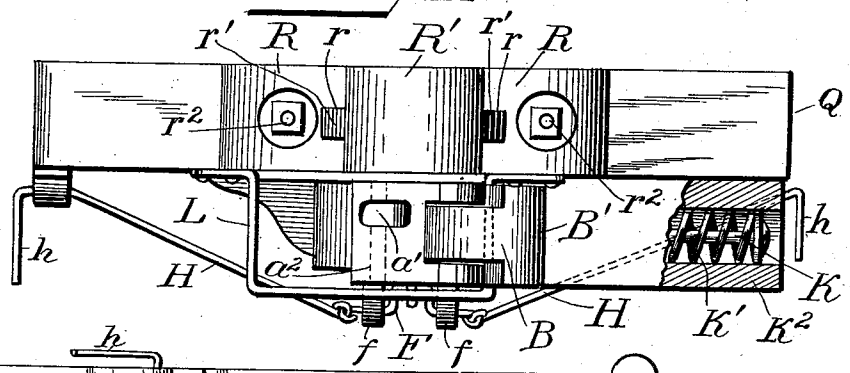
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N. DARROW & J. A. ROOSEVELT.

CAR COUPLING.

No. 509,365. Patented Nov. 28, 1893.

Fig. 1.



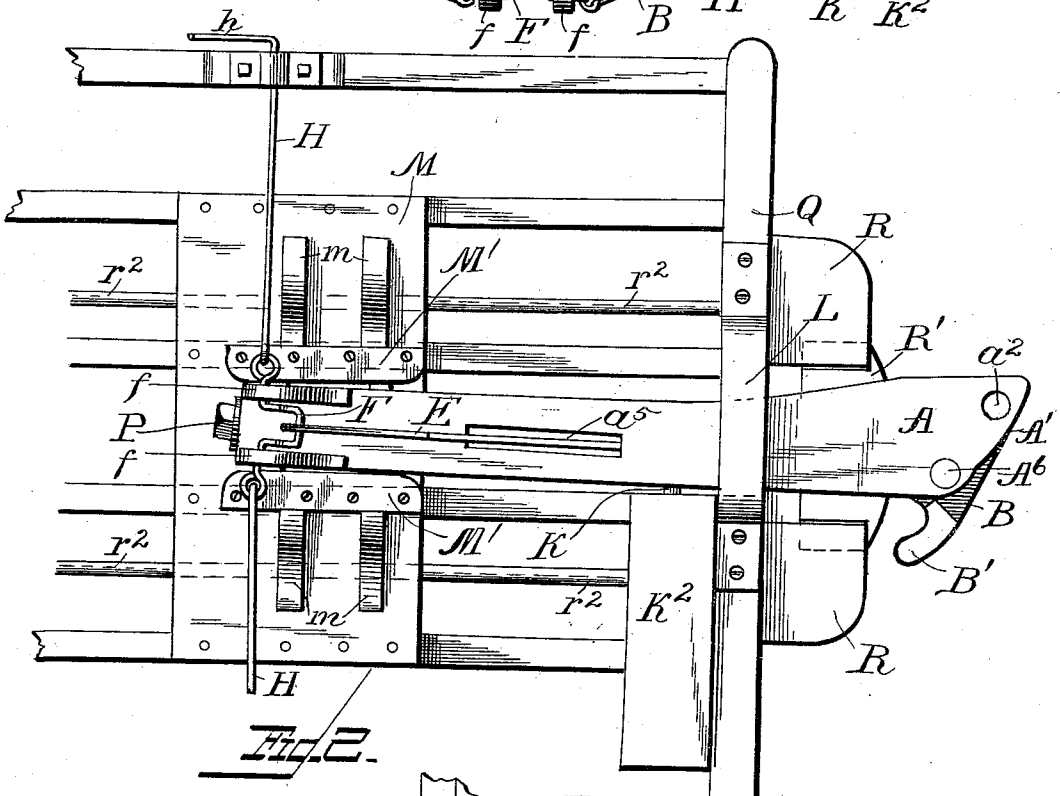


Fig. 2.

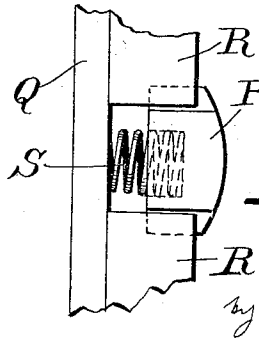


Fig. 7.

