(No Model.)

R. J. CATCHINGS.

RAILROAD RAIL LOCK.

No. 551,349. Patented Dec. 10, 1895.

Fig. 1.

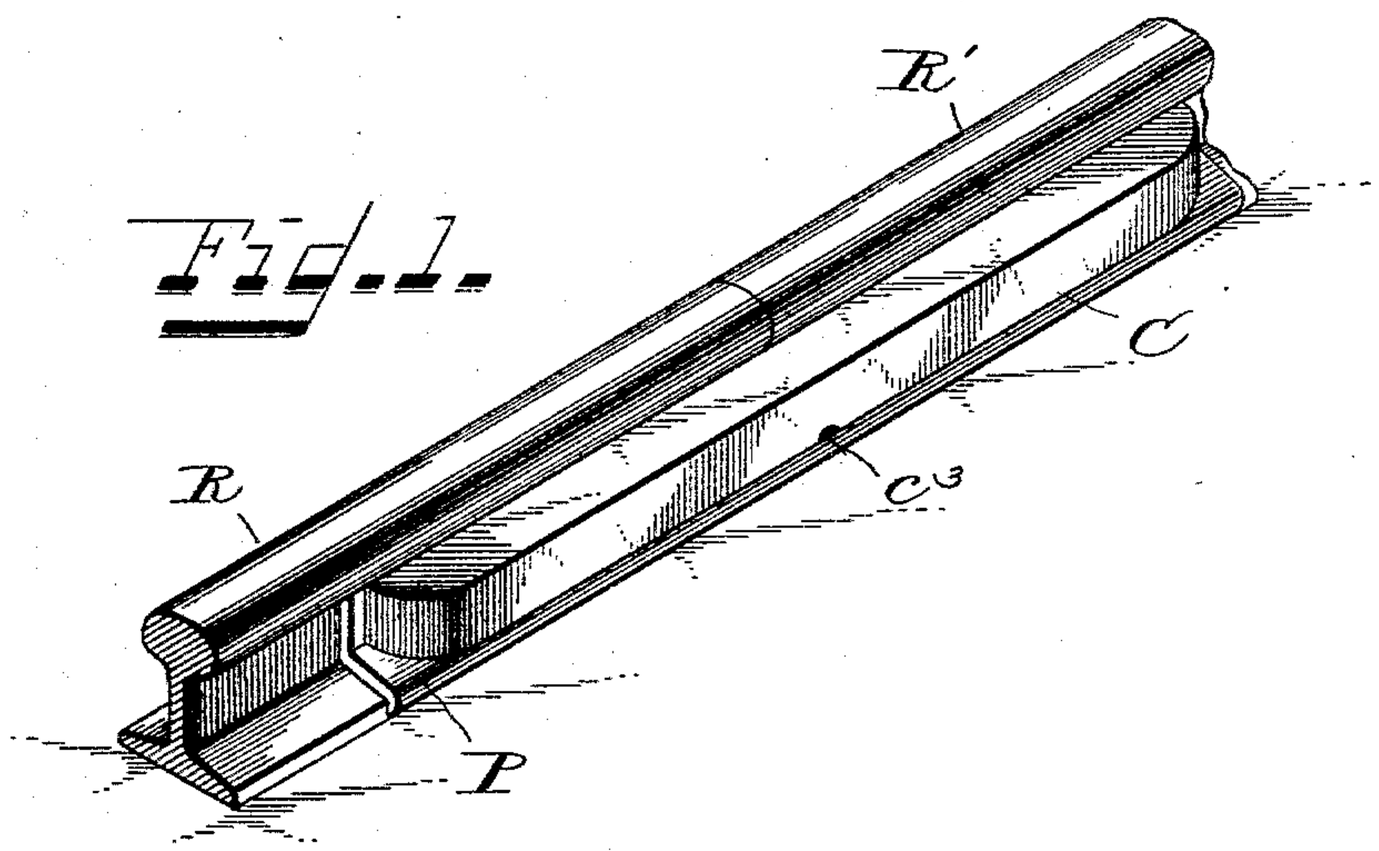


Fig. 2.

