

E. L. LIBBY & G. B. DAVIS.
NUT LOCK.
APPLICATION FILED JULY 8, 1910.

979,177.

Patented Dec. 20, 1910.

Fig. 1.

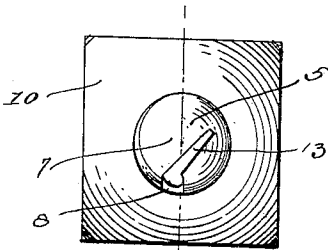


Fig. 2.

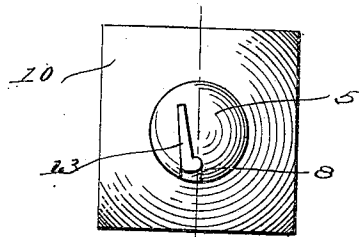


Fig. 3.

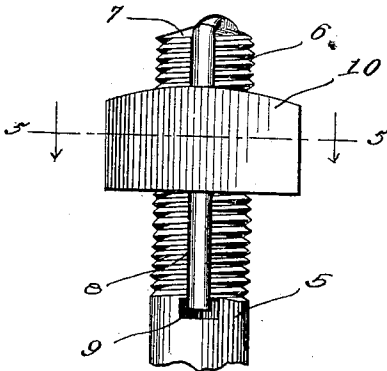


Fig. 4.

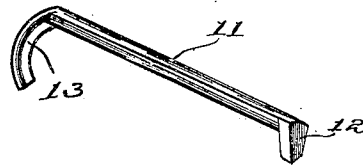


Fig. 5.

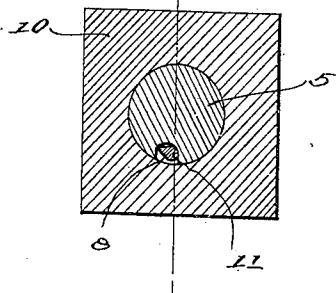
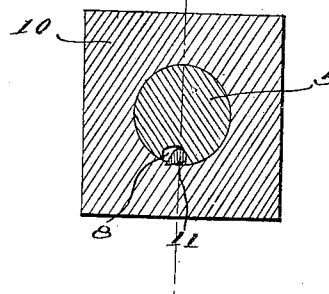


Fig. 6.



Witnesses

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UNITED STATES PATENT OFFICE.

ERNEST L. LIBBY AND GREEN B. DAVIS, OF LINN CREEK, MISSOURI.

NUT-LOCK.

979,177.

Specification of Letters Patent.

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Application filed July 6, 1910. Serial No. 570,629.

To all whom it may concern:

Be it known that we, ERNEST L. LIBBY and GREEN B. DAVIS, citizens of the United States, residing at Linn Creek, in the county of Camden and State of Missouri, have invented new and useful Improvements in Nut-Locks, of which the following is a specification.

This invention relates to improvements in nut locks and has for its object the provision of a nut lock provided with a locking pin adapted, when turned to one position to engage with the threads of a nut, whereby movement of the same upon the threads of the bolt will be prevented and when turned to another position to permit the removal of the nut.

With the above and other objects in view, which will fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims; it being understood that various changes in the form, proportion, size, and minor details of the device may be made, within the scope of the appended claims, without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, forming part of the specification;—Figure 1 is an end view showing the locking key in inoperative position. Fig. 2 is a similar view showing the locking key in operative position. Fig. 3 is a detail side elevation of the threaded shank portion of the bolt. Fig. 4 is a detail perspective of the locking key. Fig. 5 is a transverse sectional view on the line 5—5 of Fig. 3 showing the locking key in the groove and in inoperative position. Fig. 6 is a similar view but showing the locking key in operative position.

Similar numerals of reference are employed to designate corresponding parts throughout.

