(No Model.)

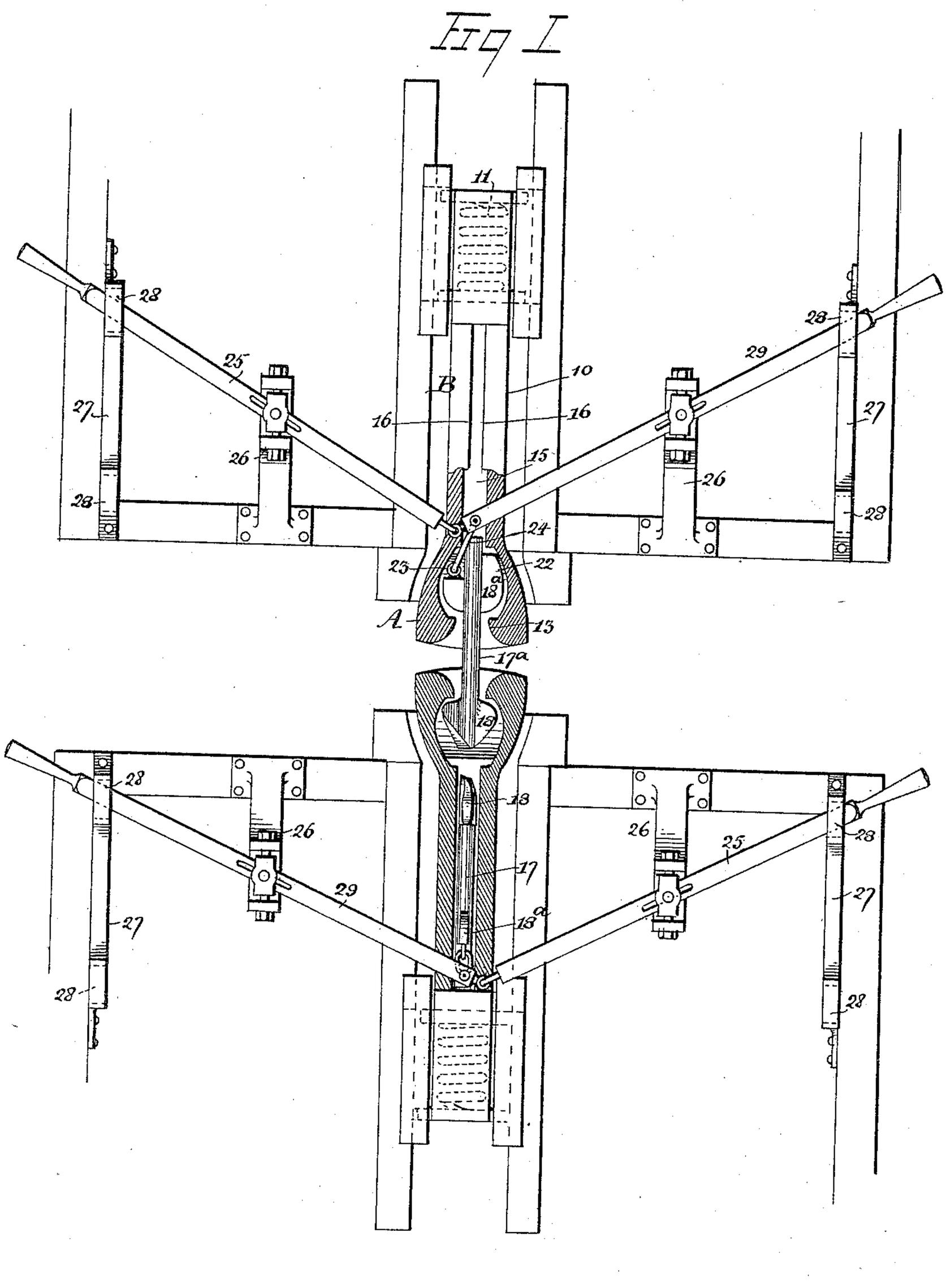
2 Sheets—Sheet 1.

