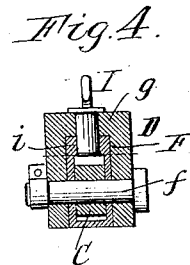
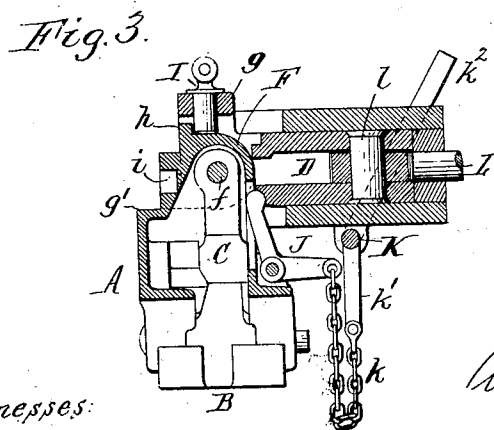
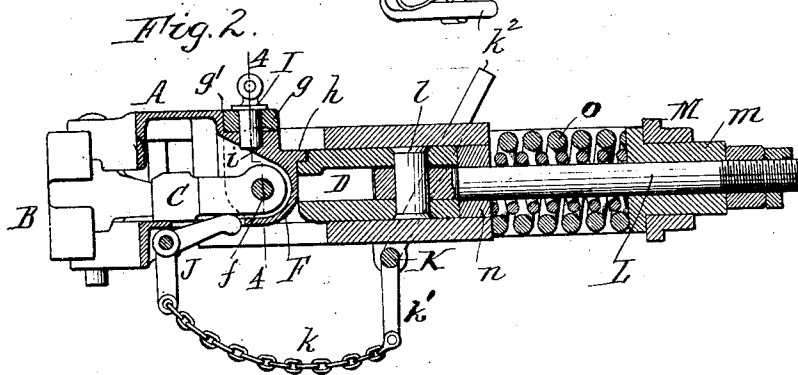
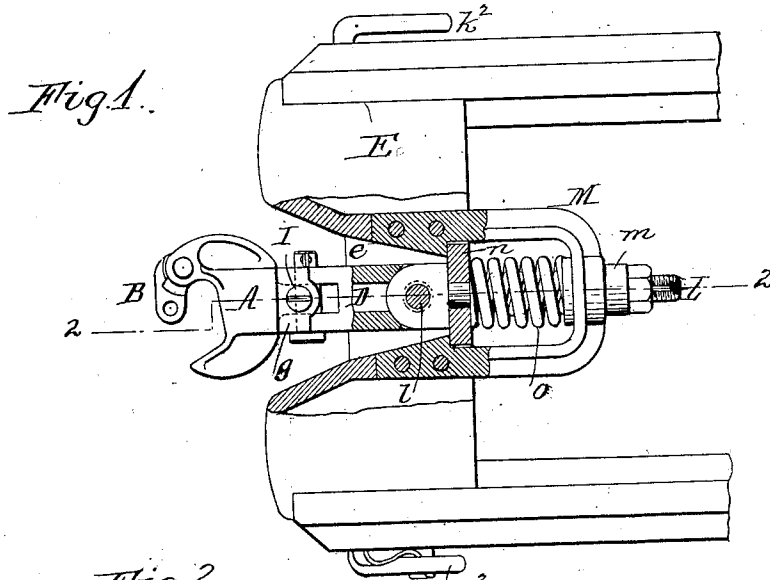


No. 836,404.

PATENTED NOV. 20, 1906.

W. F. RICHARDS.  
CAR COUPLING.

APPLICATION FILED APR. 6, 1903.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

WILLARD F. RICHARDS, OF BUFFALO, NEW YORK, ASSIGNOR TO GOULD  
COUPLER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF WEST  
VIRGINIA.

## CAR-COUPLING.

No. 836,404.

Specification of Letters Patent.

Patented Nov. 20, 1906.

Application filed April 6, 1903. Serial No. 151,281.

*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 new and useful Improvements in Car-Couplers, of which the following is a specification.

