(No Model.)

P. RILEY.

CAR COUPLING.

No. 367,549. Patented Aug. 2, 1887.

Fig. 1.

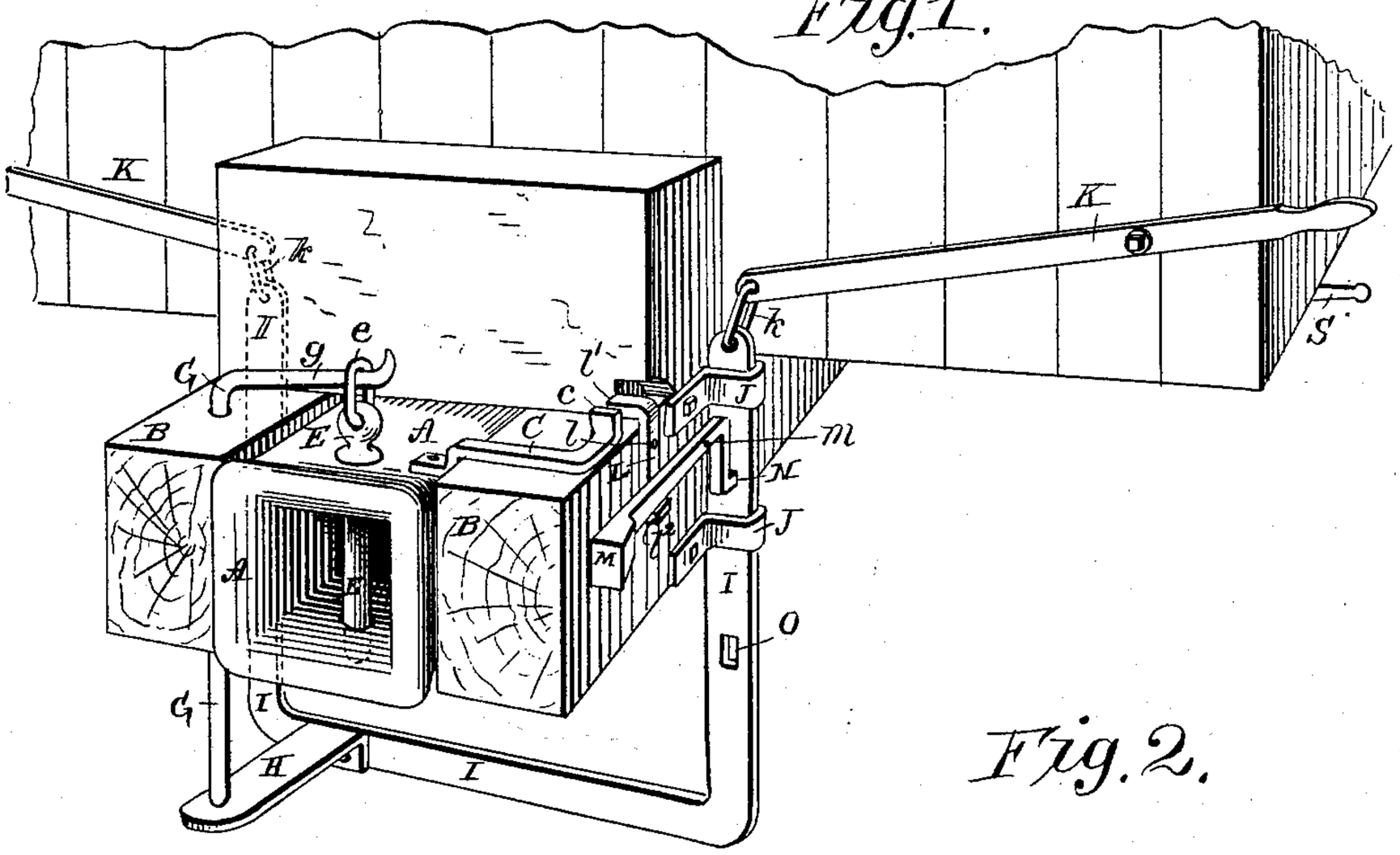


Fig. 2.

