

No. 677,212.

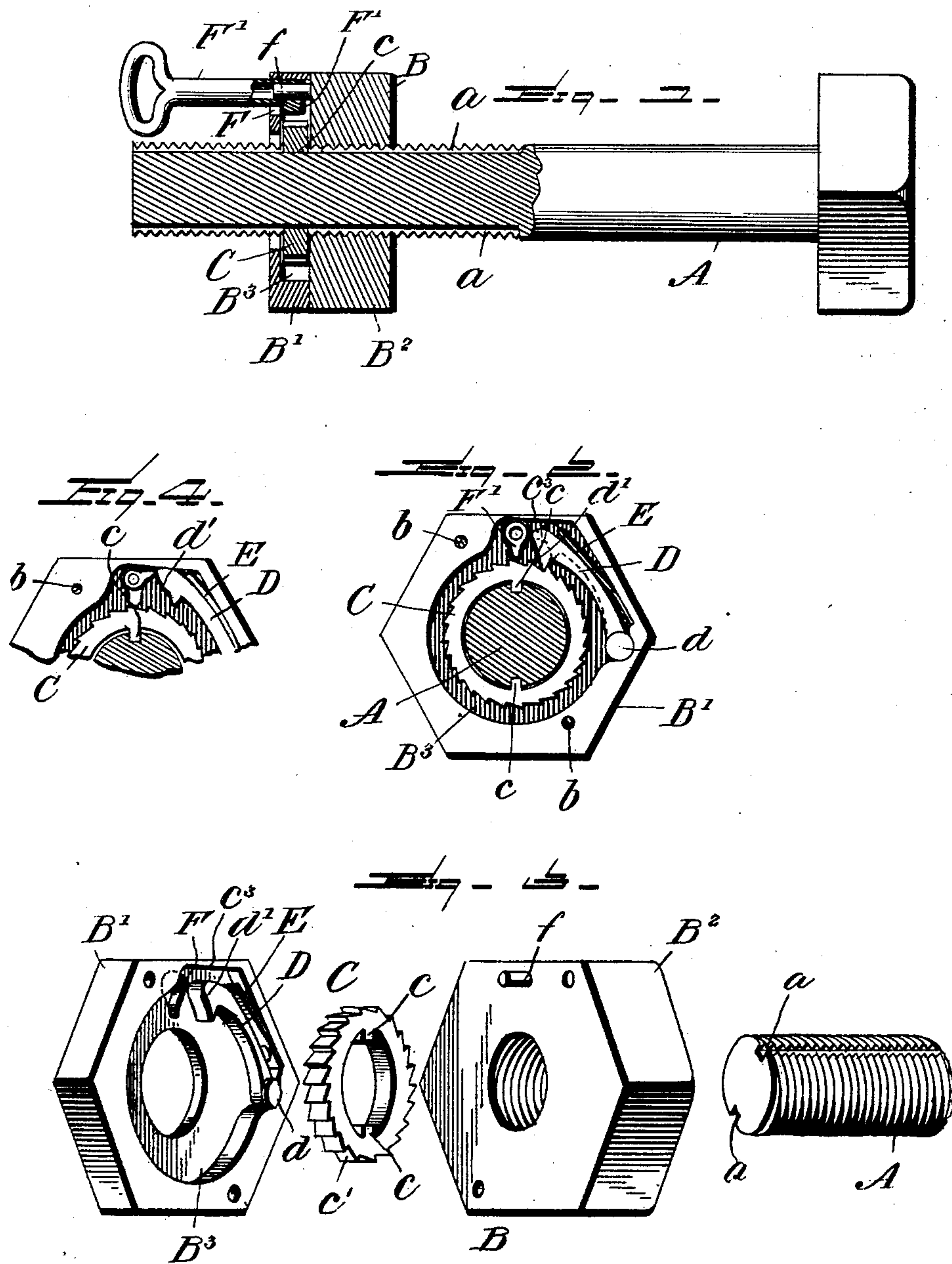
Patented June 25, 1901.

J. HEILMAN.

LOCK NUT.

(Application filed Feb. 26, 1901.)

(No Model.)



WITNESSES:

H. F. Doyle
E. C. Merriam

INVENTOR

Jonas Heilman

BY *J. S. Barker and*
J. H. Houghton Attorneys

UNITED STATES PATENT OFFICE.

JONAS HEILMAN, OF SALTSBURG, PENNSYLVANIA.

LOCK-NUT.

SPECIFICATION forming part of Letters Patent No. 677,212, dated June 25, 1901.

Application filed February 26, 1901. Serial No. 48,961. (No model.)

To all whom it may concern:

Be it known that I, JONAS HEILMAN, a citizen of the United States, residing at Saltsburg, in the county of Indiana and State of Pennsylvania, have invented new and useful Improvements in Lock-Nuts, of which the following is a specification.