# J. W. ROBERTS.

## CAR COUPLING.

No. 411,227. Patented Sept. 17, 1889.

Fig 1




WITNESSES:
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(No Model.) 2 Sheets—Sheet 2.

# J. W. ROBERTS.

## CAR COUPLING.

No. 411,227. Patented Sept. 17, 1889.

Fig 2

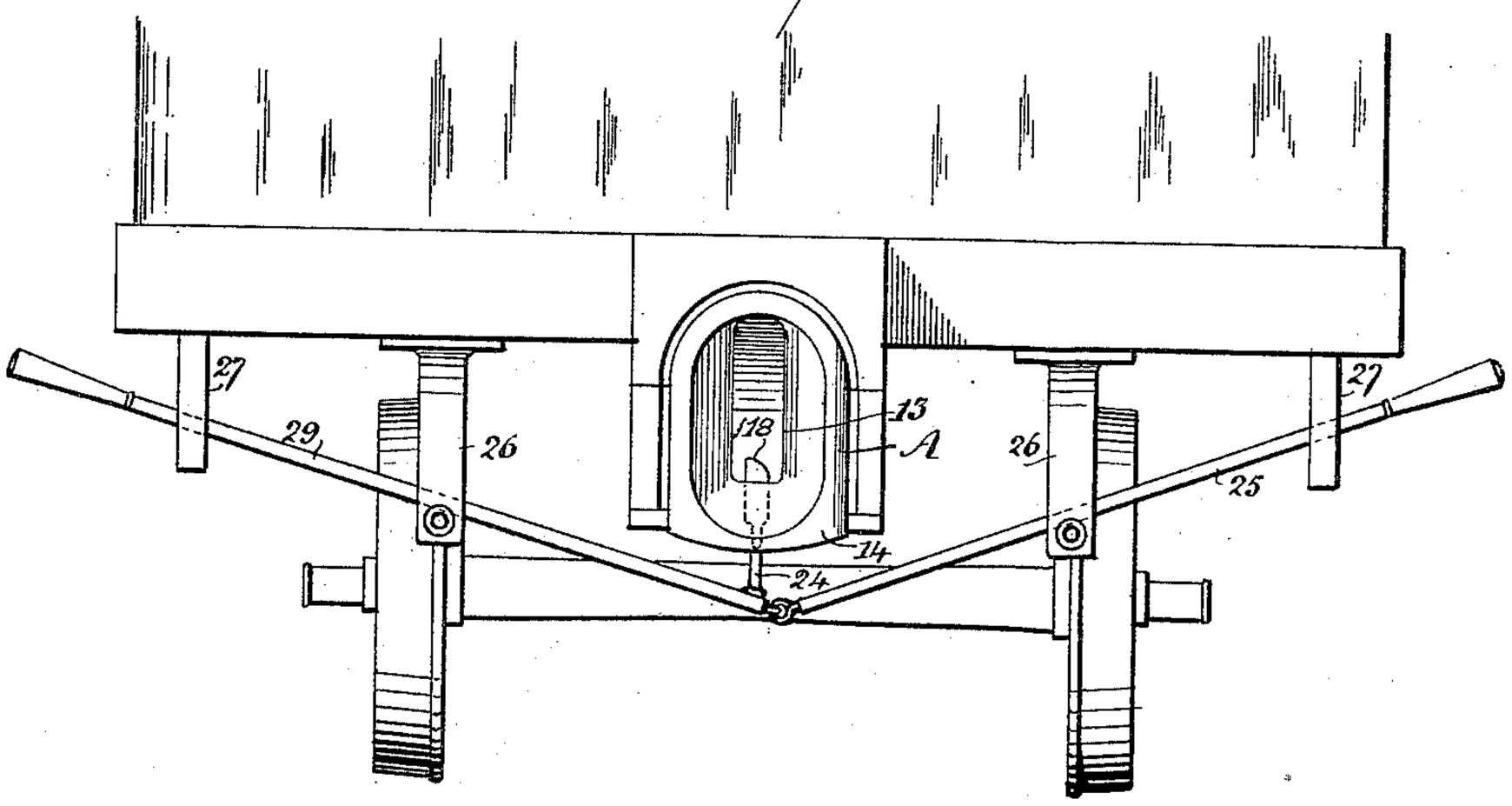



Fig 3

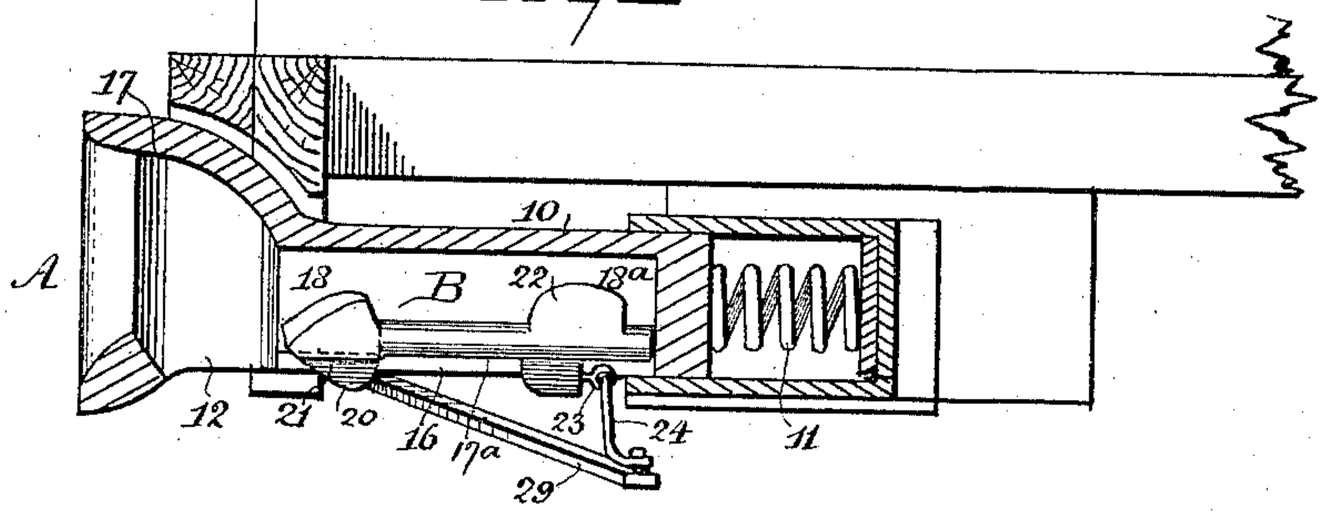
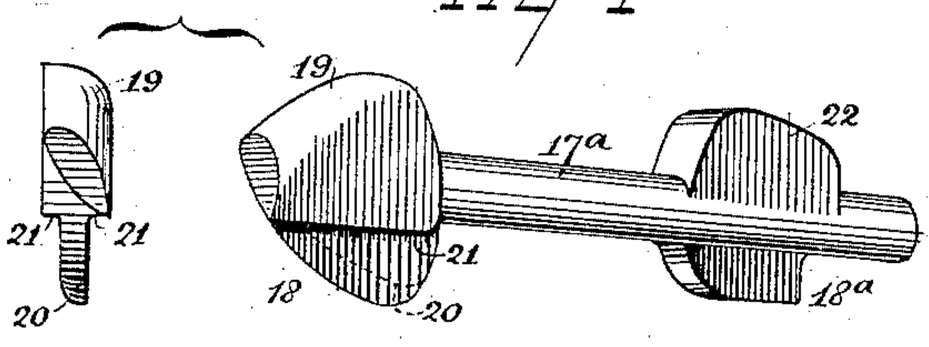



Fig 4




WITNESSES:
H. Walker
C. Sedgwick

INVENTOR:
J. W. Roberts
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# UNITED STATES PATENT OFFICE.

