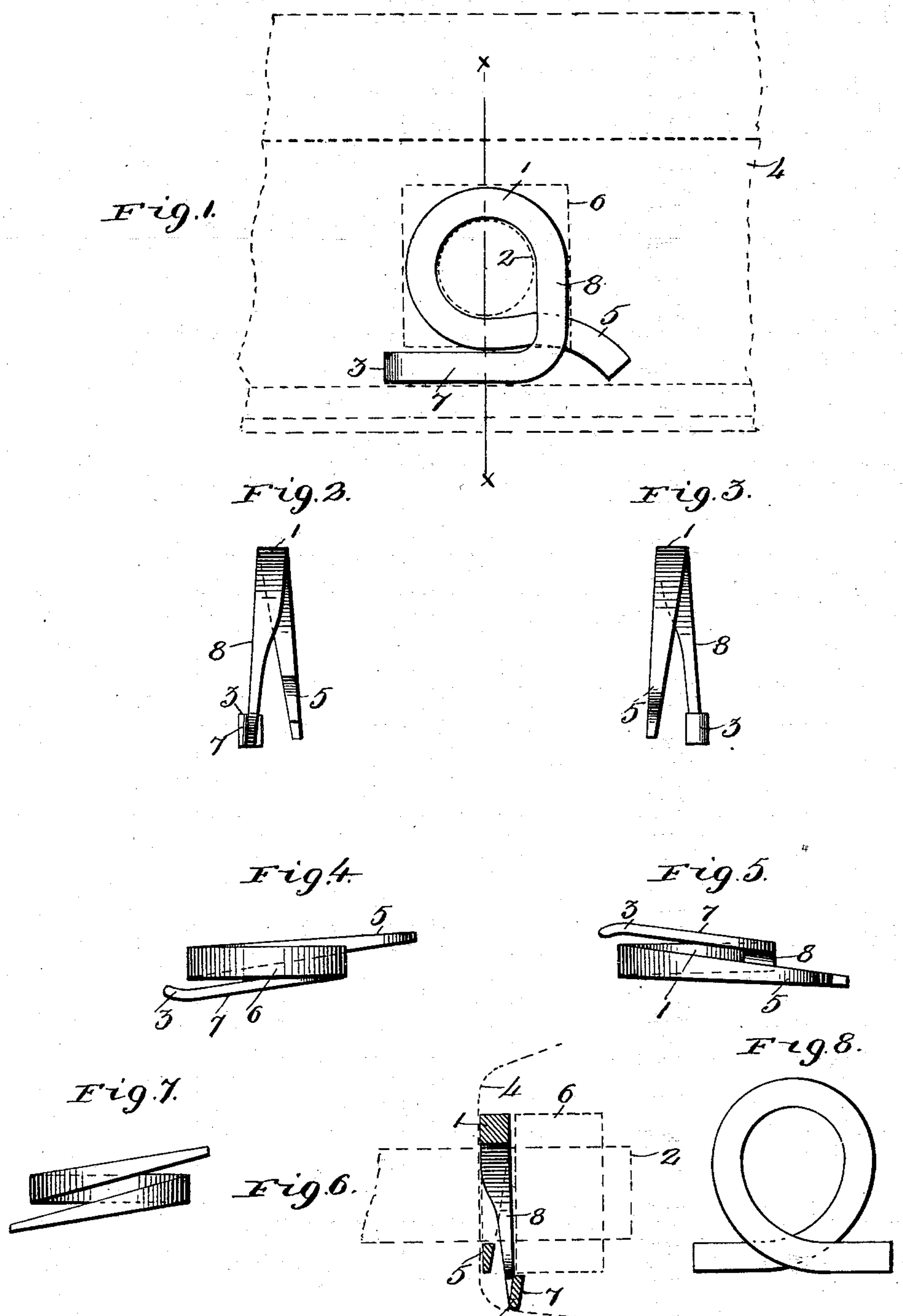
No. 648,502. **Patented May 1, 1900.**

W. E. LEEDS.

NUT LOCK.

(Application filed Aug. 7, 1899.)

(No Model.)



WITNESSES:

INVENTOR

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BY

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIS E. LEEDS, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE CLIMAX NUT LOCK COMPANY, OF SAME PLACE.

NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 648,502, dated May 1, 1900.

Application filed August 7, 1899. Serial No. 726,443. (No model.)

To all whom it may concern:

Be it known that I, WILLIS E. LEEDS, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Nut-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.

My invention relates to improvements in nut-locks; and it consists in the novel combination and arrangement of parts, as will be hereinafter more particularly described and claimed.

