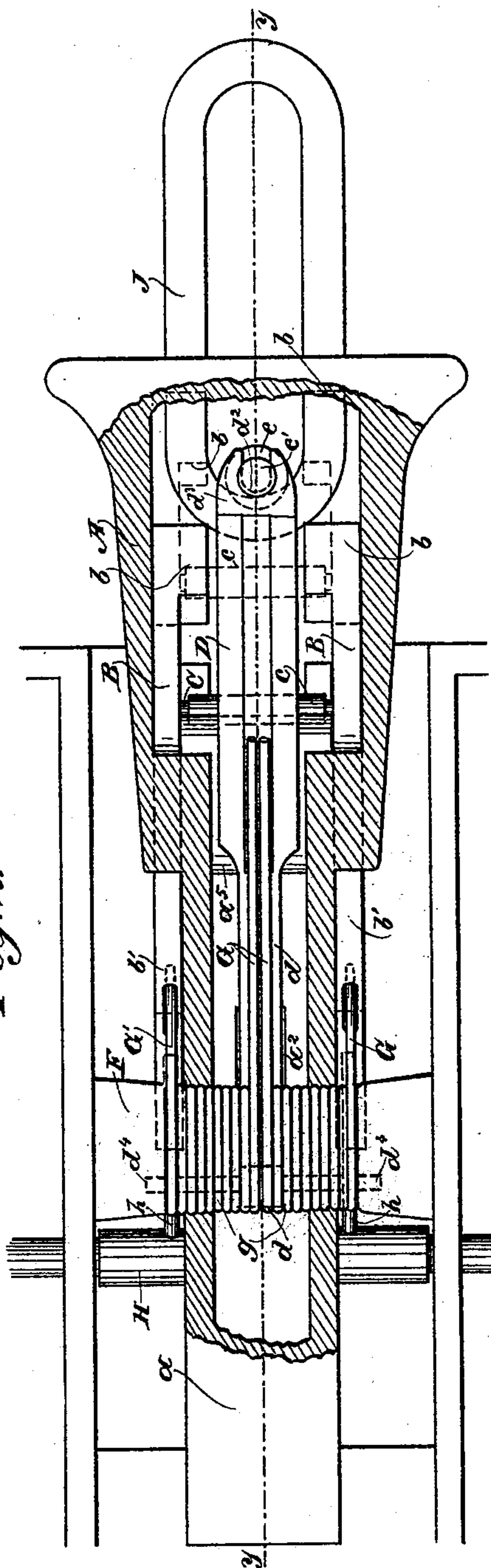
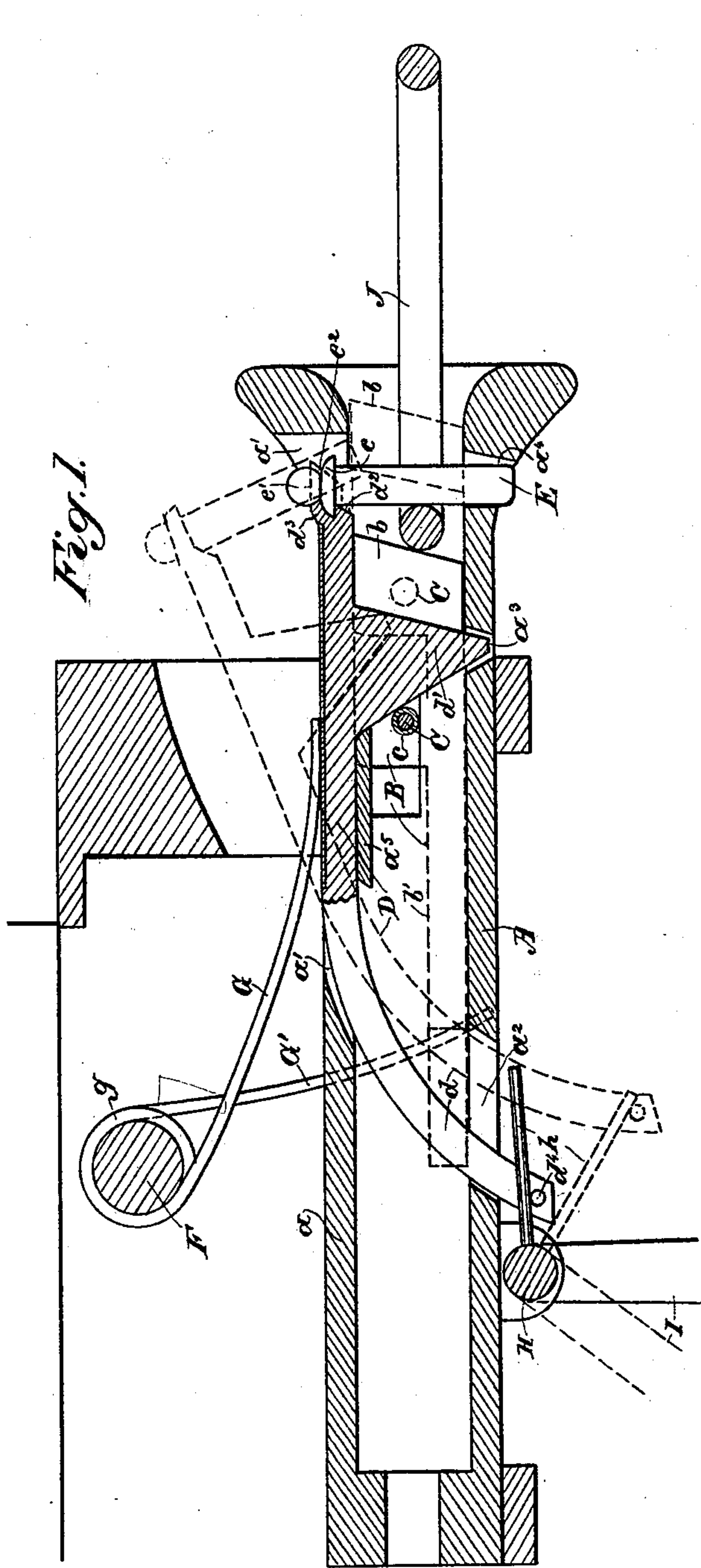


