No. 648,957. Patented May 8, 1900.

J. S. HOOD.

CAR COUPLING.

(Application filed May 31, 1899.)

(No Model.)

Fig. 1.

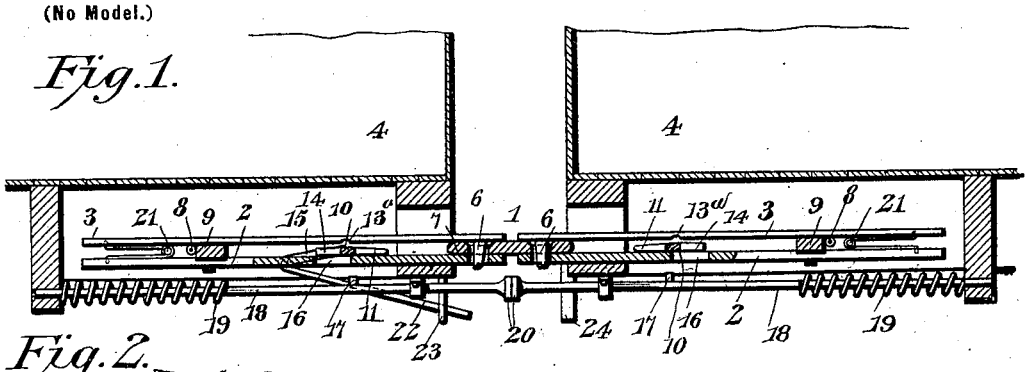


Fig. 2.

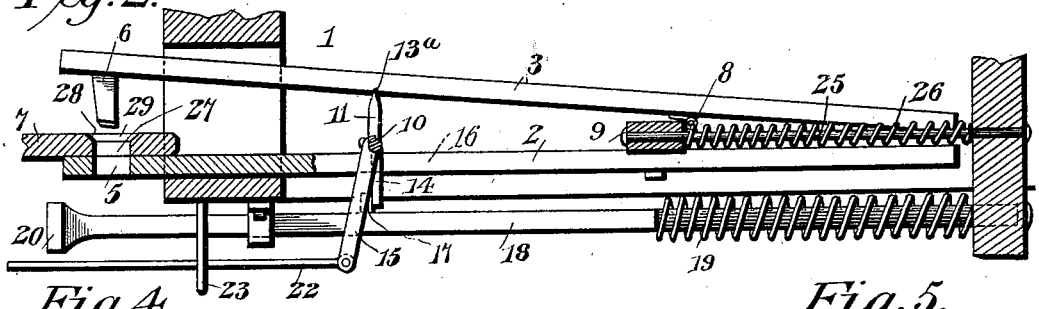


Fig. 4.

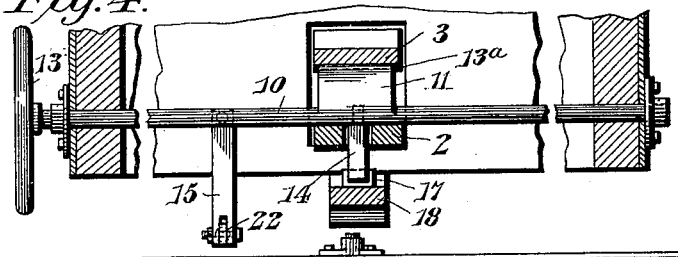


Fig. 5.

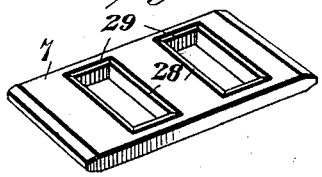
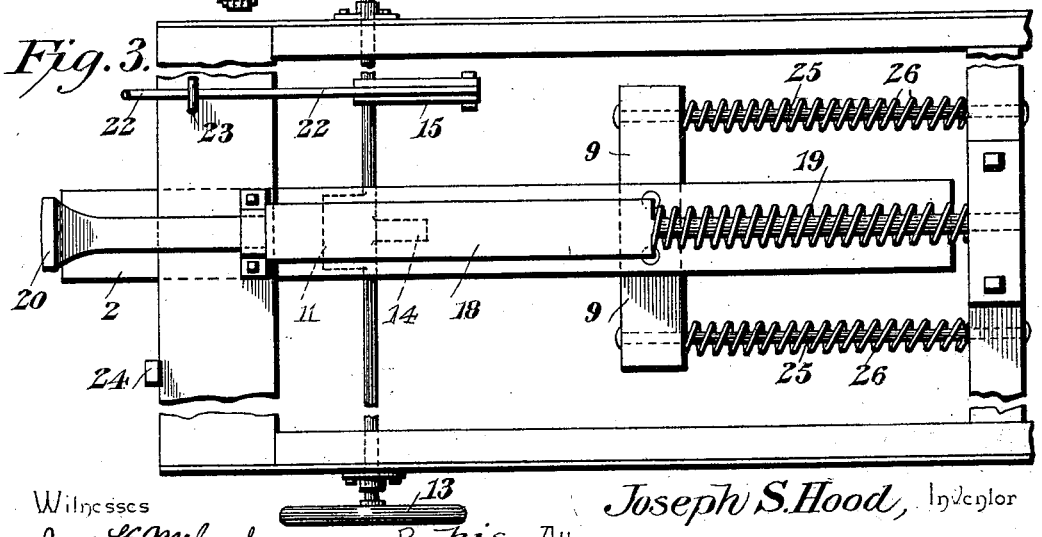


Fig. 3.



