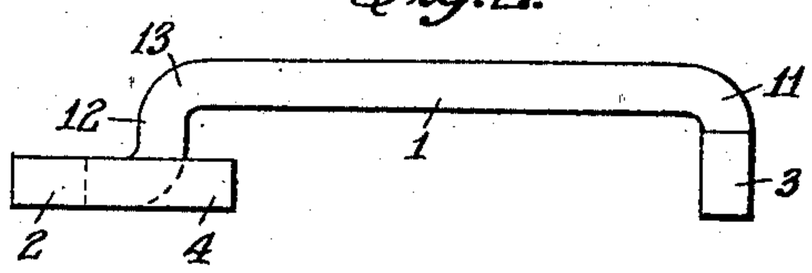


Fig. 4.

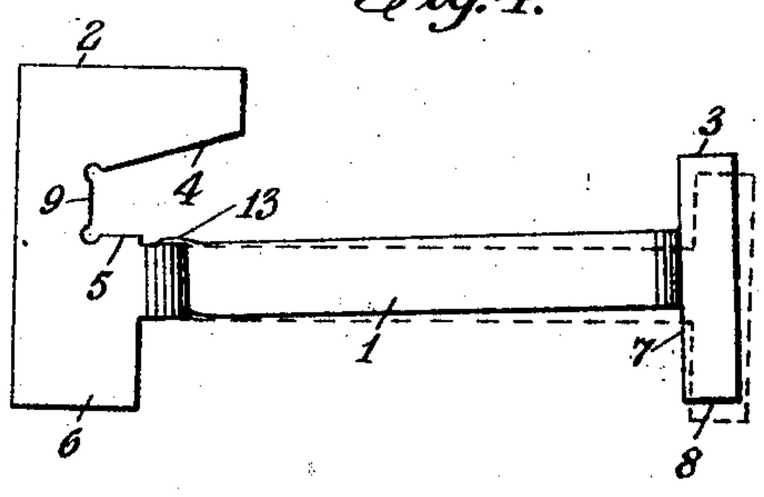


Fig. 3.

