

H. BARTLEY.
NUT LOCK.

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1,034,057.

Patented July 30, 1912.

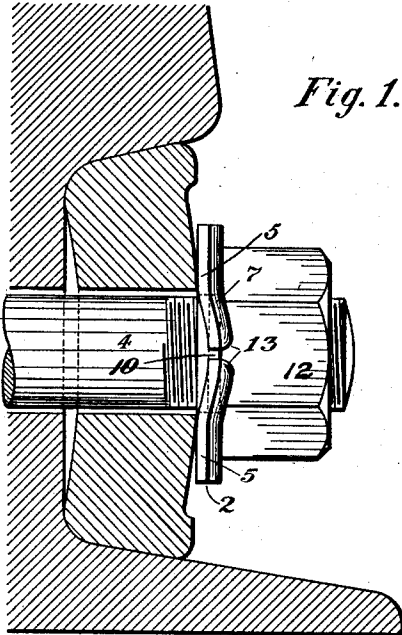


Fig. 1.

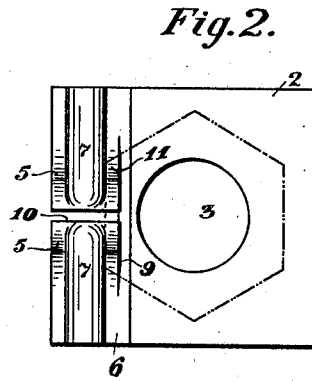


Fig. 2.

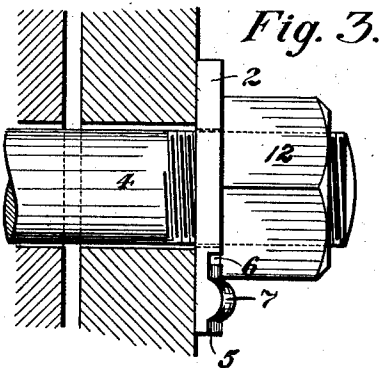


Fig. 3.

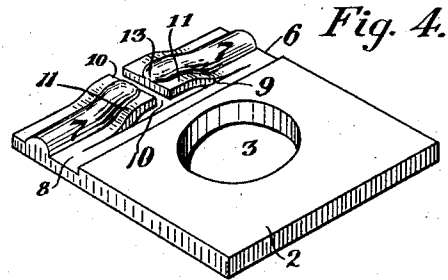


Fig. 4.

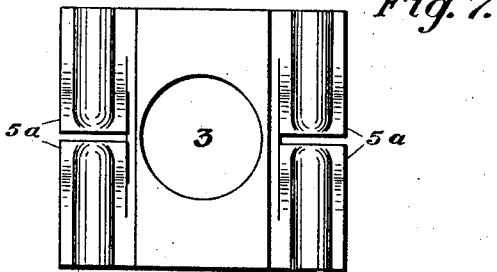


Fig. 7.

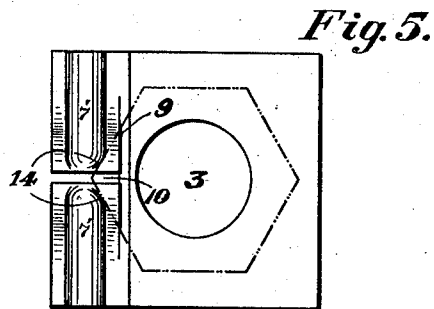


Fig. 5.

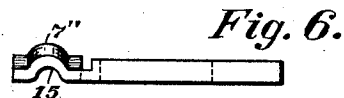


Fig. 6.

Witnesses:

W. A. Leckman
J. O. Bailey Brown

Inventor:
Harry Bartley
V. M. Clarke
his attorney

UNITED STATES PATENT OFFICE.

HARVEY BARTLEY, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR OF THREE-FOURTHS
TO MILTON BARTLEY, OF PITTSBURGH, PENNSYLVANIA.

NUT-LOCK.

1,034,057.

Specification of Letters Patent.

Patented July 30, 1912.

Application filed September 2, 1911. Serial No. 647,447.

To all whom it may concern:

Be it known that I, HARVEY BARTLEY, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Nut-Locks, of which the following is a specification.

My invention consists of an improvement in nut locks of the type shown in my prior application filed June 20, 1911, Serial No. 634,347, and is made of a washer plate, preferably cut from a rolled blank of two thicknesses, having a plurality of integral partly slitted spring tongues, each provided with an inner bearing ledge for the under side of the nut and an outwardly rounding rib or boss adapted to engage the nut and prevent it from turning.

The lock is constructed and adapted to operate in the manner more fully herein-after described.

