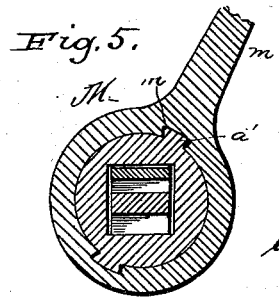
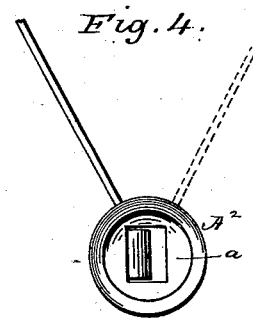
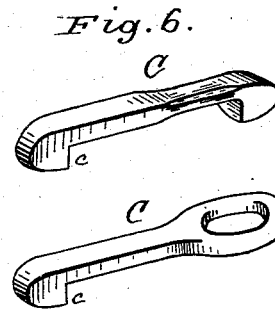
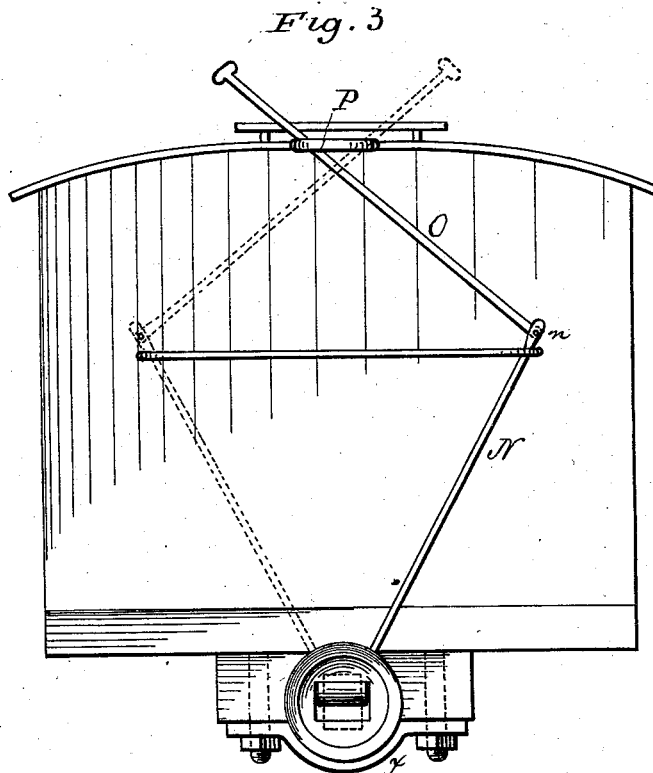
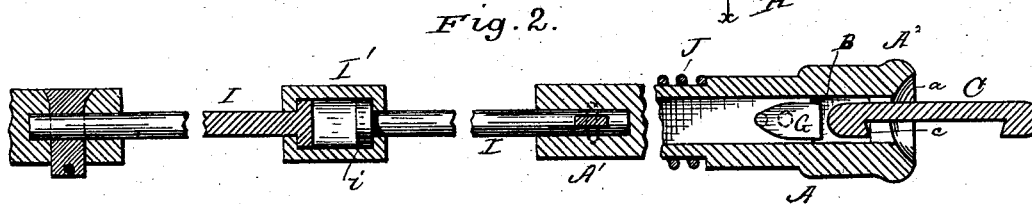
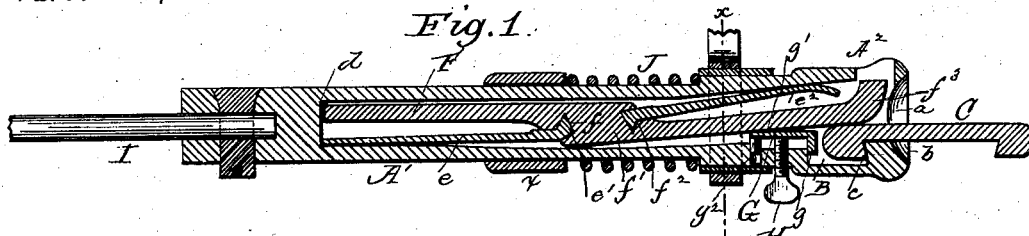


(No Model.)

L. H. FINNEY.
CAR COUPLING.

No. 260,183.

Patented June 27, 1882.



Witnesses
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UNITED STATES PATENT OFFICE.

LEWIS H. FINNEY, OF POWHATAN COUNTY, VIRGINIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 260,183, dated June 27, 1882.

Application filed May 15, 1882. (No model.)

