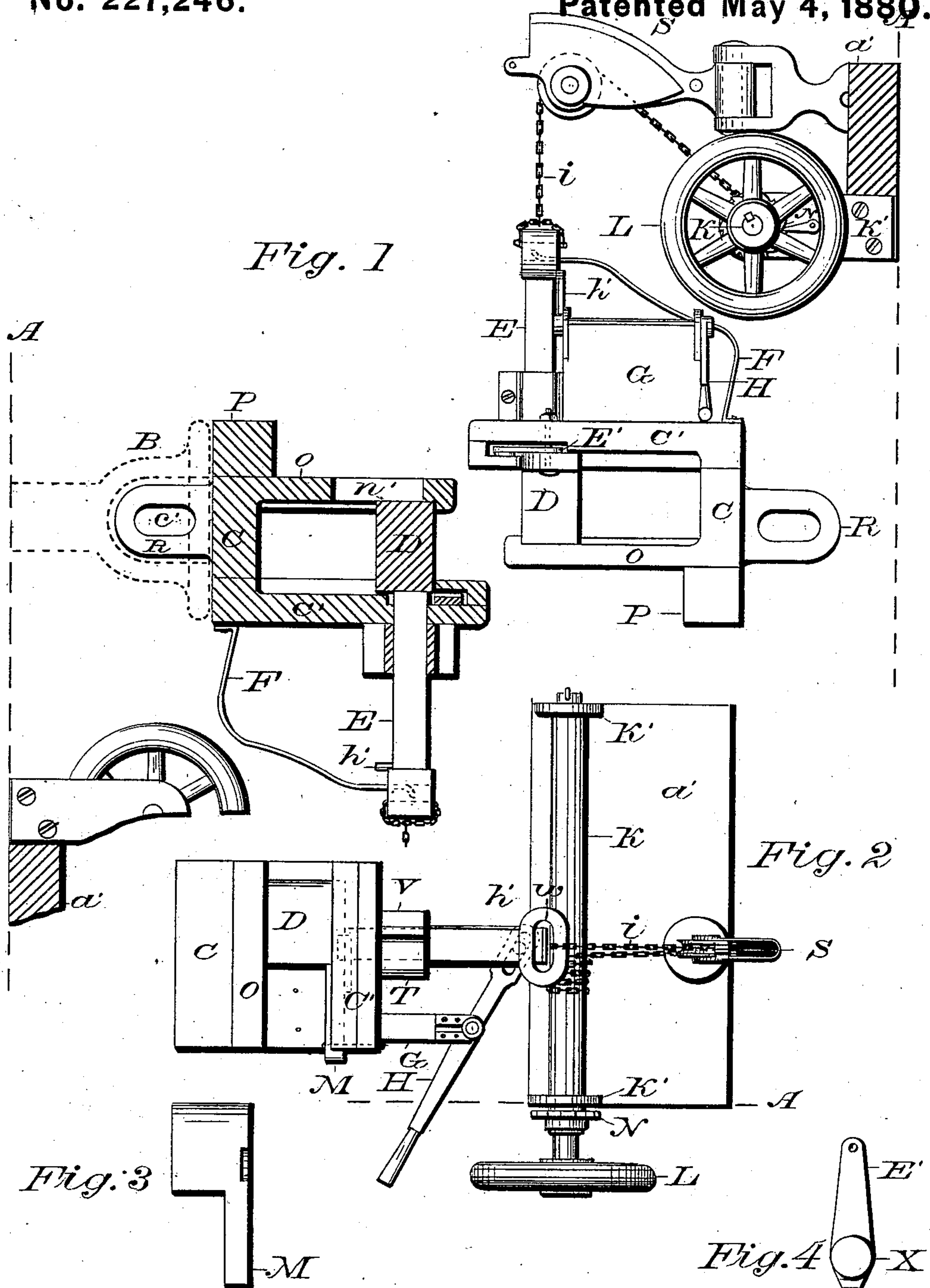


W. HARKINS.  
Car-Coupling.

No. 227,246.

