

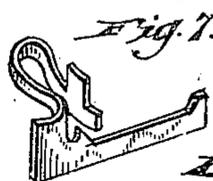
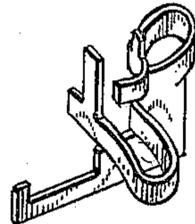
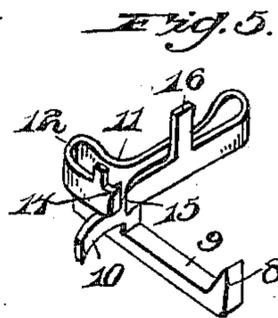
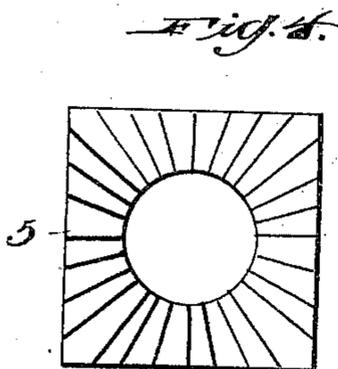
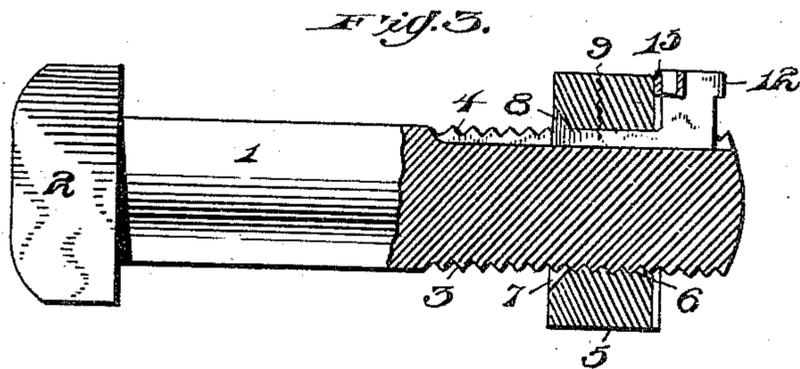
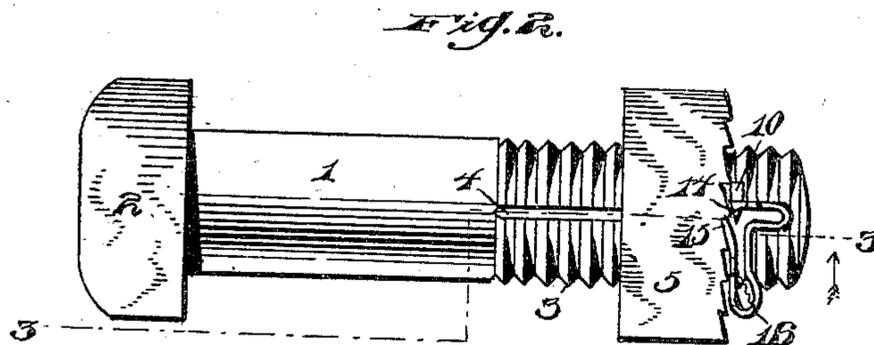
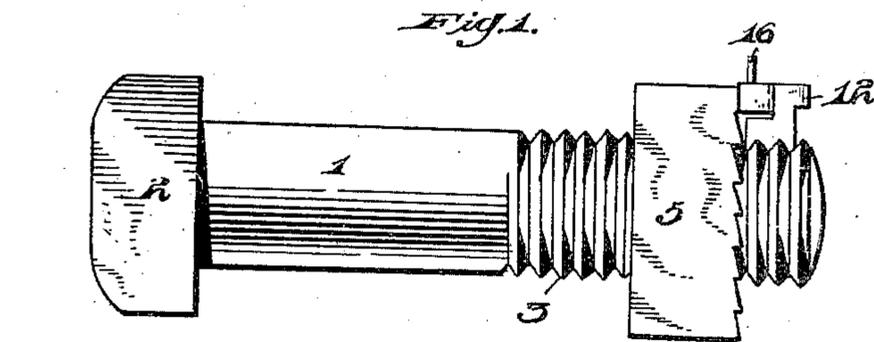
No. 688,715.

Patented Dec. 10, 1901.

G. P. BUCHANAN.
NUT LOCK.

(Application filed May 1, 1901.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE P. BUCHANAN, OF ALLEGHENY, PENNSYLVANIA.

NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 688,715, dated December 10, 1901.

Application filed May 1, 1901. Serial No. 58,284. (No model.)

To all whom it may concern:

Be it known that I, GEORGE P. BUCHANAN, a citizen of the United States of America, residing at Allegheny, 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, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in nut-locks, and more particularly to that class operating upon the principle of a pawl and ratchet.

The present invention has for its object to 15 provide novel means whereby a nut will be prevented from turning upon the bolt and locked thereto in any desired position.

