(No Model.)

C. MALDNER.

NUT LOCK.

No. 332,669. Patented Dec. 15, 1885.

Fig. 1.

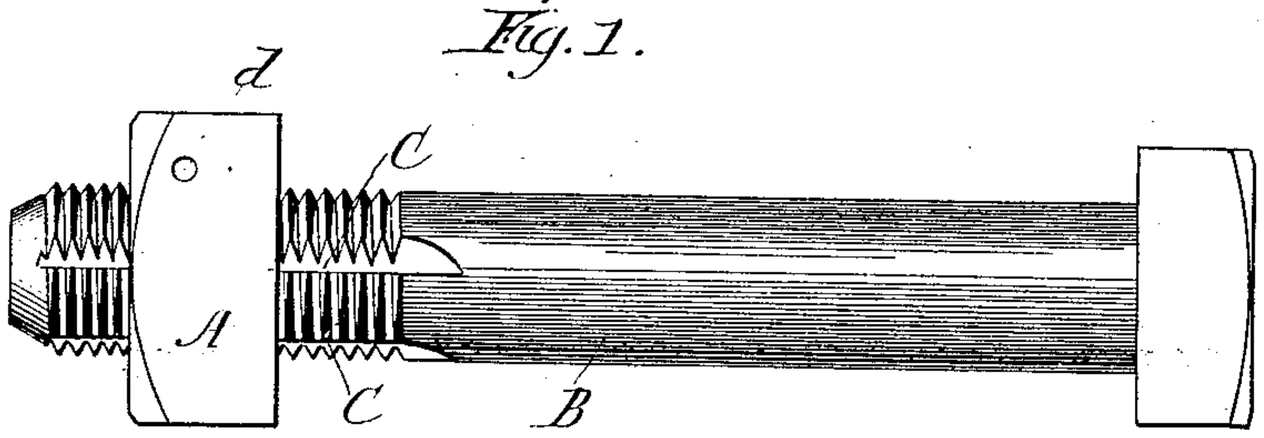


Fig. 2.

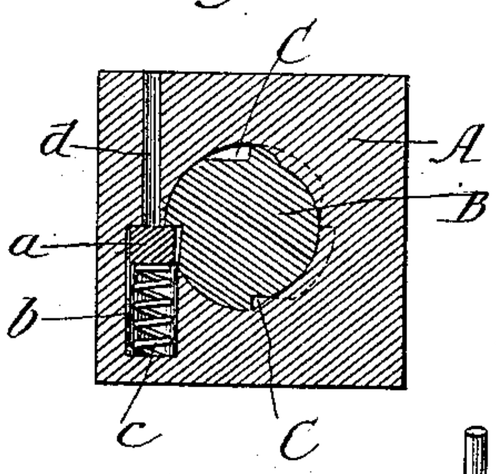


Fig. 3.

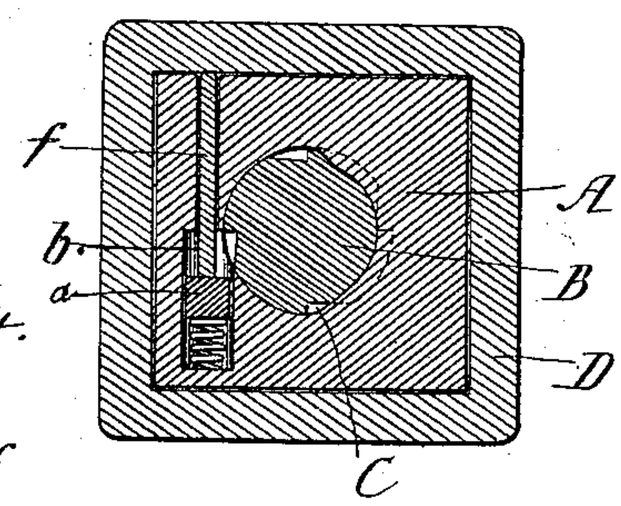


Fig. 4.

Fig. 5

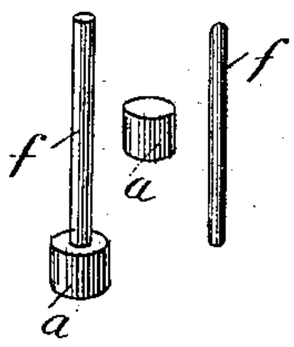


Fig. 6.

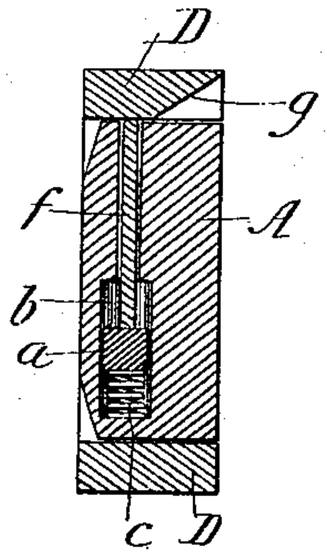
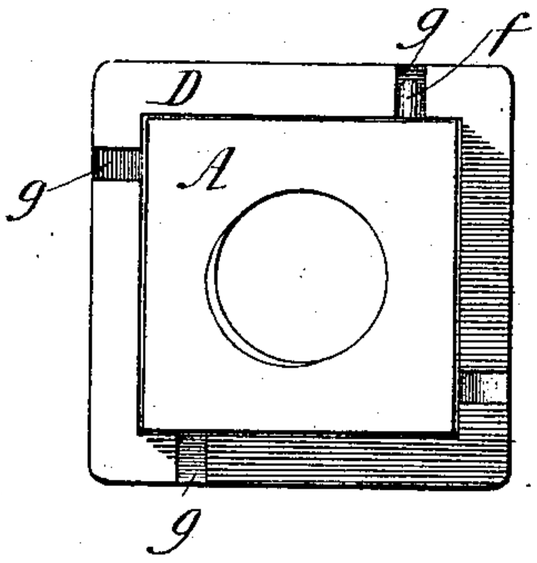
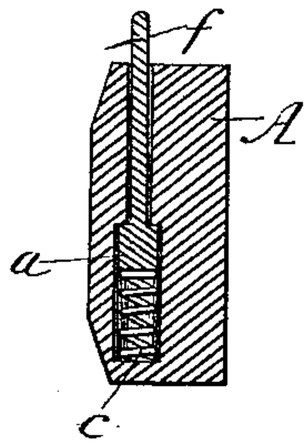