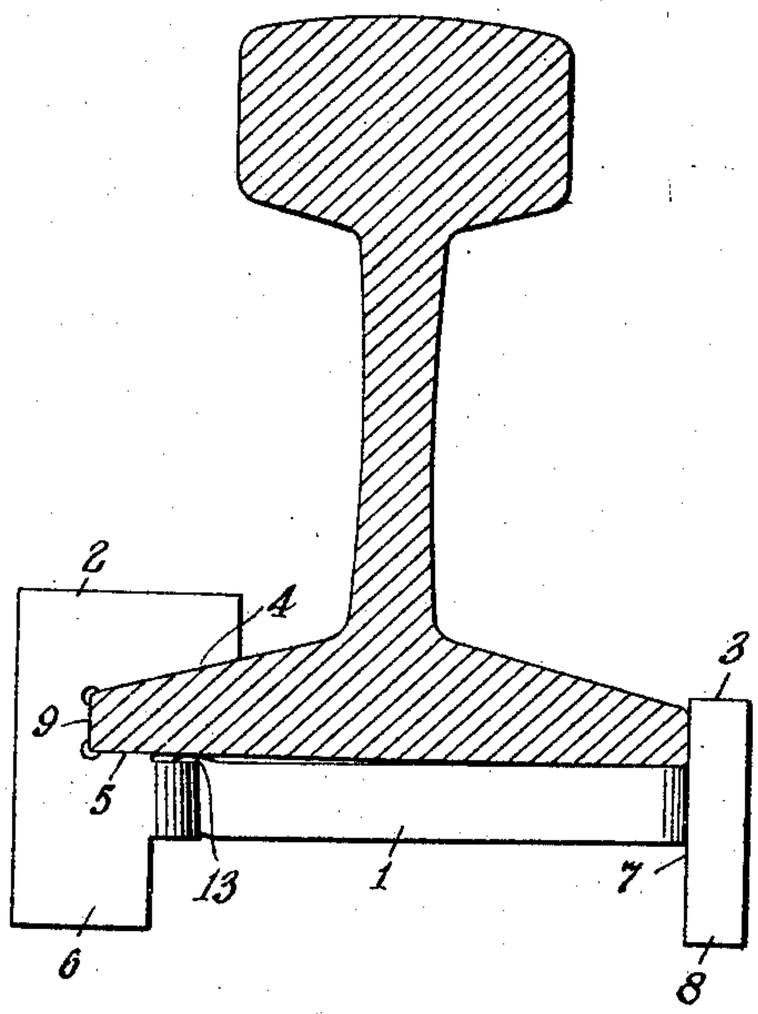
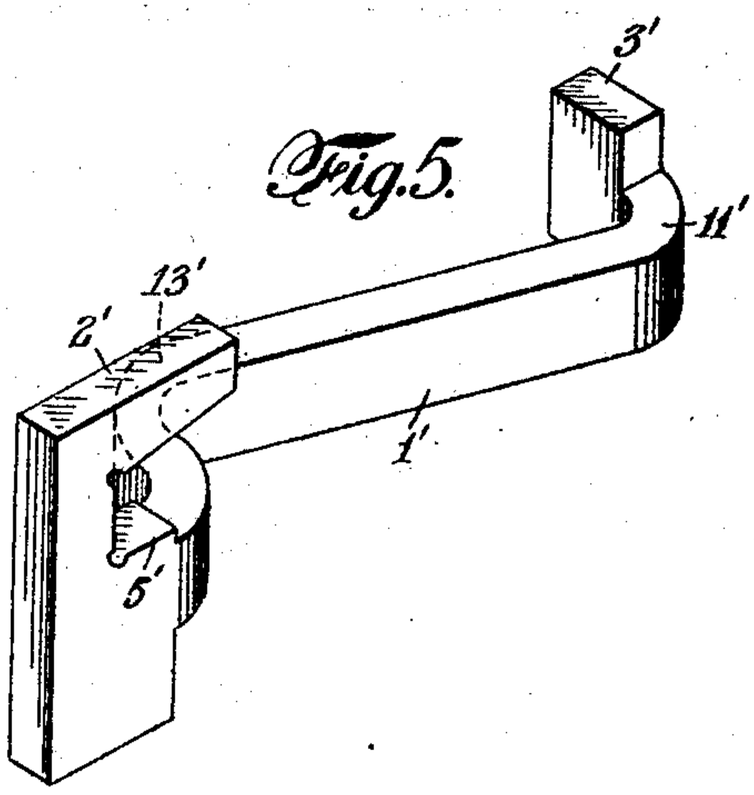


Fig. 5.



INVENTOR

BY

ATTORNEY

Patented Oct. 7, 1930 1,777,583

UNITED STATES PATENT OFFICE

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RAIL ANCHOR

Application filed May 1, 1928. Serial No. 274,177.

This invention relates to those devices which are adapted to prevent the longitudinal creeping of rails, known as rail anchors.

An object of this invention is to provide a rail anchor having rail base flange-engaging means, one of said flange-engaging means adapted to engage a vertical edge of the rail base flange which it is intended to hold with a flat or side surface.

Another object of this invention is to provide a rail anchor having a body member with a laterally disposed loop, a jaw disposed at one end thereof and presenting edgewise contact surfaces to the rail base flange which it is intended to engage and a vertical edge-engaging means disposed on the opposite end of the body member adapted to engage said vertical edge with its flat or side surface.

Further objects will appear from the hereinafter following description, appended claims and the accompanying drawings in which:

Figure 1 is an isometric view of a rail anchor embodying my invention.

Figure 2 is a top plan view of the anchor shown in Figure 1.

Figure 3 illustrates the anchor in position on a rail, the rail being shown in section.