WITNESSES

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Fig. 3.

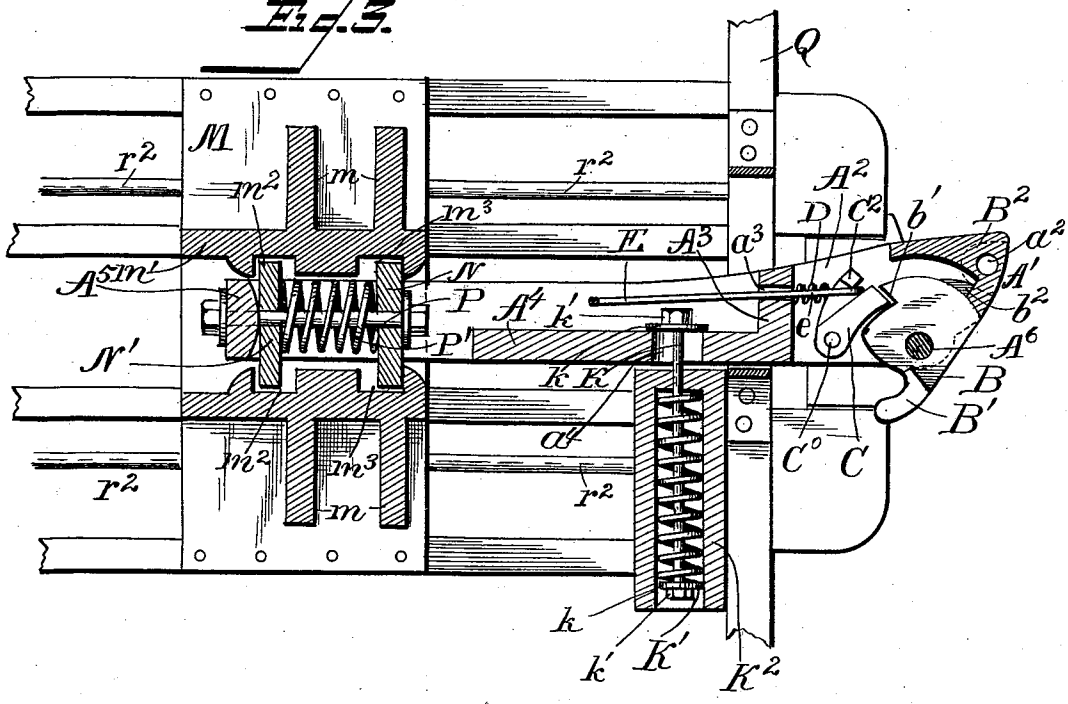


Fig. 4.

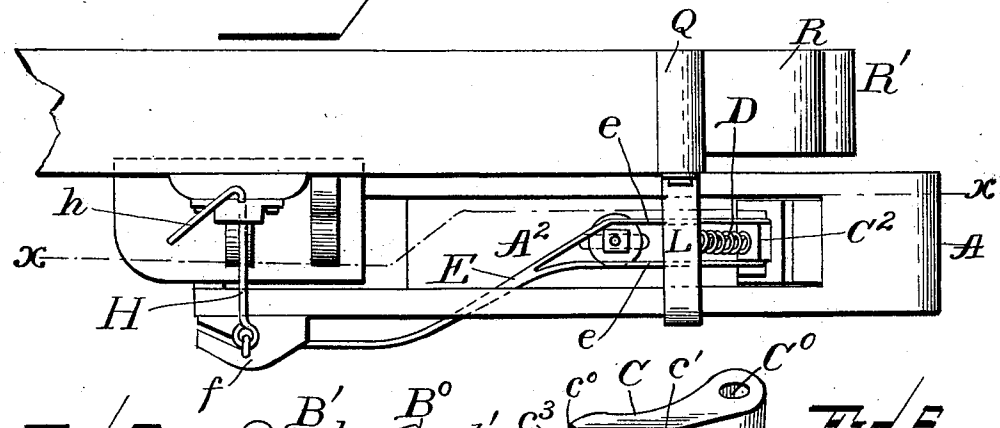


Fig. 5.

