

(No Model.)

F. P. LEWIS & E. N. & A. STAPP.
NUT LOCK.

No. 574,548.

Patented Jan. 5, 1897.

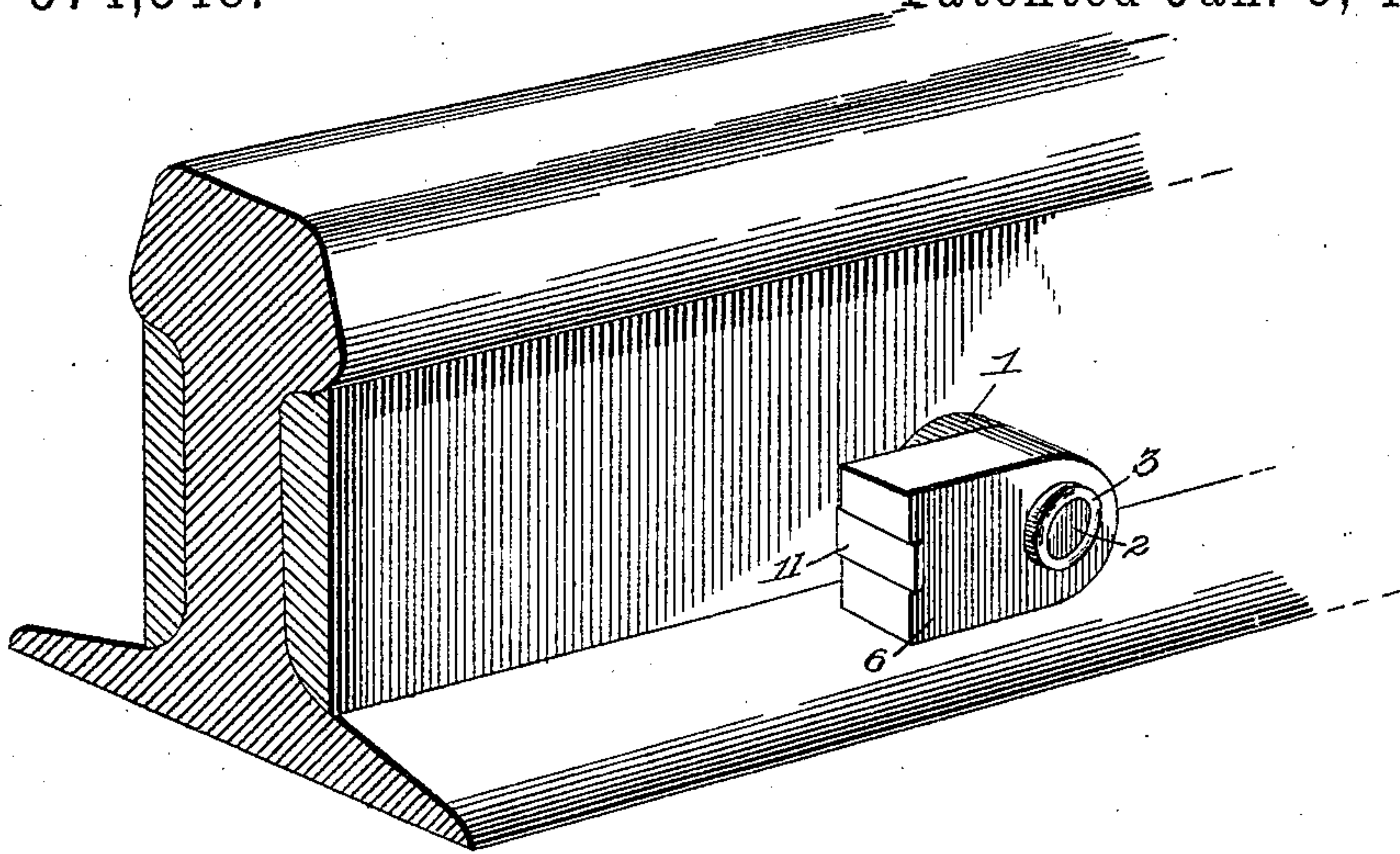


Fig. 1.

