

No. 709,468.

Patented Sept. 23, 1902.

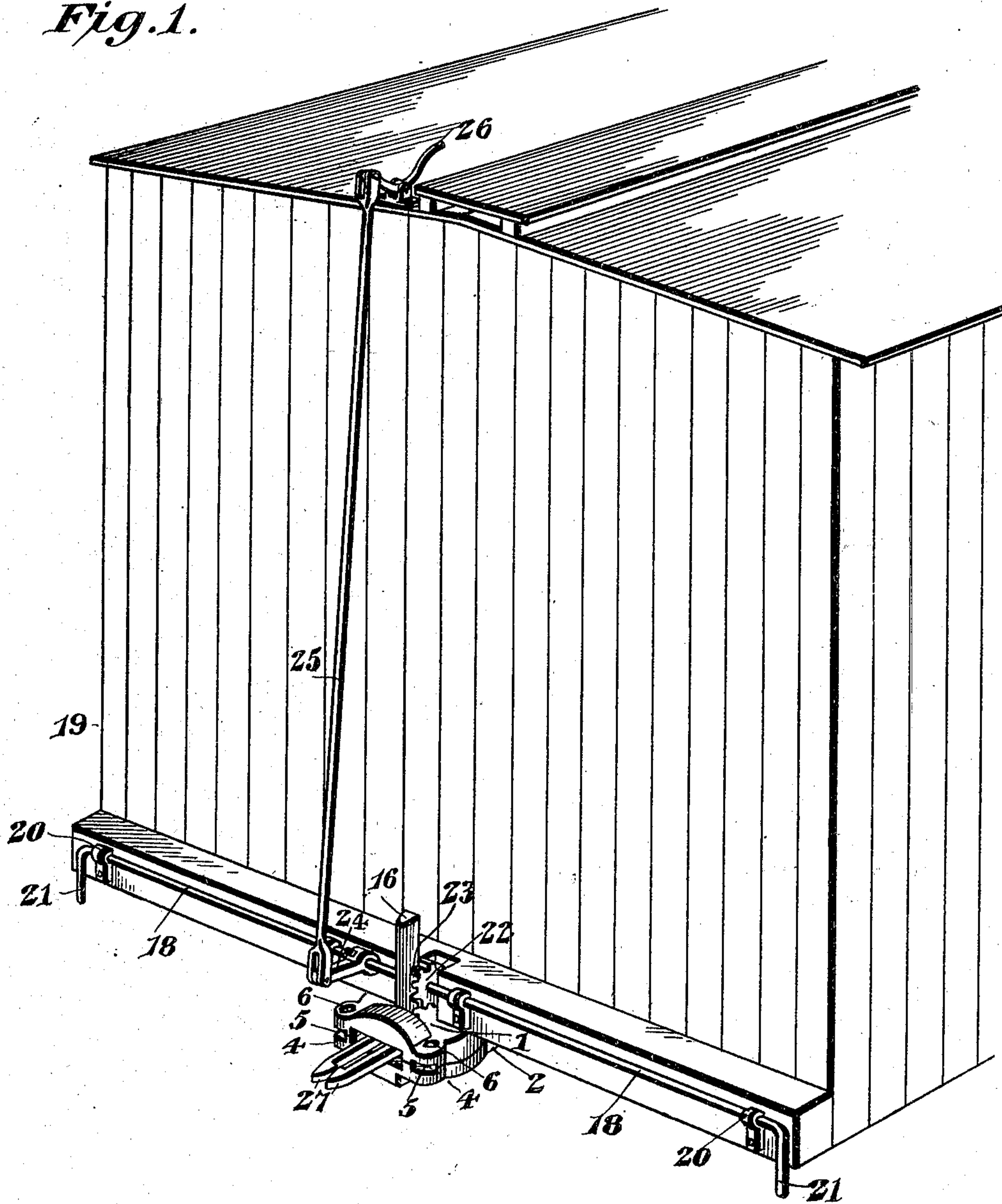
A. B. CARTER.  
CAR COUPLING.

(Application filed Apr. 26, 1902.)

(No Model.)

