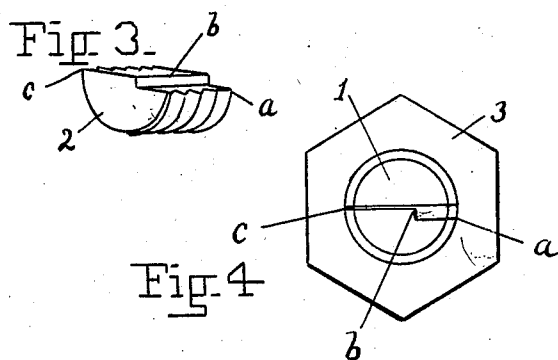
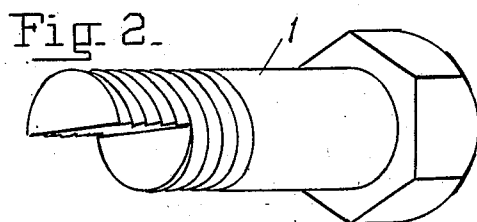
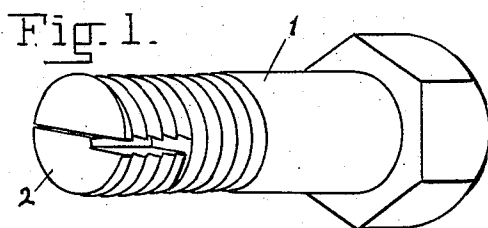


(No Model.)

E. STANCLIFF.
NUT LOCKING BOLT.

No. 577,521.

Patented Feb. 23, 1897.



Witnesses:

Samuel W. Balch
Wm. Whitman

Inventor,
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Attorney.

UNITED STATES PATENT OFFICE.

EDWIN STANCLIFF, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO
THOMAS ORGILL, OF SAME PLACE.

NUT-LOCKING BOLT.

SPECIFICATION forming part of Letters Patent No. 577,521, dated February 23, 1897.

Application filed July 16, 1895. Serial No. 556,196. (No model.)

To all whom it may concern:

Be it known that I, EDWIN STANCLIFF, a citizen of the United States of America, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Nut-Locking Bolts, of which the following is a specification.

My invention is an improvement upon the inventions disclosed in my prior patents, No. 514,570, for a nut-locking bolt, and No. 514,571, for friction grip mechanism, both of which are dated February 13, 1894.

The object of the invention is to make a somewhat different cut from that described in the aforesaid patents in forming the rocking edge, which is the essential feature patented in those patents.

My invention consists, essentially, of a shaft split on a plane that lies in the general direction of the length of the shaft, with the two parts laid together so as to make the shaft complete, one part having a portion of the face that contacts with the other part cut away in such manner as to form a shoulder and a longitudinal rocking edge, the latter being so positioned that if the parts are rocked relatively to each other upon this edge in one direction their joint diameter is increased beyond their normal diameter when the parts are rocked in the other direction. The bolt might be split along its whole length; but I show it only split part way along its length, so that there is a comparatively small rocking piece upon which the longitudinal rocking edge is formed.

In the accompanying drawings, which form a part of this specification, Figure 1 is an elevation representing the bolt complete. Fig. 2 is an elevation showing the bolt without the rocking piece. Fig. 3 is an elevation of the rocking piece. Fig. 4 is a transverse cross-section through the end of the bolt and the rocking piece, showing the nut in place on the bolt.

