Nov. 18, 1930. W. A. KENNEDY 1,782,170

RAIL ANCHOR

Filed May 27, 1929

Fig.1

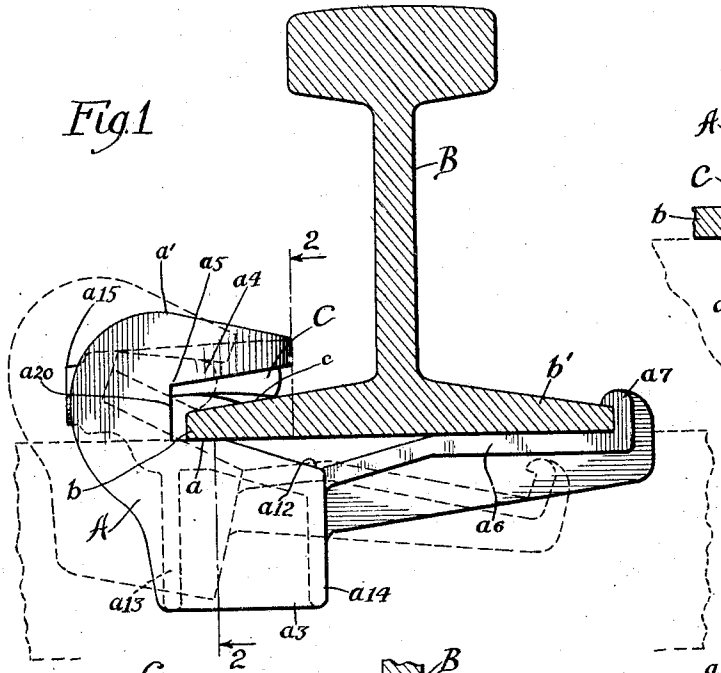


Fig.2

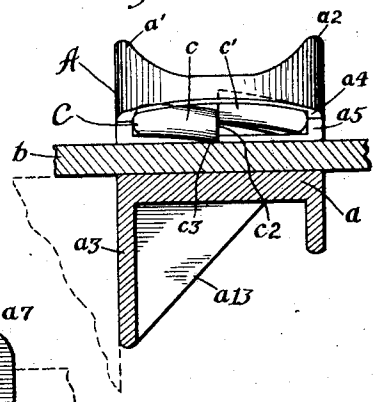


Fig.5

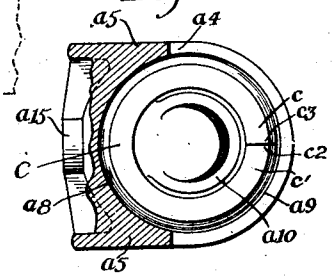


Fig.4

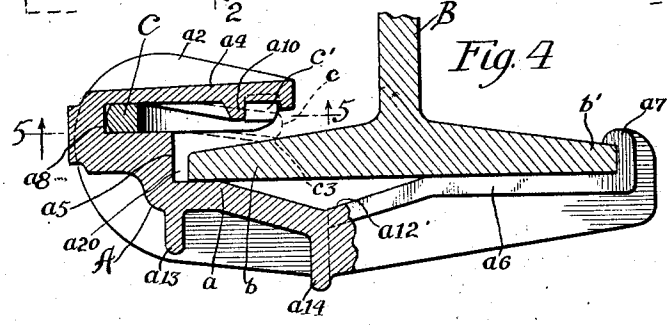


Fig.3

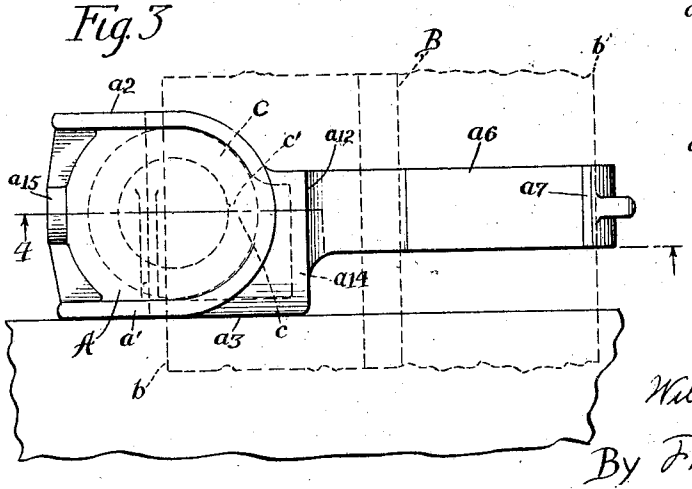
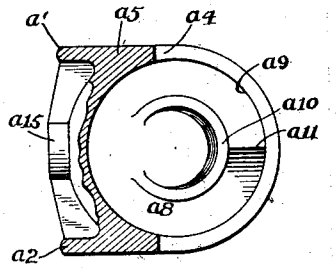


Fig.6



Inventor

William A. Kennedy.