2 Sheets—Sheet 1.

*Fig. 1.*



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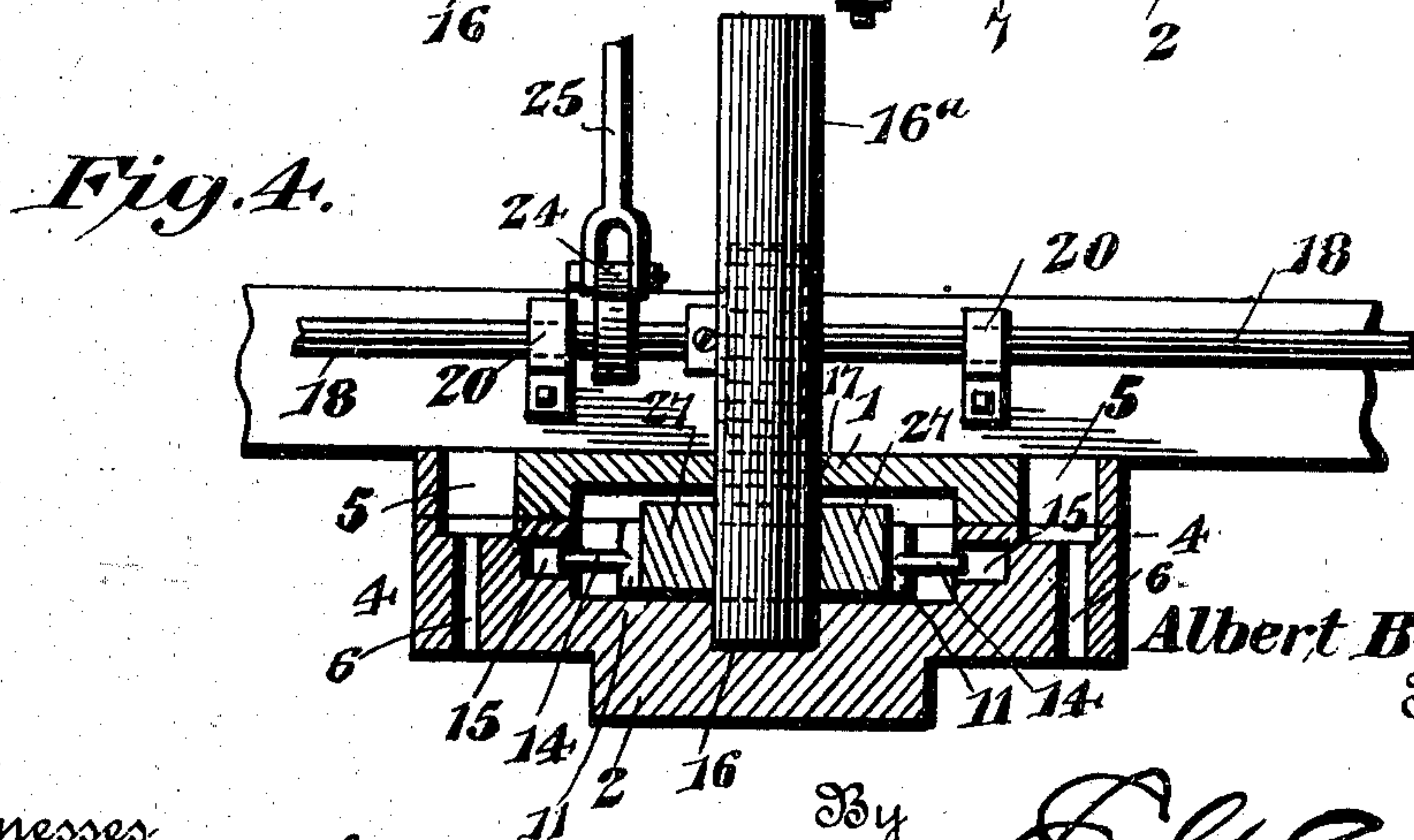
