No. 875,141. PATENTED DEC. 31, 1907.

H. J. BERKLEY.

NUT LOCK.

APPLICATION FILED FEB. 27, 1907.

Fig. 1.

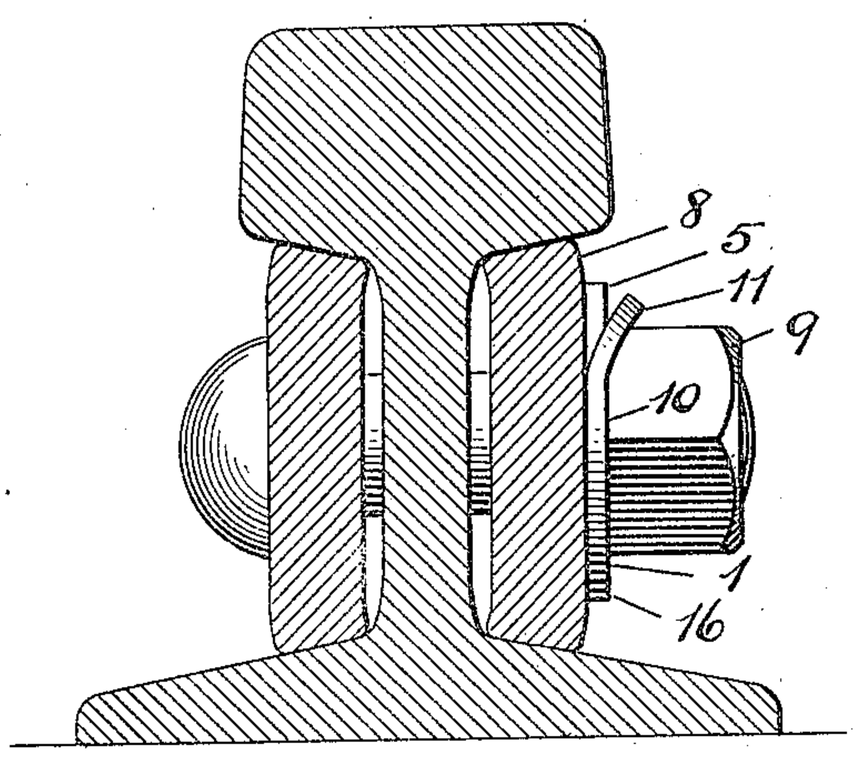


Fig. 2.

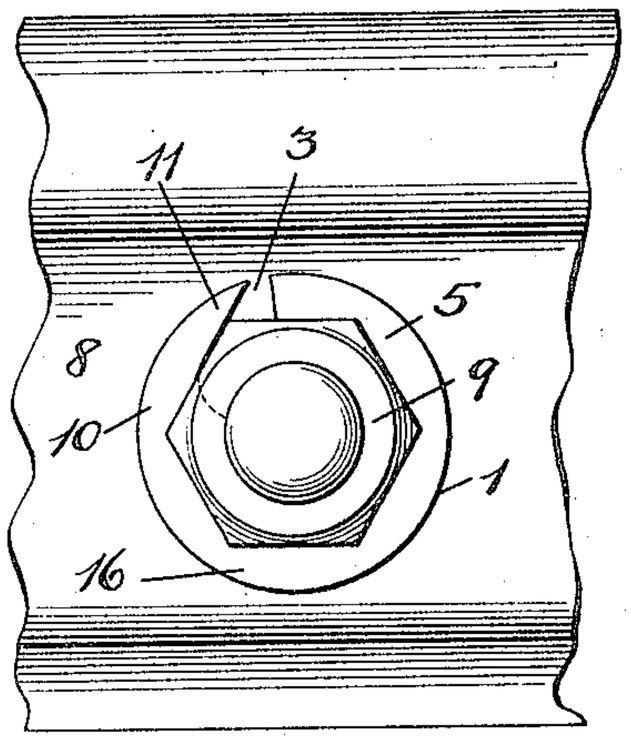


Fig. 3.

