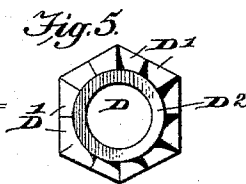
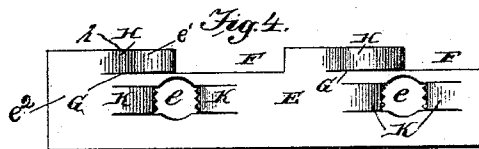
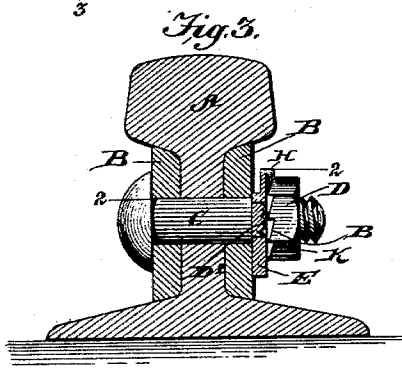
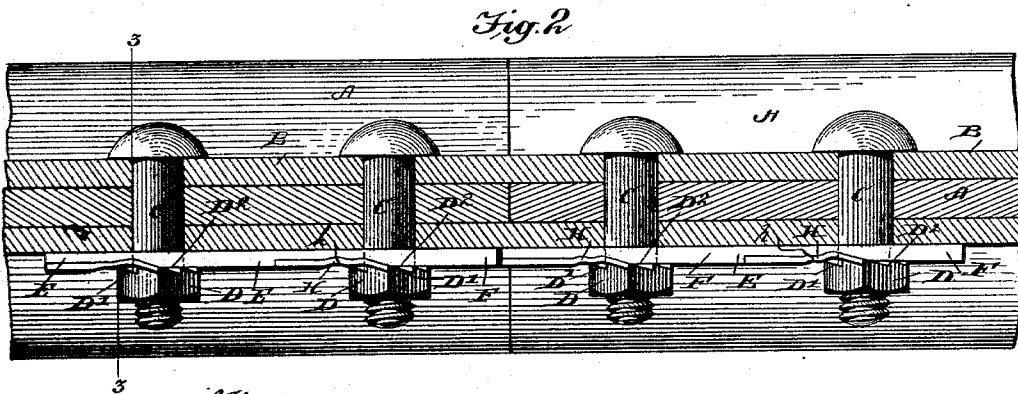
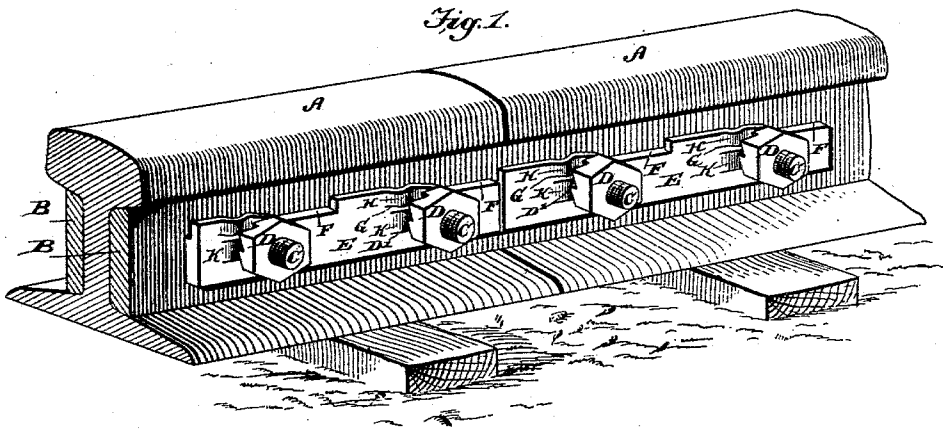


(No Model.)

L. M. CUNNINGHAM.
NUT LOCK.

No. 571,721.

Patented Nov. 17, 1896.



Witnesses:

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UNITED STATES PATENT OFFICE.

LOGAN M. CUNNINGHAM, OF ERIE, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO ROBERT S. CONSTABLE, OF SAME PLACE.

NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 571,721, dated November 17, 1896.

Application filed March 11, 1896. Serial No. 582,808. (No model.)

To all whom it may concern:

Be it known that I, LOGAN M. CUNNINGHAM, residing in Erie, in the county of Erie and State of Pennsylvania, have invented a new and Improved Nut-Lock, of which the following is a specification.

This invention is an improved nut-lock, the object of the invention being to provide a locking device which will securely hold a number of nuts at one time, and the device is particularly adapted for use upon railroad-rails.

