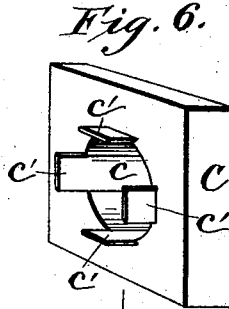
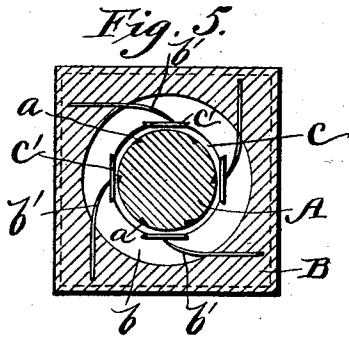
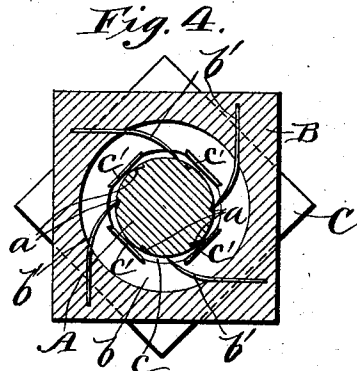
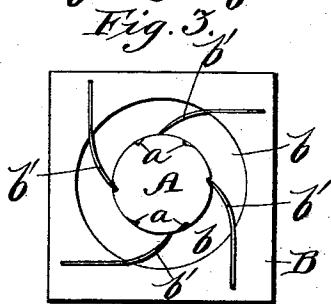
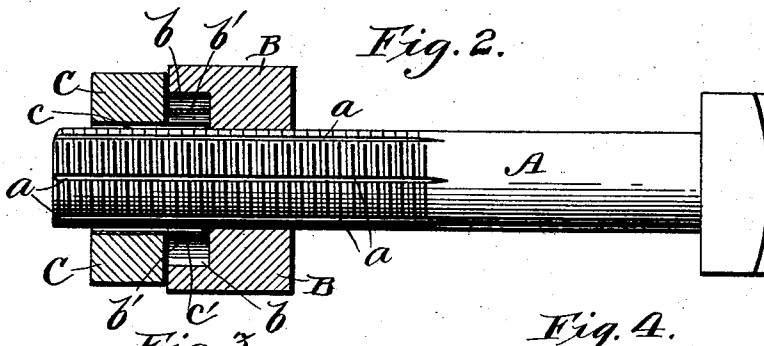
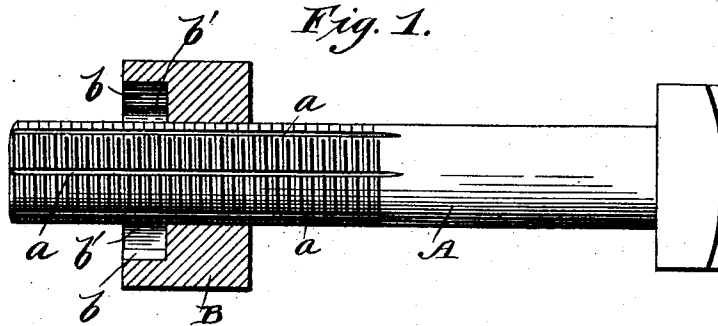


(No Model.)

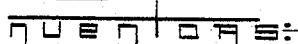
R. KIRKPATRICK, G. S. TILLER & W. O. KIRKPATRICK.
LOCK NUT.

No. 506,596.

Patented Oct. 10, 1893.



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C. Albert Hines.



Rufus Kirkpatrick
George S. Tiller
Wallace O. Kirkpatrick
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Mason, Finnick & Hammer

UNITED STATES PATENT OFFICE.

RUFUS KIRKPATRICK, GEORGE S. TILLER, AND WILLIAM O. KIRKPATRICK,
OF SWEET SPRINGS, MISSOURI.

LOCK-NUT.

SPECIFICATION forming part of Letters Patent No. 506,596, dated October 10, 1893.

Application filed February 4, 1893. Serial No. 461,031. (No model.)