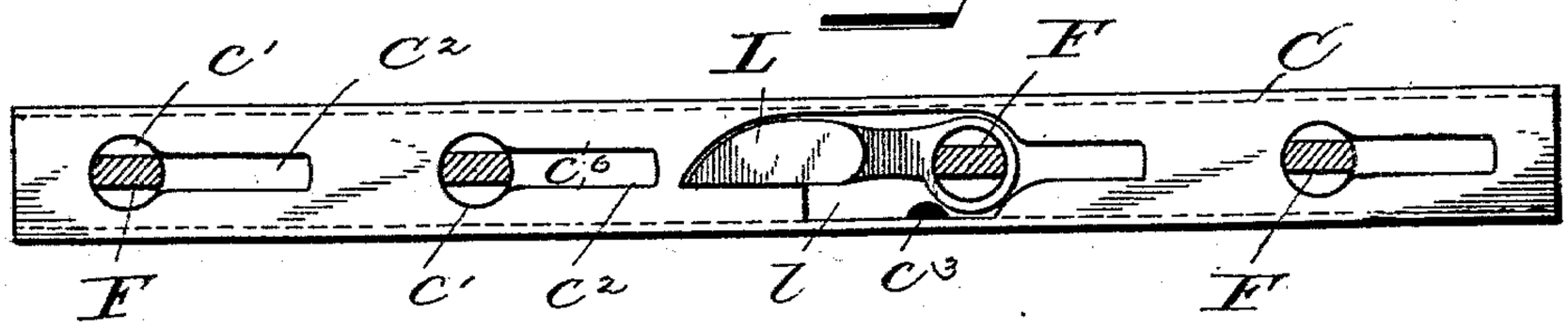


Fig. 3.

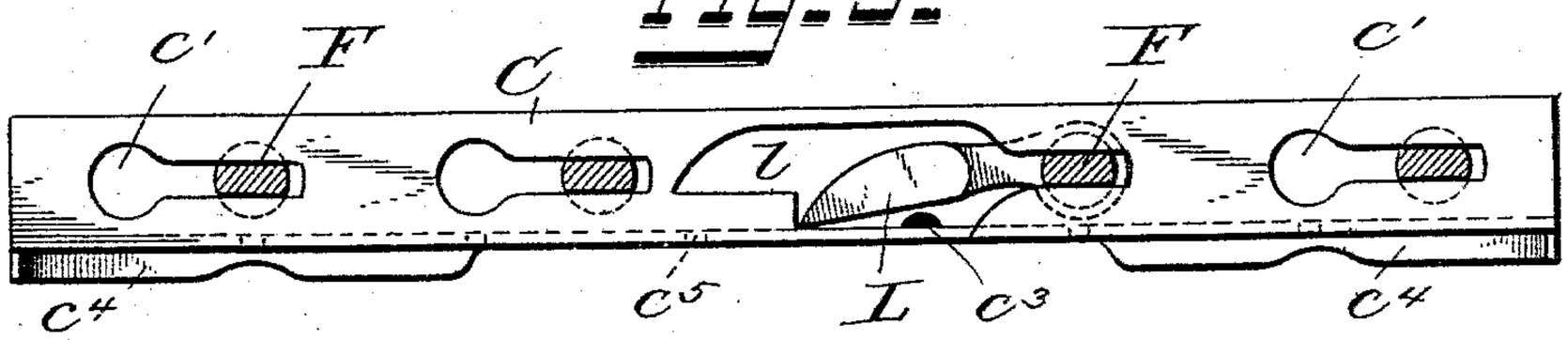


Fig. 4.

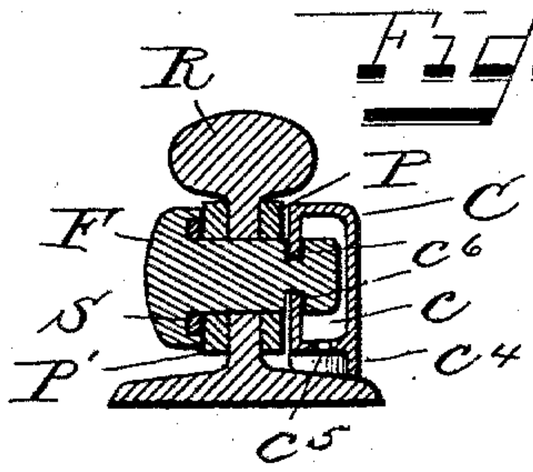


Fig. 5.