Another object is to provide a nut-locking device which embodies the principle of a pawl and ratchet, the pawl being arranged upon the washer and the nut constructed with a ratchet lower face.

Another object is to provide a washer-plate of different thicknesses, the thick portion being arranged beneath the nut to receive the strain, and the thin portion being cut away to provide the locking tongues or pawls.

Another object is to provide a washer-plate of different thicknesses, the thick portion being arranged beneath the nuts, the outer face of the thin portion being flush with the outer face of the thick portion.

With these objects in view and such others as may appear as the details of the invention are better understood my invention consists in the peculiar construction of the various parts and also in their novel combination or arrangement, all of which will be fully described, and then pointed out in the claims.

In the drawings forming a part of this specification, Figure 1 is a view showing my invention in use. Fig. 2 is a horizontal section on the line 2 2 of Fig. 3. Fig. 3 is a section on the line 3 3 of Fig. 2. Fig. 4 is a detail view of washer-plate. Fig. 5 is a detail face view of the ratchet-faced nut.

Inasmuch as my invention is particularly adapted for use upon the splice-joint of railroad-rails, I have shown the meeting ends A of two rails, which are of the usual construction, and likewise the fish-plate B and bolts C C.

The nut D has a ratchet-face D'; but it will be noticed that the ratchet-teeth are arranged near the outer edges only, and at the center said nut has a flat annular portion D².

The washer-plate E, which is adapted to be placed upon the bolts between the fish-plate and nuts, can be made any length desired in order to accommodate the requisite number of bolts and nuts, in the present instance four, two on each side of joint. This washer-plate, however, is of different thicknesses, that is, the upper inner edge is cut away or reduced, having the upper forward edge *e'* about one-half the thickness of the body portion *e*², said body portion being arranged between the nut and fish-plate and receives all the strain or pressure. The upper edge *e'* is cut away at F and slit horizontally at G, thus providing a series of horizontal spring-tongues H, the free ends of which rest above the vertical axis of the bolt-holes *e*.

The tongues H are turned slightly outward at their ends to engage the ratchet-faces of the nuts and act as locking-pawls, said tongues being crimped or corrugated transversely to their length, as shown at *h*, the purpose of said construction being to stiffen the said tongue, thus making said tongue extremely elastic and effective.

The washer-plate is slotted longitudinally near each bolt-hole, thereby providing spring-tongues K K, the edges of which are serrated and bite into the bolt, thus locking the washer-plate securely to the bolt, said tongues being forced inward as the nuts are screwed down.

In operation the rails, fish-plates, and bolts are arranged as usual. The washer-plates E are then placed upon the bolts and the nuts screwed home. The nut as it approaches the forward face of washer-plate engages the end of the spring-tongue, which permits the ratchet-faced nut to slip thereon and locks it against reverse revolution, and as the nut is screwed tighter the tongues K bite into the bolt, thus holding the plate E immovable upon the bolts. The body of nut bears or presses entirely upon the thick oblong portions of washer-plate, which is sufficiently thick to withstand all strain. The ratchet-face of nut, however, contacts with the spring-tongue, which is only about one-half the thickness of main portion of plate, but is crimped or corrugated transversely to strengthen or stiffen said tongue. Furthermore, when it is desired to press the tongue back to remove the

nut the concavity of the crimp or corrugation affords a convenient place to insert a tool.

In order to permit the rail to expand and contract, the bolt-holes in the fish-plate are of course made oval or elliptical in shape, and to prevent the tongues being drawn out of engagement with the nut I prefer to make the washer-plate in two sections, as shown in Figs. 1 and 2, each plate locking two bolts.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a nut-lock the combination with a bolt, of a washer-plate having spring-tongues at the upper edges and spring-tongues in the main portion of plate and a nut having ratchet-teeth and an annular base all arranged substantially as shown and described.

2. In a nut-lock, the combination with a bolt, of a washer-plate, having crimped or corru-

gated spring-tongues upon the upper edge of plate, and spring-tongues within the main portion of plate, and the nut having its base constructed with central annular portion and the ratchet-faced outer portion substantially as shown and described.

3. In a nut-lock, the combination with a bolt, of a washer-plate, the upper edge of which is reduced, cut away and slitted providing a spring tongue or tongues, said tongue or tongues being crimped or corrugated transversely, the spring-tongues in the main portion of plate, and a nut having the ratchet-teeth and flat central portion upon its base all arranged substantially as shown and described.

LOGAN M. CUNNINGHAM.

Witnesses:

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