By Fred Gerlach his Atty.

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UNITED STATES PATENT OFFICE

WILLIAM ALEXANDER KENNEDY, OF OAK PARK, ILLINOIS

RAIL ANCHOR

Application filed May 27, 1929. Serial No. 366,354.

The invention relates to anchors for preventing rails from creeping.

The object of the invention is to provide a rail anchor which can be readily applied to rails and which will be effective in holding them against creeping.

Another object of the invention is to provide an anchor of this type, which is simple in construction, which may be produced at a low cost, and in which the stresses are distributed so that the practical minimum of metal in the body of the anchor need not be excessive in weight.

The invention consists in the several novel features hereinafter set forth and more particularly defined by the claims at the conclusion hereof.

In the drawing: Fig. 1 is an end elevation of an anchor embodying the invention and applied to a rail. Fig. 2 is a vertical section taken on line 2—2 of Fig. 1. Fig. 3 is a plan. Fig. 4 is a section taken on line 4—4 of Fig. 3. Fig. 5 is a section taken on line 5—5 of Fig. 4. Fig. 6 is a detail inverted plan showing the formation of the top of the pocket for the spring washer.

The invention is exemplified in a body A formed of a single casting and with a jaw at one side thereof to extend around the base-flange at one side of the rail and a spring washer C held in the body and applied to secure the body on the rail. This jaw is formed of a lower wall a to engage the underside of the base-flange b on one side of the rail B and an upper wall a^4 united to wall a by a side-wall a^5; and vertical reinforcing webs a' and a^2 united to the ends of the web a and extended above and below the jaw. A downward extension a^3 of wall a' forms an abutment or stop to engage a tie on which the rail is laid. A laterally extending arm a^6 projects transversely from the wall a under the rail and is provided with a hook a^7 to engage the base-flange b' on the opposite side of the rail. A connecting rib a^{14} between walls a' and a^2 and a rib a^{13} between extension a^3 and wall a' are integrally formed with the body A. An approximately circular pocket a^8 for the washer C is formed in the upper wall a^4 of the jaw on the body, a portion of which overlies the outer portion of the flange b and the remainder of which is disposed laterally of the flange. The portion of the pocket overlying the flange b is open at its bottom, as at a^9. The spring-washer C is split and comprises continguous ends c, c' which are relatively offset and disposed at the inner side of the jaw at the opening a^9. The end c forms a downwardly pressed terminal or tooth for engaging the top of the flange b and the end c' bears against the top of the pocket so that end c will be forced against flange b. The outer portion of the washer is confined in the outer portion of the pocket while the end c' is disposed in the portion of the pocket a^9 which has no bottom so that end c can engage the flange b. A rib a^{10} is formed in the top of the pocket a^8 so that the washer will be held against radial contraction in the pocket. A notch a^{11} is formed in the top of the pocket to receive the end c' of the washer to lock the latter against rotative movement in the pocket. The washer may be formed of chrome steel and is adapted to withstand a high compression, for example, 16,000 pounds. While partially compressed, it is inserted transversely into the pocket a^8 through the inner open side of the jaw so the washer will be held in the pocket under, and by its own, spring pressure when it has been inserted in the jaw. The retaining rib a^{10} slopes outwardly and upwardly to permit the washer to be inserted in place. A depression a^{12} is formed in the wall a and arm a^6 to facilitate forcing of the flange b under the washer.

In applying the anchor to a rail, its jaw is first placed in position indicated by dotted lines in Fig. 1, the end c of the washer engaging the top of the flange b and frictionally holding the anchor. Blows are imparted to an anvil a^{15} formed on the outer side of the jaw to drive the anchor transversely into position so that hook a^7 will clear the outer edge of the rail flange b'. There is sufficient clearance at a^{20} in the jaw to permit this movement. During this driving operation, the outer incline of depression a^{12} and wall a will swing the arm a^6 upwardly against the bottom of the rail through the pressure of the

washer against flange b. When the hook a^7 has cleared the outer edge of flange b', the anchor will be tapped transversely in reverse direction until the hook a^7 interlocks with the margin of flange b'.

