

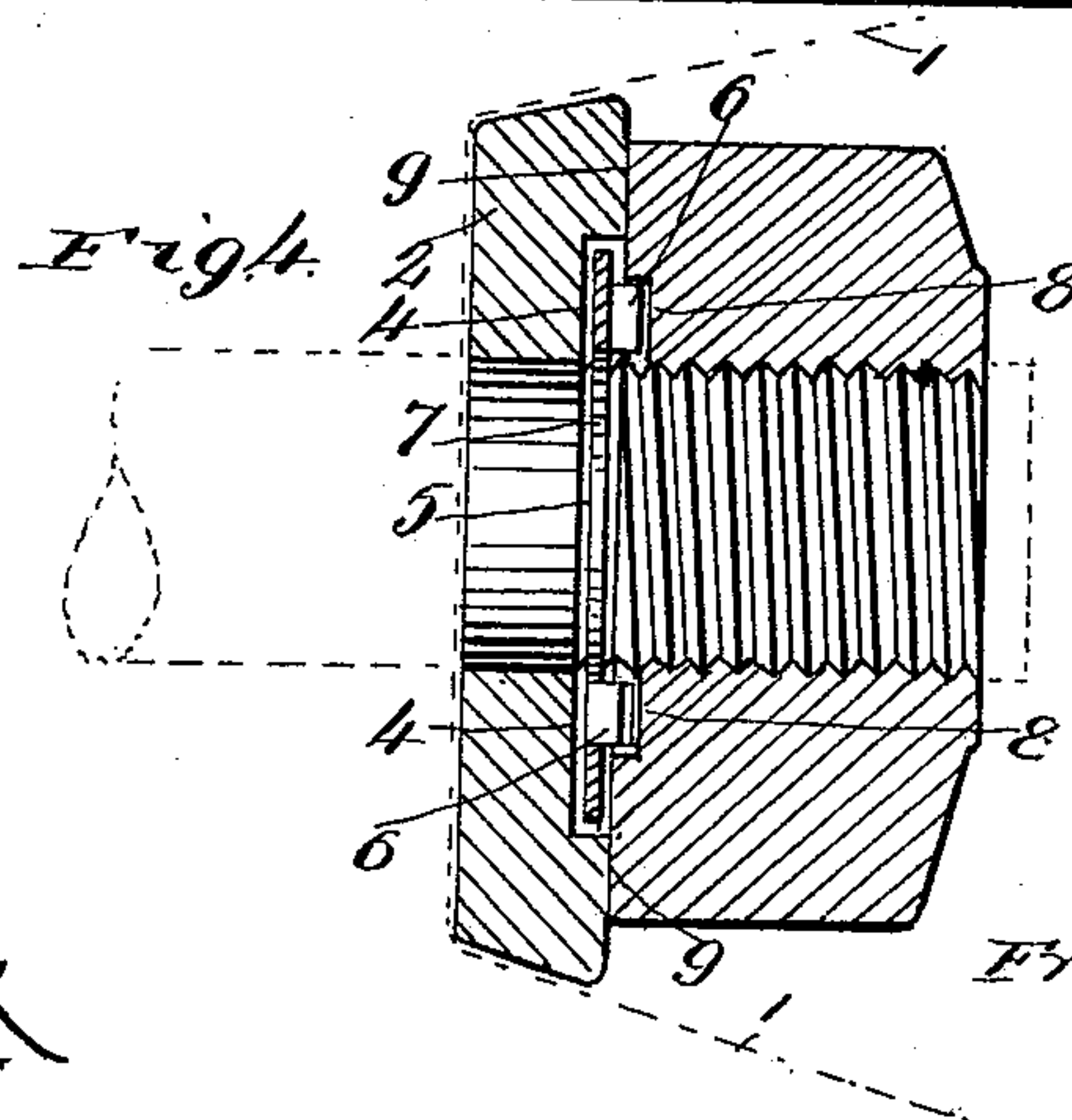
