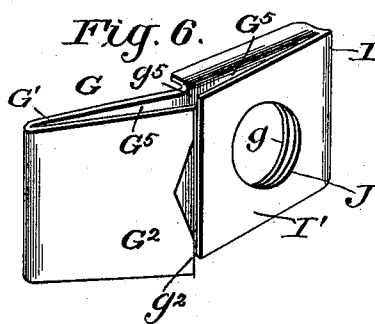


C. T. REDFIELD.
NUT LOCK.

Patented June 1, 1897.

Fig. 1.



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CHARLES T. REDFIELD, OF GLEN HAVEN, NEW YORK.

NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 583,817, dated June 1, 1897.

Application filed January 2, 1897. Serial No. 617,749. (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 improved nut-lock intended especially for use on rail-joints, but applicable to other structures; and it 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 face view, and Fig. 2 a cross-section on about line 2 2, Fig. 1, of a rail-joint provided with my improved nut-lock. Fig. 3 is a detail view of the locking-plate shown in Figs. 1 and 2. Fig. 4 is a detail view of the spring-ring employed in the construction shown in Figs. 1 and 2. Fig. 5 is a face view of a rail-joint provided with a nut-lock somewhat different from that shown in Figs. 1 and 2, and Fig. 6 is a detail view of the locking-plate shown in Fig. 5.

The rail A, fish-plates B C, bolt D, and nut E may be of the ordinary pattern. Against the fish-plate B, I fit the base bar or plate F, having openings for the bolts and held from turning on the bolts preferably by fitting it to receive two or more bolts, as shown. Against this base-plate I place the lock-plate G, having an opening *g* for the bolt and a flange *g'* to overlap the base bar or plate F to hold the plate G from turning. Instead of this flange *g'* the plate G may be held from turning by providing it with barbs or spurs to enter the portion against which the locking-plate is pressed or by arranging the lower edge of the locking-plate to rest against the foot of the rail. At one end the plate is extended at *G'* and has its full width at such end folded back, forming a return-bend, which serves as a spring-tongue portion *G²*, which is arranged to fit at its free edge *g²* alongside the nut and is bent out at such edge to normally project above the base of the nut, as presently more fully described. The plate G is arched or bent outward from end to end, and, like the tongue *G²*, is tempered so it will form a spring to take up slack of the bolt,

hold the bolt tight at all times, and prevent any rattling in the joint.

By preference the arch or bend is so formed as to provide the flat wings *G⁵*, extending from a central point *g⁵* to its opposite ends, and which may be forced flat against the surface against which the locking-plate fits, so the nut may be screwed up to the full extent without in the least endangering the washer.

On the main portion of the plate G, surrounding or adjacent to the bolt-hole therein, I provide an offset portion of a thickness equal to or in excess of that of the spring-tongue, so the nut will be held sufficiently off the face of the plate G to permit the tongue *G²* to be forced by a blow beyond the base of the nut, so the latter may be turned on or off over the tongue, the latter being repeatedly struck by a hammer to permit the corners of the nut to successively escape over the edge of the locking spring-tongue.

In the construction shown in Figs. 1 and 2 I use the spring-ring H (shown in Fig. 4) as the offset portion, such spring-ring being split and having its ends bent out of line to form a spring. This form may be desired because in addition to its spacing function it operates with a spring action on the nut and bolt, supplementing and coöperating with the spring of the plate G, but, if desired, the spring-ring may be replaced by a similar-sized plain unbroken ring, which will serve the spacing or offset purpose before described. The free edge of the tongue *G²* may be notched to properly secure the nut if a corner of the latter be presented to the edge of the tongue, as will be readily understood.

It may in some instances be preferred to form the offset portion integral with the plate G, and this I show in Figs. 5 and 6. In this construction the locking-plate is folded upon itself at I, forming the section I', which is preferably at a slight angle, to serve as a spring like the split ring. This portion I' is provided with a bolt-hole J, registering with that in the body of the plate. This overturned plate I', being of the same thickness as the spring-tongue, forms a proper offset and permits the freeing of the nut by the repeated hammering operation before described. This form of locking-plate may be held from turning by

any of the means described in connection with the nut-locking devices shown in Figs. 1 and 2.

In the several constructions it will be readily seen that the locking-plate is bowed outward from end to end and efficiently serves as a spring and that in each case I furnish the spring-tongue to fit alongside the edge of the nut in connection with the offset beneath the nut, whereby the latter is held so projected as to permit the spring-tongue to be hammered below it as the nut is turned and so permit the offturning and the application of the nut, as may be desired. It is manifest that the improvements can be applied to other structures than rail-joints and may be used in bridge-building, carriages, in machines, and elsewhere where the locking of a nut is desired, and on iron, wood, or other structures. By the use of the bent end of the locking-plate as a spring-tongue and the bowing of the main portion of such plate I secure a double spring, and the straightening of the main portion as the nut is turned home tends to increase the tension of the tongue by setting the point thereof nearer the rail than when the main portion of the locking-plate is bowed out in the normal position of said portion. It will further be seen that the several spring portions act singly and together to prevent any rattling of the joint.

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

1. A nut-lock consisting of a spring-plate having a main portion bowed outwardly from end to end and having at one end of said main portion a returned or folded portion forming a spring-tongue, the main portion being pro-

vided with a bolt-opening, and an offset device or portion upon the main portion adjacent to the bolt-hole whereby to form an abutment for the nut, by the side of which abutment the end of the spring-tongue may be depressed beneath the nut all substantially as shown and described.

2. In a nut-lock the combination of the bolt and nut the base-plate fitted on the bolt, the locking-plate fitted on the bolt over the base-plate and having a flange to overlap the base-plate the locking-plate having a main portion bowed outwardly from end to end and provided with a returned tongue folded back from the end of the main portion, the offset on the main portion and the nut turned on the bolt against the said offset, the free end of the tongue projecting alongside said nut and being depressible below the nut and alongside the offset portion all substantially as shown and described.

3. In a nut-lock, the combination of the locking-plate having a bolt-hole and folded back at one end forming a spring-tongue and a ring or collar bearing upon said plate surrounding the bolt-hole by which to hold the nut away from the face of the plate substantially as shown and described.

4. In a nut-lock a locking-plate having a main portion, a portion folded back from one end thereof to form an offset for the nut and a spring-tongue bent back from the opposite end of the main portion and resting alongside the adjacent edge of the nut all substantially as shown and described.

CHARLES T. REDFIELD.

Witnesses:

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