The invention further aims to construct a device of the above-described character that 20 will be extremely simple in construction, strong, durable, comparatively inexpensive to manufacture, and highly efficient in its use.

With the above and other objects in view the invention consists in the novel combination and arrangement of parts to be herein- 25 after more fully described, and specifically pointed out in the claims.

In describing the invention in detail reference is had to the accompanying drawings, 30 forming a part of this specification, and wherein like numerals of reference indicate corresponding parts throughout the several views, in which—

Figure 1 is a side elevation of my improved 35 nut-lock. Fig. 2 is a top plan view thereof. Fig. 3 is a vertical sectional view taken on the line 3 3 of Fig. 2 looking in the direction of the arrow. Fig. 4 is a plan view of the nut. Fig. 5 is a perspective view of the ratchet- 40 spring. Fig. 6 is a perspective view of a modified form of ratchet-spring. Fig. 7 is a similar view of another modification of ratchet-spring.

In the drawings the reference-numeral 1 indicates a bolt of the ordinary construction, 45 carrying a head 2 and provided with screw-threads 3. Extending transversely across the screw-threads 3 in alinement with the bolt is formed a groove 4.

50 The reference-numeral 5 represents a nut, which is likewise provided with interior screw-threads 6, registering with the screw-threads

3 of the bolt. In this nut is formed an annular recess 7, having inclined walls to receive the heel 8 of the extension 9, upon 55 which is formed a shoulder 10, the latter resting against the front face of the nut when placed in proper position.

The reference-numeral 11 indicates a looped end, which is joined to and formed integral 60 with the extension 9, as shown at 12, said looped end terminating at one end in a heel 14 and at its other end in an engaging end 15, which normally operates against the ratchet-teeth. The looped end 11 forms a 65 spring, which also carries an extension 16, which likewise serves to obtain a free and easy movement of the end of the spring 15 in the ratchet-teeth. In order to place the spring in an inoperative position to remove the nut, 70 the end of the spring 15 by means of the shoulder 16 is pressed against the heel 14, which will tend to press the heel 14 outwardly and serves to retain the end 15 in an inoperative position against the ratchet-teeth of the 75 nut. By this means the nut may be removed, together with the ratchet-spring.

It will be noted that in the modifications shown the same principle of locking the end 80 of the spring in an inoperative position is shown, although the convolutions of the spring and particular construction in the modification are slightly different, but are 85 within the spirit of the invention, as all the characteristic features of the ratchet-spring are clearly shown in the modified views.

The many advantages obtained by the use of my invention will be readily apparent, as the ratchet-spring is so placed and connected 90 to the nut, with the heel 8 secured in the recess 7, that the ratchet-spring will follow the nut to any position upon the bolt and will securely lock the same at any desired point.

The manner of locking the nut is extremely 95 simple, as heretofore explained, as it is only necessary to depress the ends of the spring 15 in order to retain it under the heel 14, thereby placing these parts in an inoperative position, which will allow the nut to turn 100 freely upon the bolt and the removal of the entire device, together with the nut, if desired.

Another advantage obtained by the use of

my improvement resides in the fact that it may be used any number of times and that neither the bolt nor nut is materially weakened by the attachments, as heretofore described.

Attention is directed to the fact that various changes may be made in the details of construction without departing from the general spirit of my invention.

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

1. In a nut-lock, in combination with a grooved bolt, a nut having an annular recess formed on its rear face, ratchet-teeth formed on its outer face, a ratchet-spring said spring comprising an elongated portion, a heel formed integral with one end of said portion and adapted to engage said annular recess, a shoulder formed on said portion, a looped end formed integral with said portion, said end terminating in a heel and at its other end in an engaging end adapted to operate on the said teeth, substantially as described.

2. In a nut-lock, the combination of a grooved bolt, a nut having an annular recess formed on its rear face, ratchet-teeth formed on its outer face, a ratchet-spring operating in said groove and means carried by one end of said spring for engaging said annular recess, the other end of said spring engaging the said ratchet-teeth and means carried by

said ratchet-spring whereby said spring may be retained in an inoperative position, substantially as described.

3. In a nut-lock, the combination with a grooved bolt, a nut having an annular recess formed on its rear face, ratchet-teeth formed on its forward face, a ratchet-spring operating in said groove and with said nut, the end of said ratchet-spring engaging said ratchet-teeth, and means whereby the end of said spring may be retained in an inoperative position, substantially as described.

4. In a nut-lock, the combination of a grooved bolt, a nut having an annular recess formed on its rear face, ratchet-teeth formed on its outer face, a ratchet-spring operating in said groove, a heel carried by one end of said spring, said spring being looped, a heel carried by one end of said loop, the other end of said loop adapted to engage said heel, a shoulder carried by said spring adapted to engage the outer face of the said nut, and means whereby the said shoulder may be thrown out of engagement with the said ratchet-teeth, substantially as described.

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

GEORGE P. BUCHANAN.

Witnesses:

JOHN NOLAND,
E. E. POTTER.