(No Model.)

D. J. STEVENSON.  
CAR COUPLING.

No. 516,457.

Patented Mar. 13, 1894.



Witnesses,  
J. H. House  
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Inventor  
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attys



# UNITED STATES PATENT OFFICE.

DAVID J. STEVENSON, OF BAKERSFIELD, CALIFORNIA, ASSIGNOR, BY DIRECT  
AND MESNE ASSIGNMENTS, TO JOHN M. KEITH, OF SAME PLACE.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 516,457, dated March 13, 1894.

Application filed April 20, 1893. Renewed January 31, 1894. Serial No. 498,665. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID J. STEVENSON, a citizen of the United States, residing at Bakersfield, Kern county, State of California, have invented an Improvement in Car-Couplings; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of car couplings, in which a link and pin are automatically coupled, through the agency of spring controlled slides within the draw-head, and actuated by the entering link to lift a spring-controlled lever arm which carries the pin, said class being exemplified by the device shown in those certain Letters Patent granted to me July 7, 1885, No. 321,918.

My invention consists in the novel constructions, arrangements and combinations herein-after fully described and specifically claimed.

The object of my invention is to provide a car coupling using the ordinary link and pin, adapted to be automatically coupled, and which is of a simple and efficient construction, enabling the parts to be readily uncoupled and separated and renewed when necessary.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a vertical longitudinal section on the line  $y-y$  of Fig. 2, the dotted lines showing the act of coupling. Fig. 2 is a plan of the draw-head, the upper wall being broken away.

A is the draw-head which is secured in any usual manner. Within the draw-head chamber, are the slides B, one on each side thereof, said slides having the contact faces or heads  $b$ , and shanks  $b'$  which extend rearwardly and project from each side of the chamber, lying parallel to and outside of the draw-head shank  $a$ . Between these slides extends a cross-bar C which may be fitted with an anti-friction roller  $c$ .

