(No Model.)

L. L. WEAKLEY.

CAR COUPLING.

No. 460,101. Patented Sept. 22, 1891.

Fig. 1.

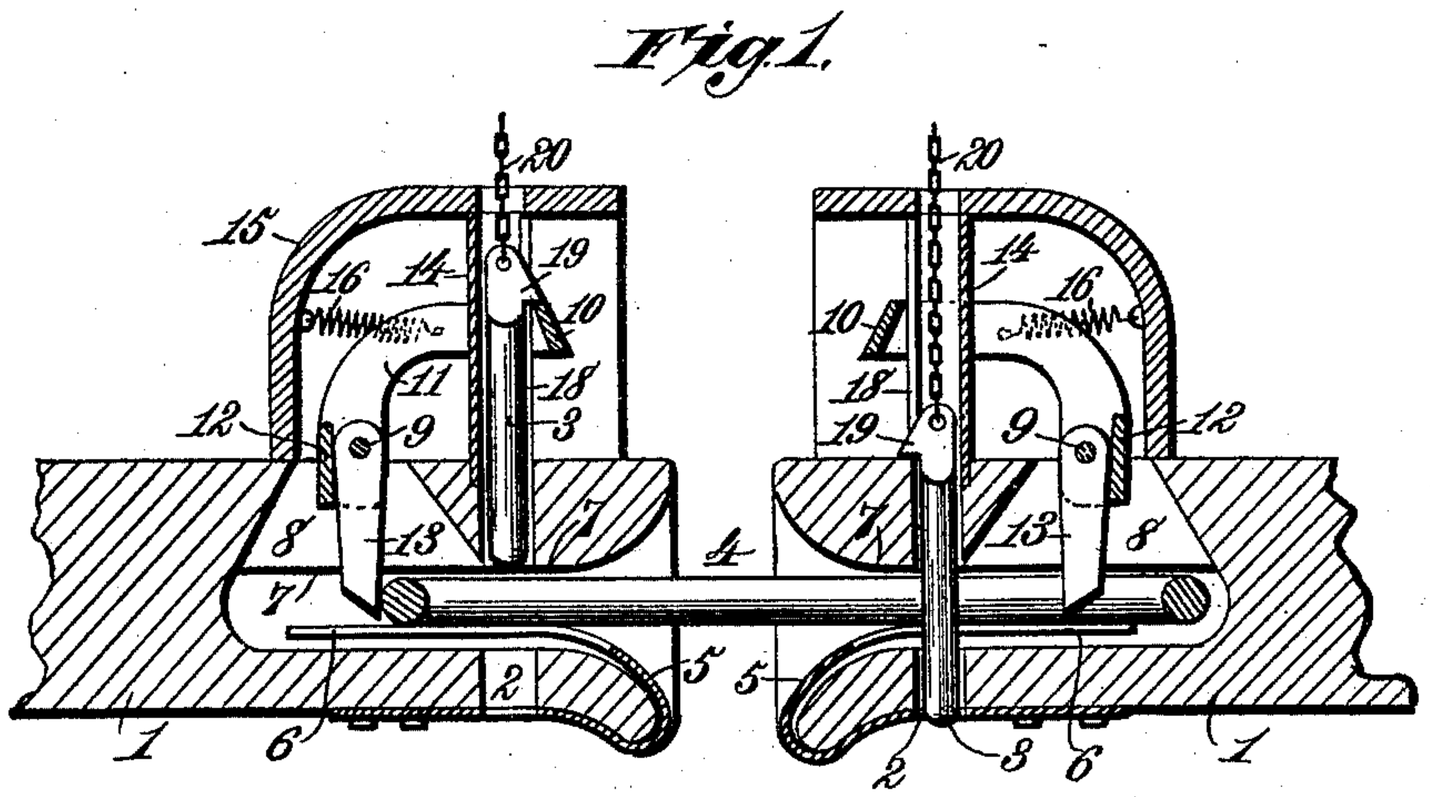


Fig. 2.

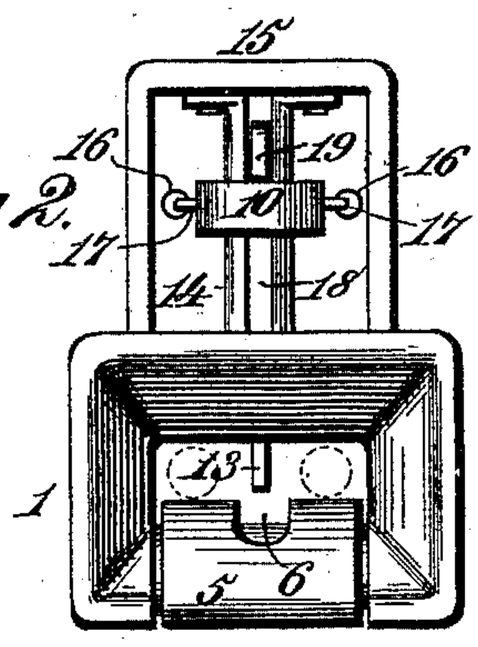


Fig. 3.

