No. 633,517.

Patented Sept. 19, 1899.

B. J. JOHNSON.

CAR COUPLING.

(Application filed June 3, 1899.)

(No Model.)

2 Sheets—Sheet 1.

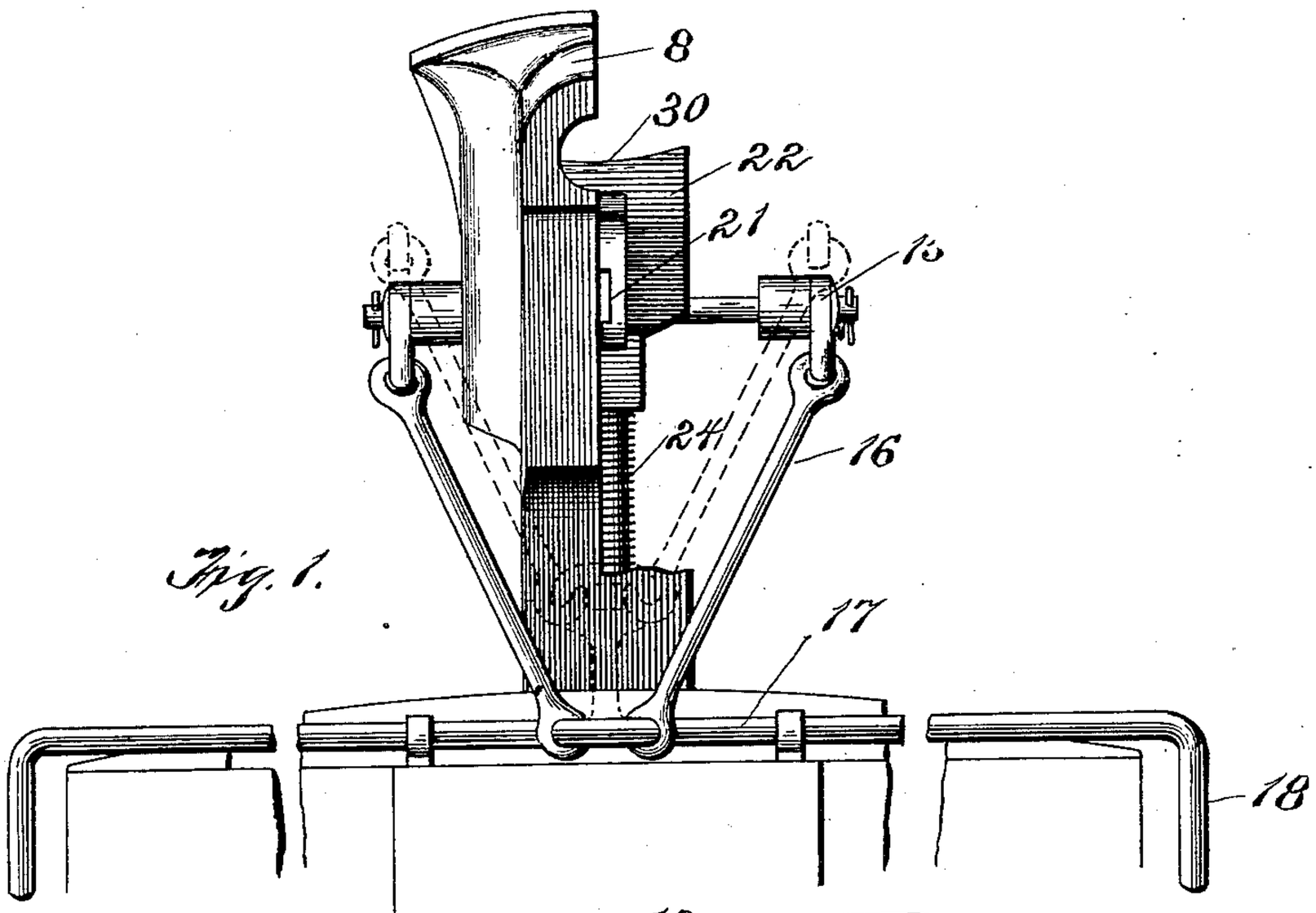

Fig. 1.

