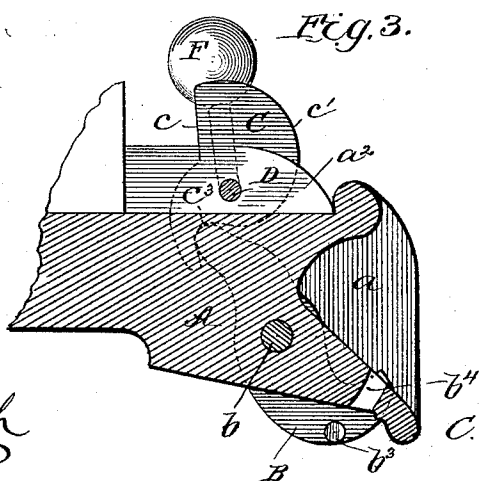
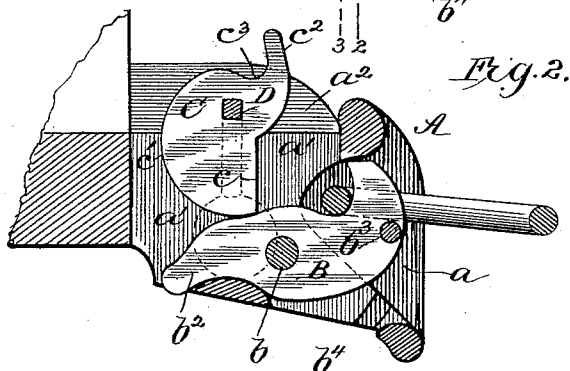
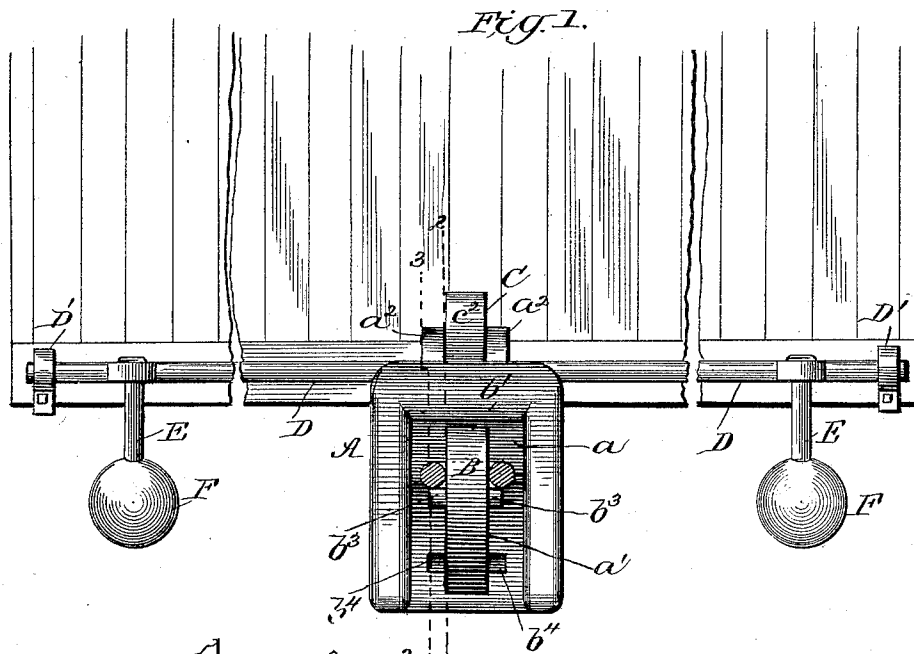


(No Model.)

C. J. KNIGHTON, Jr.
CAR COUPLING.

No. 465,711.

Patented Dec. 22, 1891.



WITNESSES:

Fred G. Dietrich
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UNITED STATES PATENT OFFICE.

CHARLES J. KNIGHTON, JR., OF BIRMINGHAM, ALABAMA, ASSIGNOR OF ONE-HALF TO CHARLES J. KNIGHTON, SR., OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 465,711, dated December 22, 1891.

Application filed June 23, 1891. Serial No. 397,247. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. KNIGHTON, Jr., of Birmingham, in the county of Jefferson and State of Alabama, have invented a new and useful Improvement in Car-Couplings, of which the following is a specification.

This invention relates, generally, to car-couplers, and more particularly to that class thereof known as "hook-and-link" couplers, the object of my invention being to provide an automatic coupler of this description that shall consist of a few simply-constructed and assembled parts which can be coupled with all varieties of link-couplers and uncoupled from the sides of the car.

With these objects in view my invention consists of a coupling-hook pivoted within a draw-head and a rocking eccentric adapted to bear upon the inner end of said hook to raise the outer or forward end of the same to effect a coupling.

My invention consists, further, in certain details of construction and novel combination of parts, as will be more fully described hereinafter, and designated in the claims.