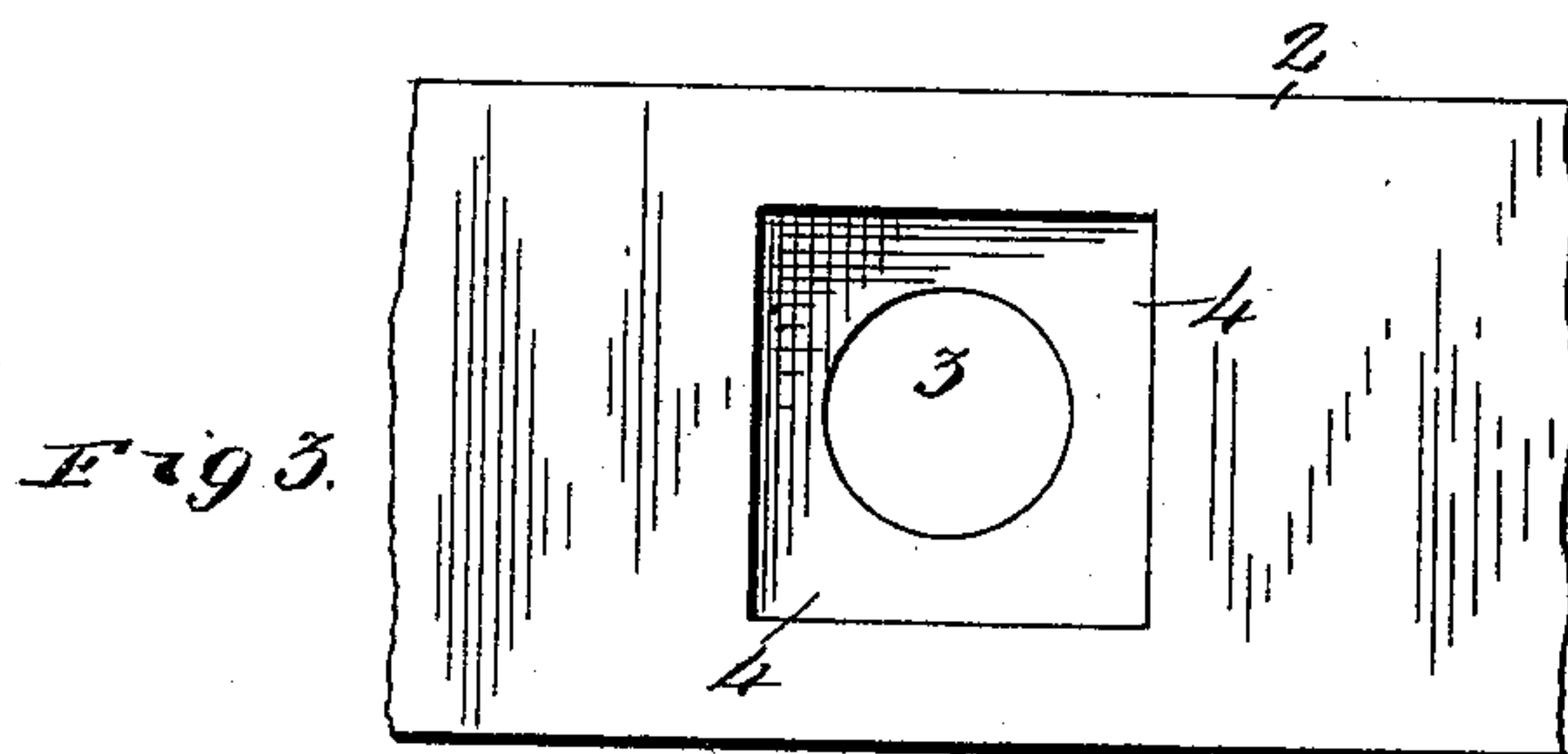
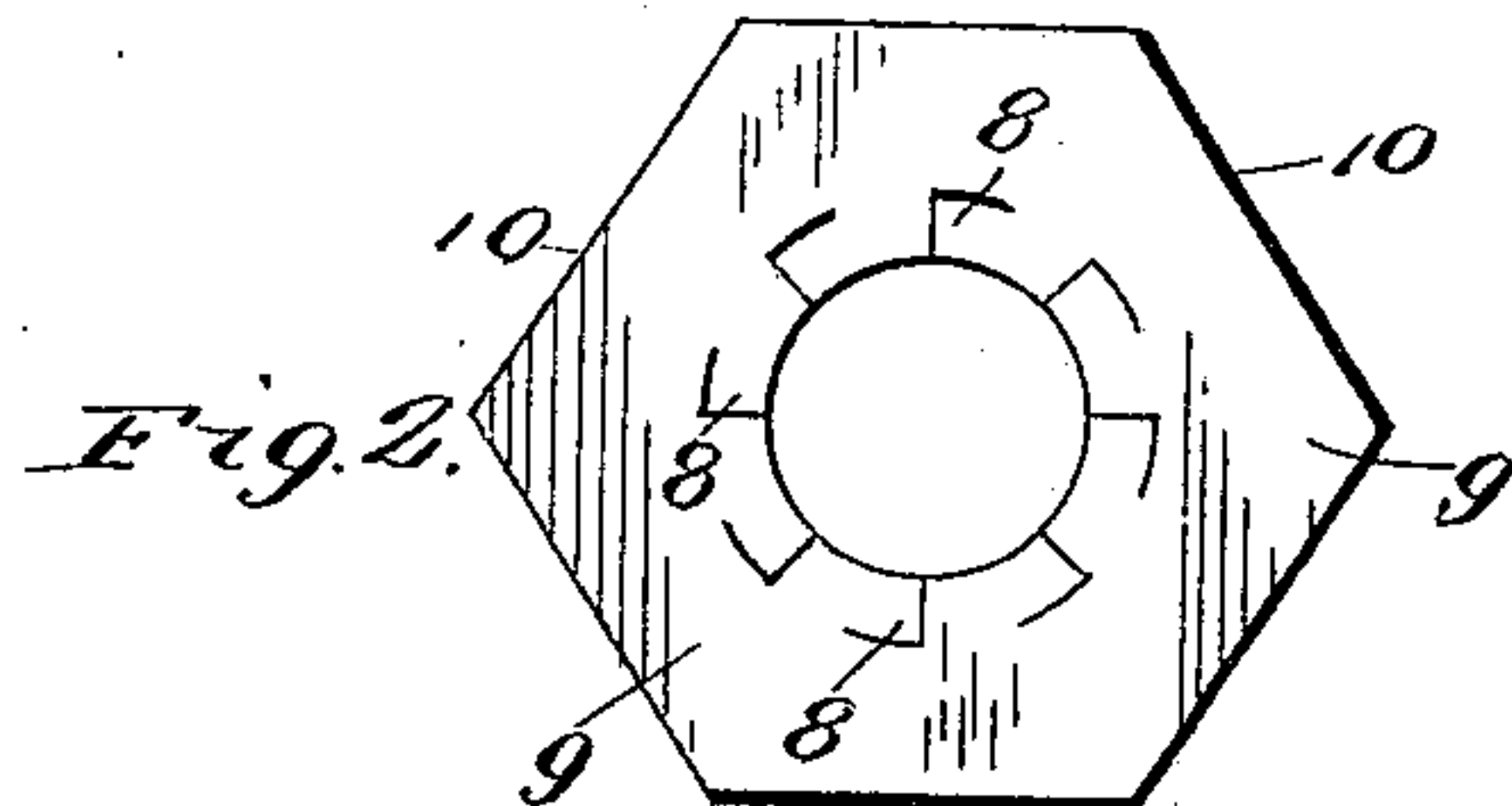
