Feb. 26, 1924. 1,484,689

J. WALKER

NUT LOCK

Filed April 14, 1923 2 Sheets-Sheet 1

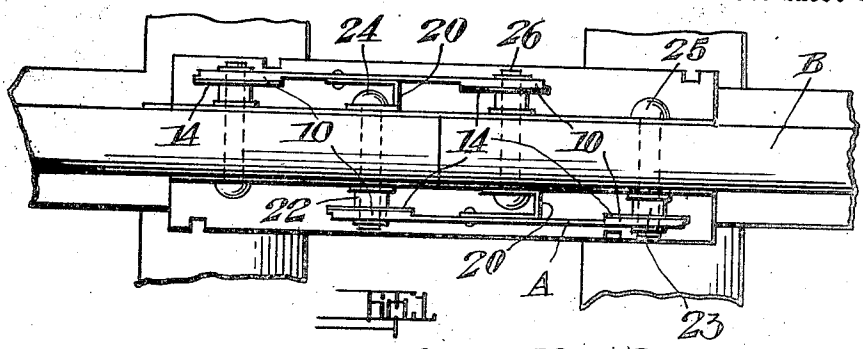


Fig. 1.

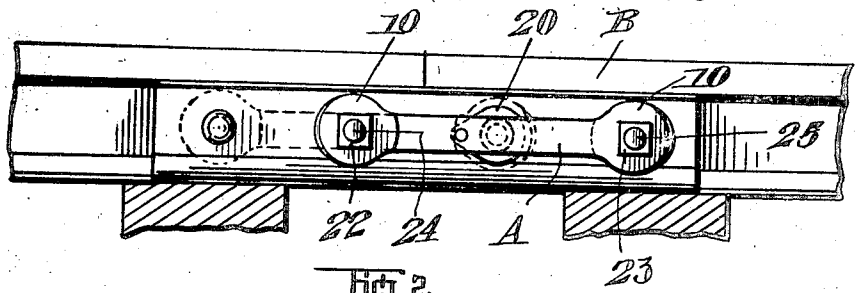


Fig. 2.

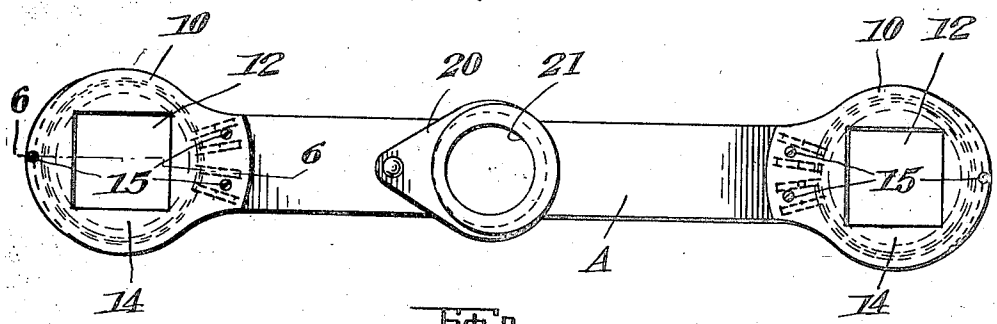


Fig. 3.

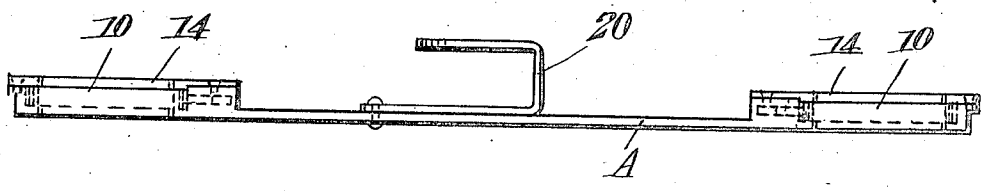


Fig. 4.

