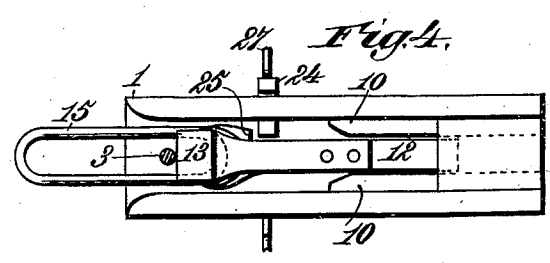
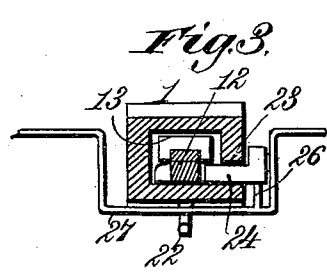
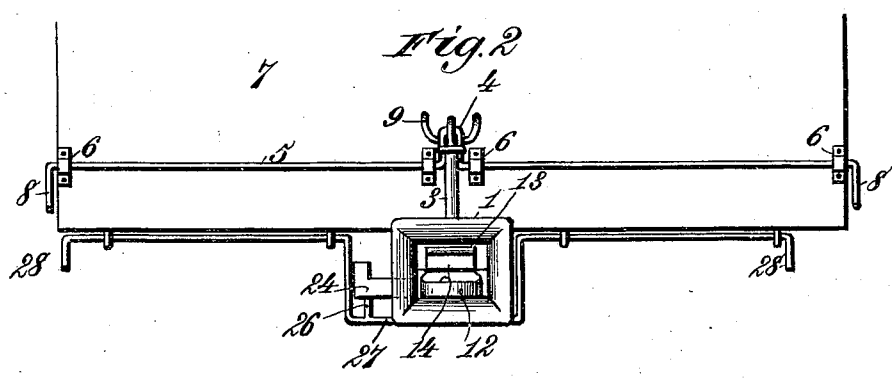
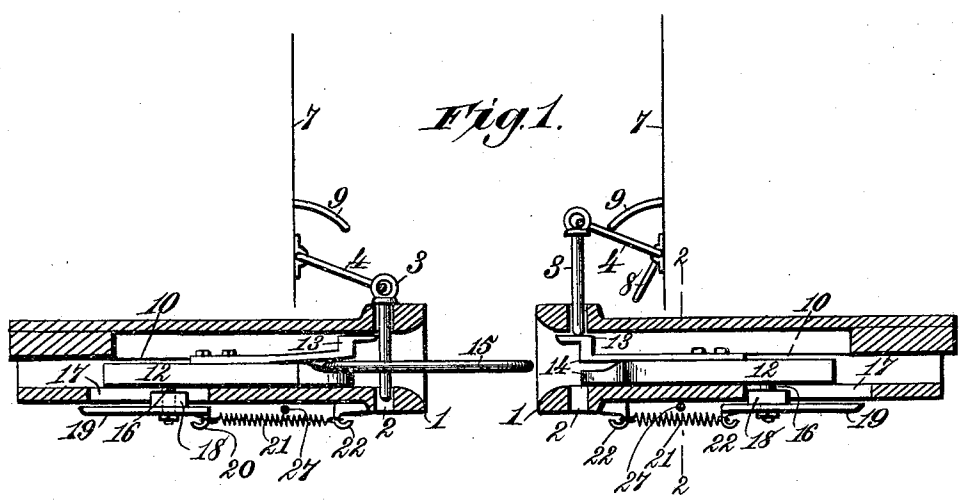


(No Model.)

E. SURPRENANT.
CAR COUPLING.

No. 475,168.

Patented May 17, 1892.



Witnesses:
Robert G. Pratt,
J. A. Rutherford.

Inventor:
Edward Surprenant.
By James L. Norris,
Atty.

UNITED STATES PATENT OFFICE.