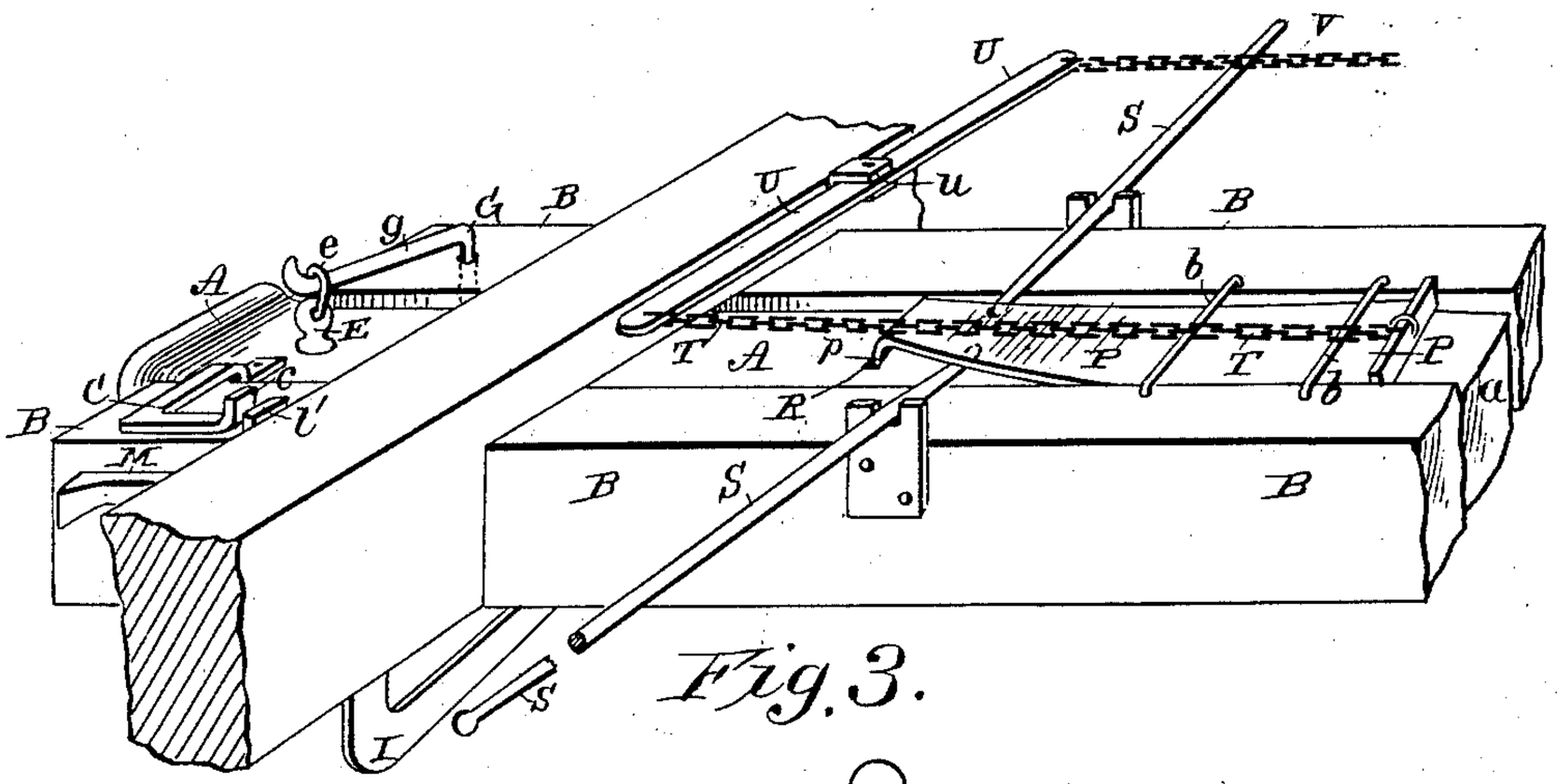


Fig. 3.

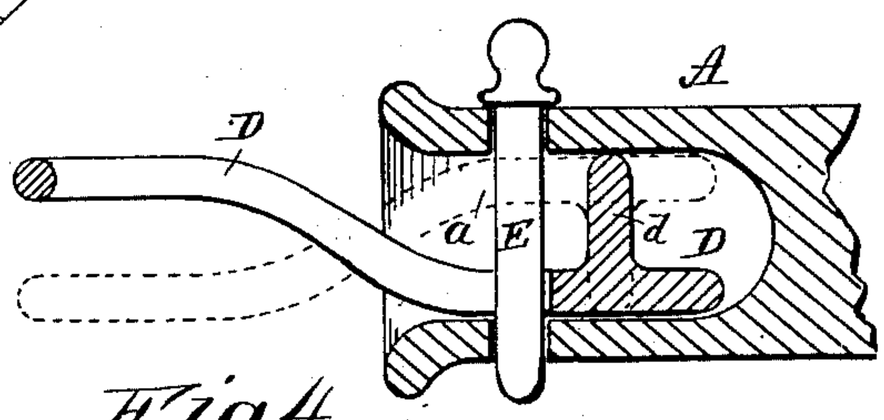
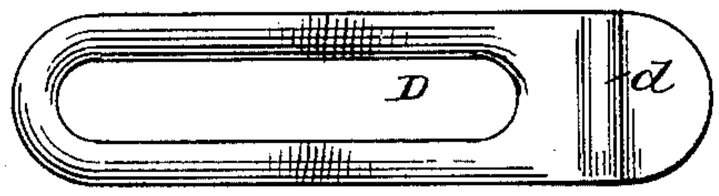


Fig 4



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PHILIP RILEY, OF MARION, IOWA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 367,549, dated August 2, 1887.

