(No Model.)

I. J. GRIFFIN.

NUT LOCK.

No. 470,561. Patented Mar. 8, 1892.

Fig. 1.

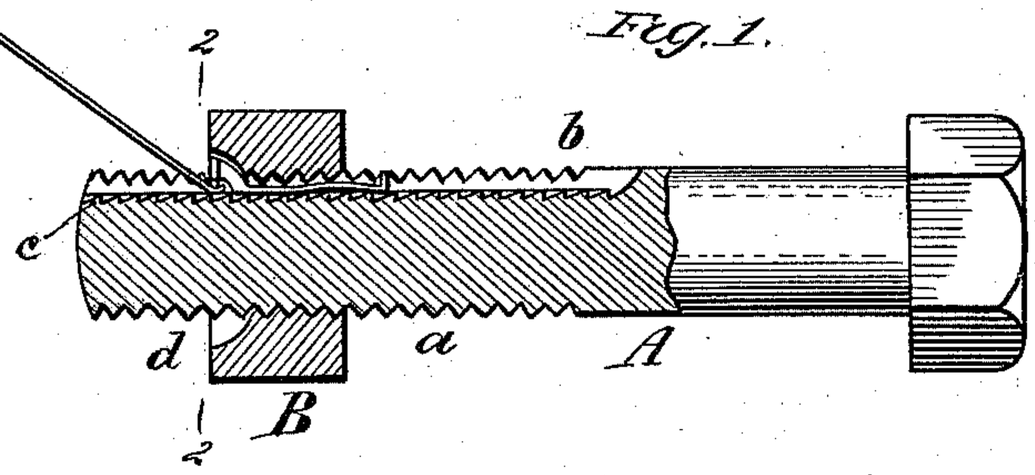
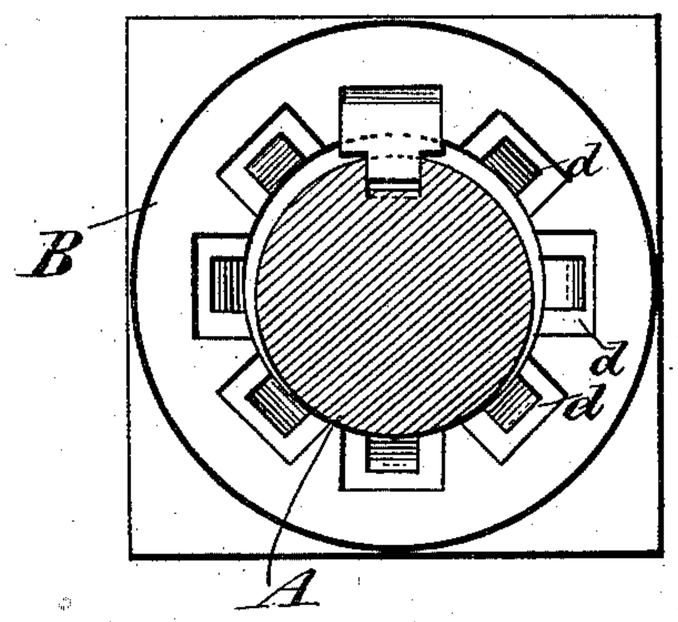


Fig. 2.



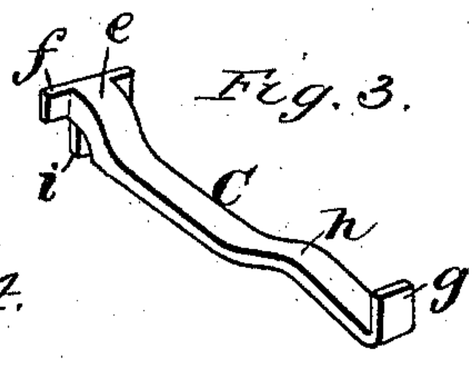


Fig. 3.

Fig. 4.

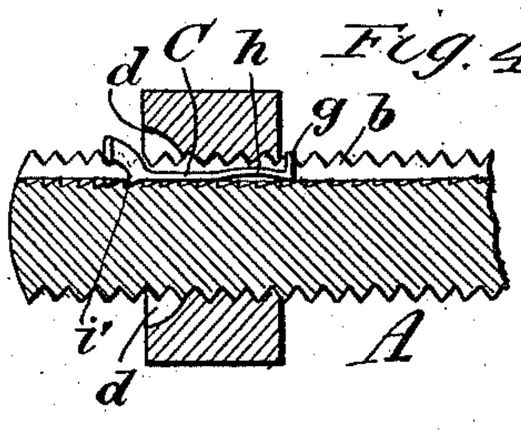


Fig. 5.

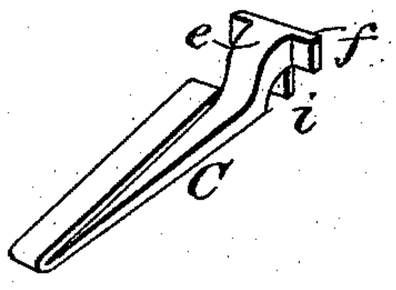
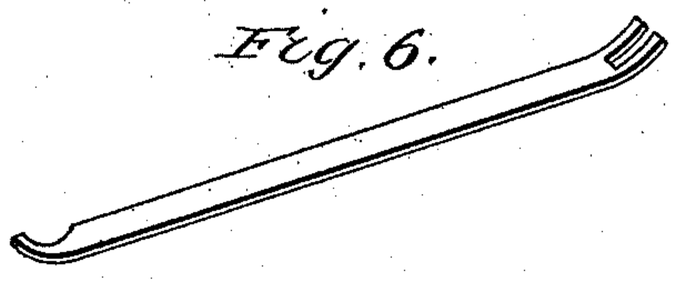


Fig. 6.



