

(No Model.)

2 Sheets—Sheet 1.

W. S. EDWARDS.
CAR COUPLING.

No. 488,065.

Patented Dec. 13, 1892.

Fig. 1.

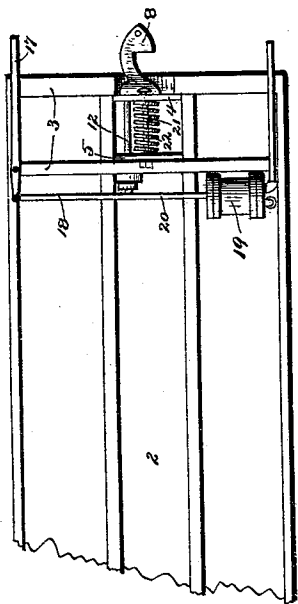


Fig. 7.

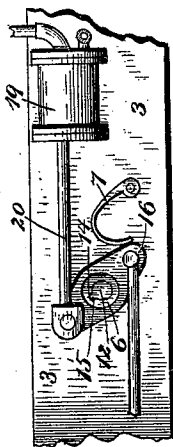
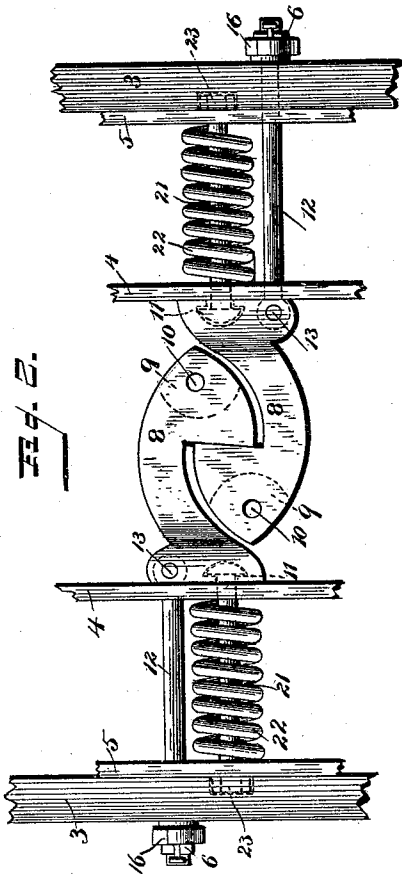


Fig. 2.



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Inventor:
William Seymour Edwards,
By M. C. Farland & Benjamin
His Attorneys.

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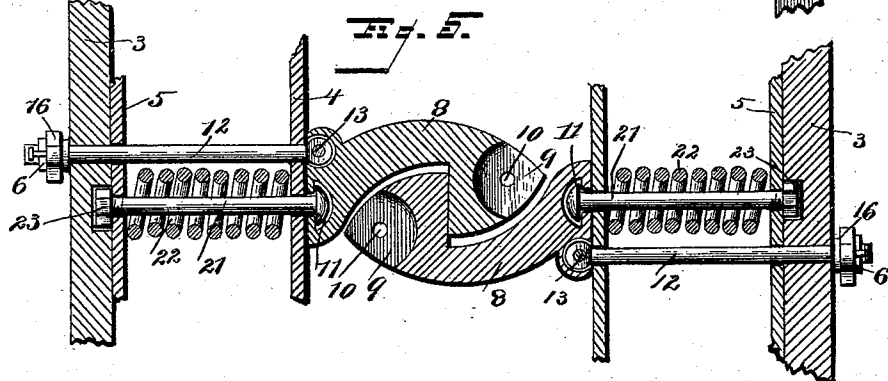
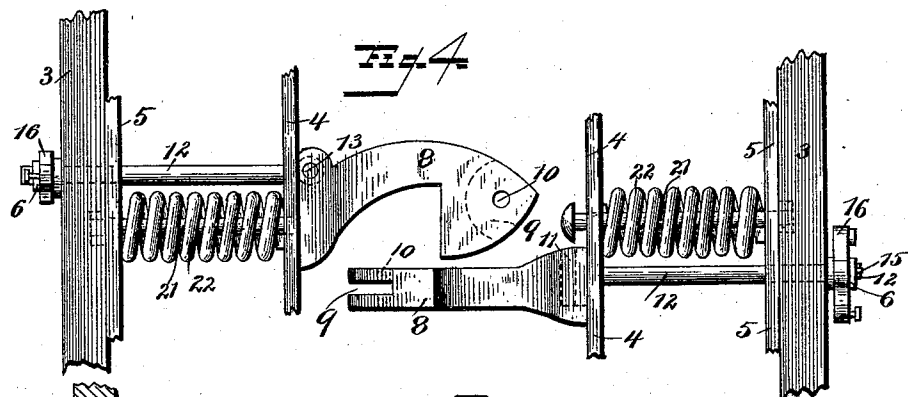
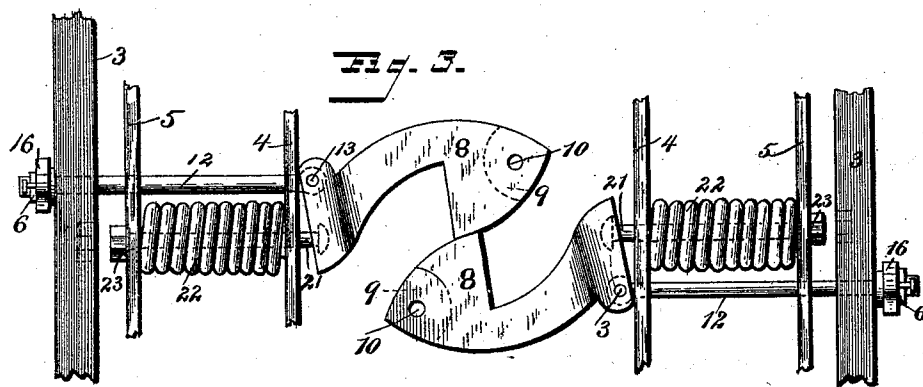
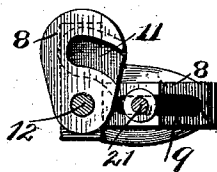


Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM SEYMOUR EDWARDS, OF CHARLESTON, WEST VIRGINIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 488,065, dated December 13, 1892.

Application filed October 27, 1892. Serial No. 450,117. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SEYMOUR EDWARDS, a citizen of the United States, residing at Charleston, in the county of Kanawha and State of West Virginia, have invented certain new and useful Improvements in Combined Automatic and Hand Car-Couplers; and I 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.

This invention relates to car-couplings having rotary draw-heads; and its object is to provide an improved coupling device of that class wherein the coupling may be effected automatically or by hand and the uncoupling performed by hand-power from a point without the car or by mechanical power from a point within the car or train.

The invention consists, first, in a novel combination of a draw-head of the hook pattern with a crank operated from within or without the car and by manual or mechanical power, so that the draw-head may be rotated for the purpose of disengaging the car from the corresponding draw-head of a car with which it is coupled.

It consists, secondly, in a novel combination of such a draw-head with a draw-bar adapted and fitted to permit the draw-head to swing open when coupling with another and corresponding draw-head, and to restore the draw-head to normal draft position when the coupling is effected.

In the accompanying drawings, wherein like numerals represent like parts, Figure 1 is a plan of a car-bottom with my devices applied; Fig. 2, an enlarged plan of two couplers in operative position; Fig. 3, a similar view showing two couplers moving over each other into operative position; Fig. 4, a similar view showing two couplers detached; Fig. 5, a horizontal longitudinal sectional view of the devices; Fig. 6, a detached view in elevation of two adjacent draw-heads, whereof the front one (shown from the rear) is in detached and the other (shown from the front) in operative position; and Fig. 7, a rear elevation of a cross-timber bearing the crank that uncouples the draw-heads and its motors.

The numeral 2 represents the bottom of a

railway-car, and 3 the ordinary cross-timbers thereon. The draw-head 8 is of the hook pattern, so contoured that the contact-surfaces of a pair of co-operating draw-heads will slide easily over one another and the projecting head of each will fit into the corresponding recess of the other. In the crown of each draw-head it is desirable to form a horizontal socket 9, bisected by a pair of pin-holes 10, so that a car provided with my draw-head may be coupled to an ordinary car by means of the familiar link and pin. Projected rearward from the draw-head is a bar 12, connected to the draw-head by a pivot 13, in vertical position through a shoulder formed at the base of the draw-head, so that the draw-head may swing horizontally and outwardly upon the pivot. The bar is carried back through a cross-timber 3 and at the rear end has a key 15 projected on its circumference and sliding back and forth in a groove 14, formed in the hub of a crank 16, which may be mounted to turn upon a stud 6 on the rear face of the cross-timber, or may be mounted directly upon the bar 12 as a matter of simplicity and economy of construction. The crank 16 is turned upon its support either by means of a hand-lever 17, pivoted to the outside of the car and to a rod 18, directly connected to the crank, or the crank may be connected to the piston 20 of an air or steam cylinder 19, and the valve to admit air or steam to the cylinder may be placed within the car for operation by the conductor, or within the cab for operation by the engineer, the cylinder being attached to the bottom of the car and suitably connected to the engine for its supply of steam or air. A spring 7, mounted on the rear face of the cross-timber, bears at its free end against the crank to restore it to its normal vertical position after it has been turned into or toward a horizontal position by the hand-lever or power-piston. In the base of the draw-head is a recess 11, extending from the edge well across the diameter of the base and so curved in longitudinal direction that while it engages the head of the draw-bar 21 when the draw-head is in normal horizontal position the latter may be turned upward by rotation of the bar 12 without interference from or disturbance of the draw-bar 21, with which the draw-head is

