M. J. DUFFY.

LOCK NUT.

APPLICATION FILED OCT. 12, 1909.

969,092. Patented Aug. 30, 1910.

Fig. 1.

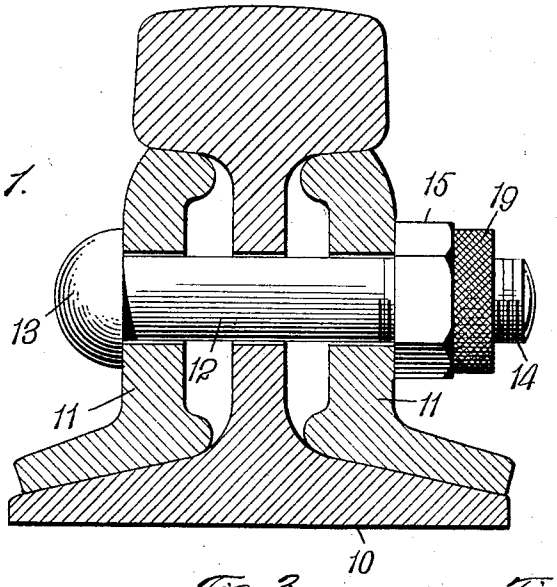


Fig. 2.

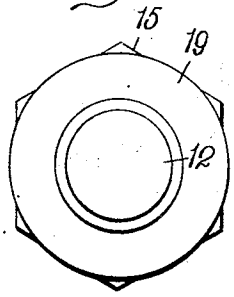


Fig. 3.

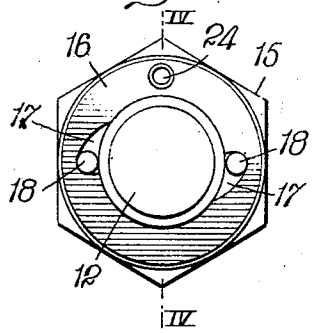


Fig. 4.

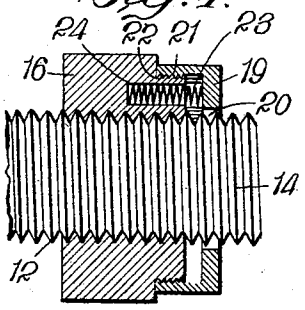


Fig. 5.

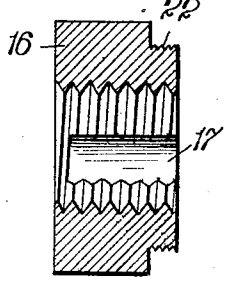


Fig. 6.

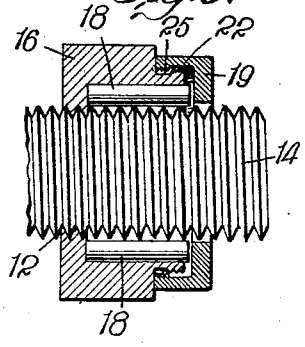
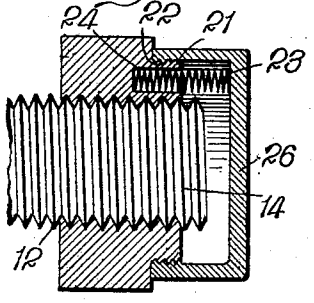


Fig. 7.



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LOCK-NUT.

969,092. Specification of Letters Patent. Patented Aug. 30, 1910.

Application filed October 12, 1909. Serial No. 522,294.

To all whom it may concern:

Be it known that I, MICHAEL J. DUFFY, a citizen of the United States, and resident of New York, borough of Brooklyn, county of Kings, and State of New York, have invented certain new and useful Improvements in Lock-Nuts, of which the following is a full, clear, and exact description.

This invention relates more particularly to a lock nut or device adapted for use in connection with bolts in which the device comprises a plurality of members.

The primary object of the invention is to provide a simple and efficient device in which one member of the nut is provided with means for positively engaging and locking the same to a bolt or fastening element, and the locking means so held that a part of the locking nut has to be removed before the nut can be released from the bolt after being once fastened thereto.

Another object of the invention is to provide a nut having simple means for holding the gripping and locking elements against accidental loss or displacement.

A further object of the invention is to provide a device which is simple in construction, which may be readily made and assembled, and which may be used for various purposes.

With these and other objects in view, the invention will be hereinafter more particularly described with reference to the accompanying drawings, which form a part of this specification, and will then be pointed out in the claims at the end of the description.

In the drawings, Figure 1 is a transverse section showing one form of the invention as applied to a rail joint. Fig. 2 is an end view of the bolt and nut. Fig. 3 is a detail end view of the locking member of the nut. Fig. 4 is a vertical section, partly in elevation, taken on the line IV—IV of Fig. 3. Fig. 5 is a sectional view of the locking member of the nut; and Figs. 6 and 7 are sectional views showing slightly different forms of lock nuts.