In the drawings: Figure 1 is a partial sectional view through a portion of a rail and fish plate, showing the application of my improved nut lock to the bolt and nut of a rail joint. Fig. 2 is a view of the locking washer in front elevation ready for application, indicating the position of the nut in dotted lines. Fig. 3 is a sectional plan view of the device. Fig. 4 is a perspective view of the device. Fig. 5 is a view, similar to Fig. 2, showing a modified construction. Fig. 6 is an edge view, showing a lock having a pressed rib. Fig. 7 is a view similar to Fig. 2, showing the locking tongues at each side of the washer plate.

The nut lock is composed of a single piece of metal, preferably rectangular in shape, or of other suitable form, the main body portion of which is of a proper gage to provide strength and a solid bearing for the nut, in the manner of a washer plate 2. The plate is centrally apertured as at 3 for the bolt 4. At one or both sides of the center, the metal is of reduced thickness to provide resiliency in the spring tongues, and the reduction in the metal is preferably either wholly or partially at the front side as indicated, to admit of the partly severed tongues 5, 5, being pressed forwardly to provide a bearing for the nut.

The washer 2 is cut from a previously rolled or pressed blank having along its front face at one side of the hole 3, a de-

pression or channel 6, beyond which is a rounded rib 7 in parallel arrangement. The web of metal 8 connecting the ribbed portion with the main washer is, therefore, considerably thinner than the washer 2, the rib being of about the same thickness. The spring tongues 5 are formed by partly slitting through the thin web 8, lengthwise of it between its ends, as at 9, and also dividing such partly severed part about midway at right angles to the slit, as at 10. The tongues thus formed, with their integral ribs 7, are then pressed or bent forwardly as shown in Fig. 4, whereby to bring the outer surface of the ledges or lips 11, thus formed from the thin web 8, up to a position slightly above the general level of the outer face of the washer 2. The general direction of the tongue surfaces, inwardly from their integral connection with the washer at each side, is in the line of a compound curve, the inner confronting terminals of each spring tongue corresponding in position. As thus made, when the nut 12 is screwed upon the end of the bolt 4, its under side edges will always bear upon and slightly depress the spring tongues. The side of the nut will also bear against the inner rounded portion of the rib 7, so that the nut will be effectually prevented from turning or loosening on the bolt. The terminals of the ribs 7 are preferably rounded as at 13 so that in screwing the bolt in either direction, the nut will ride over and depress the rib toward which it is advancing, with sufficient force, thereby enabling either forcible tightening or loosening of the nut. The resiliency of the tongues will, however, always hold the ribs outwardly with sufficient force to lock the nut.

In Fig. 5 I show the ribs 7' as rounded off on their inner corners, as at 14, at a greater radius than that shown in the other figures, whereby to provide clearance for the corner of the nut, if it is desired to locate it in a position half way between the positions in which its straight edges may bear longitudinally against the ribs, and in which the corner of the nut projects between the rounded ends of the ribs. By this means I provide a lock capable of holding the nut in a greater number of positions, while at the same time insuring a very positive engagement.

As shown in Fig. 6, the rib 7'' may be

formed by pressing or striking up the metal from the back, as indicated at 15, and either way of forming the rib may be adopted.

Fig. 7 shows a modified construction employing spring tongues 5^a at each side of the washer plate but otherwise constructed and adapted to operate in the same manner as above described, thereby providing for simultaneous engagement of the nut at each side.

The nut lock may be made in different proportions, shapes or sizes, and can be made and used in many different forms to suit special conditions of use.

What I claim is:

1. A nut lock consisting of a flat metallic body portion having a bolt hole, and a pair of oppositely disposed spring tongues connected with the body portion at one side thereof by a web of reduced thickness and having rounded ribs.

2. A nut lock consisting of a flat metallic body portion having a bolt hole, and a pair of oppositely disposed spring tongues connected with the body portion at one side thereof by a partly slitted web of reduced thickness and having rounded ribs.

3. In a nut lock of the class described, an apertured washer plate, a web extension thereof of reduced thickness having a longitudinal rounded rib and partly severed from the washer plate, and transversely di-

vided and outwardly bowed, substantially as set forth.

4. In a nut lock of the class described, an apertured washer plate, a transversely divided web extension thereof of reduced thickness having longitudinal rounded ribs and partly severed from the washer plate, to provide inner resilient portions, said portions being outwardly bowed to provide spring locking tongues.

5. In a nut lock of the class described, an apertured washer plate, a web extension thereof of reduced thickness having a longitudinal rounded rib and partly severed from the washer plate, transversely divided and outwardly bowed, and having the inner corners of the ribs adjacent to the surface of the web extension rounded, substantially as set forth.

6. A nut lock consisting of a flat metallic body portion having a bolt hole, and a plurality of pairs of oppositely disposed spring tongues connected with the body portion at different sides thereof by webs of reduced thickness and having rounded ribs.

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

HARVEY BARTLEY.

Witnesses:

C. M. CLARKE,
PETER GLICK.