Witnesses

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JOSEPH S. HOOD, OF STAHLSTOWN, PENNSYLVANIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 648,957, dated May 8, 1900.

Application filed May 31, 1899. Serial No. 718,906. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH S. HOOD, a citizen of the United States, residing at Stahlstown, in the county of Westmoreland and State of Pennsylvania, have invented a new and useful Car-Coupling, of which the following is a specification.

The invention relates to improvements in car-couplings.

One object of the present invention is to improve the construction of car-couplings and to provide a simple, inexpensive, and efficient one capable of coupling automatically and adapted to be readily uncoupled without going between the cars.

A further object of the invention is to cushion the cars before the car-couplings engage each other, whereby the couplings are prevented from being broken or otherwise injured by the blows incident to coupling.

Another object of the invention is to provide a car-coupling of this character adapted to employ a link for connecting two cars and capable of automatically engaging the same when the link is at an angle, as well as when it is in alinement with the couplings.

The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings, Figure 1 is a longitudinal sectional view showing two cars provided with automatic couplers constructed in accordance with this invention and coupled. Fig. 2 is a similar view of one of the car-couplings, showing the same set for automatic coupling. Fig. 3 is a reverse plan view. Fig. 4 is a transverse sectional view. Fig. 5 is a detail perspective view of the link.

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

1 designates a car-coupling comprising a pair of longitudinal bars or members 2 and 3, connected with suitable draft mechanism and designed to be mounted on a car 4. The lower bar 2 is provided at its outer end with an opening 5, and the upper bar carries a tongue or pin 6, adapted to extend through the opening 5 and capable of engaging a link 7, similar to an ordinary coupling-pin, whereby two cars are coupled, as clearly shown in Fig. 1 of the accompanying drawings. The bar 2, which is provided with the opening 5, is illustrated in the accompanying drawings as arranged at the bottom of the coupling; but it will be readily apparent that the bars 2 and 3 may be reversed to arrange the bar 2 at the top instead of at the bottom. The bars 2 and 3 are hingedly connected and are adapted to open, as illustrated in Fig. 2 of the accompanying drawings. The bar 2 is preferably stationary with regard to vertical movement, and the bar 3 is preferably hinged between its ends at 8 to a transverse bar 9, which is bolted or otherwise mounted on the bar 2 and which is connected with the draft mechanism.

The hinged or movable bar 3 is opened or swung away from the bar 2 by means of a transverse rock-shaft 10, journaled in suitable bearings and provided with an arm 11, preferably of the width of the bars 2 and 3, and having its outer edge rounded, as shown, and adapted to engage a groove or seat 13^a, extending transversely of the inner face of the upper bar 3, whereby it is prevented from accidentally slipping when the jaw or bar is open. The rock-shaft, which may extend to one or both sides of the car, is provided with a suitable hand-wheel 13 or other device, whereby it may be readily rotated without going between cars to set the coupling for automatic operation.

The rock-shaft is provided at its center and at one side with depending tripping-arms 14 and 15, which are adapted to be oscillated by the means hereinafter described, whereby the rock-shaft is rotated to swing the arm 11 downward and cause the tongue or pin 6 to engage the link 7 when two cars come together. The centrally-arranged depending arm 14 extends through a slot 16 of the bar 2 and is engaged by a lug 17, arranged on the upper face of a longitudinally-movable buffer 18, which is adapted to cushion the cars as they come together to prevent the coupling from being injured. The longitudinally-movable buffer-bar, which has its inner portions reduced to receive a coiled spring 19, which is provided at its outer end with a buffer 20, is mounted in suitable guides, the spring being interposed between the inner guide and the shoulder formed by reducing the inner

portion of the buffer-bar. The buffer-head normally projects beyond the car-coupling when cars are not coupled and the buffer-heads of two cars engage each other before the car-couplings come in contact with each other, and they cushion the blow incident to coupling and protect the car-couplings and greatly increase the life of the same. When the central depending arm of the rock-shaft is moved inward, the rock-shaft is rotated and the arm 11 is swung downward to a horizontal position by a spring 21, which is interposed between the rear portions of the bars or jaws 2 and 3. The spring 21, which may be of any desired construction, is shown in the drawings as consisting of a coil and a pair of arms secured to the inner faces of the bars 2 and 3 in suitable recesses thereof.