JOHN W. ROBERTS, OF WATFORD, PROVINCE OF ONTARIO, CANADA.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 411,227, dated September 17, 1889.

Application filed May 21, 1889. Serial No. 311,625. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN WILLIAM ROBERTS, of Watford, in the Province of Ontario and Dominion of Canada, have invented a new and Improved Car-Coupler, of which the following is a full, clear, and exact description.

My invention relates to an improvement in car-couplers, and has for its object to provide a coupling of simple and durable construction, whereby the cars may be uncoupled from the sides without necessitating the operator passing between the opposed sills.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter more fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters and figures of reference indicate corresponding parts in all the views.

Figure 1 is a partial bottom plan view of two opposed cars having my coupling attached, the draw-heads being in horizontal section. Fig. 2 is a front elevation of a draw-head. Fig. 3 is a longitudinal section through the same, and Fig. 4 is a perspective view of the link detached.

The draw-head 10 comprises a buffer-head A and a body B, which body is carried rearward beneath the car and attached to a spring 11 in any suitable or approved manner. In the bottom of the head, at its junction with the body, an opening 12 is produced, the forward wall of which opening is inclined upward. The head A of the draw-head is provided with the usual link-opening 13, and the front wall of the said head at the opening is beveled inward. The upper portion of the draw-head is curved, the sides essentially straight, and the lower portion 14 is slightly bowed outward to meet the corresponding portion of the opposed draw-head to sustain the shock. The entire draw-head is tubular, and in the bottom of the body portion a slot 15 is produced, extending longitudinally from the opening in the bottom of the head essentially to the rear portion of the body, as illustrated in Fig. 1. At each side of the slot 15 the metal of the body is projected inward to form ways or supports 16, adapted to guide the link, hereinafter described, in its travel. These ways may, if found desirable, consist of separate pieces of metal secured to the said body of the draw-head. In practice, however, they preferably constitute an integral portion of the said body.

The rear upper wall of the cavity proper in the head A of the draw-head is preferably curved downward, as shown at 17 in Fig. 3.

The link $17^a$ consists, preferably, of a round bar having essentially arrow-shaped heads 18 and $18^a$, one at each end. The outer head 18, which is adapted to couple with an opposed draw-head, is thicker at one side than at the other, and the sides of the said head 18 are beveled in opposite directions, as illustrated at 19 and 20 in Fig. 4. The thinner side of the head is of such width that it will travel conveniently in the slot 15 of the draw-head, and the shoulder 21, formed by reducing the said surface of the head when the link is so traveling, contacts with the inner face of the ways 16. The body-bar of the link extends rearward beyond the inner head $18^a$, and the said inner head is weighted upon one side, as shown at 22, the weighted portion of the inner head being upon the same side as the thicker portion of the outer head, and the opposite side of the inner head is reduced and provided with a shoulder to travel in the slot 15 of the draw-head in like manner to the outer head of the link.

In the reduced side of the inner head a recess is formed, and in the wall of the said recess a pin or eye 23 is inserted, to which an angle-rod 24 is secured, which rod extends downward through the slot 15 of the draw-head beneath the same to an attachment with the inner end of a lever 29, which lever is fulcrumed at or near its center in a hanger 26, secured to the sill of the car. This lever 29 extends beyond the side of the car, terminating in a handle, and the outer extremity of the lever is made to travel in a strap or bracket 27, having a depression 28 produced at each end to lock the lever in an unlocked or a locked position. A second lever 25 is linked to the inner end of the lever 29, the said second lever being supported by a hanger in like manner to the first-named lever and

made to travel in a strap or bracket similar to the bracket 27, as best illustrated in Fig. 1.