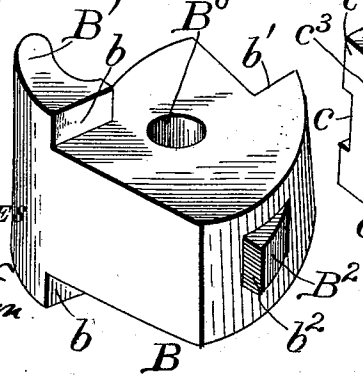
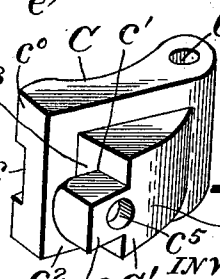


Fig. 6.



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UNITED STATES PATENT OFFICE.

NICHOLAS DARROW AND JAMES A. ROOSEVELT, OF AUSTIN, TEXAS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 509,365, dated November 28, 1893.

Application filed March 25, 1893. Serial No. 467,572. (No model.)

To all whom it may concern:

Be it known that we, NICHOLAS DARROW and JAMES A. ROOSEVELT, citizens of the United States, residing at Austin, in the county of Travis and State of Texas, have invented certain new and useful Improvements in Car-Couplings; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to improvements in car couplings, and it consists in certain novel features hereinafter described and claimed.

Reference is had to the accompanying drawings, in which the same parts are indicated by the same letters throughout the several views.

Figure 1 represents a front view of the car coupling and buffer, parts being broken away. Fig. 2 represents an inverted plan view of the car coupler, and illustrates the manner of operating the uncoupling rod, and also the manner of attaching the drawbar to the bottom of the car. Fig. 3 represents a section along the line $x\ x$ of Fig. 4, and looking upward in the said Fig. 4. Fig. 4 represents a side elevation of the car coupler and its attachments as seen from the left of Fig. 1. Fig. 5 represents a perspective view of the knuckle or hook detached. Fig. 6 represents a perspective view of the latch detached, and Fig. 7 represents a plan view of the buffer over the car coupler, for easing the buffing strain on the head of the car coupler, as the cars come together.

A represents the car coupler which is provided with a nose A′, a hollow drawhead A^2, a transverse rib A^3, a longitudinal rib A^4, and a tailpiece A^5. The nose of the coupler is provided with a cavity a' and a pin hole a^2 for use as a link and pin coupling, should it be desired, while the knuckle B is held in place by the pivot pin A^6. This knuckle swings about the said pivot, and is provided with a pivot hole B^0, a hook B′ having shoulders b adapted to strike against the inner side of the nose and prevent the knuckle from swinging open too far, a catch b', adapted to engage the latch C, and a lug B^3 having shoulder b^2 adapted to strike against the inner wall of the nose A′ as shown in Fig. 3, and thus to prevent the knuckle from closing up too much.

The latch C is pivoted at C^0 and is provided with a lug C′ and a projecting arm C^2, around which arm the bifurcated legs e of the rod E are passed. These legs e pass around the curved portion c' of the arm C^2 and rest against the face c^3 of the lug C′. The curved face c' of the arm C^2 is at a short distance from the rear face c^2 of the latch C, as shown in Figs. 3 and 6. The front face of the latch C, is provided with a recess c, adapted to allow the lug B^2 on the back of the pivoted knuckle to enter freely therein. In the rear face c^4 of the lug C′, a recess c^5 is provided, adapted to engage the end of the latch spring D, which spring normally presses the latch C forward, causing the face c^0 to engage the shoulder b' of the knuckle and thus holding the knuckle closed as shown in Fig. 3.

The bifurcated rod E is connected at its rear end to a double crank F connected by a flexible joint to the rods H having hand cranks h at either side of the car. The double crank F and rod H, hand crank h and rod E should be so arranged relative to each other that when the crank h hangs down, as shown in Fig. 1, the latch C is pressed forward by the spring D or the crank h is thrown up the latch C is drawn backward against the said spring or opened. By having the double crank F so adjusted as to be in a center relative to the rod E when the latch is drawn back, the spring D will then create sufficient friction between the parts E, F and f to hold the latch open against ordinary jars, and the open position of the latch will be indicated by the raised position of the crank h.