As the jaw is forced into this position, the washer will ride on the upper inclined face of flange b and be compressed sufficiently to cause the end c to exert a very heavy pressure against the upper face of the flange b and jam the wall a against the bottom face of flange b. The end c of the washer has an end face c^2 and is downwardly inclined as at c^3 to act as a ratchet or one-way tooth to bite into flange b, to permit the anchor to slip in one direction and positively grip the rail to lock the anchor against movement in the reverse direction. This permits the anchor to be driven longitudinally of the rail toward the tie until the abutment a^3 is in close engagement therewith. When the rail is stressed to move toward the tie, the end c of the washer acts as a positively engaging gripping tooth to lock the anchor to the rail and to render the anchor effective to prevent creeping of the rail in one direction. Thus, this washer serves to effectively prevent relative movement in one direction by the rail and the anchor.

The invention exemplifies an anchor which consists of an integral body containing a spring washer for gripping the rail to lock the anchor to the rail. The invention also exemplifies an anchor in which the stresses from the rail are applied to the body and are transmitted directly against the abutment for the tie so as to minimize the amount of metal required in the anchor. The arm a^6 is of sufficient strength to act as a retaining member. The inclination of the top face of flange b causes the spring washer to exert sufficient pressure to prevent displacement of the hook a^7 from the flange b'. The anchor can be easily driven on the rail, and dispenses with adjustable wedges or devices and requires no drilling of the rail. The entire anchor consists of a single casting and the spring washer, so it can be produced at a low cost. The spring washer has been found to exert sufficient pressure to effectively prevent the rail from creeping.

The invention is not to be understood as restricted to the details set forth, since these may be modified within the scope of the appended claims, without departing from the spirit and scope of the invention.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent, is:

1. A rail anchor comprising a body, and a split spring washer held non-rotatably by the body and in a position wherein one end thereof is adapted to bite directly against one of the base-flanges of a rail and prevent the anchor from moving lengthwise of the rail in one direction.

2. A rail anchor comprising a body provided with a jaw to fit loosely around one of the base-flanges of a rail, and a split spring washer held in the jaw in such a manner that one end thereof is adapted to bite directly against said one base-flange and prevent the anchor from moving lengthwise of the rail in one direction

3. A rail anchor comprising a body provided with a jaw to fit loosely around one of the base-flanges of a rail, and a split spring washer held in the jaw and having relatively offset ends, one of which is confined in a notch or recess in the jaw and the other end of which is arranged to engage said one base-flange in such a manner that it operates to prevent the anchor from moving lengthwise of the rail in one direction.

4. A rail anchor comprising a body having a jaw shaped to straddle loosely one of the base flanges of a rail and provided with a pocket, and a split spring washer confined non-rotatably in said pocket and having relatively offset ends, one of which is arranged to engage the said one base-flange in such a manner that it operates to prevent the anchor from moving lengthwise of the rail in one direction.

5. A rail anchor comprising a cast metal jaw shaped to fit loosely around one of the base-flanges of a rail and having a pocket therein, and a split spring washer held non-rotatably in the pocket and in such a manner that one end thereof is adapted to engage the said one base-flange and prevent the anchor from moving lengthwise of the rail in one direction, the jaw being provided with an opening which permits it and the washer to be driven transversely onto the rail flange.

6. A rail anchor comprising a cast jaw having a pocket therein, extending partially over the flange at one side of the rail, a split spring washer in the pocket, and means for locking the washer against rotation and means for preventing radial contraction in the jaw, the jaw being formed to permit it and the washer to be driven transversely onto the rail flange.

7. A rail anchor comprising a cast metal jaw shaped to fit loosely around one of the base flanges of a rail and having a pocket formed therein, a member formed integrally with the jaw and extending upwardly and then towards the jaw to form a hook for gripping the other base-flanges of the rail, and a split spring washer held in the pocket and having one of its ends positioned to press against the said one base-flange and prevent the anchor from moving lengthwise of the rail in one direction, the jaw being formed to permit it and the washer to be driven transversely onto the said one base

flange so the hook will clear the other base-flange of the rail, and then to be retracted so the hook will engage said other base flange.

8. A rail anchor comprising a body provided with a jaw adapted to fit loosely around one of the base-flanges of a rail, a split spring washer held in said jaw to lock the body to the rail, and an anvil on the body whereby the jaw and washer may be driven transversely onto the said one base-flange.

9. A rail anchor comprising a cast metal jaw adapted to fit loosely around one of the base-flanges of a rail and having a pocket formed therein, a hook formed integrally with the jaw and adapted to extend around the other base-flange of the rail, and a split spring washer held in the pocket and having one of its ends positioned to press against the said one base-flange and prevent the anchor from moving lengthwise of the rail in one direction, the jaw being formed to permit it and the washer to be started obliquely and then swung toward the bottom of the rail and driven transversely onto the said one base flange so the hook will clear the other base flange, and then to be retracted so the hook will engage the rail.

Signed at Chicago, Illinois, this 14th day of May, 1929.

WILLIAM ALEXANDER KENNEDY.