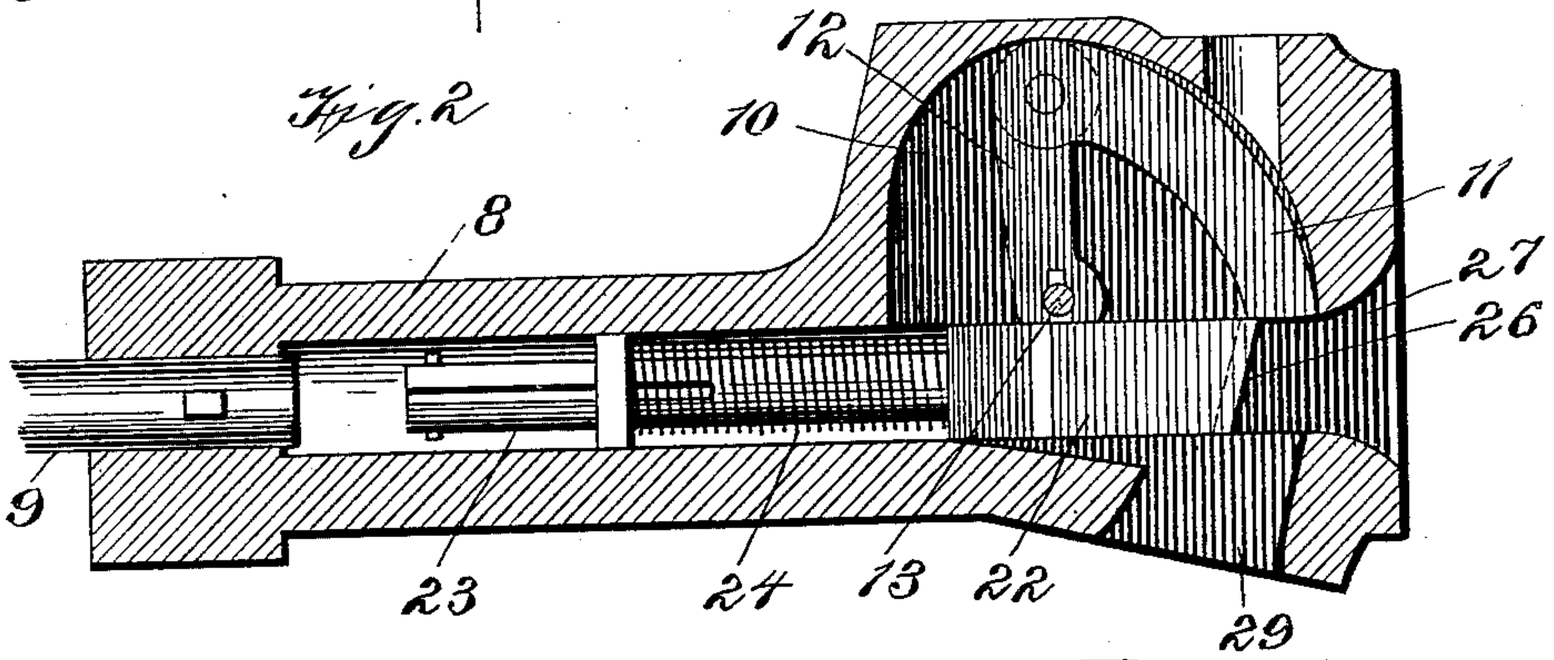

Fig. 2.

