

(No Model.)

2 Sheets—Sheet 1

W. F. RICHARDS.
CAR COUPLING.

No. 583,631.

Patented June 1, 1897.

Fig. 1.

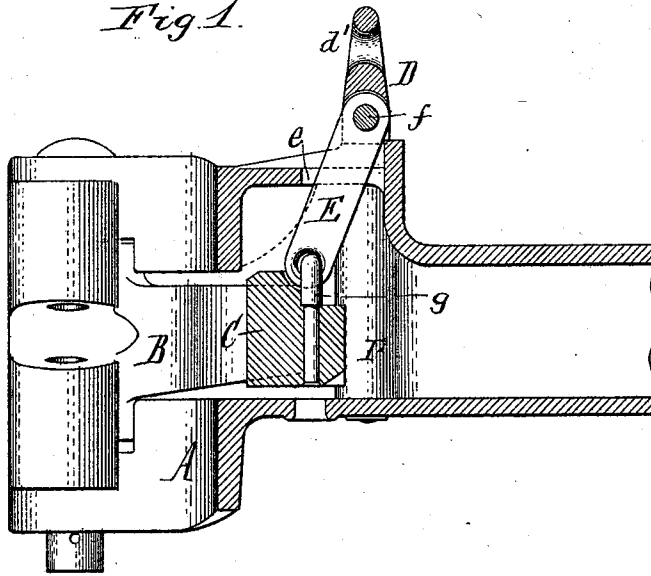
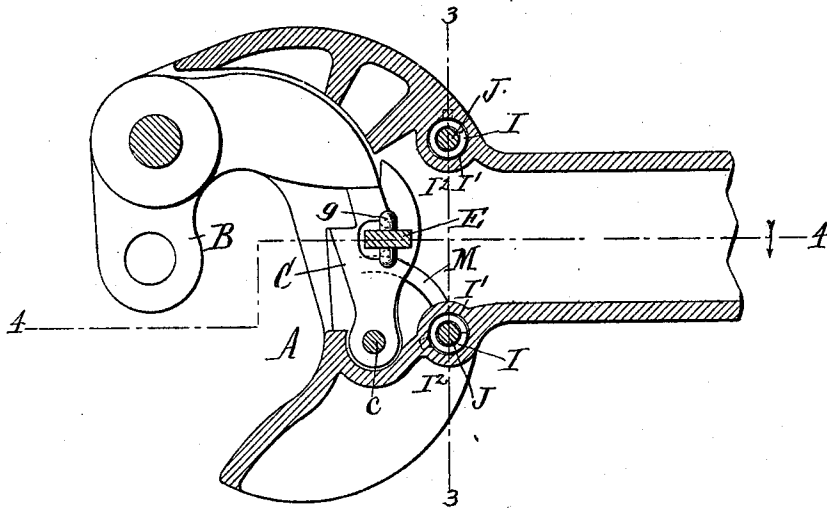


Fig. 2.



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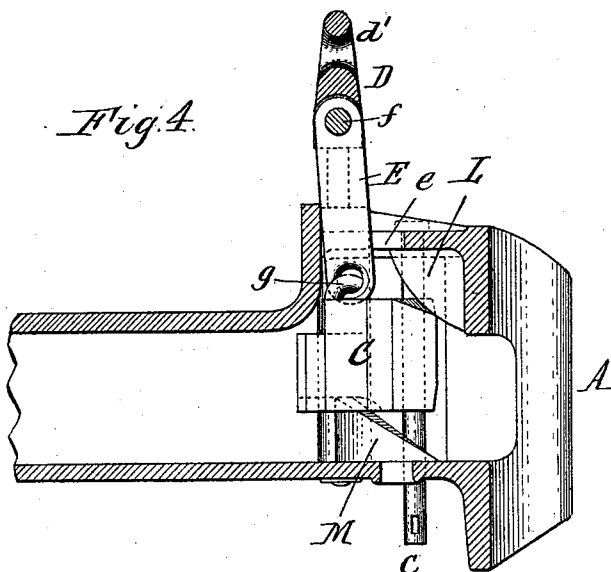
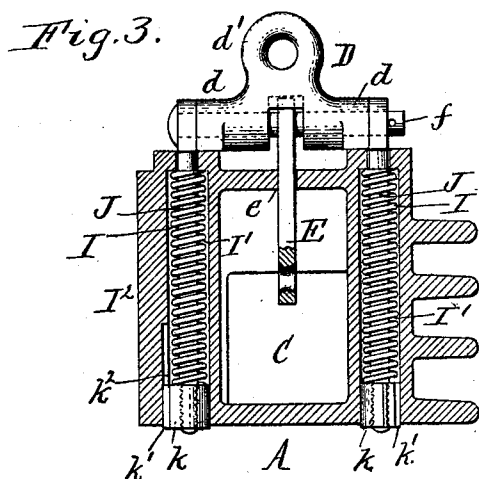
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2 Sheets—Sheet 2.

W. F. RICHARDS.
CAR COUPLING.

No. 583,631.

Patented June 1, 1897.



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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. 583,631, dated June 1, 1897.