EDWARD SURPRENANT, OF COHOES, NEW YORK.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 475,168, dated May 17, 1892.

Application filed February 18, 1892. Serial No. 422,010. (No model.)

To all whom it may concern:

Be it known that I, EDWARD SURPRENANT, a citizen of the United States, residing at Cohoes, in the county of Albany and State of New York, have invented new and useful Improvements in Car-Couplings, of which the following is a specification.

This invention relates to that class of automatic couplings for railway-cars wherein a spring-pressed slide within the draw-head serves to sustain a coupling-pin until an entering link moves the slide rearward to permit the descent of the pin. In prior couplings of this construction it frequently occurs that the springs of the slides vary in power, and if a link engaged with a slide in the draw-head of one car acts on another pin-supporting slide the spring of which is of greater power than the spring of the slide carrying the entering link the cars will not be coupled, because the stronger or more powerful spring will hold its slide and push back the slide carrying the entering link.

The objects of my invention are to avoid this objection and to improve automatic car-couplings of the character alluded to.

To accomplish these objects my invention consists, essentially, in the combination, with a draw-head having a vertical pin-hole for the passage of a coupling-pin and a spring-pressed slide movable longitudinally in the draw-head, having a link-engaging jaw at its front end and normally held by its spring in position to support the coupling-pin, of a locking-bolt carried by the draw-head and adapted to be moved into engagement with a recessed part of the slide when a link is engaged therewith to enter another draw-head having a spring-pressed pin-supporting slide of similar construction, so that if the spring of the latter slide is stronger or more powerful than the slide carrying the link the latter will be held by the locking-bolt and thereby prevented from being moved backward to such extent as to prevent the proper coupling of the cars.

The invention also consists in certain other features of construction and combination or arrangement of parts hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a longitudinal sectional view of two draw-heads constructed in accordance

with my invention and arranged in such relation that the coupling-link in one draw-head is about entering the mouth of the other draw-head. Fig. 2 is an end elevation of a car showing my invention applied thereto. Fig. 3 is a transverse sectional view taken on the line 2 2, Fig. 1; and Fig. 4 is a top-plan view of one of the draw-heads, omitting the upper wall thereof to exhibit the pin-supporting slide.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein—

The numeral 1 indicates a draw-head provided, as usual, with a vertical pin-hole 2 for receiving the coupling-pin 3, which is pivotally connected with the crank-arm 4 of a rock-shaft 5, journaled in suitable bearings 6 on the end of a car 7. The extremities of the rock-shaft extend to the sides of the car and are provided with handles 8, of any suitable construction, for the purpose of axially turning the rock-shaft for elevating the coupling-pin. A stop-arm or bracket 9 is secured to the car at a point directly above the crank-arm 4 of the rock-shaft 5 for the purpose of limiting the upward movement of the crank-arm and thereby preventing the complete withdrawal of the coupling-pin from the pin-hole in the draw-head. The interior of the draw-head is provided at its sides with a pair of parallel guide-ribs 10, between which is adapted to move lengthwise a pin-supporting slide 12, having a head 13 at its front extremity, which is adapted to move under the pin-hole in the top wall of the draw-head for the purpose of supporting the coupling-pin in position for the automatic coupling of the cars, as will hereinafter appear. The pin-supporting slide is preferably composed of two plates suitably bolted together and so constructed at the front portion as to form a pair of link-engaging jaws 14, between which one extremity of a coupling-link 15 can be inserted for the purpose of entering another draw-head to push the pin-supporting slide thereof rearward to permit the descent of the coupling-pin and thereby automatically couple the cars. I do not, however, confine myself to the pin-supporting slide composed of two sections or plates detachably connected together, al-