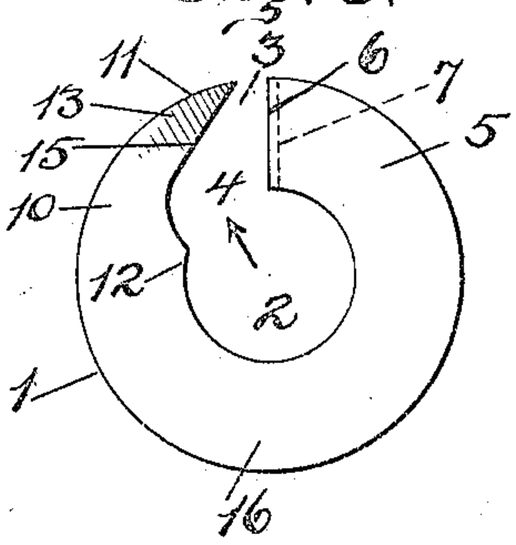


Fig. 4.

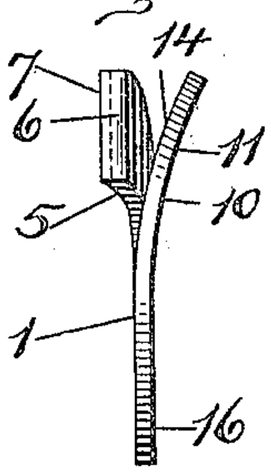


Fig. 6.

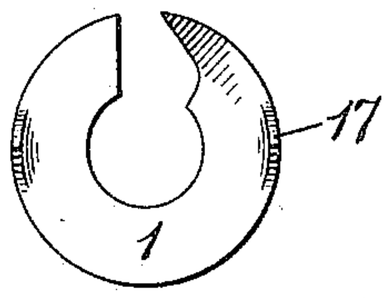


Fig. 7.

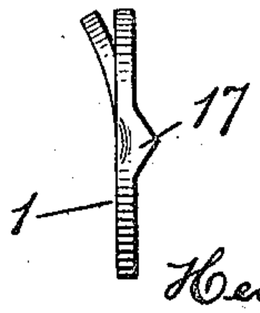
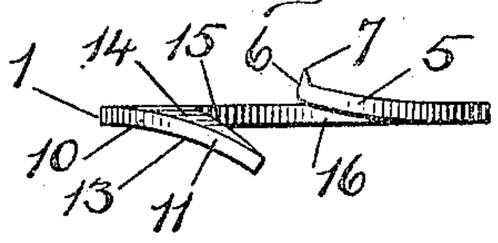


Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

HENRY J. BERKLEY, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF TO CHARLES F. CORNING, OF BALTIMORE, MARYLAND.

NUT-LOCK.

No. 875,141. Specification of Letters Patent. Patented Dec. 31, 1907.

Application filed February 27, 1907. Serial No. 359,541.

To all whom it may concern:

Be it known that I, HENRY J. BERKLEY, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Nut-Locks, of which the following is a specification.

This invention relates to improvements in nut locks and particularly to that class of nut locks in which the lock has the form of a split ring or washer.

The invention in its present form is particularly an improvement on the nut lock shown and described in the U. S. Patent Number 750,796 granted to me February 2nd, 1904.

After considerable experiment I have found that the expense incident to the maintenance of the dies and tools in the manufacture of nut locks is so great as to render them commercially impracticable,—the dies wearing out during the manufacture of a few thousand washers in addition to the fact that the washers have to be handled several times and subjected to several operations before they are completed.

By my present invention these objections have been avoided and the washers can be formed by the simple operation of a die whose construction and cutting edges are such as to be maintained throughout the stamping of large numbers of washers.

