

W. H. COTTRELL.

NUT LOCK.

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913,266.

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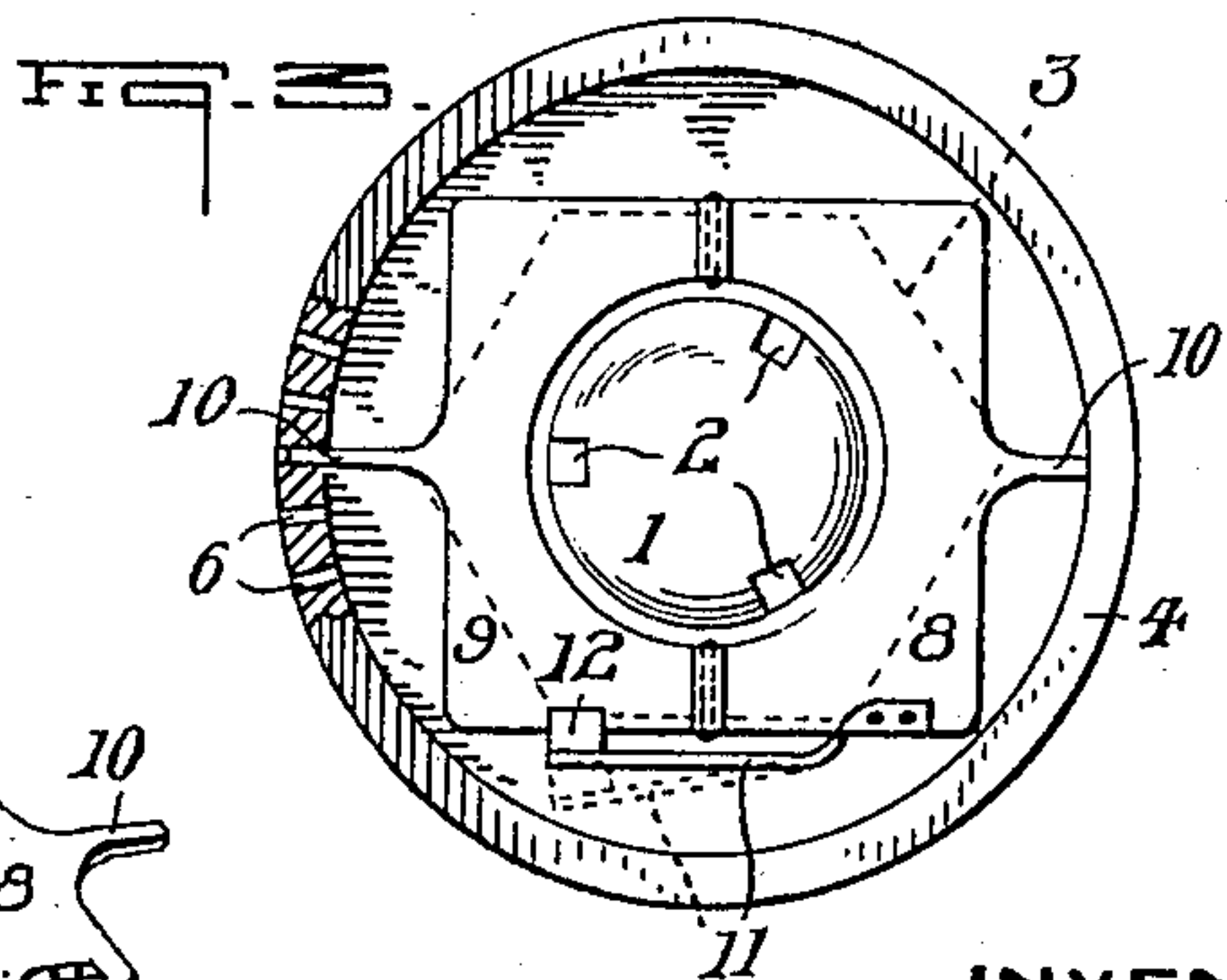
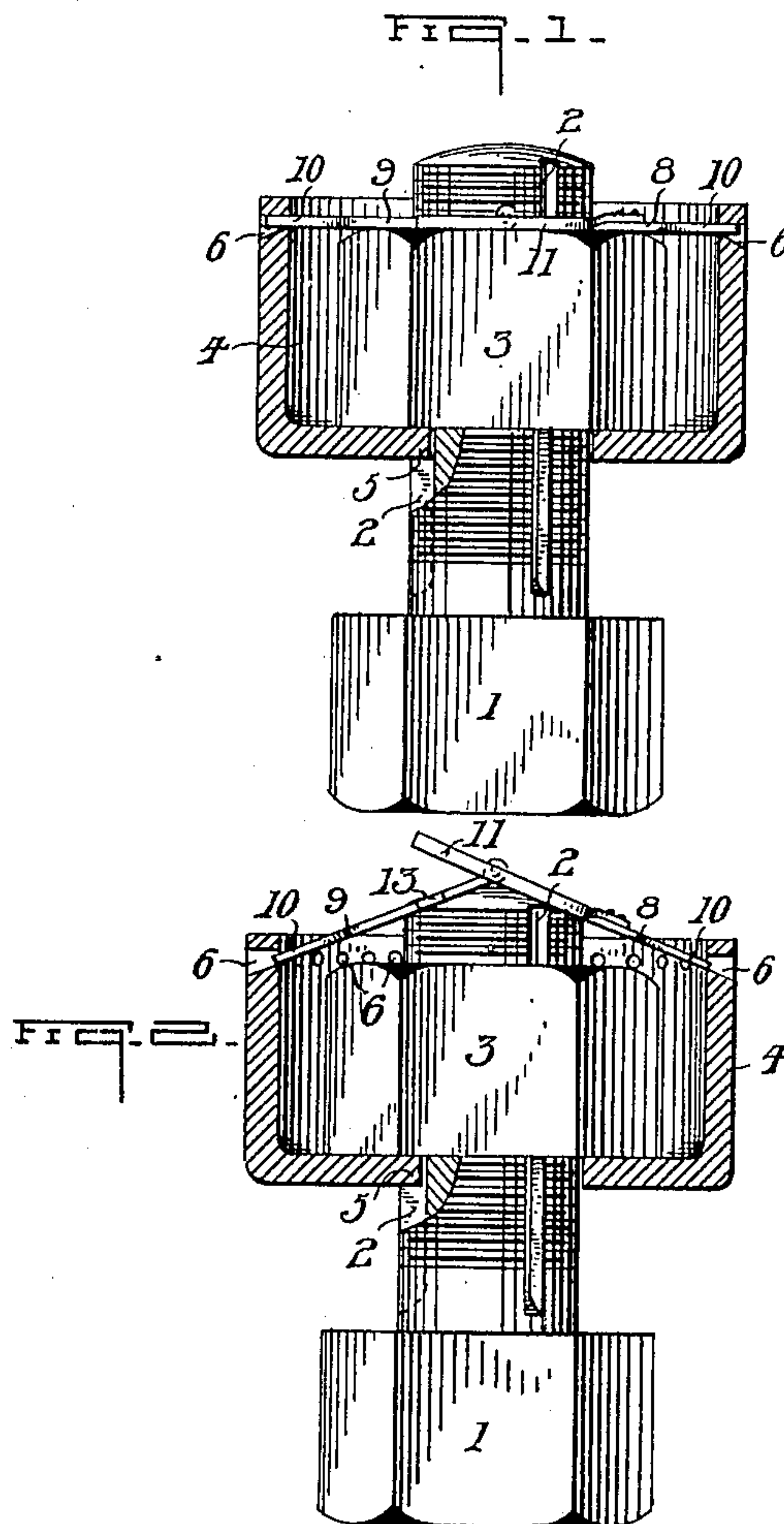
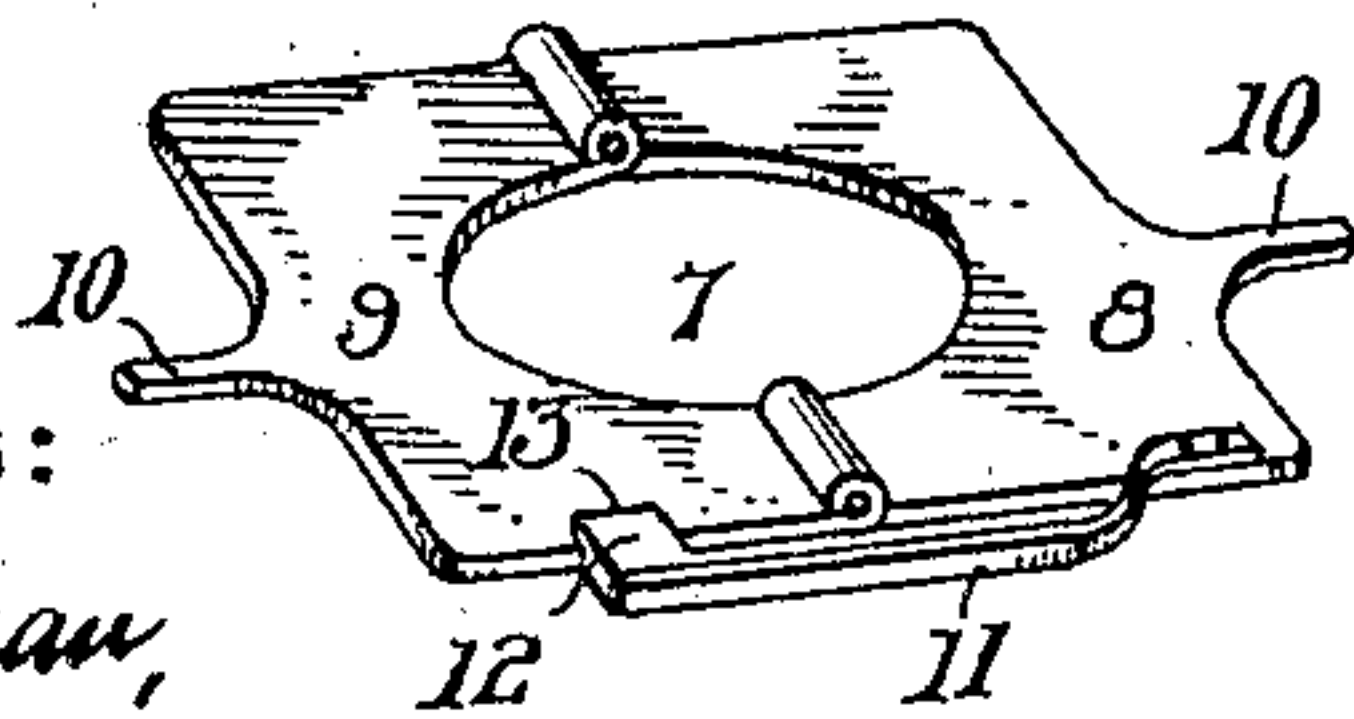


