

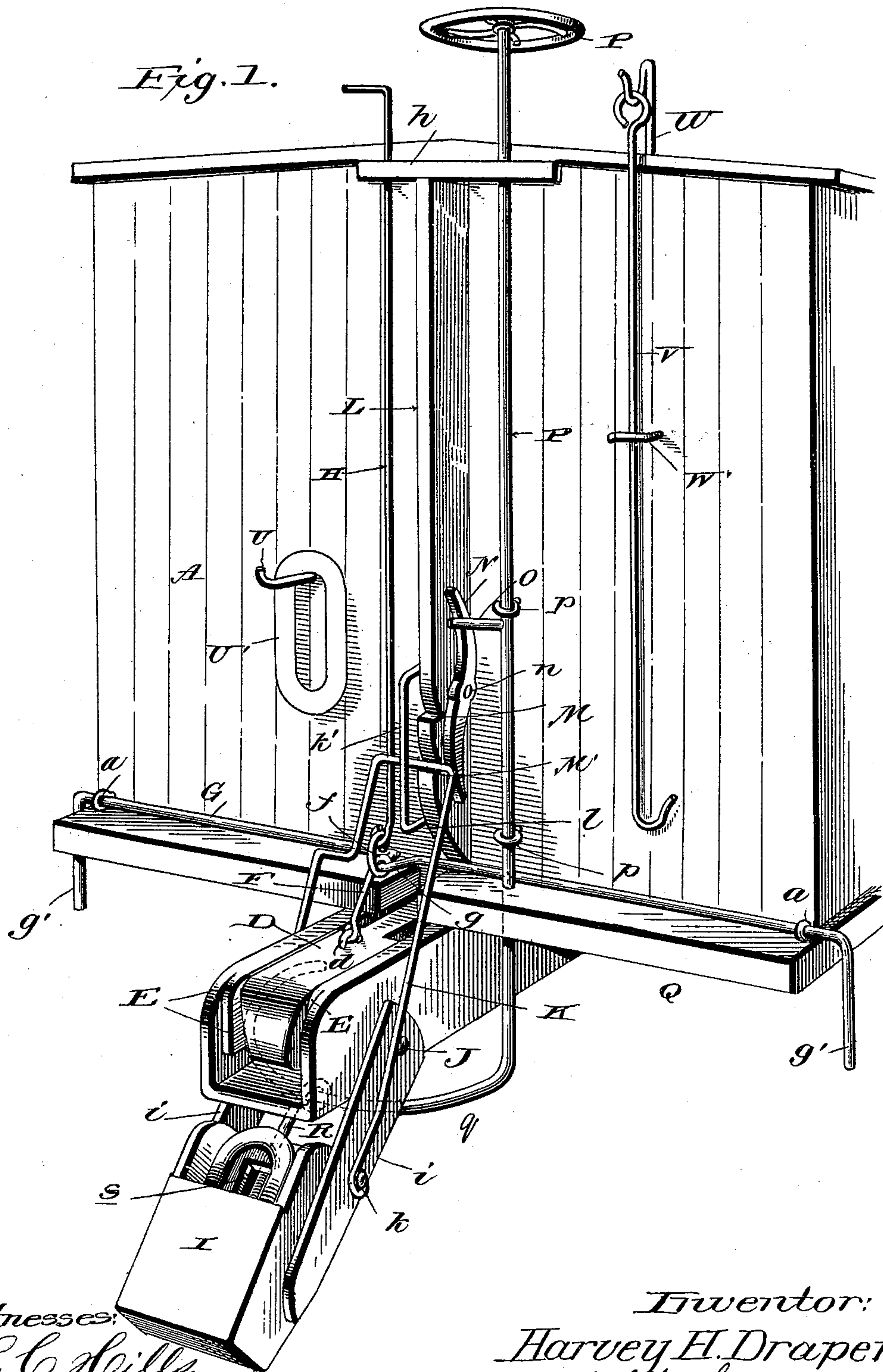
(No Model.)

2 Sheets—Sheet 1.

H. H. DRAPER.
CAR COUPLING.

No. 583,172.

Patented May 25, 1897.



Witnesses:

L. C. Hills.
E. A. Bond

Inventor:

Harvey H. Draper:
By Wm. Walker Atty.