To all whom it may concern:

Be it known that I, LEWIS H. FINNEY, a citizen of the United States, residing in the county of Powhatan and State of Virginia, have invented certain new and useful Improvements in Car-Couplers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to an improved car-coupling; and the novelty consists in the construction and arrangements of parts, as will be more fully hereinafter set forth, and specifically pointed out in the claims.

The invention belongs to that class of couplers known as "self-couplers," and the device herein presented also contemplates a self-uncoupling or self-liberating attachment.

The invention consists essentially in a cylindrical draw-head adapted to be turned to the left in its bearings a distance of ninety degrees by means of a clamp or bracket which has free longitudinal movement upon the shank of the draw-head, but through the agency of dovetailed lugs on said shank, which are received in similar recesses in the clamp, forces the draw-head to turn the said distance in either direction as the clamp is impelled by proper levers. The draw-head has a beveled or inclined mouth and a recess with an abrupt or acute-angled shoulder, against which a similar hooked portion on the coupling-link abuts when the coupling is completed. When the coupling-link is in this position it is held thus locked by a tongue having duplex springs, one under and extending toward the rear, the other over and extending toward the front. These springs are dovetailed, and are readily forced laterally into corresponding recesses in the tongue and there secured. The tongue has a beveled front surface, against which the link impinges when the coupling is to be effected, the action of the beveled portion of the link being to raise the front end thereof against the constant force of the two springs connected thereto, until the hook of the link drops into the recess in the draw-head and engages the

shoulder therein. It will be observed that if the link be held against oscillation and the draw-head be turned one-fourth of a circle, the hook of the link is forced out of engagement with the shoulder and is readily disconnected from the draw-head. To provide for the link remaining in one of its two bearings, I form one of the hook-faces square across, while the other hook is rounded at the corners. The rounded hook will then turn in one of the draw-heads, while the flat-surfaced hook will retain its position in the other. This portion of the device is of obvious importance in case a car should jump the track and fall upon its side. The shank of the draw-head operates loosely in cylindrical bearings rigid with the car-body, and a spiral spring between this bearing and a collar or annular shoulder cast upon the draw-head serves to cushion the concussion as the draw-heads come together. Properly keyed to the rear of the shank is a rod, the other extremity of which, by head and washer, is secured to a box or stirrup, and the draw-head upon the opposite end of the car is similarly constructed and secured to the same stirrup. It will thus be observed that the "draw" from either draw-head serves to compress the spring upon the opposite draw-head, and thus the force is cushioned in either direction. The tongue is housed in the cylindrical draw-head without other fastenings than the friction of the springs, and I provide means for taking up lost force in the said springs, so that they will serve their functions until their power is so far depreciated as to render them useless, in which case the tongue and springs are readily removed, new springs put in place, and the device thrust back in the draw-head without delay and without disturbing any of the other parts of the device.

The improvement is adapted to be applied to many of the couplings now in use, and by means of proper holes in the draw-head and coupling-link I may employ a coupling-pin with the old link-and-pin construction.

The invention is fully illustrated in the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a central vertical longitudinal section; Fig. 2, a horizontal sectional view of a section of the draw-head, with said draw-

head oscillated ninety degrees, or one-fourth of a revolution, to the left, in the act of automatically uncoupling. Figs. 3 and 4 are end views taken at right angles to each other, indicating the coupling and uncoupling position; Fig. 5, a section through Fig. 1 upon the line $x x$, showing the means for rotating the draw-head at will; and Fig. 6, views of the coupling-links.

To enable others skilled in the art to which the invention relates to make and use the same, I will describe its construction and mode of operation by referring to the said drawings, in which similar letters of reference indicate like parts in all the figures. Thus:

A represents the cylindrical casting, comprising the draw-head, having shank A' , enlarged mouth portion A^2 , with flaring inlet a and dovetailed lugs a' . Upon the inner lower side of this draw-head is cast a recess, B, having an outwardly-inclined shoulder, b , which is adapted to engage a corresponding hook portion, c , of a coupling-link, C. This coupling-link is provided with a similar shoulder upon each end, except that the face of one describes an approximate transverse plane, while in the other the corners are rounded, the object being to have one of the hooks to engage firmly, while the other—the one with the rounded corners—will readily disengage from the shoulder b as the draw-head is turned, as will be explained.

