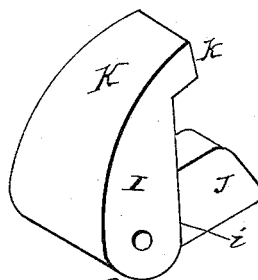
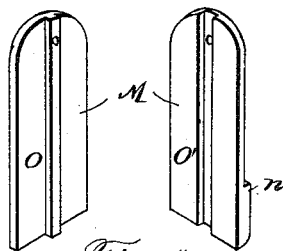
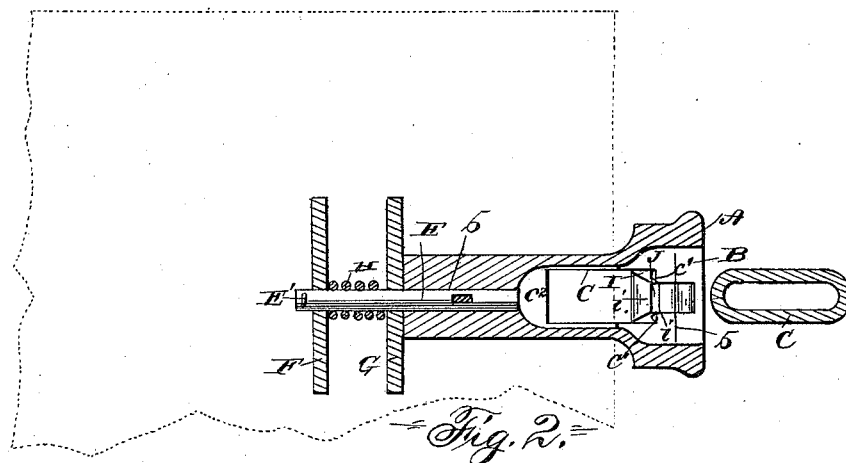
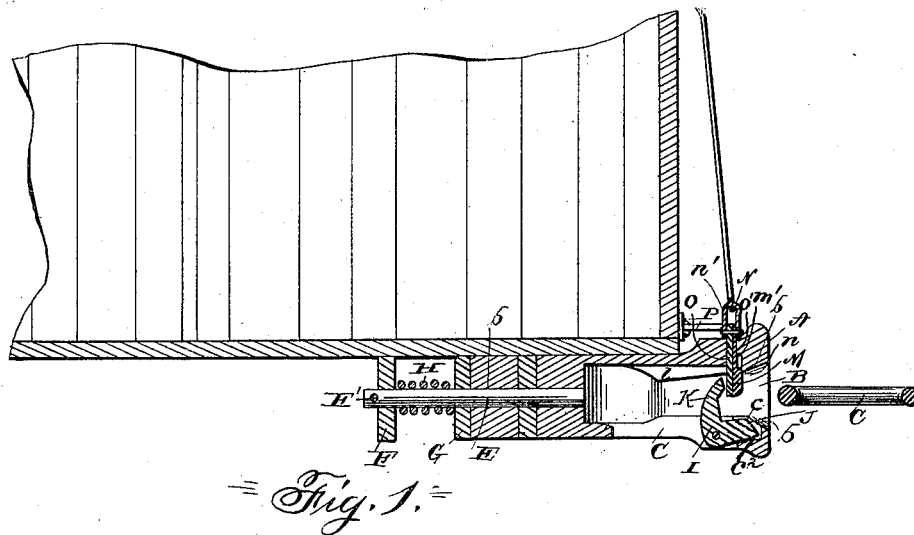


(No Model.)

H. ECKEL.
CAR COUPLING.

No. 343,989.

Patented June 22, 1886.



Witnesses

James M. Nelson
H. E. Bernhardt

Inventor

Howard Eckel

By *H. E. Bernhardt* Attorney

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

HOWARD ECKEL, OF PITTSBURG, PENNSYLVANIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 343,989, dated June 22, 1886.

Application filed April 28, 1886. Serial No. 200,164. (No model.)

To all whom it may concern:

Be it known that I, HOWARD ECKEL, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Car-Couplings, of which the following is a specification.

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

The object of the present invention is to provide an improved car-coupling which shall be automatic in operation and capable of being uncoupled from the top or side of the car-body, and thus obviate the danger usually attended upon coupling and uncoupling cars having the ordinary pin-and-link coupling.

A further object of my invention is to provide an improved coupling which can be coupled with draw-heads of the ordinary class employing a link, and which can be applied to cars of ordinary form without disarranging any of the parts thereof; and, finally, to provide an automatic coupling which shall dispense with the use of springs and other like contrivances, which are objectionable in that they are liable to soon wear out or become disarranged or broken, and thus render the device inoperative.

In the accompanying drawings, Figure 1 is a vertical longitudinal sectional view of a car-coupling embodying my invention. Fig. 2 is a horizontal sectional view on the line *xx* of Fig. 1. Fig. 3 is a detached perspective view of the swinging coupling-hook. Fig. 4 is a like view of the retaining-pin.

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 automatic car-coupling, which is provided with the usual chamber, B, for the reception of the link C, of the ordinary class. The chamber B of the draw-head is inclined or beveled on its upper and lower walls at the front open end thereof—as at *b*—to permit the free and unobstructed entrance of the link therein and to guide the latter, and the rear end of the chamber is extended into

chamber B', which receives the front end of the draw-bar E. This draw-bar is extended through the draw-head, and is secured therein by a key or pin, E', that passes through the draw-bar and the draw-head, and is rigidly secured in place therein, and the rear end of the draw-bar carries two brackets or bearings, F G, one of which is rigidly secured to the car-body and the other is free to slide on the draw-bar to permit the latter to move rearwardly for a limited distance under the impact thereon of an approaching draw-head, the force of the blow on the draw-head A being reduced to a minimum by a cushion or coiled spring, H, that encircles the draw-bar and bears at its ends against the bracket-plates.

