

J. W. BRODERICK.
 LOCK NUT.
 APPLICATION FILED APR. 3, 1920.

1,432,050.

Patented Oct. 17, 1922.

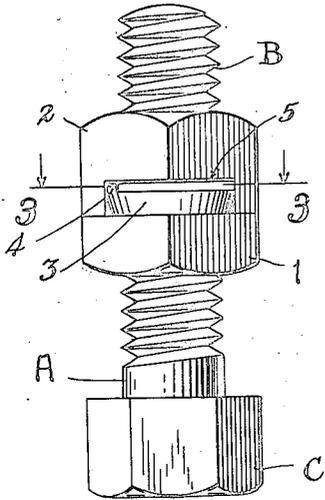


Fig. 1.

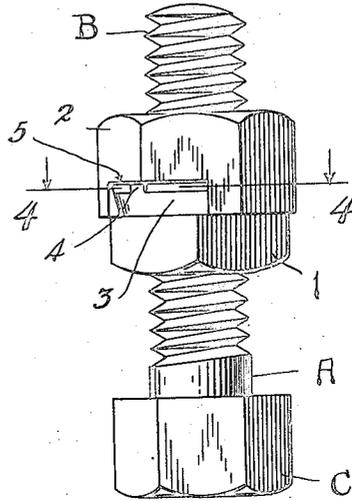


Fig. 2.

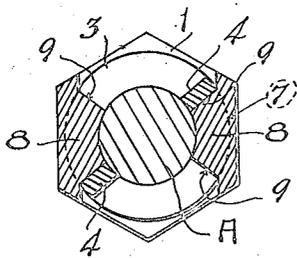


Fig. 3.

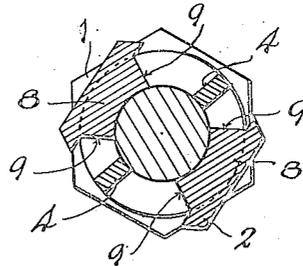


Fig. 4.

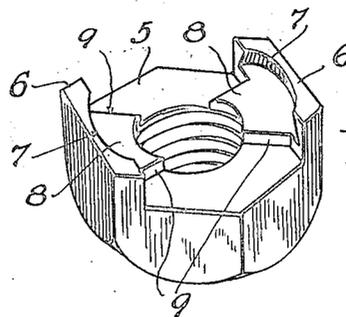


Fig. 6.

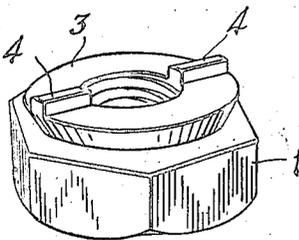


Fig. 5.

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UNITED STATES PATENT OFFICE.

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LOCK NUT.

Application filed April 3, 1920. Serial No. 370,984.

To all whom it may concern:

Be it known that I, JOHN W. BRODERICK, a citizen of the United States, and a resident of Hillside, in the county of Union and State of New Jersey, have invented new and useful Improvements in Lock Nuts, of which the following is a specification.

This invention relates in general to lock nuts and more particularly to a device of this character which operates in the manner of an ordinary jam nut.

The objects of the invention are to provide a lock nut embodying novel features of construction and particularly segmental marginal portions or flanges upon one of the meeting ends of the sections of such a lock nut, which flanges can be readily sprung or bent over a reduced portion or boss with undercut side walls on the other of said meeting ends to swivelly connect the sections; to limit relative turning of the sections by means of stop projections upon one of the meeting ends of said sections entering recesses in the other of said meeting ends, which recesses open through the outer walls of the section and thus cannot become clogged with dirt or the like; to further have said recesses open through both the inner and outer walls of the sections; to locate such recesses between the segmental flanges for swivelly connecting the sections and thus render it possible for them to open as already stated; to thus obtain improved means for connecting the two sections of the nut; to secure a simple inexpensive and easily operable construction; and to obtain other objects and results as may be brought out by the following description.

Referring to the accompanying drawing, in which like numerals of reference indicate the same parts throughout the several views,

Figure 1 is a side elevation of a lock nut embodying my invention applied to a bolt, the lock nut being shown in released position;

Figure 2 is a similar view showing the lock nut in a locked position;

Figure 3 is a horizontal sectional view taken on the line 3—3 of Fig. 1;

Figure 4 is a similar view taken on the line 4—4, of Fig. 2;

Figure 5 is a detached perspective view of the lower or main section of the nut,

showing the upper end thereof which engages the lower end of the locking section, and

Figure 6 is a similar view of the locking or clamping section of the nut, showing the lower end thereof which engages the upper end of the main section.

