

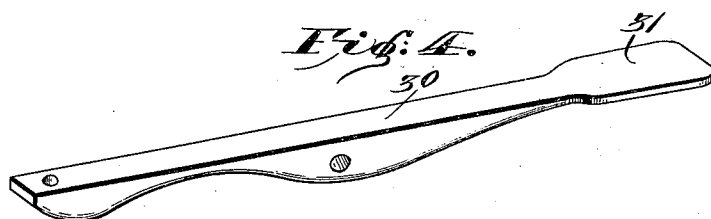
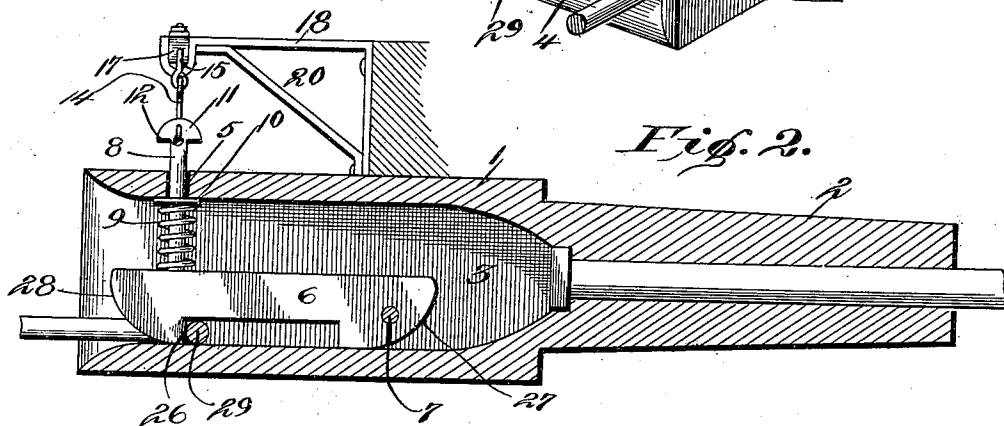
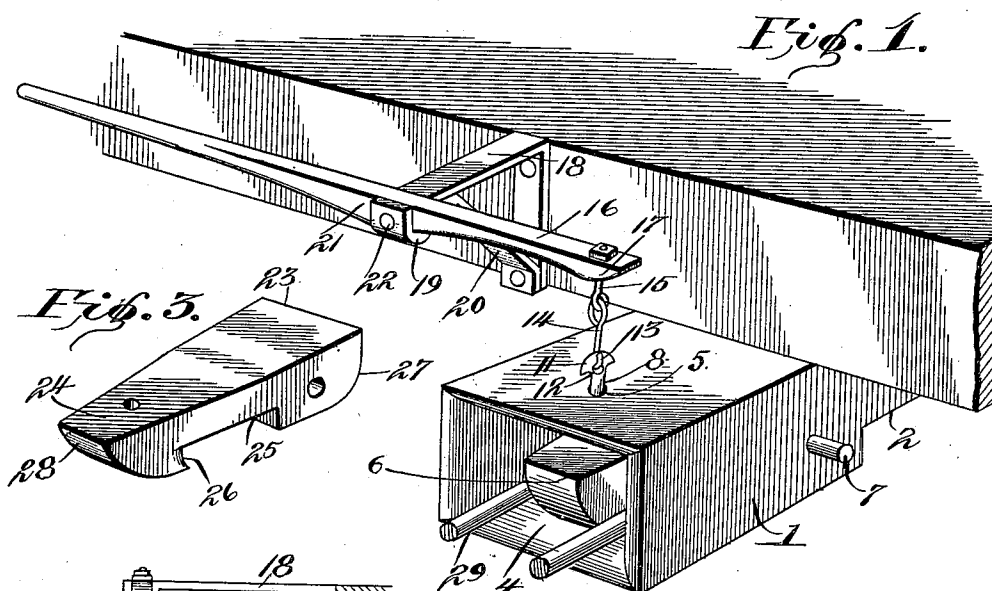
No. 650.612.

A. A. RHODES.
CAR COUPLING.

Patented May 29, 1900.