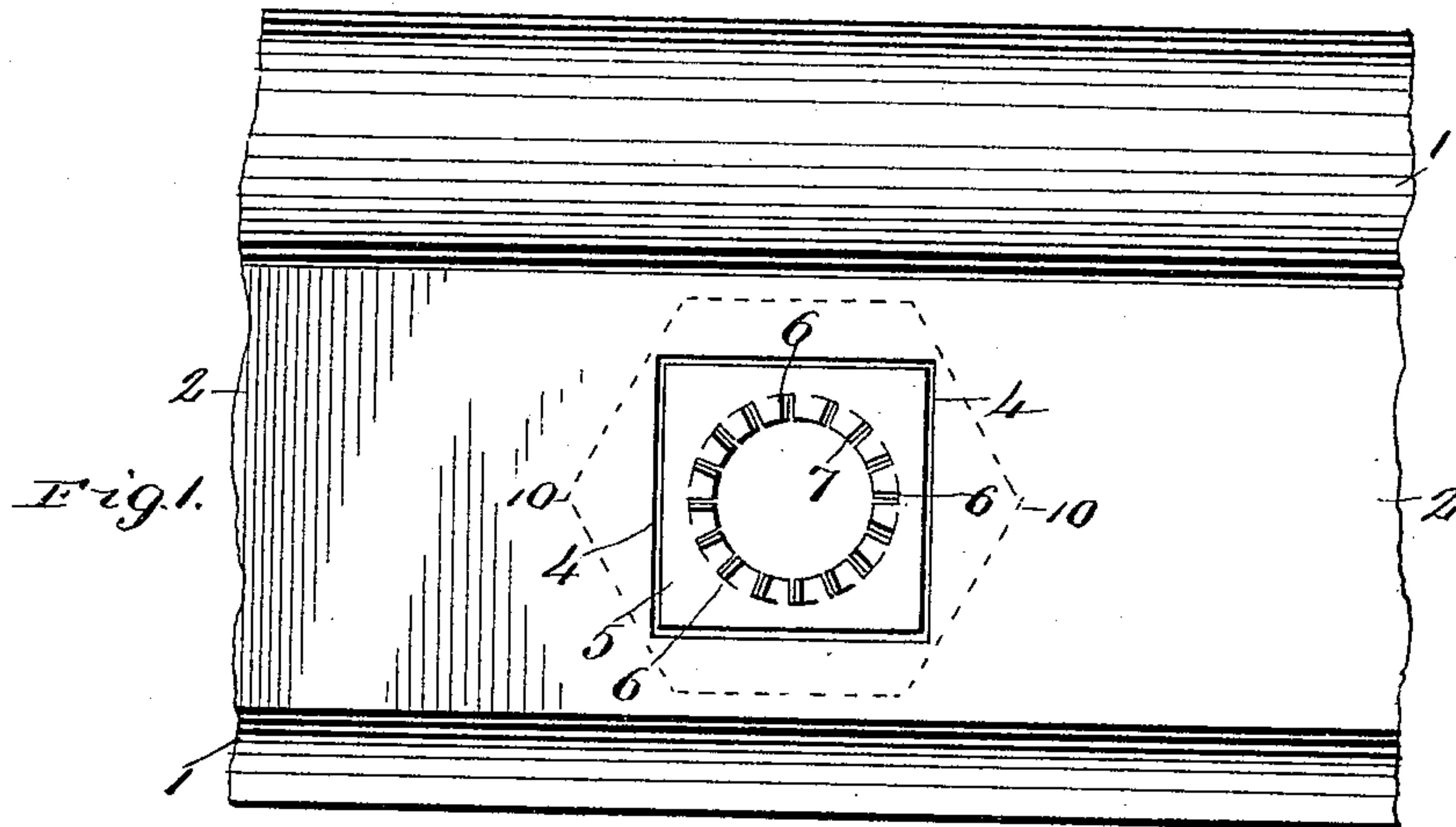
No. 645,754.