Application filed May 21, 1887. Serial No. 238,986. (No model.)

To all whom it may concern:

Be it known that I, PHILIP RILEY, of Marion, in the county of Linn and State of Iowa, have invented a new and Improved Car-Coupling, of which the following is a full, clear, and exact description.

My invention relates to car-couplings, and has for its object to provide a simple, inexpensive, and efficient coupling, allowing cars to couple automatically as they come together, or to be coupled by the operation of a hand-lever at the side of the car, and without requiring train-men to go between the cars and expose themselves to injury. The coupling is fitted with a brake attachment, which prevents withdrawal of the entered coupling-link, thereby assuring dropping of the coupling-pin through the link.

The invention consists in certain novel features of construction and combinations of parts of the car-coupling and brake attachments, all as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of part of the end of a box-car with my improved coupling applied. Fig. 2 is a rear perspective view of portions of the car-frame and the coupling, and shows also the brake attachment by which the coupling of two cars as they come together may be assured. Fig. 3 is a detail vertical longitudinal sectional elevation of the outer end of the draw-head and the coupling-link held therein by the coupling-pin, with a second position of the link indicated in dotted lines; and Fig. 4 is a plan view of the coupling-link.

The draw-head A of the coupling is provided with a rear portion, *a*, forming the draw-bar and having any suitable buffer-springs, not necessary to show or describe. The draw-head is fitted loosely between bumper-beams B B, fixed to the car-frame, and is held up into normal position at its forward end by a metal strap or bar, C, which lies on top of one of the beams B, and serves also as a trip to the coupling-pin holding devices, as presently explained. The draw-head is provided with the usual horizontal socket, *a'*, to receive the coupling D, and vertical holes to receive the coupling-pin E, which enters the link-slot.

The coupling-link is bent flatwise, transversely, or in direction of its length, and at one end is provided with a lug or lip, *d*, which is of proper length to cause the link to be held between the upper and lower walls of the draw-head socket *a'*. When the link is placed in the draw-head with its lug *d* uppermost, the outer or coupling end of the link will be held higher by a few inches than when the link is held with the lug *d* underneath, as will be understood by a comparison of the full and dotted lines in Fig. 3 of the drawings. The outer end of the link may thus be adjusted higher or lower, to enter the high or low draw-heads of opposing cars.

The coupling-pin E is connected loosely by a link, *e*, with an arm, *g*, which is a lateral bend or extension of a rod, G, which is fitted to slide vertically in one of the beams B and rests upon a plate, H, which is fixed to a U-shaped frame, I, which is fitted to slide in suitable strap bearings or boxes J, fixed to the outer sides of the opposite beams B B. The upper ends of the side arms of the frame I are connected by links *k k* with the inner ends of two levers, K K, which are fulcrumed to the end of the car and extend to opposite sides of the car, thus allowing the frame I, and consequently the plate H, rod G *g*, and coupling-pin E, to be lifted by lowering the outer end of either lever K, preparatory to coupling the cars.

To the side of the beam B which the draw-head bar C overlies a trip-lever, L, is pivoted at *l*. The upper end of this trip is bent inward at *l'*, behind the unbent end *c* of the bar C, and the lower end of the trip L is bent outward to form a lug, *l²*, onto which the weighted outer end of an elbow-lever, M, normally rests. This lever M is fulcrumed to the beam B at *m*, near its down-bent inner end, which at its extremity is provided with a rearwardly-projecting lug, N, which is adapted to enter a hole or slot, O, made in the adjacent side bar of the frame I, and whereby when the frame is lifted by either one of the levers K, as above described, the lug N will automatically enter the slot O and hold the coupling-pin raised.

It is obvious that as the cars come together for coupling the draw-head A will be forced inward, which will cause the bar C to swing the trip L, and thereby lift the outer end of the elbow-lever M and withdraw its lug N

from the slot O of the raised frame I, and allow said frame to fall, and consequently allow the coupling-pin E to fall through the link which had entered the draw-head and effect a coupling of the cars automatically. It will also be seen that by forcibly raising the outer end of either lever K when the coupling-pin E is held up by the raised frame I, the elbow-lever lug N may be forced from the slot O, thus allowing the cars to be coupled either side of them by hand-power applied to the levers and without requiring train-men to go between the cars and expose themselves to injury.