Application filed February 27, 1897. Serial No. 625,322. (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 has more especial reference to that class of twin-jaw car-couplings having a horizontally-swinging knuckle or coupling-jaw, a horizontally-swinging lock engaging with the tail of the knuckle, and one or more springs for automatically moving the lock into engagement with the knuckle.

My invention has for its object to provide compact and effective spring mechanism for the lock which is applicable to locks operated from the top of the draw-head, as is generally the case in freight-car couplers.

In the accompanying drawings, Figure 1 is a longitudinal sectional elevation of a freight-car coupling embodying my invention, showing the knuckle locked. Fig. 2 is a horizontal section of the coupling with the parts in the same position. Fig. 3 is a transverse vertical section in line 3 3, Fig. 2. Fig. 4 is a longitudinal section in line 4 4, Fig. 2, looking in the direction of the arrow and showing the lock and its lifting-link in elevation.

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

A is the draw-head, which is chambered in the usual manner and constructed in accordance with the well-known standard lines.

B is the horizontally-swinging knuckle or coupling-jaw, and C the horizontally-swinging lock, engaging with the tail of the knuckle and mounted on a vertical pivot-pin *c*, on which it is free to rise and fall, as well as swing forwardly and backwardly, in a manner common to locks of this type.

D is a vertically-movable clevis or swivel arranged on the upper side of the draw-head and connected with the lock by an upright link E, which passes through a longitudinal slot *e*, formed in the upper side of the draw-head. The upper end of this link is pivoted to the clevis D by a transverse pin or bolt *f*, passing through the link and the horizontal eyes *d* of the clevis, while its lower end is connected to the upper side of the lock by a

staple *g* or other suitable attachment. To the upright eye *d'* of the clevis is attached the customary lifting or operating chain, 55 which is not shown in the drawings.

I I represent upright springs which yieldingly retain the lock C in its depressed or locked position, as shown in Figs. 1, 2, and 3, so as to prevent the same from being accidentally jarred out of engagement with the knuckle by the shocks received by the cars. These springs are arranged on opposite sides of the lifting-link and are inclosed in vertical pockets or sockets I', formed in bosses or enlargements I² on the side walls of the draw-head, as shown in Figs. 1, 2, and 3.

J are upright tension-rods passing through the springs I, respectively, and connected at their upper ends with the clevis D by the transverse pin or bolt *f*, one of said rods being retained upon said pin by the head thereof and the other by a pin or cotter, as shown in Fig. 3.

k represents followers which are arranged at the lower ends of the tension-rods J and between which and the closed upper ends of the pockets I' the springs are compressed, when the tension-rods are pulled upward by the clevis. The followers *k* preferably consist of cylindrical screw-nuts applied to the screw-threaded lower ends of the tension-rods and each having a spline or feather *k'*, which enters a corresponding feather-way *k''*, formed in the wall of the pocket I', as shown by dotted lines in Fig. 2 and by full lines in Fig. 3, whereby the follower is prevented from unscrewing.

L is an internal incline depending from the top of the draw-head and arranged to swing the lock rearwardly when the same is raised, so as to move it out of engagement with the lock, and M is a reverse incline located on the bottom of the draw-head and arranged to swing the lock forwardly, when the same descends by gravity and the pressure of the springs I.

When the lock is engaged with the tail of the knuckle, as shown in Figs. 1, 2, and 3, the tension-rods J and the operating-link E are drawn down to their lowermost position by the springs I, thus reliably holding the lock in position. Upon pulling the link upwardly by means of the clevis D and the usual operating-chain the lock is raised and swung rear-

wardly out of engagement with the knuckle by the upper incline L, releasing the knuckle, and by this vertical movement of the clevis the tension-rods J are also raised, thus com-
 5 pressing the springs I. Upon releasing or slackening the adjusting-chain the link E is drawn downward by the reaction of the springs, thereby forcing the lock down the
 10 lower incline M and swinging the same forwardly into position for engaging with the knuckle. When the knuckle is closed in this position of the lock, the lock is deflected backward against the resistance of the springs and the lower incline until the tail of the
 15 knuckle passes the free end of the lock, when the latter interlocks with the knuckle and is yieldingly held in place by the springs.

I claim as my invention—

1. The combination with the draw-head,
 20 the coupling jaw or knuckle and a lock, of an upright operating-link connected with the lock and extending through the top of the draw-head, and a pair of upright springs arranged in the draw-head on opposite sides of

the link and connected with the latter, sub- 25
 stantially as set forth.

2. The combination with the draw-head provided with upright pockets, and the coupling jaw or knuckle, of a lock capable of a
 a combined vertical and horizontal movement, 30
 inclines for moving said lock backward and forward, a link connected with the lock and extending through the top of the draw-head, a clevis or attachment connected with the
 upper end of the link, upright tension-rods 35
 arranged in the pockets of the draw-head, connected at their upper ends with said clevis or attachment and provided at their lower
 ends with followers and upright springs ap- 40
 plied to said tension-rods between said follow-
 ers and the closed upper ends of said pockets,
 substantially as set forth.

Witness my hand this 20th day of February,
 1897.

WILLARD F. RICHARDS.

Witnesses:

JNO. J. BONNER,
 KATHRYN ELMORE.