though this construction is preferred in that it enables the uppermost plate to be composed of slightly-elastic metal, so that the coupling-link will be gripped and securely held when forced between the two jaws 14. The rear extremity of the pin-supporting slide is provided with a guide pin or bolt 16, extending through a longitudinal slot 17 in the bottom wall of the draw-head and rigidly connected with a guide-lug 18, working in the slot 17 and formed integral with a horizontal sliding plate 19. The horizontal sliding plate is provided with a hook 20, engaged with one extremity of a spiral or other suitable spring 21, the opposite extremity of which is engaged with a hook 22, secured to the bottom wall of the draw-head. The ends of the spring are readily detachable from the hooks, and since by my arrangement the spring is located outside the draw-head it can readily be renewed if occasion demands. This is a very desirable construction in that the springs frequently become injured and usually parts of the draw-head must be separated from each other to remove the spring which acts on the pin-supporting slide. In my invention, however, the springs are located outside the draw-head and are readily removable and replaceable without disturbing any parts of the draw-head.

The side wall of the draw-head is provided with a transverse orifice 23, in which is arranged a laterally-movable locking-bolt 24, the inner extremity of which can be moved into the path of a lateral shoulder 25 on the pin-supporting slide 12. The locking-bolt is engaged with an upwardly-projecting arm 26 on a yoke-shaped rod 27, which embraces the draw-head and has its extremities extended to the sides of the car and provided with suitable handles 28, so that by moving the yoke-rod lengthwise the locking-bolt is slid into or out of the path of the lateral shoulder 25 on the pin-supporting slide.

In the practical use of car-couplings of the character alluded to the springs which press the pin-supporting slides forward into position to sustain the coupling-pin frequently vary in power, and consequently if a link engaged with a slide acts on another slide the spring of which is of greater power than the spring of the slide carrying the entering link the cars will not be coupled, in that the stronger or more powerful spring will hold its slide advanced, and consequently push back the slide carrying the entering link. This, however, is entirely avoided by the provision of the laterally-movable locking-bolt, as the latter can be moved into the path of the shoulder 25 of the slide, which engages or carries

the link to be introduced into the draw-head of another car, and consequently the slide carrying the link cannot be unduly pushed back by the power of the spring acting on the slide in the draw-head of the adjacent car.

Having thus described my invention, what I claim is—

1. The combination, with a draw-head having a vertical pin-hole, a spring-pressed slide having a lateral shoulder, and link-engaging jaws at its front end and normally held by its spring in position to support a coupling-pin, of a locking-bolt carried by the draw-head and movable into engagement with the lateral shoulder of the slide when a link is engaged therewith to enter another draw-head, substantially as described.

2. The combination, with a draw-head having a vertical pin-hole, a spring-pressed slide having a lateral shoulder, and link-engaging jaws at its front end and normally held by its spring in position to support a coupling-pin, of a locking-bolt carried by the draw-head and movable into engagement with the lateral shoulder of the slide when a link is engaged therewith, and a lengthwise-movable rod extending transversely of the car and having an arm engaging the locking-bolt for moving the latter back and forth, substantially as described.

3. The combination, with a draw-head having a vertical pin-hole, a longitudinal slot in its bottom wall, and a hook secured to the outside of the latter, of a lengthwise-movable pin-supporting slide having a hook and link-engaging jaws at its front end, a sliding plate connected with the rear end of the pin-supporting slide through the slot in the bottom wall of the draw-head and provided with a hook, and a spring detachably engaged with the hook on the draw-head and the hook on the sliding plate, substantially as described.

4. The combination, with a draw-head having a vertical pin-hole, and a pin-supporting slide normally held by its spring in position to support a coupling-pin, of a rock-shaft journaled on the car and having a crank-arm engaged with the eye of a coupling-pin, and a stop-arm secured to the car above the crank-arm of the rock-shaft for preventing the complete withdrawal of the coupling-pin from the pin-hole, substantially as described.

In testimony whereof I have hereunto set my hand and affixed my seal in presence of two subscribing witnesses.

EDWARD SURPRENANT. [L. S.]

Witnesses:

ISRAEL BELANGER,
NEIL MORRIS.