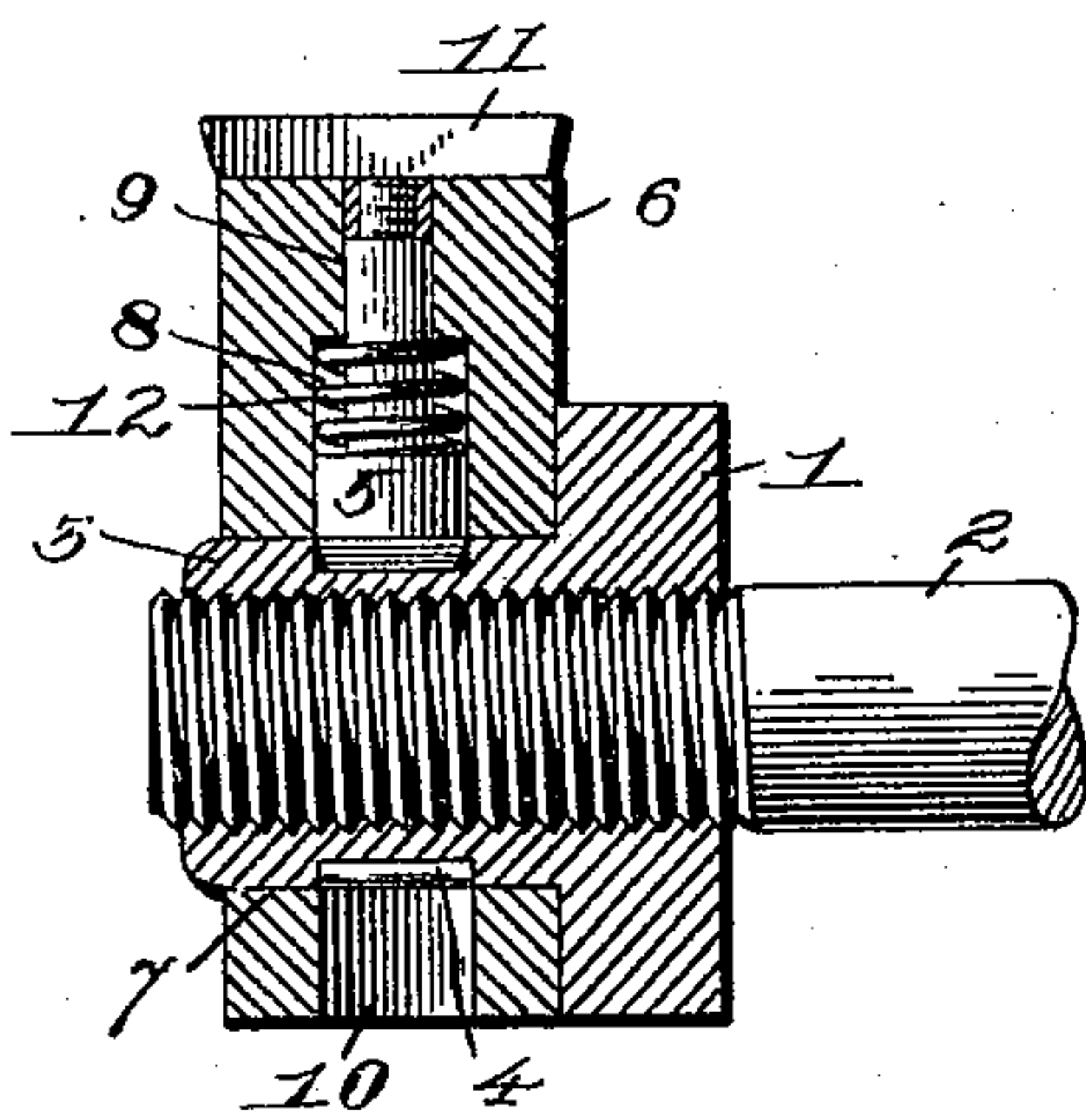


Fig. 2.