The rod E passes through an opening a^3 in the rib A^3, and also through a longitudinal slot a^5 in the bottom of the hollow drawbar. The drawbar is normally drawn toward the side thereof having the projecting hook B′ by means of the rod K and spring K′ mounted in the box K^2. The said rod is provided with nuts or bolt heads k', and washer plates k at either end thereof, as shown in Fig. 3. The front end of the drawbar is supported by the carrying iron L, and the tail is held up by follower plates N and N′ resting upon longitudinal plates M′, secured to the ribs m

of the plate M bolted to the sill of the car as shown in Fig. 2. The ribs m' have recesses m^2 and m^3 adapted to receive the ends of the follower plates N and N'. These ribs m and m' should preferably be cast integral with the plate M, but they may be bolted or riveted thereto as it be desired to use wrought iron or steel plates.

P represents the tail bolt, and P' the spring mounted thereon for the purpose of allowing the coupler to yield to buffing strains.

Mounted over the coupler we provide a buffer composed of the side pieces R held by means of the truss rods r^2 to the end sill Q, and between these side pieces a buffer piece R' is normally pressed forward by a stout spring S, which spring may be of any desired form and requisite strength. The movable piece R' has projecting lugs r' which engage in corresponding guide grooves r in the fixed side pieces R.

The operation of the devices is as follows:—As two cars come together, the noses of the couplers strike on the sloping faces, and each coupler is pressed back against the spring P', and to one side against the spring K', but before too great a pressure is brought upon the couplers, the buffers R' come together and take up the shock of the contact of the cars. As soon as one hook has passed the other, the springs K' draw the two couplers into locking position, and the pressure on the spring P' is at the same time relieved. In order to uncouple either one of the hand cranks h is turned so as to cause the double crank F to withdraw the rod E sufficiently to draw back the spring D and withdraw the rod E sufficiently with the knuckle. If any pressure now be brought upon the hook B', such for instance as the resistance of the car or a train of cars, the knuckle will swing open. If the hand-crank h be left up, as described, the double crank F will remain on a center, and the latch will remain open until released by turning the crank h down; but if as soon as the knuckle B swings open the hand crank h be turned down and the latch released it will rest on the back of the knuckle where it will be supported until the hook is closed again, when it would slide back into engaging position as would happen automatically in coupling on another car. It will be seen that the pressure of the latch on the back of the knuckle would hold it open until some force is used in swinging it to. As soon as the knuckle swings back into the position shown in Fig. 3, the latch is thrown into engaging position by the spring D, and the coupler is firmly locked. By having the nose of the coupler, and the face of the coupler, and the hook, shaped as shown, two couplers of the herein described type will couple together if the cars come together in the usual way, no matter whether both knuckles be open, whether both be closed, and locked, or whether one be open and the other be closed and locked.

It will be seen that the coupler can only be operated by hand from the side of the car, and that it would be impossible to accomplish anything either in coupling or uncoupling by having a train hand go between the cars. It will also be seen that the cars may be uncoupled or the couplers operated from either side of the car.

The link and pin attachments a' and a^2 are provided solely for the purpose of enabling the coupler to be used with cars provided only with link and pin coupling, or where the knuckle becomes inoperative from accidents to any of the necessary parts.

The drawbar A is preferably cast solid out of malleable iron, but it may be built up or made of other suitable material, if desired.

The improved means of securing the coupler to the car herein described, enables the plate M to be attached directly to the sills of the car without the necessity for any additional substructure, and at the same time renders it convenient of access, thus facilitating the removal of damaged drawbars, and at the same time giving great strength to the holding device against the violent strains to which car couplers are normally subjected.

It will be seen that the strain is put upon the coupler nearly in the line of draft, and that owing to the yielding tension of the spring K', the coupler may be pressed to one side sufficiently to allow for coupling on any of the curves ordinarily found in railroads.

It will be obvious that many modifications could be made, which could be used without departing from the spirit of our invention.

Having thus described our invention, what we claim, and desire to secure by Letters Patent of the United States, is—

1. In a car coupling, the combination with a hollow drawhead of a knuckle pivoted therein and provided with a hook on one side of said pivot and a catch on the other, a latch pivoted in said drawhead and adapted to engage said catch, a spring normally pressing said latch against said knuckle, a rod attached to said latch, a double crank connected to said rod, and hand rods and cranks at either side of the car connected to said double crank, substantially as and for the purposes described.

