C. N. MITCHELL.

NUT LOCK.

APPLICATION FILED FEB. 13, 1913.

1,249,987.

Patented Dec. 11, 1917.

2 SHEETS—SHEET 1.

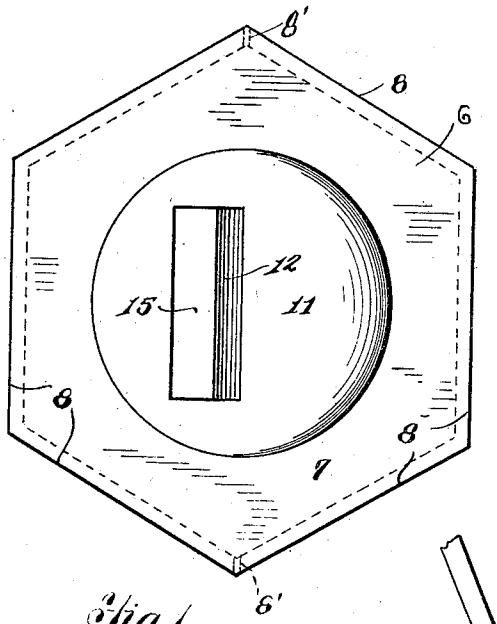


Fig. 1

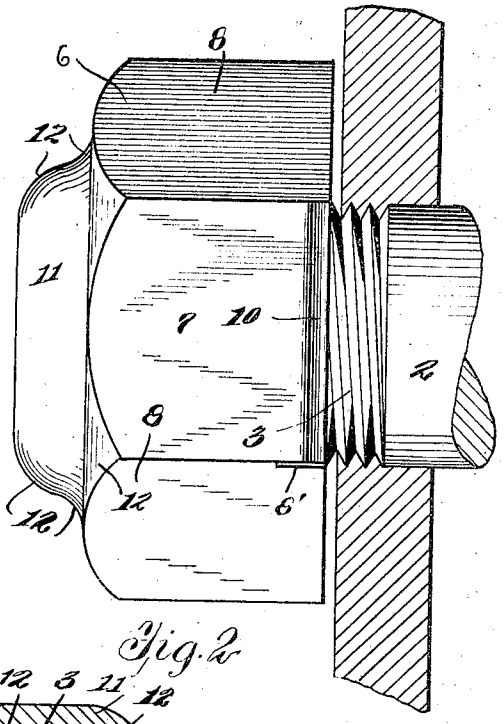


Fig. 2

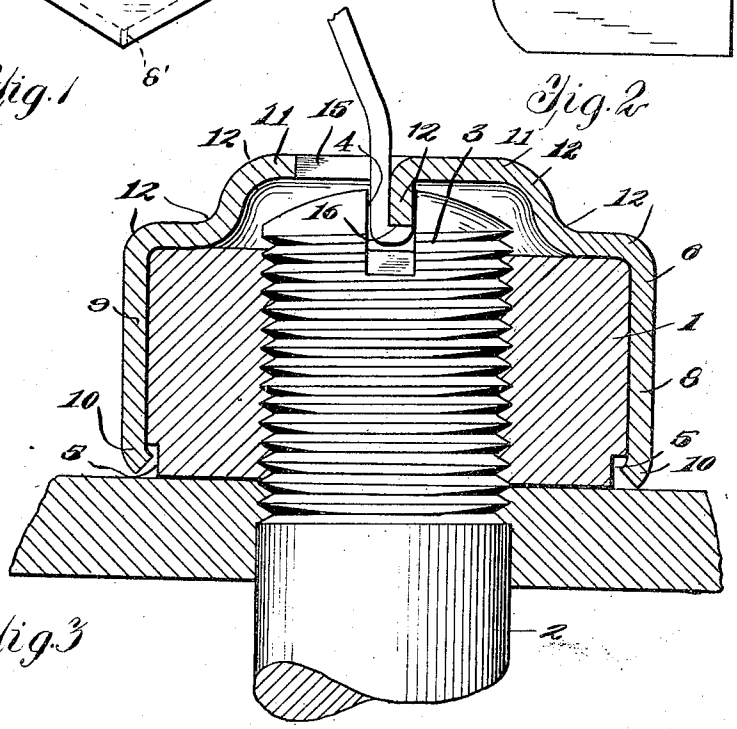


Fig. 3

WITNESSES

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2 SHEETS—SHEET 2.