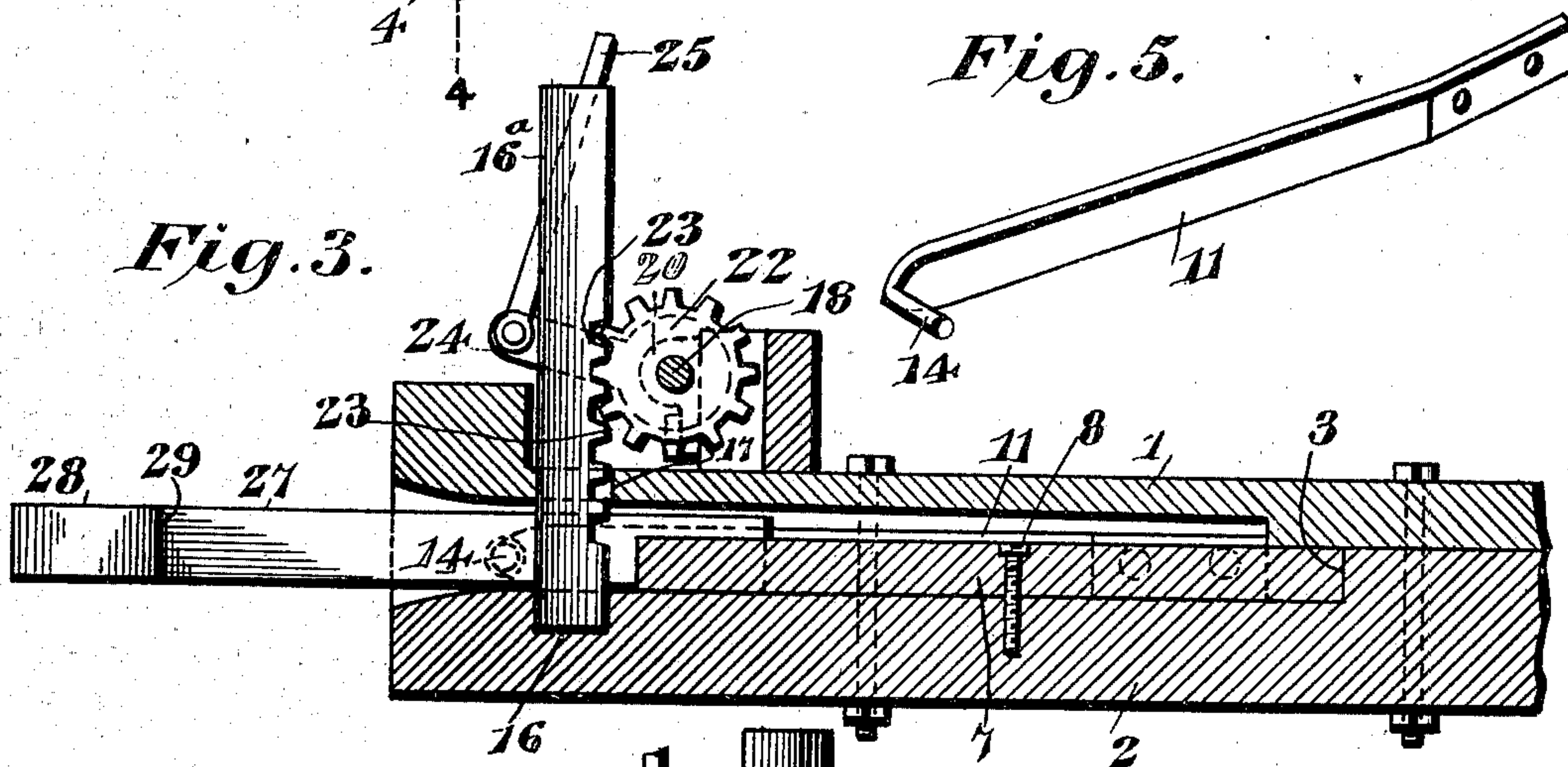
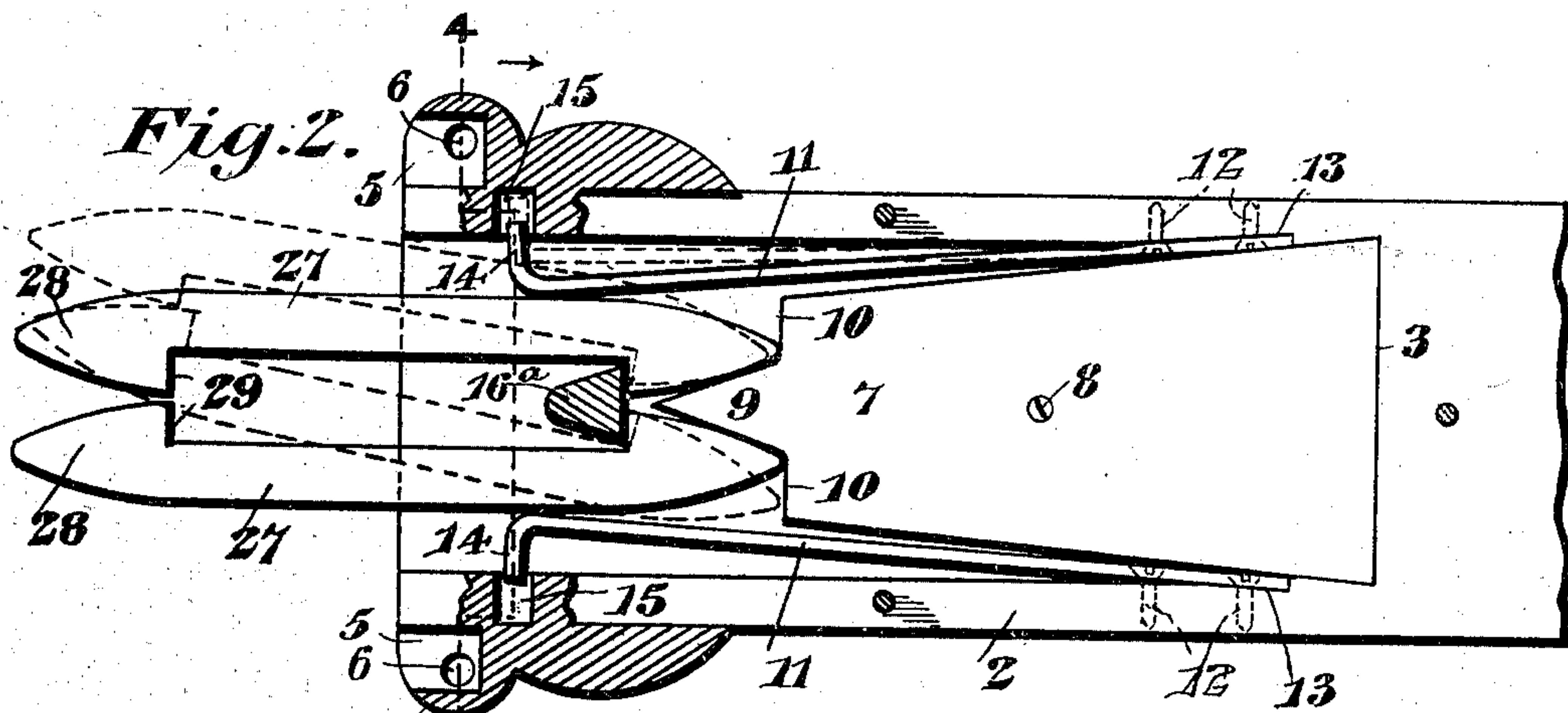
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# UNITED STATES PATENT OFFICE.