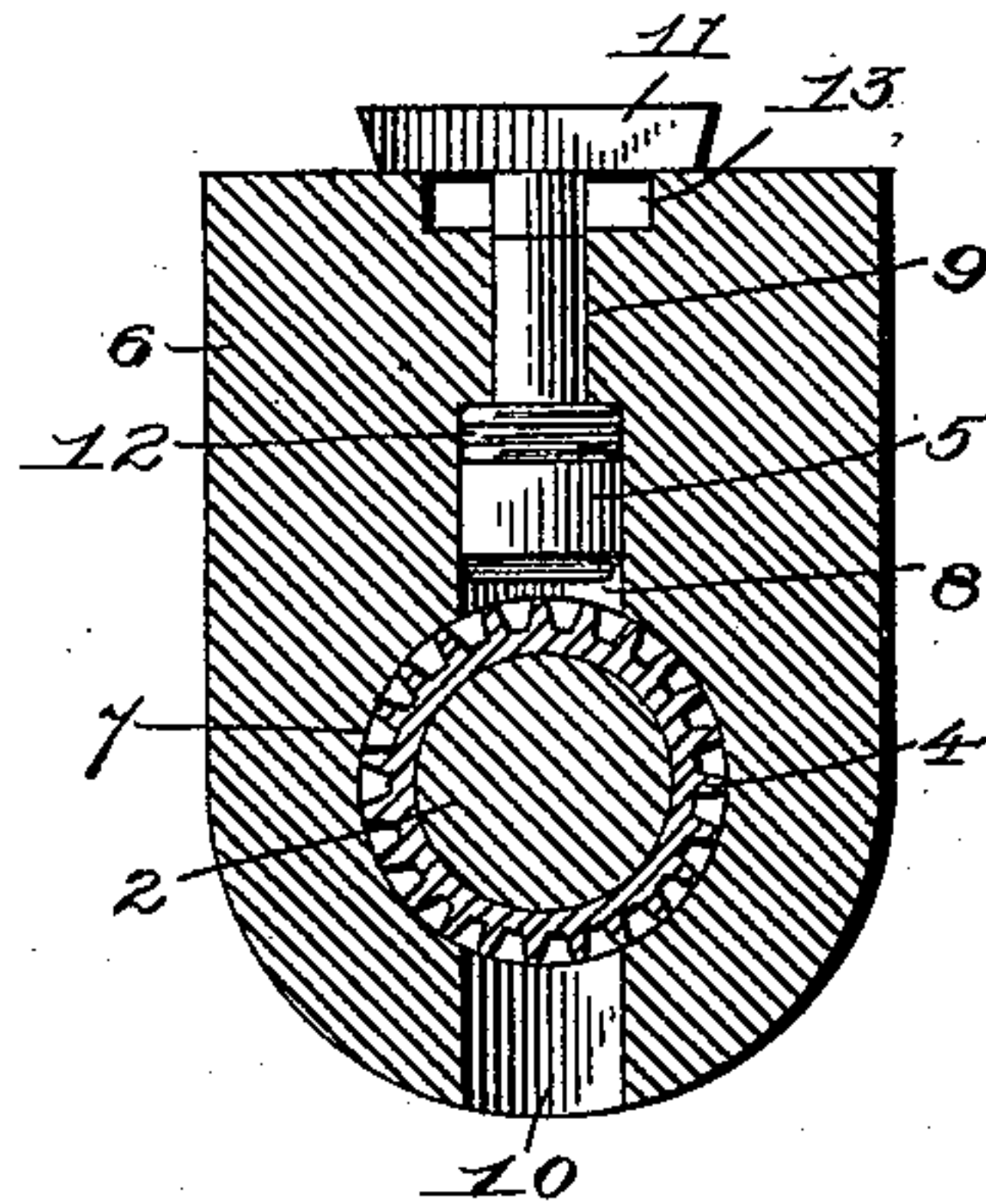


Fig. 3.