Fig. 4

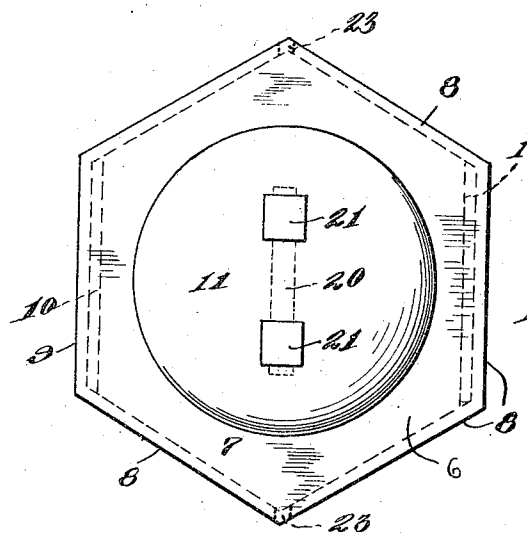
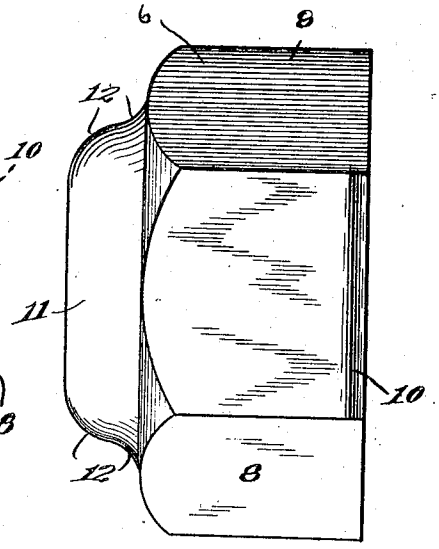


Fig. 5



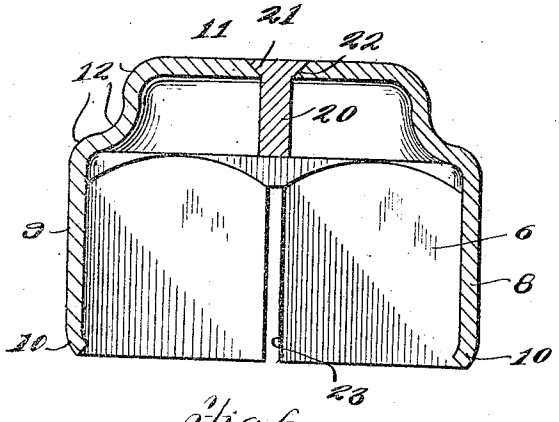


Fig 6

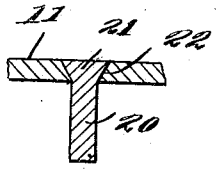


Fig. 7

WITNESSES

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UNITED STATES PATENT OFFICE.

COURTNEY N. MITCHELL, OF DETROIT, MICHIGAN.

NUT-LOCK.

1,249,987. Specification of Letters Patent. Patented Dec. 11, 1917.

Application filed February 13, 1913. Serial No. 748,187.

To all whom it may concern:

Be it known that I, COURTNEY N. MITCHELL, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Nut-Locks, of which the following is a specification.

This invention relates to nut locks, and one of the objects thereof is to provide a nut lock in a manner that is hereinafter set forth, whereby the nut will be prevented from rotating upon the bolt and furthermore, to simplify and to improve the construction and to produce a nut lock which may be inexpensively constructed, easily applied, operated and removed, and by means of which the nut may be rigidly connected to the bolt and effectually prevented from backward rotation no matter how severe the jars, strains and concussions may be to which it is subjected.

Another object of this invention is the provision of a nut and bolt lock which is constructed of resilient material such as steel or the like, one which is as neat in appearance as is consistent with the fulfiling of its fundamental functions and one which is smooth and symmetrical and should it be desired could be easily nickel or brass-plated so as to add to its attractiveness.

A still further object of this invention is the provision of a nut and bolt lock which will permit of considerable variation in the length of the bolt to which the lock is applied and one which may be removed from the nut and bolt with little trouble and without the necessity of special tools.

With the foregoing and other objects in view, this invention consists of the novel construction, combination and arrangement of parts, hereinafter more specifically described and illustrated in the accompanying drawings, wherein is shown the preferred embodiment of the invention, but it is to be understood that changes, variations, and modifications may be resorted to provided the same fall within the scope of what is claimed.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters designate like or corresponding parts throughout the several views and in which;

Figure 1, is a top plan view of the improved nut lock,

Fig. 2, is a side elevation of the same showing it applied,

Fig. 3, is a central sectional view through the nut lock and nut and showing the bolt to which the nut and lock are applied in elevation,

Fig. 4 is a top plan view of a modified form of nut lock,

Fig. 5, is a side elevation of the same,

Fig. 6, is a sectional view through the modified form shown in Fig. 4, and

Fig. 7, is a detail sectional view of a fragment of the improved nut lock shown in Figs. 4, 5 and 6.