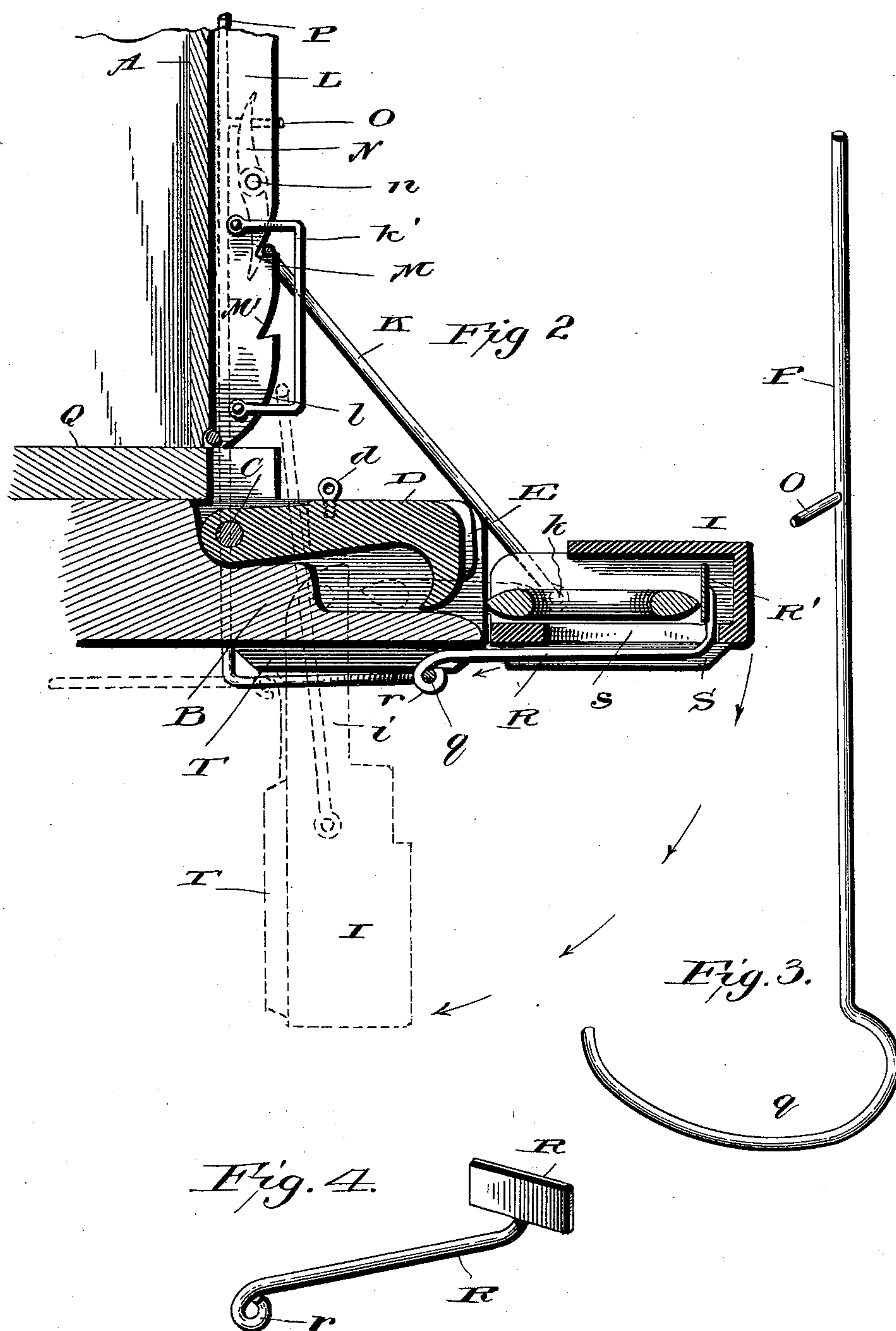
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UNITED STATES PATENT OFFICE.

HARVEY HAWKS DRAPER, OF ARKANSAS CITY, KANSAS.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 583,172, dated May 25, 1897.

Application filed February 10, 1897. Serial No. 622,803. (No model.)

To all whom it may concern:

Be it known that I, HARVEY HAWKS DRAPER, a citizen of the United States, residing at Arkansas City, in the county of Cowley and State of Kansas, have invented certain new and useful Improvements in Car-Couplings; 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 of reference marked thereon, which form a part of this specification.

