E. LEWIS.

Car-Coupling.

No. 167,454. Patented Sept. 7, 1875.

Fig. 1.

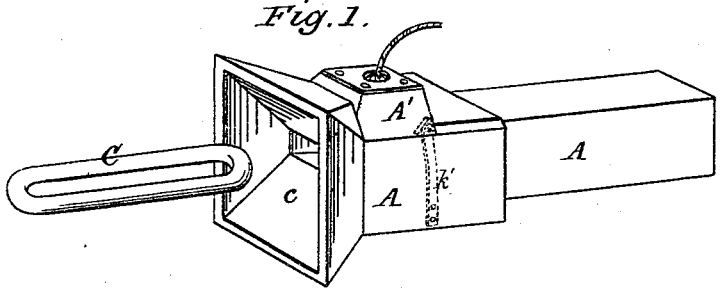



Fig. 2.

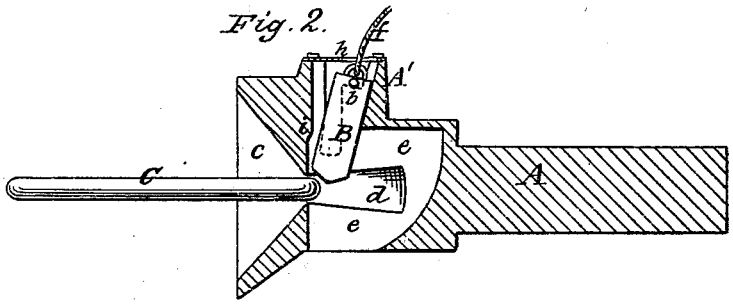



Fig. 3.

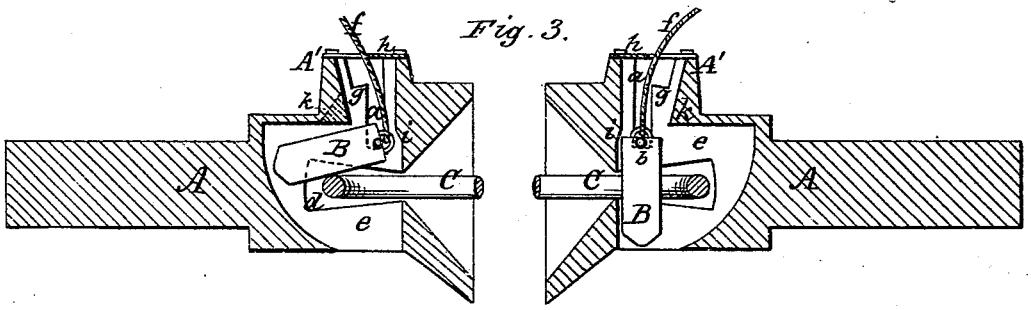
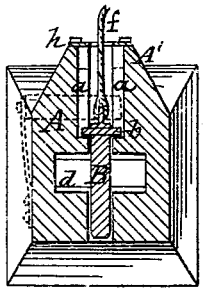



Fig. 4.




Witnesses:
W. B. Masson
Edmund Masson

Inventor
Edward Lewis
By atty A. B. Stoughton

# UNITED STATES PATENT OFFICE.

EDWARD LEWIS, OF DOVER, DELAWARE.

## IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **167,454**, dated September 7, 1875; application filed July 30, 1875.

*To all whom it may concern:*

Be it known that I, EDWARD LEWIS, of Dover, in the county of Kent and State of Delaware, have invented certain new and useful Improvements in Railroad-Car Couplings; and that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents my car-coupling in perspective. Fig. 2 represents the same in longitudinal vertical section, with the coupling-pin in position for coupling. Fig. 3 represents two of my car-couplings in longitudinal vertical section, with the coupling-pin in different positions. Fig. 4 represents a transverse vertical section through the car-coupling.

Similar letters of reference, where they occur, denote like parts in all the figures.