In the drawings, Figure 1 is a front elevation of my complete invention as applied to the rail and nut. Fig. 2 is a side elevation of the same. Fig. 3 is a similar view showing the opposite side. Fig. 4 is a top plan view of the complete nut-lock. Fig. 5 is a bottom plan view of the same. Fig. 6 is a vertical transverse section taken on the line *x x* of Fig. 1, showing the nut-lock in its proper position in respect to the rail, bolt, and nut. Fig. 7 is a bottom plan view of a modification of my invention, and Fig. 8 is a front view of the same.

The object of my invention is to construct a simple, durable, and practical nut-lock in which the ordinary bolt and nut are employed without the slightest alteration or modification; and it consists of a washer in the form of a spiral spring which is adapted to completely encircle the usual bolt, one arm of said spring coöperating with the base of the rail or the base of the usual angle-bars commonly employed in track construction and also with any one of the sides of the ordinary nut, the end of the other arm extending in the opposite direction and adapted to come in contact with said rail or angle-bar, both of said arms being tapering or reduced, whereby the nut-lock can be cheaply constructed and the nut positively locked automatically as it is turned into position, and other advantages, as will be apparent from the detail description of its construction hereinafter described.

Referring to the drawings, 1 represents the circular body portion of the nut-lock, which loosely surrounds the bolt 2, and forming a continuation of said body portion is a straight horizontal extension 3, the lower straight edge of which when the nut-lock is placed in its proper position is located adjacent to the flange of the rail 4, whereby the said nut-lock is rigidly held in its proper position upon the bolt. The opposite extension 5 of the body portion 1 of the nut-lock crosses said body portion slightly above the extension 3 and is suitably curved, as clearly shown in Fig. 1 of the drawings, the end of which is also adapted to come in contact with the base of the rail 4 or the base of the ordinary angle-bars commonly employed, which further operates to prevent the nut-lock from turning, especially where rails of various weights are employed or used, and therefore it will readily be seen that the nut-lock thus constructed may be used upon rails of various constructions and sizes.

The nut-lock constructed as above described is of spiral form throughout its structure and forms what may be commonly termed a "spring-washer" in addition to its locking feature, the upper edge of the extension 3 cooperating with any one of the sides of the nut 6, it being observed that after the nut-lock has been placed in position upon the bolt and the nut screwed upon the latter the inner flat surface of the same will first come in contact with the outer flat surface 7 of the extension 3 and intermittingly press the same inwardly as the nut is turned into its binding position.

By forming the nut-lock in a spiral manner the horizontal extension 3 of the same is inclined outwardly, so as to coöperate with the nut in a manner previously described and as clearly shown in the drawings, the vertical portion 8, leading from the body portion 1 of the nut-lock, is reduced, which reduction extends throughout the extension 3, and the extension 5, forming the remaining portion of the nut-lock, is also reduced from said body portion, whereby the nut-lock will be compactly compressed together, forming a practical yielding washer when the nut is turned into a binding position.

From the foregoing description it will be seen that the nut-lock described can be manufactured at a minimum cost and does not require the employment of costly and complicated machinery to manufacture the same,

and, further, should it be desired at any time to remove the nut a small tool or other device can be easily employed, with which the nut coöperates, to press the extension inwardly or against the fish-plate or angle-bar, thus allowing the nut to be easily turned off the bolt.

In Figs. 7 and 8 I have shown a modification of my invention in which the same principle is carried out and practically the same construction, the only difference being that a nut-lock constructed according to those shown in the drawings is that the same is reversible upon the bolt or will operate to lock the nut from either side of the same; but this construction is not preferable, for the reason that the extensions do not coöperate with as much surface of the nut as in the previous illustration.

Having fully described my invention, what I claim is—

1. A nut-lock, comprising a washer in the form of a spiral spring and having a circular body portion, adapted to embrace the bolt, two extensions forming a continuation of said body portion, and crossing one another, one of which is adapted to coöperate with the nut, and rail or angle-bar, and the other, with the rail or angle-bar only, as and for the purpose described.

2. A nut-lock, comprising a washer in the form of a spiral spring and having a circular body portion, two reduced extensions forming a continuation of the same and crossing one another, both of which are adapted to coöperate with the base of the rail or angle-bar, one of said extensions being adapted to coöperate with any one of the sides of the nut, for preventing the latter from turning, as and for the purpose described.

3. A nut-lock, comprising a washer in the form of a spiral spring, a circular body portion, forming a part of the same, a straight horizontal portion forming a continuation of said body portion, an extension also forming a part of said body portion, and crossing the extension above the horizontal portion thereof and suitably curved, the end of which is adapted to coöperate with the base of the rail or angle-bar, the said horizontal extension also coöperating with the base of the rail or angle-bar, and with one of the sides of the nut, the said extensions being reduced from a point where they cross to their ends, and normally out of contact with one another, as and for the purpose described.

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

WILLIS E. LEEDS.

Witnesses:
ALFRED A. MATHEY,
C. F. KELLER.