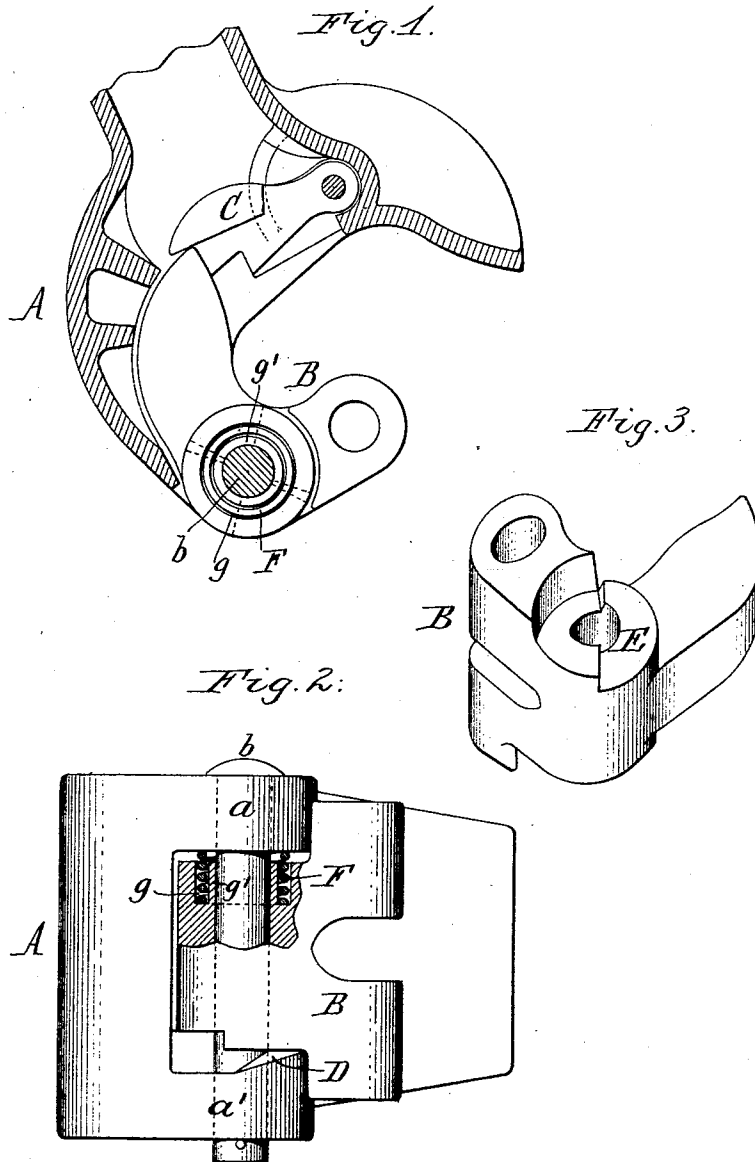


(No Model.)

W. F. RICHARDS.
CAR COUPLING.

No. 586,274.

Patented July 13, 1897.



Witnesses:

Ernest Pulsford.
Henry L. Deck.

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UNITED STATES PATENT OFFICE.

WILLARD F. RICHARDS, OF BUFFALO, NEW YORK, ASSIGNOR TO THE
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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 586,274, dated July 13, 1897.

Application filed May 3, 1897. Serial No. 634,808. (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 relates to twin-jaw car-couplings employing a horizontally-swinging knuckle or coupling-jaw and cooperating spiral inclines on the bottom of the draw-head and the under side of the knuckle-hub for automatically swinging the knuckle into its open position by gravity when released from the usual lock. These inclines, while operating satisfactorily when the parts are new and smooth, soon become rough from rust, and when this occurs the friction between the inclines is so great as to prevent the automatic opening of the knuckle.

The object of my invention is to provide simple means for supplementing the action of the usual inclines, so as always to insure the opening of the knuckle.

In the accompanying drawings, Figure 1 is a horizontal section of a car-coupling provided with my improvement. Fig. 2 is a front view thereof, partly in section. Fig. 3 is a perspective view of the knuckle.

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

A is the draw-head, of ordinary construction, having the usual lugs or jaws *a a'*, between which the knuckle B is pivoted by the usual vertical pin *b*, and C is the lock.

D is the customary incline formed on the lower jaw *a'* of the draw-head, and E the opposing incline formed on the hub of the knuckle. When the knuckle is closed, these inclines tend to swing the knuckle automatically into its open position in a well-known manner.

F is a spring interposed between the upper jaw *a* of the draw-head and the upper side of knuckle-hub and tending to depress the knuckle, so as to force it down the incline D of the draw-head and thereby swing the same open. This spring surrounds the pivot-pin *b* of the knuckle, and is preferably seated in an

annular recess or depression *g*, formed in the hub of the knuckle concentrically with the pivot-pin, as clearly shown in Fig. 2. The upper end of the spring bears loosely against the jaw *a* of the draw-head, and its lower end bears loosely against the bottom of the seat *g*. This seat or recess preferably does not open into the hole in the knuckle through which the pivot-pin passes, but is separated therefrom by an intervening annular wall or web *g'*. By this construction the spring is reliably retained in position and the usual amount of bearing-surface of the knuckle against the pivot-pin is at the same time preserved.

The spring is compressed between the knuckle and the upper jaw *a* of the draw-head when the knuckle rides upon the incline of the draw-head in closing it, and as soon as the knuckle is unlocked the spring reacts and forces the knuckle down said incline, which latter directs the knuckle outward and swings it into its open position, this action taking place notwithstanding the opposing faces of the knuckle and draw-head are rough from rust or from the coarse texture of the metal.

My improved device is very simple in construction and its cost is but nominal. It can be readily applied to the knuckle of existing car-couplings by simply boring a seat for the spring in the top of the knuckle.

I claim as my invention—

1. The combination with the draw-head having an incline, of a pivoted knuckle resting on said incline, and a spring interposed between the top of the knuckle and the draw-head and tending to force the knuckle down said incline, substantially as set forth.

2. The combination with the draw-head having upper and lower lugs and an incline on its bottom, of a knuckle pivoted between said lugs and having in its upper side an annular recess surrounding its pivot-pin, and a spring seated in said recess and bearing at its upper end against the draw-head, substantially as set forth.

3. The combination with the draw-head having upper and lower lugs and an incline on its bottom, of a knuckle pivoted between said lugs and having in its upper side an annular

recess surrounding its pivot-pin and separated from the pivot-hole of the knuckle by an intervening annular web or wall and a spring seated in said recess and bearing against the
5 draw-head, substantially as set forth.

4. A knuckle for a twin-jaw car-coupling provided in its upper side around its pivot-hole with a recess or seat adapted to receive a spring and with a web or wall which separates

said recess from the pivot-hole of the knuckle, 10 substantially as set forth.

Witness my hand this 13th day of March,
1897.

WILLARD F. RICHARDS.

Witnesses:

JNO. J. BONNER,
KATHRYN ELMORE.