Fig. 7.





Witnesses:

Frank J. Blanchard

Howard Hallock.

Inventors:

Charles Maldner

By A. M. Stout

Attorney.

UNITED STATES PATENT OFFICE.

CHARLES MALDNER, OF CHICAGO, ILLINOIS.

NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 332,669, dated December 15, 1885.

Application filed October 2, 1885. Serial No. 178,850. (No model.)

To all whom it may concern:

Be it known that I, CHARLES MALDNER, of Chicago, county of Cook, and State of Illinois, have invented certain Improvements in Nut-Locks, of which the following is a specification.

My invention will be fully described hereinafter with reference to the accompanying drawings, in which—

Figure 1 represents a side elevation of a headed bolt and a screw-nut thereon embracing my improvement; Fig. 2, a cross-section of the bolt and nut together; Fig. 3, a like cross-section of the same together, with a cross-section of a key, D, mounted upon the nut A and adapted to operate the latter; Fig. 4, a detail view of pin *f* and click *a*, to be employed in operating the locking device for the nut; Fig. 5, a cross-section in detail of the key D and of the nut A made through the locking device; Fig. 6, an end elevation of the key and of the nut, with the pin *f* in the act of entering the key; and Fig. 7, a cross-section in detail of the nut, taken through the locking device, showing the pin *f* and the click *a* in one piece in position.

The end of the bolt B opposite to its head is provided with a spiral thread, as shown, and with a suitable number of longitudinal grooves, C, cut through the thread, of such shape that the back edges of the grooves will present shoulders that are perpendicular to the periphery of the bolt, while the forward edges will present inclined or sloping surfaces, so that when the nut A, provided with a female thread, shall be turned to the right the click *a* will pass across the grooves freely; but the square shoulders, on the other hand, will catch against the click, which will prevent the nut from being turned back or to the left. In order that the click *a* shall constantly bear against the bolt as the nut turns and promptly and securely enter each groove automatically, it is seated upon a spiral spring, *c*, which is provided with a circular chamber, *b*, in the nut sufficiently long for the click and for it, and for the vertical play of both, and leading into this chamber is the pin-hole *d* for the pin *f*. The click and pin may be either in separate pieces or in one, as shown in Fig. 4. My practice is to bore the chamber and pin-hole from the lower edge of the nut, and then, after inserting the click and pin, plug up the lower end. The click has the form of a cylinder with square ends, and I prefer to have the pin *f* in a separate piece, for then the operator can keep a number of them always on hand, clean and ready for use. It should be just so long that when it is forced down by pressure upon the upper end and that end brought down to a level with the upper edge of the nut the lower end will force the click against the tension of the spring down out of reach of the square shoulders of the grooves, so that the nut may turn backward or off freely. The click in that case need never be removed at all, while the pin, being a separate piece, can be easily inserted and removed at pleasure from above.

The peculiarly-shaped grooves in the bolt, the click, the spring, and chamber for them constitute the nut-lock; but in order to unlock the nut with convenience I have devised the key D, (shown in the drawings,) which is simply a frame adapted to fit snugly around the nut, and is provided with inclined recesses *g*, arranged in such positions in one edge thereof that when the edge containing the recesses is presented to the outer face of the nut one of the recesses will always be opposite to the pin *f* in position, and when the key is forced fully upon the nut the pin will be forced down by the incline of the recess and push the click beyond the reach of the square shoulders of the grooves C, and thus unlock the nut, which may then be turned off the bolt. The key may be provided with any suitable wrench or handle, by means of which, when seated upon the nut, the latter may be turned off or on.

It is manifest that the click, which is held by the spring against the square shoulder of the groove, will securely hold the nut against unscrewing.

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

1. The combination of the nut A, provided with interior chamber, *b*, having pin-hole *d*, leading into the same, the spiral spring *c* therein, and the click *a*, having pin *f*, seated upon the spring, especially adapted to prevent the nut from turning off the bolt, except when it is desired that it shall do so, and then by simple pressure upon the top end of the pin *f*

it is forced entirely out of reach of the grooves C, so that the nut may turn back freely, substantially as described.

2. The combination of the key D, so constructed as to fit snugly over the angular nut A, and provided with the inclined recesses *g*, so located therein that the pin *f* will enter some one of them whenever the key is properly presented and forced upon the nut, with the said nut A, having the pin-hole *d*, chamber *b*, spring *c*, click *a*, and pin *f*, adapted to force in the pin *f* and hold the click *a* out of reach of the grooves C on the bolt, so that the nut may be turned backward without its touching the screw-thread on the bolt when required, substantially as described.

CHARLES MALDNER.

Witnesses:
R. B. MITCHELL,
W. A. WEED.