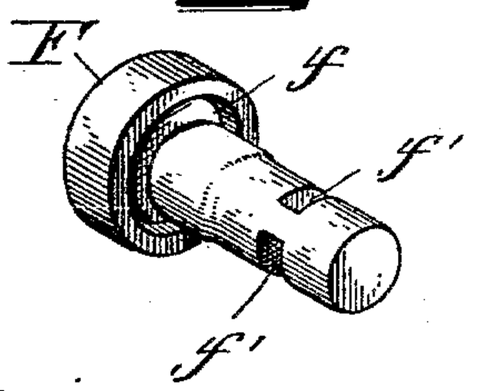
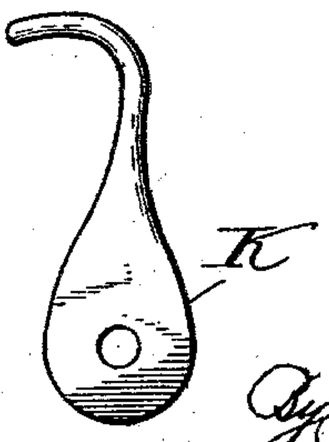


Fig. 6.



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UNITED STATES PATENT OFFICE.

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RAILROAD-RAIL LOCK.

SPECIFICATION forming part of Letters Patent No. 551,349, dated December 10, 1895.

Application filed March 25, 1895. Serial No. 543,117. (No model.)

To all whom it may concern:

Be it known that I, ROBERT J. CATCHINGS, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Railroad-Rail Locks; and I declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to novel features of construction in devices for securing the fish-plates in position at the rail-joints without the use of nuts, or bolts having threads, and which will hold the fish-plates securely clamped to the rails in a locked position.

Heretofore fish-plates for securing the ends of railroad-rails have been held in place by ordinary bolts and nuts. The objection to such a construction is that the nuts and screw-threaded bolts must be constructed at too great an expense. Another objection is that the nuts constantly work loose and drop off, thus requiring the employment of persons called "nut-tighteners" to tighten or replace them; and they are easily removed by ill-disposed persons desiring to injure the road, wreck a train or do other damage of a similar nature.

The object of my invention is to overcome these objections by providing a device which will dispense with the use of nuts and screw-threads on the fish-bolts and which will securely hold the fish-plates in a locked position and prevent rattling.

My invention consists in the lock, key, fish-bolts and springs, constructed, combined and operating substantially as hereinafter more specifically set forth and claimed when used to clamp fish-plates on rail-joints and hold them in a secure and locked position.

In the drawings, Figure 1 is a perspective view of railroad-rail joint showing my invention applied thereto. Fig. 2 is a face view of the lock-casing showing the fish-bolts in section and the device in an unlocked position. Fig. 3 is also a face view of the lock-casing showing the device in a locked position and having flanges underneath to support the lock when used on a single fish-plate. Fig. 4 is an enlarged cross-section taken through one of the fish-bolts when secured in a locked position. Fig. 5 is a detail perspective of one of the fish-bolts. Fig. 6 is a detail view of the key.

Like letters refer to like parts in all of the figures.

R and R′ represent the railroad-rails; P and P′, the fish-plates; C, the lock-casing; c, the fish-bolt chambers in the casing; c', the holes for the reception of the fish-bolts; c^2, the slots in the casing for the reception of the fish-bolts; c^3, the keyhole; c^4, flanges to support lock when used on a single fish-plate, as shown in Fig. 4; c^5, waste-holes to permit of the ready escape of water, sand, &c.; L, the lock-bolt; l, the lock-bolt chamber; F, the fish-bolt; f, the annular recess in the fish-bolt head for the reception of spring S; f', notches for the reception of flanges c^6, and K the key.

The operation of locking and unlocking the device is as follows: When the rails, fish-plates, and fish-bolts are in the position shown in Fig. 4, place the lock-bolt L in the lock-bolt chamber l in the position shown in Fig. 2. Then insert the fish-bolts in holes c' by pressing the lock-casing tightly to fish-plate. Then slip the casing to the right, the fish-bolts moving in slots c^2 until the lock-bolt L falls in the lock-chamber to the position shown in Fig. 3, when the device is locked.