To all whom it may concern:

Be it known that we, RUFUS KIRKPATRICK, GEORGE S. TILLER, and WILLIAM O. KIRKPATRICK, citizens of the United States, residing at Sweet Springs, in the county of Saline and State of Missouri, have invented certain new and useful Improvements in Lock-Nuts; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to lock nuts and means for removing the nut, and it consists of a bolt provided with a longitudinal groove or grooves in combination with a nut having a central open ended chambered portion provided with radially set detent springs which bear with their ends upon the circumference of the bolt and catch in grooves of said bolt when it is attempted to unscrew the bolt; and it further consists of a key having a central aperture for the passage of the bolt and longitudinally projecting fingers surrounding said aperture, the key being adapted to be slipped over the end of the bolt and the fingers, passed into the chamber of the bolt and by turning the key in a proper direction lift the spring detents out of engagement with the longitudinal grooves of the bolt so that the nut can be readily screwed off, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a longitudinal section through the threaded portion of the bolt and the nut, the shank and head of the bolt being shown in elevation. Fig. 2 is a similar view, but with the key applied to the bolt. Fig. 3 is an end view of the bolt and nut with the key removed. Fig. 4 is a sectional view of the nut and bolt, showing the position of the key and its releasing fingers when it is first applied to the nut; and Fig. 5 is a similar section, but showing the fingers of the key lifting the detent springs of the nut out of engagement with the longitudinal grooves of the bolt, and Fig. 6 is a perspective view of the key.

A in the drawings represents a bolt provided with one or more beveled longitudinal grooves *a* along its threaded portion and B represents a nut which is provided with a cen-

tral open ended recessed portion or chamber *b* in its outer face which is inclosed on all its sides against the entrance of dirt and snow as shown. This chamber is of sufficient diameter and depth to allow a detent spring or springs *b'* to extend into the same and bear with its or their ends upon the circumference of the bolt and when it is attempted to remove the nut to catch in one of the grooves of the bolt and prevent the nut turning. The springs *b'* are secured in the nut in any suitable manner, but in the drawings we have shown one end of the springs seated in grooves or slits sawed in the nut and held in position by the said grooves, the outer ends of the springs being curved and bearing with a spring contact upon the surface of the bolt.

C represents a key which is shown in detail in Fig. 6 and is used in unscrewing the nut from the bolt. This key consists of a flat, nut-shaped piece of metal provided with a central round passage *c* to receive the threaded end of the bolt and permit the same to pass through said passage to any extent desired. The key corresponds to the exterior shape and size of the nut, and being provided with a central opening and made flat on its inner face can be passed over the end of the bolt and brought flush against the outer surface of the nut, and thereby completely close the chamber of the nut against the entrance of dirt and snow from the end. Around the circumference of this central passage a number of fingers *c'* corresponding preferably to the number of detent springs in the nut are secured, which project outwardly a suitable distance from the surface of the key. The key is first applied to the threaded end of the nut in the manner shown in Fig. 4 so that the fingers of the key will occupy the spaces in the chamber of the nut between the spring detents and by turning the key to the left so that it will occupy the position shown in Fig. 5, the spring detents will be lifted out of engagement with the longitudinal grooves in the nut and the fingers remain beneath the ends of the detents so that the nut can be readily screwed off or on the bolt. The key can be left on the nut if desired and serve as a means for excluding dirt and snow from the chamber of the nut or it can be removed if desired. A

suitable cap can be placed over the nut for the same purpose. If it is not desirable to leave a key on every bolt, a single key could be used in removing any number of nuts and thus lessen the expense of manufacture.

Our construction of the nut with a central, open ended chamber permits of the insertion of the key and manipulation of the detent springs in a very simple and effective manner.

What we claim as our invention is—

The combination of a bolt having a longitudinal groove or grooves in its thread portion, a nut provided with a central, open-ended chamber which is inclosed on all sides against the entrance of dirt and detent springs secured in the nut having their free ends ex-

tended into the said chamber and bearing against the surface of the nut, and a key comprising a flat, nut-shaped body portion of larger diameter than the central chamber of the nut and formed with a central bolt aperture and a releasing finger or fingers projecting outwardly from said body portion, substantially as and for the purpose described.

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

RUFUS KIRKPATRICK.

GEO. S. TILLER.

WILLIAM O. KIRKPATRICK.

Witnesses:

JOHN A. REMBERT,

C. WOHLERS.