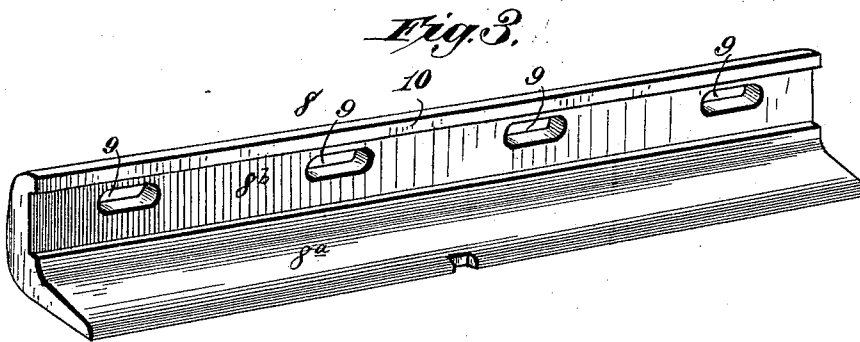
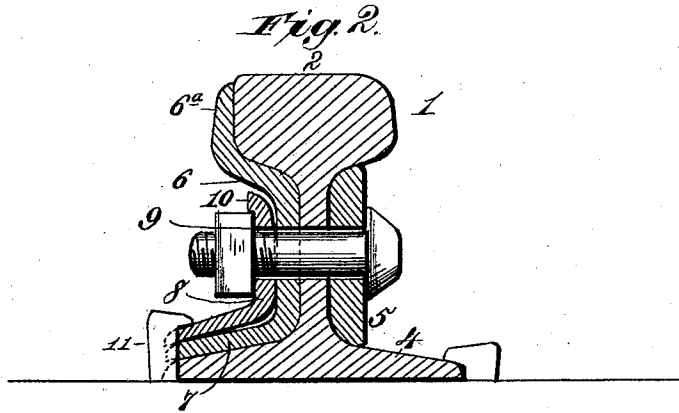
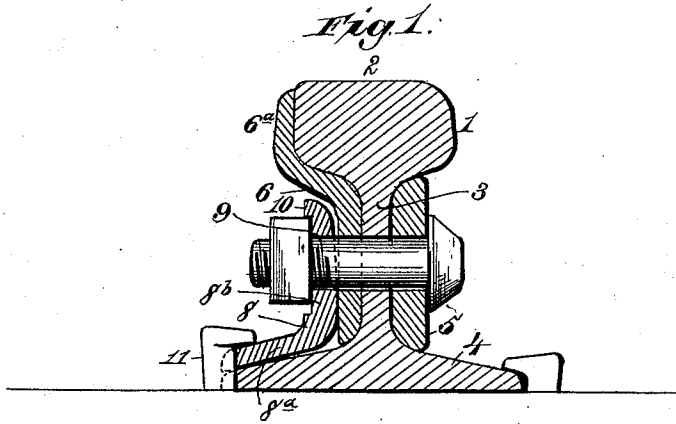


(No Model.)

G. S. LEE.  
NUT LOCK.

No. 391,624.

Patented Oct. 23, 1888.



*Witnesses.*  
*Robert Court,*  
*J. A. Rutherford.*

*Inventor:*  
*George S. Lee.*  
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*J. L. N.*

# UNITED STATES PATENT OFFICE.

GEORGE S. LEE, OF DENVER, COLORADO, ASSIGNOR TO THE NATIONAL SPLICE BAR COMPANY, OF NEW JERSEY.

## NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 391,624, dated October 23, 1888.

Application filed November 28, 1887. Serial No. 256,348. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE S. LEE, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented new and useful Improvements in Nut-Locks, of which the following is a specification.

My invention relates to nut-locks, and especially to that class of devices employed in securing the nuts used in securing together the two sections of a fish-plate.