The rail 10 may be of the usual construction and may have the usual fish-plates 11 through which passes a bolt 12, one end of which, as at 13, is provided with a head, and the other end, as at 14, with a threaded portion, all of which may be of the usual or of any preferred construction.

A nut 15 has a locking member 16 provided with a threaded opening adapted to engage the threaded end 14 of the bolt, and said locking member 16 may be hexagonal or of any other desired form to adapt the same to be rotated by a wrench, and extending for a part of the thickness of the member 16 are cam slots or recesses 17. These slots or recesses may vary in number and preferably do not extend the entire thickness of the nut, and in said recesses are the engaging rolls or elements 18. These rolls 18 may be in the form of cylindrical rods, and the slots 17 are larger at one side and taper toward the bolt 12 so that said member 16 may be readily rotated in one direction to force the nut on the bolt, but immediately the said nut is rotated in a direction to release the same, the said elements 18 will be caused to positively grip and hold the locking member 16 to the bolt, thus preventing the same from becoming loose by vibration or otherwise unless properly released.

To prevent the rolls or engaging elements 18 from being lost or displaced, I provide a cap or member 19. This member is provided with an opening 20 to fit loosely over the end 14 of the bolt, and said member 19 has a threaded part 21 which is adapted to engage a threaded part 22 of the member 16. The member 19 may have a knurled surface to adapt the same to be readily rotated by hand, and said member may be normally forced outward by means of a spring 23, one end of which is arranged in a recess 24 in the locking member 16, and the other end adapted to engage the inner surface of said member 19 serving to hold the same in such a way that it will not be released from the member 16 by vibration or accident, but will permit the said member to be removed from the member 16 when it is desired to do so. This member 19 serves to hold the engaging elements 18 within the slots 17 so that it is necessary to remove said member 19 before access can be had to the elements 18 and before the locking member 16 can be removed from the bolt.

In Fig. 6 the locking member 16 has its threaded part 22 cut away, as at 25, and the internal threaded part of the cap member 19 is also cut away for a part of its length so that said member 19 may be rotated beyond the threaded portion of said member 16. In this case the spring may be dispensed with, and as will be seen it will be necessary to manually operate the part 19

to cause the threaded part of said member to again engage the threaded part 22 of the member 16 before it can be removed.

Fig. 7 shows how the cap member 26 may be made so as to inclose the end of a bolt instead of permitting the same to pass therethrough, and said nut may be used for wagons or in other connections where the end of the bolt is intended to be covered.

It will be understood that the threads in the opening of the locking member, and the threads of the bolt may be dispensed with if desired, as the engaging elements may be made to engage the body of the bolt or other element to which the nut is to be held without the use of threads.

From the foregoing it will be seen that a simple and efficient device is provided; that said device has simple means for positively gripping and holding the same to a bolt or fastening means; that said device requires the manual operation of a part thereof before it can be removed from the bolt; and that said device is so constructed that it may be readily made and assembled and may be used for various purposes.

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

1. A device of the character described, comprising a locking member having a threaded opening and adapted to engage the threaded end of a bolt, locking means carried by said member adapted to engage the bolt as the member is rotated, and a hollow cylindrical cap adapted to engage the locking member and prevent the displacement of the locking means.

2. A device of the character described, comprising a locking member having a threaded opening adapted to engage the threaded end of a bolt, means carried by said member for locking the same to said bolt, and a cylindrical cap removably held on the locking member adapted to cover the end portion of said bolt.

3. A device of the character described, comprising a locking member having a threaded part and a threaded opening adapted to engage the threaded end of a bolt and provided with cam slots intersecting said threaded opening, a cylindrical cap member having an internal threaded portion adapted to engage the threaded part of the locking member, engaging elements located in the slots and held against removal by said cylindrical cap member, and a spring tending normally to hold said cap member against rotation.

4. A device of the character described, comprising a locking member having a threaded opening adapted to engage the threaded end of a bolt and provided with cam slots intersecting said threaded opening, and a cylindrical cap member having a part adapted to engage the threaded part of the locking member, and engaging elements located in the slots and held against removal by said cylindrical cap member.

5. The combination with a bolt having a threaded end, of a lock nut having a threaded part and a threaded opening adapted to engage the threaded end of the bolt and provided with cam slots intersecting said threaded opening, a cylindrical cap member having an internal threaded portion adapted to engage the threaded part of the locking member, engaging elements located in the slots and held against removal of said cylindrical cap member, and a spring tending normally to hold said cam member against rotation.

This specification signed and witnessed this 9th day of October A. D. 1909.

MICHAEL J. DUFFY.

Witnesses:
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