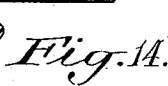
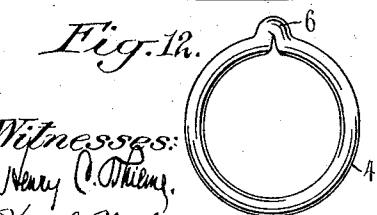
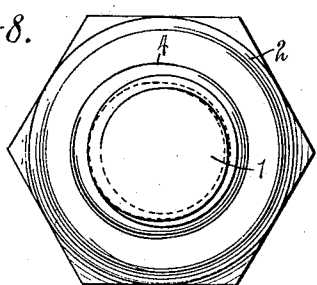
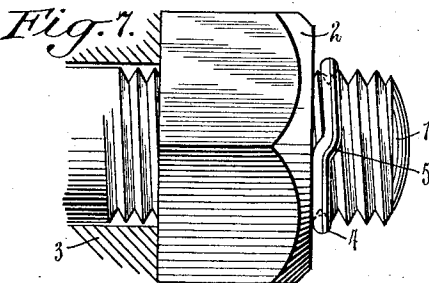
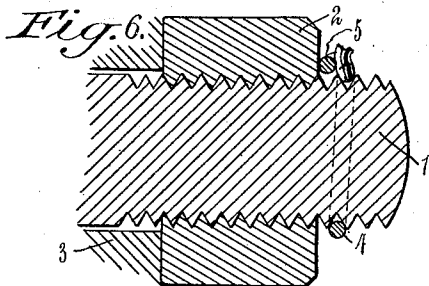
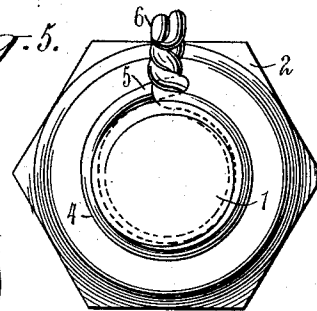
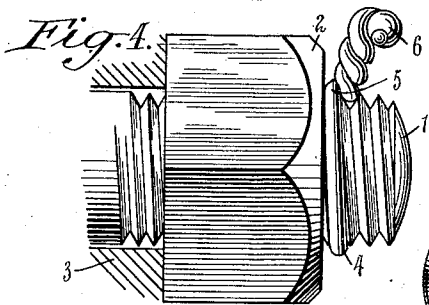
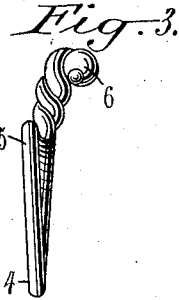
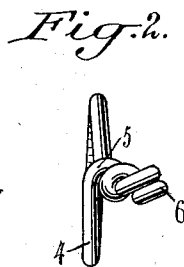
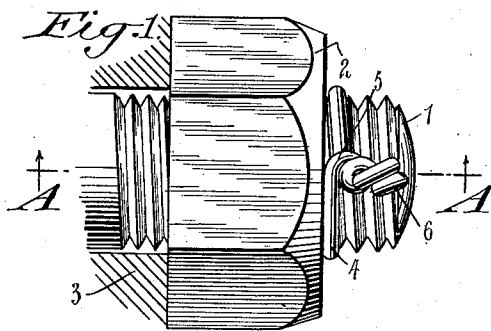


J. D. PRINCE.
 LOCKING DEVICE FOR NUTS AND THE LIKE.
 APPLICATION FILED FEB. 10, 1911.

1,009,340.

Patented Nov. 21, 1911.



Witnesses:
 Henry C. Miley,
 Harry S. Glischer

Inventor:
 John D. Prince
 by his attorng
 Brown & Shuman

UNITED STATES PATENT OFFICE.

JOHN D. PRINCE, OF NEW YORK, N. Y.

LOCKING DEVICE FOR NUTS AND THE LIKE.

1,009,340.

Specification of Letters Patent. Patented Nov. 21, 1911.

Application filed February 10, 1911. Serial No. 607,739.

To all whom it may concern:

Be it known that I, JOHN D. PRINCE, a citizen of the United States, and resident of the borough of Manhattan, in the city and State of New York, have invented a new and useful Improvement in Locking Devices for Nuts and the Like, of which the following is a specification.

This invention relates to a locking device for nuts etc. with the object in view of providing a device of this character which will be absolutely effective in operation and not require any modification of the nut or bolt, or other article which it is locking, for its application or operation.

Another object is to provide a device of this character which is cheap, easily made, simple and light.

A further object is to provide a device of this character which may be readily applied and removed by hand, which may be set up by hand so as not to require any motion of the nut to exert its locking effect.

Practical embodiments of the invention are represented in the accompanying drawings in which,

Figure 1 represents a nut and a portion of a bolt with the locking device applied in operative position. Fig. 2 represents a detail view of the form of locking device shown in Fig. 1, Fig. 3 represents a view of the same form of locking device taken at right angles to Fig. 2. Fig. 4 represents a view of the parts shown in Fig. 1, taken at right angles thereto. Fig. 5 represents an end view of the parts shown in Fig. 4. Fig. 6 represents a section taken in the plane of the line A—A of Fig. 1, looking in the direction of the arrows. Fig. 7 represents a view similar to Fig. 1, except that it shows another form of locking device. Fig. 8 represents an end view of the parts shown in Fig. 7. Figs. 9, 10 and 11 represent plan and side views respectively of the form of locking device shown in Fig. 7, and Figs. 12, 13 and 14 represent plan and side views respectively of a third form of the locking device.

