E. McCONNELL.
Nut-Lock.

No. 199,303. Patented Jan. 15, 1878.

Fig. 2.

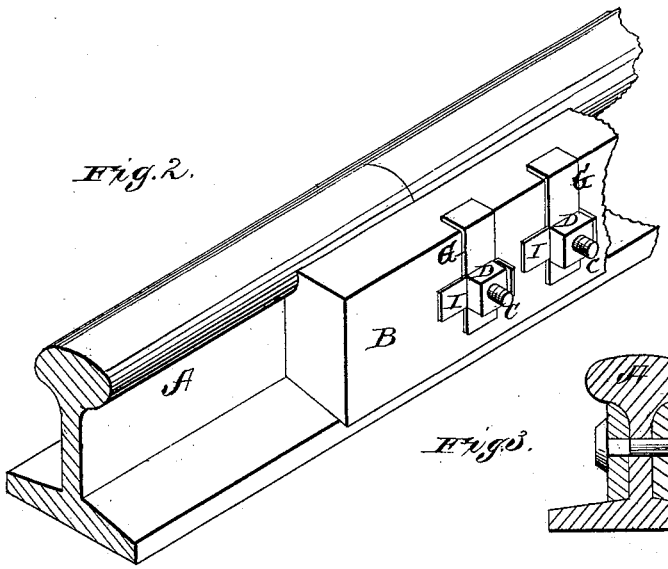


Fig. 3.

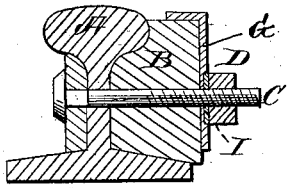
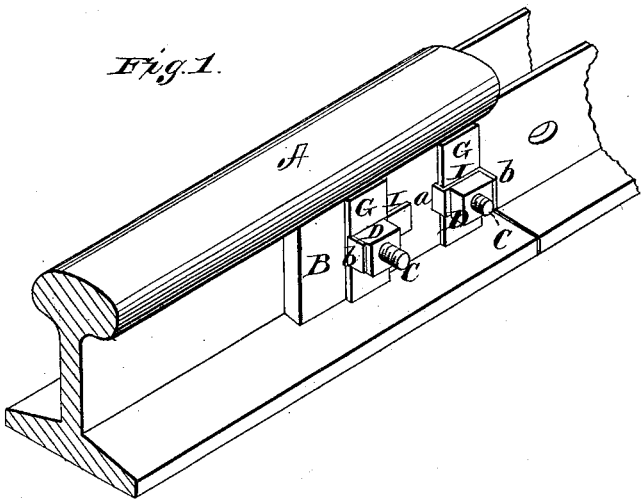


Fig. 1.



WITNESSES
F. L. Ormand
Frank Gall

INVENTOR
Edward McConnell
Alexander Mason
ATTORNEYS

UNITED STATES PATENT OFFICE.

EDWARD McCONNELL, OF LEXINGTON, VIRGINIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN M. PATTERSON, OF SAME PLACE.

IMPROVEMENT IN NUT-LOCKS.

Specification forming part of Letters Patent No. **199,303**, dated January 15, 1878; application filed September 27, 1877.

To all whom it may concern:

Be it known that I, EDWARD McCONNELL, of Lexington, in the county of Rockbridge, and in the State of Virginia, have invented certain new and useful Improvements in Nut-Locks; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to railroad-rail joints having fish-bars brought up close to the sides of the rails; and it consists in the construction of devices for locking the nuts on the bolts, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a perspective view of a railroad-rail joint embodying my invention. Fig. 2 shows my invention applied to another form of fish-bar. Fig. 3 is a cross-section of the same.

A A represent the adjoining ends of two railroad-rails. B B are two ordinary plain fish-bars placed on opposite sides of the joint of the rails A A, to be brought, when the nuts D are screwed up on the bolts C, in place, as close as can be to make as solid a bearing as practicable. The bolts C have square shoulders under the heads, to fit in corresponding holes in the inner fish-bar, and the bolts thus prevented from turning.

On the face of the outer fish-bar, and over the hole for each bolt, fits a rectangular washer, G, of any desired width, having a hole in or near the center for the passage of the bolt, and also a lateral groove in the face, in which fits a metal plate, I. This plate has also a hole to fit over the hole in the washer, said plate filling effectually the groove in the washer, so that when the nut D is screwed down tightly, its face will rest in the same plane as the outer face of the washer. The ends of the plate I extend beyond the edges of the washer, and when in position one end, *b*, of the plate is to be turned up against the side of the nut, locking it, the lower edge of the washer G being locked upon the flange of the rail, as shown in Fig. 1.

The washer can be used with the groove out from the face of the fish-bar, or with the groove placed next to the fish-bar; it will lock either way.

The plate I, to fit in the groove, can be left such a length (the height of the rail controlling it) that if the head or shoulder of the bolt should wear so much as to get loose, and the plate slip out of the groove, the end of said plate not turned up against the nut will move around until it comes in contact with the flange, and then lock the nut as effectually as before, the nut and plate keeping their original positions with reference to each other.

It will thus be seen that the washer G is locked by being brought against the flange of the rail. The plate is locked by being immovable in the groove of the washer, and the nut is locked by being held firmly by one end of the plate turned up against it. The other end of the plate I is held in reserve, in case the turned-up end should break in turning it down, to take up any wear at the bolt-head, as well as to serve as a double lock should the head wear unnoticed, and let the plate slip out of the groove.

On some roads where the outer fish-bar is made very thick, as shown in Fig. 2, the washer G could not be locked by contact with the flange of the rail. In such case the washer is made large enough, so that its upper end can be turned over on top of the fish-bar.

When any tightening is required of the bolts, the washers form, as it were, a heel at X, over which the end *b* of the plate I can be bent below the top face or plane of the washer, which will allow the nut to pass over freely. This makes a great saving both in time and labor.

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

In combination with a railroad-rail, fish-bar, bolt, and nut, the washer G, provided with an opening, through which the bolt passes,

and also provided with a lateral groove, and the plate I, filling said groove to be flush with the face of the washer, but elevated above the surface of the fish-plate, and provided with an opening, through which the bolt passes, and having one end bent outward to the side of the nut, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 12th day of September, 1877.

EDWD. McCONNELL.

Witnesses:
FRANK GALT,
J. M. MASON.