A. WOODWARD.
Nut-Lock.

No. 197,920. Patented Dec. 4, 1877

Fig. 1.

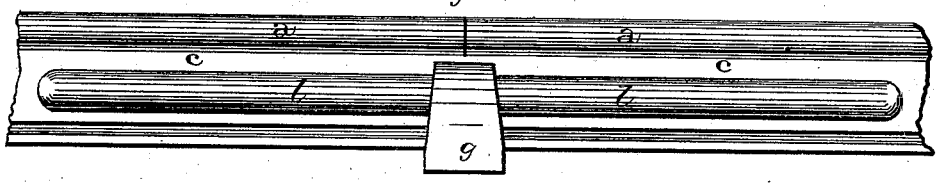


Fig. 2.

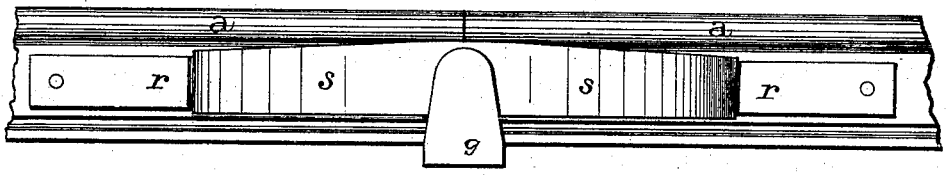


Fig. 3.

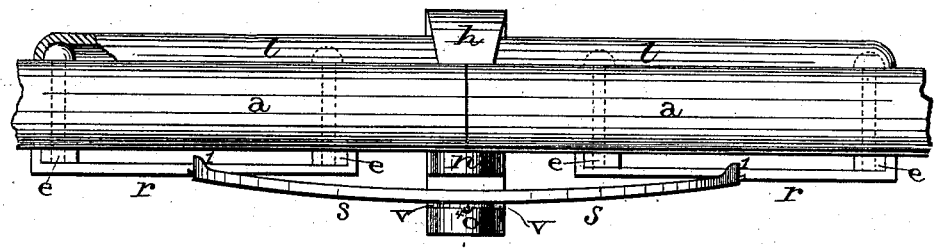


Fig. 4.

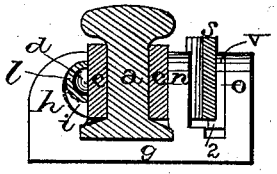
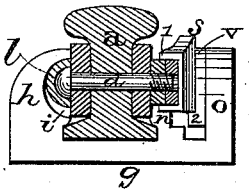


Fig. 6

Fig. 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ANDERSON WOODWARD, OF MILL SPRING, MISSOURI.

IMPROVEMENT IN NUT-LOCKS.

Specification forming part of Letters Patent No. **197,920**, dated December 4, 1877; application filed November 3, 1877.

To all whom it may concern:

Be it known that I, ANDERSON WOODWARD, of Mill Spring, in the county of Wayne and 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 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 nut-locks; and it consists in the arrangement and combination of parts that will be more fully described hereinafter, whereby an effective lock for nuts is produced that will prevent them from working loose under any and all circumstances.

The accompanying drawings represent my invention. *a* represents the railroad-rails; *c*, the usual fish-plates; *d*, the bolts, and *e* the nuts.

Before the two rails are fastened together the chair *g* is slipped over the fish-plates and the end of one of the rails. The two rails are then bolted together in the usual manner, and the chair, which is so formed as to catch under and above the flanges on their lower edges, comes just opposite their two ends, as shown. Upon the inner end of the chair is formed the projection or flange *h*, which projects upward and bears against the side of the fish-plate, and through the side of this flange or projection *h* is made a horizontal groove, *i*, to receive the sheet-metal cover *l*. This cover conceals and protects the heads of the bolts *d*, and should have each end bent down over a head, so that it cannot be moved horizontally out of position.

The outer end of the chair has two flanges formed upon it, one, *n*, that projects up the side of the rail against the outside fish-plate, and another one, *o*, upon the very end of the chair. After the chair has been placed in position, and the two rails bolted together, the locks *r* are passed over the outer sides of the nuts *e*. These locks have a flange formed on each end, each one of which catches over the side of a nut, and effectually prevents it from turning around or in any way becoming loose. As the nuts cannot turn upon one side, and as the bolts are prevented from working backward upon the other, it will readily be seen that the bolts cannot possibly get loose.

In order to keep these locks in position the steel spring *s*, having a projection, 1, formed upon each corner, so as to catch over one edge of the lock, is passed down into the space between the two flanges *n o*, as shown. In this position each end of the spring bears tightly against the outer side of one of the locks, and as the ends of the bolts prevent the locks from moving either up or down, they are held securely in position, and at the same time lock the spring.

In order to lock the spring securely in position, so as to prevent intentional displacement, a key, *v*, having a horizontal flange, 2, on its lower edge to catch under the spring, and a vertical flange, 3, upon its outer side to catch in a groove, 4, made in the inner side of the flange or projection *o*, is slipped in between the outer side of the spring and the inner side of this flange *o*. This key forces the center of the spring inward, and thus its ends are made to bear with great force against the locks.

In order to displace the locks and unfasten the two rails, the center of the spring must be forced inward far enough to allow the key *v* to be displaced, when the spring may be removed, then the locks *r*, and then the nuts.

Persons not understanding the construction of my lock, and provided with suitable tools to unfasten them, will find it almost impossible to tamper with the rails for the purpose of wrecking a train.

The guard *l* to prevent the bolts from moving backward, and the locks *r*, having holes through them to catch over the outer ends of the bolts, and thus prevent them from being moved either up or down, and the shoulders or catches on locks *r* to prevent spring *s* from moving in a horizontal direction, form special features of my invention.

Having thus described my invention, I claim—

1. The combination of the chair *g*, provided with the flange *h*, with the guard *l*, substantially as described.

2. The chair *g*, provided with the three flanges *h n o*, and so formed as to catch over

the flange on the bottom of the rail, substantially as set forth.

3. The combination of the locks *r*, having the flanges and holes, as described, with the spring *s* and flange *o*, substantially as shown.

4. The combination, with the key *v*, spring *s*, and locks *r*, of the chair *g*, having the flange *o*, and the nuts and bolts, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 26th day of October, 1877.

ANDERSON WOODWARD. [L. S.]

Witnesses:
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