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Feb. 26, 1924. 1,484,689

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Filed April 14, 1923 2 Sheets-Sheet 2

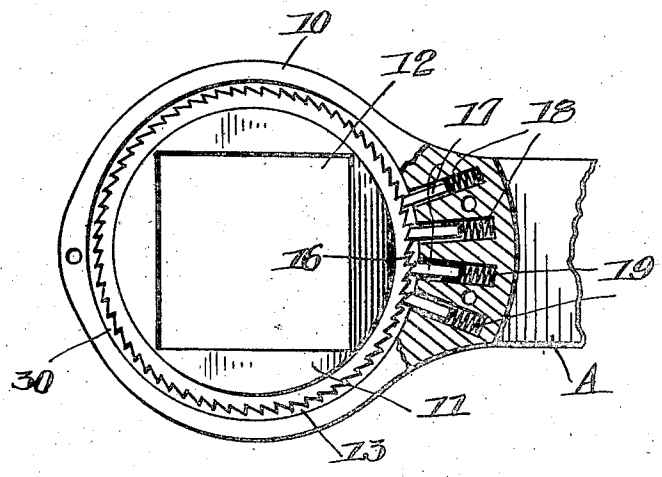


Fig. 5.

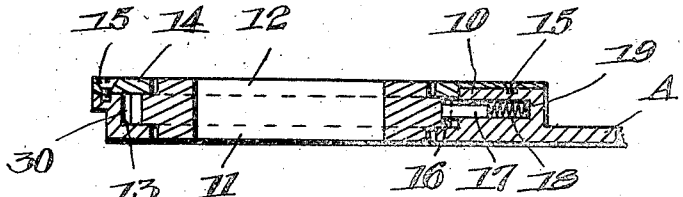


Fig. 6.

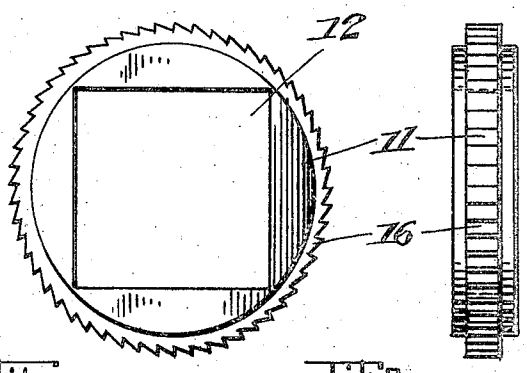


Fig. 7.

Fig. 8.

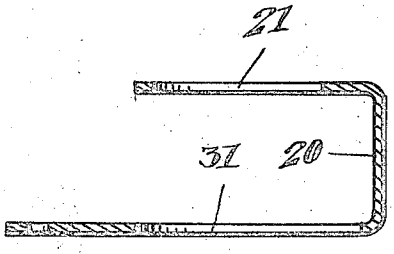


Fig. 9.

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Patented Feb. 26, 1924. 1,484,689

UNITED STATES PATENT OFFICE.

JOHN WALKER, OF BARRIE, ONTARIO, CANADA.

NUT LOCK.

Application filed April 14, 1923. Serial No. 632,116.

To all whom it may concern:

Be it known that I, JOHN WALKER, a subject of the King of Great Britain, and a resident of the town of Barrie, in the Province of Ontario and Dominion of Canada, have invented certain new and useful Improvements in Nut Locks, of which the following is a specification.

This invention relates to improvements in nut locks, and the objects of the invention are to provide a simple and effective device for locking and tightening the nuts of track bolts such as used for rail joints and plates, and to provide a device of such a character that the operation of the track will automatically take up the slip occasioned by vibratory movement, thus preventing loosening and consequent pounding of the rail joint.

Further objects of the invention are to provide such a device that will be automatic in character, and will automatically tighten the nuts from time to time, continuing in this way to correct the tendency for the joint to loosen.

And still further objects are generally to improve and simplify the construction of the device to better adapt the various parts to perform the functions required of them.

And it consists essentially of the improved construction hereinafter described in detail in the accompanying specifications and drawings.

In the drawings:

Figure 1 is a plan view of an embodiment of the invention.

Figure 2 is a side view.

Figure 3 is a plan view of the underside of the device.

Figure 4 is a side view of the device.

Figure 5 is a sectional elevation drawn to an enlarged scale.

Figure 6 is a sectional detail taken on the line 6—6 of Figure 3.

Figure 7 is a detail showing an elevation of one of the ratchet members.

