

(No Model.)

W. F. RICHARDS.  
CAR COUPLING.

No. 586,273.

Patented July 13, 1897.

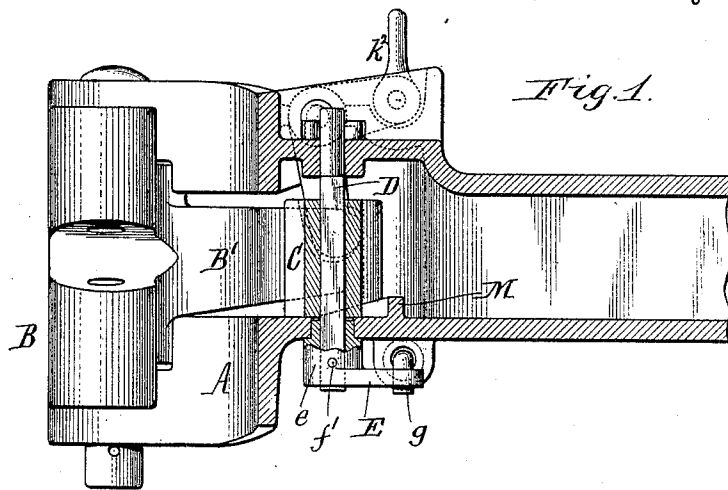


Fig. 1.

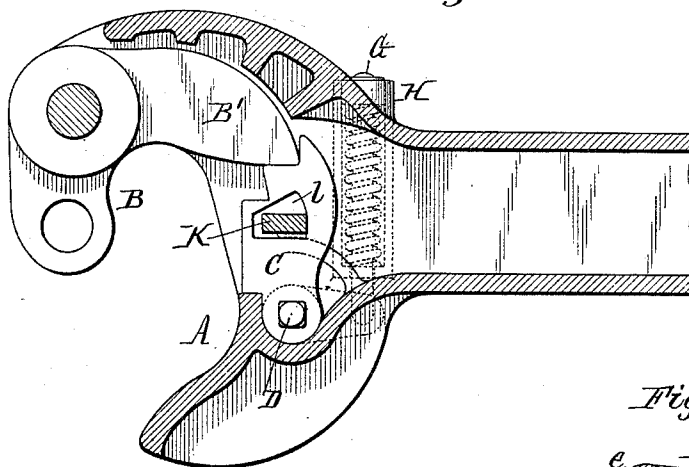


Fig. 2.

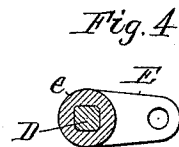


Fig. 4.

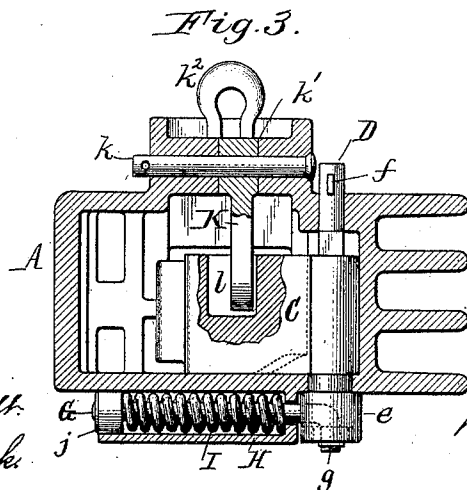


Fig. 3.

WITNESSES:

Chas. F. Burkhardt.  
Henry L. Deck.

W. F. Richards.

INVENTOR

By Wilhelm Borned.

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

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

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 586,273, dated July 13, 1897.

Application filed April 5, 1897. Serial No. 630,711. (No model.)

*To all whom it may concern:*

Be it known that I, WILLARD F. RICHARDS, a citizen of the United States, residing at 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 belongs to the class of automatic car-couplings having a pivoted knuckle or coupling-jaw, a lock engaging with the tail-piece of the knuckle, and a spring for yieldingly holding the lock in its normal position, so as to prevent its accidental disengagement from the knuckle by shocks sustained by the cars.

The object of my invention is the provision of a simple spring mechanism for the lock which is effective in action and in which the parts are so combined that they can be readily assembled or dismembered for making repairs or renewing parts.

In the accompanying drawings, Figure 1 is a longitudinal sectional elevation of my improved car-coupling. Fig. 2 is a horizontal section thereof. Fig. 3 is a transverse vertical section of the coupling. Fig. 4 is a horizontal section of the pivot-pin of the lock and the retaining-lever thereof.

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

A is the hollow draw-head, which may be constructed upon the well-known standard lines, and B the horizontally-swinging knuckle or coupling-jaw, pivoted to the draw-head and having the usual tailpiece B'.

