

No. 844,382.

PATENTED FEB. 19, 1907

D. C. MERCER.

LOCK NUT.

APPLICATION FILED NOV. 28, 1903.

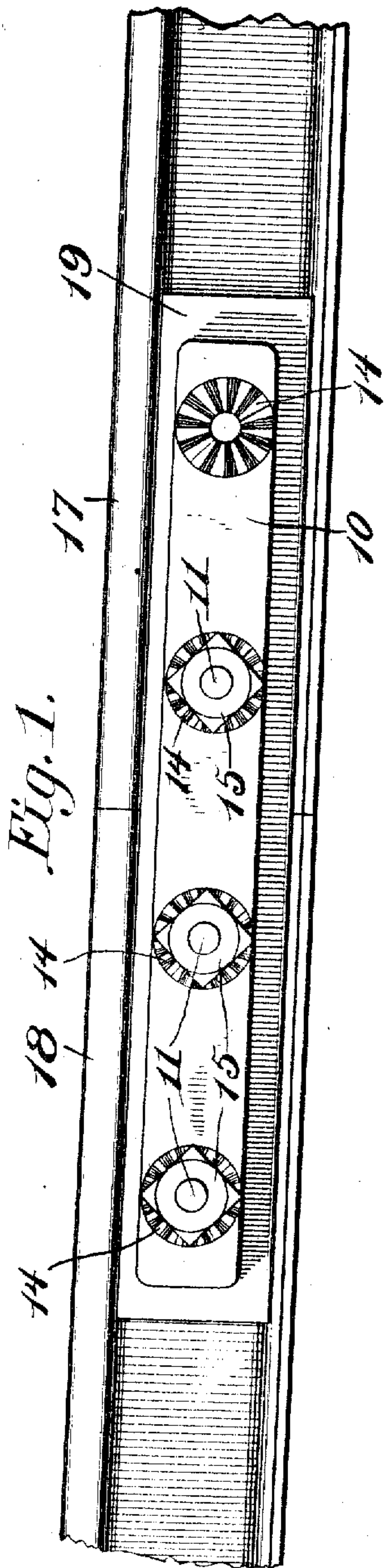


Fig. 1.