The object therefore of my present invention is to provide an improved construction of lock washer which shall be interposed between the nut and the structure to which the nut is to be rigidly held so as to engage said structure and nut to prevent any loosening movement of the latter as the result of jars or vibrations.

The invention consists in the novel construction of the washer as will presently be described and specifically claimed.

The accompanying drawing illustrates the invention in which—

Figure 1 shows a vertical sectional view through a metal structure such as a rail and fish plates which are bolted together and locked by my improved spring washer. Fig. 2 illustrates a side elevation of the same. Fig. 3 shows a plan or face view of the washer. Figs. 4 and 5 edge views of the same. Figs. 6 and 7 illustrate the washer having tangs or flanges adjacent to its edge which are especially designed for use in securing parts of wood structures.

Referring to the drawing by numerals, 1, designates a flat split washer of a circular form and of a uniform thickness and having the usual central bolt opening, 2.

A slot 3 is formed in the washer and extends in a crosswise direction from the periphery of the washer plate to the inner central bolt opening, 2, thereof. This slot increases in width as it extends from the periphery toward the central opening so that at the said central opening, it has its greatest width, as indicated at, 4. The formation of this cross slot serves to separate or split the washer thus forming two ends. One end, 5, of the washer has a straight edge, 6, which latter however has a sharpened edge, 7, projecting toward one side, in the present instance termed the inner side, because it is the side that contacts with the surface such as, 8, in Fig. 1, against which the nut, 9, forces it. This entire end, 5, of the washer also curves inwardly,—the curve extending from said straight edge for a distance covering practically about one-third of the entire circumference of the washer plate. The other or opposite end, 10, of the washer preferably has a pointed prong, 11, approximately at the periphery of the washer and from said peripheral point this prong gradually increases in width as it recedes from said point until it merges into the wall, 12, of the central opening, 2. In cross-section or in the direction indicated by the dart in Fig. 3 this prong, 11, of the washer is slightly concave as at, 13, on its outer surface against which the nut contacts, while the inner surface, 14, of said prong is slightly convex because the uniformity of thickness is maintained throughout the washer plate. This concavo-convex formation of the prong throws the periphery of the prong in the plane outside of the plane of the inner edge, 15, thereof and thus enables the prong to spring or yield to readily engage the faces of the nut as the latter travels over said inner edge and avoids the necessity of grinding or in some other manner making the inner edge, 15, thinner, to enable the nut to be readily turned over said edge. In addition to the concavo-convex formation of the prong, 11, the entire end, 10, of said washer is curved outward for a circumferential distance equal to about

one third of the circumference of the washer plate, similiar to the manner in which the opposite end is turned inwardly. It is therefore to be understood that the circumference of the washer is divided practically speaking into three equal portions,—one portion, 16, which is diametrically opposite to the slot being flat; the end, 5, which curves or bends inwardly in a plane to one side of the flat portion, and the other end, 10, which curves or bends outwardly in a plane to the other side of the flat portion, as plainly seen in Fig. 5.

The forms shown in Figs. 6 and 7 are constructed like the form shown in Figs. 1 to 5 inclusive with the omission of the cutting edge, 7, and the substitution of lateral tangs, 17, formed at the outer circular edge or periphery, which when such washer is used in locking nuts with wood structures will be embedded in the wood to prevent rotation of the washer.

Having thus described my invention what I claim as new and desire to secure by letters patent is:

The herein described nut-lock consisting of a split circular plate having a central opening and a cross-slot which increases in width as it extends from the periphery of the circular plate where the slot is narrowest and which opens into the inner circular opening—said plate being of a uniform thickness from one side of the slot around to the opposite side of said slot and the plate having a single prong formed at one end which lies within the periphery of the plate and which increases in width as it recedes circumferentially from the slot, said prong being concavo-convex longitudinally.

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

HENRY J. BERKLEY.

Witnesses:
CHAS. B. MANN,
G. FERDINAND VOGT.