My invention relates to the manner in which the coupling-pin is guided in its motions up or down by small pins or projections attached to, or formed on, two of its sides near its top, slid into grooves cut in the interior of the buffer-head, said grooves and coupling-pins being of a peculiar form, so as to allow the car-coupling to be self-coupling when it is so desired, and to prevent the coupling-pin riding up and out of the link when the cars are in motion.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

A represents the frame of a buffer-head containing my improvements. It is extended upward at A′, so as to incase and guide the coupling-pin B. This pin is made rectangular in form, with its point forming an obtuse **V**, so as to ride easily over the link C when the latter is introduced through the funnel-opening *c* of the draw-head A into the chamber *d* formed in the draw-head to receive the link C. The chamber *d* is enlarged in the rear more than at the entrance, so as to accommodate the link C of cars of different heights. The coupling-pin B is provided with pins or projections *b* that enter grooves *a* recessed out of the groove *e* formed in the middle of the draw-head to allow the coupling-pin B to operate. This coupling-pin has at its upper end a staple or hole, at which point is attached a rope or chain, *f*, that extends so as to be easily operated by the brakeman from the platform, or from the roof of the car, or from the side of the car, by a pivoted lever, to one end of which the rope *f* can be attached. The groove *a* is formed so that its front edge is vertical, or nearly so, but the upper portion is enlarged in the rear, so as to form a shoulder, *g*, to receive the pin *b*, and support the coupling-pin B in proper position to be operated by the link C. The opening *e*, inclosing the coupling-pin B, is partly closed by a plate or bars, *h*, bolted or riveted on the top of the draw-head, so that the coupling-pin cannot be easily removed or lost; but, if it should get broken, a new one could be introduced by using ordinary tools for the purpose. The forward part of the groove *e* is cut vertically in two parallel planes, but with an angle or curve at *i* to prevent the coupling-pin B riding up and out of the coupling-link C when the cars are in motion. The groove *e* is cut back of the vertical grooves *a* a sufficient distance to allow the coupling-pin B, when down, to revolve one-quarter of a circle, so that if a car carrying a coupling-link, as shown on the right side of Fig. 3, should be backed against another having its coupling-pin down, the coupling-pin will swing up out of the way of the coupling-link, and not latch with it, the concussion being borne by the buffer-heads.

When it is desired to couple two cars together, (one of them carrying the coupling-link,) the coupling-pin B of the other being raised by means of the rope or chain *f* until the pins *b* rest on the shoulders *g* of the grooves *a*, the rope or chain, and with it the head of the coupling-pin B, being drawn slightly backward, as shown in Fig. 2, the coupling-link, in entering the chamber *d*, strikes the beveled end of the pin B, and throws its supporting-pins *b* off the shoulders *g*, allowing it to descend inside of the coupling-link, and retain it fast to the draw-head. When it is desired to uncouple the cars, the coupling-pin is raised, by means of the rope or chain, to the position shown in Fig. 2, where it will generally remain after the removal of the link.

By making the angular projection *k* movable in the form of a triangular bolt connected

with the draw-head, and retained in position by a spring, *k'*, as shown by dotted lines in the drawings, the chamber *e* can be enlarged at the will of the brakeman, so as to allow the pin B to be coupled with the link C even after the latter has entered the chamber *d*.

Having thus fully described my invention, what I claim is—

1. The combination of the grooves *a* and shoulders *g*, formed into an elevated extension, A', of the draw-head A, with the pins *b* of the coupling-pin B, and plate *h* to retain the coupling-pin in position, substantially as shown and described.

2. The combination of the groove *e*, having its forward end recessed at *i*, and its rear portion enlarged, with the coupling-pin B capable of a vertical and a rotating motion, substantially as and for the purposes described.

3. The combination of the draw-head A A', groove *e*, and plate *h* with the flat coupling-pin B, having its point made angular fore and aft, substantially as and for the purpose set forth.

EDWARD LEWIS.

Witnesses:

VINCENT E. MOORE,

GEO. W. MASSEY.