

(No Model.)

G. W. PERRY.
NUT LOCK.

No. 579,547.

Patented Mar. 23, 1897.

Fig. 1.

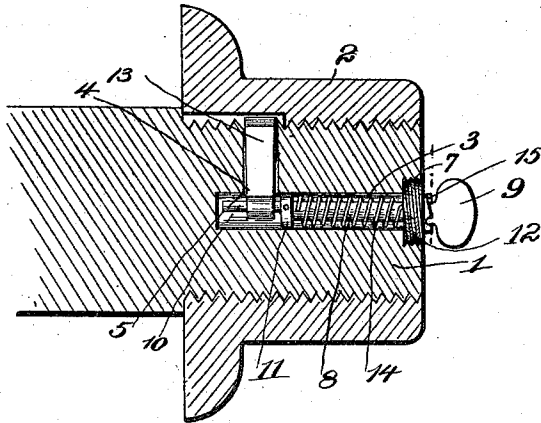


Fig. 2.

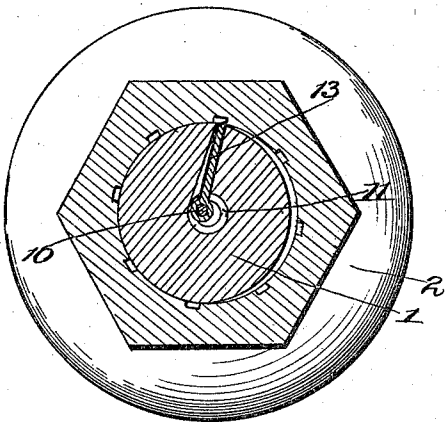


Fig. 3.

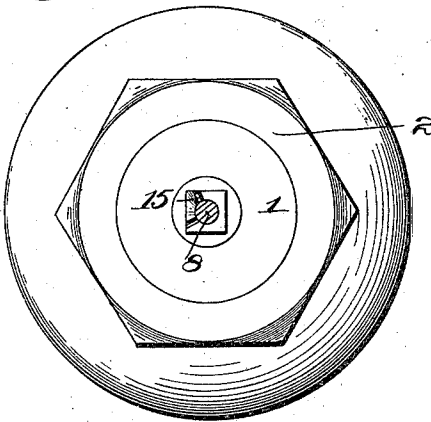


Fig. 4.

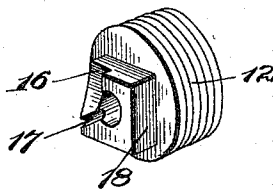
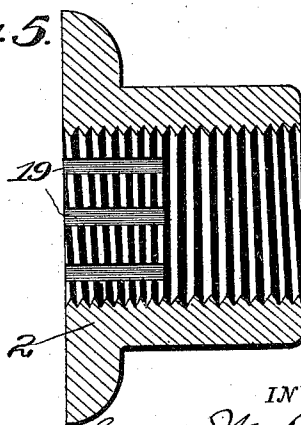


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE W. PERRY, OF WOODSIDE, NEW YORK.

NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 579,547, dated March 23, 1897.

Application filed November 25, 1896. Serial No. 613,440. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. PERRY, a citizen of the United States, residing at Woodside, in the county of Queens and State of New York, have invented certain new and useful Improvements in Automatic Axle-Locks; and I do hereby 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.

This invention has reference to a novel construction in a nut-lock, and is adapted more especially for use for locking the nuts upon vehicle-axles.

The invention consists in the features of construction hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a vertical longitudinal section of the end portion of an axle and its nut with this improvement applied thereto. Fig. 2 is a transverse section of the same, taken through the catch. Fig. 3 is an end elevation without the finger-piece. Fig. 4 is a perspective view of the cap-nut. Fig. 5 is a sectional view of the axle-nut.

It is understood, of course, that although this invention is shown and will be described with especial reference to an axle and its nut it is applicable for use in various other connections where it is desired to lock a nut upon a screw-threaded bolt.

