C. F. SAWYER.

NUT LOCK.

APPLICATION FILED AUG. 17, 1907.

941,046.

Patented Nov. 23, 1909.

Fig. 1

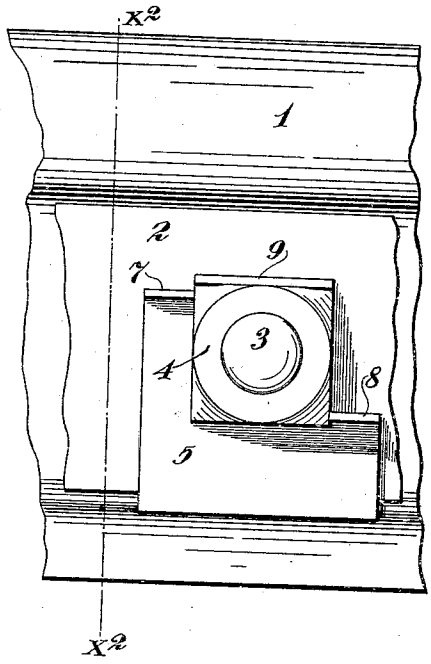


Fig. 3

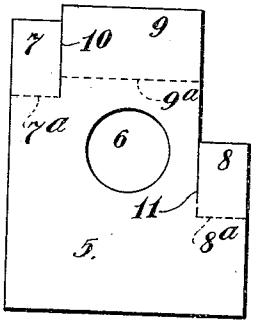
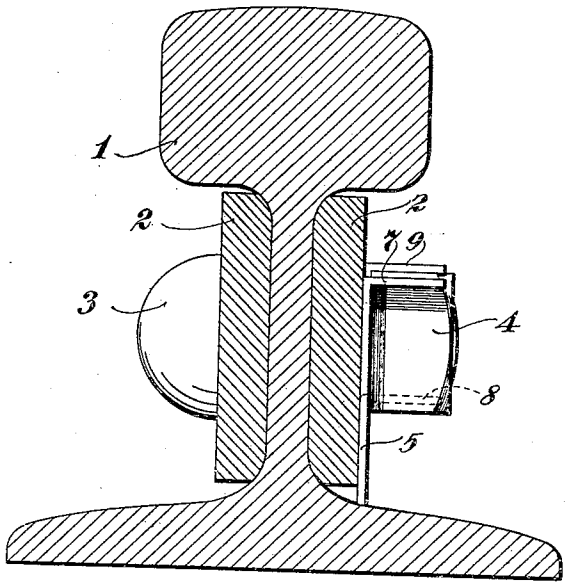


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

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NUT-LOCK.

941,046. Specification of Letters Patent. Patented Nov. 23, 1909.

Application filed August 17, 1907. Serial No. 388,987.

To all whom it may concern:

Be it known that I, CHARLES F. SAWYER, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Nut-Locks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to provide an improved nut lock, and to this end, it consists of the novel device and combination of parts hereinafter described and defined in the claims.

The improved nut lock, while capable of general use, is especially adapted for application to lock nuts used on rail joints, and while best adapted for application to square nuts, may, nevertheless, be applied to polygonal nuts of other form.

In the accompanying drawings, the improved lock is shown as applied to a nut of one of the bolts used at a rail joint to connect the fish plates to the abutting ends of the rails.

In the said drawings, like characters indicate like parts throughout the several views.

Referring to the drawings; Figure 1 is a view in side elevation showing the nut lock applied to a nut at a rail joint. Fig. 2 is a vertical section taken on the line x^2 x^2 of Fig. 1; and Fig. 3 is a detail view in plan, showing the nut lock in blank or flat form.

The numeral 1 indicates a rail, the numeral 2 fish plates, and the numeral 3 a bolt having a square nut 4, the said parts being of the usual construction and arrangement. In the usual construction, as is well known, the bolt 3 has a flattened or angular portion which engages the correspondingly formed seat, not shown, of the fish plate with which the head of the said bolt engages.

The improved nut lock is formed from the single piece of flat sheet metal 5, preferably sheet steel. This flat lock plate 5 is provided with a centrally located bolt passage 6 through which the threaded end of the bolt is adapted to be freely passed, and, as preferably constructed, is formed with three lock lips 7, 8 and 9 that are adapted to be turned, at or approximately at a right angle with the body of said lock plate 5, on the dotted lines marked 7^a, 8^a and 9^a respectively. The lips 7 and 8 are partially separated from the body of the lock plate 5 by slits 10 and 11. The lock plate is adapted to be used as a washer, and hence, of course, placed on the threaded end of the bolt between the nut and the adjacent fish plate. The dimensions of the lock plate should be such that when applied as shown in the drawings its lower edge will bear against the foot flange of the rail. In many cases, however, fish plates with foot flanges are employed, and when the lock plate is to be used in connection with these it should be of such dimensions that its lower edge will closely engage the foot flange of the said fish plate. In this way, the lock plate is positively held against rotation by engagement with an underlying flange of the rail in the one instance, and of the fish plate in the other instance. The modified arrangement, including the flanged fish plate above suggested, would be the equivalent of the arrangement illustrated, and it would be within the scope of the claims of this application.

The nut, when tightened, should be stopped in a position in which two of its sides will be approximately parallel to the slits 10 and 11. The lock lips 7 and 8 should then be turned down at an approximately right angle to the lock plate, and when so turned they will stand in position to directly engage the diametrically opposite corners of the nut. These out-turned lock lips or portions of the lock plate then afford positive stops or locks preventing rotation of the nut in a direction to loosen the same on the bolt. By turning the lip or extended portion 9 also down against the upper edge of the nut, additional security against loosening of the nut is provided. The nut is thus locked at three different places, so that no possible amount of jarring can loosen the nut.

A nut lock of this character, while efficient for the purposes had in view, has the additional advantage that it is of extremely small cost. It may be stamped by one operation from a sheet of metal.

When it is desired to loosen the nut, it is necessary to turn back the lock lips 7, 8 and 9 into the plane of the lock plate. As stated above, the nut lock is especially adapted for use in connection with rail joints, but is not limited to that particular application. When used in connection with wooden beams, or the like, the lock plate should be provided with down-turned lips or anchoring projec-

tions adapted to be pressed into the wooden body.

What I claim is:—

The combination with a rail and fish plate, of a nutted bolt securing the same together, and a nut lock comprising a metallic plate interposed between said nut and adjacent fish plate and having a bolt passage through which the bolt is passed, the said plate having a depending portion adapted to engage with one of the flanges of the rail to hold said plate against rotation, and a pair of locking lips for engaging diagonally opposite corners of said nut formed by cutting slits from the top toward the bottom of said plate on opposite sides of said bolt passage, and bending the two side portions of said plate at right angles to the termination of said slits and bending the upper intermediate portion of said plate so as to engage the upper surface of said nut, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES F. SAWYER.

Witnesses:

MALIE HOEL,

F. D. MERCHANT.