(No Model.)

A. S. REEVES.

CAR COUPLING.

No. 265,935. Patented Oct. 10, 1882.

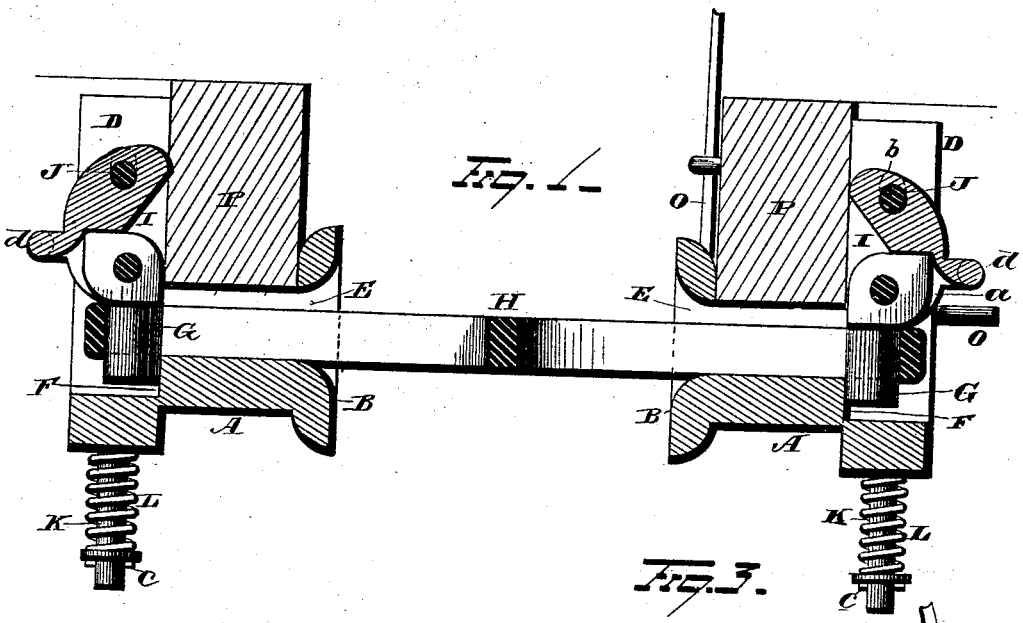


Fig. 1.

Fig. 3.

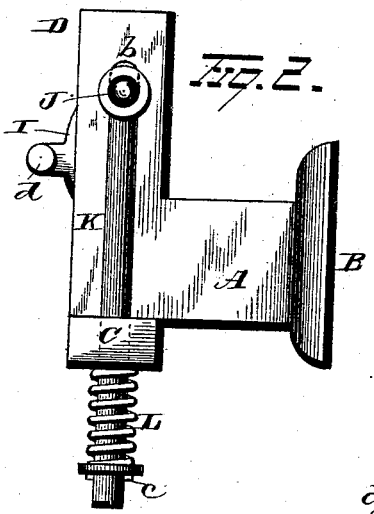
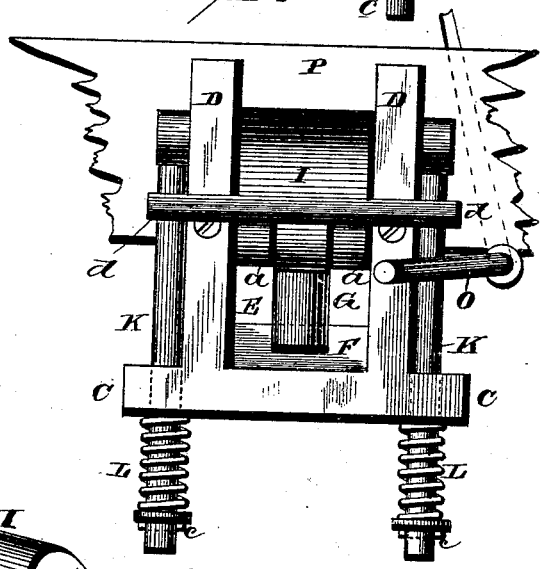


Fig. 2.



