June 27, 1933. J. ARRINGTON 1,915,588

SLIP NUT

Filed Jan. 23, 1932

Fig. 1.

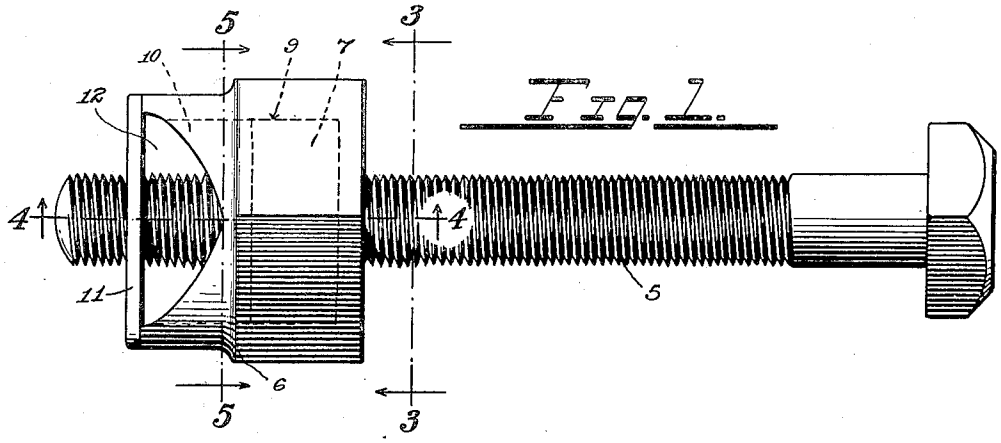


Fig. 2.

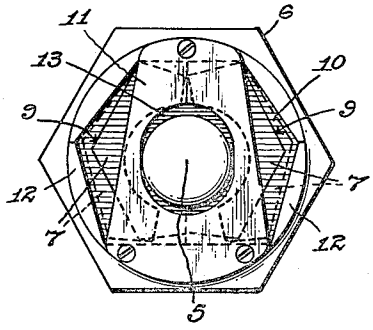


Fig. 3.

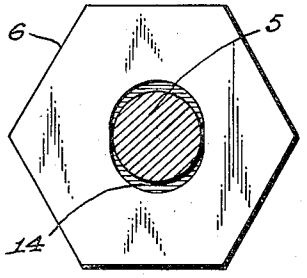


Fig. 4.

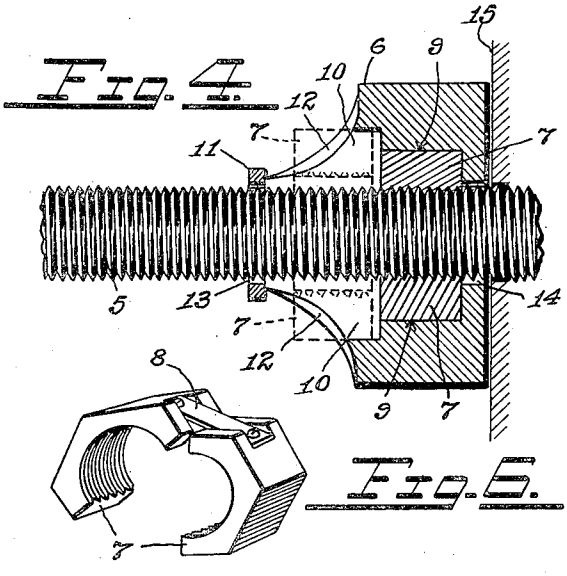


Fig. 5.

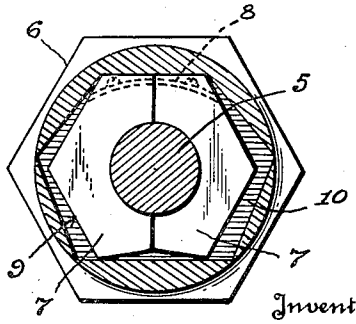


Fig. 6.

Inventor

John Arrington

John W. Maupin

Attorney

Patented June 27, 1933 1,915,588

UNITED STATES PATENT OFFICE

JOHN ARRINGTON, OF SEATTLE, WASHINGTON

SLIP NUT

Application filed January 23, 1932. Serial No. 588,390.

My invention relates to slip nuts and certain objects of the invention are to provide a nut made in two sections that are connected by a spring hinge which is adapted to normally retain the two parts in an open or retracted position. Another object is to provide an outer housing for the split-nut having a small hexagonal compartment that is arranged to receive and retain the split-nut in a contracted or closed position around the threads of a bolt whereby the device may be set up or tightened with a wrench. A further object is to provide an enlarged compartment within the housing whereinto the slip-nut may be moved and whereby its spring hinge causes its two sections to expand and thus release their hold on the threads of a bolt and whereby the entire device may be manually slipped along on a bolt. Still further objects are to provide a slip nut comprising an inner spring hinged split-nut that is retained and operative within a housing thus forming a self-contained unit of the device as a whole, means for retaining the split-nut within the housing, apertures for the housing whereby the split-nut may be manually manipulated within the housing, and oval bolt hole openings for the housing whereby the device is guided in alignment when same is slipped along a bolt.

With the above and other objects in view which will appear as the description proceeds, the invention consists of the novel construction, adaptation, combination and arrangement of parts hereinafter described and claimed. These objects are accomplished by devices illustrated in the accompanying drawing; wherein: Figure 1 is a view in side elevation showing the device installed on a bolt; Fig. 2 is a view in front end elevation of the same; Fig. 3 is a view in transverse vertical section taken on a broken line 3—3 of Fig. 1 and showing the nut in rear end elevation; Fig. 4 is a view in longitudinal section taken substantially on a broken line 4—4 of Fig. 1; Fig. 5 is a view in transverse vertical section taken on a broken line 5—5 of Fig. 1; and Fig. 6 is a detail view in perspective of the spring hinged split-nut.