My invention relates to lock-nuts, and has for its object to provide a lock-nut capable of freerotation upon its bolt in one direction, but normally locked against rotation in the other direction, and, further, to provide means for easily releasing the locking devices to permit the nut to be reversely rotated when it is desired to remove the same.

In the drawings, Figure 1 is a longitudinal section of the lock-nut upon its bolt. Fig. 2 is a horizontal section taken on the plane which separates the two sections of the nut. Fig. 3 is a perspective view of the parts separated. Fig. 4 is a detail sectional view illustrating the parts in their unlocked position.

In the drawings, A represents a bolt having its screw-threaded end portion provided with one or more (preferably two) kerfs or slots *a*, extending longitudinally of the bolt.

B is the nut, composed of an upper and a lower section, lettered, respectively, B' B². The base or lower section B² is screw-threaded in the usual manner for engagement with the bolt, and the upper section B' is centrally apertured and is suitably recessed to form a chamber B³ to receive the locking parts. The two sections B' and B² are united by rivets *b* or the like. Within the chamber B³ is arranged a loose ring or annulus C, surrounding the bolt A and provided on its inner periphery with lugs or projections *c*, extending into the kerfs *a* in said bolt. The exterior periphery of the ring is provided with ratchet-teeth or serrations *c'*, with which engage a pawl D, pivoted to the part B' at *d* and normally held in contact with the ring or annulus by means of a spring E, pressing thereon. Adjacent to the head of the pawl I form in the upper surface of the part B' a key-opening F to receive a key F', adapted when turned to engage the head *d'* of the pawl D and lift the same against the resistance of its spring out of engagement with the teeth of the ring C. The key is preferably seated on a pin or stud *f* on the part B² of the nut, but may be of any preferred type.

I prefer that some means should be employed to retain the key in unlocking position in order that it need not be held during the unscrewing of the nut. To this end I so form the head *d'* of the pawl D that it extends into close proximity to the wall of the chamber C³ at a point adjacent to the key-opening and curve its front face, so that it will be eccentric to the path of the bit F' of the key. Thus when the key is turned to unlocking position, as shown by dotted lines in Fig. 2, the bit is wedged between the wall of the recess C³ and the head of the pawl and remains in such position, holding the latter out of engagement with the ring C. It is apparent, however, that the same result might be accomplished in other ways—as, for example, by nicking the head of the pawl to form a slight catch for the key.

From the foregoing description the operation of the lock-nut will be apparent. The nut is screwed on in the usual manner until the projections *c* of the annulus come in contact with the end thereof. The annulus or ring C can then be turned with the fingers until the said projections register with the kerfs *a* in the bolt and the nut further screwed up, the ring C being now held in fixed circumferential relation to the bolt, but being axially movable thereon together with the nut. As this forward movement takes place the pawl D slides easily over the teeth of the annulus or ring; but any movement in the reverse direction is positively prevented by the engagement of the pawl with said teeth.

When it is desired to remove the nut, the key is inserted and turned to lift the pawl out of engagement with the toothed annulus, and the nut may then be freely turned in either direction.

I do not wish to limit myself to the exact structure shown as the preferred embodiment of my invention, for it is apparent that many changes might be made therein by those skilled in the art without departing from the spirit of my invention; but

What I claim, and desire to secure by Letters Patent, is—

1. The combination with a bolt having a longitudinal slot in its threaded end, of a nut comprising a threaded section, to engage the bolt and a recessed section carried by the threaded section, of an annulus arranged in

the recess and surrounding said bolt, having exterior peripheral ratchet-teeth and an internal lug for engaging the slot in the bolt, a pawl to engage the ratchet, and a key for
5 moving the pawl away from said ratchet-plate, substantially as set forth.

2. The combination with a bolt, of a nut comprising a threaded section and a recessed section carried by the threaded section, a
10 ratcheted annulus arranged in the recess and slidably mounted on the bolt, a pawl to engage the ratchet, and a rotatable key for moving said pawl out of engagement with the ratchet and retaining the same in inopera-
15 tive position, substantially as set forth.

3. The combination with a bolt having a

longitudinal slot in its threaded end, of a nut comprising a solid base portion threaded to engage the bolt, an upper recessed portion
affixed to said solid portion to form a cham- 20
ber, an annular plate provided with exterior, peripheral ratchet-teeth, and an internal lug for engaging the slot in the bolt, and a piv-
oted pawl engaging said ratchet, the ratchet- 25
plate and pawl being arranged within the chamber formed by the nut portions, substantially as set forth.

JONAS HEILMAN.

Witnesses:

MILO HILEMAN,
P. A. WAUGAMAN.