

UNITED STATES PATENT OFFICE.

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NUT-LOCK.

No. 826,734.

Specification of Letters Patent.

Patented July 24, 1906.

Application filed November 7, 1905. Serial No. 286,251.

To all whom it may concern:

Be it known that I, ALEXANDER M. MOYLAN, a citizen of the United States, residing at Century, in the county of Escambia and State of Florida, have invented certain new and useful Improvements in Nut-Locks, of which the following is a specification.

This invention embodies a simple and effective nut-locking device of that type which utilizes a lock-plate adapted to coact with a plurality of nuts to prevent accidental displacement or loosening thereof.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a perspective view showing a nut-lock embodying the invention applied to an ordinary rail-joint. Fig. 2 is a longitudinal horizontal section. Fig. 3 is a perspective view of the lock-plate alone. Fig. 4 is a view embodying a modification of the invention.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings, the numeral 1 indicates the meeting ends of two rails, which are secured together by a joint comprising ordinary fish-plates 2, held in place by bolts 3. The bolts 3 pass through the rails in the fish-plates in the customary way, and the invention is so applied to the joint that each lock-plate comprising the same will readily cooperate with a pair of nuts to accomplish the desired result. The lock-plate above mentioned is of peculiar formation and consists of a spring-plate 4 of a length about equal to the distance between adjacent nuts 5 on the bolts 3. The spring-plate 4 is provided adjacent one end with an opening 6, through which a bolt 3 may pass preparatory to screwing its nut in place thereon. The nut 5, applied to the bolt 3, passing through the opening 6, will effectively attach the lock-plate 4 to the fish-plate, and said plate 4 is provided with a spring-tongue 7, adjacent the opening 6 and arranged to engage a side of a nut to lock the same from movement. The tongue 7 is formed by an arc-shaped slot 8 in the plate 4, a slit or cut 9 extending from the slot 8 at an angle thereto to separate a portion of the plate 4 from its

body sufficiently to admit of springing the same out from the plate. The formation of the slot 8 and slit 9 is such that when the tongue 7 is pressed out from the plate said tongue is of approximately triangular form, having a straight edge nearer the opening 6 and adapted to abut with a side of the nut to accomplish the locking action.

The end of the plate 4 opposite that adjacent which the opening 6 is provided is bent inwardly at approximately a right angle to the body of the plate to form an extension, which is designated 10. This extension is adapted to abut at its inner edge with the outer side of the fish-plate 2, while its outer side is adapted to abut with a side of one of the nuts 5.

The advantages of the special construction of the plate 4 will be apparent on description of the actual operative position assumed thereby when in use. In applying the invention the two bolts, the nuts of which are to be locked by the plate 4, are first placed in proper positions. The plate 4 is now arranged so that one of the bolts 3 pass through the openings 6 therein. The nut 5 for the bolt located adjacent the extension 10 of the plate, having previously been secured upon said bolt, will be prevented from unscrewing movement by engagement of said extension with a side thereof. The nut of the bolt 3, which passes through the opening 6, may now be screwed in place until it is hard against the outer side of the plate 4. The normal position of the tongue 7 of the plate 4, previous to placing the plate in position, is slightly inclined from the plane of the outer surface of said plate, the direction of inclination being such that the nut adjacent may readily be screwed in place, but will be held from unscrewing movement by the straight edge of said tongue. In other words, as the nut 5 of the bolt 3, passing through the opening 6, is screwed against the plate 4 the tongue 7 will be sprung inward to the plane of the plate. Said tongue will spring out, however, when its straight edge is in line with a side of the adjacent nut. The plate 4, as before mentioned, has a spring-plate, and is therefore possessed of a certain amount of resiliency. This is particularly advantageous when it is noted that the extension 10 spaces an end of the plate 4 from the fish-plate 2 adjacent, so that as the more remote nut 5 is screwed against the outer side of the plate 4 said plate is sprung inwardly or

caused to curve in toward the said fish-plate 2. This action causes the plate 4 to be held with positive spring-pressure at the end having the extension 10, and does away with all likelihood of vibration or rattle being caused by movement of the plate 4 toward and from the plate 2 as the rolling-stock passes over the rails. Furthermore, the spring tension of the plate 4, caused by the nut bearing against its outer side, is such as to force the extension 10 hard against the side of the adjacent nut 5, so that said extension will positively engage therewith and likelihood of looseness of the nut or of rattle or vibration of the extension 10 is also done away with. The arrangement of the extension 10, which projects from the inner side of the plate 4, as contradistinguished from the tongue 7, which projects from the outer side of the plate 4, is of importance for reasons which have been above enlarged upon. In the event the extension is not sufficiently near the adjacent nut 5, even when the parts have been arranged in their proper relative positions, it will be noted that a blow on the outer side of the plate near the extension 10 will so bend the plate as to force the extension 10 hard against the nut to accomplish the desired locking action. The slot 8, which has been before described, gives sufficient clearance to admit of insertion of an implement of suitable nature between the tongue 7 and the fish-plate, so that said tongue may be bent out from the fish-plate to assume a position about at a right angle thereto and have its whole straight edge in engagement with the side of the adjacent nut to secure the best locking action. The said plate 4 may be readily stamped from a single piece of sheet metal and formed into the desired shape, as heretofore fully described.

The modification in Fig. 4 is substantially the same as the construction shown in the first three figures, except that the opening in the lock-plate, which is indicated 6^a, is elongated sufficiently to extend to an end of the plate, thereby virtually forming a slot, which admits of placing the lock-plate in position or removing the same without displacing the nuts from the bolts.

Having thus described the invention, what is claimed as new is—

1. In combination with two bolts, nuts screwed thereon, the plate or member 2, the lock-plate 4 provided near one end with an opening through which one of the aforesaid bolts passes, a locking-tongue projecting outwardly from the lock-plate to engage a side of one of the nuts, the end portion of the plate opposite that adjacent to which the opening aforesaid is located being bent inwardly to form an extension arranged to abut with a side of the other of the nuts, said extension also spacing this end of the lock-plate from the member 2.

2. A nut-lock consisting of a plate comprising a spring-body provided near one end with an opening, said body being formed with a curved slot adjacent to said opening and having a slit leading to said slot to provide a tongue projecting outwardly from the body of the plate, the end of the plate opposite that having the opening before mentioned being bent inwardly to form an extension for the purpose specified.

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

ALEXANDER M. MOYLAN. [L. S.]

Witnesses:

R. A. GAMBLE,
E. L. MCGEE.