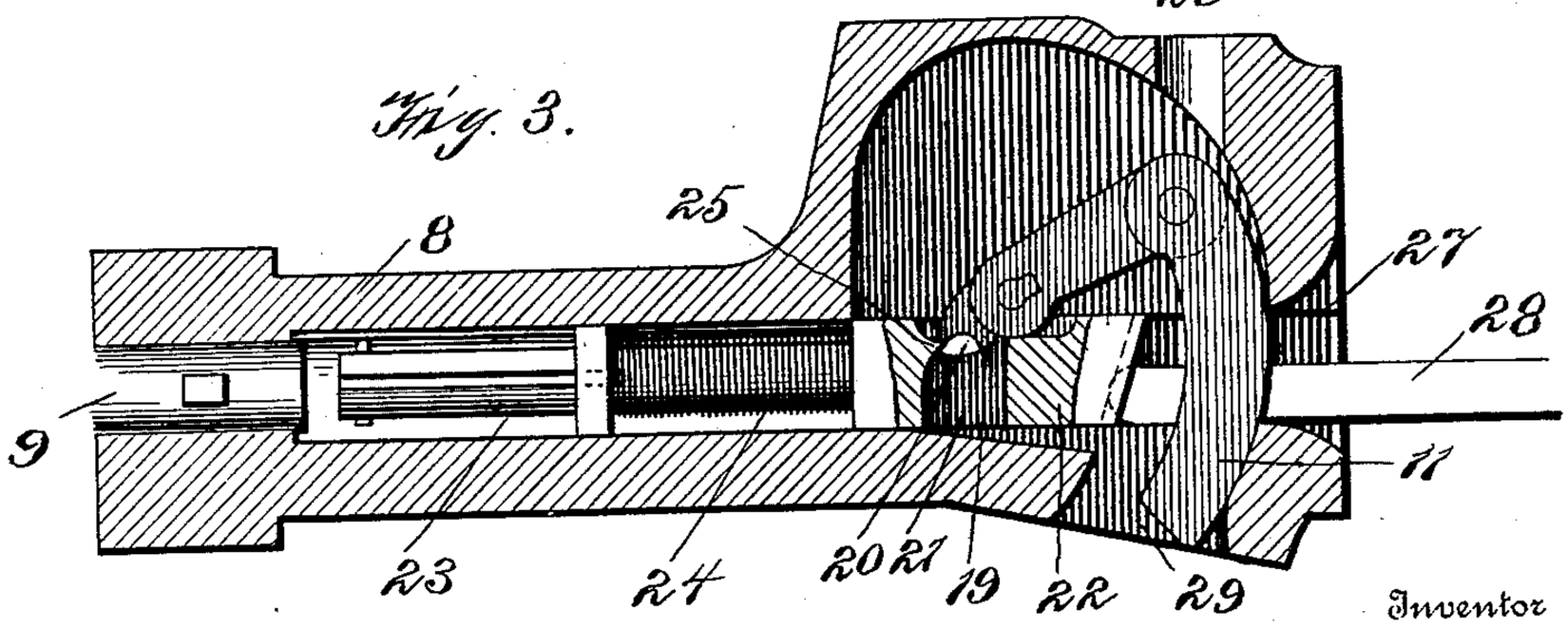

Fig. 3.

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(No Model.) 2 Sheets—Sheet 2.

