(No Model.)

# S. C. MURRAY.

## CAR COUPLING.

No. 342,376. Patented May 25, 1886.

Fig. 1.

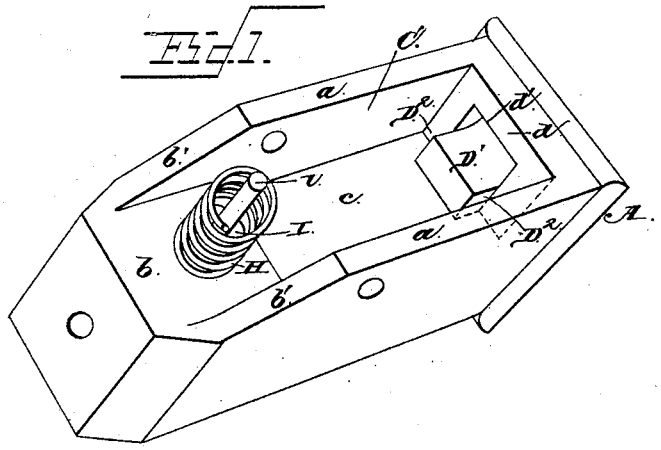



Fig. 2.

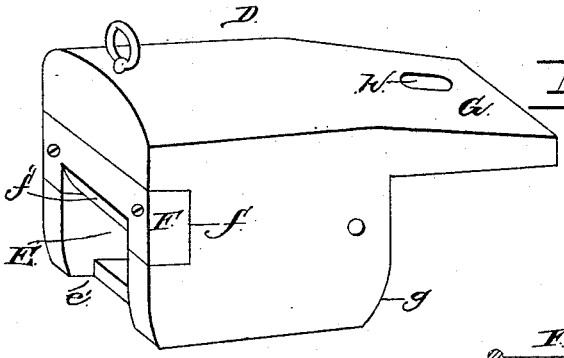



Fig. 3.

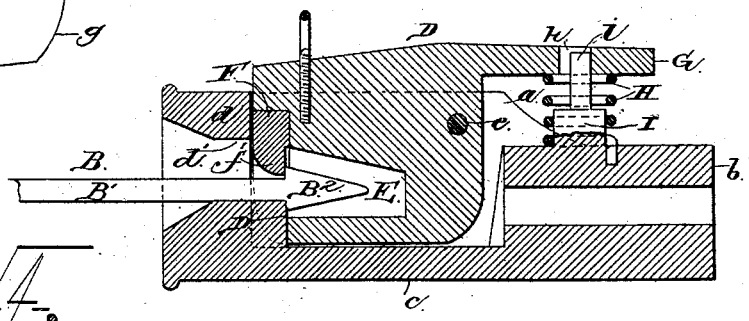
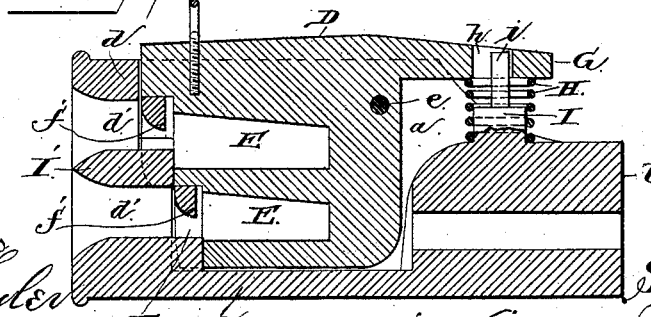



Fig. 4.

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# UNITED STATES PATENT OFFICE.

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## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 342,376, dated May 25, 1886.

Application filed March 3, 1886. Serial No. 193,813. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL C. MURRAY, a citizen of the United States, residing at Silver Spring, in the county of Wilson and State of Tennessee, have invented a new and useful Improvement in Car-Couplings, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to improvements in car-couplings; and it consists of the peculiar and novel construction and combination of parts, substantially as hereinafter fully set forth, and specifically pointed out in the claims.

The object of my invention is to provide an improved car-coupling which shall be automatic in its operation, to obviate the necessity of the brakeman passing between the cars, which is very hazardous and sometimes attended with loss of life; and a further object of my invention is to provide an improved coupling which shall be very simple, strong, and durable in its construction, thoroughly effective in operation, and comparatively cheap and inexpensive.

In the accompanying drawings, Figure 1 is a perspective view of the draw-head with the coupling-hook or drop removed, the draw-head being partly broken away to more clearly show its interior construction. Fig. 2 is a like view of the drop or coupling-hook detached from the draw-head, and Fig. 3 is a central vertical longitudinal sectional view through the draw-head and hook or drop with the coupling-link therein. Fig. 4 is a vertical longitudinal sectional view through a modified form of my invention.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, A designates the draw-head of my improved car-coupling, which comprises the parallel side walls, *a*, a solid portion, *b*, which forms the rear wall and has the rear ends of the side walls inclined or cut down to the plane thereof, as at *b'*, a bottom wall, *c*, and a front wall, *d*, which has an opening, *d'*, therein for the admission and passage of the coupling-link B, which latter comprises a bar, B', having the enlarged arrow-shaped heads $B^2$. The various walls above described, *a*, *b*, *c*, and *d*, form a chamber or space, C, for the reception of the coupling-hook or "drop" D, which is of a shape and size to snugly fit within the chamber.