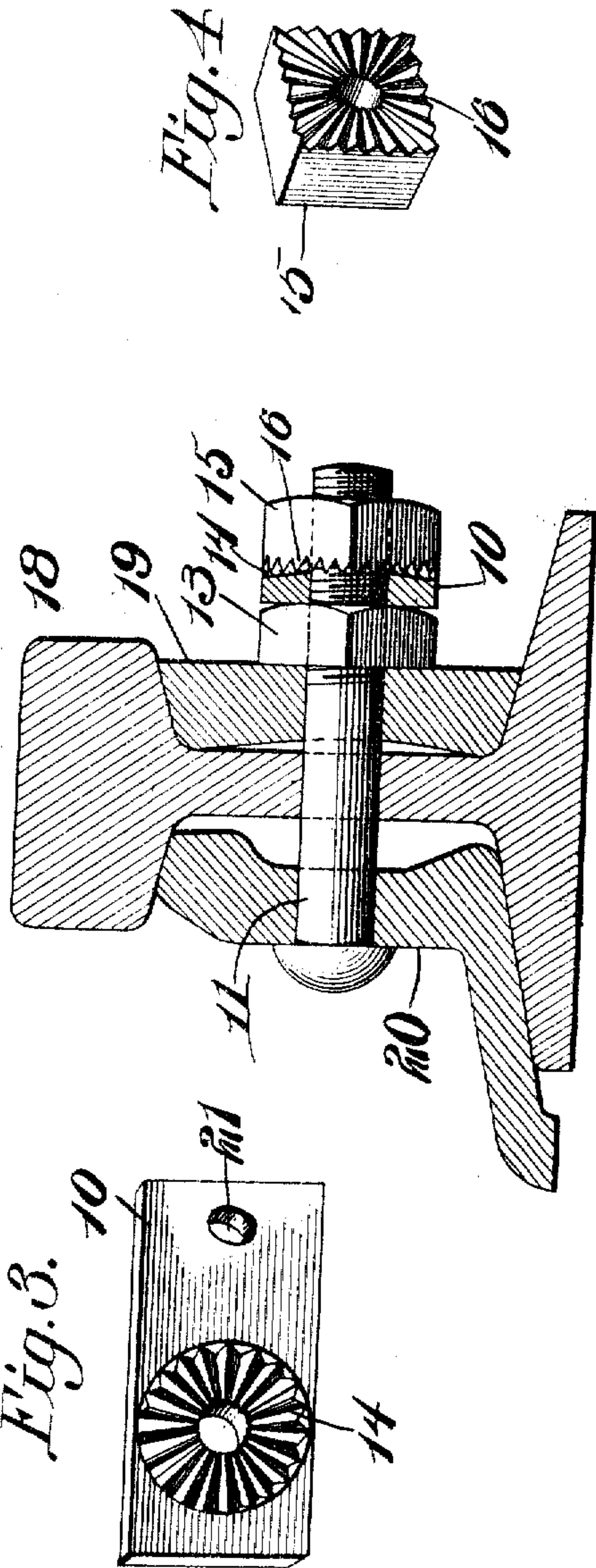


Fig. 2.

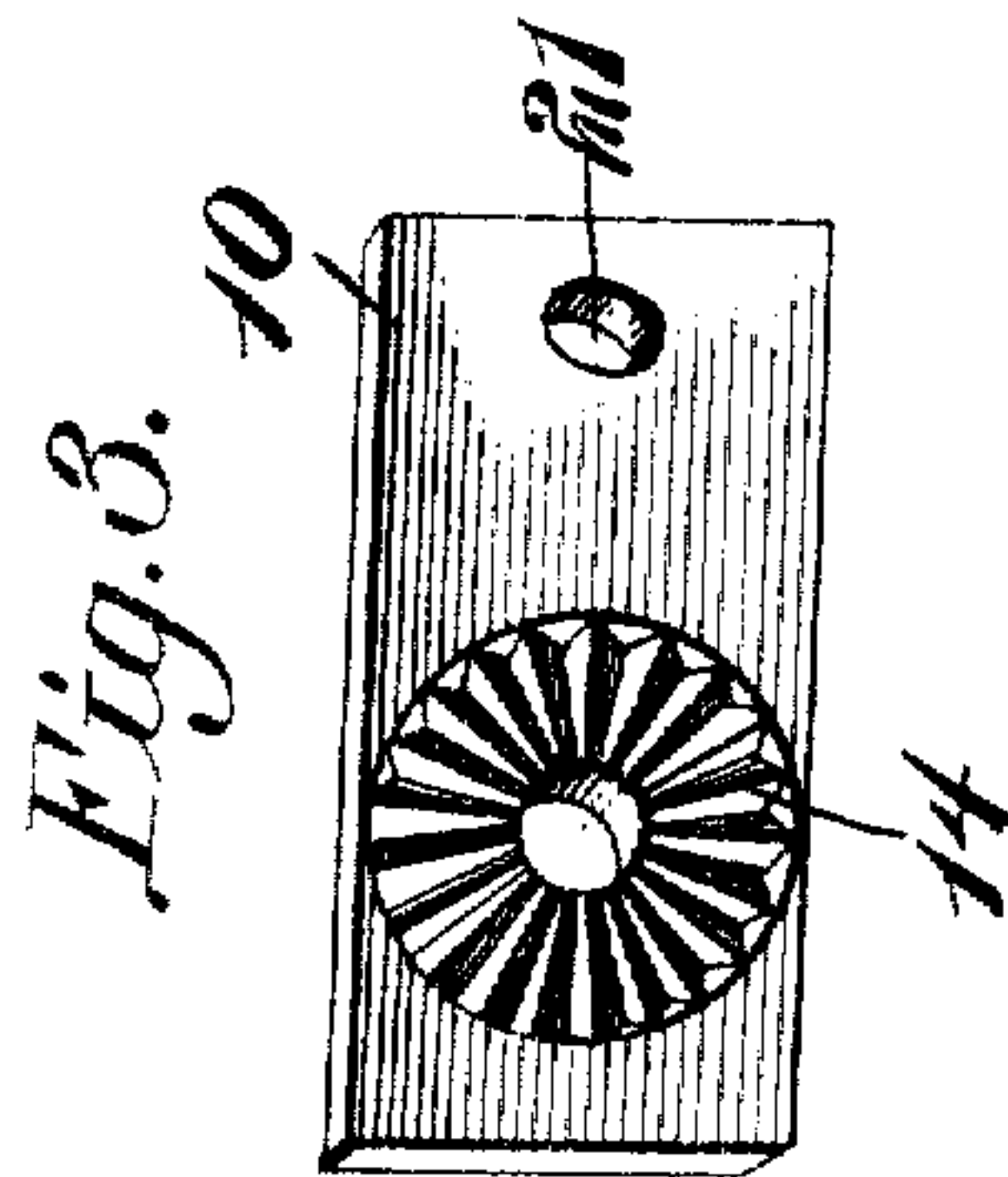


Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

DAVID C. MERCER, OF CHICAGO, ILLINOIS.