Referring now to said drawings, 1 indicates the axle, bolt, or male member, and 2 the nut or female member. Within the member 1 is a longitudinal opening 3, extending inwardly from the end thereof, while a lateral opening 4 extends from a point near the inner end of said opening 3 through the side of the member 1. This lateral opening 4 is enlarged at its inner end, as shown at 5, for the purpose to be hereinafter referred to. The said opening 3 has a countersunk outer end portion 7. Situated within the opening 3 is a key-pin 8, having at its outer end a finger-piece 9 and at its inner end a catch-pin 10. The said key-pin 8 is a little smaller than the opening 3 and is held therein by means of a collar 11, rigidly fastened to the inner end thereof and fitting nicely within the opening, and by means of a cap-nut 12, that screws into the

countersunk opening 7 of the member 1 and through which the key-pin extends. The inner end of the key-pin does not reach the lateral opening 4, but the catch-pin 10 extends across the same. A catch 13 is situated within the lateral opening 4 and is pivoted at its inner end upon the catch-pin 10. It is seen from the foregoing description that the said catch 13 can be moved outwardly and inwardly by reason of the rotation of the key-pin 8. The outer end of said catch stands normally a little beyond the outer face of the member 1, and to hold the catch in this position a spring 14 is employed that is connected at one end to the key-pin and at its other end to the cap-nut 12. This spring 14 has a tendency both to turn the key-pin and to draw it toward the inner end of the opening 3. To limit the rotation and the longitudinal movement of the key-pin, a finger 15 is employed, extending laterally from the key-pin at a point near its outer end adjacent to the finger-piece 9, and which engages notches or projections 16 and 17 in a boss or projection 18 of the cap-nut. The said notch or projection 16 is provided with an abrupt shoulder situated in the path of the finger 15, and the parts are so arranged that when the spring throws the finger 15 against this projection the outer end of the catch stands a little distance beyond the outer face of the member 1. This notch has also an inclined face to allow a slight play of the finger 15, hereinafter referred to. It is thus seen that the finger 15 serves to hold the catch in the correct position, and it is obvious that it also limits the longitudinal movement of the key-pin. The notch 17 is situated in the path of the finger 15 and in such a position that when the key-pin is turned sufficiently to move the finger into this notch 17 the outer end of the catch is drawn sufficiently into the opening to allow the nut to turn freely upon the member 1. The female member 2 or the axle-nut is constructed in the ordinary manner with the exception that it is provided with a plurality of interior longitudinal grooves 19 in the manner shown. It is preferable to allow these grooves 19 to extend only partially the length of the nut from the inner end thereof.

The parts being constructed and arranged as above described, it is obvious that the nut

is screwed upon the bolt by retracting the catch sufficiently to allow the inner end of the nut to pass thereover. Said catch can then be released, while the nut can be screwed onto the axle in the usual manner. When thus screwing the nut in place, the catch will move back and forth as the grooves 19 in the nut pass by the same, it being understood that when the grooves come opposite the end of the catch the spring will move the catch outwardly, and that when the nut is screwed into place the catch will stand within one of the grooves and effectually prevent the unscrewing of the nut. As seen in Fig. 2, the catch stands at an incline or slightly tangential to the key-pin. This allows the catch to be easily moved backwardly by the nut. It is understood, of course, that the contact between the finger 15 and projection 16 holds the catch in this position, and, furthermore, that the enlarged inner end of the lateral opening 4 allows the rotation of the key-pin and catch and the side movement of the inner end of the catch. It will be noted that as the nut is screwed in place the finger 15 moves away from the projection 16 along the inclined face. The notch 17, however, is a little distance beyond the extent of the movement of this finger 15, and when the nut is to be unscrewed the key-pin is turned sufficiently to bring the finger 15 into the notch 17, into which it is held by the spring 14, and in this way the catch is held sufficiently retracted to allow the nut to be unscrewed without interference.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a nut-lock, the combination with a male member having a spring-actuated catch normally standing beyond the face of the same and means for retracting said spring-actuated catch and bringing its outer point within the face of said male member, of a female member provided with interior grooves to receive the end of said catch.