This invention relates to certain new and useful improvements in car-couplings of that class known as "link-lifters;" and it has for its object, among others, to provide a simple and cheap construction by which the cars may be coupled or uncoupled from the top or either side of the car and thus avoid any possibility of injury to the train-hand. The pocket or link-holder is mounted for pivotal movement and is designed to be thrown into an inclined position to receive the link, being held in such position, and then it may be turned so as to bring it into its horizontal position, so that the link will be in position to enter the mouth of the draw-head, when by a quick turn of the hand-wheel the link is thrown into the draw-head and engaged by the dog or hook, and the pocket or link-holder drops into its vertical position, where it remains until again called into use. Novel means are provided for operating the link-holder and retaining it in its different positions.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention in this instance resides in the novel construction, combinations, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the drawings, and then particularly pointed out in the claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a perspective view showing the

application of the invention with the link-holder or pocket in its first position, that which it assumes when receiving the link. Fig. 2 is a detail in vertical longitudinal section with parts in elevation, showing by full lines the position of the parts in the second position of the link-holder and by dotted lines the position of the parts after the link has been thrown into its position and engaged by the hook or dog of the draw-head. Fig. 3 is a perspective view of the curved arm that operates the pocket or link-holder. Fig. 4 is a perspective view of the push-bar that throws the link from the pocket into the draw-head.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates the end of a car, and B the draw-head thereof. This draw-head is open upon its upper face, as seen best in Fig. 1, and within the same is pivoted upon a cross-pivot C the dog or hook D, which is of sufficient weight to at all times keep it in its closed position, as seen in Fig. 2.

E are guides upon the inner wall of the mouth of the draw-head at opposite sides, as seen best in Fig. 1, and which serve to keep the link in a horizontal position when it is once entered in the draw-head. The dog or hook is provided with an eye or staple or analogous device *d* for the connection of the link F, which, as seen in Fig. 1, is formed between its ends with a loop or bent *f*, in which is loosely engaged the crank *g* of the crank-shaft G, which is mounted to rock in suitable bearings *a* at the end of the car, and its ends extended and formed into or provided with handles *g'*, by which the shaft may be rocked in its bearings when desired. The other end of this link is engaged in the eye at the lower end of the vertical rod H, which is arranged at the end of the car and designed for vertical movement through a suitable guide, such as an opening in the bar or plate *h* on the end of the car, at the top thereof, as shown in Fig. 1.

I is the link-holder or pocket. It is closed at its outer or lower end, and its upper side is cut away near its inner or rear end, so that the link may be more readily received therein. It is carried by the side bars *i*, rigidly affixed

thereto or integral therewith, the upper or rear ends of the side bars being pivoted upon opposite sides of the draw-head upon pivots J.

K is a bail pivotally mounted on opposite sides of the link-holder, as seen at *k*, and adapted for free movement upon its pivots. The upper end of this bail works behind the guide *k'* on the end of the car, as shown. This guide is supported from the vertical plate L, secured to the end of the car, the guide projecting beyond the front edge of the plate, as seen in Figs. 1 and 2, and the plate is provided near its lower end with the two notches M and M', the extreme lower end of the plate being rounded, as seen at *l*. The cross portion of the bail is designed to ride over this rounded end of the plate and to be engaged in the notches thereof, as will soon be explained.

N is a rocking lever pivotally mounted between its ends, as at *n*, on the plate L, its ends being preferably somewhat curved in opposite directions, as seen best in Fig. 1. The lower end of this lever is designed to engage the cross portion of the bail, while its upper end is adapted to be engaged by the horizontal arm O on the vertical shaft or rod P, which is mounted to revolve in bearings in the plate *h*, and suitable guides *p* on the end of the car, and its upper end is provided with a hand-wheel P'. The lower end of this rod or shaft P passes through the floor Q of the car at its extended portion, as seen best in Fig. 1, and at a point beneath the draw-head it is extended horizontally and curved, as seen at *q*, and adapted to act upon the under faces of the side bars *i* of the pocket or link-lifter. This curved horizontal portion passes loosely through an eye *r* on the forward end of the push-rod R, the other end of which carries the pusher R'. This pusher works in the draw-head, the end of the arm R being passed upward through a longitudinal slot *s* in the bottom of the link-lifter or pocket, as seen best in Fig. 2. Upon the under side of the link-lifter, upon opposite sides of the slot, are the flanges or guides S, between which the rod R moves, while upon the under side of the draw-head, in line therewith, are the flanges or guides T, which serve also as guides for the said rod R in its movements.

