(No Model.)

D. P. GIENTY.

NUT LOCK.

No. 360,091. Patented Mar. 29, 1887.

Fig. 1.

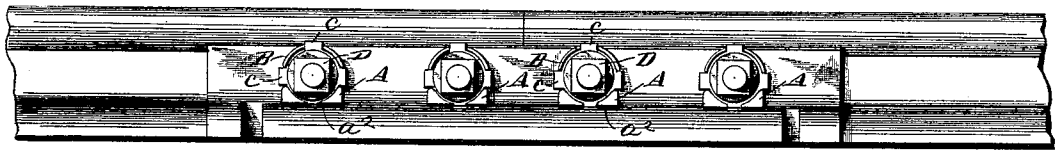


Fig. 2.

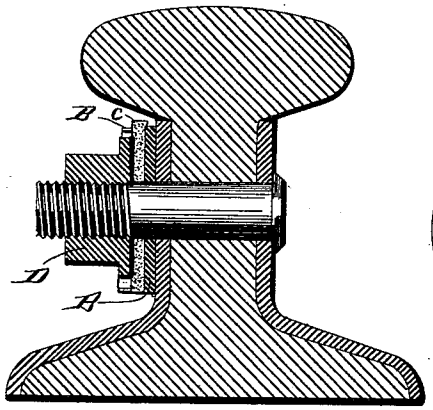


Fig. 4.

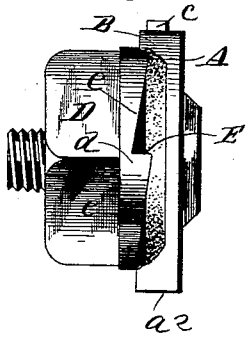


Fig. 5.

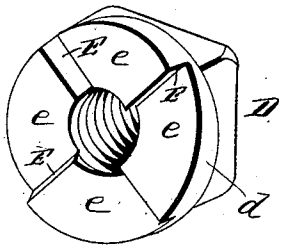
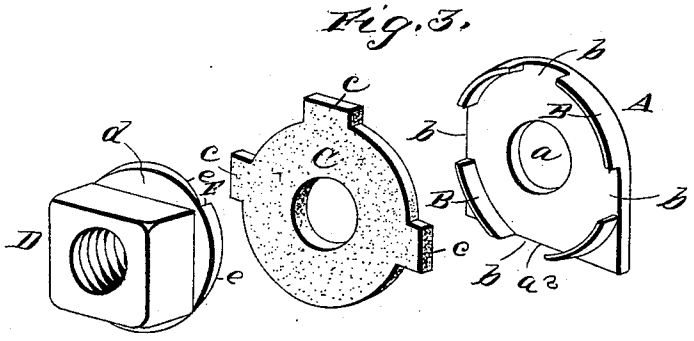


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

DANIEL P. GIENTY, OF CONCORD, NEW HAMPSHIRE, ASSIGNOR OF ONE-HALF TO HENRY W. HAYDEN, OF SAME PLACE.

NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 360,091, dated March 29, 1887.

Application filed December 31, 1886. Serial No. 223,082. (No model.)

To all whom it may concern:

Be it known that I, DANIEL P. GIENTY, a citizen of the United States, residing at Concord, in the county of Merrimac and State of New Hampshire, have invented a new and useful Improvement in Nut-Locks, of which the following is a specification.

My invention is an improved nut-lock, the novelty of which consists in the peculiar construction and arrangement of parts for service, substantially as hereinafter described, and specifically pointed out in the claim.

It is my object to provide a nut-lock to lock the nuts on bolts used for securing railroad-rails together, which will effectually prevent the nuts from turning or working loose, as is often the case in consequence of the heavy weight and jar of the trains in passing over the rails.

It is my object, further, to provide a nut-lock which will combine extreme simplicity of construction with great strength and durability, and render the nut-lock thoroughly efficient for the purpose intended and cheap of manufacture.

I attain the objects mentioned by the construction illustrated in the accompanying drawings, showing a nut-lock embodying the features of my invention, and in which similar letters of reference denote corresponding parts in all the figures.

Figure 1 is a side elevation of my invention applied in position to the rails. Fig. 2 is a transverse sectional view. Fig. 3 is a perspective view of the parts comprising my invention in a detached condition. Fig. 4 is a plan view, partly in section, showing more clearly how the nut engages the washer. Fig. 5 is a detail view of the inner side of the nut.