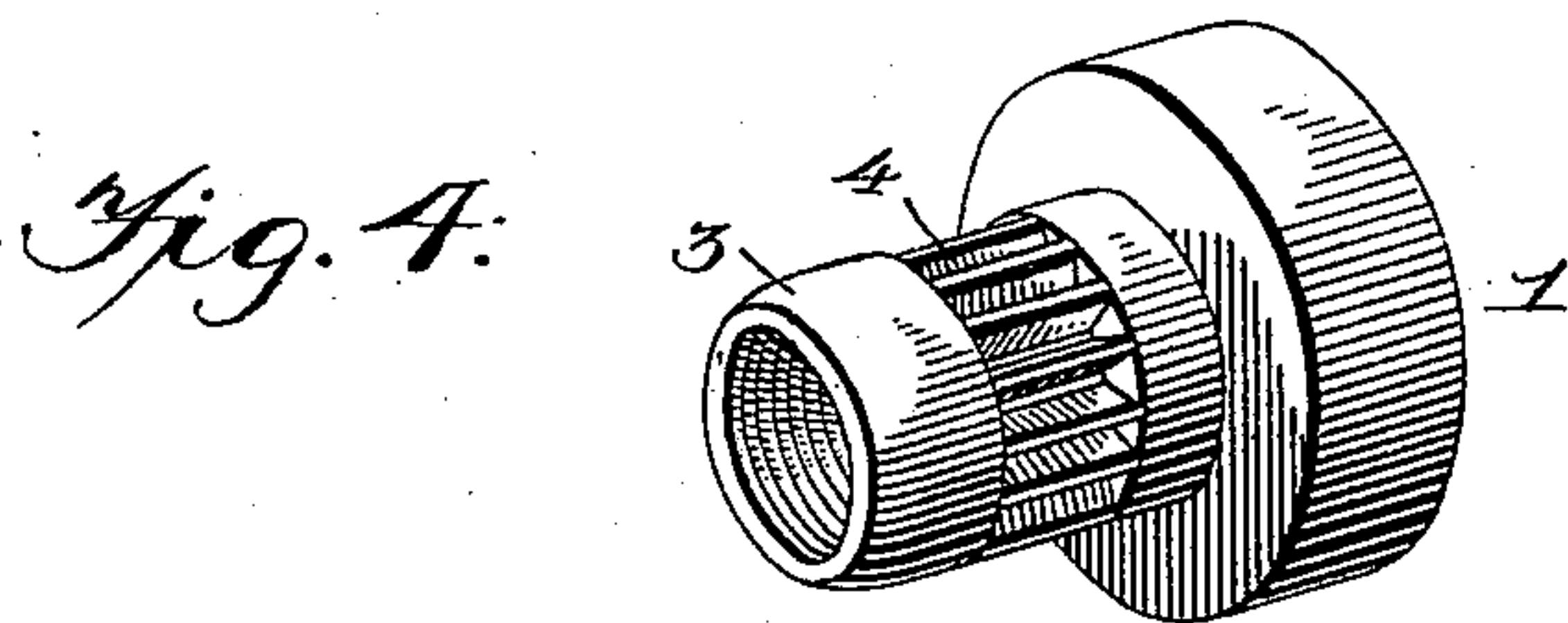


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

FRANK P. LEWIS, ELBRIDGE N. STAPP, AND ACHILIS STAPP, OF SOUTH GREENFIELD, MISSOURI.

NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 574,548, dated January 5, 1897.

Application filed October 29, 1896. Serial No. 610,503. (No model.)

To all whom it may concern:

Be it known that we, FRANK P. LEWIS, ELBRIDGE N. STAPP, and ACHILIS STAPP, citizens of the United States, residing at South Greenfield, in the county of Dade and State of Missouri, have invented a new and useful Nut-Lock, of which the following is a specification.

The invention relates to improvements in nut-locks.

The object of the present invention is to improve the construction of nut-locks and to provide a simple, inexpensive, and efficient device adapted for use on railroads, machinery, and other constructions and capable of securely holding a nut against accidentally unscrewing and of permitting the same to be readily removed when desired, and of facilitating the screwing up of the nut.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a nut-lock constructed in accordance with the present invention and shown applied to a rail-joint. Fig. 2 is a sectional view taken longitudinally of the bolt. Fig. 3 is a sectional view taken transversely of the bolt and showing the spring-actuated pawl out of engagement with the ratchet-teeth of the nut. Fig. 4 is a detail perspective view of the nut, the oscillating arm being removed.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 designates a nut arranged on the threaded end of a bolt 2 and consisting of a disk and a cylindrical sleeve 3, the sleeve being interiorly threaded and forming an extension of the bore of the disk or nut proper. The nut by being round is adapted to be rotated in places where the ordinary square nut could not be employed, and the sleeve or cylindrical extension 3 is provided with an annular series of recesses forming teeth 4, adapted to be engaged by a spring-actuated pawl 5, which is mounted in an oscillating arm 6. The oscillating arm 6, which has one end rounded

and its other end square, is provided adjacent to its rounded end with a circular opening 7, receiving the sleeve 3, and the rounded end of the oscillating arm is flush with the adjacent portion of the periphery of the nut, so that it does not project beyond the same.

The oscillating arm is provided with a longitudinal opening 8, intersecting the circular opening 7 and having a reduced portion 9. The pawl 5, which is provided with a beveled tooth, consists of a head and a stem. The head, which is rounded, is of the same diameter as the major portion of the bore or opening 8, and the pawl is adapted to be introduced into the same through the outer portion 10 thereof. The stem of the pawl is of less diameter than the head, and is adapted to extend outward through the reduced portion 9 of the opening or bore 8, and a plate 11, which is arranged on the exterior of the oscillating arm 6, is adapted to serve as a handle to enable the pawl to be withdrawn from engagement with the ratchet-teeth of the nut. A spiral spring 12 is disposed on the stem of the pawl and interposed between the head thereof and the shoulder formed by the reduced portion 9 of the bore or opening 8.