Referring now to the drawing throughout which like reference numerals indicate like parts, the numeral 5 designates a bolt with a long area of threads and the numeral 6 designates the outer housing of the device as a whole. The numeral 7 indicates the two halves or sections of a split-nut which sections are hingedly connected by a flat spring 8 fitting into grooves in said sections and adapted to normally retain said sections in an open or retracted position as most clearly shown in Fig. 6 of the drawing.

While it will be understood that the device is not limited to the exact form herein illustrated, I have shown the rear half portion of the housing 6 hexagonal in shape and the front half portion annular in shape. The hexagonal portion of said housing is provided with a comparatively small true hexagonal compartment 9 that is adapted to snugly receive the two halves of the split-nut when same are pressed together in the closed position. The annular portion of said housing is provided with a comparatively large distorted hexagonal compartment 10 that is in communication with the said small true hexagonal compartment.

A plate 11 is secured to the front of the housing 6 and retains the split-nut sections 7 within said housing. This is an important feature of my device as it makes same self contained and salable as a unit so that parts are prevented from becoming misplaced or lost. The front annular portion of said housing is provided with opposite apertures 12 for entry of the fingers in manipulating the split-nut. The plate 11 and the rear wall of the housing 6 are provided with oval bolt holes 13 and 14 respectively. The major axes of said holes are in the same plane and they serve as guides for the device when it is slipped along a bolt and also allow a small amount of play so that the threads of the bolt are prevented from binding on the housing or plate. While I have shown a plate as a means for retaining the split-nut within the housing it will be understood that other means may be used for this purpose such as flanges or prongs formed on the front end of the housing and bent over to partially close its front end.

Referring to Fig. 4 of the drawing, in the operation of my device it will be apparent that when the two sections 7 of the split-nut are in the open or expanded position within the large distorted hexagonal compartment 10, as shown in dotted lines, the entire device may be slipped along on the bolt 5 until the rear end of the housing 6 is close to the abutment shown at 15. The two sections of the split-nut are then pressed together with the thumb and forefinger until their threads coincide with the threads of the bolt. The housing 6 is then moved back until its small true hexagonal compartment 9 receives the split-nut and retains same in the contracted position. In the contracted position the spring 8 is under tension and is curved or bowed as shown in dotted lines in Fig. 5. After the split-nut has been received by the small compartment 9, as shown in full lines in Fig. 4, a wrench is used on the hexagonal portion of the housing 6 and with a few turns its rear face is set up in secure engagement with the abutment 15 as will be understood.

To release the device so that same may be slipped along the bolt 5 in the opposite direction it is only necessary to threadedly draw the housing 6 away from the abutment 15 a distance slightly greater than the thickness of the split-nut by means of a wrench. The said housing may then be pushed back against the abutment and the split-nut will be held stationary by the threads of the bolt until same is free of the small compartment 9 and fully within the larger compartment 10 at which time its spring 8 will immediately cause its two sections 7 to snap apart thus releasing its threads from the threads of the bolt and allowing the entire device to be slipped along the bolt as before. The larger or distorted hexagonal compartment 10 has an upper side that is equal in width and in the same plane with the upper side of the smaller true hexagonal compartment 9. The lower side of said distorted hexagonal compartment is also in the same plane with the lower side of the true hexagonal compartment but is somewhat wider. The other sides of the larger or distorted hexagonal compartment connecting its upper and lower sides are therefore expanded thus giving more lateral space for expansion of the split-nut when same enters the said larger compartment. In its expanded position the split-nut substantially fills the said larger compartment as shown in dotted lines in Fig. 2.

Having thus described my invention, it will now be apparent that I have provided a slip nut that is entirely self contained as a single unit and by means of which the device may be quickly moved along a bolt having a long threaded area thus saving the time and work of threadedly moving a nut by means of a wrench.

What I claim and desire to secure by Letters Patent of the United States is:—

1. A slip nut comprising in combination a housing having in communication a large and a small compartment, a spring hinged split-nut operative within the housing, a plate adapted to retain the split-nut within the housing, and said plate and housing having aligned oval bolt holes.

2. A slip nut having in combination a housing with a small true hexagonal compartment communicating with a large distorted hexagonal compartment, a split nut comprising two sections disposed within the housing, means for retaining the split-nut within the housing, a spring adapted to normally retain the split-nut in the retracted open position when same is within the large compartment, and the small compartment adapted to retain the split-nut in the retracted closed position against the tension of the spring.

3. The combination with a threaded bolt of a slip nut comprising a housing having a small true hexagonal compartment communicating with a large distorted hexagonal compartment, a split-nut within the housing and comprising two sections, a spring hinge for the split-nut adapted to normally retain the sections of the split-nut in the open position free of the bolt when said split-nut is disposed within the large compartment, a plate for retaining the split-nut within the housing, said plate and housing having aligned oval bolt holes arranged to serve as guides when the device is slipped along the bolt, the small true hexagonal compartment adapted to retain the split-nut in the closed position with its threads engaging the threads of the bolt, and the large compartment having apertures to permit the split-nut to be manually contracted and moved from the large compartment into the small compartment.

In testimony whereof I affix my signature.

JOHN ARRINGTON.