

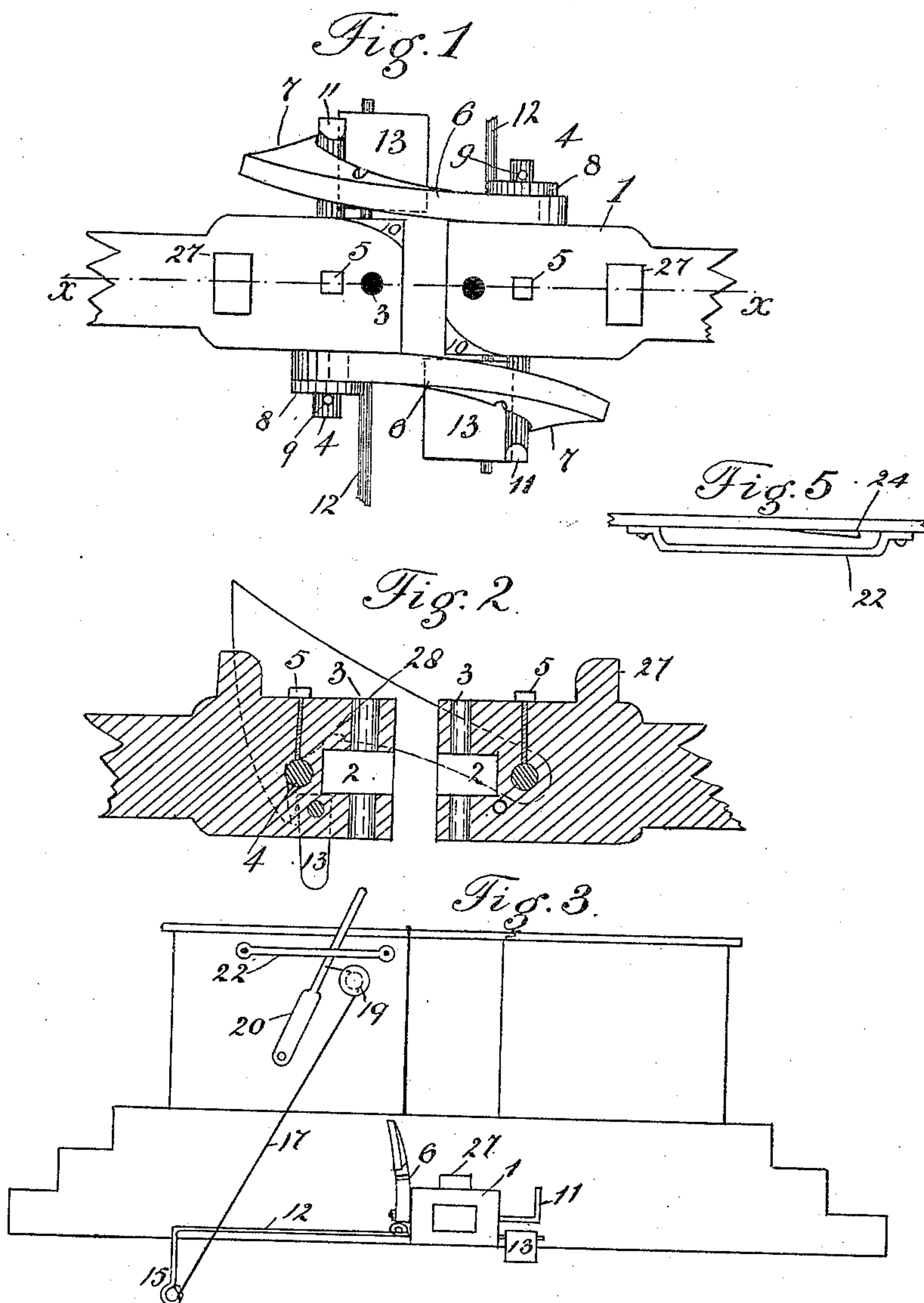
(No Model.)

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H. NIEMANN.
CAR COUPLING.

No. 436,722.

Patented Sept. 16, 1890.



WITNESSES:

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G. J. Reelands
Wm. M. Connell

INVENTOR

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(No Model.)

