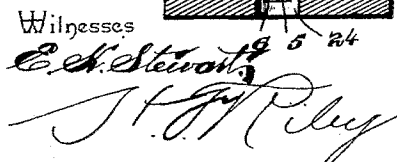


C. LEE.
CAR COUPLING.

Patented Nov. 24, 1896.



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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 571,771, dated November 24, 1896.

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To all whom it may concern:

Be it known that I, CHARLES LEE, a subject of the Queen of Great Britain, residing at San Antonio, in the county of Bexar and State of Texas, have invented a new and useful Car-Coupling, of which the following is a specification.

The invention relates to improvements in car-couplings.

The object of the present invention is to improve the construction of pin-and-link car-couplings, and to provide a simple and inexpensive one which will be capable of coupling automatically and which may be readily uncoupled without going between cars.

A further object of the invention is to provide a car-coupling which will be adapted to have its coupling-pin elevated and maintained in that position to enable a "flying kick" to be imparted to a car, and of automatically setting the parts in position for automatic coupling after such car has been cut off or separated.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a perspective view of a car-coupling constructed in accordance with this invention. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3 is a horizontal sectional view. Fig. 4 is a transverse sectional view. Fig. 5 is a detail perspective view of the spring-actuated block.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a draw-head mounted on a car and provided with a shank or stem of a size and shape similar to those of the standard car-couplings in common use, and adapted to be readily mounted on the ordinary car having the usual pin-and-link car-couplings without requiring any alteration in the construction of the car or its draft connections. Within the draw-head is slidably mounted a spring-actuated block 3, provided at its top and bottom with centrally-arranged rectangular projections 4 and 5, located at the front of the block and fitting in corresponding longitudinal grooves 6 in the top and bottom of the

draw-head. These grooves 6 are open at their front terminals to permit the sliding block to be removed from and inserted in the draw-head, and the block is also guided in its forward and rearward movements by a transverse pin 7, removably arranged in a perforation 8 of the block and projecting laterally beyond the same and fitting in horizontal grooves 9 of the sides of the draw-head. At the front terminal of the horizontal grooves 9 of the sides of the draw-head are located perforations or openings 10, arranged slightly above the plane of the grooves 9 and adapted to permit the pin 7 to be withdrawn when the spring-actuated block is slightly elevated in the draw-head to cause its horizontal perforation to register with the openings or perforations of the sides of the draw-head. On the inner faces of the sides of the draw-head are arranged horizontally-disposed rectangular ribs 11, contracting the width of the longitudinal opening or throat of the draw-head, to enable a cylindrical spiral spring 12 to fit snugly in position in rear of the sliding block. The sliding block is provided at opposite sides with grooves 13, corresponding to the horizontal ribs 11 of the draw-head, and the spiral spring is strengthened by an inner spiral spring 14 and is interposed between the rear end of the sliding block and a removable stationary plate 15, provided at opposite sides with notches 16, receiving the ribs of the draw-head.

The spring-actuated block is provided at its front with a bottom transversely-disposed beveled projection or flange 17, adapted to form a continuation of the lower beveled portion of the draw-head, whereby a link 18 may be guided and caused to contact with the block. The top projection 4 of the block is adapted for supporting a coupling-pin 19 in an elevated position preparatory to automatic coupling, whereby when the sliding block is engaged by a link entering the draw-head the projection 4 will be carried rearward from under the coupling-pin, and the support being withdrawn the coupling-pin will fall into engagement with the link. The coupling-pin is arranged in a coupling-pin perforation, the upper section or portion 20 of which is enlarged, and is provided with a round front portion and a rectangular rear portion to

adapt the coupling-pin perforation to receive the various forms of standard pins employed in car-couplings. A round, square, or oblong coupling-pin may be employed, and the coupling-pin perforation is provided at its top with an inclined seat 21, and the lower end of the coupling-pin is recessed at its rear side or edge to provide a corresponding inclined shoulder 22, conforming to the configuration of the seat 21 and adapted to interlock partially therewith to prevent accidental disengagement. The coupling-pin is adapted to engage the seat of the draw-head automatically when it is elevated, and does not require a train-hand to go between cars to set it. The coupling-pin is designed to be held in an elevated position on the seat 21, to effect what is known as a "flying kick," and after the link has been withdrawn from the draw-head the sliding block is moved outward by the springs, and its upper shoulder or rectangular projection 4 engages the depending lower end of the coupling-pin and swings the same forward, carrying it from its seat and causing it to drop upon and be supported by the rectangular top projection 4 of the sliding block, whereby the coupling-pin is maintained in position for automatic coupling. A link now entering the draw-head will come in contact with the sliding block and will move the same inward from beneath the coupling-pin, and the latter will fall and engage and couple the link.

The draw-head is provided at its top with an upward-extending boss 23, surrounding the coupling-pin perforation and increasing the bearing of the coupling-pin, whereby the latter is held with greater steadiness and security when in an elevated position, as illustrated in Fig. 1 of the accompanying drawings. The bottom portion 24 of the coupling-pin perforation is slightly beveled or enlarged at the upper face of the bottom of the draw-head.