The shank of the bolt is designated by the numeral 5 and at one end portion thereof is screw-threaded, as shown at 6. The end of the screw-threaded portion 6 of the bolt is conical as shown at 7, and formed throughout the length of the screw-threaded portion 6 is a groove or channel 8, the inner end of said groove or channel terminating in an inwardly extending socket

9. By reference now to Fig. 2 of the drawings it will be seen that the medial line of the floor of the groove or channel is located to one side of the highest point of the conical-shaped end 7 of the bolt, the sides of said channel or groove being unequal in width. In order that the sides of the channel or groove may be unequal in width as stated it is evident that one side will extend radially of the bolt, while the opposite side will be parallel with the first-named side. The floor of the groove is rounded, for a purpose to be presently described.

The nut is designated in general by the numeral 10 and is provided with the usual threaded bore the threads of which engage with the threaded portion 6 of the bolt.

The locking key comprises a shank portion designated by the numeral 11. The length of this shank corresponds to the length of the channel or groove 8. The shank is substantially pyriform in cross section, the smaller end being sharpened to provide a cutting edge. The length of such cross section corresponding approximately to the width of the groove but greater than the depth of the groove, so that when one side of the shank bears on the rounded floor of the groove the sharp edge of the shank will lie within the edges of the sides of the grooves, whereby the nut 10 may be screwed onto the bolt without contacting with the shank 11. One end of the shank 11 terminates in a lateral extension or nose 12, which is loosely received by the socket 9, the provision of the nose limiting endwise movement of the shank in one direction. The opposite end of the shank terminates in a laterally curved extension or keeper 13, which bears on the conical-shaped end 7 of the bolt. Owing to the length of the shank the latter will be held against endwise movement in either direction through the coöperation of the keeper and nose. It will be observed, owing to the disposition of the keeper, that when one side of the shank bears on the floor of the groove the keeper 13 will bear on one side of the conical-shaped end 7. When, however, the keeper is moved across the highest or outermost point of the conical-shaped end 7, it being understood that the keeper is somewhat resilient and that this movement may be effected with a suitable tool, the shank will be turned so that the sharp edge thereof will extend a trifle beyond the narrow side

walls of the groove and into engagement with the threads of a nut after the latter has been screwed onto the portion 6 of the bolt. When the sharp edge of the shank engages
 5 with the threads of the nut as just described outward turning movement of the nut will be prevented, but inward or tightening movement of the nut will be permitted by virtue of the nut turning the shank so that
 10 the edge thereof will move into the groove. Reversing the position of the keeper the nut may be removed from the bolt.

From the foregoing, it is evident that we have provided a device which is compara-
 15 tively simple in structure and inexpensive in manufacture, embodying few parts and these so arranged that the danger of derangement will be reduced to a minimum.

We claim:—

20 1. In a nut lock, the combination with a bolt having a cone-shaped end and a longitudinal groove terminating at its inner end in a socket, and a nut threadable onto the bolt; of a locking key having a shank
 25 portion insertible into the groove and provided with a sharpened edge, said shank being oblong in cross section, the length of such cross section being greater than the depth but approximately the same as the
 30 width of said groove, said locking key being provided at one end with an extension receivable by the socket, and further pro-

vided at its opposite end with a resilient keeper adapted when moved in one direction over the outermost point of the cone-shaped
 35 end to rock the edge of the locking pin into engagement with the threads of the nut.

2. In a nut lock, the combination with a bolt having a cone-shaped end and a longitudinal groove terminating at its inner end
 40 in a socket, and a nut threadable onto the bolt; of a locking key having a shank portion insertible into the groove and provided with a sharpened edge, said shank being pyriform in cross section, the length of such
 45 cross section being greater than the depth or approximately the same as the width of said groove, said locking key being provided at one end with a lateral extension to loosely fit within the socket, and provided
 50 at its opposite end with a curved resilient keeper adapted when moved in one direction over the outermost point of the cone-shaped end to rock said shank portion to such position that the sharpened edge there-
 55 of will engage with the thread of the nut.

In testimony whereof we affix our signatures in presence of two witnesses.

ERNEST L. LIBBY.
 GREEN B. DAVIS.

Witnesses:

SID C. ROACH,
 E. C. TRAW.