ALBERT BEVERLY CARTER, OF HAZLEHURST, MISSISSIPPI.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 709,468, dated September 23, 1902.

Application filed April 26, 1902. Serial No. 104,848. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT BEVERLY CARTER, a citizen of the United States, residing at Hazlehurst, in the county of Copiah and State of Mississippi, have invented a new and useful Car-Coupler, of which the following is a specification.

This invention relates to car-couplers, and has for its object to provide certain new and useful improvements wherein while the draw-bar is capable of endwise yieldable movements under draft and buffing strains it is held rigid or stationary with respect to lateral movements, so as to obviate wear incident to the ordinary swinging type of draw-bar. It is furthermore designed to compensate for the relative rigidity of the draw-bar, so that a pair of engaged couplers may not become uncoupled when rounding a curve, and to accomplish this feature through a relative looseness of the links which connect the opposite couplers.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a car-coupler embodying the features of the present invention and shown applied to a car. Fig. 2 is a horizontal longitudinal sectional view. Fig. 3 is a vertical longitudinal sectional view of Fig. 2. Fig. 4 is a cross-sectional view on the line 4-4 of Fig. 2. Fig. 5 is a detail perspective view of one of the link-engaging springs.

Like characters of reference designate corresponding parts in all the figures of the drawings.

In carrying out the present invention the draw-head is formed in top and bottom longitudinal sections 1 and 2, respectively, which have their contiguous faces channeled out to form a draw-head chamber for the reception of the links. The chambered portion of each draw-bar section terminates in a shoulder 3

at a predetermined distance in rear of the front of the draw-bar. The forward end of each draw-bar section is laterally enlarged at opposite sides, as indicated at 4, and each enlargement is provided in its forward end with a horizontally-disposed socket or recess 5, and the tops and bottoms of the registered recesses are provided with corresponding openings 6. These sockets or recesses and openings 6 are designed for the reception of ordinary pins and links whenever it may become necessary.