The beveled tooth of the spring-actuated pawl is adapted to engage the ratchet-teeth of the sleeve of the nut when the oscillating arm is swung in a forward direction for screwing the nut on the bolt, and the beveled face of the tooth of the pawl is adapted to slide over the ratchet-teeth of the nut when the oscillating arm is swung backward. By this construction the arm can be oscillated in a small space or area to screw the nut on the bolt, as will be readily understood, and the squared end of the oscillating arm is adapted to be engaged by an ordinary wrench when it is desired to screw the nut on or off.

The plate 11 is arranged in a recess 13 of the squared end of the arm in order not to interfere with the wrench, and when it is desired to unscrew the nut the plate can be drawn outward and turned transversely of the recess 13 to hold the pawl out of engagement with the ratchet-teeth to permit the oscillating arm to be taken off or put on the sleeve. The pawl is adapted to be given a

half-turn to reverse the ratchet mechanism of the oscillating arm, and it will be apparent that in screwing or unscrewing the nut the wrench does not have to be removed from the oscillating arm until the operation is completed.

The nut-lock is applicable to rail-joints, machinery, and all other constructions where it is desirable to prevent the nut from accidentally unscrewing, and the oscillating arm is adapted to be swung back and forth in a very small space, and the nut is capable of use in places where an ordinary square nut could not be employed. When the nut-lock is employed on rails at a rail-joint, the oscillating arm is turned backward, so as to rest upon the bottom flange of a rail after the nut has been screwed sufficiently tight. The bottom flange of the rail will prevent the oscillating arm from swinging back farther, so that the nut will be locked against retrograde rotation and the arm cannot accidentally swing upward, as this will serve to tighten the nut.

It will be seen that the nut-lock is simple and comparatively new in construction, that it is positive and reliable in operation, and that while locking a nut against retrograde rotation it greatly facilitates screwing a nut on a bolt and removing it therefrom. It will also be apparent that the oscillating arm is adapted to be reversed by reversing the pawl of the ratchet mechanism, that the spring-actuated pawl serves as a means for retaining the oscillating arm of the sleeve or cylindrical extension of the nut, and that the wrench does not have to be removed from the oscillating arm until the nut is entirely screwed on or off.

Changes in the form, proportion, and the minor details of construction can be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

What we claim is—

1. In a nut-lock, the combination of a nut provided with an extension having an annular series of ratchet-teeth, and an oscillating arm journaled on the extension and provided with a spring-actuated pawl adapted to engage the ratchet-teeth of the extension of the nut, said oscillating arm being adapted to ro-

tate the nut and to lock the nut against retrograde rotation, substantially as described.

2. In a nut-lock, the combination of a nut having an extension with an annular series of ratchet-teeth, an oscillating arm journaled on the extension, and a spring-actuated pawl having a beveled tooth mounted on the oscillating arm and engaging the annular series of ratchet-teeth, said pawl detachably securing the oscillating arm to the extension, whereby the oscillating arm is adapted to be readily removed or reversed, so that the ratchet mechanism may be employed for screwing the nut in either direction, substantially as described.

3. In a nut-lock, the combination of a nut comprising a disk and a sleeve extending from the disk and having an annular series of ratchet-teeth, an oscillating arm journaled on the sleeve and having one end rounded and the other end squared, the rounded end of the arm being substantially flush with the adjacent portion of the periphery of the said disk, and a spring-actuated pawl mounted on the oscillating arm and engaging the ratchet-teeth, substantially as described.

4. In a nut-lock, the combination of a nut provided with a sleeve having an annular series of ratchet-teeth, an oscillating arm having an opening to receive the sleeve and provided with a longitudinal bore intersecting the said opening provided with a reduced portion forming a shoulder, said arm being provided at its outer end with a recess, a pawl mounted in the bore of the oscillating arm and provided with a stem, a plate fitting in the recess of the oscillating arm and connected to the stem of the pawl, and a coiled spring disposed on the stem of the pawl and bearing against the latter and the said shoulder, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

FRANK P. LEWIS.
ELBRIDGE N. STAPP.
ACHILIS STAPP.

Witnesses:

A. B. ELMORE,
T. V. SPEER.