The part of the bolt marked 1 carries the head and a portion of the thread of the bolt, and part 2 carries the remainder of the thread of the bolt. A portion of the surface of separation of the two parts is, as shown, parallel to the longitudinal axis of the bolt. The separation of the parts of the bolt is effected by

making a transverse cut in the threaded portion of the bolt and a longitudinal cut from the threaded end of the bolt through the body of the bolt to meet the transverse cut. There is thus formed on each part a plane surface which extends clear across the bolt. These two plane surfaces are of course equal. Then from one of the parts, part 2, as shown, a section is cut out longitudinally. This cut forms a square shoulder and forms a rocking edge *b* upon the piece 2. There are thus formed two parallel faces on the part 2, one shown in Fig. 4 as bounded by the line *c b* and the other as bounded by the line which extends from the point *a* to the shoulder. There should not be cut away more than half of the flat face of the part 2, formed by the longitudinal cut through the body of the bolt above referred to, and in the single case where the cut through the body of the bolt lies, as shown, in the same plane with the central axis of the bolt less than half of the flat face should be cut away, for if exactly half is cut away the rocking edge will then coincide with the axis of the bolt, and the diameter of the bolt will not be altered by rocking the part on its edge, and if more than half be cut away the diameter of the bolt would not be increased by rocking it upon this edge, but when rocked on one direction would be diminished below the normal diameter of the bolt.

Referring to Fig. 4, and assuming that the nut and bolt are provided with right-hand threads, the nut 3 can be turned onto the bolt, because, when turned in right-handed motion, that is, in the direction of the motion to the hands of a watch, it presses the face *c b* in contact with the face on the part 1, and thereby maintains the bolt at its normal diameter; but the nut cannot be turned off, for if it be turned in the direction of a left-handed rotation, that is, in the opposite direction to the motion of the hands of a watch, it will tend to rock the part 2 upon the rocking edge *b* and increase the normal diameter of the bolt and thereby lock the nut.

As to getting the nut off when desired, it is only necessary to provide means for holding the face *c b* in contact with the flat face of the part 1 when the nut is being turned off.

As to the means of accomplishing this, reference is made to the aforesaid patents.

It is an interesting fact in connection with bolts of the type shown in the foregoing patents and in this application that if a nut be started part way on and the bolt be suspended with the threaded end down from a string tied around the bolt near the head of the bolt, then be shaken by dangling it from the string, the nut will work its way onto the bolt instead of being shaken off, as it would be from a plain bolt.

So far as the general operation of the bolt is concerned the form shown in this application is identical with the forms of the foregoing patents. In this aspect it is manifestly immaterial whether the longitudinal rocking edge be formed in the manner shown in this application or in the foregoing patents. The part 2 can be rocked in Fig. 4 until the point *a* comes in contact with the flat face of the part 1. The range of rotation would be the same if the part were cut in the manner shown in the foregoing patents; but the work can be done more cheaply in the manner shown in this application than in the manner shown in the aforesaid patents, and there is, moreover, the advantage that when the parts are rocked relatively to each other from the position of Fig. 4, so as to bring the point *a* nearer to the flat face of the part 1, the parts 1 and 2 are less apt to stick together by reason of rust or any other reason when the cut is in the shape shown in this application than when there are two flat faces brought into proximity, as is true of the forms shown in the foregoing patents. This, therefore, is a structural difference which affects the prac-

tical operation of the bolt, and the action is quicker than in the form of rocking piece shown in said former patents.

Having now described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A bolt or similar device split in the general direction of its length in two parts, the two parts being laid together so as to make the bolt complete, one of the parts being cut away so as to form a shoulder and longitudinal rocking edge, the rocking edge being so positioned that if the parts are rocked relatively to each other upon this edge in one direction their joint diameter is increased beyond the normal diameter, substantially as described.

2. The combination of a nut and a bolt, the bolt being split in the general direction of its length in two parts, the two parts being laid together so as to make the bolt complete, and one of its parts being cut away to form a shoulder and a longitudinal rocking edge, the rocking edge being so positioned that if the parts are rocked relatively to each other upon this edge in one direction the joint diameter is increased beyond the normal diameter, the threads of the bolt and nut being so cut that the nut can be turned on with ease but is turned off with comparative difficulty, substantially as described.

Signed by me, in New York city, this 9th day of July, 1895.

EDWIN STANCLIFF.

Witnesses:

HY. H. WHITMAN,
DANIEL F. KIELY.