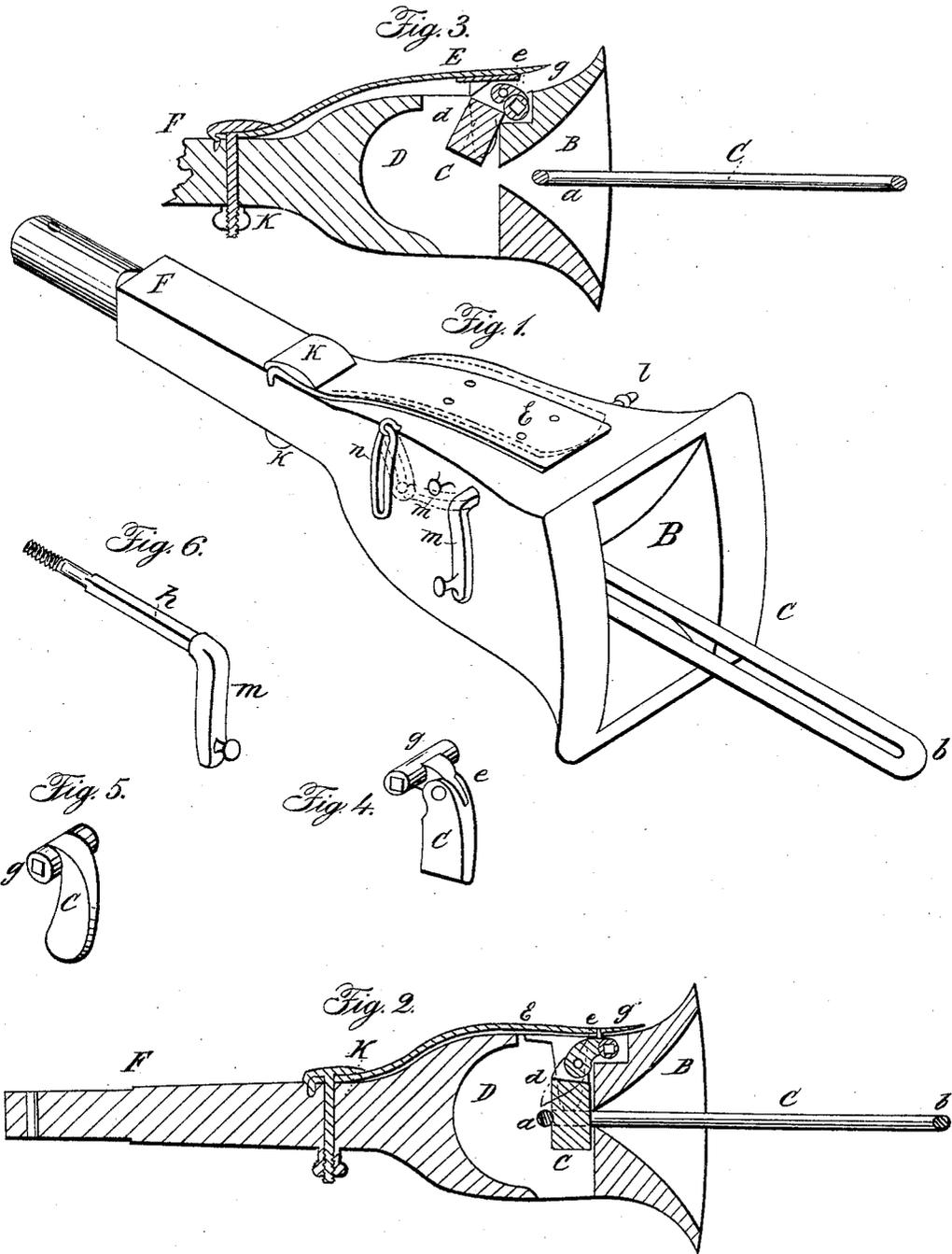


J. H. REED.
Car Coupling.

No. 57,767.

Patented Sept. 4. 1866.



Witnesses:

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UNITED STATES PATENT OFFICE.

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IMPROVED CAR-COUPLING.

Specification forming part of Letters Patent No. 57,767, dated September 4, 1866.

To all whom it may concern:

Be it known that I, JOHN H. REED, dentist, of the city and county of New Haven, in the State of Connecticut, have invented a new and useful Improvement in Self-Couplers for Railroad-Cars; and I do hereby declare that the following is a full, clear, and exact description of the construction, character, and operation of the same, reference being had to the accompanying drawings, which make a part of this specification, in which—

Figure 1 is a perspective view of the coupler when detached from the car, showing the front or open end of the draw-head with the link inserted, the lever by which the toggle or coupling-pin is to be raised to uncouple, and the spring which holds the link in a horizontal position ready to enter the other draw-head. Fig. 2 is a longitudinal section of the same cut vertically through the center, showing the relative positions of the several internal parts when the toggle is in the link. Fig. 3 is a like longitudinal section, showing the position of the parts when the toggle is raised out of the link, as in uncoupling, &c. Fig. 4 is a perspective view of the toggle when jointed so as to enter or leave the link in a vertical line at all times. Fig. 5 is a perspective view of the toggle when not jointed and when the lower end of the toggle moves in a curved line. Fig. 6 is a perspective view of the rock-shaft or elbow-shaped lever by which the toggle (either Fig. 4 or Fig. 5) is to be worked to uncouple.