(Application filed June 20, 1899.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

ASA ALONZO RHODES, OF CUMBY, TEXAS, ASSIGNOR OF ONE-THIRD TO
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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 650,612, dated May 29, 1900.

Application filed June 20, 1899. Serial No. 721,237. (No model.)

To all whom it may concern:

Be it known that I, ASA ALONZO RHODES, a citizen of the United States, residing at Cumby, in the county of Hopkins and State of Texas, have invented a new and useful Car-Coupler, of which the following is a specification.

This invention relates to car-couplers; and the purpose of the same is to improve devices of this class to such an extent as to overcome disadvantages and deficiencies heretofore encountered in analogous structures, whereby the operation of couplings is rendered more positive and can be obtained with a greater degree of safety to operatives or trainmen.

The invention consists of the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a portion of the end of the platform of the car, showing the improved coupling applied thereto. Fig. 2 is a longitudinal vertical section of the improved coupler and a part of the end of the car. Fig. 3 is a detail perspective view of a coupling-dog included in the improved coupler. Fig. 4 is a similar view of an operating-lever adapted to be employed on the top of box-cars when the coupler is applied to the latter.

Similar numerals of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a draw-head supported by a draw-bar 2, the latter being connected up to the under framework of a car in the ordinary manner. The chamber 3 of the draw-head is sufficiently spacious to permit the operation of the parts located therein and to accommodate a convenient attachment or disconnection of the movable devices for the purpose of repair or substitution of other like parts in the event of injury or breakage. The orifice 4 of the chamber 3 is formed, as in ordinary couplers, with surrounding outwardly-beveled walls merging into the walls of the said chamber 3, and in the upper front portion of the draw-head 2 is a vertical opening 5. Within the chamber 3, adjacent the bot-

tom wall, a dog 6 is pivotally mounted at its rear end and swings or moves on a pivot-bolt 7, extending transversely through the rear portion of the draw-head and said dog. To the front end of the dog 6 an operating-pin 8 is firmly connected and moves upwardly through the opening 5 in the draw-head. Surrounding said operating-pin is a coiled spring 9, located between the upper front portion of the said dog and the upper wall of the draw-head, a washer 10 being secured on the operating-pin 8, against which the upper termination of the said spring 9 has bearing. The upper terminal of the operating-pin 8 is flattened in semicircular form, as at 11, and at the base of the flattened portion an opening 12 extends transversely through the said pin. The lower hooked end 13 of a link 14 is movably connected to the upper end of the operating-pin 8 and bears on one flat side of the upper terminal of said pin to prevent too much play or rotative movement, the said terminal or head of the operating-pin being always turned or having a direction corresponding to the desired position of the hook 13—that is, the link 14 will be positioned in such manner as to correspond to the direction of the operating mechanism attached thereto and also to accommodate the angle of said mechanism. The upper end of the link 14 is movably connected to the lower looped end of an eyebolt 15, secured to the inner end of an operating-lever 16, as shown particularly in Fig. 1. The said operating-lever is extended out sidewise, and in this instance the coupler is adapted for use on a flat or a gondola car. The inner end of the lever, where the bolt 15 passes therethrough, is enlarged, as at 17, to give better bearing for the said bolt and increase the strength of the lever at this point. On the end of the platform of the car, as shown by Figs. 1 and 2, a fulcrum-support is secured, and consists of an angle-plate 18, having a seat 19 on the outer end of the horizontal member, and running from the said latter member adjacent said seat downwardly to the lower end of the vertical member of the angle-iron is a diagonal brace 20. The seat 19 is large enough to receive a fulcrum enlargement 21

of the lever 16, and through the opposite vertical portion of said seat and said fulcrum enlargement a pivot-pin or analogous device 22 is passed. The fulcrum enlargement 21 also increases the strength of the lever at the point of its pivotal attachment, and as well facilitates the establishment of a better leverage. The particular form of fulcrum-support specified is also of material import, as it permits the lever to have an outstanding mounting relatively to the end of the platform of the car to which the coupler is attached.