This invention relates more particularly to a coupler intended for cars employed for charging cupola-furnaces and similar purposes. In use these cars are raised and lowered on an elevator to and from an elevated track leading to the charging-opening of the furnace. As the couplers of the cars usually protrude some distance in front of the car-body, they are often broken or cause damage by striking the elevator-shafting in raising and lowering the elevator.

The object of this invention is to prevent injury to the coupler or other property by providing a coupler of simple and strong construction which can be swung or moved back toward the car when not in use, so that it will not protrude and strike the elevator-shafting or other objects in handling the car.

In the accompanying drawings, Figure 1 is a plan view, partly in section, of the end portion of a car-frame provided with a coupler embodying the invention. Fig. 2 is a longitudinal vertical section thereof in line 2 2, Fig. 1. Fig. 3 is a fragmentary longitudinal section showing the draw-head hanging vertically. Fig. 4 is a transverse section through the draw-head and shank in line 4 4, Fig. 2.

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

The coupler is preferably of the well-known "Gould" type comprising a draw-head A, pivoted horizontally-swinging knuckle B, and a releasable lock C, which is arranged in the draw-head and is adapted to cooperate with the tail of the knuckle to hold the latter in closed or coupling position. These parts may be constructed in accordance with any of the known forms of couplers.

The draw-head is pivoted at its rear end to the front end of the coupler-shank D, which is arranged to slide longitudinally and swing laterally in an opening *e* in the supporting sill or part E of the car. In the charging-

cars referred to this sill constitutes a platform on which the attendant or workman handling the car stands. In the construction shown the front end of the shank has a longitudinal slot or cavity and the draw-head is provided with a reduced rear end F, which is located in said slot and pivoted to the separated front end portions of the shank by a horizontal pivot-pin *f*, on which the draw-head is adapted to swing vertically. The separated front end portions of the shank are connected by a bridge-piece *g*, and the draw-head has a vertical shoulder *g'*, which abuts against the front face of this bridge-piece *g*, while the rear face of the reduced rear end of the draw-head abuts against the front end of the body of the shank when the draw-head is in coupling position. These abutting faces on the head and shank relieve the pivot-pin of strain in buffing or coupling the cars. The reduced rear end of the draw-head is also provided with a lug *h*, which is adapted to strike the top of the body portion of the shank to limit the upward swing of the draw-head or stop the latter when in its correct horizontal or coupling position.

The draw-head is held up in coupling position and is prevented from swinging on its pivots when hanging vertically by a latch device, preferably in the form of a bolt I, which passes through a hole in the bridge-piece and engages in a socket *i* in the top face of the reduced rear end of the draw-head when it is horizontal and engages behind the lug *h* on the draw-head when the latter hangs vertically, as shown in Fig. 3. When the bolt is lifted, the draw-head can be swung on its pivot, but when the bolt is released and engages the socket or lug *h* the draw-head is held from swinging.

The knuckle-lock C can be operated to release the knuckle by any suitable means which will not interfere with the vertical swinging movement of the draw-head. It will be observed that the lock C is pivoted on the pivot-pin connecting the draw-head to the shank. A bent lock-lifting lever J is shown pivoted on the under side of the draw-head and having a depending operating-arm and a rearwardly-projecting arm extending

through a slot in the bottom of the draw-head beneath the knuckle-lock. The depending arm of the lever is preferably connected by a chain or the like  $k$  to an arm  $k'$  on a transverse rock-shaft  $K$ , journaled in bearings on the car sill or frame and having operating-arms  $k^2$  at its opposite ends. The chain  $k$  allows the draw-head to swing freely from the vertical to the horizontal position, or vice versa, without disturbing the lock, and as it is beneath the coupler and car-sill it is out of the way of a workman or person on the end sill.