The arm 15, which is located at one side of the center, has its outer end bifurcated and pivoted to a reciprocating push-bar 22, arranged in the bifurcation and having its outer portion mounted in a suitable guide 23. The push-bar is extended beyond the car when the parts are set for automatic coupling, and it is adapted to engage a suitable stop or bracket 24 of another car, whereby it will be moved inward and will cause the rock-shaft to rotate. Each car is designed to be provided with a reciprocating push-bar and with a bracket or stop, the push-bar being arranged at one side of the car and the bracket or stop at the other.

The transverse bar 9, which forms laterally-extending arms at opposite sides of the car-coupling, is provided with openings for the reception of longitudinal guide-rods 25, and the said arms engage cushioning-springs 26, disposed on the rods 25. Instead, however, of connecting the car-coupling to draft-rigging of this construction any other desired form of draft mechanism may be employed.

The depending tongue or pin 6 of the bar 3 has its lower end oppositely beveled or tapered, and the link is provided with beveled ends, and it has openings 27 to receive the pins or tongues of two car-couplings. The openings 27, which extend transversely of the link, have their side and end walls beveled at 28 and 29, forming flaring entrances, whereby the link is adapted to readily couple when it is arranged out of alinement with the bars 2 and 3, thereby enabling the coupling to operate on curves as well as on a straight track.

The invention has the following advantages: The car-coupling, which is simple, inexpensive, strong, and durable, is positive, reliable, and automatic in its operation and obviates the necessity of going between cars in coupling and uncoupling them. The double-operating mechanism, which is located at the center and at opposite sides of the bars, insures a perfect operation, and the central operating device also serves as a cushion or buffer to relieve the car-couplings of the force of the blow incident to coupling. The flaring openings of the link and the tapering tongues or pins of the car-couplings enable the operation of coupling to be performed when the link is straight or in alinement with the bars 2 and 3 and also when it is arranged at an angle to them—as, for instance, in coupling on curves. The openings of the link are of sufficient size to provide for the necessary play incident to rounding curves, and the aforesaid construction will enable the tongues or pins to engage the link in any position the latter may assume.

Changes in the form, proportion, size, and the minor details of construction within the scope of the appended claims may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention, such as varying the form of the spring for closing the jaws of the car-coupling, the arrangement of the jaws, and the means for mounting the same on a car.

What is claimed is—

1. In a car-coupling, the combination with a car of two jaws or bars hingedly connected, one of the jaws or bars being provided with an opening and the other having a pin or tongue adapted to extend through the opening, and capable of engaging a link, a transverse rock-shaft provided with an arm 11 adapted to engage one of the jaws, an arm 15 extending from the rock-shaft in the opposite direction from the arm 11, and a longitudinally-movable push-bar mounted in suitable guides, connected with the arm 15, and adapted to extend beyond the car to engage a corresponding push-bar of another car, whereby it is operated when two cars come together for coupling, substantially as and for the purpose described.

2. In a car-coupling, the combination with a car of two jaws or bars hingedly connected and adapted to engage a link, a rock-shaft extending between the jaws or bars and provided with an arm 11 adapted to open the same, an arm 14 extending from the rock-shaft, and a reciprocating buffer-bar having a cushioning-spring and provided with a lug adapted to engage the arm 14, said reciprocating buffer-bar extending beyond the car and adapted to engage the buffer-bar of another car, substantially as described.

3. In a car-coupling, the combination with a car of the bars 2 and 3 hingedly connected, the bar 2 being provided with a slot, a rock-shaft extending between the jaws or bars and provided with an arm 11 for engaging the bar 3 and having an arm 14 extending through the slot of the bar 2, and a reciprocating buffer-bar having a cushioning-spring and provided with a lug arranged to engage the bar 14, said buffer-bar extending beyond the car and adapted to engage the buffer-bar of another car, substantially as described.

4. In a car-coupling, the combination of the bars 2 and 3 hingedly connected and adapted to engage the link, one of the bars being provided with an opening and having a slot and the other bar being provided with a tongue

or pin, a transverse rock-shaft passing between the bars and provided with the arm 11 arranged to engage the bar 3, said rock-shaft being provided with the arms 14 and 15 the arm 14 extending through the slot 16 and the arm 15 being arranged at one side of the car-coupling, a reciprocating buffer-bar provided with a lug arranged to engage the arm 14, and a reciprocating push-bar connected with the arm 15, said buffer-bar and push-bar being extended beyond the car 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.

JOSEPH S. HOOD.

Witnesses:
C. F. MARKER,
S. S. DICE.