LOCK-NUT.

No. 844,382.

Specification of Letters Patent.

Patented Feb. 19, 1907.

Application filed November 28, 1903. Serial No. 183,045.

To all whom it may concern:

Be it known that I, DAVID C. MERCER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Lock-Nut, of which the following is a specification.

This invention relates to devices employed for preventing nuts from turning backward upon the bolts or becoming loosened thereon, and has for its object to simplify and improve devices of this character.

The invention consists in certain novel features of construction, as hereinafter shown and described.

The improved device may be employed upon nuts used for a variety of purposes—such as railway-rail joints and similar structures, bridgework, cars, mills, and other structures built of wood and which are subject to jars and concussions—but is especially applicable to railway-rail joints and for the purpose of illustration is shown thus applied—

Figure 1 representing a side elevation; Fig. 2, a transverse section of a railway-rail joint with the improvement applied. Fig. 3 is a perspective view of a portion of the lock-plate detached. Fig. 4 is a perspective view of the notched nut detached.

The improved device consists of a lock-plate 10, having one or more perforations for engaging the bolt 11 outside the ordinary nut 13 and provided with radiating notches, as at 14, adjacent to each of its perforations, and a locking-nut 15, having radiating notches, as at 16, corresponding to the notches in the plate and adapted to engage them when the nuts 15 are engaged with the bolts.

In Figs. 1 and 2 the improved device is applied to the clamp-bolts of a railway-rail joint, wherein 17 18 represents the abutting ends of the rails 19 20, the usual clamp or "fish" plates through which and the intervening portions of the vertical webs of the rails the clamp-bolts 11 pass in the ordinary manner, said clamp-bolts being supplied outside one of the clamp-plates with the improved attachments 10 15, as shown. One of the fish-plates 19 is disposed in contact with the adjacent surface of the web of the rail, while the opposite or mating fish-plate

20 is bowed centrally and spaced from said web, as shown.

In applying the device the ordinary nuts 13 are first "set up" against the clamp-plate 19 or 20, as the case may be, and the lock-plate 10 placed over the extended portions of the bolts and the lock-nuts 15 placed on the bolts and rotated into engagement with the lock-plate. The nuts 13 are then reversely rotated a short distance, generally not exceeding about one-fourth or one-third of a revolution, to force the notches of the lock-plate into engagement with the notches on the clamp-nuts, thus firmly "locking" the nuts to the bolt and effectually preventing any tendency to become loosened, no matter how severe the jarring and concussions may be.

When employed upon structures other than railway-rail joints or where one bolt only is to be supplied with the device the plate 10 will be provided with means, such as an aperture 21, for a nail, screw, or other appliance to prevent its rotation, the holding nail or screw being inserted into the body of the structure on which the bolt is employed, as will be obvious.

The notches in the plate 10 and nuts 15 may be formed in any desired manner, but will preferably be impressed therein when these portions of the device are constructed, so as to produce a series of radiating ratchet-teeth having biting edges, as shown. The form of the notches may be varied as required, and I do not, therefore, desire to be limited to any specific form of notch, but reserve the right to such modifications in this and other portions of the device as may fall within the scope of the claim.

Having thus described my invention, what I claim is—

A nut-lock consisting of a bolt passing through a plate, said plate having a smooth outer surface, a nut screw-threaded upon the bolt and having its inner and outer faces smooth, the inner faces bearing against the smooth surface of said plate, a perforated bar having one surface smooth which bears against the outer surface of said nut, the outer surface of said bar being provided with countersunk teeth radiating from the

bar perforation, means for retaining said bar against rotation, a lock-nut screw-threaded upon said bolt and having its under face provided with radial ratchet-teeth adapted to engage the countersunk ratchets of said bar said smooth nut when reversely turned causing the teeth of the lock-nut and bar to intermesh.

In testimony that I claim the foregoing as my own I have hereto affixed my signature to in the presence of two witnesses.

DAVID C. MERCER.

Witnesses:

EDGAR F. MERCER,
GEORGE W. RUGBY.