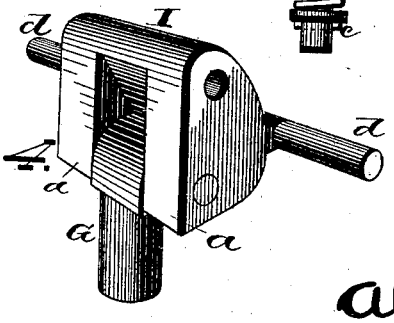


Fig. 4.

WITNESSES

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UNITED STATES PATENT OFFICE.

ALBERT S. REEVES, OF PORT ELIZABETH, NEW JERSEY, ASSIGNOR OF TWO-THIRDS TO FRANCIS LEE, OF SAME PLACE, AND BENJAMIN F. LEE, OF TRENTON, NEW JERSEY.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 265,935, dated October 10, 1882.

Application filed July 18, 1882. (No model.)

To all whom it may concern:

Be it known that I, ALBERT S. REEVES, of Port Elizabeth, in the county of Cumberland and State of New Jersey, have invented certain new and useful Improvements in Car-Couplers; and I do hereby 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 pertains to make and use the same.

My invention relates to an improvement in car-couplers, the object of the same being to provide a device of few parts, that is automatic in its action, and that shall combine simplicity and economy of construction with safety, durability, and efficiency in use; and with these ends in view my invention consists in certain details in construction and combination of parts, as will be more fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal sectional view through two draw-heads and the connecting-link, showing the manner of connecting them together. Fig. 2 is a side view of one draw-head. Fig. 3 is a rear view of the same. Fig. 4 shows the cam-block and locking-pin detached from the draw-head.

A represents the draw-heads, provided with the flaring mouth B, the side arms or extensions, C, and the upward extensions, D, the above extensions being formed integral with or separate from the draw-head, as desired. In the construction of draw-head shown in the drawings the entire upper portion or surface back of the flaring mouth is open, while the sides and bottom thereof are closed; but this is not essential, as it can be constructed in numerous different ways to accomplish the desired end.

The lower surface of the link or passage way E is provided with a step, F, against which the locking-pin G abuts, and which holds the link H firmly therein when the said locking-pin bears against the said step. This locking-pin G is provided with a flat upper surface and rounded edges, and is pivotally secured to the under side of the pivoted cam I between the arms *a*. These arms *a* are formed integral with the cam, and are separated sufficiently for the admission of the head of the locking-pin G, and when the latter is secured in position between the said arms an elbow-joint is formed, which allows the parts to bend backward when pressure is exerted from the front, but holds the parts rigid when pressure is exerted from the rear.

The cam I is pivotally secured to the upright arms D by the pivot-bolt J, which latter rests and moves in the oblong slots *b* in the said arms. The ends of this bolt project out slightly beyond the side arms, C, and are secured to the vertical bars K, situated respectively on opposite sides of the draw-head. These vertical bars K pass through the side arms or extensions, C, and are encircled below the latter by the spiral springs L, which are retained in position thereon by nuts or pins *c*. The tendency of these vertical bars and springs is to keep the cam I and pins G down to their lowest position, so as to hold a coupling-link horizontal while coupling two cars, and at the same time allow the parts to give while the cars are in motion and during the coupling process, so as to prevent them from breaking or bending. The cam I fits in between the upright arms, and is allowed, when free, to swing on its pivotal connection, and the locking-pin, which is pivotally secured to the same, is also free to swing on its connection; but the weight of the pin alone is sufficient to keep the latter in a vertical position up against the step.

