D. R. BAIRD.

NUT-LOCKS.

No. 183,038. Patented Oct. 10, 1876.

Fig. 1.

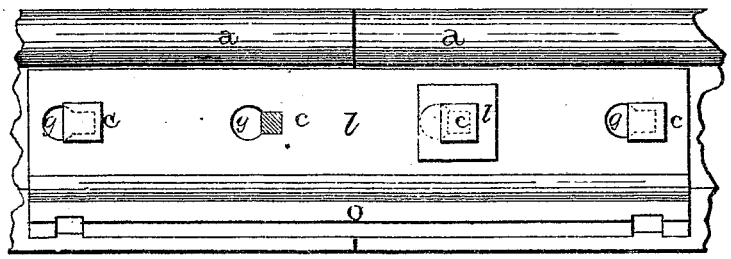


Fig. 2.

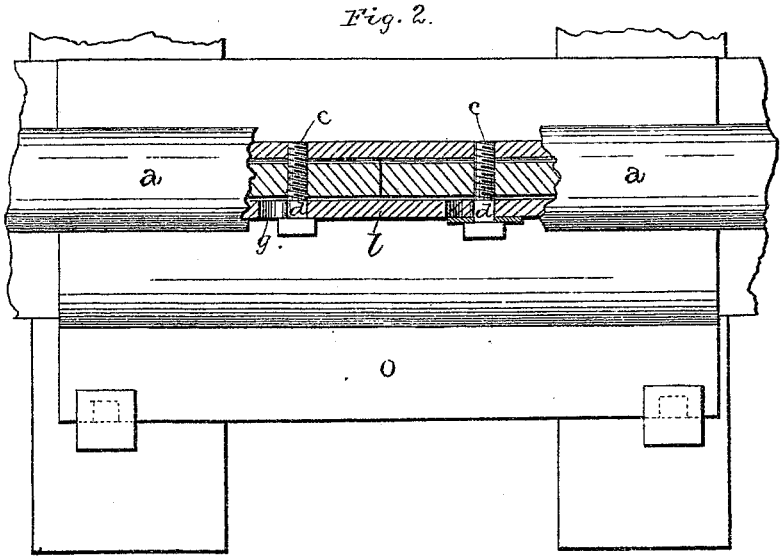


Fig. 3.

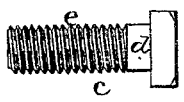
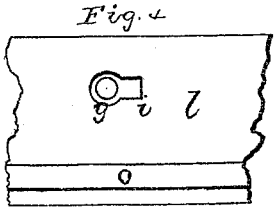


Fig. 4.



WITNESSES:

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F. M. Burnham.

INVENTOR:

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per

F. A. Lehmann Atty

UNITED STATES PATENT OFFICE.

DAVID R. BAIRD, OF JOHNSTOWN, PENNSYLVANIA.

IMPROVEMENT IN NUT-LOCKS.

Specification forming part of Letters Patent No. **183,038**, dated October 10, 1876; application filed September 18, 1876.

To all whom it may concern:

Be it known that I, DAVID R. BAIRD, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented certain new and useful Improvements in Combined Bolt-Lock and Fish-Plates; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in combined bolt-lock and fish-plate; and it consists in making square corners on the bolts, just under their heads, and screw-threads on their ends, and placing washers over these bolts between the fish-plate and the heads, so as to prevent the holes in the plate from becoming clogged with dirt and ice.

Through the fish-plate, on one side, is made a round hole, large enough to allow the shoulders of the bolt to turn freely around, and from this hole is made an elongated recess, so that when the plate is moved endwise this recess slips up over the shoulders of the bolt, and prevents the bolt from turning.

By means of the screw-thread on each bolt the bolts can be tightened to any desired degree, as will be more fully described hereinafter.

The accompanying drawings represent my invention.

a represents the two sections of the rails that are spliced together by the usual fish-plates in the usual manner. The bolts *c* have the usual heads, square shoulders *d* just inside of the heads, and then screw-threads *e* the balance of their length. These bolts are then passed through the two plates and the rail, and screwed up as tightly as possible, the thread of the bolt screwing into one of the fish-plates instead of into a nut.

Thus it will be seen that I use no nuts whatever, and am therefore enabled to use shorter bolts.

One of the fish-plates has a large round hole, *g*, made through it, so that the square corners of the bolt can turn freely therein, and from this hole extends horizontal with the length of the plate a recess, *i*, which is just large enough to slip over the square shoulders when they are turned in line with the recess. After the bolts have been screwed up as tightly as possible the shoulders are all turned in line with the recesses, and then the plate is struck with some instrument, so as to drive it endwise, and thus force it far enough along to force the recesses up over the square shoulders.

As the recesses are not wide enough to allow the square shoulders to turn around in them, it will be readily seen that the bolts are prevented from turning around or working loose until the plate is forced back into position, and the plate is securely held.

Where there is no screw cut on the bolts the parts cannot be fastened securely together, nor can the fish-plate be prevented from working back endwise, so that the bolts will readily come out or work loose.

I am aware that a fish-plate, having similar openings for the bolts, to what is here shown, has been used, but only in connection with plain bolts that have recesses cut in their sides, and this I disclaim.

The fish-plate *l* is securely held into the position into which it is forced by the friction of the bolts; but in order to prevent the plate from being tampered with, or moving back, a flange, O, is made to extend down over the side of the bottom flange of the rail, and to rest solidly on the ties, where spikes are driven into, and thus the plate cannot possibly be moved until the spikes are withdrawn. Where this flange is not locked the jarring and shaking of the passing trains would have a tendency to work the plate back, and thus loosen every bolt.

Under the head of each bolt should be placed a washer, *t*, large enough to cover the hole in the fish-plate *l*, and thus keep out dust, dirt, &c., and prevent the freezing of water between the rail and the fish-plate.

Having thus described my invention, I claim—

The washer *t*, placed under the heads of the bolts *c*, in combination with an endwise-moving fish-plate, *l*, having the holes *g* and recesses *i*, and the bolts *c*, having a portion of their shanks of a form corresponding to the recesses, substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 16th day of September, 1876.

DAVID R. BAIRD.

Witnesses:

ROBT. M. BARR,

F. A. LEHMANN.