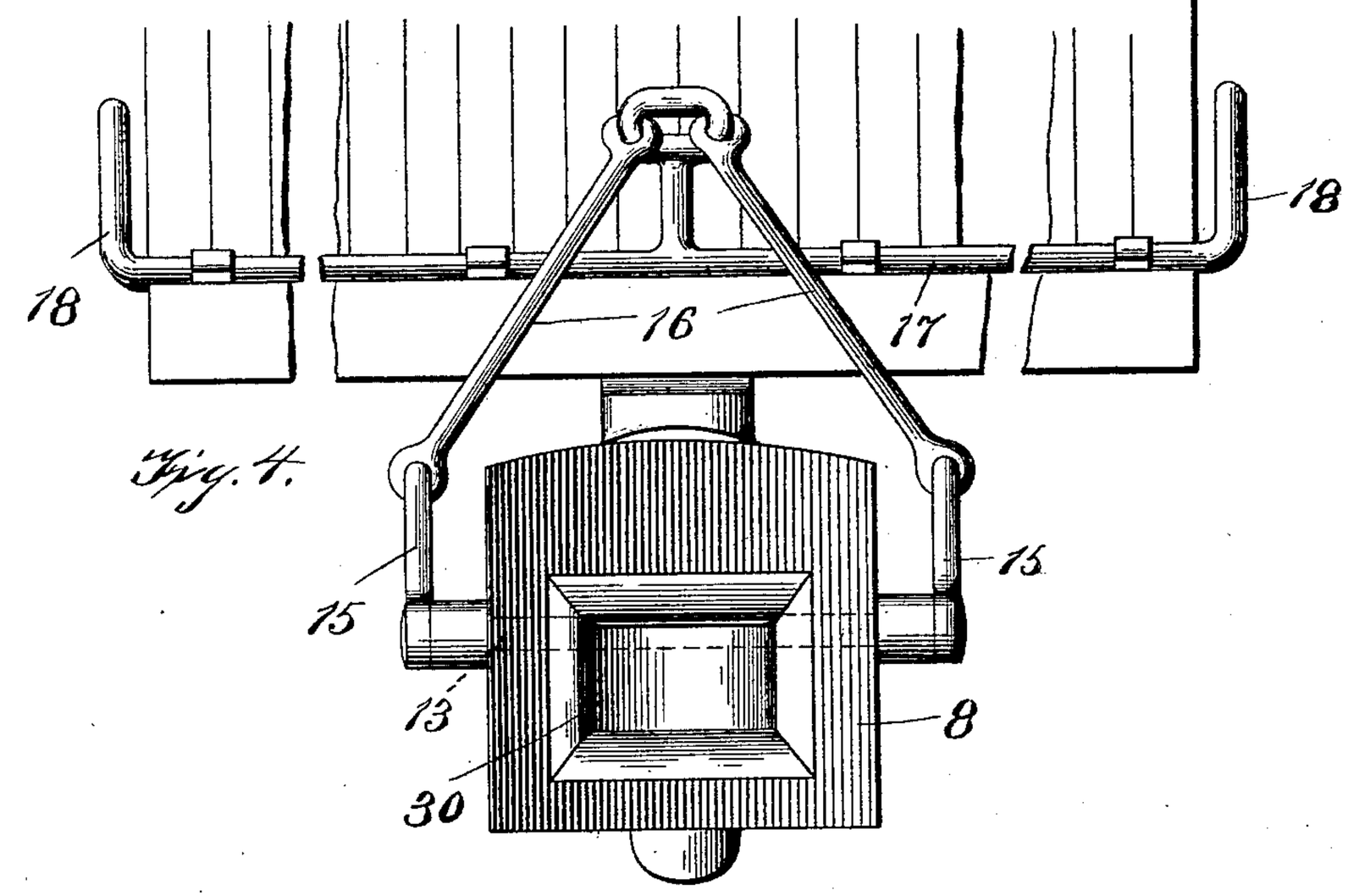

Fig. 4.

