

G. W. WHITEMAN.

NUT LOCK.

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986,110.

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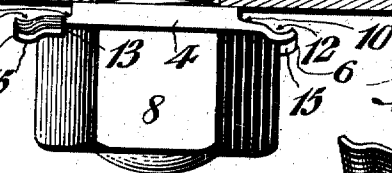
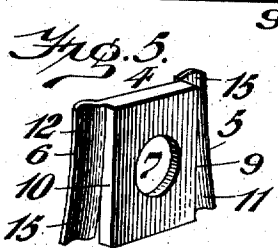
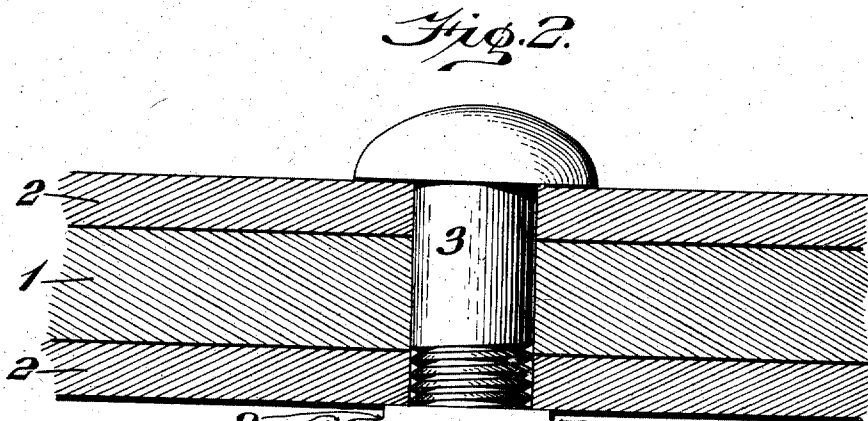
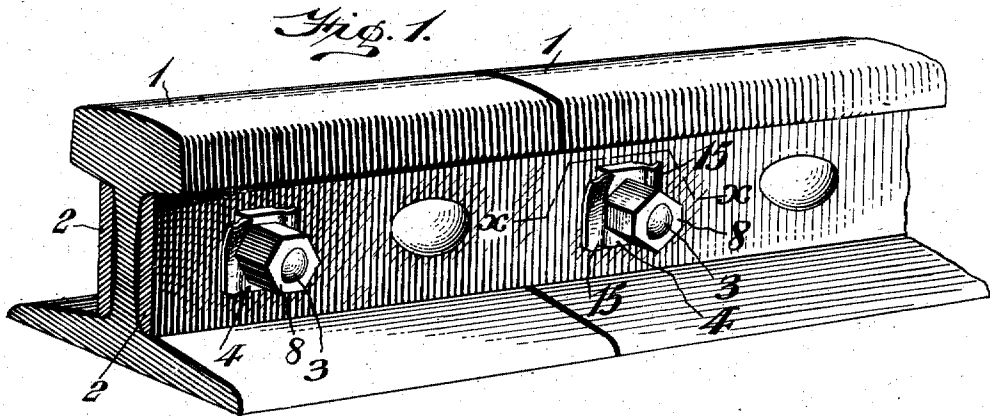
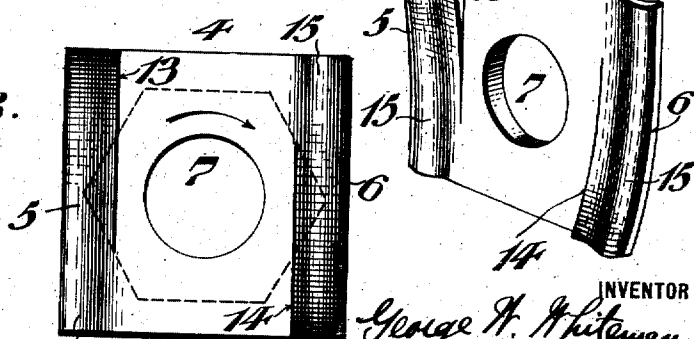


Fig. 3.