It is the purpose of my present invention to provide simple, effective, and inexpensive means for locking the nuts in that class of fish-plate joints employed upon some roads wherein the outer plate is carried up or nearly up to the level of the tread of the rail, whereby it forms a partial support for the wheel and promotes the smooth and even running of trains. In this class of joints the rail is usually formed with a well-defined outer angle in order that the overlapping margin of the fish-plate may lie closely against the same.

My invention consists in certain improvements upon that contained in an application filed by me of even date herewith, and will first be fully described, and then particularly pointed out and defined in the claims.

In the accompanying drawings, Figure 1 is a transverse section of a railway-rail near the joint, showing the manner of applying my invention. Fig. 2 is a sectional view showing a modified construction. Fig. 3 is a detail perspective showing the nut-lock.

In the said drawings, the reference-numeral 1 designates the rail, having a T-head, 2, the inner angle whereof is rounded, as usual, while the outer is more nearly rectangular.

The numeral 3 designates the web of the rail, having the usual bolt-openings; and 4 is the rail-foot.

The fish-plates are constructed in the usual manner, the numeral 5 indicating the inner plate and 6 the outer plate, the latter having a margin, 6<sup>a</sup>, which extends up to or nearly to the outer angle of the rail. This outer plate may terminate at the angle between the web 3 and the rail-foot 4, or it may be provided with a foot-flange, 7, which extends over and lies upon the rail-foot, as shown in Fig. 2.

The numeral 8 denotes an angular plate sub-

stantially co-extensive with the fish-plate 6, and consisting of two parts, 8<sup>a</sup> and 8<sup>b</sup>, forming an angle with each other, the one being adapted to lie upon the rail-foot, while the other stands adjacent to that portion of the outer fish-plate which lies against the web of the rail. In the latter portion of said plate is formed a series of bolt-openings, 9, similar in size and corresponding with those in the fish-plates, and upon one or both sides of said openings 9 is a rib, flange, or projection, 10, lying at a distance from the centers of the bolt-openings which is at least equal to half the diameter of the nut. Usually, however, this distance is a little greater to permit the rib 10 to be drawn easily over the aligned edges of the nuts after the same are in place. The angle between that face of the plate 8 which lies against the fish-plate and that which lies on the rail-foot is somewhat less than the angle formed by the surfaces against which said plate is placed, in order that after the parts are in proper relative position and the nuts turned upon the bolts as far as they will go the foot-plate 8<sup>a</sup> may be forced downward and the rib or flange 10 drawn over the aligned edges of the nuts, this position being maintained by spikes 11, driven into the sleepers through notches 12 in the margin of the foot-plate and rail-foot.

I may use a fish-plate having a foot-flange, 7, lying on the rail-foot, as shown in Fig. 2, and in this case the construction is not substantially changed, the locking-plate being merely placed upon the foot-flange 7 instead of the rail-foot.

By this invention the slight tilting motion of the angular locking-plate in locking the nuts drives the outer fish-plate, 6, against the web and head of the rail with great force, and not only promotes the strength and permanence of the fastening, but tends to make a perfect joint between the overlapping portion 6<sup>a</sup> and the head of the rail.

Having thus described my invention, what I claim is—

1. The combination, with a railway-joint and with an inner and outer fish-plate, the latter having a marginal portion extended to or nearly to the level of the tread of the rail, of an angular locking-plate having a rib, flange, or projection upon one side of bolt-openings

which correspond with those of the rails and fastenings by which the foot-plate is drawn downward to force the said rib over the aligned edges of the nuts, substantially as described.

5 2. The combination, with the rails of a railway, of an inner and outer fish-plate, the latter having a marginal portion extending to or nearly to the angle of the rails, a foot-flange and a portion lying against the web, and an angular locking-plate having a channel crossing its

bolt-openings and provided with notches or openings to receive fastenings by which said channel is drawn outward to inclose the nuts, substantially as described.

In testimony whereof I affix my signature 15  
in presence of two witnesses.

GEORGE S. LEE.

Witnesses:

JAMES L. NORRIS,  
J. A. RUTHERFORD.