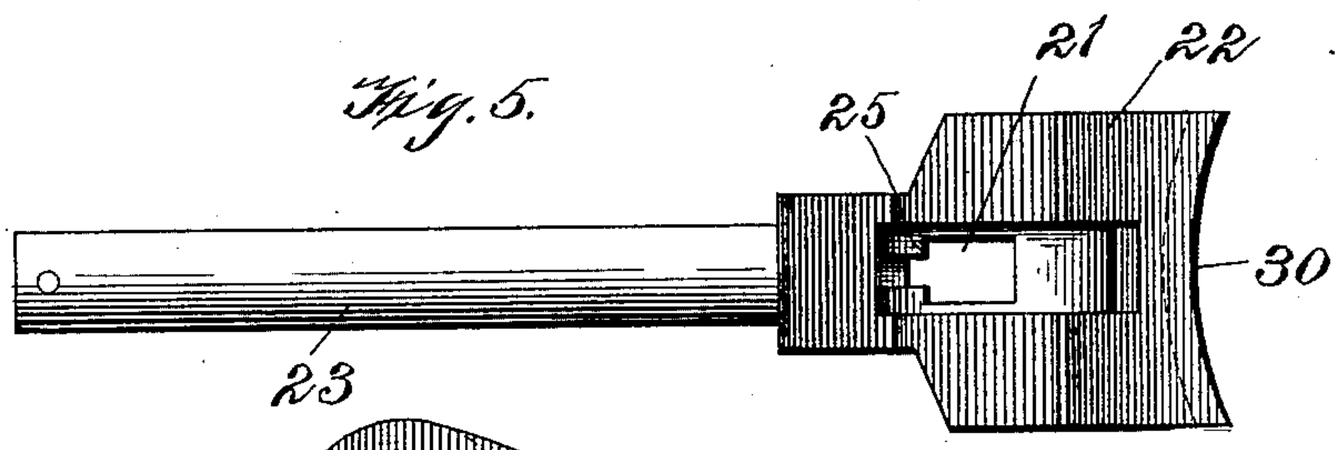

Fig. 5.

