(No Model.)

J. E. WOOTTEN.

NUT LOCK.

No. 248,975. Patented Nov. 1, 1881.

FIG. 1.

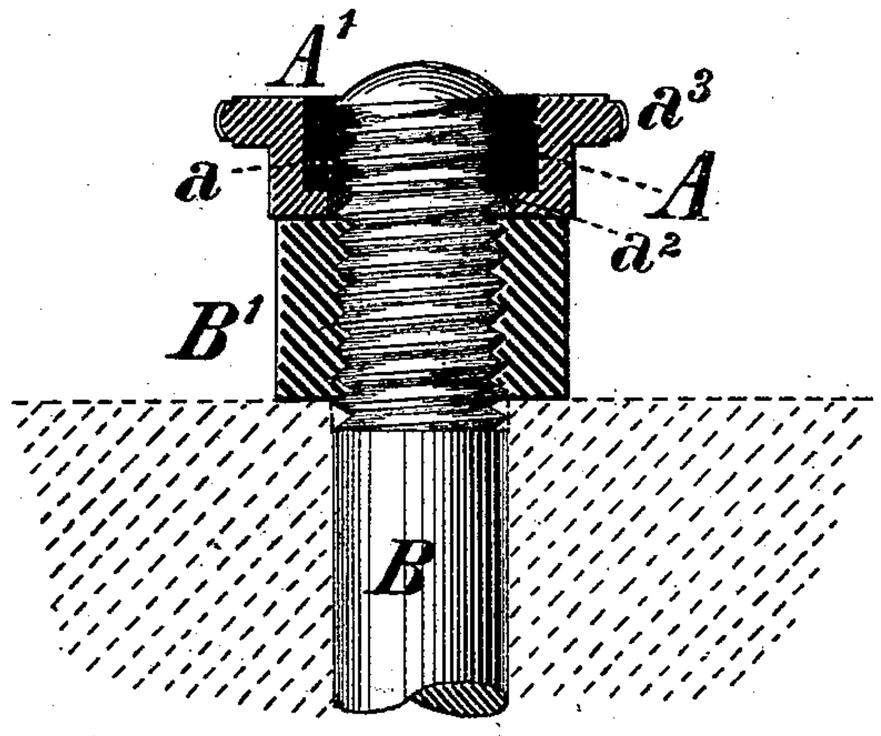


FIG. 4.

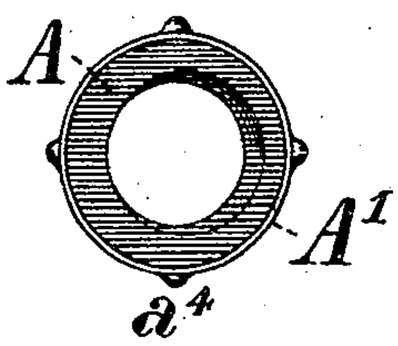


FIG. 5.

FIG. 3.

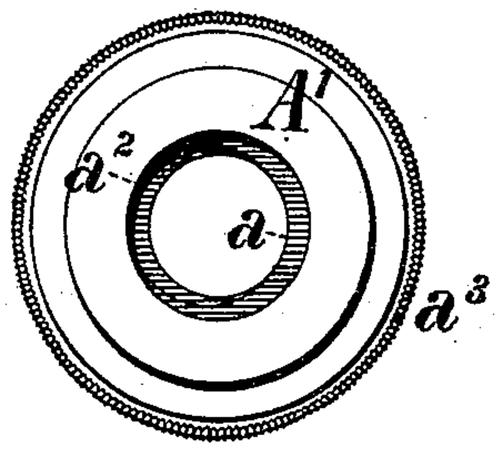
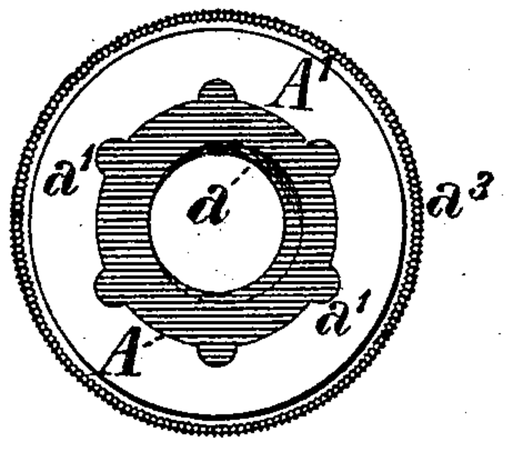


FIG. 2.



WITNESSES:

Geo. B. Collier.

Geo. T. Kelly.

INVENTOR

John E. Wootten,
by Collier & Bell,
attys.