D is the pin-carrying lever arm. Its body lies in a groove or slot  $a'$  in the top of the draw-head and is fulcrumed on a cross piece  $a^5$  therein. Its rear portion  $d$  is curved downwardly and extends through a hole  $a^2$  in the bottom of the draw-head shank.

On the under side of the lever arm D is a cam lug  $d'$  which normally lies directly be-

hind and in contact with the cross-bar C of the slides B. The lower end of this cam lug is adapted to fit in a socket  $a^3$  in the floor of the draw-head chamber, whereby said lug can be made of sufficient length to provide for as long a coupling pin as may be required and yet have the lever arm practically flush with the upper surface of the draw-head.

The forward end of the lever arm D carries the coupling pin E which may be of any suitable character, either flat, or as here shown, round. The connection between the pin and the lever arm should be an easily detachable one, to enable the pin to be readily removed when necessary. I have here shown a novel form of connection, consisting of a semicircular recess  $d^2$  in the end of the arm surmounted by a grooved and notched flange cap  $d^3$ . The upper end of the pin E has a shoulder  $e$  and a head  $e'$  joined to the shoulder by a neck  $e^2$ . The body of the pin fits in recess  $d^2$ , the shoulder  $e$  fits in the groove of the cap  $d^3$ , the neck  $e^2$  in the notch of the cap, and the head  $e'$  projects above. The lower end of the coupling pin is adapted to fit down into a hole  $a^4$  in the floor of the draw-head chamber.

Seated in the framing above the draw-head is a cross-shaft F. Upon this are seated the coils of the spring which controls the several parts. This spring is a single one, its bight, (which may or may not be severed) forming the bearing arm G, its body forming the coils  $g$  and its ends forming the arms  $G'$ . The arm G extends down to and bears freely upon the upper exposed surface of the lever arm D, holding said arm normally down, and the surface on which it bears may be, as here shown, a depressed smooth one, providing for the free movement of the lever arm without interference from the spring which, notwithstanding, constantly controls it. The arms  $G'$  of the spring extend down to and pass freely through inclined holes in the rear projecting shank ends of slides B, and tend to hold said slides to their forward position and by their connection to limit their forward projection.

Under the framing of the draw-head is a rock-shaft H, which at its middle carries two parallel arms  $h$  which bear above and upon



cross pins  $d^4$  in the downwardly projecting end  $d$  of the lever arm D.

A lever or handle I is secured to one end of the rock-shaft H, whereby it can be operated from the side of the car.

J is the coupling-link.

The operation is as follows: The link entering the draw-head comes in contact with and forces backwardly the slides B. The cross-bar C of the slides now comes in contact with the cam lug  $d'$  of lever arm D, and bearing backwardly against its inclined face, lifts the lever arm D, which movement thus raises the coupling-pin E before the entering link. The pin thus clears the advancing link, and when the latter has entered sufficiently far, the cross-bar C slips by the cam lug  $d'$ , and thereupon the lever arm D, under the influence of spring arm G, is forced down, and the pin enters and engages the link. The slides B, under the power of spring arms G' are now forced forward, but not to their original position, for the cross-bar C is now behind the cam lug  $d'$ , and this holds the slides well back, thus providing for all necessary free play of the link while coupled.

To uncouple the device from the side of the car, the hand lever I is operated whereby, through the rock-shaft H and the arms  $h$  bearing down on cross pins  $d^4$ , the rear end of lever arm D is forced down and its forward end lifted whereby the pin is elevated from its engagement with the link. The slides B being now free, spring forward to their normal position, and in so doing both eject the link and allow the lever arm D and pin to return ready for the next coupling:

The controlling spring, in addition to being simple, economical and effective, is so arranged that it will permit the entire draw-head to be easily removed, either by accident or design, and the connection of the rock-shaft H with the lever arm D is of a character permitting a similar result.