WITNESSES

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NUT-LOCK.

986,110.

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To all whom it may concern:

Be it known that I, GEORGE W. WHITEMAN, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Nut-Lock, of which the following is a specification.

My invention relates to a novel construction of a nut lock or device for preventing nuts from loosening by turning, and it consists in a specially constructed washer plate adapted to co-act with the bolt and the nut and provided with a pair of partially severed and outwardly bent parallel tongues which are adapted to be readily sprung outwardly from the body of the nut lock and to be deflected so as to properly engage the locking nut in a novel manner, said tongues being provided with convex surfaces adapted to be engaged by the nut proper and being formed by parallel cuts extending in opposite directions through the body of said washer, the rear portion of said tongues being provided with vertically extending recesses, whereby there is no liability for dirt to lodge in proximity to said tongues.

While my invention is especially adapted to be used upon the fish plates of railroad rails, it is adapted for general use as it is extremely simple in construction and application and can be readily and cheaply manufactured in large quantities, being durable and effective and forming a strong and firm lock that is readily and conveniently applied to an ordinary bolt and nut without requiring any alteration thereof.

To the above ends my invention consists of a novel nut lock comprising a plate having parallel tongues deflected from opposite portions of the plate, each of said tongues being provided exteriorly with a convex bearing surface and having recesses at their rear.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

For the purpose of illustrating my invention, I have shown in the accompanying drawings one form thereof which is at present preferred by me, since the same has been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise ar-

range and organization of these instrumentalities as herein shown and described.

Figure 1 represents a perspective view of a nut lock and its adjuncts embodying my invention. Fig. 2 represents a section on the line $x-x$, Fig. 1, certain of the parts being shown in elevation. Fig. 3 represents a front elevation of the washer or body portion of the nut lock removed. Fig. 4 represents a perspective view of Fig. 3. Fig. 5 represents a perspective view of the rear of Fig. 4.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings:—1 designates the abutting ends of a pair of rails, which are connected by the usual fish plate 2 and bolt or bolts 3.

My novel construction of locking washer consists of a metallic plate or body portion 4, whose side portions 5 and 6 to be referred to, are preferably somewhat pliable, said plate having the preferably central hole 7 for the bolt 3, upon which latter the nut 8 is engaged in the usual manner. The rear portion of the body 4 is provided on each side thereof with the vertically extending shoulders or cut away portions 9 and 10, whereby the open ended recesses 11 and 12 are formed which extend vertically and form a continuous open channel between the sides or tongues 5 and 6 and the contiguous fish plate 2, whereby no dirt or the like can collect or become lodged in the recesses 11 or 12. The tongue 5 is formed by slitting the washer 4 from the top thereof downwardly as indicated at 13 to a point slightly below the center of the hole 7, the tongue or side 5 being then sprung slightly outwardly as indicated in Figs. 1, 2 and 4. The tongue 6 is formed by slitting the opposite side of the body 4, as indicated at 14, from the bottom of said body upwardly to a point preferably slightly above the center of the hole 7, substantially as indicated in Figs. 3 and 4, said tongue 6 being sprung slightly outwardly as will be understood from Fig. 4. In order to provide a good bearing for the nut 8 on the oppositely located tongues 5 and 6 I construct each of said tongues with a convex bearing surface, 15, which extends vertically as will be best understood from Figs. 2, 3 and 4, so that when the parts are assembled in locked position the nut will be in contact with the edges of said tongues,

as best seen at the right of Fig. 1. Both of the cuts or slits 13 and 14 are preferably substantially on a line with the shoulders 9 and 10, and each tongue is formed or sprung outwardly, as seen in Fig. 4 by the insertion of a suitable implement or by striking by a hammer, so as to spring said tongues outwardly so as to bring them into the proper position relative to the nut, when the parts are assembled, as will be clearly understood from the right hand portion of Fig. 1, it being apparent that the frictional contact of the parallel walls of the nut with the contiguous portion of the juxtaposed tongues 5 and 6, prevents the nut from rotation and forms an efficient and reliable nut lock. In the construction shown at the left of Fig. 1 and in Figs. 2 and 3, the nut is shown in the act of being turned into its locked position which it assumes as at the right of Fig. 1.