Against an abutting shoulder, d , near the rear end of the shank A' , rests a spring, e , having a dovetailed inner extremity, e' , which fits snugly in a dovetailed recess, f , in the body f' of the tongue F, while a similar spring, e^2 , having dovetailed inner extremity, is similarly received in a recess, f^2 , in the said body f' of the tongue F. This latter spring, e^2 , has its free end curved downward, so that the tongue and springs may be readily removed when the springs have lost their power, for renewal, repair, or other reason. The tongue has an inclined surface, f^3 , at the front end, against which the incline of the coupling-link impinges in the act of coupling, and in any movement of the tongue each of the springs serves to hold the tongue downward with a constant force, and the connection of the link with the draw-head is at the bottom portion thereof, so that the draft lifts as well as draws.

To prevent the wedge end of the link C from being forced between the tongue and the shoulder at the rear of the recess B, I provide a shield, G, having vertical portion g bent downward into recess B, a horizontal portion, g' , resting upon an adjusting-screw, H, and a vertical spindle portion, g^2 , which operates loosely in a vertical hole in the draw-head. The adjusting-screw H allows the operator to take up and compensate for lost power in the springs, and the shield, moving with the adjusting-screw H, serves as a stop to the link.

Properly keyed to the rear of the draw-head shank A' is a rod, I, having a head, i , which

operates in a stirrup, I' , so as to turn readily therein, a washer being introduced to reduce friction. As the draw-heads are of similar form, construction, and adaptation upon each end of the car, and as the draw-heads operate loosely through circular bearings x rigid with the bottom or frame of the car, it will be obvious that the draw-heads and attachments thus far described are connected at this point to the stirrup or box I' .

Between the stationary bearings x and a shoulder upon the rear of the enlarged portion A^2 , I place a stout spiral spring, J, which not only cushions the concussion as the cars come together, but, as the draft is upon one draw-head, through the rods I, pulls upon the draw-head upon the opposite end of the car and compresses that spring and cushions the draft.

In ordinary service the uncoupling is accomplished by turning the draw-head one-fourth of a revolution to the right or left. As shown, it is to the left. In Figs. 3 and 4 I show means for accomplishing this from the top of the car, as is usual in freight-cars, which is the class to which my invention is best adapted. Referring to those figures, M represents a sleeve which surrounds the draw-head, and it is provided with dovetailed recesses m , which receive the lugs a' , and with a shank, m' , which is secured rigidly to a lever, N, to which, at n , is pivoted a lever, O, which operates loosely in a bracket, P, secured to the top of the car. The brakeman elevates and depresses the lever O, using the shoulders p as a fulcrum, in either direction to overcome the dead-center, and thus oscillates the draw-head until the slot between the tongue and bottom of the mouth of the draw-head and the hook occupy parallel planes, when the hook readily is disengaged.

If desirable, the draw-head may be similarly operated from the ground by a proper system of levers. While the draw-head is thus voluntarily manipulated, as described, it will be understood that in case of an accident—such as the overturning of a car in either direction which has jumped the track—the uncoupling is automatically accomplished as soon as the hook reaches the position described.

From this description the operation is obvious.

What I claim as new is—

1. A cylindrical draw-head having recess B, with inclined shoulder b , combined with a spring-tongue, a hooked coupling-link, C, and with means for turning said draw-head one-fourth of a revolution to uncouple, as set forth.

2. The draw-head A, having shank A' , enlarged portion A^2 , inclined or flaring mouth a , and recess B b , combined with the tongue F, springs e e^2 , and coupling-link C c , as and for the purpose set forth.

3. In a car-coupling, substantially as described, the tongue F, having dovetailed recesses f f^2 and inclined surface f^3 , combined with the springs e e^2 and the draw-head A, the

said tongue F being adapted to be readily removed for repairs, as set forth.

4. The shield G, composed of the vertical parts g^2 and the horizontal portion g' , combined with the spring-tongue F, draw-head A, link C, and set-screw H, as and for the purposes specified.

5. The cylindrical draw-head A, having dove-tailed lugs a' , combined with the sleeve M, having recesses m and shank m' , combined with the levers N O, bracket P, and link C c , as set forth.

6. In a car-coupling, a coupling-link having upon each end a coupling hook or shoulder, one of which is rounded at the corners and the

other presenting a face upon a direct transverse plane, combined with the draw-head A, having recesses B b , spring-tongue F, and means for rotating the draw-head, substantially as set forth.

7. The set-screw H and draw-head A, combined with the tongue F and springs $e e^2$, the said set-screw being adapted to take up lost power.

In testimony whereof I affix my signature in presence of two witnesses.

LEWIS H. FINNEY.

Witnesses:

L. H. MARCERON,
M. P. CALLAN.