(No Model.)

C. T. REDFIELD.

NUT LOCK.

No. 571,286. Patented Nov. 10, 1896.

Fig. 1

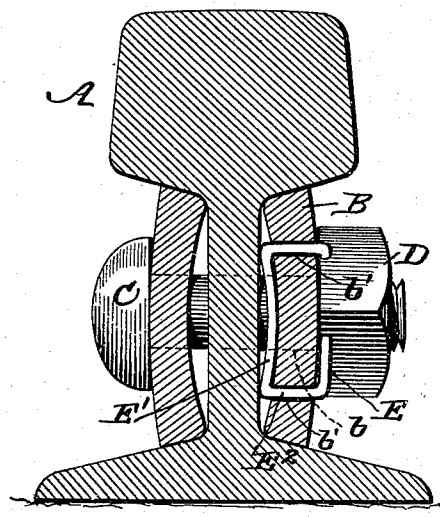


Fig. 2.

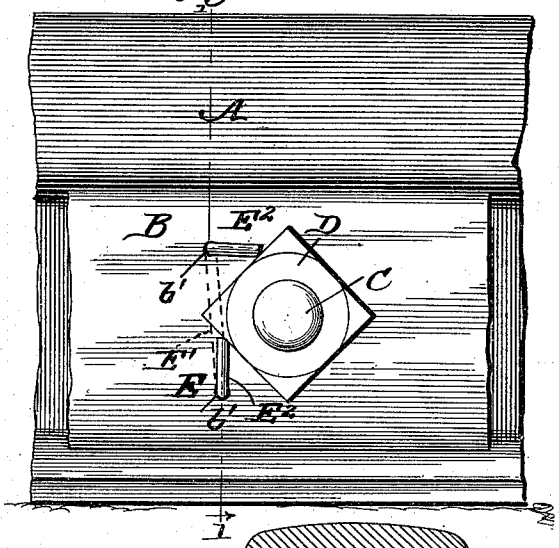


Fig. 3.

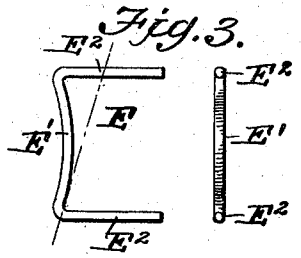


Fig. 4.

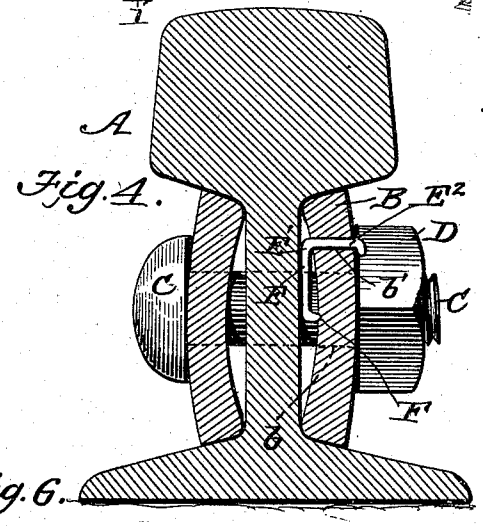


Fig. 5.

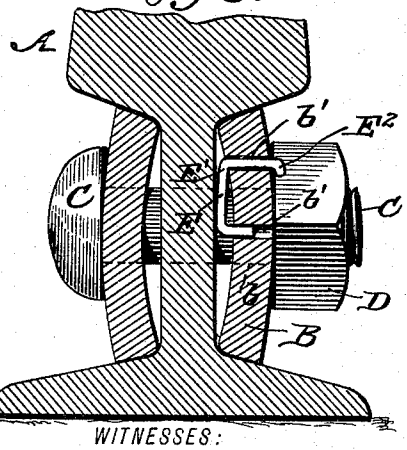
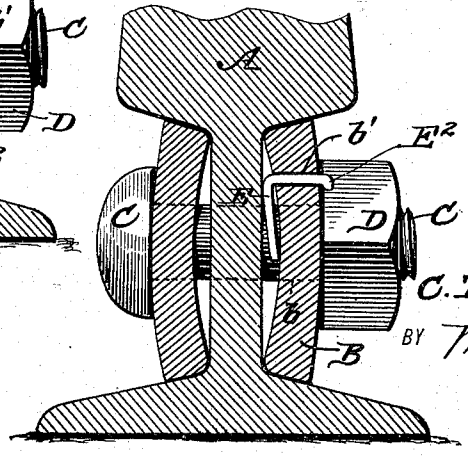


Fig. 6.



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NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 571,286, dated November 10, 1896.

Application filed April 14, 1896. Serial No. 587,496. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. REDFIELD, of Glen Haven, in the county of Cayuga and State of New York, have invented a new and useful Improvement in Nut-Locks, of which the following is a specification.

My invention is an improvement in nut-locks, and seeks to provide a lock comprising, in connection with a perforated fish-plate, a wire or rod having portions passed through such fish-plate, such rod being adapted for convenient manipulation to secure the nut; and the invention consists in certain novel constructions, combinations, and arrangements of parts, as will be hereinafter described and pointed out in the claims.