D' designates a shoulder, that is formed integral with the front and bottom walls of the draw-head A, and this shoulder is of a width equal to the transverse diameter of the opening *d'* and lies on the plane of the lower edge thereof, thus forming or leaving a space, $D^2$, between each of its side edges and the adjacent side walls of the draw-head A.

The drop or coupling hook D is pivoted near its rear end on a pin or shaft, *e*, that is supported in the side walls of the draw-head; and the front face of the coupling-hook is provided with a chamber, E, near its lower edge. The upper wall of the chamber is inclined rearwardly, as clearly shown in the sectional views, Figs. 3 and 4, and the front edge of the bottom wall of the chamber is cut away for a short distance, as at *e'*, so that the side walls project beyond the bottom, as will be very readily understood.

When the coupling-hook is properly fitted in the draw-head chamber, the shoulder D' therein fits in the cut-out portion *e'* of the drop and between the projected ends at the front of the side walls that fit in the recesses $D^2$, and the drop is thus guided in its vertical movements. The front face of the drop is further recessed, as at *f*, to receive a block, F, which is secured flush with the outer faces of the drop, and provided with a ledge or shoulder, *f'*, that lies at a considerable distance below the plane of the front end of the inclined upper wall of the coupling-hook chamber E. The rear face of the body of the coupling-hook is curved or inclined at its lower edge, as at *g*, and at its upper edge the coupling-hook is provided with a rearwardly-extending plate or arm, G, that lies above the solid rear end, *c*, of the draw-head.

The plate or arm G is provided with a longitudinal slot, *h*, at or near its middle, and in this slot works a reduced end, *i*, of a guide-pin, I, the base of which is enlarged and suitably secured to or cast with the solid rear end, *c*, of the draw-head; and around this pin is fitted a coiled spring, H, which bears against the rear end of the coupling-hook or drop, so that the front end thereof is depressed to bring the shoulders D' *f'* close together, so as to se-

curely retain the arrowhead of the coupling-link B in place.

The draw-head is all cast in one piece of metal for strength and simplicity, and the coupling-hook or drop is likewise cast in one piece, with the exception of the shouldered block F, which is preferably made detachable, so that if the shoulder becomes broken through violent concussion between the same and the coupling-link, it can easily be removed and replaced at a trifling expense; but if it is desirable the block and its shoulder can also be cast with the coupling hook or drop.

The draw-head is suitably secured in proper position on a car-body, and the drop is provided with an eye or equivalent device, to which one end of a cord, rod, lever, or the like is connected, so that the drop can be elevated to release the coupling-link B, and thus uncouple the cars from either the roof of the car or from one side thereof.

When the device is set for coupling, the pressure-spring H forces the front end of the coupling-hook downward, so as to leave or provide a comparatively small space between the shoulders D′ *f*′. When the arrowheaded link B enters the opening *d*′ in the draw-head, its point enters the space between the shoulders, and when the enlarged portion of the head comes in contact with the beveled face of the shoulders *f*′, it will elevate the face end of the coupling-hook against the tension of its pressure-spring; and the arrowheaded coupling-hook thus engages the shoulders D′ *f*′ to couple the cars, the pressure-spring reasserting its force when the link engages the shoulders.

In the modification shown in Fig. 4 of the drawings I have shown the draw-head A provided with two of the openings *d*′ arranged one above the other so that the draw-heads of cars of different heights can be conveniently and readily coupled. The draw-head A is provided with a transverse partition, I′, which is also provided with a shoulder, D′, and the coupling-hook D is provided with two of the chambers E, for the reception of the coupling-link, each chamber having a depending removable shoulder *f*′, and the chambers are arranged in alignment with the openings *d*′ in the draw-head. The operation of this form of my invention is substantially the same as that hereinbefore described.

I do not desire to confine myself to the precise details of construction and form and proportion of parts herein shown and described as an embodiment of my invention, as I am aware that slight changes therein can be made without departing from the principle thereof.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a car-coupling, a draw-head having an open chamber and a shoulder, D′, at its lower front end, in combination with a pivoted coupling-hook closely and wholly fitted within the draw-head chamber, and provided with a recessed portion, *e*′, at its lower front edge for the passage therethrough of the shoulder D′, the front edges of the sides of the coupling-hook lying between the side walls of the draw-head chamber and the shoulder D′, said coupling-hook being further provided with a chamber, E, and a retaining-lip, *f*′, and a pressure-spring for normally holding the front end of the coupling-hook depressed, substantially as described.

2. In a car-coupling, the combination, with a draw-head having a chamber, of a pivoted coupling-hook fitted in the chamber and having a chamber for the reception of a link, a removable block secured in the coupling-hook at the upper end of the chamber thereof and provided with a depending lip, and a pressure-spring for normally holding the front end of the hook depressed, substantially as described.

3. In a car-coupling, the combination of a draw-head having an open chamber and a shoulder, D′, a pivoted coupling-hook closely and snugly fitted in the draw-head chamber and having a recessed bottom, as at *e*, and a chamber, E, a removable block, F, having a depending shoulder, *f*′, a guide-pin, I, passing through the slotted end G of the coupling-hook, and a coiled spring, H, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of three witnesses.

SAMUEL C. MURRAY.

Witnesses:
E. G. SIGGERS,
H. T. BERUHOD,
WM. N. MOORE.