Patented May 4, 1880.



Witnesses  
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# UNITED STATES PATENT OFFICE.

WILLIAM HARKINS, OF DUNKIRK, NEW YORK.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 227,246, dated May 4, 1880.

Application filed March 16, 1880. (Model.)

*To all whom it may concern:*

Be it known that I, WILLIAM HARKINS, of Dunkirk, in the county of Chautauqua and State of New York, have invented a new and Improved Car-Coupler, of which the following is a specification.

Figure 1 represents a transverse section of the device and a plan of the same. Fig. 2 is a front view of the device. Fig. 3 is a side view of the buffer-guard. Fig. 4 is a view of the drop-guard, showing the upper surface.

Similar letters of reference indicate corresponding parts.

The object of this invention is to provide a satisfactory automatic coupler for cars, attached to them in the ordinary way, or attachable by a pin to the ordinary draw-head.

The invention consists of a novel construction and arrangement of a draw-head provided with two extended rigid arms—the longer to carry the mechanism and act as a buffer, the shorter to act as a coupling-bar—of two guards, and of a mechanism for withdrawing a key both from the ground and the top of cars.

In the drawings, A represents the end of the car. B is the ordinary draw-head, to which the device is shown attached by a pin passing through the hole *c'*. C is the draw-head, consisting of two rigid arms—C', somewhat longer than the other, in order to receive the shock of the cars in coming together, bearing the key and coupling mechanism, and O, somewhat shorter, provided with a slot, *n'*, which serves as a coupling-bar. It has also the shoulder P, to engage with the arm C' of the opposite draw-head as a buffer.

On the rear end of the draw-head C is the stud R, having the hole *c'* for the pin of the common draw-head. R may also be a shank immediately fastened in any suitable manner to the body of the car to act as a draw-bar.

D is a buffer-guard to hold the key E retracted or set for coupling. It is pivoted at the lighter and upper end and in the entrance of the draw-head, directly across the path of the key E. It may be pivoted in a recess of one of the arms, as shown, or be suspended above the draw-head in any manner. When struck by the entering bar O it is thrown back and up until it releases the key E. By the peculiar shape of the draw-head C—i. e., hav-

ing a recess between two arms or vertically-slotted jaws—the buffer D may be thrown up and kept entirely out of the path of the arm O of the opposite coupler, thereby securing sufficient size and weight for the novel action of the buffer D, as hereinafter described.

The shoulder M of the buffer D prevents, by engaging with the top of the draw-head, the buffer being thrown over too far to return by its own weight, which it does on the parting of the cars.

Pivoted between the buffer D and the arm C', in a recess of the same, is the drop-guard E', having the shoulder X on its outer surface and at its larger end. This is used to enable the key E, when retracted, to be set when cars are shoved together, so as to make the use of the buffer-guard D of no avail. When the key E is sufficiently retracted the drop-guard E' falls of its own weight in front of said key and holds it back. It has a shoulder, X, which on the parting of the cars engages with the buffer-guard D, thereby being thrown forward and allowing the key to press against the buffer-guard D instead. The buffer-guard is made of such material, size, and weight as to usually secure the throwing forward of the drop-guard E', as described; but this may be done by hand in case such action should not take place.

The drop-guard E' may be dispensed with and the ratchet-wheel of the rod K be used to hold back the key, as hereinafter described.

On the outer face of C' is a frame, T, provided with a cap, V, to hold the key E firmly in position. The said key E is provided with a slot, W, to receive the spring F, by which said key is impelled, when liberated, by the guards D or E'. It also has a pin, *h'*, to engage with the lever H, for retracting in uncoupling in case such lever is used. This lever H is shown fulcrumed on the frame G of the arm C', but may be fulcrumed also on the platform of a car, in which case the frame G may be dispensed with. A straight rod is used to separate the two arms of the lever H in order to allow the handle to approach the end of the car and be more conveniently managed.

