(No Model.)

# T. W. MURPHY.

## NUT AND BOLT LOCK.

No. 587,012. Patented July 27, 1897.

*Fig. 1.*

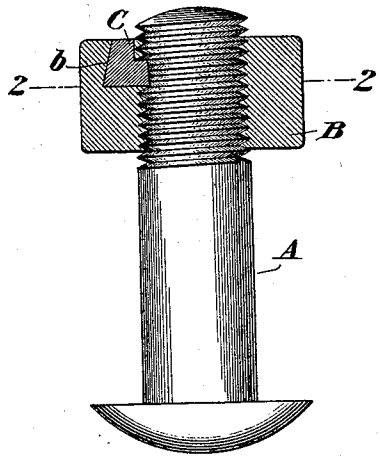



*Fig. 2.*

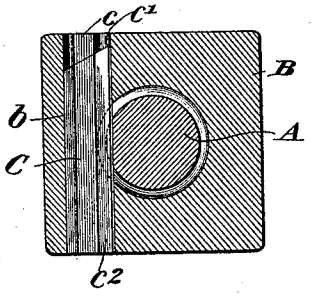



*Fig. 3.*

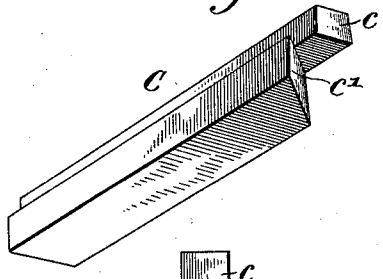



*Fig. 4.*

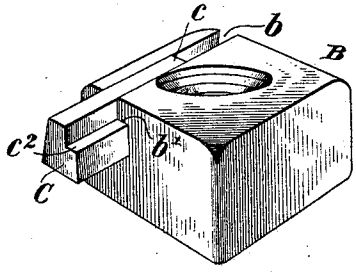
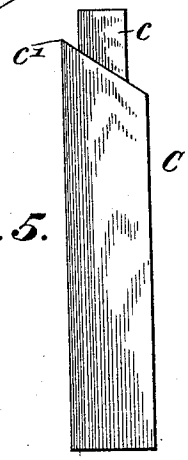



*Fig. 5.*




Witnesses

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# UNITED STATES PATENT OFFICE.

TIMOTHY W. MURPHY, OF WASHINGTON, DISTRICT OF COLUMBIA.

## NUT AND BOLT LOCK.

SPECIFICATION forming part of Letters Patent No. 587,012, dated July 27, 1897.

Application filed December 16, 1896. Serial No. 615,836. (No model.)

*To all whom it may concern:*

Be it known that I, TIMOTHY W. MURPHY, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Nut and Bolt Locks; and I do hereby declare the following to be a full, clear, and exact description of my invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings.

This invention is an improvement in nut and bolt locks, and is illustrated in the accompanying drawings, in which—

Figure 1 is a view showing a bolt in elevation and the nut and lock or key in cross-section. Fig. 2 is a view showing the lock or key in plan and the nut and bolt in horizontal section along the plane indicated by the line 2 2 in Fig. 1. Fig. 3 is a view showing the lock or key in perspective and enlarged. Fig. 4 is a view showing the nut and lock or key in perspective, the key having been inserted in the nut a portion only of its length. Fig. 5 is a plan of the key from its lower side, enlarged.

In the drawings the letter A indicates an ordinary bolt having the usual threaded end; B, a nut having the usual threaded opening adapted to receive the end of the bolt and provided with a dovetail groove in its upper face tangential to and intersecting the threaded opening, and C a key or lock adapted to fit within the dovetail groove in the nut and to cut a seat in the bolt, thereby locking nut and bolt together.

The nut B has a dovetail groove *b* in its upper face tangential to and intersecting the threaded bolt-opening. The said groove is undercut or has a shoulder *b'* overhanging it on its inner side. The shoulder *b'* in many instances is divided on either side of the point where the threaded opening and the groove meet, the bolt-opening and the groove merging into each other in practice, not in theory. The key or lock C has a cross-section to correspond with and to enable it to fit into the groove *b* and has a step or offset $c^2$ to engage the shoulder *b'*. The length of the key C along its upper portion *c* is exactly the length of the groove *b* whether the said groove is parallel to the sides of the nut or slants, and the ends of said key are made to fit flush with the sides of the nut. As shown, the nut is square, the groove is parallel to two of the sides, and the ends of the key are squared. The lower portion of the key from the step $c^2$ to its base is cut away short of the extremity of one end at an angle and forms a cutting edge *c'*, the upper portion *c* projecting beyond this cutting edge and protecting it. The whole key or merely the cutting edge *c'* is tempered or rendered harder than the material of the bolt, or it may be made of a harder and different material therefrom.

My improved nut and bolt lock is used as follows: The bolt A having been placed in position the nut B is screwed home upon its threaded end and the end of the key C having the cutting edge *c'* nearest it is inserted in one end of the groove *b*, the cutting edge *c'* being upon the side of the groove next to the bolt. If the key consisted only of the upper portion *c*, it would pass the bolt, merely grazing its threads, but the cutting edge *c'* is set forward by the step $c^2$ a distance slightly greater than the screw-threads on the bolt. A few sharp blows, however, drive the key completely within the groove in the nut, the cutting edge *c'* plowing its way through the threads and some little into the body of the bolt, thus forming a seat for itself and locking the nut and bolt together. The end of the upper portion of the key *c*, projecting beyond the cutting edge *c'*, is a protection to said edge either when carried loosely prior to use or when it is desired to force the key from its seat to release the nut from the bolt.

The key may have its cutting edge on either side—that is, on its right, as shown in the drawings, or on its left. The advantage of placing the edge on the right, however, is that the blows which drive it home tighten the nut.

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

1. In a nut and bolt lock the combination with a bolt having a threaded end, of a nut having a threaded opening adapted to receive

said end, said nut having a dovetail groove in its upper face tangential to and intersecting its threaded opening, and a key adapted to fit said groove, said key having a cutting edge on its lower side short of one end.

2. In a nut and bolt lock the combination with a bolt and a nut, the nut having a dovetail groove intersecting its threaded opening, of a key adapted to fit said groove, said key having a cutting edge short of its end.

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

TIMOTHY W. MURPHY.

Witnesses:

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