An ordinary bolt is represented by 1 and its nut by 2. The nut 2 is shown as screwed home against an abutment 3, in which position it is desired to lock the said nut.

The locking device itself is represented by 4, and is preferably composed of metal, circular in cross section, such, for instance, as wire. The locking device 4 is essentially

a ring and has one portion out of the plane of the remainder of the ring. This portion is denoted by 5. This portion 5 is also eccentric to the remainder of the ring in plan view. The ring or locking device, may be provided with a lug 6 for convenient manual operation, but this lug 6 is not essential to the function of the device.

A convenient form of this locking device is represented in Figs. 1 to 5 inclusive, in which it is shown as composed of wire twisted into the form of a ring having a portion 5 out of the plane of the remainder and eccentric to the remainder in plan view, as mentioned above, the ends of the wire being twisted up so as to form a lug 6 for manual operation.

In the form shown in Figs. 7 to 11 inclusive, the device may be made by stamping out of metal and is not provided with any lug for manipulation.

In the form shown in Figs. 12, 13, 14, the device is shown as stamped out of metal but is provided with a lug 6 for manual operation.

The locking device 4 is intended to be of such shape that it will follow the groove of the thread of a bolt for part of a circumference and then rise up over the intervening crown of the thread and join into a completed ring or circle at its point of starting. In the illustration in the drawings the device is shown as gradually rising up to the height of the crown of the tread and then rather suddenly crossing over to its point of starting. However, this gradual rise and sudden crossing is not essential to the function of the device, which will operate effectively so long as it does rise up to the crown of the thread and cross over to its point of starting.

In operation, after the nut has been screwed home, the locking device is applied to the thread at the end of the bolt and screwed on after the manner of a nut, until it abuts against the outer face of the nut. It may then be forced tight up against the face of the nut by hand, if the device is provided with a lug, or by the use of a wrench or pincers if the device is not provided with means for manual operation. When the device is in operative position as described, it acts as a wedge between the outer face of the nut and the adjacent thread crown and effectually prevents any movement on the part of the nut in the direction of unscrewing it. This wedge-like

action utilizes a considerable portion of the circumference of the ring, as is clearly shown in Figs. 1, 4 and 7, and the harder the device is jammed up against the nut, the more extended will be the bearing surface or the wedge action of the ring and hence the more effective will be its locking action.

By reason of the fact that this locking device travels in the thread of the bolt, it is prevented from accidentally dropping off therefrom in case for any reason the nut should advance away from the locking device; and consequently, if the nut, after advancing, should tend to unscrew, it will be caught and locked as soon as it abuts against the locking device.

I have found this device to be extremely effective in operation and to absolutely prevent any loosening of the nut or bolt. It is preferably made of metal softer than the metal of which the bolt and nut are composed, in order that it may be jammed very tightly between the outer face of the nut and the adjacent thread crown when it is applied, but this is not an essential feature.

An important feature of this device is its extreme lightness which prevents it from becoming loosened by vibration, as well as enabling a large number of the locking devices to be shipped at a very low cost.

I contemplate that this device may be made in a great many different ways and shapes and of different materials, without departing from the spirit and scope of my invention and hence I do not intend to limit myself to the forms herein shown and described, but

What I claim is:

1. A device of the character described comprising a continuous ring adapted to be engaged with the thread of a bolt, said ring having a portion eccentric to the remainder.

2. A device of the character described comprising a continuous ring having a portion which, when in use, is eccentric to the remainder and out of the plane thereof.

3. A device of the character described comprising a continuous ring having a portion

which, when in use, is eccentric to the remainder and out of the plane thereof, the said ring being provided with a lug for manual operation.

4. A device of the character described comprising a continuous ring fitted to travel in the groove of a bolt thread for part of one circumference and then cross the intervening thread crown to its starting point, being in engagement with the thread throughout its length.

5. A device of the character described comprising a continuous ring fitted to travel in the groove of a bolt thread for almost a complete circumference and then abruptly cross the intervening thread crown to its starting point, being in engagement with the thread throughout its length.

6. A device of the character described comprising a continuous ring composed of wire twisted and fitted to travel in the groove of a bolt thread for part of one circumference and then cross the intervening thread crown to its starting point, the twisted ends of the wire extending from the ring in the form of a lug for manual operation, and the said ring being in engagement with the thread throughout its length.

7. In combination with a bolt and nut, a continuous ring fitted to travel in the groove of the bolt thread for part of one circumference and then cross the intervening thread crown to its starting point, the said ring being of softer material than the bolt and nut.

8. A device of the character described comprising a continuous inelastic ring having a portion eccentric to the remainder and out of the plane thereof.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two witnesses, this sixth day of February 1911.

JOHN D. PRINCE.

Witnesses:

F. GEORGE BARRY,
HENRY C. THIEME.