Figure 8 is a side view of one of the ratchet members.

Figure 9 is a sectional detail of the connecting bracket.

In the drawings, like characters of reference indicate corresponding parts in all the figures.

Referring to the drawings:

A indicates a supporting member having at each end a head or housing 10 designed to rotatably support a ratchet member 11 which is formed with an aperture 12 to fit a square, hexagonal or other nut. As shown, the ratchet member is held in position in an annular socket 13 in the supporting member by means of a removable annular retaining plate 14 held in position by releasable means such as set screws 15.

The ratchet member is provided on the side with a ratchet wheel 16 designed to be engaged by one or more spring-actuated pawls 17 which operate in radially extending recesses 18 provided in the head being forced outwardly by springs 19 extending between the inner end of the pawls and the ends of the recesses. I have shown four of such spring pawls, but it is obvious that any desired number might be used, and these will be designed with reference to the size of the teeth of the ratchet wheel in accordance with the conditions under which the device is to be used.

The supporting member is provided at a suitable point with a connecting or supporting bracket 20 which, as shown, is pivoted thereto and is of U-shape, having an aperture 21 on the inner side designed to receive a bolt or rivet by which it may be held in position on the track.

The manner of applying the device will be readily apparent from Figures 1 and 2 of the drawings. It will be seen that the supporting member A extends parallel with the track B, and that nuts 22 and 23 extend through the heads of the supporting member, these nuts being provided on the bolts 24 and 25, the supporting member being retained in position by an intermediate bolt 26 the head of which engages the bracket 20.

It will be seen further that two supporting members are provided, one on each side of the rail, the four bolts of the joint having the nuts alternately on opposite sides whereby the heads of the bolts 26 and 24 on the sides opposite the nuts will serve to engage and retain the bracket 20 in position.

It will be found that, in action, the vibratory movement produced by the traffic will cause the nuts to tighten while retrograde movement will be prevented by the

spring ratchet, as indicated. The pitch or space between the teeth of the ratchet wheels may be lessened or increased to correspond with the ratio between the application of power and the intensity of movement set up in the joint by traffic. Expansion or contraction of the rail is allowed for in the space 30 between the ratchet member and its supporting housing.

It will be observed that the supporting bracket 20 is formed with an aperture 31 opposite the aperture 21 to facilitate the passage of the bolt through the supporting member.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention within the scope of the claims, constructed without departing from the spirit or scope thereof, it is intended that all matter contained in the accompanying specification and drawings shall be interpreted as illustrative and not in a limiting sense.

What I claim as my invention is:

1. A device of the character described comprising a supporting member having a head formed with a socket, a ratchet member adapted to fit the socket having an aperture to receive the head of a nut and being formed with a ratchet wheel, a removable cover plate retaining the ratchet member in the socket, and a spring pawl in the head designed to engage the ratchet wheel.

2. A device of the character described comprising a supporting member having a head formed with a socket, a ratchet member adapted to fit the socket having an aperture to receive the head of a nut and being formed with a ratchet wheel, a removable cover plate retaining the ratchet member in the socket, and a plurality of radially extending spring-actuated pawls in the head adapted to engage the ratchet wheel.

3. A device of the character described comprising a longitudinally extending supporting member having a head at each end, a ratchet member rotatably mounted in each head formed with an aperture to receive a nut and with a ratchet wheel, spring pawls on the heads engaging the ratchet wheels.

4. A device of the character described comprising a longitudinally extending supporting member having a head at each end, a ratchet member rotatably mounted in each head formed with an aperture to receive a nut and with a ratchet wheel, spring pawls on the heads engaging the ratchet wheels, and a supporting bracket secured to the head by which it may be attached to a rail.

5. A device of the character described comprising a longitudinally extending supporting member having a head at each end, a ratchet member rotatably mounted in each head formed with an aperture to receive a nut and with a ratchet wheel, spring pawls on the heads engaging the ratchet wheels, and a supporting bracket secured to the head by which it may be attached to a rail, said supporting bracket being of U-shape having aperture at opposite sides through which a bolt may pass.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

JOHN WALKER.

Witnesses:
SARAH EDITH BLACK,
JEAN ELMA MCKEVER.