FIG. 4.



WITNESSES:

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## NUT-LOCK.

No. 913,266.

Specification of Letters Patent.

Patented Feb. 23, 1909.

Application filed February 19, 1908. Serial No. 416,784.

*To all whom it may concern:*

Be it known that I, WARREN HENRY COTTRELL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Nut-Locks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to certain new and useful improvements in devices for locking nuts on a bolt, and is specially designed and applicable on machinery, vehicles, or other objects of a similar nature, where the moving parts require the positive locking of the securing nuts.

Another object sought after is to provide a means for locking the nut in any suspended position on the bolt, and likewise for retaining the washer in close contact with the said nut.

In the accompanying drawing I have illustrated my invention by several detailed views, in which:

Figure 1 shows the preferred form of my device as applied to a bolt. Fig. 2 is a similar view showing the adjusting position of the locking cap portion of my device. Fig. 3 is a top plan view of the same, and Fig. 4 is a detached view of the locking cap.

Throughout the drawing the numeral 1 indicates an ordinary headed bolt in the threaded portion of which, for the necessary carrying out of my idea, is formed one or a plurality of grooves 2—2, which extend lengthwise of the bolt and preferably the full length of the said threaded portion. The interiorly threaded nut which may be either hexagon or square, is designated by the numeral 3. A cup shaped member or washer 4 designed to fit over the threaded portion of the bolt, prior to the turning on of the nut, is provided on its inner or bottom face with an inwardly projecting lug 5, which registers in one of the grooves 2, and affords a means for preventing said member from turning on the bolt. Through the vertical flange or wall portion of said cup washer, adjacent to the upper edge or periphery, are formed a plurality of apertures 6—6 extending around the entire circumference. These said aper-

tures are preferably formed with their bottom edge cut on an angle of predetermined degree; the utility of which will be explained further on.