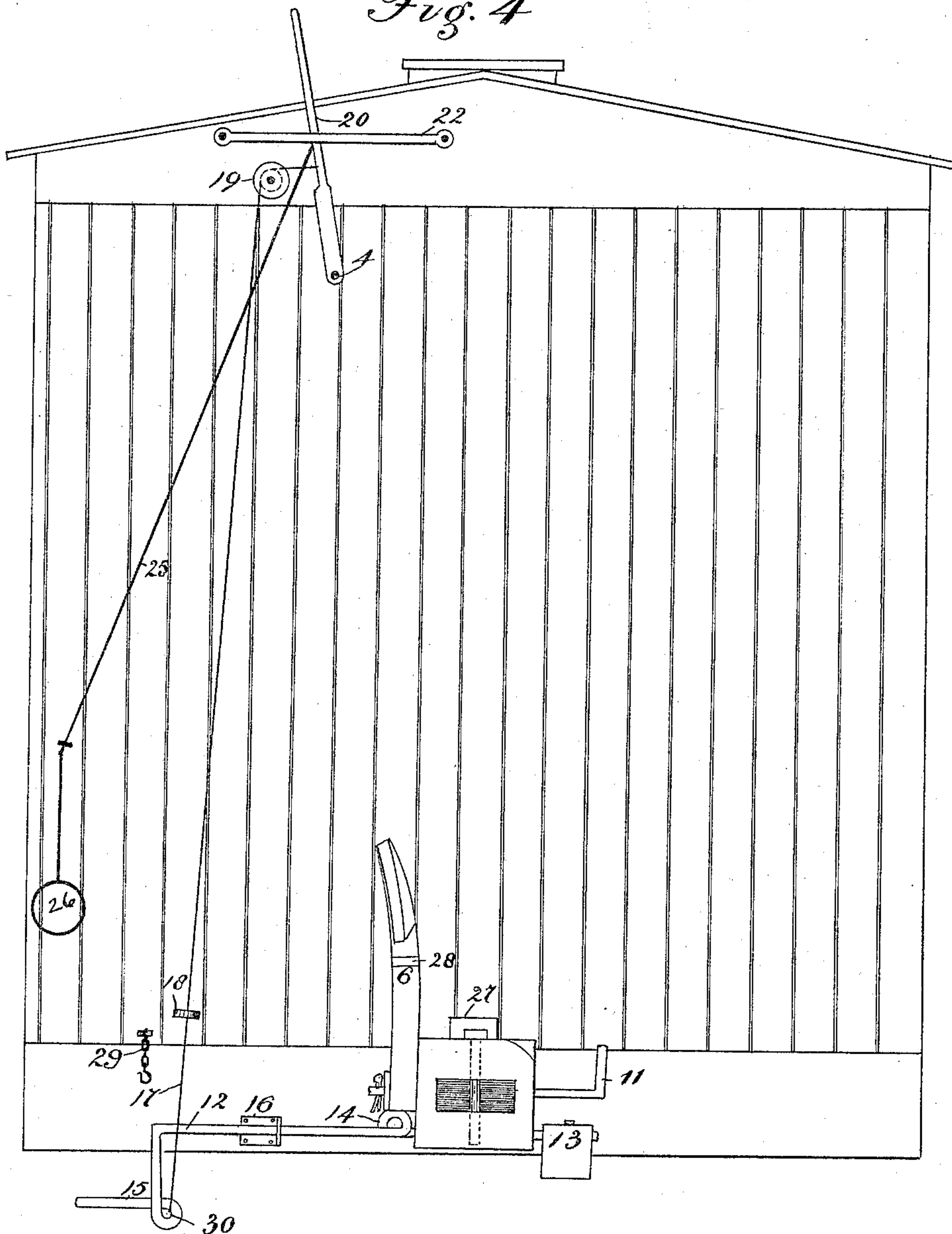
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Fig. 4



WITNESSES:

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HENRY NIEMANN, OF DENVER, COLORADO.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 436,722, dated September 16, 1890.

Application filed January 14, 1890. Serial No. 336,951. (No model.)

To all whom it may concern:

Be it known that I, HENRY NIEMANN, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, 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 figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in car-couplings for railway-cars; and the object of my invention is to provide a coupling of the class stated which shall be automatic in action, durable, reliable, and effective in operation, a coupling simple in construction, economical in cost, and not liable to get out of repair, being at the same time applicable either to freight-cars or passenger-coaches.

To these ends my invention consists of the features, arrangements, and combinations hereinafter described and claimed.

In the drawings is illustrated an embodiment of the invention, in which drawings—

Figure 1 is a plan view of the device, showing the position of the parts when two contiguous cars provided with my invention are coupled. Fig. 2 is a longitudinal section taken on the line $x x$, Fig. 1. Fig. 3 is an end view of the device attached to a passenger-car, showing the coupling-bar raised. Fig. 4 is an end view of a freight-car provided with my improvement, the coupling-bar being also uplifted. Fig. 5 is a plan view of a bracket and lug secured to the end of the car and adapted to guide the lever and also retain it in place.

