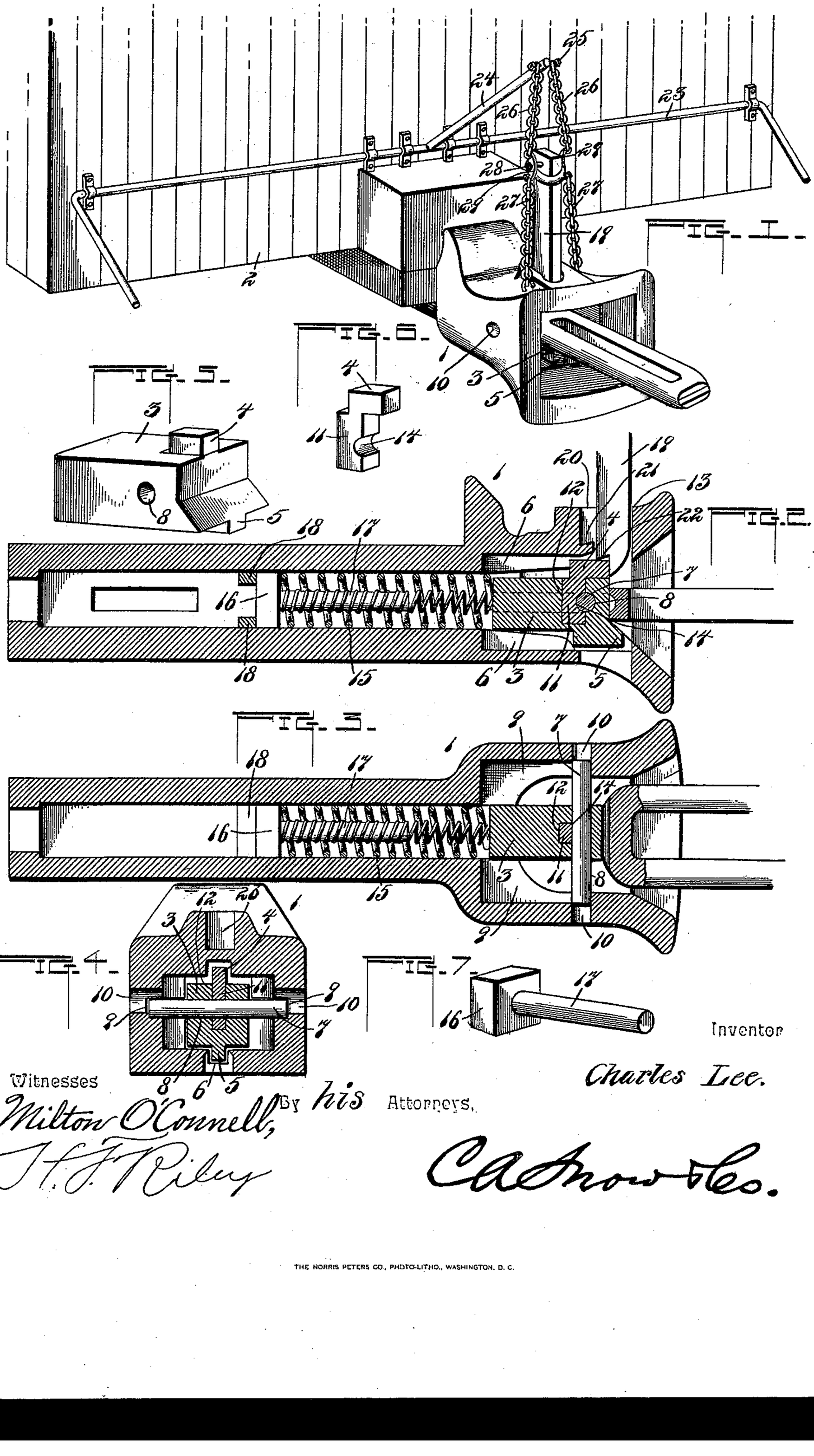
(No Model.)

C. LEE.

CAR COUPLING.

No. 583,186. Patented May 25, 1897.



Witnesses
Milton O'Connell,
T. J. Riley

Inventor
Charles Lee.
By his Attorneys,
C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

CHARLES LEE, OF SAN ANTONIO, TEXAS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 583,186, dated May 25, 1897.

Application filed September 21, 1896. Serial No. 606,546. (No model.)

To all whom it may concern:

Be it known that I, CHARLES LEE, a citizen of the United States, 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 that class of automatic pin-and-link car-couplings in which a sliding spring-actuated block is employed for supporting the coupling-pin in an elevated position preparatory to coupling.

The object of the present invention is to improve the construction of this class of car-couplings, more especially the spring-actuated block and the means for mounting the same in a draw-head, whereby the latter will be strengthened and the block supported and prevented from being injured.

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 and shown applied to the car. Fig. 2 is a longitudinal sectional view of the car-coupling. Fig. 3 is a horizontal sectional view of the same. Fig. 4 is a transverse sectional view. Fig. 5 is a detail perspective view of the spring-actuated block. Fig. 6 is a similar view of the removable top lug. Fig. 7 is a detail perspective view of the pin for supporting the spring which actuates the sliding block.

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

1 designates a draw-head designed to be mounted on a car 2 in the usual manner, and slidingly mounted within the same is a spring-actuated block 3, which is provided at its top and bottom with centrally-arranged longitudinally-disposed lugs or projections 4 and 5. The lugs or projections 4 and 5, which are located at the front of the block 3, fit in corresponding longitudinal grooves 6 of the top and bottom of the draw-head. The block is also guided in its forward and rearward movements by a transverse pin 7, removably arranged in the perforation 8 of the block, projecting laterally beyond the same and fitting in horizontal grooves 9 of the sides of the draw-head. At the front terminals 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 perforations to register with the openings or perforations of the sides of the draw-head.