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IRA J. GRIFFIN, OF SING SING, NEW YORK.

NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 470,561, dated March 8, 1892.

Application filed March 10, 1891. Serial No. 384,424. (No model.)

To all whom it may concern:

Be it known that I, IRA J. GRIFFIN, of Sing Sing, in the county of Westchester and State of New York, have invented a new and Improved Nut-Lock, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a side elevation, partly in section, of a bolt and nut, showing the application of my improvement. Fig. 2 is an enlarged section taken on line 2 2 in Fig. 1. Fig. 3 is an enlarged perspective view of the key for locking the nut. Fig. 4 is a longitudinal section of a bolt provided with a modified form of key. Fig. 5 is a perspective view of a key having a V-shaped spring, and Fig. 6 is a perspective view of the lever for removing the key.

Similar letters of reference indicate corresponding parts in all the views.

The object of my invention is to provide a simple and effective means for locking a nut upon a bolt, so as to prevent it from becoming loosened accidentally; also, to provide means for readily releasing the nut.

My invention consists in the combination, with a bolt having a longitudinal groove in one side thereof and a nut furnished with radial slots or recesses in the outer face thereof, of a spring-key fitted to the groove of the bolt and adapted to enter into the recesses of the nut.

It also further consists in a series of ratchet-teeth in the bottom of the longitudinal groove in the bolt and a key adapted to engage the ratchet-teeth, all as will be hereinafter more fully described.

The bolt A is provided with the thread *a* in the usual way. In one side of the threaded portion of the bolt is formed a longitudinal groove *b*, which extends inwardly a short distance below the bottom of the thread. For some purposes I form in the bottom of the groove a series of ratchet-teeth *c*, while in other cases I leave the bottom of the groove plain. To the threaded portion of the bolt is fitted a nut B, in the outer face of which are formed radial recesses *d* of the same width as the longitudinal groove of the bolt. To the groove *b* is fitted a spring-key C, provided at one end with an upwardly-curved portion *e*, adapted to fit into either of the recesses *d* and furnished with a head *f* wider than the recess and capable of extending a short distance over the threaded portion of the bolt. The opposite end of the key C is bent at right angles to form a finger *g*, which prevents the key from being accidentally withdrawn from the groove *b*.

The key C tapers from the head *f* to the finger *g*, and the portion adjoining the finger is bowed upwardly, as shown in Fig. 3, forming a convex surface *h*, which constitutes a bearing or fulcrum for the key when it is in its place in the slot and within the nut B. The key is held in place in the recess *d* by the engagement of the laterally-projecting portions of the head *f* with the thread of the bolt, the said projecting portions entering into the groove of the thread. In addition to the lateral projections of the head *f* the key is provided with a downward projection *i*, adapted to engage the ratchet-teeth *c* in the bottom of the groove *b*. In lieu of the downward projection of the head just described the shoulder *j* of the key may be prolonged, forming a tooth *i'*, adapted to engage the ratchet-teeth *c*, as shown in Fig. 4.

When the nut is turned home, it is stopped so that one of the recesses *d* registers with the groove *b*. The key C is then pushed inward until the upwardly-curved portion *e* enters one of the recesses *d*, when the lateral projections of the head *f* drop into the groove of the screw-thread or the tooth *i'* engages one of the ratchet-teeth *c*, thus locking the nut securely, so that it cannot be accidentally turned.

Where more spring is required in the key than can be obtained in the form shown in Figs. 1 to 4, inclusive, I make the spring portion of the key V-shaped, as shown in Fig. 5. The lever shown in Fig. 6 is employed for raising the key, so that the nut can be unscrewed. One end of the lever is reduced to the width of the groove *b* and curved, so that it may be placed under the end of the key, as shown in Fig. 1, when its free end may be pressed downwardly, thus raising the head of the key out of engagement with the threads of the bolt, when it may be readily withdrawn. In a similar way the forked end of the lever may be inserted under the lateral projections of the head of the key and used to lift the

tooth *i'* out of engagement with the ratchet-teeth *c*.

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

1. The combination, with a bolt having a longitudinal groove in one side of the threaded portion thereof and provided with ratchet-teeth at the bottom of the groove, of a spring-key formed of a single piece of metal and fitted to the groove of the bolt and to the recesses in the nut and provided with an upwardly-curved bearing-surface and a downwardly-turned pawl for engaging the ratchet, substantially as specified.

2. The combination, with a bolt having a longitudinal groove in the threaded portion thereof provided with a ratchet, of a nut furnished with a series of radial recesses and a key fitted to the groove of the bolt and to the radial recesses and furnished with a transverse head extending over and engaging the threaded portions of the bolt and a downwardly-turned pawl for engaging the ratchet, substantially as specified.

IRA J. GRIFFIN.

Witnesses:
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