F. W. McFARLAND.
NUT LOCK.

Patented Mar. 20, 1900.

(Application filed Apr. 17, 1899.)

(No Model.)



WITNESSES:

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FRED W. McFARLAND, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF
TO GEORGE M. BLAIR, OF SAME PLACE.

NUT-LOCK.

SPECIFICATION forming part of Letters Patent No. 645,754, dated March 20, 1900.

Application filed April 17, 1899. Serial No. 713,372. (No model.)

To all whom it may concern:

Be it known that I, FRED W. McFARLAND, a citizen of the United States, residing at St. Louis, 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 side elevation of an ordinary rail and fish-plate having a portion of my invention applied thereto, with the nut removed. Fig. 2 is a plan view of the rear surface of the nut. Fig. 3 is a front elevation of the fish-plate; and Fig. 4 is a vertical transverse section of the fish-plate, washer, and nut in a locked position.

One object of my invention is to construct a simple, durable, and practical nut-lock in such a manner that when the nut is screwed upon the bolt in the usual manner the parts will be automatically locked, and, further, is of such a nature that moisture or foreign accumulations cannot gain access to the operative parts of the device.

A further object of my invention is to construct the locking-washer in such a manner that should it be desired to remove the nut from the bolt for any reason the washer alone will be destroyed, which is simple and inexpensive, the remaining parts being adapted to be again used by the employment of a new washer.

Referring to the drawings, 1 represents an ordinary rail, and 2 the usual fish-plate commonly employed in connection with the former for connecting the meeting ends of the rails. The fish-plate is provided with the ordinary opening 3 for the passage of the securing-bolt and surrounding the same, and located on the outer surface of the fish-plate is a rectangular-shaped depression 4, which is adapted to snugly receive the corresponding-shaped locking-washer 5, with its outer

surface substantially flush with the outer surface of said fish-plate.