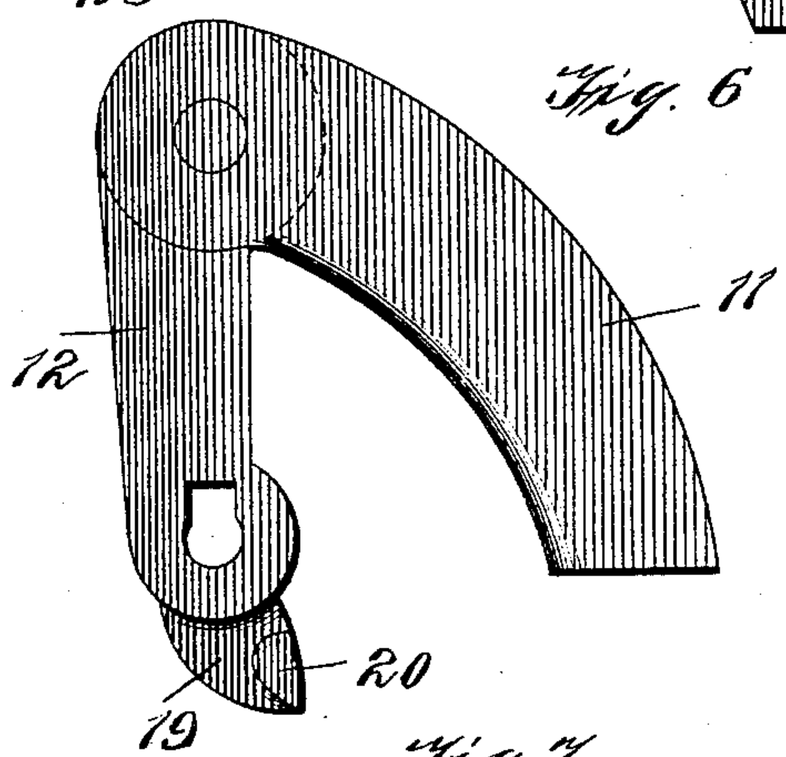

Fig. 6

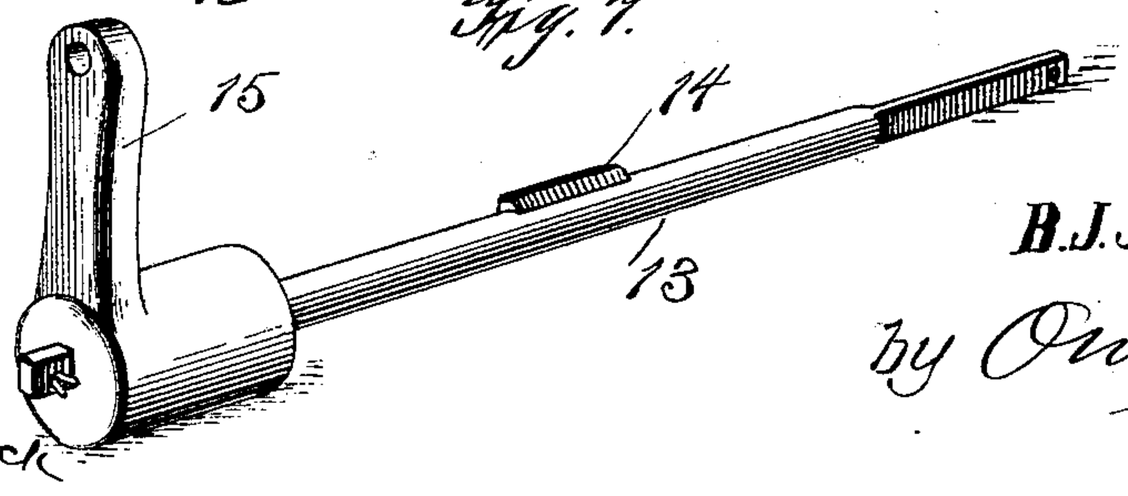

Fig. 7.

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UNITED STATES PATENT OFFICE.

BJARNI J. JOHNSON, OF SPANISH FORK, UTAH, ASSIGNOR OF ONE-HALF TO THORBER THORVALDSON, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 633,517, dated September 19, 1899.

Application filed June 3, 1899. Serial No. 719,246. (No model.)

To all whom it may concern:

Be it known that I, BJARNI J. JOHNSON, a citizen of the United States, residing at Spanish Fork, in the county of Utah and State of Utah, have invented a new and useful Car-Coupling, of which the following is a specification.

My invention relates generally to car-couplings, and more especially to that class of car-couplings which are automatic in their action when the cars come together, in which an ordinary coupling-link is used, and in which the coupling can be released without passing between the cars.

The object of the invention is to generally improve the construction and operation of such car-couplings and to provide means whereby in case of accident the improved coupling can be made to operate with an ordinary coupling-pin.

With this object in view my invention consists in the improved construction, arrangement, and combination of parts hereinafter fully described and afterward specifically pointed out in the claims.

In order to enable others skilled in the art to which my invention most nearly appertains to make and use the same, I will now proceed to describe its construction and operation, reference being had to the accompanying drawings, forming part hereof, in which—

Figure 1 is a view in top plan of part of a car equipped with my invention. Fig. 2 is a central vertical section with the parts in position ready to couple. Fig. 3 is a similar view with the parts in coupled position. Fig. 4 is an end elevation of part of a car with the coupling attached, the parts being in the positions shown in Fig. 2. Fig. 5 is a top plan view of the thrust-bar detached. Fig. 6 is a view of the curved coupling-pin and its carrying-arm detached. Fig. 7 is a detail perspective view of the pivotal bar of the curved coupling-pin.

Like numerals of reference mark the same parts in all the figures of the drawings.

Referring to the drawings by numerals, 8 indicates the draw-head, which is secured at the end of the draw-bar 9 in any usual manner and is provided with a vertical central chamber 10, in which is located curved coupling-pin 11, extending downwardly and forwardly from the outer end of an arm 12, pivoted in the draw-head by means of a horizontal pin 13, splined at 14 to enter a groove in the side of the bore in the arm, which receives said pin, so that by turning the pin 13 the arm and curved coupling-pin will be raised or lowered, as desired.

Outside of the draw-bar the pin 13 is provided with arms 15, linked to an arm 16 of a rod 17, extending to the sides of the car and provided with operating-handles 18. The arm 12 projects beyond its pivot, as at 19, and is provided with side lugs 20, the extension 19 being adapted to pass into a vertical slot 21 in the head 22 of a thrust-bar 23, slidably and horizontally mounted in the draw-head, and normally presses forward to the position shown in Fig. 2 by a spring 24. The side lugs 20 of the extension are adapted to engage under points 25 on the rear wall of the slot 21, the upper faces of the lugs and the lower faces of the points being curved, as shown.