The lower lug or projection 5 is formed integral with the sliding block, and the upper lug or projection 4 is removable, being provided with a vertical shank 11, fitting in a vertical socket 12 of the sliding block, and the socket 12 extends downward from the top of the sliding block to within a short distance of the bottom thereof and is centrally located. The removable lug or projection is introduced into the draw-head through the upper portion of the coupling-pin perforation 13 after the sliding block has been inserted through the mouth of the draw-head, and its shank is secured in the socket of the sliding block by the transverse pin 7, which engages a groove 14 at the front side of the shank 11. By employing a removable upper lug or projection the mouth of the draw-head may be made smaller than it could be were both lugs or projections 4 and 5 formed integral with the sliding block, and the draw-head is not weakened at the upper portion of the coupling-pin perforation.

The block is actuated by a spiral spring 15, which is interposed between the back of the block and a head 16 of a horizontal pin 17, which extends into the inner or rear portion of the spring. The head 16 of the pin 17 is rectangular and fits snugly within the opening of the shank or draw-bar of the draw-head, and is supported by stops 18. When the sliding block is forced inward during the operation of coupling, the blow is received after the spring is compressed by the pin 17, which prevents the lugs of the sliding block from breaking by reason of the latter being forced inward too far. The stops 18 are located at the sides of the opening of the shank or draw-bar, and the pin 17, which has its head fitting against the stops, may be

readily inserted into and removed from the draw-head through the mouth thereof.

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 the 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 the coupling-pin perforation, which has its upper portion 20 enlarged and provided with a seat 21, and the lower end of the coupling-pin is recessed at its rear edge to provide a corresponding shoulder 22, conforming to the configuration of the seat and adapted to rest thereon. The coupling-pin is designed to be held in an elevated position on the seat 21, 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 lug 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 operating mechanism for elevating the coupling-pin consists of a transverse rock-shaft 23, journaled in suitable bearings of the car 2 and provided at its ends with depending handles located adjacent to the sides of the car. The rock-shaft is provided with a central outwardly-extending arm 24, which has its outer end perforated for the reception of a bolt 25 or other suitable fastening device, and upper and lower chains 26 and 27 are employed for connecting the upper end of the coupling-pin with the arm 24 of the rock-shaft and with the draw-head. The upper end of the coupling-pin is perforated to receive a bolt 28, which pivots a pair of connecting-pieces 29 to the said coupling-pin. The connecting-pieces are provided with upper and lower eyes, into which are linked the adjacent ends of the upper and lower chains. The upper terminals of the chains 26 are secured to the arm 24 by the bolt 25, and the draw-head is provided with suitable eyes or loops to receive the lower terminals of the chain 27. The chains, which are arranged in pairs and which are located at opposite sides of the coupling-pin, limit the upward movement of the latter and prevent it from becoming accidentally withdrawn from the coupling-pin perforation, and the links of the chain are preferably circular to prevent the chain from clanking and thereby shortening the connection and interfering with the operation of the car-coupling. It will be seen that the strength and durability of the draw-head are increased, that the block may be readily introduced into the mouth of the draw-head without enlarging the same, and that the inward movement of the block is limited and the upper and lower lugs are prevented from being broken.

Changes in the form, proportion, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention.

What I claim is—

1. In a car-coupling, the combination of a draw-head having a coupling-pin perforation and provided with upper and lower grooves, a sliding spring-actuated pin-supporting block provided with a depending projection arranged in the lower groove, said block having a socket extending downward from its top, a removable upper lug or projection 4 located entirely within the draw-head adapted to be introduced through the upper portion of the coupling-pin perforation and provided with a shank 11 fitting in the socket of the block, said lug or projection being arranged in the upper groove of the draw-head, and means for detachably locking the shank in the socket of the block, substantially as described.

2. In a car-coupling, the combination of a draw-head having a coupling-pin perforation, provided at its top and bottom with longitudinal grooves and having at its sides horizontal grooves, a spring-actuated block having a depending lug to engage the bottom groove of the draw-head, said block being provided at its top with a socket and having a transverse perforation intersecting the socket, an upper lug or projection adapted to be introduced into the draw-head through the upper portion of the coupling-pin perforation and provided with a shank fitting in the socket of the sliding block and having a transverse groove, and a transverse pin arranged in the transverse opening of the block, engaging the groove of the shank and fitting in the horizontal grooves of the draw-head, substantially as described.

3. In a car-coupling, the combination of a draw-head having a shank or draw-bar and provided with upper and lower longitudinal grooves, a sliding block arranged within the draw-head and provided with upper and lower projections fitting within said grooves, a detachable head arranged within the draw-bar or shank, a spiral spring interposed between the head and the block, and a pin carried by the head, arranged within the spring and extending forward or outward from the said head in position to be engaged by the sliding block when the spring is compressed, whereby the projections of the sliding block are prevented from coming in contact with the draw-head at the ends of the grooves, substantially as described.

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

car, of a draw-head mounted thereon and provided at its top at opposite sides of its coupling-pin perforations with eyes, a coupling-pin arranged in the coupling-pin perforation, connecting-pieces pivoted to the opposite sides of the upper end of the coupling-pin, a transverse shaft journaled in the car and having a central arm extending outward from the coupling-pin, and the upper and lower chains arranged in pairs, linked into the eyes of the connecting-pieces and extending upward and downward therefrom, the lower chains being linked into the eyes of the draw-head, and the upper chains being secured to the arm of the rock-shaft, 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:
THOMAS HAYNES,
F. J. SPRAGUE.