My improvement consists in making the draw-head so much bell-mouthed that it will receive the link without reference to the occasional difference in the elevation of cars; and in making the toggle with or without a joint, and so suspending it on a rock-shaft, elbow-shaped lever, or bell-crank that it will readily yield to the pressure of the end of the link when being inserted into the draw-head for coupling, and by its own weight or gravity immediately fall into the link, so as to couple it securely, and so that it may at any time be readily raised out of the link by the use of the lever or rock-shaft; and in fitting a spring with a forked or pronged apparatus to rest on the inner end of the link, so as to insure the horizontal position of the link or shackle when but one end is in a draw-head.

I make the draw-head of cast-iron or any other suitable material, substantially of the shape represented in Fig. 1 and indicated in section in Figs. 2 and 3, by casting it one piece.

I make the draw-head largely bell-mouthed, as represented at B, Figs. 1, 2, and 3, so that it may readily receive the end, as *a*, of the link or shackle C, while the other end is secured in the draw-head of the other car, without reference to the occasional difference of elevation of the two cars, so that the link or shackle will need no human attention after one end has been inserted into one draw-head; and in rear of the bell-mouth I have an open space, as indicated in section at D, Figs. 2 and 3, into which the end, as *a*, of the link C enters, and which also receives the toggle *c* and the appendages (shown in red dots at *d*) of the spring E, the principal use of which appendages is to rest on the inner end, as *a*, Fig. 2, of the link C; to sustain the link in a horizontal position, as represented in Figs. 1 and 2, ready for the end *b* to pass into the draw-head of another car. I make the rear or inner end, F, in the form shown, or in any other suitable shape to be attached to the frame of the truck.

I make the toggle or coupling-pin *c* of wrought-iron or any other suitable material, substantially in the form shown in Fig. 4, with a joint, *e*, and a socket, *g*, to fit onto the rock-shaft, Fig. 6, making the toggle *c* sufficiently heavy to cause it to hang vertically from the joint *e*, so that it will rise and fall vertically to uncouple or couple, as indicated in Fig. 2, and of sufficient strength to make a secure coupling-pin; or I make the toggle, as represented in Fig. 5, without a joint, which will be equally certain to couple and to hold securely; but it cannot be uncoupled when there is any forward strain on the cars, as it must be drawn out of the link or shackle in a curvilinear direction.

I make the rock-shaft or elbow-shaped lever of wrought-iron or any other suitable material, with the central portion of its horizontal part made square in the cross-section, as shown at *h*, Fig. 6, to fit the socket *g*, Figs. 4, 5, 2, and 3, or with a spline or otherwise, to cause the socket *g* of toggle *c* to turn with the rock-shaft.

On the upper side of the main body of the

draw-head I fit a spring, as represented at E, Figs. 1, 2, and 3, which I attach or secure by a screw-bolt, as represented at *k*, Figs. 2 and 3, and indicated at *k* and *k*, Fig. 1. Near the front end of this spring I append a forked piece, or piece with two flat prongs, as indicated by dots at *d*, Figs. 2 and 3, which appendages are, by operation of the spring E, pressed onto the inner end, as *a*, of the link C, as shown in red dots in Fig. 2; and the spring E and its appendages *d* are raised up by the upper end of the toggle when the toggle is raised up to allow the link C to pass in, or when it is raised to uncouple or to prevent coupling, as represented in Fig. 3, to the position represented at E, Fig. 3, and indicated by red dots in Fig. 1, which spring E also covers the opening in the upper surface of the draw-head, and secures it against dust, &c.

I use any ordinary link or shackle, as C, Figs. 1, 2, and 3, or any other convenient form.

Having made the several parts, as before described, I place the toggle in the position shown in Fig. 2 or Fig. 3, and pass the part *h* of the rock-shaft, Fig. 6, through the square socket *g*, Figs. 2, 3, 4, and 5, and secure it in its place by turning on a nut, as *l*, when the arm or lever *m* will hang down, as in Fig. 1, and the toggle *c* will fall to the position shown in Fig. 2. I then put on the spring E, and secure it by the screw-bolt *k*, as shown in Figs. 1, 2, and 3.

To couple or secure the end of the link or shackle C in the draft-head, I pass it in, as indicated in Fig. 3, when it will force the tog-

gle *c* up to a sufficient height, (somewhat as represented in Fig. 3, though not so high,) when the link C will pass under it, and the toggle, by its own gravity, will fall to the position shown Fig. 2, when the link will be securely held, and at the same time the spring E will press the part *d* onto the inner end of the link, and sustain the link in a horizontal position, all as shown in Fig. 2 and indicated in Fig. 1, and the lever *m* will hang down, as represented in Fig. 1, which will always be a reliable signal that the toggle is in its place and all is safe; and a lever like *m* may be hung on the other side, at the other end of the rock-shaft, at *l*, to serve as a signal when *m* cannot be seen.

If, in switching cars from one track to another, I do not desire to have them couple when they come together, I hook the link *n* onto the lever *m*, as shown by red dots in Fig. 1, which will raise the toggle *c* to the position shown in Fig. 3, when the link C may pass in and out with perfect freedom.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the toggle or coupling-pin *c*, rock-shaft and crank *h* and *m*, and the spring E with its appendages *d*, when the whole is constructed, arranged, and combined substantially as herein described and set forth.

J. H. REED.

Witnesses:

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