In the figures let the reference-numeral 1 indicate the coupling-heads of the draw-bars secured to the frame-work of the cars in any suitable manner or in the ordinary way. Each coupling-head of two contiguous cars is provided with a link-recess 2 and an aperture 3 for the reception of a coupling-pin. It will thus be seen that the coupling-heads provided with my improvement are so constructed that the cars to which they are attached may be coupled in the ordinary way—

that is, by the use of a link and coupling-pin—if at any time an emergency should exist therefor, as in case it should be necessary to couple two cars, one provided with my improvement and the other having only the ordinary draw-head.

With the exception of the link-recess and the aperture for the coupling-pin, each coupling-head is solid. Passing through each coupling-head in the rear of the link-recess is a pin 4, rigidly secured within the draw-head by the locking-bolt 5. To one extremity of each of these pins 4 and on the outside of each draw-head is pivoted one end of a coupling rod or bar 6, formed with the hook end 7 on the under side of its forward or free extremity. Each coupling-pin is nicely fitted upon its supporting pivot or pin, being at the same time allowed to turn freely thereon.

To facilitate precision and accuracy in the movement of the connecting-bar upon its pivot, a large washer 8 is placed upon the pivot outside of the bar and engaging the same, as shown in Fig. 1. Passing through an aperture in the outer extremity of the pivoted pin 4 is a key 9, retaining the bar 6 at all times securely in place thereon. The opposite extremity of bar 4 projects sufficiently beyond the draw-head or coupling-head to engage the hooked or free forward extremity of the coupling-bar pivoted to the pin 4 on the opposite draw-head. One corner of each draw-head, being that adjacent to the coupling-pin secured to the opposite draw-head when the cars are coupled, is cut away at 10 to allow the coupling-bars perfect freedom of movement in coupling and in order that each of said bars may be surely guided to engagement with the pin of the adjacent draw-head, even though the hooked extremity of the coupling-bar should strike slightly to one side of the proper engaging-point.

The hooked extremities of the coupling-bars turn outward slightly for the same purpose—namely, to insure perfect automatic action in engaging the pins 4, it being impossible with the corners of the draw-heads cut away and the coupling-bars shaped as shown that there should be any obstruction to perfect automatic work.

The extremity of each pin 4 which engages

the coupling-bar is turned upwardly, so as to occupy a vertical position, as shown at 11, in order to prevent the hook from slipping over the engaging extremity of the pin 4 or uncoupling.

The cars are uncoupled by means of a rod 12, passing through the draw-head and provided with a large cam 13 at one extremity, said cam being located directly beneath the coupling-bar attached to the opposite draw-head when the cars are coupled. Cam 13 is rigidly secured to its rod and turns therewith.

On pin 12 and on the side of the draw-head opposite to cam 13 is a similar cam 14, formed, preferably, integral with the rod by coiling the same one or more times around at this point, which is directly beneath the coupling-bar attached to the draw-head through which rod 12 passes, but close to its pivotal point. The object of these cams 13 and 14 is to enable a person to uncouple or disconnect the cars without going between them, and therefore without danger to the person attending to the work. This is accomplished by turning rod 12 so that each coupling-bar shall be engaged by its respective cam. Since cam 14 acts near the pivotal point of the coupling-bar which it engages, it need not be so large as the opposite cam 13, which acts comparatively remote from the pivotal point of its coupling-bar or near its hooked extremity.

The coupling-bar which is engaged by cam 13 in uncoupling the cars is provided with a small recess 28, into which the cam slips after having raised the bar sufficiently to disengage the hook end from the pin 4. By this means the cam 13 and its connections are held in the upraised position until the cars are separated by drawing one from the other. This may be some time, and the engagement of the cam with recess 28 obviates the necessity of a person remaining there to hold rod 12 with its attachments in the upright position until the engine starts and separates the cars. This action of the cams raises both coupling-bars from engagement with the pins 4 and leaves the cars free to move independently of each other. Rod 12 also performs the further office of supporting the coupling-bar attached to the same draw-head in a position ready to again make an automatic coupling after the cars are disconnected.

When not in use, the coupling-bars may be held in the upraised position by the use of the hook and chain 29, secured to the end of the car and hooked into the eye 30 of the crank-arm 15.