2. In a nut-lock, the combination with a male member provided with a longitudinal opening, a lateral opening, a catch situated within said lateral opening, a rotatable pin situated within said longitudinal opening, connections between said catch and pin to move the former longitudinally by reason of the rotation of the latter and devices for rotating said pin in opposite directions, of a female member provided with interior grooves to receive said catch.

3. In a nut-lock, a male member provided with a longitudinal opening, a lateral opening extending from said longitudinal opening, a catch situated within said lateral opening, a rotatable pin situated within said longitudinal opening and pivoted to the inner end of said catch, and devices for turning said pin in opposite directions.

4. In a nut-lock, a male member having a longitudinal opening, a lateral opening extending through said longitudinal opening, a

catch-pin on the inner end of said key-pin, a catch situated within said lateral opening and pivoted at its inner end to said catch-pin, and devices for turning said key-pin in opposite directions.

5. In a nut-lock, a male member provided with a longitudinal opening, a rotatable key-pin situated within said opening and provided at its inner end with a catch-pin, a collar upon said key-pin fitting within said opening, a cap-nut at the outer end of said opening, and through which said key-pin passes, a lateral opening extending from the inner end portion of said longitudinal opening, a catch situated within said lateral opening and pivoted to said catch-pin, and devices for rotating said key-pin in opposite directions.

6. In a nut-lock, a male member provided with a movable catch and a rotatable pin for moving the same, a spring for turning said pin in one direction, and stops situated between said pin and said male member to limit the movement of said pin.

7. In a nut-lock, a male member provided with a longitudinal opening, a lateral opening, a rotatable pin situated within said longitudinal opening, a catch situated within said longitudinal opening, connections between said pin and catch to move the latter by reason of the rotation of the former, a spring connected with said pin and with the male member to turn said pin in a direction to move the catch outwardly, a projection upon said male member, and a finger upon said pin to engage said projection.

8. In a nut-lock, a male member provided with a movable catch and a rotatable pin for moving the same, a spring for turning said pin in a direction to move said catch outwardly, stops to limit the outward movement of said catch, a finger upon said pin, and a notch in said male member to receive said finger.

9. In a nut-lock, a male member provided with a longitudinal opening, a lateral opening extending therefrom, a rotatable key-pin situated within said longitudinal opening and having an eccentric catch-pin, a catch situated within said lateral opening and pivoted to said catch-pin, a spring for turning said key-pin in a direction to move said catch outwardly, and a stop situated to engage said key-pin and to hold it against the action of the spring, said parts being arranged to coact when the outer end of the catch stands a little beyond the outer face of the male member and is in a tangential position in relation to the key-pin.

10. In a nut-lock, a male member provided with a longitudinal opening having a countersunk outer end portion, a lateral opening extending from said longitudinal opening, a cap-nut situated within said countersunk portion within the longitudinal opening and provided with a projection 16 and notch 17, a rotatable key-pin passing through said cap-nut and provided with a finger 15, a spring

for turning said key-pin in one direction and for drawing it into the longitudinal opening, and a catch situated within said lateral opening and pivoted to said key-pin.

- 5 11. In a nut-lock, the combination with a male member provided with a longitudinal opening, a lateral opening extending therefrom, a cap-nut situated within the outer countersunk portion of said longitudinal
10 opening and provided with a central opening and a projection 16 and notch 17, a key-pin passing through said opening in the cap-nut and provided with a finger 15 situated outside of said cap-nut, a collar 11 upon said

key-pin fitting within said longitudinal open- 15
ing, an eccentric catch upon the inner end of said key-pin, and a catch situated within said lateral opening and pivoted to said catch-pin, of a female member provided interiorly with a plurality of longitudinal grooves. 20

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GEORGE W. PERRY.

Witnesses:

THEOPHILUS JOHNSON,
H. L. BARKER.