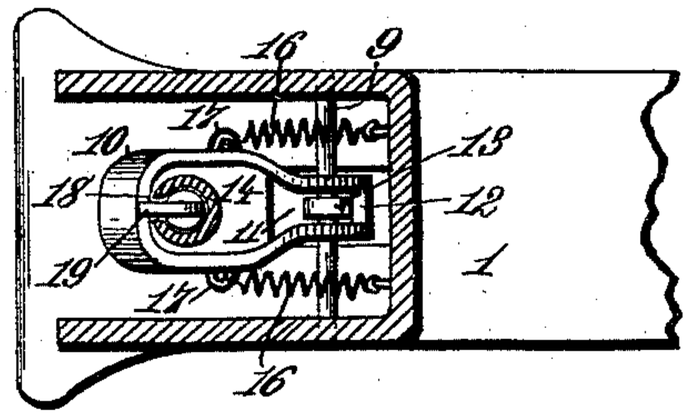
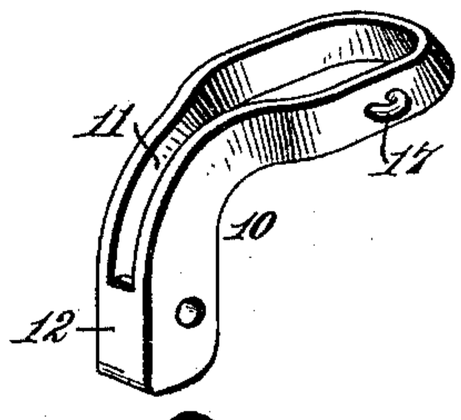


Fig. 4.



Witnesses.
Robert Everett.
J. A. Rutherford

Inventor.
Loyd L. Weakley.
By
James L. Norris.
Atty.

UNITED STATES PATENT OFFICE.

LOYD L. WEAKLEY, OF EDWARDS, ASSIGNOR OF ONE-HALF TO ELISHA P. DISMUKES, OF QUINCY, FLORIDA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 460,101, dated September 22, 1891.

Application filed January 22, 1891. Serial No. 378,707. (No model.)

To all whom it may concern:

Be it known that I, LOYD L. WEAKLEY, a citizen of the United States, residing at Edwards, in the county of Gadsden and State of Florida, have invented new and useful Improvements in Car-Couplings, of which the following is a specification.

My invention relates to that class of car-couplings in which a vertically-movable pin is supported in an elevated position until by the entrance of a suitable link into the draw-head the pin-support is tripped and the pin permitted to fall into engagement with the link, thereby coupling the adjacent cars.

The objects of my invention are to improve the devices for supporting and tripping the pin and for guiding it in its vertical movements, and also for holding the link in a horizontal position; and to these ends the invention consists in the novel features of construction and combinations of parts hereinafter more fully described and claimed.

In the annexed drawings, illustrating the invention, Figure 1 is a longitudinal vertical section of an automatic car-coupling embodying my improvements. Fig. 2 is a front elevation of a draw-head provided with my improvements. Fig. 3 is a plan partly in section. Fig. 4 is a perspective of the pin supporting and tripping devices detached.

Referring to the drawings, the numeral 1 designates a draw-head having the usual beveled or flaring mouth. In the forward end of the draw-head is a vertical opening or pin-hole 2 for passage of the coupling-pin 3 as it descends to engage the link 4, which may be of the ordinary straight form, or said link may be curved more or less in a well-known manner to accommodate adjacent draw-heads of differing heights.

Secured to the under side of the draw-head and curved backward within the mouth thereof is a bifurcated and nearly flat metal spring-plate 5, which is provided within the draw-head with a central longitudinal slot 6 to afford passage for the coupling-pin. This spring 5 serves, in connection with the upper wall 7 of the draw-head, to hold the link 4 in a horizontal position, while the elasticity of the spring enables it to yield downward somewhat to avoid obstructing the entrance of the link into the draw-head and to assist in maintaining the proper position of the link undisturbed by jar or strain.