By means of the slotted head the key E, if desired, may be pulled out by hand, or a chain attached thereto, as shown and hereinafter



described, for a similar purpose. The slot serves to allow the free movement of the spring necessary to move over the arc of a circle in its action. It also prevents the displacement of both spring and key.

K is a perpendicular rod borne on the end of the car at a proper distance, having the ratchet-wheel N and the wheel L. To this is attached the chain *i* at one end, the other end being attached to the key E. By means of this rod K and wheel L, through the winding of the chain *i*, the key E may be retracted from the top of a car or platform by a circular movement, thus doing away with the use of a long and inconvenient lever.

The ratchet-wheel N enables the key to be held back should the guard E' not be used. S is a pulley, borne at a proper distance from the end of the car near the side, over which the chain *i* passes from the key E to the brake-rod K, by means of which arrangement the rod K may be located nearer the end of the car and the key may be retracted without going in between the cars.

If desired, another pulley might be placed on the other side, operating in a similar manner.

The rod K may be the ordinary brake-rod, in which case the chain *i* would be wound oppositely to that of the brake-rod.

The pulley S may be dispensed with. In coupling, the key E, liberated by the striking of the buffer D by the opposite arm, O, will in each draw-head pass through the slot N of the arm O, thereby coupling the two together. To prevent interference the key of one draw-head will be held back by the ratchet-wheel N of the rod K.

Of the above devices, I do not claim the combination of a coupler consisting of vertically-slotted jaws with a horizontal sliding bolt, substantially as described in Morgan and Gerry's patent, nor the combination of a gravity-guard with a draw-head of the usual or bell shape; but,

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

1. The combination of the draw-head C, provided with the two unequal arms or vertically-slotted jaws C', having frame T, and O, having slot *n'*, provided also with the shoulder P, key E, and spring F, with the buffer-guard D, working between said arms or jaws, substantially as specified.

2. The combination of the draw-head C,

having key E and spring F, and provided with the arms or vertically-slotted jaws C' and O, the latter having slot *n'*, and the former frame T and cup V, with the buffer-guard D, working between said arms or jaws, substantially as specified.

3. The combination of the draw-head C, having the shoulder P, the unequal arms C' and O, the former having frame T and cup V, the latter having slot *n'*, with the buffer-guard D and drop-guard E', substantially as specified.

4. The combination of the draw-head C, having the vertically-slotted jaws O and C', the former with slot *n'*, the latter with frame T and cup V, with the buffer-guard D and drop-guard E', substantially as specified.

5. The combination of the drop-guard E' with the draw-head C, having the slotted arms C' and O, and the horizontal key of a car-coupler, whereby cars when shoved together may be uncoupled and set at once without parting, substantially as specified.

6. The combination of the rod K, having wheel L and chain *i*, with the key E, spring F, and draw-head C, having arms O and C', substantially as specified.

7. The combination of the rod K, having wheel L and chain *i*, with the key E and draw-head C, having arms O and C', substantially as specified.

8. The combination of key E, having slot W, with the spring F, buffer-guard D, and drop-guard E', substantially as specified.

9. The combination of the rod K, chain *i*, key E, spring F, and draw-head C, having vertically-slotted arms, substantially as specified.

10. The combination of the rod K, having wheel L and chain *i*, with the key E, draw-head C, having arms C' and O, spring F, and buffer-guard D, substantially as specified.

11. The combination of the rod K, chain *i*, pulley S, key E, spring F, and draw-head C, having slotted arms C' and O, substantially as specified.

12. The combination and arrangement of devices to secure an automatic car-coupling, consisting of the draw-head C, having vertically-slotted jaws O and C', the key E, spring F, buffer-guard D, drop-guard E', chain *i*, rod K, and wheel L, substantially as specified.

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Witnesses:

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