In the drawings forming a part of this specification, Figure 1 is a front elevation of my improved coupling. Fig. 2 is a sectional view on the plane of line 2 2, Fig. 1; and Fig. 3 is a similar view of the plane of line 3 3, Fig. 1.

In carrying out my invention I employ a draw-head A, which is somewhat enlarged at its forward end and provided at that end with the usual link-cavity *a*, the lower side of which slopes downward and outward, as shown. At the rear of the link-cavity the draw-head is provided with a longitudinal slot *a'*, said slot extending entirely through the lower side of the link-cavity and partly through the upper side of the same, and upon the upper face of the draw-head, upon opposite sides of the slot *a'*, are produced parallel vertical lugs or brackets *a*². A coupling-hook B is pivoted in the slot *a'* upon a shaft *b*, passed transversely through the draw-head at a point to the rear and below the inner lower corner of the link-cavity. The forward end of the coupling-hook is formed with an upwardly-projecting hook proper *b'*, and

the rear end is somewhat reduced and curved in the opposite direction, as shown at *b*².

A guiding-pin *b*³ is passed transversely through the forward end of the coupling-hook and works in the notches or recesses *b*⁴, produced in the sides of the slot *a'*. The forward end of the hook being heavier, it will normally rest in a lowered position, as clearly shown.

An eccentric-block C is arranged between the vertical lugs or brackets and rigidly mounted upon a transverse rock-shaft D, which is journaled in the said lugs or brackets, and brackets D', arranged near the sides of the car, the rock-shaft extending entirely across the car, as shown. An arm E is attached to the rock-shaft D, near each end of the same, and upon the free ends of said arms are arranged weights F. The block C is formed with a straight side *c* and a curved side *c'* and a projection *c*², intermediate the said sides, the under or forward face of which is concaved, as at *c*³. The block is so arranged upon the rock-shaft that when the weight descends and the shaft is rocked the block will be moved downward and forward, and the curved surface bearing upon the inner end of the hook will depress said inner end and raise the lower or forward end, and if a link has been previously inserted in the link-chamber the hook proper will be passed through the link and a coupling effected.

In order to automatically operate the weight and rocking eccentric, the upper end of the hook is curved, as shown, and adapted to engage the concaved face *c*³ of the projection *c*² when the said block is raised and the hook lowered. A link entering the link-cavity will contact with the hook above its pivotal point, forcing the rear end in, which bears upon the projection, partially rocking the block and transverse shaft. The weights are thus moved from their rearmost position and drop by gravity, causing the eccentric-block to rock upon the curved end of the hook, whereby the forward end is elevated and the coupling effected. To uncouple, the weighted arm is lifted and thrown back, raising the eccentric-block, and the forward end of coupling-hook will drop until the inner end engages the

concaved side of the projection upon the eccentric-block and is there held ready to be coupled again. The upper surface of the inner end is made convex, whereby the engagement of the curved face of the eccentric-block is rendered positive and the forward end is permitted to drop lower.

Having thus described my invention, what I claim as new is—

10 1. In a car-coupler, the combination, with a draw-head, of a coupling-hook pivoted therein and having a curved rear end, the cam-shaped block adapted to bear upon said curved end, the rock-shaft to which the cam-shaped block is attached, the arms carried by said shaft, and the weights attached to the ends of the same, substantially as shown and described.

2. In a car-coupler, the combination, with a draw-head having a longitudinal slot produced therein, of a coupling-hook pivoted in the said slot, the parallel vertical lugs produced upon the upper face of the draw-head, the eccentric-block pivoted between the same and working in the longitudinal slot, the rock-shaft, and weighted arm, all arranged substantially as shown and described.

3. In a car-coupler, the combination, with a longitudinally-slotted draw-head, of a coupling-hook pivoted in the said slot, the forward end being heavier and the rear end having a

convex upper surface, the eccentric-block having a convexed surface adapted to engage the inner end of coupling-hook, the rock-shaft, and weighted arm, all arranged substantially as shown and described.

4. In a car-coupler, the combination, with a longitudinally-slotted draw-head, of a coupling-hook pivoted therein, a guiding-pin attached to the forward end of the said hook, said pin working in recesses produced in the sides of the slot, the parallel vertical lugs or brackets, the eccentric-block, the rock-shaft, and weighted arm, all arranged substantially as shown and described.

5. The combination, with a draw-head, of a coupling-hook pivoted therein, a rocking eccentric-block having a projection adapted to engage the inner end of the coupling-hook, and an eccentric surface adapted to rock upon said end, substantially as shown and described.

6. The combination, with a draw-head, of a coupling-hook, the rocking eccentric-block having a projection, the rock-shaft, and weighted arms, all arranged substantially as shown and described.

CHARLES J. KNIGHTON, JR.

Witnesses:

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