In the rear portion of the upper wall of the draw-head is a longitudinal slot 8, which is of greater length below than above, its inclined end walls being made to diverge gradually from above downward. At the top of this slot 8 is a transverse shaft or pivot 9, on which is loosely pivoted the lower end of an upwardly and forwardly curved pin-support 10, the upper portion of which is provided with a longitudinal slot or opening 11, that is somewhat the wider at its forward end. The lower rear portion of the slot or opening 11 is provided with a cross-piece 12, that serves as a bearing for a trigger 13, which is pivoted on and loosely suspended from the transverse pivot-shaft 9, on which the support 10 is also mounted. The wide forward end of the slot 11 in the pin-support 10 surrounds a vertical guide-tube 14, which coincides with and forms a continuation of the upper end of the opening or pin-hole 2, that is formed through the draw-head. The tube 14 has its lower end secured to the draw-head in any suitable manner and is extended vertically above the same to the top of a hood 15, to which its upper end is secured. This hood 15 serves to protect the inclosed parts from the weather and affords in its rear inner side attachment for two spirally-coiled springs 16, that are extended forward and attached to eyes 17 on the opposite sides of the pivoted pin-support 10 near its forward end. In the front of the vertical guide-tube 14 is a vertical guide-slot 18, that receives a forwardly-projecting nose 19 on the upper end of the coupling-pin 3, whereby said pin is guided in its vertical movements. The pin 3 is supported, when in a vertical position, by reason of the engagement of its nose 19 with the forward end of the pivoted pin-support. As a means for raising the vertically-movable pin 3 it has attached to its upper end a chain 20, which may be extended to the top of a freight-car, and, if desired, be connected with suitable levers by means of which the pin can be elevated from either the top or side of the car, thus enabling the cars to be uncoupled without risk of injury to the attendants.

The operation and practical advantages of

my improved car-coupling will be readily understood. By means of the bifurcated spring-plate or link-support 5 and the upper horizontal wall of the draw-head the coupling-link 4, which may be of any suitable length and form, is supported horizontally in proper position to enter the draw-head of an adjacent car. The coupling-pin 3 is elevated by means of the attached chain 20, and in the act of being raised the beveled nose 19 of said pin comes in contact with the inwardly and upwardly beveled forward end of the pivoted support 10 and automatically engages the upper edge thereof, as shown in Figs. 1, 2, and 3. While in this position the coupling-pin 3 is supported clear of the interior of the draw-head and offers no obstruction to the entrance of the link. When the link is introduced, its end comes in contact with the loosely-suspended trigger 13 and forces it back against the cross-piece 12 of the pivoted pin-support, thereby tilting the upper portion of said support forward and slightly downward against the action of the springs 16, thus releasing the coupling-pin 3 and permitting it to drop through the slotted guide-tube 14 and into engagement with the open link. As soon as the pin 3 falls the springs 16 return the pin-support 10 to its normal position and the trigger 13 assumes its former vertical position by the action of gravity. It will be seen that the slotted form of the pivoted pin-support 10 allows it free movement with relation to the guide-tube 14 and enables it to present a surface in front of said guide-tube for engagement with the forwardly-projecting beveled nose of the coupling-pin.

The devices that constitute this car-coupling are simple in construction, reliable in operation, and not liable to become broken or disarranged by ordinary usage. The length of the link 4 and the relative positions of the pin-hole 2 and pivoted pin-support 10 can be varied according to desired distance between the draw-heads, and I would have it understood that I do not confine myself to the precise form and construction of parts illustrated, as the same may be varied to some extent without departing from my invention.

What I claim as my invention is—

1. The combination, with a draw-head and a vertically-movable coupling-pin having a forwardly-projecting nose, of a pivot or shaft 9, supported by the draw-head, and the pin-support 10 and trigger 13, both mounted on the said pivot or shaft, and the pin-support having a cross-piece or abutment 12 extending behind the trigger at a point below the shaft thereof, so that the pin-support is swung forward to release the coupling-pin when the trigger is swung rearward by the entering link, substantially as described.

2. The combination, with a draw-head, of a spring-plate secured to the under side of the draw-head, curved round and covering the lower front edge of the mouth thereof and having its free extremity extended into the draw-head and provided with a central longitudinal slot 6 for the passage of the coupling-pin, substantially as described.

3. In a car-coupling, the combination, with a draw-head and a vertically-movable coupling-pin having on its upper end a forwardly-projecting nose, of a vertically-slotted guide-tube for said pin, a pivoted pin-support mounted on the draw-head and slotted to surround the guide-tube, a loosely-pivoted trigger suspended in the draw-head from the shaft or pivot on which the pin-support is mounted and adapted to trip said support and release the elevated coupling-pin, and springs for returning said pivoted pin-support to its normal position, substantially as described.

4. In a car-coupling, the combination of a draw-head having the pin-hole 2 and slot 8, the vertically-movable coupling-pin 3, provided with beveled nose 19, the guide-tube 14, having a vertical guide-slot 18, the pivoted pin-support 10, surrounding the guide-tube and having a beveled forward end to engage the nose of the coupling-pin, the cross-piece 12 at the lower end of said pivoted pin-support, and the loosely-pivoted trigger 13, suspended in the draw-head from the shaft or pivot on which the pin-support is mounted, substantially as described.

5. In a car-coupling, the combination of the draw-head having the pin-hole 2 and slot 8, the slotted guide-tube 14, the vertically-movable coupling-pin 3, provided with nose 19, the pivoted pin-support 10, having springs 16, the loosely-pivoted trigger 13, adapted to trip said pin-support and release the elevated coupling-pin and the link 4, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

LOYD L. WEAKLEY.

Witnesses:
M. F. BURGHARD,
GEO. D. MUNROE.