In the bottom section of the draw-bar a filling or abutment block 7 is secured by means of a fastening 8 with its rear end lying against the shoulder 3 and its opposite longitudinal edges converged forwardly, there being a pointed tongue or projection 9 at the front end of the block and disposed in line with the longitudinal center thereof, whereby shoulders 10 are provided at opposite sides of the projection 9. In the space between each longitudinal edge of the block and the adjacent wall of the chambered draw-bar section there is a leaf-spring 11, which normally lies against the adjacent edge of the block, and therefore inclines forwardly and transversely inward, the rear end of the spring being secured to the draw-bar by means of suitable fastenings 12, which are applied before the block is fitted in the draw-bar. It will be observed that the rear portion of the channeled part of the draw-bar is slightly enlarged, or, in other words, the opposite longitudinal side walls of the chamber are notched, as at 13, so as to receive the rear ends of the springs. By reason of the space between the opposite edges of the block 7 and the longitudinal side walls of the chambered draw-bar the springs 11 are capable of lateral movement, and their forward ends, which are projected a suitable distance beyond the front end of the block and terminated short of the front end of the draw-bar, are provided with lateral outwardly-directed pins or projections 14, which work in sockets or recesses 15, formed in the side walls of the draw-bar and providing guideways for said projections, the latter also forming stops to close the spaces between the forward ends of the springs and the side walls of the draw-bar. A socket 16 is formed in the upper face of the bottom of the draw-bar, is located in



front of the block 7 and between the springs 11, and designed to receive the lower end of the coupling-pin. The locking-pin 16<sup>a</sup>, which is substantially triangular in cross-section with its apex directed forwardly, is mounted to work vertically through an opening 17 in the top of the draw-head and corresponding to the socket 16 in the bottom of the draw-head. For manipulating the pin from either side of the car a rock-bar 18 is mounted transversely across the sill of the car-body 19 by means of suitable bearings 20 and is provided at its opposite ends with crank-handles 21. A gear or pinion 22 is fixed upon the middle portion of the shaft and is in mesh with a rack or teeth 23 upon the back of the pin, so that by manipulating either of the crank-handles the pin may be raised and lowered through the medium of the pinion meshing with the teeth upon the pin. In order that the pin may be manipulated from the top of the car, the rock-shaft is provided at one side of the pinion with a forwardly-directed crank-arm 24, from the outer end of which rises a connecting-rod 25, which has its upper end connected to the forward end of an intermediately-fulcrumed lever 26, mounted upon the top of the car, so that by manipulating the lever the rock-shaft may be readily thrown in either direction to raise and lower the pin. To cooperate with the pin and form the connection between a pair of draw-bars, there is provided a pair of links 27, each of which is tapered at its opposite ends to form the arrow-heads 28, the latter being projected at the inner side of each link to form an abrupt shoulder 29, which is designed to engage against the back of the locking-pin 16<sup>a</sup>, with which it is yieldably held in engagement by means of the adjacent spring 11. By reason of the fact that the pin is beveled upon its front side the links are separated thereby when two couplers are brought together, and as the springs yield outwardly the shoulders 29 will snap back of the pin, and thereby form the connection between the links and the pin. To release the links, the rock-shaft is turned either from the side of the car or the top thereof to elevate the pin out of engagement with the links, and then the latter are free to move out of the draw-bar.

A very important feature of the present device resides in the fact that the draw-bar is held rigid with respect to any lateral movement, and while no draft and buffing springs have been shown it will of course be understood that I contemplate using such springs, which may be mounted with respect to the draw-bar in any ordinary or preferred manner. By having the draw-bar held against lateral movement it is preserved against wear and breakage incident to the ordinary type of swinging draw-bars, as the latter are frequently damaged and broken by violent lateral jars. To compensate for the relative rigidity of the draw-bar, the links are adapt-

ed to swing or yield laterally when the cars are upon a curve, as indicated by dotted lines in Fig. 2 of the drawings, so as to prevent breaking of the links and damage to the draw-bar, the links being held in engagement with the pins, and thereby prevented from becoming disengaged therefrom by means of the springs 11, which permit of the required yielding movement of the links. It will here be observed that the recesses formed by the reduced tongue or projection 9 of the block 7 receive the heads of the respective links, and when on a curve this projection forms a fulcrum-bearing for the inner end of one of the links.