normally engaged. Loosely encircling the draw-bar 21 is a spiral spring 22, compressed between a pair of plates that slide upon the bars 12 and 21, the forward plate 4 bearing 5 against the base and the ordinary framework of the draw-head, and the hinder plate 5 bearing against the cross-timber. A nut 23 at the rear end of the draw-bar prevents said draw-bar from pulling out through the two 10 plates, and the cross-timber is recessed to seat this nut.

Where two cars are fitted with my coupler the coupling is effected by impact, the draw-heads coming together forcibly enough to 15 swing them outwardly upon their pivots till the convexed faces have passed each other, when the draw-heads are locked together by the recoil of the spring 22, which has been compressed by the drawing forward of the 20 plate 5 through the pull of the draw-bar 21, which is engaged by its head in the recess 11 of the draw-head.

To uncouple cars, the crank 16 is turned toward a horizontal position by the operation 25 of the hand-lever 17 or the power-piston 20, whereby the bar 12 is rotated through the engagement of its key 15 with the groove 14 in the hub of the crank, and in turn swings up the draw-head vertically.

30 I claim as follows:

1. The hook-shaped draw-head having the curved recess in the base thereof, in combination with the bar pivoted to a shoulder of the draw-head and passing back through a 35 cross-timber of the car-bottom and having a key projected from its circumference at the rear end, the crank supported upon or around the rear end of the aforesaid bar and having a groove within its hub in engagement with the key of said bar, and suitable means to 40 turn said crank upon its axis, all substantially as herein described, for the purpose of turning the aforesaid draw-head from a horizontal to a vertical position in the operation 45 of uncoupling railway-cars.

2. The hook-shaped draw-head having the curved recess in the base thereof, in combination with the bar pivoted to a shoulder of the draw-head and passing back through a 50 cross-timber of the car-bottom and having a key projected from its circumference at the rear end, the crank supported upon or around the rear end of the aforesaid bar and having a groove within its hub in engagement with the key of said bar, the spring mounted on 55 the rear face of the aforesaid cross-timber and bearing at its free end against said crank, and suitable means to turn said crank upon its axis against the resistance of said spring, 60 all substantially in the manner described, whereby the aforesaid draw-head is turned

from a horizontal to a vertical position in the operation of uncoupling railway-cars and restored to a horizontal position by reaction of said spring in readiness for the operation of 65 coupling such cars.

3. The hook-shaped draw-head having the curved recess in the base thereof, in combination with the bar pivoted to a shoulder of the draw-head and passing back through a 70 cross-timber of the car-bottom and having a key projected from its circumference at the rear end, the crank supported upon or around the rear end of the aforesaid bar and having a groove within its hub in engagement with 75 the key of said bar, the spring mounted on the rear face of the aforesaid cross-timber and bearing at its free end against said crank, the hand-lever pivoted outside the car, the rod pivoted at one end to the said lever and 80 at the other end to the aforesaid crank, the cylinder beneath the car, having suitable air or steam power connections with the engine of the train, and the piston connecting said cylinder with the aforesaid crank, all sub- 85 stantially as described, whereby the aforesaid draw-head is turned from a horizontal to a vertical position in the operation of uncoupling railway-cars by an application of 90 manual power from without or of mechanical power from within the train and restored to its normal horizontal position after the uncoupling has been effected.

4. The hook-shaped draw-head having the curved recess in the base thereof and piv- 95 oted at its outer shoulder to a suitable support by a vertical pivot, in combination with the backwardly-extending draw-bar normally engaged by its head in said recess, the forward plate loosely mounted on said draw- 100 bar and bearing against the base and ordinary framework of the draw-head, the rearward plate loosely mounted on said draw-bar and bearing against the front face of the proximate cross-timber, the spiral spring 105 wound loosely upon the draw-bar between said plates and bearing against their inner faces, the said draw-bar having a nut at its rear end bearing against the outer face of the said rearward plate, all substantially as 110 described, whereby the aforesaid draw-head is enabled to swing outwardly in the operation of coupling railway-cars and restored to and held in draft position at the completion 115 of said operation.

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

WILLIAM SEYMOUR EDWARDS.

Witnesses:

A. H. MAHONE,

WM. S. SUMMERS.