To unlock insert the key K in keyhole c^3 and raise lock-bolt L until it touches the top of lock-bolt chamber, by pressing the key upward. Then slip the lock-casing to the left, removing key, until the lock-bolt L and fish-bolts F are in the position shown in Fig. 2, when the lock may be taken off by moving it away from the rail and fish-plate in a horizontal direction.

My lock may be applied with double or single fish-plates or may be used with either style of fish-plate on one side of the rails and without any fish-plate on the lock side, the lock-casing taking the place of the fish-plate when so used. I construct my lock with sufficient play to allow for the usual contraction and expansion of the rails.

A desirable feature of my invention is the overcoming of rattling and loose joints, which

I accomplish by inserting springs in annular recesses in the heads of the fish-bolts, which when pressed tight against the fish-plates and locked on the opposite side hold the fish-plates snugly against the rails, take up any slack that may occur by the wearing off of any rough surface, prevent rattling, and keep the fish-plates firmly bound to the rails, thus giving the road a perfectly safe and secure joint.

The advantages which I secure by my construction are strength, simplicity, durability, and economy. The notched bolts are stronger than bolts with threads. The retaining-flanges which hold the fish-bolts in place are stronger than the nuts and will not work off by the running or jar of trains, but will hold the fish-plates in position until the lock is unlocked. It can be applied with greater speed than any now known, and can also be easily and quickly removed by any person having the key and knowing the peculiar manner of using it and removing the casing, but cannot be taken off by persons not familiar with such method and not in possession of the key, as can be done by anybody unscrewing the nuts and removing the rails where bolts and nuts are used. I not only give a more secure fastening of the rail-joints but also a more excellent and perfect finish to the same.

I claim—

1. In a railroad rail lock, lock-casing, lock-bolt and fish-bolts provided with annular recesses in the heads thereof, circular springs taking into said recesses for the purpose specified, all combined to lock and securely hold the fish-plates to rails, substantially as described.

2. In a railroad rail lock the combination of the fish-bolts with the spring, lock-bolt and lock-casing, said lock-casing being provided with a key-hole for the reception of a key to unlock the device, substantially as described.

3. The combination in a railroad lock of the fish-bolts F with the lock-casing C provided with a hole for the reception of the key K to release the lock-bolt L, substantially as described.

4. A railroad rail lock having a casing provided with fish-bolt holes, slots and chambers and a lock-bolt chamber, and a lock-bolt, having a fish-bolt hole in one end thereof, said lock-bolt being adapted to be fixed or moved in said chamber as desired, substantially as described..

5. In a railroad rail lock, fish-bolts having annular recesses in the heads thereof, springs taking therein, said fish-bolts having notches f' near one end, lock-casing having flanges c^6 taking into said notches, said lock-casing being provided with key-hole, waste-holes, fish-bolt holes, slots, chambers and lock-bolt chamber, and lock-bolt having fish-bolt hole in one end, combined and adapted to operate substantially as and for the purpose specified.

6. In a railroad rail lock, lock-casing provided with key-hole, waste-holes, fish-bolt holes, slots and chambers and a lock-bolt chamber, and a lock-bolt having a fish-bolt hole in one end, adapted to work in said chamber, combined and operating substantially as and for the purpose specified.

7. The combination in a railroad rail lock of the rails R R′, fish-plates P P′, fish-bolts F, spring S, lock-casing C, and lock-bolt L in said casing adapted to hold the device in a locked position or to be raised by key K when unlocking the device, substantially as described.

8. In a railroad rail lock, rails R R′, fish-plates P P′, lock-casing C, fish-bolts F, lock-bolt L, and spring S, combined and operating substantially as and for the purpose specified.

9. In a railroad rail lock, rails R R′, fish-plates P P′, lock-casing C, flanges c^6, fish-bolts F, lock-bolt L and spring S, combined for the purpose specified.

10. In a railroad rail lock the combination of the rails R R′ with fish-plates P P′, lock-casing C, fish-bolts F having recesses f, springs S taking therein, said bolts having notches f', flanges c^6 adapted to take into said notches, lock-bolt L and flange-supports c^4, substantially as described.

11. The combination in a railroad rail lock of the rails R R′ with fish-plate P′, fish-bolts F, spring S, lock-casing C and lock-bolt L adapted to rest therein and hold the device in a locked position, or to be raised by key K when unlocking the device, substantially as described.

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Witnesses:
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