

(No Model.)

W. F. RICHARDS.
CAR COUPLING.

No. 511,457.

Patented Dec. 26, 1893.

Fig. 1.

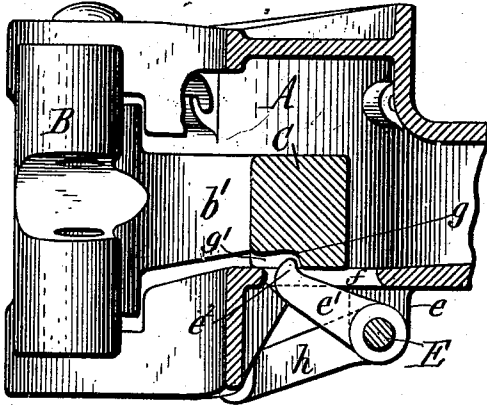


Fig. 2.

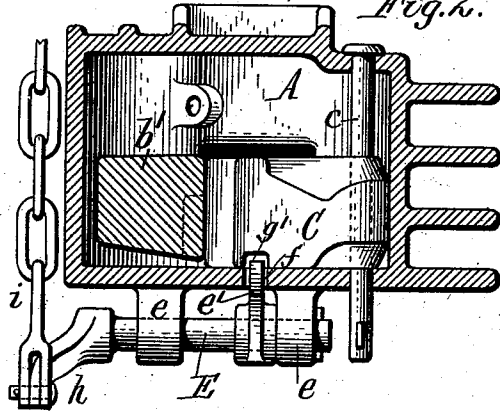


Fig. 3.

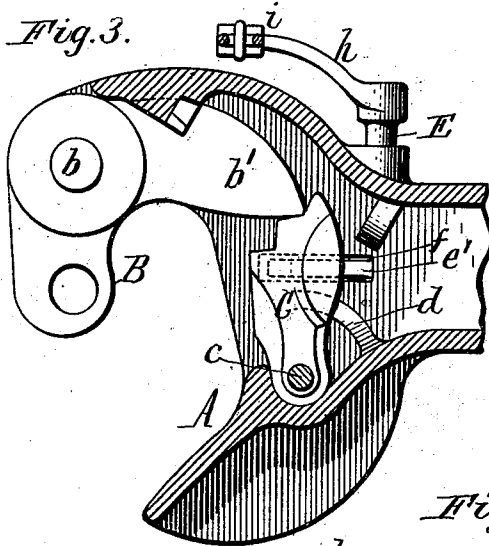


Fig. 4.

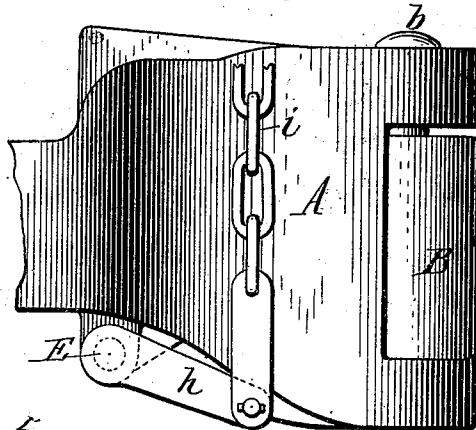
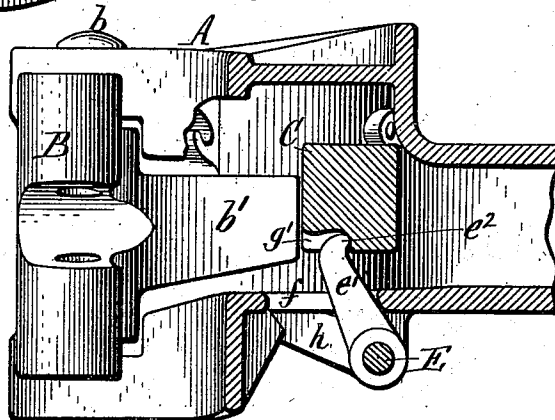


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLARD F. RICHARDS, OF BUFFALO, ASSIGNOR TO THE GOULD COUPLER COMPANY, OF NEW YORK, N. Y.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 511,457, dated December 26, 1893.

Application filed September 30, 1893. Serial No. 486,900. (No model.)

To all whom it may concern:

Be it known that I, WILLARD F. RICHARDS, a citizen of the United States, residing at the city of Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Car-Couplings, of which the following is a specification.

This invention has general reference to twin car couplings which comprise essentially a horizontally swinging coupling jaw or knuckle, a horizontally swinging lock or pawl engaging with the locking arm of the coupling jaw and means for moving the pawl out of engagement with the arm of the coupling jaw for releasing the latter.

The invention relates more particularly to a coupling of this class which is especially applicable to low flat cars in which it is desirable to operate the locking pawl from the under side of the drawhead.

My invention has for its object to simplify the devices for operating the locking pawl, and to construct the same in such a manner that the upper incline, with which the drawhead is commonly provided for swinging the lock backward, may be dispensed with.