The upward movement of the coupling-pin is limited to prevent it from leaving the draw-head when uncoupling by means of a chain 25, having its upper end secured to the top of the coupling-pin and its lower end attached to the draw-head in a recess thereof. The chain 25 may be readily disconnected from the coupling-pin when it is desired to remove the latter from the draw-head.

The link 18 may be of the standard form employed on railroads, but it is preferably provided with flattened ends 26, having grooves 27. The flattened ends of the link engage the flat front face of the sliding block, which will hold the link in proper position for guiding it into the mouth of a draw-head, and if the link should be pushed aside the springs and the block will return it in proper position if flattened ends are used, and the grooves increase the durability of the link and preserve the flattened ends.

The coupling-pin is raised for uncoupling by means of a transverse rock-shaft 28, jour-

naled on the car 2, and a link 29, provided at its inner end with a transverse head 30 and at its outer end with a hook 31. The head 30 projects laterally from the inner end of the link and forms journals which are arranged in suitable bearings. The hook is connected with the coupling-pin, and the rock-shaft 28, which is provided at its ends with handles 32, has a central curved bend or arm 33, located beneath the link 29 and adapted to swing the same upward. After the coupling-pin has been elevated the rock-shaft is released and swung downward against the car.

It will be seen that the car-coupling is simple, strong, and durable, that it is positive and reliable in operation and is capable of receiving the standard pins and links, and that its stem or shank, by being of the standard form and construction, is adapted to be placed on the ordinary construction of cars without necessitating any change therein.

Changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention, such as varying the shape of the stem of the draw-head to adapt it to various forms of draft connections, of fluting it to diminish its weight, and the like.

What I claim is—

1. In a car-coupling, the combination with a car, a coupling-pin provided a short distance from its lower end with a shoulder, and means for raising the coupling-pin without going between cars, of a draw-head having a coupling-pin perforation and provided at the rear of the upper portion thereof with a shoulder located above the upper wall of the link opening or cavity, forming a seat and arranged to be engaged automatically by the shoulder of the coupling-pin when the latter is raised, said coupling-pin projecting below the top wall of the draw-head when it is supported on said seat, and a spring-actuated block arranged to engage the depending portion of the coupling-pin, substantially as described.

2. In a car-coupling the combination of a draw-head having a coupling-pin perforation, and provided at the rear thereof, at a point above the upper wall of the cavity of the draw-head, with a downwardly and rearwardly inclined seat, a coupling-pin provided at its rear edge with an inclined shoulder arranged to interlock automatically with the inclined seat, said shoulder being located a sufficient distance from the lower end of the coupling-pin to cause the latter to project below the top wall of the draw-head, and a spring-actuated block mounted within the draw-head and adapted to engage the depending end of the coupling-pin, substantially as described.

3. In a car-coupling, the combination of a draw-head having a coupling-pin perforation, provided at its top with a seat and having a

rounded front portion and a rectangular rear portion, a coupling-pin having a shoulder to engage the seat, and a spring-actuated block, substantially as described.

5 4. The combination of a draw-head provided at its top and bottom with longitudinal grooves and having horizontal grooves on the inner faces of its sides and provided at the front terminals of the latter grooves with perforations or openings located slightly above the horizontal plane of those grooves, a spring-actuated sliding block arranged in the draw-head and provided with upper and lower projections fitting in the longitudinal grooves, said block being provided with a transverse perforation, and a pin arranged in the perforation of the block and projecting laterally therefrom and fitting in the horizontal grooves, said pin being adapted to be withdrawn through the perforations or openings of the draw-head, substantially as described.

10 5. In a car-coupling, the combination of a draw-head provided at its top and bottom with longitudinal grooves and having at its sides horizontal grooves and longitudinal ribs, a spring-actuated block provided at its sides with grooves to receive the ribs and having a transverse perforation and provided at its top and bottom with projections fitting in the longitudinal grooves, and a removable transverse pin arranged in the perforation of the block and fitting in the horizontal grooves, substantially as described.

6. In a car-coupling, the combination of a draw-head provided at its top and sides with grooves and having longitudinal ribs arranged on the inner faces of its sides, a sliding block provided at its sides with grooves to fit the said ribs and having a transverse perforation and provided with upper and lower projections to fit the longitudinal grooves at the top and bottom of the draw-head, a transverse pin arranged in said perforations and fitting in the grooves of the sides of the draw-head, a stationary plate removably arranged in the draw-head and provided with notches to receive the ribs thereof, and a spring interposed between the plate and the block, substantially as described.

7. In a car-coupling, the combination of a draw-head provided at its sides with longitudinal grooves and having perforations communicating with the same, a spring-actuated block provided with a transverse perforation, and a removable transverse pin adapted to be passed through the perforations of the draw-head and arranged in the perforation of the block and having its terminals fitting in the said grooves, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES LEE.

Witnesses:

F. J. SPRAGUE,
BEN S. FISK.