Figure 4 illustrates the relation of parts before and after the rail anchor has been applied to the rail base flange, the dotted lines illustrating the position of parts after application.

Figure 5 is a modification of the invention illustrated in Figures 1 to 4 inclusive.

Referring to the drawings in which like reference characters designate like parts, and especially to Figures 1 to 4 inclusive, wherein there is disclosed one embodiment of my invention, the reference numeral 1 designates a body member adapted to extend transversely of a rail base flange. This body member is bowed, and preferably laterally, to provide a spring tension member which, when applied in place, will exert a pressure transversely of the rail base flange. At the opposite ends of the body member 1 are rail flange-engaging means 2 and 3. The rail base flange-engaging means 2 comprises a substantially rigid jaw member presenting edgewise contact to the rail base flange. This member has an upper jaw 4 adapted to engage the upper surface of the rail base flange. I prefer to make the jaw 4 of the same shape as the top of the rail base flange which it is intended to engage and hold, though it is obvious that it may be made of any shape or contour. Disposed beneath the upper jaw 4 is a small jaw 5. This jaw 5 is spaced from the jaw 4 a distance slightly greater than the thickness of the rail base flange which it is intended to grasp or grip, thus providing a slight clearance. Depending from the jaw 2 there is a member 6 which functions as tie-abutting means.

Disposed at the opposite end of the body member 1 is, as previously described, a rail flange-engaging means which comprises a vertical edge-engaging means 3. This vertical edge-engaging means is so formed that it presents its flat or side surface 7 in contact with the vertical edge of the rail base flange which it is intended to engage. If desired, this vertical edge-engaging means may be provided with a vertical depending portion 8 which functions as a tie-abutting means. However, this is not essential and may be omitted. The distance between the flat surface 7 of the vertical edge-engaging means 3 and the vertical edge 9 of the jaw member 2 is less than the width of a standard rail base flange which it is intended to grip.

The body member 1, as previously pointed out, is bowed or curved to provide self-contained resilient and yielding means. The loop may be of any desired shape or form. In Figures 1 and 2 I have illustrated the body member 1 with a bowed portion which is offset and laterally disposed to the rail flange-engaging means. In this modification the body member is provided with a laterally disposed and offset U-shaped loop.

To provide the necessary upward and downward thrusts and pressure in the anchor, various parts of the anchor are disposed in various planes. The jaw 5 is made to normally lie in a plane higher than that occupied by the body member 1. The bend 13 and the

portion 11 of the body member 1 adjacent the vertical edge-engaging means 3 are disposed in a plane higher than the plane of the small jaw 5 and is located back of the vertical plane of the jaw member, whereby the upward pressure of the points 13 and 11 against the bottom surface of the rail base exerts a leverage on the jaw member, tending to rock it about an axis extending transversely of the rail; the bearing at point 11 tending also to rock the jaw member 2 about an axis extending longitudinally of the rail. The under rail portion of the anchor functions as a resilient lever to exert the combination leverage or tilting pressures above referred to. The fit of the jaw member on the rail base is preferably such that the said resilient leverage does not produce any substantial tilting about the transverse axis, but the tilting pressure exerted forms a part of the combination grip effected and adds to the tenacity of its hold on the rail.

In applying the anchor to a rail base flange, the jaw member is slipped over the rail flange which it is intended to hold and forced on by hand as far as it will go. The anchor is then struck on the arm 12 or bend 13 adjacent the jaw 2 with a spike maul or sledge whereby the portion 12 is driven upon the base flange embraced and the body member 1 yields and elongates. This operation is continued until the vertical edge-engaging means 3 clears the opposite edge of the rail base flange and snaps into position. The anchor may also be forced to its applied position by pulling outwardly on the end 3 of the anchor until the portion 3 clears the edge of the rail base whereupon the resiliency of the body will cause the portion 3 to snap over the edge of the rail base into locking engagement with the vertical edge surface of the rail base.