In the normal position of the parts the thrust-bar will be forward and the lower end of the curved hook resting upon its head, the head of the thrust-bar, the front face 26 of which is inclined inward from top to bottom, filling the throat of the face-opening 27, which is flared to facilitate the entry of a link 28 of an approaching car and the throat of the opening being of greater height than the vertical thickness of the link. The link entering the face-opening will strike the end of the thrust-bar and will slide down its inclined face until it strikes the bottom of the throat, when its continued advance will press the thrust-bar inward, the extension 19 of arm 12 being moved inward with it, causing the curved pin to drop into the link into the position illustrated in Fig. 3, its end projecting into a lower extension 29 of the vertical chamber. By reason of the height of the throat and of the fact that the slot 21 is slightly longer than the extension 19 of arm 12 there will be sufficient play to permit the link to press the thrust-bar in far enough to allow the curved pin to fall slightly before the front wall of the slot 21 strikes the extension 19 of arm 12, thus avoiding locking, straining, or breaking of the parts.

The front face of the thrust-bar is curved to fit the end of the link, as shown at 30 in Fig. 5.

When the coupling is to be released, one of the handles 18 at the side of the car is operated, turning rod 17, and by means of arm 16 the links, pin 13, and arm 12 will be turned upward, carrying the curved pin with it and releasing the link. During the raising of arm 12 and the curved pin the thrust-bar will be pressed forward, its motion being regular on account of the engagement of the upper curved sides of lugs 20 with points 25 of the rear wall of slot 21.

In case of accident to the arm 12 or the curved pin while out on the road and away from repair or supply shops these parts can be removed from the draw-head and an ordinary coupling-pin inserted in a hole 31, provided for the purpose, and this pin will rest on the head of the thrust-bar when ready to couple and drop into the link when the thrust-bar is forced back by the link, thus rendering the coupling automatic to that extent.

With my improved coupling the making of the coupling is automatic, its breaking possible without the necessity of passing between the cars, and all the operations easy and certain.

While I have illustrated and described what I consider to be the best means now known to me for carrying out my invention, I do not wish to be understood as restricting myself to the exact forms and constructions shown, as many slight changes therein or variations therefrom might suggest themselves to the ordinary mechanic, all of which would be clearly included within the limit and scope of my invention.

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

1. In a car-coupling, the combination with a chambered draw-head, of an arm pivoted therein, and carrying a curved coupling at its outer end, said arm being extended beyond its pivot and provided with side lugs on the extension, and a spring-actuated thrust-bar, provided with a vertical slot slightly longer than the width of the extension and having curved forward points on the rear wall of its slot, substantially as described.

2. In a car-coupling, the combination with a chambered draw-head, of an arm pivoted therein, and carrying a curved coupling-pin at its outer end, and a spring-actuated thrust-bar adapted to normally support the pin in position for automatic coupling, the draw-head being provided with a vertical opening in position to receive an ordinary coupling-pin in position to rest on the thrust-bar in position for automatic coupling when the arm and curved pin are removed, substantially as described.

3. In a car-coupling, the combination with a chambered draw-head, a horizontal bar pivotally mounted in the draw-head, and having arms on its outer ends, a horizontal rod pivoted to the car and having end handles and a central arm, links connecting the arm with the arms of the pivoted bar, an arm splined on the pivot-bar in the chamber of the draw-head and carrying a curved coupling-pin at its outer end, the arm being extended beyond the pivot and the extension provided with side lugs having curved upper faces, and a spring-actuated thrust-bar having a slot to receive the extension and forwardly-projecting points on the rear wall of the slot having curved under sides to engage the curved faces of the lugs, substantially as described.

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SAMUEL CORNABY.