While in the drawings two separate forms of the improved nut lock are shown, that shown in Figs. 1, 2 and 3 is the preferred form and more stress will be laid upon the same in the following description.

The bolt upon which the nut 1 is mounted is designated by the numeral 2 and may be of any type of bolt now in use. The outer end of the threaded shank 3 of the bolt 2 is provided with a lateral slot 4 which is preferably centrally located in the end of the bolt, the purpose of which slot will be hereinafter set forth. The nut 1 which is mounted upon the threaded shank 3 of the bolt 2 is of the ordinary construction and has each of its hexagonal sides provided with cut out portions 5 adjacent the lower end of the nut.

The nut lock 6 is constructed of resilient material, such as steel or the like and has its main body portion 7 shaped so as to conform to the shape of the nut 1, upon which it is mounted having its various sides 8 contacting with the sides of the nut. The lower ends of two of the sides 8 are curved inwardly as is shown at 10 and when the nut lock 6 is in an operative position, as is shown in Fig. 3 of the drawings, these curved ends 10 are seated in the cut out portions 5 in the sides of the nut 1 and prevent the nut lock 6 from being moved longitudinally.

The upper end of the nut lock 6 has a struck out portion 11 formed integral therewith. This struck out portion 11 is formed expressly for the purpose of receiving and forming a covering for the end of the shank 3 of the bolt 2. A portion of the struck out portion 11 is cut so as to form a key or lug 12 which is bent inwardly, as is clearly shown in Fig. 2 of the drawings, and

is seated in the lateral slot 4 in the bolt shank 3.

All of the corners of the nut lock 6 are rounded as is shown at 12. By rounding the corners all abruptness and sharp edges of the nut lock will be eliminated and the same assumes a smooth and symmetrical appearance, as well as an attractive one and should it be desired would permit the plating of the nut lock.

The operation of mounting the nut lock 6 upon the nut 1 and the bolt 2 is exceedingly simple. All that is necessary is to simply push the lock 6 over the end of the bolt 2 and the nut 1. The resiliency of the nut lock will cause the curved portions 10 to seat themselves in the cut out portions 5 in the lower edge of the two sides of the nut and will prevent longitudinal movement of the lock. The depending lug 12 being seated in the slot 4 will prevent rotary movement of the nut upon the bolt and these two features will form a positive and practical nut lock.

To aid the resiliency of the nut lock and render the operation of applying the same more simple, two of the corners at which the hexagonal sides meet are slotted as is shown at 8'.

When it is desired to remove the nut lock from the nut, the hooked end of a hooked implement is inserted in the opening 15 and the transverse slot 4 with its hooked end arranged in parallelism with the longitudinal axis of the tongue 12. The implement is now rotated to cause the hooked end to assume the position shown in Fig. 2. Upon pulling the implement away from the nut, the nut lock will be readily detached from the same.

When it is desired to remove the nut lock from the nut and bolt the curved edges 10 are forced from engagement with the slots 5 by means of any suitable tool allowing the nut lock to be drawn up and out of engagement with the nut 1.

In Figs. 4, 5, 6 and 7 of the drawings, the modified form of this nut lock is shown. In this modified form the lug 12 is omitted and a piece of metal 20 is employed in lieu thereof. This piece of metal 20 is secured to the struck out portion 11 by means of two lugs 21 formed integral with the member 20 and near the outer ends thereof. These lugs 21 are inserted through openings 22 in the struck out portion 11, which openings have angular sides as is shown in Figs. 6 and 7 of the drawings. When the lugs 21 are inserted through the openings 22 they are then upset so as to fill an opening 22. This upsetting of the lugs 21 securely holds the member 20 in engagement with the struck out portion 11 and prevents any movement thereof.

In this modified form, the main body portion 7 is provided with two oppositely disposed slots 23. These slots 23 aid the resiliency of the nut lock and make the application of the same easier.

In all other respects, the modified form illustrated in Figs. 4, 5, 6 and 7 of the drawings, is identical with the preferred form which is illustrated in Figs. 1, 2 and 3 of the drawings, and the operation is the same.

In the drawings, has been illustrated a nut lock which is applicable only to hexagonal nuts but it is to be understood that this nut lock may be so shaped as to conform to the shape and be applicable with any type, shape or construction of nut and bolt now in use.

What is claimed is:

The combination with a bolt having a transversely extending recess at its threaded end, a many sided nut mounted on the threaded end of the bolt, of a resilient metallic casing inclosing the nut and resiliently engaging the same, a downwardly extending locking tongue struck out from the casing at its top wall thereof and engaged in the transverse opening in the bolt, the struck out portion affording a longitudinal opening at one side of the locking tongue whereby to permit a hooked implement to be engaged with the locking tongue, whereupon pulling the implement, the casing will be detached from the nut.

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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."