(No Model.)

I. S. HUMBERT.

NUT LOCK.

No. 418,949. Patented Jan. 7, 1890.

Fig. 1.

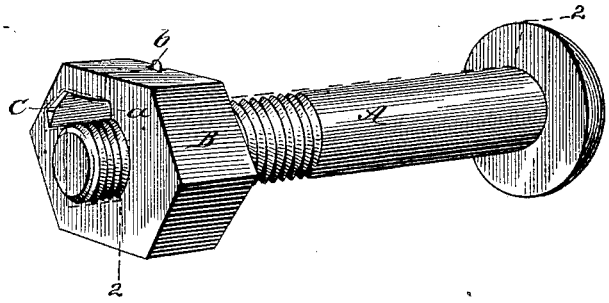


Fig. 2.

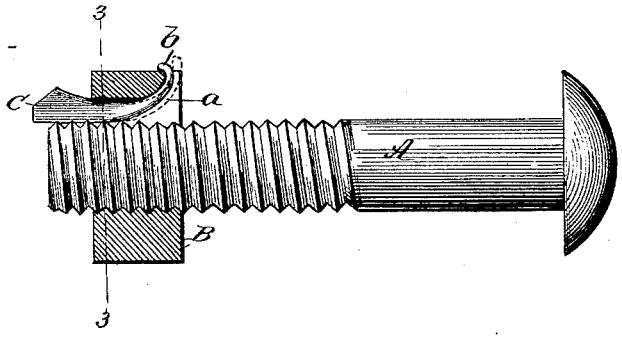


Fig. 3.

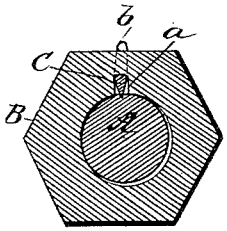
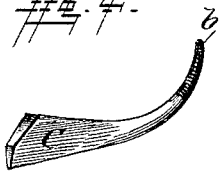


Fig. 4.



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NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 418,949, dated January 7, 1890.

Application filed July 9, 1889. Serial No. 316,950. (No model.)

To all whom it may concern:

Be it known that I, ISAAC SYLVESTER HUMBERT, residing at Staunton, in the county of Augusta and State of Virginia, have invented a new and Improved Nut-Lock, of which the following is a specification.

Nuts have been locked on screw-bolts by means of a wedge-shaped and sharp-edged key which was driven into a transverse groove formed in the inner threaded portion of the nuts, and thus made to cut into the threads of the bolts. Various means or expedients have been employed to hold such key in place and engaged with the bolt-thread. In one instance the outer projecting end of the key was driven into the thread of the bolt, and in another the key was secured by a washer of peculiar construction, which was detachably secured to the outer face of the nut by means of interlocking parts. There is also another class of nut-locks in which a soft-metal key is driven into a channel or passage formed by coincident grooves in the nut and bolt and its inner end bent or turned up against the inner face of the nut.

My invention combines the main features of both the classes of nut-locks above referred to, but embodies novel features which distinguish it from them and render it greatly superior in practical use.

In the accompanying drawings, Figure 1 is a perspective view of a screw bolt and nut with my improved key applied, as required, for locking the latter. Fig. 2 is a longitudinal section on line 2 2, Fig. 1. Fig. 3 is a cross-section on line 3 3, Fig. 2. Fig. 4 is a perspective view of the nut-locking key.

The bolt A has the usual integral or unmutilated thread. The nut B is provided with a groove *a*, extending transversely across the thread and radially outward on the inner face of the nut, the bottom of said groove being curved upon the arc of a circle, as shown. The key C has the following characteristics: As to form it is tapered longitudinally to a point, also wedge-shaped or beveled on its inner side to form a cutting-edge, and curved longitudinally, so that the said edge is slightly convex, the curve corresponding substantially to the curve of the bottom of the groove in the nut; and, lastly, the body or main portion of the key is made of steel or hardened iron to enable it to cut into the bolt-threads, while the tip or pointed end *b* (see shaded lines, Fig. 4) is soft, so that it may have the flexibility required to adapt it for use, as hereinafter specified.

In practice, when the nut B has been screwed home, the key C is inserted in the groove *a* and driven with a light blow of a hammer until tightly wedged in place, by which its sharp edge is made to slightly cut or indent the bolt-thread, and thus effectually lock the nut, while the soft flexible tip *b* enters the radial portion of the groove *a* and is bent backward therein by any suitable tool, so that it forms a clasp, and thereby prevents displacement of the key by any of the incidents of practical use. To detach the key, and thus unlock the nut, its tip *b* is forced—*i. e.*, bent inward—as shown by dotted lines, Fig. 2, by means of any suitable tool, when it may be drawn out by pinchers.

By the above-described construction and combination of parts it will be seen that I dispense with a washer for locking the key; also avoid the use of lengthwise grooves in the bolt-thread, and the frequently inaccurate or loose adjustment of the nut consequent upon the use of such grooves, and likewise attain several advantages, especially a more secure fastening of the nut and greater facility of removal of the key, over nut-locks of the class in which the head of a soft-metal key is forced into the thread of a bolt to hold said key in place. The adaptability of the key to lock the nut in any adjustment around the bolt is obviously important.

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

1. The combination, with the bolt having an integral thread, and the nut having a transverse groove *a* in its threaded portion, the bottom of said groove being curved substantially as specified, of the transversely-wedge-shaped and longitudinally curved and

tapered key C, having a hardened or steel body and soft tip to adapt it to cut the bolt-thread and clasp in the nut-groove, as shown and described.

2. The tapered curved nut-locking key C, whose convex side is beveled, and thus forms a sharp edge adapted to make an indentation in the thread of a bolt, and whose body and tip are made of hard and soft metal, respectively, as and for the purpose set forth.

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Witnesses:
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