In the accompanying drawings: Figure 1 is a longitudinal sectional elevation of my improved coupling, showing the coupling jaw in its closed or coupled position. Fig. 2 is a cross section thereof in line 2—2, Fig. 1, showing the parts in the same position. Fig. 3 is a horizontal section of the coupling in its locked position. Fig. 4 is a side elevation of the drawhead, showing the chain for operating the rock shaft of the lock-shifting lever. Fig. 5 is a longitudinal sectional elevation corresponding to Fig. 1, showing the lock swung back out of engagement with the arm of the coupling jaw and raised on its incline.

Like letters of reference refer to like parts in the several figures.

A is the drawhead, having the usual chamber for receiving the movable parts of the coupling.

B is the coupling jaw or knuckle pivoted to the drawhead by an upright pin *b*, in the ordinary manner, and having the usual locking arm *b'*.

C is the lock or pawl which engages with the arm of the coupling jaw for locking the jaw in its coupled position, and which swings horizontally on an upright pin *c* that is free to rise and fall in its openings in the drawhead, so as permit the lock to move vertically as well as swing horizontally.

d is the usual rearwardly-rising incline arranged on the drawhead underneath the lock, for automatically moving the latter forwardly into engagement with the arm of the coupling jaw when the jaw is swung into its closed position.

E is a horizontal rock shaft arranged transversely on the under side of the drawhead and journaled in perforated lugs or bearings *e* formed on the adjacent portion of the drawhead.

e' is a shifting arm or lever mounted on the rock shaft and adapted to move the lock backward out of engagement with the coupling jaw and at the same time lift it on its incline. This shifting lever swings upward and backward in a vertical plane and extends forwardly and upwardly from the rock shaft, through a longitudinal slot *f* formed in the lower wall of the drawhead. The shifting lever is adapted to engage with its free end against a shoulder *g* formed on the adjacent under side of the swinging lock C, as shown in Figs. 1 and 5, the lever being preferably provided at its free end with a lip or shoulder *e'*² which bears against the shoulder of the lock. The shoulder of the lock is produced by forming a longitudinal recess *g'* in the lock, which recess extends to the front edge of the lock.

h is an actuating lever or arm secured to the outer end of the rock shaft for turning the same, and *i* is an operating chain attached at its lower end to said arm and at its upper end to the arm of the usual uncoupling shaft journaled on the end sill of the car.

In the locked position of the coupling jaw, the lock is engaged with the arm of the jaw and the shifting lever *e'* stands with its free end in close proximity to the shoulder on the under side of the lock, as shown in Figs. 1 and 2. When it is desired to unlock the coupling jaw for uncoupling the cars, the chain *i* is

pulled upward, which causes the rock shaft to be turned in the proper direction to swing the shifting lever upward and backward to the position shown in Fig. 5. This movement of the shifting lever is imparted to the lock by the free end of the lever bearing against the shoulder of the lock, causing the lock to be moved backward out of engagement with the arm of the coupling jaw and at the same time elevated on its incline. The coupling jaw, being now released, is free to swing to its open position. Upon releasing the chain, the shifting lever drops to its former position and the lock descends on its incline. When the coupling jaw is swung inward to its locked position by contact with the coupling of an opposing car, its arm, striking the lock, swings the latter backward on its incline and as soon as the locking arm passes inward beyond the free end of the lock, the latter rides down its incline and automatically interlocks with the arm of the coupling jaw in the usual manner. By extending the recess *g* to the front edge of the lock, as shown, the lock, when in its depressed position, is permitted to move backward preparatory to descending into engagement with the arm of the coupling jaw, without being restrained by the end of the shifting lever which enters such recess.

The shoulder on the under side of the lock is so arranged with reference to the end of the shifting lever that the lock is permitted to move forward sufficiently to interlock with the arm of the coupling jaw.

By arranging the shifting lever in the manner herein shown and described, the lock is moved backward as well as upward by the lever alone, thus dispensing with the use of

the upper incline ordinarily employed for swinging the lock back.

I claim as my invention—

1. The combination with the drawhead and the swinging coupling jaw, of a lock engaging with said jaw, a transverse rock shaft arranged on the under side of the drawhead, and a shifting arm or lever secured directly to said shaft and adapted to engage with said lock, substantially as set forth.

2. The combination with the drawhead having a slot in its bottom and the swinging coupling jaw, of a lock mounted on an upright pivot and capable of swinging in a horizontal plane, a transverse rock shaft journaled on the under side of the drawhead and a vertically swinging shifting arm secured to said shaft, projecting through the slot of the drawhead and adapted to engage with said lock, substantially as set forth.

3. The combination with the drawhead having a longitudinal slot in its bottom, and the coupling jaw, of a horizontally swinging lock provided in its under side with a recess opening at the front side of the lock and forming a shoulder, a horizontal rock shaft journaled on the under side of the drawhead, and a shifting lever mounted on said rock shaft, extending through the slot of the drawhead and engaging against the shoulder of the lock, substantially as set forth.

Witness my hand this 2d day of September, 1893.

WILLARD F. RICHARDS.

Witnesses:

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