The cam-block I is provided on its rear face with the lateral or horizontally-extending arms *d*, adapted to form a check to prevent the cam-block from moving forward sufficiently in case the elbow-joint between the said cam-block and pin should become inoperative or give way and allow the link to draw the parts forward sufficiently to enable the pin to escape or jump the the step, and also afford means by which the pin is disengaged from the link, which latter operation is performed directly from the car-platform or from the top of a box-car by means of the bent crank-lever O. This lever O is bent substantially as shown, and by simply moving the free end thereof outward toward the side of the car the inner end of the said lever is elevated, which elevates or partly turns the cam-

block I. As the cam-block turns the pin also moves upward, but retains its vertical position. When the parts are thus slightly elevated the lower edge of the pin G leaves the step and is free to bend forward sufficiently to enable the link to pass under the same.

The manner of coupling-cars by means of my improvement is as follows: The link is first introduced into one of the draw-heads and is retained therein in a horizontal position by the mechanism before described. This link is free to move backward, but cannot be withdrawn without first lifting the locking-pin. As the draw-heads approach, the outer end of the link enters the mouth B, and from thence into the guideway of the draw-head until it strikes the locking-pin G or cam-block I, which are turned on their pivotal connections until the end of the link has passed the pin. The parts then resume their former position, the lower end of the pin abutting against the step. This firmly locks the link in position and holds the same until the pin is elevated by the means before described.

In the present construction I have shown the draw-heads secured directly to the rear of the front sill, P, of the car-frame by the upright arms D, which latter rest directly behind the said sill, and are provided with holes for the passage of securing-bolts.

In using my improved construction of draw-head it is necessary to provide means for limiting the penetration of the link, so as to prevent the same from sliding or moving in too far during the operation of coupling the cars; or a double rigid link can be used, or a link provided with the side arms similar to that shown in the drawings can be employed and answer all the necessary purposes.

Draw-heads constructed on my improved plan are necessarily shorter than those now commonly employed, as the link has to pass nearly through the same before it is locked. This makes a great saving in material, as well as weight, and enables the couplers to be manufactured at a comparatively small cost.

My invention is simple in construction, is of few parts, is automatic in operation, and is durable, safe, and effective in use.

It is evident that slight changes in the construction and arrangement of the different parts of my improvement might be resorted to without departing from the spirit of my invention; and hence I would have it understood that I do not limit myself to the exact construction of parts shown and described, but consider myself at liberty to make such changes as come within the spirit and scope of my invention.

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

1. The combination, with the draw-head, of a block supported in a vertically-yielding pivot, and coupling-pin pivoted to said block, the parts being formed to interlock when forced in one direction and to turn in their pivots when forced in the opposite direction, and springs for imparting pressure to the coupling-pin for retaining the link in a horizontal position, substantially as set forth.

2. In a car-coupler, the combination, with a draw-head having two upwardly-extending arms, each being provided with an oblong slot, two horizontal side arms, and a step formed in the linkway of the draw-head, of a pivoted cam-block, the pivot-bolt of which passes through the oblong slots in the upwardly-extending arms of the draw-head, vertical bars connected in the said pivot-bolt and passing downward through the horizontal side arms, springs encircling the lower ends of the said bars and retained thereon by any suitable means, and a coupling or locking pin secured to the said cam-block by an elbow-joint, all of the above parts constructed and adapted to operate as described.

3. The combination, with the draw-head provided with the step, upwardly-extending arms, and side arms, as described, the cam-block provided with the laterally-extending arms, the pivot-bolt, vertical bars, and springs, and the locking-pin secured to the cam-block by elbow-joint, of the bent lever O, secured to the car-frame and adapted to partly turn the cam-block and elevate the locking-pin, all of the above parts constructed and adapted to operate as described.

4. The combination, with a draw-head provided with a step, as described, a cam-block pivotally secured to the said draw-head, and a locking or coupling pin secured to the said cam-block by elbow-joint, of a coupling-link provided with lateral extensions or equivalent means for preventing the link from entering too far into the draw-head, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ALBERT S. REEVES.

Witnesses:

WM. HOWELL,

DANIEL T. HOWELL.