Referring to the drawings, A designates the base-plate of my nut-lock, the top periphery or edge of which is curved and the lower portion straight, as at a^2, the straight edge a^2 being adapted to rest on the flange of the rail or fish-plate to retain the base-plate from turning. The said base-plate A is provided with the usual bolt-opening, *a*, and is adapted to rest with its inner or rear face against the fish-plate, and its front or outer face is provided with the circular flange or ridge B. This circular flange B is cut out at regular intervals to form the square recesses *b*, which receive the arms or extensions *c* on the circular washer C. The said washer lies or rests in the curved space provided by and within the flange or ridge B. This curved washer C is formed of leather, rubber, or other suitable elastic material, for a purpose which will be explained, and is intended to be thinner than the flange B, whereby said flange projects outward over and beyond the washer.

D designates the nut of my improved nut-lock, the inner edge of which nut is rounded and formed with the circular flange *d*, which projects beyond the squared portion of the nut. The inner side or face of the nut and its flange *d* is recessed to provide the series of inclined planes *e*, the highest points of which provide shoulders E. The shoulder of one plane is arranged adjacent to the lowest portion of the adjacent plane, and the said shoulders E are adapted to bear against the elastic washer C, and serve to lock the nut in place on the bolt.

From the foregoing description, taken in connection with the drawings, the operation of my invention will be readily understood.

The base-plate A, after being passed over the bolt, rests against the fish-plate of the rail-joint, and the straight edge a^2 of the base-plate engages with the flange of the fish-plate. The elastic cushion is fitted on the bolt and occupies the space provided within the circular flange B of the base-plate, with the arms *c* of the washer C received in the recesses *b* of the flange B, thereby retaining the elastic washer in place and preventing any movement of the same. The nut is then screwed on the bolt, and as it is tightened the inclined planes on the inner side thereof glide over the elastic cushion or washer and compress it at the points where the shoulders E impinge against it, and cause said washer to be bulged or expanded into the recesses of the planes adjacent to the said shoulders.

It will be readily understood that the tighter the nut is screwed down the more the washer will be compressed by the shoulders E, and

consequently the more will the said washer be bulged or expanded into the radial recesses or spaces on the face of the nut.

The force of the expansion when the nut has been forced down very strongly is very great, and therefore the expansion or bulge into the said recesses is necessarily very rigid and unyielding.

By the construction of the inner side of the nut with inclined planes terminating in abrupt shoulders it will be seen that although the nut may be screwed down, (the inclined planes then acting to glide over and gradually compress the washer,) the reverse motion—namely, that of loosening or unscrewing the nut—is opposed and entirely prevented by the expanded or bulged portion of the washer which has sprung up immediately behind the shoulder E. (Clearly shown in Fig. 4.) The said shoulder is unable to pass over the firm expansion, and the washer itself is prevented from turning bodily by the arms or extensions thereon, and consequently the nut is effectually locked in position.

The advantages of my nut-lock will be readily appreciated by all skilled in the art to which it pertains. It is very easily applied, and the elastic cushion always serves to bind the nut and form a perfect lock. It will also be observed that my nut-lock is very compact, and possesses great strength, which is very essential in nut-locks, and by reason of its thorough efficiency and cheapness it commends itself as a practical and much-needed device.

I am aware that it has been heretofore proposed to provide a nut-lock with two nuts having alternate depressed inclined portions and projecting shoulders formed in their opposing faces, and an elastic washer interposed between the nuts and compressed and expanded by the same to fill the spaces formed by the inclined depressed portions, and hence I do not claim the same, broadly.

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

As an improvement in nut-locks, the combination of a base-plate having a straight lower edge adapted to rest against the fish-plate, and an annular notched flange or rim, B, on its outer face, an elastic washer housed within the flange or rim, and having the projecting arms fitting in the notches, and thereby hold the same from rotation, and a nut formed with a disk on its inner side of less or equal diameter than the washer, and having the inner inclined faces forming shoulders which compress the washer, and thereby expand portions of the same into the spaces formed by the inclined faces of the disk, as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

DANIEL P. GIENTY.

Witnesses:

HENRY W. HAYDEN,

EDWARD G. LEACH.