The lower wall of the draw-head A is slotted longitudinally, as at *c*, and the front end of this slot is reduced to form the shoulders *c'*, the extreme front end of the reduced portion of the slot being provided with a ledge or abutment, *c''*, against which the free end of one arm of a swinging coupling-hook, I, is adapted to strike to limit the movement of said hook in one direction. This swinging coupling-hook I comprises two arms or branches, J K, which are formed integral with and arranged at right angles to each other, the longitudinal faces of the arms being preferably curved, as shown. The arm J of the swinging coupling-hook is made smaller, or of reduced width in cross-section, than the arm K, and at its point of junction with the latter are provided shoulders *i*, on opposite sides of the arm J, these shoulders coming in contact with the shoulders *c'* of the draw-head, the said shoulders *c'* being curved or rounded to adapt the shoulder *i* of the swinging coupling-hook to move freely thereon during the movements of the hook. The free end of the arm J of the coupling-hook is adapted to rest on the ledge or abutment *c''* of the draw-head when the device is set for coupling, and the free end of the arm K is provided with an extended flange or rib, *k*, that is formed integral therewith and arranged at right angles thereto. The upper wall of the draw-head chamber is further provided with a longitudinal recess, *l*, that is formed at the middle of the said wall to permit the arms of the coupling-hook to fit therein, and the said wall of the draw-head is further provided with a vertical

slot, *m*, having on one of its interior faces an inwardly-extended ledge or rib, *m'*, for a purpose presently described.

M designates a retaining-pin, against which the free end of the arm J of the swinging hook impinges when the cars are coupled. The lower end of this pin is provided with a flange, *n*, that is adapted to take against the flange *m'* of the slot *m*, to limit the upward movement of the pin and prevent it from becoming accidentally detached from the draw-head, and the downward movement of the said pin is limited by a transverse pin, *n'*, that passes through the upper free end of the pin and pivotally connects a swinging bail, N, thereto.

To permit the ready detachment of the retaining-pin, when desired, it is made in two longitudinal sections, O and O', and the opposing faces of the sections are grooved and tongued to adapt them to fit snugly and tightly together, the lower outer end of one of the sections having the flange *n'*, as is obvious. To the bail N is connected one end of a cord or other suitable connection that leads to the top or roof of the car, so that the pin can be elevated to release the arm J of the coupling-hook and the free inner end of a horizontally-disposed lever, P, is also pivotally connected to the bail, so that the pin can be elevated by a brakeman standing at one side of a car to which the coupling is applied.

The operation of my invention is as follows: When the device is set for coupling, the retaining-pin is elevated and the arm J of the coupling-hook rests at its free end against the abutment *c*², and the arm K thereof assumes a vertical position with its flange *k* extended forward, the arms J and K of the hook being depressed and elevated, respectively. When the link of an approaching car enters the draw-head chamber, it strikes the arm K of the swinging coupling-hook, between the ends thereof, and turns the hook on its shaft or pivot, thus depressing the arm K and elevating the arm J, and after the arm J passes beneath and in rear of the pin M the latter is dropped to prevent the swinging coupling-hook from being turned when the draft of the adjacent car is brought thereon by the link in engagement therewith. To uncouple the cars, it is only necessary to elevate the retaining-pin to release the arm J of the coupling-hook from contact therewith, and the link can be readily withdrawn from the draw-head upon the retrograde movement of the link.

The coupling-hook is arranged within the

longitudinal slot *c* of the draw-head, and is journaled on a shaft, C', that is supported in the walls of the draw-head, the said shaft passing through the coupling-hook at the point of juncture of the arms thereof.

It is evident that slight changes or modifications in the form and proportion of parts and details of construction can be made without departing from the principle of my invention.

I am aware that it is not broadly new to provide a car-coupling with a swinging coupling-hook having two arms, and a pin to retain the hook in its coupled position, and hence I confine myself to the particular construction herein shown and described.

Having thus fully 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 a longitudinal slot, C, in its bottom wall and with a contracted front end forming the shoulder *c'*, and a stop-ledge, *c*², at the front of the contracted end, in combination with a swinging coupling-hook having the right-angled arms J K, and a pin to engage the arm K and lock the hook against movement when the cars are coupled, the said hook being arranged and pivoted in the slot C, and having the shoulders *i* at the juncture of its arms and an angular flange, *k*, at the free end of the arm K, all arranged and combined substantially as described.

2. The combination of the draw-head, the swinging coupling-hook journaled therein, and a sectional retaining-pin, one section of the pin having a groove and the other a tongue which fits in the groove, substantially as described.

3. In a car-coupling, the combination of the draw-head having a vertical slot, *m*, and a projecting flange, *m'*, projected into the slot, a coupling-hook, and a vertically-movable pin having a flange, *n*, adapted to engage with the flange *m'*, and made in two longitudinal sections, one having a groove and the other a tongue fitting in the groove, substantially as described, for the purpose set forth.

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

HOWARD ECKEL.

Witnesses:

WM. J. MOORE,

WN. H. MONINGER.