From the foregoing description it is apparent that the device of the present invention is exceedingly simple and inexpensive, and by reason of the fact that the draw-head is made in detachably-connected sections the parts of the coupler are effectively housed and protected, and should any of these parts become broken or damaged they may be readily replaced, whereby the life of the coupler is materially increased, as it need not be discarded should any of the minor parts thereof become broken.

What I claim is—

1. In a car-coupler, the combination with a draw-head having a vertically-movable pin which is fixed against lateral movement, of a coupling-link which is separate from the draw-head and is provided with a lateral shoulder for engagement with the pin, and a spring to yieldingly hold the shoulder of the link in engagement with the pin.

2. In a car-coupler, the combination with a draw-head which is held against lateral movement, and is provided with a vertically-movable coupling-pin which is fixed against lateral movement, of a coupling-link which is separate from the draw-head and is provided with a lateral shoulder for engagement with the pin, and a spring to bear against the outer side of the link and yieldably hold the shoulder thereof in engagement with the coupling-pin.

3. In a car-coupler, the combination with a draw-head, having a vertically-movable pin, of a pair of links which have their opposite ends provided with lateral shoulders upon their inner sides for engagement with the locking-pin, and springs disposed at opposite sides of the pin to bear against the links and yieldably hold the same in engagement with the pin.

4. In a car-coupler, the combination with a draw-head, of a vertically-movable coupling-pin therefor, a coupling-link provided with lateral shoulders for engagement with the coupling-pin, and a spring having one end secured to the draw-bar with its free end portion bearing against the outer side of the link to hold the same in yieldable engagement with the pin and provided at its free end with a guide projection working in a guideway formed in the draw-head.



5. In a car-coupler, the combination with a draw-head, and a vertically-movable coupling-pin piercing the top thereof, of a pair of coupling-links which are provided with lateral inwardly-directed shoulders for engagement with the back of the pin, and leaf-springs located at opposite sides of the links with their free ends bearing against the same to hold the shoulders of the links yieldably in engagement with the pin, the free ends of the springs having lateral projections working in sockets formed in the opposite side walls of the draw-head.

6. In a car-coupler, the combination with a draw-head, of an endwise-movable coupling-pin, a headed link for detachable engagement with the pin, a spring to yieldably hold the link in engagement with the pin, and an abutment in rear of the pin to form a fulcrum-bearing for the link substantially as and for the purpose set forth.

7. In a car-coupler, the combination with a draw-head, of an endwise-movable locking-pin, a beveled abutment in rear of the pin, a pair of arrow-headed links for engagement with the pin, and springs to yieldably hold the heads of the links in detachable engagement with the pin, the abutment forming a fulcrum-bearing for the inner ends of the links in the manner substantially as described.

8. In a car-coupler, the combination with a draw-head, of an endwise-movable coupling-pin, a forwardly-tapered abutment-block fitted in the back of the draw-head and having its forward end provided with a reduced forwardly-tapered projection terminated adjacent to the rear side of the coupling-pin, leaf-springs secured between the opposite sides of the abutment-block and the corresponding sides of the draw-head, the forward free ends

of the springs being projected beyond the position of the coupling-pin and having lateral projections working in recesses formed in the sides of the draw-head, said projections closing the spaces between the free ends of the springs and the adjacent sides of the draw-head, and a pair of coupling-links provided at opposite ends with the arrow-heads for engagement with the coupling-pin, the springs normally lying in engagement with the links to hold the same yieldably in detachable engagement with the pin, and the reduced projection of the abutment forming a fulcrum for the inner ends of the links.

9. In a car-coupler, the combination with a draw-head having sockets in its opposite inner sides, of a coupling-pin, leaf-springs having their rear ends connected to the draw-head and inclined inwardly and forwardly, the free ends of the springs having lateral outwardly-directed projections working in the respective guide-sockets and closing the spaces between the free ends of the springs and the respective sides of the head, and a pair of headed links for engagement with the pin.

10. In a car-coupler, the combination with a draw-bar, of an endwise-movable coupling-pin having teeth upon the back thereof, a rock-bar located in rear of the pin, a pinion carried by the rock-bar and in mesh with the teeth of the pin, a crank-arm carried by the rock-bar, a connecting-rod rising from the crank-arm, and an intermediately-fulcrumed lever connected to the upper end of the rod.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ALBERT BEVERLY CARTER.

Witnesses:

A. J. HODGES,  
J. M. NORMAN.