It will of course be understood by those skilled in the art that the nut lock proper will be prevented from rotation, as is common in this art, either by the contact of an edge of the same with an upper or lower abutment, as for example, the upper or lower projecting portion of the rail seen in Fig. 1, and that if desired I may employ such other devices, as are well known to those skilled in the art, to prevent improper rotation of the washer or nut lock proper.

It will be apparent from the foregoing that my novel device is adapted to be used with bolts having either right or left hand threads with equal facility and I desire to call special attention to the function of the recesses 9 and 10, since by the employment of the same it will be apparent that no dirt can lodge in the space between the rear of the tongues 5 and 6 and the contiguous fish plate 2. It will also be apparent that by the employment of the parallel tongues 5 and 6 having the convex longitudinally extending parallel ridges 15, the nut 8 can readily engage the same and be firmly held in the desired position by reason of the collocation of the oppositely extending tongues 5 and 6.

I am aware that it has heretofore been proposed to provide a nut locking device with one or more tongues projecting therefrom as seen in the patent to Krohn No. 723,882, granted March 31, 1903 and Bartley No. 11,963, January 28, 1902, but these devices have disadvantages in practice, by reason of the fact that the rear of the resilient tongues abuts against the fish plate or other device to which the nut lock is applied, and provide a pocket or chamber wherein dirt, grit or scale is liable to settle, so that when the nut is tightened the resilient function of the spring tongues is almost wholly lost. In my invention, by the provision of the vertically extending recesses 9 and 10, a pair of vertical open ended

recesses is formed through which in practice dirt, grit or scale or the like will drop entirely through and will not lodge therein so that the resilient function of my tongues 5 and 6 is not impaired. By the provision of the parallel convex surfaces 15 co-acting with the tongues 5 and 6 and the vertical recesses in the rear thereof, I am enabled to produce a device having advantageous features over those of the prior art and to none of the constructions of the prior art do I herein make my claim.

In the manufacture of my device the plate or body portion of the nut lock 4 can be readily stamped from steel or other material in the different sizes and forms required, after which the steps of slitting the sides of the same at the points 13 and 14 to form the tongues 5 and 6 can be readily effected.

It will now be apparent that I have devised a novel and useful construction of a nut lock, which embodies the features of advantage enumerated as desirable in the statement of the invention and the above description, and while I have, in the present instance, shown and described a preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that the same is susceptible of modification in various particulars without departing from the spirit or scope of the invention or sacrificing any of its advantages.

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

1. A nut lock washer, consisting of a plate, provided with a bolt hole, and a pair of tongues having convex outer surfaces thereon, said tongues being formed by oppositely disposed slits extending in opposite directions on opposite sides of said plate, and being adapted to be sprung outwardly from said plate and having recesses in their rear to permit the descent of dirt, scale or the like.

2. A nut lock washer, consisting of a plate, provided with a bolt hole, and a pair of parallel tongues having convex parallel outer surfaces thereon, said tongues being formed by oppositely disposed slits extending in opposite directions on opposite sides of said plate, and being adapted to be sprung outwardly from said plate and having recesses in their rear to permit the descent of dirt, scale or the like.

3. A nut lock washer, consisting of a plate, provided with a bolt hole and a pair of tongues adapted to be sprung outwardly and located on opposite sides thereof, said tongues being formed by slitting said plate on one side from the top downwardly and on the opposite side by a parallel slit extending from the bottom of said plate upwardly and having vertical parallel recesses

in the rear thereof, whereby no dirt or scale can lodge in proximity thereto.

4. In a nut lock, the combination with a bolt and a nut of a washer plate engaging
5 said bolt, and provided with tongues 5 and 6, formed by the oppositely extending slits, 13 and 14, said tongues having the convex

outer surfaces 15, and the recesses 9 and 10 in the rear thereof, adapted to permit the descent of dirt or scale.

GEORGE W. WHITEMAN.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