Due to the construction of this anchor, when in position on a rail base flange, it exerts a transverse pressure at 9 and 7, an upward pressure at 5 and 11 and a downward pressure at 4. The transverse pressure provides an effective grip to hold the jaw end of the anchor on the rail. The bowed construction of the under rail portion provides for sufficient resiliency to permit the anchor to be easily sprung to its locked position on the rail and also permits application of the anchor to base flanges of different base widths.

In the modification illustrated in Figure 5, the body member is shown curved differently from that illustrated in Figures 1 to 4. In this modification the body member 1′ has disposed at the opposite ends thereof a jaw 2′ and a vertical edge-engaging means 3′ which are similar to those disclosed in my preferred embodiment. The body member 1′, however, differs from the body member 1 in that, when the jaw member is applied to the same base flange as the jaw member shown in Fig. 3, the body is curved rearwardly adjacent the jaw member 2′ and forwardly adjacent the flange-engaging means 3′ forming a substantially S-shaped loop having the rail flange-engaging means on the opposite side thereof.

In this anchor, due to the curvature of the body member 1′, the rail base flange-engaging means 2′ and 3′ are offset to each other and disposed in different vertical planes. As in the preferred modification, the jaw 2′ and the arm 11′ are disposed in planes higher than that occupied by the small jaw 5′. The manner or mode of application is the same as that employed in applying the preferred modification.

Since it is obvious that various modifications may be made without departing from the nature of the invention, I do not limit myself to the exact and specific details above described except as hereinafter claimed.

I claim:

1. A rail anchor comprising a body member bowed longitudinally of the rail, a jaw member disposed on one end of said body member, rail base flange-engaging means disposed on the opposite end of said body member, said rail base flange-engaging means adapted to engage with its flat side surface a vertical edge of said rail base flange, and said bowed body being adapted to press upwardly against the bottom of the rail base at a point located at one side of the side plane of said jaw portion.

2. A rail anchor formed from a flat metal plate and comprising a body member, a jaw presenting edgewise or cross-section contact with the vertical edge of the rail base flange which it is adapted to engage disposed on one end of said body member, a rail edge-engaging means disposed on the opposite end of said body member, said rail edge-engaging means adapted to engage said rail edge with its flat side surface.

3. A rail anchor formed from a flat metal plate and comprising a bowed body member, a jaw presenting edgewise or cross-section contact with the vertical edge of the rail base flange which it is adapted to engage disposed on one end of said body member, a rail edge-engaging means disposed on the opposite end of said body member, said rail edge-engaging means adapted to engage said rail edge with its flat side surface.

4. A rail anchor formed from a flat metal plate and comprising a U-shaped body member normally disposed edgewise to the rail base, a jaw presenting edgewise or cross-section contact with the vertical edge of a rail base flange which it is adapted to engage disposed at one end of said U-shaped body member, vertical edge-engaging means disposed at the other end of said U-shaped member and adapted to engage with its flat side surface the vertical edge of a rail base flange.

5. A rail anchor formed from a flat metal plate and comprising a laterally disposed U-shaped body member, a jaw presenting edgewise or cross-section contact with the vertical edge of a rail base flange which it is adapted to engage disposed at one end of said U-shaped body member, vertical edge-engaging means disposed at the other end of said U-shaped member and adapted to engage with its flat side surface the vertical edge of a rail base flange.

6. A rail anchor formed from a flat metal blank recessed to receive the base portion of a rail and comprising a body provided at one end with a jaw portion disposed edgewise to one base flange of the rail and having a part for bearing against the bottom surface of the base flange near the edge thereof, and at the other end with means for engaging the vertical edge portion of the other base flange and provided with a bottom bearing portion adjacent said edge engaging means for bearing against the bottom surface of the rail base, the said body portion being bowed laterally relative to the side plane of said jaw portion to provide resiliency both vertically and transversely of the rail and the bottom bearing portions at opposite sides of the rail being so disposed with relation to each other that the last mentioned bottom bearing is forced downwardly to a position of substantial alignment with the first bottom bearing, in applying the anchor to a rail.