C is the lock, which is arranged to swing horizontally in the draw-head and which is rigidly mounted on a vertical pivot-pin D, journaled in the top and bottom of the draw-head, so that the lock is compelled to turn with the pivot-pin. In the construction shown in the drawings the main portion of the pivot-pin is square or angular and the lock has a correspondingly-shaped opening for receiving the pin. The upper end of the pin is round and journaled in a corresponding hole formed in the top of the draw-head, while the square lower end of the pin passes through the hub of a horizontal retaining arm or lever E, which is provided with a correspondingly-shaped bore, as shown in Fig. 4. The hub of

the lever is round, as shown in Figs. 1 and 4, and turns in a corresponding hole formed in the bottom of the draw-head, whereby the hub forms a journal for the lower end of the pivot-pin. The latter is retained in place in the draw-head, preferably by a cotter *f* or similar detachable fastening passing through its projecting upper end, while the actuating-lever is secured to the lower end of the pin by a similar fastening *f'*.

G is a horizontal tension-rod arranged transversely on the under side of the draw-head and guided in a pocket or housing H, formed on the draw-head. This tension-rod passes through an opening formed in the closed front end of the pocket H, and its projecting front end is connected with the free rear end of the retaining-lever E preferably by a depending lip *g*, formed by bending the end of the rod downward at right angles to the same, as shown in Figs. 1 and 3. The angular end of the tension-rod is fitted loosely in an opening formed in the free end of the retaining-lever. I is a spring surrounding the tension-rod and bearing at its front end against the closed end of the pocket H and at its rear end against a follower, collar, or screw-nut *j*, secured to the rear end of the tension-rod, so as to resist the outward movement of the tension-rod, thereby yieldingly holding the retaining-lever E of the lock against turning.

K is an operating-lever whereby the lock is withdrawn for releasing the knuckle. This lever, which is of bell-crank form, is arranged in a longitudinal slot *k'*, formed in the top of the draw-head and is mounted on a transverse pin *k*. The upper rearwardly-extending arm of this lever is provided with a clevis *k*<sup>2</sup> for connecting it with any suitable or well-known operating mechanism arranged on the end of the car, while its depending lower arm engages loosely in a socket or cavity *l*, formed in the upper side of the lock.

M is the usual incline upon which the lock rests and which aids in moving the same automatically into engagement with the knuckle.

When the lock is engaged with the tailpiece of the knuckle, as shown in Fig. 2, the tension-rod G is drawn into its innermost position by the spring I and the retaining-lever E of the lock is drawn inwardly to the posi-

tion shown in the drawings, thus reliably holding the lock in its proper position and preventing accidental unlocking of the knuckle. When it is desired to unlock the knuckle, the lock is swung backward by means of the bell-crank lever K, and by this movement of the lock its arm E is swung outwardly, thereby drawing the tension-rod G in the same direction and compressing the spring I. Upon releasing the operating-lever the tension-rod and the arm of the lock are drawn inwardly by the reaction of the spring, causing the lock to swing forward into the proper position to engage automatically with the knuckle when the latter is again closed.

The lock and its spring mechanism are readily assembled by placing the lock in the draw-head and the tension-rod G and its spring into the pocket H, then passing the pivot-pin D through the opening of the lock and the pivot-holes of the draw-head and then applying the retaining-lever E to the pivot-pin and engaging the opening in its free end over the lip of the tension-rod. The parts are as readily dismembered by performing these operations in the reverse order.

I do not wish to claim in this application the feature of the elbow-lever K in connection with the recessed lock herein shown and described, as that improvement is claimed in another application for patent filed by me on or about the 10th day of March 1897, Serial No. 626,708.

I claim as my invention—

1. The combination with a draw-head having a chamber closed at its top, bottom and

sides and provided on its under side with a transverse pocket or housing, of a coupling-jaw pivoted to the draw-head, a horizontally-swinging lock arranged within the chamber of the draw-head and rigidly mounted on a vertical pivot-pin which passes through the bottom of the draw-head, an arm or lever secured to the portion of said pivot-pin projecting below the draw-head, a tension-rod arranged in said transverse pocket, connected at its front end with the arm of the lock-pivot and provided at its opposite end with a follower or enlargement, and a spring surrounding said tension-rod between its follower and the closed front end of said pocket, substantially as set forth.

2. The combination with the draw-head provided on its under side with a transverse pocket or housing, of the pivoted knuckle or coupling-jaw, a lock rigidly mounted on a vertical pivot-pin journaled in the draw-head, an arm or lever applied to the projecting lower end of said pivot-pin, a tension-rod guided in said transverse pocket and provided at its front end with a lip which is detachably connected with said arm or lever and at its rear end with a follower, and a spring applied to said tension-rod between said follower and the front end of said pocket, substantially as set forth.

Witness my hand this 27th day of March, 1897.

WILLARD F. RICHARDS.

Witnesses:

CARL F. GEYER,  
ELLA R. DEAN.