Rod 12 may be manipulated for the purpose of uncoupling the cars in various ways. This rod may be formed with a crank-arm 15 for use on freight-cars, said arm extending sufficiently near the outside of the car to enable a person to uncouple the cars without stepping between them. 16 is a support and guide for rod 12, the same being secured to the end of the car. Rod 12 may also be operated from the top of a freight-car, as shown

in Fig. 4, by the use of a cord or chain 17, having one extremity secured to the crank-arm 15, passing thence up the end of the car, through an eye 18, and over a pulley 19, secured near the top of the car, its upper extremity being made fast to a lever 20, pivoted to the end of the car at 21 and guided and maintained in position by the bracket-support 22. A person standing on top of the cars and throwing lever 20 toward him will turn rod 12, raise the coupling-bars, and disconnect the two cars. This lever may then be made to engage lug 24, secured to the end of the car, and thus maintain rod 12, with its cams, in the upraised position when the cars are uncoupled. 25 is a chain or cord connected with lever 20 at one extremity and provided with a ring 26 at the opposite extremity, said ring hanging low enough on the end of the car to allow the train-man to reach it while standing on the ground and disengage lever 20 from lug 24 whenever it may be necessary and without going to the top of the car.

The means of operating rod 12 for the purpose of disconnecting the cars when used on passenger-cars is similar to that employed in operating the device on freight-cars, as just described, except that in the case of a passenger-coach the train-man stands on the platform instead of on the top of the car while manipulating the lever. This is illustrated in Fig. 3, where the corresponding parts are indicated by the same reference-numerals as in Fig. 4.

It will be readily observed that my improved coupler may be attached to the ordinary draw-head of either passenger-coaches or freight-cars with but very little change, and consequently with small expense, having this important advantage over those couplings requiring for their use the manufacture of complete new draw-heads. This leads me to make further mention of a very important feature of my improved device—namely, the solid or practically solid draw-head or coupling-head, adding strength and durability to the parts and contributing largely to the advantage first mentioned—namely, ease and facility of attaching my improvement to draw-heads of cars equipped in the ordinary way.

27 is a stop-block secured or formed integral with the top of the rear portion of the coupling-head to prevent the coupling from slipping beyond a point where the block engages the front end of the car in case the spring or other device located at the rear extremity of the draw-bar should give way or become useless.

Having thus described my invention, what I claim is—

1. The combination of the coupling-head, a draw-bar provided with the ordinary link-recess and an aperture for the ordinary coupling-pin, a coupling-bar having an undercut and outwardly-deflected hook end, said bar being independently pivoted to one side of the coupling-head, a lesser cam taking under-

neath said bar, a larger cam adapted to take beneath the coacting coupling-bar of the adjacent coupler, a pintle or shaft upon which such cams are secured, one on each side of the draw-head, the pintle passing therethrough and being pivoted therein, and means for lifting the cams to simultaneously disengage both coupling-bars, substantially as described.

2. The combination of a coupling-head having a coupling-bar 6 pivoted to the exterior thereof, said bar having an undercut outwardly-deflected hook end 7, and the pin 4, one extremity of which is upturned at 11 and engages on the outside of its draw-head the hook end of the coupling-bar of the opposite draw-head, substantially as described.

3. The combination of a solid coupling-head, substantially as described, a coupling-bar 6, pivoted to the exterior thereof, said bar having a hook end 7, a pin 4, rigidly secured to the draw-head, one extremity of which engages the hook end of the coupling-bar of the opposite draw-head when the cars are coupled, rod 12, pivoted within the draw-head and provided with cams 13 and 14, rigidly secured to said rod on opposite sides of the draw-head, and means for lifting the cams to simultaneously engage both coupling-bars, substantially as described.

4. The combination of a solid coupling-head, substantially as described, having one corner cut away at 10, a coupling-bar 6, pivoted to the exterior thereof and provided with

an outwardly-deflected hook end 7, a pin 4, extending through the draw-head, one extremity of said pin forming the pivot for the coupling-bar, the opposite extremity being adapted to engage the coupling-bar of the opposite draw-head, rod 12, provided with cams 13 and 14 on opposite sides of the draw-head, said rod being provided with a crank-arm 15, and means for operating said rod and lifting the cams simultaneously, said means consisting of a cord or chain 17 and lever 20, pivoted to the end of the car, said cord or chain being secured to the crank-arm at one extremity, passing over a pulley, and secured to the lever at the opposite extremity, substantially as described.

5. The combination, with a draw-head, of a coupling-bar 6, pivoted to the outside of the draw-head and provided with a hook end 7 and a shallow recess 28, pin 4, a rod 12, pivoted within the draw-head and provided with cams 13 and 14, and suitable means of raising cams 13 and 14 and disengaging the coupling-bars from pins 4, cam 13 being adapted to engage recess 28 and maintain the connecting parts in the upraised position, substantially as described.

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

HENRY NIEMANN.

Witnesses:

FRED. W. FELDWISCH,
WM. MCCONNELL.