Specifically describing the present embodiment of the invention, the reference character A designates a bolt threaded at one end thereof as at B, and having a head C at the opposite end thereof. The lock nut D comprises two polygonal sections 1 and 2, both of said sections 1 and 2 of the nut being threaded correspondingly to the bolt A and adapted to screw thereon in a conventional manner. One of the sections, in the present instance the section 1, is provided at one end thereof with an upstanding inverted frusto-conical boss 3 set slightly inwardly of the side edges of the nut, said boss being formed with a pair of radially disposed stop projections or ribs 4, said ribs being arranged in longitudinal alignment and extending diametrically of the boss 3.

The section 2 of the nut is cut away at one end thereof as at 5 to form a pair of opposed side flanges 6 having inwardly diverging undercut arcuate grooves 7 to fit over and receive the edges of the frusto-conical boss 3 of the section 1 of the nut. The boss 3 may be fitted in the grooves 7 in any suitable manner, as by first bending the flanges 6 outwardly, slipping the boss in the grooves and then bending the flanges inwardly, or first slipping the boss between the flanges and then upsetting or spreading the same into the grooves 7. The section 2 is further provided at the bases of the grooves 7 with upstanding lugs 8, said lugs being formed with radially disposed side stop shoulders 9 adapted to cooperate with the respective stop projections or ribs 4 on the section 1 to limit relative movement of the two sections 1 and 2. A swivel connection is thus provided between the two sections of the nut and the sections 1 and 2 are preferably snugly and frictionally connected by the boss 3 and flanges 6 so as to be rotatable upon each other only by the use of a wrench for turning them. The ribs 4 and the stop shoulders 9 are arranged so

that when one of the sections is held stationary and the other rotated to loosen the nut on the bolt, the rotation is stopped to bring the respective side faces of the sections of the nut into alinement as shown by Figures 1 and 3.

In the use of the lock nut D, the two sections are screwed onto the bolt A with the respective side faces in alinement as shown by Figures 1 and 3 until the inner section of the nut is firmly clamped against the work being bolted. The outer section of the nut is then slightly rotated further in the same direction whereby the said section acts as a jam nut to lock the nut upon the bolt, as shown by Figures 2 and 4, this action being insufficient to cause the ribs 4 to engage the shoulders 9. To remove the nut or loosen the same, the outer section is first independently turned backwardly until the ribs 4 and stop shoulders 9 engage, this bringing the respective side faces of both the nut sections into alinement (see Figures 1 and 3), after which the wrench is applied to both sections which can then be easily loosened from the bolt. The stop shoulders 9 and ribs 4 prevent the outer section of the nut from being rotated too far backwardly to lock the nut again as it is being loosened and facilitate in causing the two sections to rotate together when the nut is being loosened. Obviously after the nut has been loosened it is not necessary to maintain the wrench on both sections as rotation of the outer section will, due to the ribs 4 and shoulders 9, cause a corresponding rotation of the other section, which would not be possible were the two sections not provided with this stop means.

It will be noted that the side flanges 6, 6 are segmental or extend each for only a segment of the circumference of the section, which enables the recesses between the shoulders 9, 9 of the lugs 8, 8 to open through the outer and inner walls of the section. This construction not only conduces to ease and cheapness of manufacture, but also prevents the recesses from clogging with dirt or the like, enables the working of the nut to be seen, and so forth.

Various modifications may be made in the details of construction of my improved lock nut without departing from the spirit or scope of the invention, and I do not wish to be understood as limiting myself except

as required by the following claims when construed in the light of the prior art.

Having thus described the invention, what I claim is:

1. A lock nut including superposed continuously threaded sections, one of the meeting ends of said sections having a boss with undercut sides and the other of said meeting ends having undercut segmental flanges receiving said boss and swivelly connecting the sections, and cooperating means on said sections for limiting relative turning.

2. A lock nut including superposed continuously threaded sections, one of the meeting ends of said sections having stop projections and the other of said meeting ends having recesses for said stop projections, said recesses opening through the outer walls of the section, and means for swivelly connecting said sections.

3. A lock nut including superposed continuously threaded sections, one of the meeting ends of said sections having stop projections and the other of said meeting ends having recesses for said stop projections, said recesses opening through the inner and outer walls of the section, and means for swivelly connecting said sections.

4. A lock nut including superposed continuously threaded sections, one of the meeting ends of said sections having a reduced portion with undercut sides and stop projections on its end face and the other of said meeting ends of the sections having undercut segmental flanges receiving said reduced portion and recesses between said segmental flanges opening through the outer walls of the section and receiving the stop projections, whereby the sections are swivelly connected and relative turning of them limited.

5. A lock nut including superposed continuously threaded sections, one of the meeting ends of said sections having a reduced portion with undercut sides and stop projections on its end face and the other of said meeting ends of the sections having undercut segmental flanges receiving said reduced portion and recesses between said segmental flanges opening through both the inner and outer walls of the section and receiving the stop projections, whereby the sections are swivelly connected and relative turning of them limited.

JOHN W. BRODERICK.