The rear end of the coupler-shank is connected by a vertical pivot-pin  $l$  to the front end of a coupler-stem  $L$ , the rear of which passes through an opening in a yoke or bracket  $M$ , secured to the car sill or frame  $E$ . The rear end of the stem carries the usual sliding thimble  $m$ , between which and a front follower  $n$ , arranged to slide on the stem, are the ordinary draft and buffing springs  $o$ , which act in a well-known manner to relieve the draft and buffing shocks. The rear end face of the coupler-shank is broad and square and bears flat against the front face of the front follower when the coupler is in a central position. When the coupler is swung laterally to either side on the vertical pin connecting it with the stem, the rear end face of the shank will be tilted or inclined and will press the front follower rearwardly, straining the draft and buffing springs, which will return the coupler to its central or straight position. The springs thus act to right or always hold the coupler yieldingly in a central position, as well as to cushion the draft and buffing shocks.

While the invention is described as applied to a furnace-charging car, it is not limited to such use, but is applicable wherever a vertically-swinging coupler is required.

I claim as my invention—

1. The combination of a coupler draw-head pivoted to swing vertically, and a single latch which engages parts on said draw-head to hold the latter stationary in either a horizontal or vertical position, substantially as set forth.

2. The combination of a draw-head, a shank to which the draw-head is pivoted to swing vertically and which has a part overhanging a portion of the draw-head, and a latch which is mounted on said overhanging portion of the shank and engages a part on the draw-head to hold the latter from swinging, substantially as set forth.

3. The combination of a coupler-shank, a draw-head pivoted thereto to swing vertically, and a latch carried by said shank and adapted to engage parts on said draw-head to hold the latter in either a horizontal or a vertical position, substantially as set forth.

4. The combination of a coupler-shank

pivoted to swing laterally, a draw-head pivoted to said shank to swing vertically, and a latch connecting the draw-head and shank for holding the draw-head from swinging vertically, substantially as set forth.

5. The combination of a coupler-shank, a draw-head pivoted thereto to swing vertically, a pivoted knuckle, a lock for holding said knuckle, an operating device for said lock mounted on the draw-head, and means for actuating said device comprising a flexible part, whereby the operating device will not be disturbed when the draw-head swings vertically, substantially as set forth.

6. The combination of a coupler draw-head pivoted to swing vertically, means for holding the draw-head from swinging, a pivoted knuckle, and a swinging lock for said knuckle which is connected to the draw-head by the pivot for the latter, substantially as set forth.

7. The combination of a coupler having a shank provided with a straight rear end face, a stem pivoted to said shank, a follower slidable on said stem and bearing against said rear end face of the shank, and a buffing-spring which holds said follower yieldingly against the rear end face of said shank, whereby the coupler is held in a central position, substantially as set forth.

8. The combination with a Master Car-Builders' coupler having an operative locking-knuckle, of a coupler-bar pivoted to swing vertically, and means upon and movable with the coupler-bar for operating said knuckle-lock, substantially as set forth.

9. The combination with a car-frame, of a coupler-bar pivoted to swing vertically and carrying a coupling-head with a lock for the knuckle thereof, and a lever for actuating said lock carried by the movable coupler-bar, substantially as set forth.

10. The combination with a coupler-bar pivoted to swing vertically and having a head and a movable knuckle with a lock for said knuckle, and operating mechanism for manipulating the lock from outside the train, partially carried by said movable coupler-bar, substantially as set forth.

11. The combination with a vertically-swinging or folding automatic coupler-head having a locking-knuckle and lock therefor, of an operating-lever carried by the coupler for manipulating the lock, and means for operating the lever from outside the car-line, substantially as set forth.

12. The combination with a bar pivoted to swing vertically and having a Master Car-Builders' automatic coupling-knuckle thereon, of a locking device for said knuckle, a lever on and movable with the pivoted bar for operating the locking device, and a lever mounted upon the car-body for operating the first-named lever from outside, substantially as set forth.

13. A coupler-bar extension pivoted to  
swing vertically and carrying a coupler-head  
with automatic locking means and carrying  
also upon the pivoted coupler-bar a lever,  
5 and means for operating the lever to manipu-  
late the locking device from outside the car-  
line, substantially as set forth.

Witness my hand this 25th day of March,  
1903.

WILLARD F. RICHARDS.

Witnesses:

JNO. J. BONNER,  
C. M. BENTLEY.