The dog 16, as clearly shown by Fig. 3, is provided with a rear broadened end 23 and a bottom recess 25, having a front wall 26, which closely conforms to the end of the link adapted to engage therewith. By broadening the rear portion of the dog a stronger formation ensues at the point where the pivot-bolt 7 passes therethrough and strain incident to the pull on the dog through the link is more uniformly resisted. The front-end reduction of the said dog also facilitates the close fitting of the wall 26 to the link, and that portion of the said dog in advance of said wall is free to enter the space between the opposite sides of the link. The rear end of the dog is also curved, as at 27, to allow it to ride on the base-wall of the chamber 3 when elevating in the coupling or uncoupling operations and also to prevent obstruction of the rise of the front end of said dog, as will be obviously apparent. The front end of the dog also is formed with a curved contacting surface 28, which runs gradually from the upper termination of the top surface downwardly to the base of the wall 26 and serves to permit a link 29 to strike thereagainst and gradually raise the same when automatically coupling two draw-heads. The tapering dog forms tapering spaces between its side faces and the sides of the draw-head, and should the link when moved backward in the recess of the dog be thrown upward by any jolting or vibration of the draw-head its upward movement will be resisted by its sides binding in the tapering spaces without raising the dog.

In Fig. 4 a detailed view of another form of lever 30 is shown and adapted for disposition on the top of a box-car. This lever is similar to that heretofore described in all respects except that one end has a broadened tread-surface 31, upon which the foot of the brakeman or operative may be placed in disconnecting cars or releasing the dog of one coupler from the link that may have been in engagement therewith. It will also be understood that in different kinds of cars the lever in either of its forms best adapted for the purpose will be disposed at such angles as will be found most convenient.

In operation the approach of a draw-head carrying a link will cause the latter to strike

the outer curved end 28 of the dog 6 and gradually elevate the same against the resistance of the spring 9, surrounding the operating-pin. After the front or approaching end of the link has passed under the dog and enters the recess 25 the said spring 9 will force the dog downward to its normal position and the wall 26 will take over the link end and hold the two draw-heads in firm coupled condition. The recess 25 is long enough to permit the link to move longitudinally thereof and to accommodate the play between the parts without injury to said link.

In uncoupling the links the lever 16 or 30, as the case may be, has a downward pressure exerted on its outer free end which elevates the inner end of the same, and through the eyebolt 15 and link 14 an upward tension is exerted on the pin 8 to clear the end of the link. After the link has become free of the dog 6 the lever is released and said dog restored to its normal position.

When the link is in connection with the bar, sufficient freedom is permitted between the connected parts to compensate for the lateral swing or movement of cars in rounding curves or other conditions. Furthermore, the engagement of the lower end of the link 14 against the flattened upper terminal or head of the operating-pin will prevent wear to a very material extent and also the loose joint between the said link 14 and the eyebolt 15 will accommodate the change of angle ensuing from the elevation of the inner end of the lever 16 to the perpendicular movement of the pin 8.

The improved coupler is adapted to be applied to any kind of car, and the ordinary draw-head can be conveniently utilized to receive the dog 6, and with slight changes of openings to receive the pivot-bolt or the dog and the operating-pin 8. This operating-pin, however, could be made to move through the ordinary pin-opening in the common forms of car-coupler heads, and by means of this simple conversion a great saving ensues in the application of the improved features.

While the preferred form of the device has been illustrated and descriptively disclosed, it will be understood that such changes in the proportions, size, and minor details as fully fall within the scope of the invention will be resorted to in order to permit the device to be applied to different cars.

Having thus described the invention, what is claimed as new is—

In a car-coupling, the combination of a draw-head, the tapering dog arranged at the bottom of the draw-head and having its rear end extending entirely across the same and provided at its lower face with a recess, the side faces of the dog being converged toward the outer end thereof, a transverse pivot passing through the rear end of the dog, and a link adapted to be engaged by the dog and

being of a width greater than the front engaging portion of the same and less than the rear portion thereof, whereby the link is adapted to swing upward and downward
5 freely when at the outer end of the dog and is held in a horizontal position when it is moved inward, substantially as described.

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

ASA ALONZO RHODES.

Witnesses:

MARVIN MORTON,
C. M. HOWARD.