7. A rail anchor formed from a flat metal blank and comprising a body provided at one end with a jaw portion disposed edgewise to one base flange of the rail and including a jaw for gripping the top of one base flange, and at the other end with means for engaging the edge portion of the other base flange; the said body portion being bowed laterally relative to the side plane of said jaw portion and adapted to press upwardly against the bottom of the rail base at a point remote from said jaw portion to hold the jaw portion turned about an axis extending longitudinally of the rail and in a direction tending to force the inner end of said jaw into tight gripping engagement with the top surface of the rail base flange engaged.

8. A rail anchor formed from a flat metal blank and comprising a body formed at one end with a jaw portion disposed edgewise to one base flange of the rail, and at the other end with means for engaging the edge portion of the other base flange; the said body portion being bowed laterally relative to the side plane of said jaw portion and adapted to press upwardly against the bottom of the rail base at a point remote from the said jaw portion to hold the jaw portion turned about an axis extending longitudinally of the rail and to also exert a force on said jaw portion tending to tilt it about an axis extending transversely of the rail base.

9. A rail anchor comprising a body portion formed at one end with a jaw portion disposed edgewise to one base flange of the rail, at the other end with means for engaging the edge portion of the other base flange to lock the said jaw portion in gripping engagement with the rail; the said body portion being bowed laterally relative to said jaw portion and adapted to bear against the bottom of the rail at one side of the plane of said jaw portion whereby the upward pressure of the body against the bottom of the rail base exerts force on the jaw portion tending to cant it about an axis extending transversely of the rail.

10. A rail anchor comprising a body portion formed at one end with a jaw portion having an upper jaw for bearing against the upper inclined surface of a rail base, and a lower jaw for engagement with the bottom surface of the rail base and formed at the other end with a locking shoulder adapted, by a flexing of the body, to be engaged with the edge of the other flange of the rail; the body being bowed longitudinally of the rail and projecting above the plane of the lower jaw whereby the said bowed portion exerts pressure upwardly against the bottom of the rail base at one side of a side plane of said jaw member to exert a lever force on said jaw member tending to tilt it about an axis extending longitudinally of the rail and also about an axis extending transversely of the rail.

11. A rail anchor formed with an under rail portion provided at one end with an upper and lower jaw and at the other end with means for providing a relatively wide flat bearing engagement with the opposite edge of the rail base; the intermediate portion of said rail anchor being bowed backwardly relative to the direction of creep of the rail and projecting upwardly above the plane of the lower jaw so as to exert pressure against the bottom surface of the rail base tending to force the inner end of the upper jaw down in tight engagement with the upper surface of the rail base and to force a binding engagement of the lower jaw with the lower corner portion of the base flange engaged and to also exert a pressure on the jaw portion tending to tilt it about an axis transversely of the rail.

12. A rail anchor comprising a body member substantially S-shaped in configuration, a jaw member disposed at one end of said body member, rail base engaging means disposed on the opposite end of said body member, said rail base flange engaging means adapted to engage with its flat side surface a vertical edge of said rail base, and said body being adapted to press upwardly against the bottom of the rail base at a point located at one side of the side plane of said jaw portion.

13. A rail anchor formed from a flat metal

blank and comprising a body formed at one end with a jaw portion disposed edgewise to one base flange of the rail, and at the other end with means for engaging the edge portion of the other base flange; the body portion being bowed rearwardly adjacent said jaw portion and bowed forwardly adjacent said edge portion engaging means and adapted to press upwardly against the bottom of the rail base at a point remote from said jaw portion to hold the jaw portion turned about an axis extending longitudinally of the rail and to also exert a force on said jaw portion tending to tilt it about an axis extending transversely of the rail base.

In testimony whereof, I have affixed my signature to this specification.

CHARLES B. SHEPHERD.