The washer 5 is preferably constructed of sheet-steel by a die and punch or other former designed for the purpose and is provided with a series of yielding ratchet-teeth 6, which project in an inclined direction from one side of the same, said teeth being arranged in a circle the inner edges of which form an opening 7, through which the bolt passes. In forming the teeth from the plate of which they form a part the metal is sheared or cut to form yielding tongues, which are adapted to yieldingly cooperate with the correspondingly-shaped depressions 8, formed on the rear flat engaging surface 9 of the nut 10, which depressions are located adjacent to and surround the screw-threaded opening formed in the nut, it being observed, however, that the number of yielding teeth or tongues are far in excess of the number of depressions formed on the nut, whereby the nut will be automatically locked in the slightest adjustment, which renders the device practical for all purposes.

It will thus be observed that from the construction of the nut-lock as above described the nut or rear surface thereof will come in direct contact with the fish-plate, and consequently the operative parts will not be obstructed or injured, and, further, no moisture or accumulation can possibly gain access to the washer or parts cooperating therewith.

I do not limit myself to the application of my invention exclusively to railroad purposes, as it is evident that it may be used for locking a nut against rotation in the opposite direction for all applications.

In order to remove the nut from the bolt after the parts have been once assembled, a wrench or other tool is applied to the said nut and turned in a direction to remove the nut from the bolt, in which operation the yielding teeth or tongues will be turned or bent in the reverse direction shown, and consequently destroy the same for all practical purposes, in which operation the nut will be free to be turned off the bolt.

By the employment of the rectangular-shaped depression 4, formed in the fish-plate

2, the locking-washer 5 is securely held in position and is therefore prevented from being turned in either direction when the nut is screwed upon or removed from the bolt.

5 In carrying out my invention it is to be observed that the number of ratchet-shaped depressions 8 formed on the engaging surface 9 of the nut 10 may be greater than that shown and described, in which instance the yielding
10 ratchet teeth or tongues 6 should be of a less number, whereby the same result would be obtained, the object of my invention, in particular, being to form yielding tongues from a locking-washer of which they form a part, the
15 inner edges of said tongues forming an opening through which an ordinary bolt is adapted to be passed, and a nut the inner flat surface of which is provided with ratchet-teeth which are arranged about the screw-threaded open-
20 ing of the same, the said tongues and depressions differing in number.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is—

25 1. In combination with a fish-plate having a rectangular depression formed in the outer surface of the same, and around the opening formed therein, a thin locking-washer adapted to be received by said depression substantially flush with the outer surface of said fish-
30 plate, radially - arranged yielding tongues forming a part of said washer, and projecting in an inclined direction from one side of the same, the inner edges of said tongues
35 forming an opening corresponding in size to the opening in the fish-plate, through which openings the ordinary bolt is adapted to be passed, a nut adapted to entirely cover the
40 washer, the inner flat surface of which is provided with radially-arranged ratchet-shaped

depressions, adjacent to, and surrounding the screw-threaded opening formed therein, with which depressions, the said tongues are adapted to coöperate, the said tongues and
45 depressions differing in number, said yielding tongues adapted to be bent against the washer of which they form a part, by one of the walls forming said depressions when the same are brought in contact with the free ends
50 of said tongues, when it is desired to remove the nut, substantially as described.

2. A nut-lock, comprising a thin locking-washer, radially-arranged yielding tongues forming a part of the latter, and projecting
55 in an inclined direction from one side of the same, the inner edges of said tongues forming an opening through which the ordinary bolt is adapted to be passed, a nut adapted to coöperate with said washer, the inner flat sur-
60 face of which is provided with radially-arranged ratchet-shaped depressions, adjacent to, and surrounding the screw-threaded opening formed therein, with which depressions the said tongues are adapted to coöperate,
65 the said tongues and depressions differing in number, said yielding tongues adapted to be bent against the washer of which they form a part by one of the walls forming said depressions, when the same is brought in contact
70 with the free ends of said tongues, when it is desired to remove the nut, and means for holding said washer, substantially as described.

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

FRED W. McFARLAND.

Witnesses:

ALFRED A. MATHEY,
C. F. KELLER.