UNITED STATES PATENT OFFICE.

JOHN E. WOOTTEN, OF PHILADELPHIA, PENNSYLVANIA.

NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 248,975, dated November 1, 1881.

Application filed July 2, 1881. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. WOOTTEN, of the city and county of Philadelphia, in the State of Pennsylvania, have invented a certain new and useful Improvement in Lock-Nuts, of which improvement the following is a specification.

The object of my invention is to provide simple and effective means for securing a nut in its adjusted clamping position upon a bolt and preventing its slackening thereon by the agitation in service of the structure to which it is connected, to which slackening action the nuts of bolts employed in the permanent way and rolling-stock of railroads are of necessity particularly subject.

To this end my improvement consists in the combination of a compressible elastic block having a permanent internal thread fitting that of the bolt to which it is to be applied, and acting by its compression in application to clamp the main or holding nut, and a rigid inclosing case free from contact with the thread of the bolt and acting to resist the bursting strain exerted upon the elastic block. The improvement claimed is hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a central transverse section through a lock-nut embodying my improvement as applied to secure a nut in position upon a bolt; Figs. 2 and 3, top and bottom views, respectively, of the lock-nut detached; and Figs. 4 and 5, an end view and a central transverse section, respectively, showing the case as formed of sheet metal.

To carry out my invention I form centrally within a block or annulus, A, of india-rubber or analogous elastic material, an internal screw-thread, *a*, corresponding in diameter and pitch with the thread of the bolt B, to which the device is to be applied, and inclose the block in a rigid metallic case or shell, A′, independent axial movement of the block and case being prevented by projections *a′* upon the periphery of the block, which enter corresponding recesses in the case.

The case A′ is entirely open at one end to admit of the introduction of the block, and is, at the other end, perforated by a central opening, a^2, of larger diameter than the thread *a* of the inclosed block, so that when in service the latter only shall be in contact with and bear directly upon the thread of the bolt on which it is used.

It is essential to the operation of my invention that the opening a^2 shall be unprovided with a female thread, and that it shall be of a diameter greater than that of the bolt, for, were the opening a^2 threaded, it would be impossible to effect compression of the rubber block by the act of screwing the nut to a bearing.

The case may be either provided with a milled rim, a^3, to admit of its rotation with the threaded block upon the thread of the bolt, or may have its periphery flattened or furnished with teats or projections to the same end.

The modification shown in Figs. 4 and 5 differs from the construction just described in the particular that the shell A′ is formed of light sheet metal, having lateral swells a^4 upon its periphery, which serve to receive the retaining-projections *a′* of the block, and also serve in lieu of a milled rim as a means of rotation.

In operation, the lock-nut being screwed upon the bolt B and against the outer face of the main metallic nut B′, the elastic block A is compressed by and in correspondence with the force applied between the rim of the case A and the thread of the bolt B, and the thread *a* of the block is thereby forced so tightly around the thread of the bolt B as to hold the nut B′ securely in place and prevent the turning backward of said nut upon the bolt, which otherwise would be liable to occur under the influence of shocks or casual strains sustained by the structure in which it is located.

My improvement possesses the advantages of being simple and inexpensive in construction, reliable in operation, and applicable to bolts and nuts of the ordinary form without change or modification thereof in any particular.

The state of the art to which my improvement relates evinces that the employment of rubber or an analogous elastic medium for the prevention of the unscrewing of nuts upon their bolts is old, the same having been heretofore known in elastic or spring washers, and in metallic nuts having an elastic packing or core compressed within them so as to induce increased friction upon the thread of a bolt.

Said application of elastic material I therefore distinctly disclaim, and further disclaim, broadly, a lock-nut composed of elastic material.

I am aware that heretofore a lock-nut has been proposed consisting of a shell, the lower opening of which is threaded, said shell having a rubber packing or core. Such a device differs essentially from my invention, in which, as above stated, the lower opening, or that at the base of the nut, must be unthreaded and of a diameter greater than that of the bolt, in order to permit of the compression of the rubber. I am also aware that a wooden jam-nut inclosed by a metallic band is old. Such nut-locks, which lack the essence of my invention, I therefore do not claim; but

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

The combination, with a block or annulus of rubber or equivalent elastic material having a permanent internal thread, of a rigid inclosing case or shell, open at its top to admit of the introduction of the block, and having an unthreaded opening at its base of diameter greater than that of the bolt, these members being combined for joint operation to admit of the compression of the elastic block between the case and the thread of a bolt in and by the operation of screwing the same to a bearing thereon, substantially as set forth.

JOHN E. WOOTTEN.

Witnesses:
J. SNOWDEN BELL,
T. F. FITZPATRICK.