The whole assemblage and connection of parts result in general simplicity and effectiveness, not likely to get out of order and capable of being readily replaced and renewed when necessary. The socket  $a^3$  in which the cam lug  $d'$  fits is carried through the floor of the draw-head chamber, thus providing for the discharge of extraneous or foreign matters, and avoiding interference with the proper seating of the lever arm with its lug and pin.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a car-coupling, the combination of the draw-head, the spring-controlled slides therein for receiving the contact of the entering coupling link, the cross-bar between said slides, and the swinging spring-controlled lever arm carrying the coupling-pin and having the cam lug in the path of movement of the cross-bar of the slides whereby said lever

arm and slides are reciprocally affected, substantially as herein described.

2. In a car coupling, the combination of the draw-head, the slides at the sides thereof and normally projected forward to receive the contact of the entering coupling link, the lever arm between the slides carrying a coupling pin at its forward end, a spring connection one end of which is secured to the slides and the other end engages the lever arm whereby the movement of the slides is transmitted to and actuates said arm, and a connection, operated from without, with the lever arm to enable it to be moved to lift its pin and uncouple the link, substantially as herein described.

3. In a car-coupling, the combination of the draw-head, the spring-controlled connected slides at the sides thereof for receiving the contact of the entering coupling-link, the swinging spring-controlled lever arm carrying the coupling-pin, and having a cam lug engaged by the slides during their movement a suitable connection between the slides and the lever arm whereby they are reciprocally affected as described, and a connection operated from without with the lever arm whereby it can be moved to lift its pin and uncouple the link, consisting of a rock-shaft with a lever handle and connected with the rear end of the lever arm, substantially as herein described.

4. In a car-coupling, the combination of the draw-head, the spring-controlled slides therein for receiving the contact of the entering coupling-link, the swinging spring-controlled lever arm carrying the coupling-pin, a suitable connection between the slides and the lever arm whereby they are reciprocally affected as described, and a connection operated from without with the lever arm whereby it can be moved to lift its pin and uncouple the link, consisting of a rock-shaft with a lever handle, the arms of said rock-shaft and the cross pins in the rear end of the lever arm, substantially as herein described.

5. In a car-coupling, the combination of the draw-head, the spring controlled slides therein for receiving the contact of the entering coupling link, the cross-bar of said slides, the swinging spring-controlled lever arm carrying the coupling-pin, and having the cam lug in the path of movement of the cross-bar of the slides, whereby said lever arm and slides are reciprocally affected, and the means for uncoupling the link and pin from without consisting of the rock shaft with its handle, the arms of said shaft and the cross pins in the rear end of the lever arm, substantially as herein described.

6. In a car-coupling, the combination of the draw-head, slides therein having their shanks projecting through the back of the draw-head chamber, the swinging lever arm, a connection between said lever arm and slides whereby they are reciprocally affected, and the



spring having the arm G bearing on and controlling the lever arm and the arms G' connected with the projecting ends of the slides, substantially as herein described.

5 7. In a car-coupling, the combination of the draw-head, the slides therein having their shanks projecting through the back of the draw-head chamber, the cross-bar of said slides the swinging lever arm having the cam  
10 lug in the path of movement of the cross-bar whereby the lever arm and slides are reciprocally affected, and the spring having the arm G bearing on top of and controlling the lever arm and the arms G' connected with the  
15 projecting ends of the slides, substantially as herein described.

8. In a car-coupling, the combination of the draw-head the slides therein and the swinging lever connected with the slides and af-  
20 fected thereby, as described, and the single spring with its coils and arms G and G', said arms controlling the lever arm and slides respectively, substantially as herein described.

9. In a car-coupling, the combination of the

draw-head having the recess in the floor of its 25 chamber, the spring-controlled slides in said chamber for receiving the contact of the entering coupling link, the cross-bar of the slides, and the swinging spring-controlled le-  
30 ver arm carrying the coupling pin, and having the cam lug adapted to enter the recess in the draw-head chamber, said lug lying in the path of the cross-bar of the slides, substantially as herein described.

10. In a car-coupling, the lever arm having 35 the recessed end and the grooved and notched flange cap over said end, in combination with a coupling pin having a shoulder with a head above it whereby it is adapted to be remov-  
40 ably connected with said lever arm, substantially as herein described.

In witness whereof I have hereunto set my hand.

DAVID J. STEVENSON.

Witnesses:

S. H. NOURSE,

J. A. BAYLESS.