Seated on top of the nut 3, after it has been turned into the cup washer 4, is a locking cap member formed in the shape of a hinge, and has a central opening 7 to fit over the threaded portion of the bolt. The two half portions of this hinged cap member are designated by 8 and 9 respectively, and on each of these said members, at the outer free edge, is a projecting lug 10, which, when the said hinged member is placed in position on top of the nut 3, engages in the apertures 6. On the side edge of the member 8, or it may be placed on the opposite member 9, is secured a spring locking member or latch 11 on the outer free end of which is an inwardly projecting bifurcated lug 12 designed to enter a notch 13 formed in one of the hinged members and engage over the edge of said member. This said member 11 is intended as a means for locking said two hinged members and prevents any buckling or displacement when said hinged cap is in secured position on top of the nut.

One of the fundamental objects sought after, and accomplished by my invention, is to provide a reliable means for locking a nut and washer at any desired position on the bolt, regardless of whether the washer is in contact with any object or not. This is especially of great advantage on certain classes of machinery, and I accomplish this feature in the following manner: The cup washer is first placed over the bolt to any predetermined position with the lug 5 engaging in the groove 2, which prevents said washer from turning. The nut 3 is next turned on the bolt until it seats in said cup washer and engages against the bottom of that member. The next step consists in placing the hinged cap in broken formation, as shown in Fig. 2, over the bolt, and then by guiding the lugs 10—10 into the apertures 6—6, the said cap is free to be collapsed against the top of the nut 3, and when thus positioned will hold the washer 4 in suspended position, and at the same time prevent the nut from turning on the bolt. As will be seen by reference to Figs. 1 and 2, the washer 4 cannot turn on the bolt owing to the lug 5 seating in the groove 2, and the hinged cap member, when seated on top of the nut, with the projecting lugs



10 engaging in the apertures 6 formed in said cup washer, will hold said washer in suspended position against the bottom of the nut, and itself be locked in position on top of the nut. When thus confined between the aforesaid two members the nut, by reason of its frictional contact with the washer and cap, will be prevented from turning on the bolt, or from moving away from its locked position. It will be seen that the bottom portion of the apertures 6—6 are cut on an angle, and this is for the purpose of allowing the easy insertion of the lugs 10—10 formed on said cap, and obviates any possibility of binding during the adjustment process. In order to lock the two hinged portions of the said cap when thus seated on the nut, and prevent this member from being sprung away from its locking position, I have provided the spring latch feature 11, heretofore described, which can be easily sprung away from its seat in the notch 13 whenever it is desired to remove said cap; or any other suitable locking means may be employed in place of said latch.

Having thus fully shown and described my invention what I claim and desire to secure by Letters Patent is:

30 1. In a nut lock the combination with the nut and bolt, the latter member being pro-

vided with one or a plurality of grooves formed lengthwise of the threaded portion, of a cup shaped washer designed to seat over the bolt and receive the nut said washer having a lug formed in the bottom thereof to engage in one of the grooves, also a plurality of apertures formed in the walls thereof; and a hinged cap member designed to seat over the bolt and engage the nut, and having suitable lugs formed thereon to enter the apertures provided in said cup washer.

2. In a nut lock a cup shaped washer provided with a bottom opening to receive the bolt, and a lug formed adjacent said opening designed to seat in a groove formed lengthwise of the bolt, said washer also provided with a plurality of apertures through the walls thereof; a hinged locking cap designed to seat over the bolt and engage the nut, said cap being provided with suitable lugs which enter the apertures formed in said cup-shaped washer; and means formed on said cap for locking together the two hinged members.

In testimony whereof, I affix my signature, in presence of two witnesses.

WARREN HENRY COTTRELL.

Witnesses:

BEATRICE FITZGERALD,  
H. W. STEVENSON.