When it is desired to prepare the draw-head to receive the link of the opposed coupler, the levers 25 and 29, or one of them, as they both act together, are carried forward in the direction of the end of the car, whereupon the link $17^a$ is drawn backward within the body of the draw-head, leaving the head unoccupied and in position to receive the link of the opposed draw-head. In the opposed draw-head the link is projected through the link-opening in the head proper by carrying one of the levers 25 or 29 rearward, the reduced portion of the link-heads traveling in the slot 15 and the shoulders thereon resting upon the ways 16. When the reduced inclined portion of the outer head of the link strikes the lower inclined wall of the head, it readily travels upward and outward, and when the link is in position for coupling the rear end of the weighted side of the rear head contacts with the curved upper wall of the draw-head proper, and thus the link is prevented from being driven backward in coupling, as the link contacts with the walls of the link-opening of the opposed draw-head, and as the edges of the outer head are oppositely beveled and both heads upon one side weighted the head, which now occupies a vertical position, is automatically turned and made to occupy a horizontal position within the opposed draw-head, thus providing a secure lock. The weighted side of the heads expedites the partial revolution of the link in uncoupling.

To uncouple, since the levers are connected with one side of the inner head at the end, as either lever is carried forward, by reason of the angular rod-connection 24 simultaneously with the movement of the lever, the coupling-link is carried rearward, the heads are brought to their first or vertical position, and upon carrying the lever manipulated into the outer depression in the strap or bracket the link is forced backward within the body of the draw-head.

If in practice it is found desirable, the outer head of the link may be substituted by an ordinary link to couple with pin-couplers. The beveled walls of the link opening in the head proper of the draw-head facilitates the entrance of the link, and the opening in the bottom of the head not only renders the said head light, without materially detracting from its strength or durability, but also serves to readily permit the heads of the link to travel rearward.

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

1. In a car-coupler, the combination, with a tubular draw-head, comprising a head having an opening in its bottom and a body adapted to extend rearward beneath the car, and provided with a longitudinal slot, and guideways at each side of the said slot, of a link adapted to travel upon the said guideways, and means, substantially as shown and described, for operating the said link, as and for the purpose specified.

2. In a car-coupler, the combination, with a tubular draw-head, comprising a head having an opening in its inner side, the forward wall of which opening is upwardly inclined, and a body portion adapted to extend beneath the car, provided with a longitudinal slot, and guideways at each side of the said slot, of a link comprising a cylindrical body and an arrow-head at each end, which heads are weighted at one side and reduced at the other to travel in the slot of the draw-head, all combined for operation substantially as shown and described.

3. In a car-coupler, the combination, with a tubular draw-head, comprising a head having an opening in its inner side, the forward wall of which opening is upwardly inclined, and a body portion adapted to extend beneath the car, provided with a longitudinal slot, and guideways at each side of the said slot, of a link comprising a cylindrical body and an arrow-head at each end, one side of which heads is weighted and the opposite side reduced to travel in the slot of the draw-head, the sides of the outer head being beveled in opposite directions, as and for the purpose specified.

4. In a car-coupler, the combination, with a tubular draw-head, comprising a head proper, having a downwardly-curved upper wall, an opening in its lower face, the forward wall of which opening is upwardly inclined, and a body portion adapted to extend beneath the car and provided with a longitudinal slot, and a guideway at each side of the said slot, of a link comprising a cylindrical body and a front and rear arrow-head, weighted at one side and reduced at the other to travel in the slot of the draw-head, the forward head at its sides being oppositely beveled, a cylindrical projection extending from the center of the rear head, jointed levers fulcrumed beneath the car, and an angular rod-connection between the said levers and the rear end of the reduced portion of the rear head of the link, substantially as and for the purpose specified.

JOHN W. ROBERTS.

Witnesses:
H. COOK,
JAS. KELLER.