In the drawings, Figure 1 is a cross-sectional view of a rail-joint provided with my improvement. Fig. 2 is a side view thereof. Fig. 3 is a detail view of the locking device. Fig. 4 is a cross-sectional view showing a somewhat different construction in which one of the arms is omitted and a short spur is provided in its place. Fig. 5 is a cross-sectional view showing one of the end arms shortened so it will not project beyond the face of the fish-plate, and Fig. 6 is a cross-sectional view in which one of the end arms of the locking device is omitted and the remaining end arm may be directed at a right angle to the edge of the nut to bear squarely against the same.

The rail A, fish-plate B, bolt C, and nut D may be generally of ordinary construction. A novel feature of the fish-plate is the provision, in connection with the bolt-holes b, of a perforation or perforations b', arranged in such relation to the bolt-hole b that one or both of the end arms of the locking device may be bent to position alongside the nut to effectually lock the same. The locking device consists of a length of wire or rod bent in the construction shown in Figs. 1, 2, and 3 to provide a central connecting portion E′ and end arms E^2, projecting in parallel directions from the opposite ends of the connecting portion E′, the said parts E′ and E^2 constituting the locking device E. The connecting portion E′ is preferably tempered and is bowed in the direction of the plane of said end arms E^2, forming a spring which tends to hold the locking device from any movement when its arms are inserted in the perforations of the fish-plate, as shown in Fig. 1, and this tempered and bowed connecting portion may also be utilized to take up expansion when desired, or separate springs may be used to take up expansion in any desired manner. While the portion E′ is preferably tempered, the extremities of the end arms E^2 are untempered, and it is preferred to have one of such arms untempered entirely to its joint with the connecting portion E′, the object of such untempered joint being to permit the device to move out slightly at such joint when the connecting portion is compressed.

In Fig. 3 I indicate by dotted lines the points to which the locking device is tempered, the tempered portion extending from one end of the connecting portion to a point between the ends of the opposite arm, and it will be seen that this permits the dipping of the locking device in the tempering solution in such manner as to leave the inner end or one end arm untempered and yet involve the immersion of every portion of the deflected or bowed central portion E′.

In the use of my improvement, the fish-plate being suitably perforated, which may be easily and quickly accomplished by single or duplex drills, or in other suitable manner, I place the locking devices in connection with the fish-plate, as shown in Fig. 1, and then bend the ends of one or both of the arms E^2 to position to lock the nut, as will be understood from Fig. 2.

Where desired, one of the arms E^2 need not project beyond the outer face of the fish-plate, but may serve simply to positively lock the locking device from any swinging movement. In the construction shown in Fig. 4 I provide only one perforation for one arm of the locking device, the portion of such device extending beneath the fish-plate being provided at one end with a spur F, adapted to be pressed into locking engagement with the fish-plate by the turning of the nut up against such plate, as will be understood from Fig. 4.

In the construction shown in Fig. 5 the bow of the tempered connecting portion is toward one end thereof, and such connecting portion is formed on a straight line instead of a curved line, as shown in Fig. 1.

In the construction shown in Fig. 6 the inner portion of the locking device extends

alongside the inner face of the fish-plate and has one end adapted to bear against such fish-plate and its opposite end connected with the arm which projects out through the perforation in the fish-plate and is adapted at its free end to be adjusted to lock the nut. Manifestly this form is within the broad idea of my invention, which includes a perforated fish-plate and a locking device having an arm extended through the perforation in the fish-plate and adapted to be bent to secure the nut and having a portion extended alongside and beneath the fish-plate, substantially as before described.

Among the many other advantages of my invention may be noted its simplicity, its cheapness, the ease with which it can be applied, and the positive lock of the nut at any point which is secured by its use, as well as the positive lock of the locking device.

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

1. In a nut-lock the combination of the bolt and nut, the fish-plate having perforations adjacent to said nut and a locking device consisting of a central connecting portion and parallel arms projecting from the opposite ends of said connecting portion the latter being bowed approximately in the plane of said end arms, the said arms being directed through perforations in the fish-plate and bent into engagement with the nut and the bowed portion being arranged beneath the fish-plate all substantially as shown and described.

2. In a nut-lock, a locking device comprising a central connecting portion and parallel arms projecting from the ends thereof the arms being untempered and the connecting portion being tempered and bowed approximately in the plane of said arms combined with the bolt and nut and means for holding said locking device in place with its untempered arms in position to be turned to position to lock the nut substantially as shown and described.

3. The combination of the bolt, the nut, the fish-plate having a perforation and the locking device having an arm extended through said perforation and bent to secure the nut and having a portion extended alongside and beneath the fish-plate substantially as set forth.

4. The improvement in nut-locks substantially as herein described consisting in combination with the rail, the fish-plate, fitted thereagainst and having perforations adjacent to its bolt-holes the bolt and the nut, of the locking device having a central portion extending along the inner side of the fish-plate and held between the same and the rail and having end arms entering the perforations in the fish-plates, one or both of said arms being bent flat against the fish-plate and bearing at its extremity against the edge of the nut substantially as shown and described.

5. The combination of the fish-plate having separated perforations adjacent to its bolt-hole, the bolt and nut, and the locking device having a connecting portion under the fish-plate and arms projected out through the separated perforations and bent against the fish-plate and bearing endwise against the nut substantially as shown and described.

6. The combination of the perforated fish-plate, the bolt and nut and the locking device having a bowed or deflected portion under the fish-plate and an arm extended out through the perforations in the fish-plate, bent against the fish-plate and bearing endwise against the nut substantially as shown and described.

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Witnesses:
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