2. In a car coupling, the combination with a hollow drawhead, of a knuckle pivoted therein and provided with a hook on one side of said pivot and a catch on the other, a latch pivoted in said drawhead and adapted to engage said catch, a spring normally pressing said latch against said knuckle, a rod bifurcated and passing on either side of said spring and attached to said latch, and means operated by hand, for drawing said rod to the rear and so withdrawing said latch from engagement with said catch, substantially as and for the purposes described.

3. In a car coupling, the combination with a hollow drawbar having lateral play in its bearings, of a spring adapted to normally

hold said drawbar in the central position, a knuckle pivoted in the drawhead and provided with a hook in one side of said pivot and a catch on the other, a latch pivoted in said drawhead and adapted to engage said catch, a spring normally pressing said latch against said knuckle, a rod attached to said latch, a double crank connected to said rod, and hand rods and cranks at either side of the car connected to said double crank, substantially as and for the purposes described.

4. In a car coupling, the combination with a hollow drawbar having lateral play in its bearings, of a spring adapted to normally hold said drawbar in the central position, a knuckle pivoted in the drawhead and provided with a hook in one side of said pivot and a catch on the other, a latch pivoted in said drawhead and adapted to engage said catch, a spring normally pressing said latch against said knuckle, a rod bifurcated and passing on either side of said spring and attached to said latch, and means operated by hand for drawing said rod to the rear and so withdrawing said latch from engagement with said catch, substantially as and for the purposes described.

5. In a car coupling, the combination with the hollow drawbar A of the pivoted knuckle B provided with hook B′, stop lug B^2, and catch b', the pivoted latch C provided with groove c, lug C′ and arm C^2; the spring D normally pressing said latch against said knuckle, and means for drawing said latch back against said spring, substantially as and for the purposes described.

6. In a car coupling, the combination with the hollow drawbar A of the pivoted knuckle B provided with hook B′, stop lug B^2, and catch b', the pivoted latch C provided with groove c, lug C′ and arm C^2; the spring D normally pressing said latch against said knuckle, the rod E divided at e inclosing said spring D and attached to said arm C^2 and the double crank F and rods H and cranks h, substantially as and for the purposes described.

7. In a car coupling, the combination with the hollow drawbar A of the rod K and spring K′, pivoted knuckle B provided with hook B′, stop lug B^2, and catch b', the pivoted latch C provided with groove c, lug C′ and arm C^2, the spring D normally pressing said latch against said knuckle, and means for drawing said latch back against said spring, substantially as and for the purposes described.

8. In a car coupling, the combination with the hollow drawbar A of the rod K and spring K′, pivoted knuckle B provided with hook B′, stop lug B^2, and catch b', the pivoted latch C provided with groove c, lug C′ and arm C^2, the spring D normally pressing said latch against said knuckle, the rod E divided at e inclosing said spring D and attached to said arm C^2 and the double crank F and rods H and crank h, substantially as and for the purposes described.

9. A device for attaching the drawbars of car couplings to cars, comprising a plate bolted beneath the car, raised ribs integral with or attached to said plates; recesses in the said ribs, follower plates adapted to be held in said recesses, a coil spring held between said follower plates, and a tail bolt passing through said spring and follower plates and connecting said plates to the draw bar, substantially as and for the purposes described.

10. A device for attaching the drawbars of car couplings to cars, comprising a plate M bolted beneath the car, ribs m and m' attached to or integral with said plate, recesses m^2 and m^3 in said rib m', follower plates N and N′ adapted to fit in said recesses, a spring P′ held between said follower plates, and the tail bolt p passing through said spring and follower plates and connected to the draw bar, substantially as and for the purposes described.

11. The combination with a drawbar and a knuckle pivoted therein, of a spring connected to said drawbar and adapted to allow said drawbar to be pushed back; and a buffer above said drawbar adapted to take the buffing strain of the cars as they come together, the said buffer comprising the fixed side pieces R provided with guides r therein, the movable buffer piece R′ provided with lugs r' adapted to move in said guides, and the buffer spring S, substantially as and for the purposes described.

12. A buffer for easing the buffing strain on car couplings, comprising two side pieces R rigidly attached to the car, and provided with guides r; the movable piece R′ provided with lugs r' adapted to engage in said guides; and a strong spring normally pressing said movable piece outward, substantially as and for the purposes described.

In testimony whereof we affix our signatures in presence of two witnesses.

NICHOLAS DARROW.
JAMES A. ROOSEVELT.

Witnesses:
J. J. TOBIN,
A. C. GOETH.