It is desirable, when the cars come together for coupling, that rebound of the cars be prevented to preclude withdrawal of the free end of the coupling-link before the coupling-pin has time to fall through the link, and to accomplish this object I provide a brake device to be operated by the backward movement of the draw-head.

This brake device comprises a metal plate, P, which is placed loosely on top of the draw-head bar *a*, under the body of the car, and is held in place between the bumper-beams B B by a couple of rods, *b b*, fixed to the beams above the plate. The forward end of the plate P is provided with a downwardly-projecting lug or hook, *p*, which is adapted to enter a recess, R, made in the top of the draw-head bar *a*. (See Fig. 2 of the drawings.) Levers S S, fulcrumed on the beams B B, extend to the opposite sides of the cars, and the inner ends of these levers lie under the forward portion of the plate P, thus allowing the hook *p* of said plate to be lifted from the draw-bar recess R by operating either of the levers, which may be locked in position by any suitable device on the car-body to hold the hook clear of the recess. A chain, T, which is connected to the back end of the plate P, extends forward and is fixed to one end of a lever, U, which is fulcrumed at *u* on the car-frame, and is connected at its other end to a chain, V, which it is understood is to be connected to a chain or device connected to the brake-beam of the car, and whereby, when the hook *p* of the plate P is in the draw-bar recess R, the chain T will be drawn upon to operate the lever U and draw on the chain V to apply the brakes to the car-wheels to prevent rebound of the car and coupling-link and assure the fall of the coupling-pin through the link, as will readily be understood. By operating either lever S the plate-hook *p* may be raised from the draw-bar recess R, to prevent operation of the automatic-brake device, if for any reason this may be desired.

It will be noticed that the suspension of the coupling-pin by the link *e* from the lateral arm or head *g* of the rod G allows free play of the draw-head in all directions, without in any manner cramping or interfering with the operation of the coupling-pin and its retaining and trip devices.

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

1. The combination, in a car-coupling, of a draw-head, A, a coupling-pin, E, a vertically-sliding frame or bar, I, having a plate, H, and a vertically-sliding rod, G, resting on the plate H, and having a laterally-bent head, *g*, to which the coupling-pin is linked, substantially as shown and described, whereby the coupling-pin may be lifted by raising the frame or bar I and the pin will not be cramped by the movements of the draw-head, as herein set forth.

2. The combination, in a car-coupling, of a draw-head, A, a coupling-pin, E, a vertically-sliding frame or bar, I, having a plate, H, and slot O, a vertically-sliding rod, G, resting on the plate H, and to which the coupling-pin is linked, a bar, C, on the draw-head, a lever, M, fulcrumed to the car-frame and provided with a lug, N, adapted to the frame-slot O, a trip-lever, L, fulcrumed to the car-frame to support the lever M and adapted for operation by the draw-head bar C, and means for lifting the frame or bar I, substantially as described, for the purposes set forth.

3. The combination, in a car-coupling, of a draw-head, A, a coupling-pin, E, a vertically-sliding frame or bar, I, having a plate, H, and slot O, a vertically-sliding rod, G, resting on plate H, and having a bent head, *g*, to which the coupling-pin is linked, a bar, C, on the draw-head, a lever, M, fulcrumed to the car-frame and provided with a lug, N, adapted to the frame-slot O, a trip-lever, L, fulcrumed to the car-frame to support the lever M and adapted for operation by the draw-head bar C, and a lever or levers, K, fulcrumed to the car-body and connected to the frame or bar I, substantially as described, for the purposes set forth.

4. The combination, with the draw-bar of a car-coupling, of a plate, P, having a hook, *p*, adapted to a recess, R, in the draw-bar, a lever, U, fulcrumed to the car-frame, and chains or connections T V between the plate P, the lever U, and brake-applying mechanism on the car, substantially as shown and described, whereby when the draw-bar is forced back in coupling the cars the brakes will be applied to the car-wheels to prevent rebound of the cars and assure passage of the coupling-pin through the link, as herein set forth.

5. The combination, with the draw-bar of a car-coupling, of a plate, P, having a hook, *p*, adapted to a recess, R, in the draw-bar, a lever, U, fulcrumed to the car-frame, chains or connections T V between the plate P, the lever U and brake-applying mechanism on the car, and levers S, fulcrumed on the car-body and extending to the plate P and adapted for lifting its hook *p* from the recess R, substantially as described, for the purposes set forth.

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Witnesses:
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