Upon the end of the car there may be one or more hooks U to receive a link or links U', and also upon the end of the car may be hung a hooked rod V, as seen in Fig. 1, supported removably from a suitable hanger or support W and held against the end of the car by any suitable means, as a bent wire or the like, W', as shown in said Fig. 1.

With the parts constructed and arranged substantially as above described the operation is as follows: The pocket or link-holder is normally in the position in which it is shown by dotted lines in Fig. 2. When it is desired to place a link in position for coupling, the trainman on the top of the car gives the hand-wheel P' a partial turn, so as to bring the

link-holder or pocket into the position in which it is shown in Fig. 1. It will be there held by automatic engagement of the cross portion of the bail K in the lowermost notch M' of the plate L. In this position the link may be easily and quickly placed in the open end of the pocket by means of the hooked rod V. After the link is in place a quick turn of the hand-wheel will throw the pocket up into its horizontal position, as shown by full lines in Fig. 2, so that the link is brought on a level with the mouth of the draw-head. A second quick turn of the hand-wheel causes the rod R and pusher R' to move in the direction of the arrow in Fig. 2 and drives the link into the mouth of the draw-head, as indicated by the dotted lines in Fig. 2, where it is caught and held by the dog or hook, which is forced upward as the link is driven under the same, and the link-holder or pocket drops into the position in which it is shown by dotted lines in Fig. 2, where it is out of the way. It will be understood that the cross portion of the bail is disengaged from its notch by the turning of the hand-wheel through the medium of the arm O and lever N. A link can be taken out of the draw-head from the top of the car when desired by placing the hooked rod in the link and pulling up on the rod II, thus lifting the dog and leaving the link free to be withdrawn. The dog may be raised also from either side of the car by means of the handles *g'* on the ends of the crank-shaft, as will be readily understood.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages. If desired, the lower or front end of the rod R might be provided with a pulley instead of the eye *r*, to which the curved portion of the rod P would be attached, so as to lessen the friction. Other like changes I should consider as within the scope of my invention.

The draw-head may be of any desired form. It may be solid or open, as deemed best. This is an immaterial feature of the construction. I may also sometimes provide a cap or covering on top of the draw-head to protect the hook or dog during snowy or sleety weather.

What is claimed as new is—

1. The combination of the draw-head, the pivoted pocket, the rotatable rod with curved lower end, the bail pivoted on the pocket, the plate with notches with which the bail engages, and the double lever adapted to be moved by the rotation of said rod and to disengage the bail from its notch, as set forth.

2. The combination of the draw-head, the pivoted dog therein, the pivoted pocket, the bail pivoted on the pocket, the rotatable rod with curved lower end, the notched plate with which the bail engages, the pivoted double-ended rounded lever, and the arm projecting from the rotatable rod and adapted to engage one end of said lever, as and for the purpose specified.

3. The combination of the draw-head, the pivoted pocket having a longitudinal slot in its bottom, the rod with pusher at one end, and the rotatable rod having a curved horizontal lower portion arranged beneath the draw-head and connected with said rod, carrying the pusher, all substantially as and for the purpose specified.

4. The combination of the pivoted pocket, the bail pivoted thereon, the notched plate for engagement with said bail, and means for operating the pocket to throw it into a horizontal position and to eject a link therefrom and automatically drop the pocket into a vertical position, substantially as specified.

5. The combination of the pivoted pocket having a longitudinal slot and guides, the pusher-rod and pusher guided by said slot and guides, the rotatable rod having a curved portion connected with the pusher-rod, and guides on the under side of the draw-head, substantially as shown and described.

6. The combination with the draw-head having guide-flanges within its mouth at op-

posite sides, of the pivoted pocket and means constructed and arranged to throw the same into an inclined position and there lock it, and afterward to throw the pocket into a horizontal position, eject a link into the mouth of the draw-head beneath the guide-flanges therein and then drop the pocket into a vertical position beneath the draw-head, substantially as specified.

7. The combination with the draw-head and the pocket having side bars pivoted to the opposite sides of the draw-head, of the vertically-disposed rotatable rod having curved lower end arranged beneath the said side bars, and means connected with the curved portion of the rod to eject a link from the pocket into the draw-head, substantially as specified.

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

HARVEY HAWKS DRAPER.

Witnesses:

EDWARD E. POOLE,
EDWIN S. DRAPER.