

UNITED STATES PATENT OFFICE.

AMBROSE S. RAY, OF BELLEFONTE, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO HARRY KELLER, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 645,629, dated March 20, 1900.

Application filed November 22, 1898. Serial No. 697,149. (No model.)

To all whom it may concern:

Be it known that I, AMBROSE S. RAY, a citizen of the United States, residing at Bellefonte, in the county of Centre and State of Pennsylvania, have invented certain new and useful Improvements in Car-Couplers; and I do hereby 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.

My invention has relation to car-couplers, the object being to provide an automatic coupler that will be strong, simple, and durable, one that can be operated either from the side or top of the car, and one that will not compel the operator to endanger life or limb by requiring him to go between the cars.

Another and very important object I have in view is to produce a coupler which while answering every requirement of a first-class automatic coupler is yet thoroughly adapted to coöperate with the ordinary coupler, so that a car provided with my coupler can as readily and conveniently be coupled to a car having the ordinary coupler as to one of its own kind.

My further objects are to provide a coupler so constructed that it can be readily operated when the train is running, if need be, one that cannot come uncoupled in making a short turn, one as well adapted to street-cars as to ordinary railway-cars, and one in which all the mechanism is securely housed, and thereby protected not only from breakage, but also from grit and dirt and from snow and rain, which latter if admitted to a coupler is liable in cold weather to freeze and render the parts inoperative.

My coupler is further adapted to automatically relieve itself of all rain and dirt which naturally enter the mouth thereof when the train is in motion. All the foregoing advantages and others I believe to be embraced in my new automatic coupler, the construction and operation of which are described in the appended specification, and illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the end of a car provided with my new coupler. Fig. 2 is a vertical central section showing the jaws and draw-bar in operative position. Fig. 3

shows one side thereof with the outer cover removed to disclose the mechanism by which the jaws are controlled. Fig. 4 is a front view on a reduced scale. Fig. 5 is a side elevation of one of the jaws. Fig. 6 is a perspective view, on a reduced scale, illustrating the drain employed to automatically release water, grit, &c., from the front end of my coupler.

Referring to the drawings, numeral 1 designates a car to which my coupler is attached in the ordinary manner. The mouth of the coupler is provided at its top and bottom with the guides 2 and 3, respectively, which form the outer ends of its top and bottom sections 4 and 5. The outer ends 6 and 7 of the side sections are also flared, so as to present faces similar to 2 and 3, and which also act as guides. Located in the throat of the coupler are the two jaws 8 and 9, provided with the circular extensions or journals 10 and 10^b, the beveled faces 11, and the recesses 12. The journal 10 on each of the jaws terminates in the square end 10^a. Said journals 10 and 10^b are received by the proper apertures bored in the vertical sides of the coupler immediately behind the offset formed by the guides 2 and 3.

The draw-bar 13 is provided with the slots 14 and the heads 15. The jaws 8 and 9 are normally held in the position shown in Fig. 2, with the inner edges thereof sharply inclined toward each other. The faces 11 of said jaws are beveled to compensate for this inclination, so that when the head 15 of the draw-bar is entered between them in coupling the cars they each present a flat face or bearing for said head to pull against.

The jaws 8 and 9, when housed in operative position, are controlled by the mechanism illustrated in Fig. 3. The removable side section 7 of the coupler affords access to the interior thereof when in assembling the parts of my coupler it is desired to place the jaws in proper position. Said removable side is provided with two apertures which receive the journals 10 of the jaws, with the square ends 10^a projecting, and upon which are mounted the levers 16, which are held in their normal position by the leaf-springs 17.

When it is desired to spread the lever, as illustrated in Fig. 3, so as to remove the jaws

8 and 9 out of engagement with the head of the draw-bar, this result is effected by means of the controlling-lever 15, which is rigidly attached to the crank-bar 19 at the center thereof and which bar extends outwardly to the side of the car, its inner end being received by an aperture in side section 7. If found desirable, said bar may be made to extend through the coupler to both sides of the car, as illustrated in Fig. 1, in which case the aperture through which it passes must be in the rear of the draw-bar head in about the position illustrated by dotted lines in Fig. 2.

The jaw-controlling mechanism illustrated in Fig. 3 is housed and protected by the outer lid 20. Said lid at either end thereof rests upon the elevated sections 21 and 22, the faces of which occupy a plane slightly above that occupied by the outer face of levers 16 and 18 and the springs 17. Fig. 3 shows the plate removed and the operative parts 16, 17, and 18 located in a recess in the removable side 7, said recess being also shown in dotted lines in Fig. 4. This recess is in the outer side of plate 7 and is entirely separated from the central opening of the coupling-head, in which are located the jaws 8 and 9 and the draw-bar, and in the bottom of which is the inclined drain 27, leading to the outlet-aperture 26, extending through said bottom.

The removable side section 7, with its outer lid 20, is secured in operative position by the bolts 23, which pass horizontally through the coupler from one side to the other through the apertures 23, provided therefor, the heads of said bolt being countersunk in the outer lid 20.

The operating-rod 19 is provided at its ends with the crank 24 and at one side of the coupler with the crank 25. The former cranks are for the operation of the coupler from the sides of the car, while the latter, by means of a chain or other suitable connection, is attached to mechanism at the top of the car, whereby the coupler may be operated from that point. A pull on the chain is all that will be necessary to uncouple the car.

The lower section 5 of my coupler is provided with the aperture 26, with the incline 27 leading thereto. Said incline is provided at either side thereof with the walls 20, whose top faces round inwardly. The object of this mechanism is to provide a drain for the purpose of releasing from my coupler all rain and

dirt which may be drawn in at the mouth thereof when the train is in motion or when standing in an exposed place.

My coupler is provided with apertures in its top and bottom adapted to receive the strong steel pin 29, designed to be used in case it is found necessary to attach a car provided with my coupler to one provided with the ordinary link-coupler, in which case all that is necessary is to remove the draw-bar 13, enter the link, as usual, and drop pin 29 into its aperture.

My rear coupler is always provided with one of these pins to insure the draw-bar from never getting lost through the negligence or carelessness of the operator. Hence it will appear that in coupling and uncoupling cars the front one of the two cooperating couplers will be the one ordinarily operated, though of course it is a matter of indifference as to which one of the two shall be made to carry the pin 29. It is apparent that said pin passes through one of the slots 14 in the draw-bar and in dropping into its operative position would come in contact with the jaws 8 and 9 but for the apertures 12 therein, Fig. 5, which prevent this.

When necessary, the draw-bar 13 may be used instead of a link in attaching one of my couplers to an ordinary coupler.

Having thus fully set forth the principles of my invention and shown means whereby said principles may be applied to use, I yet do not desire to limit myself to the exact showing made, but desire protection in all that comes clearly within the spirit and scope of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a car-coupler, a removable side having a recess therein and operating-levers 16, 16 and 18 and springs 17 located in said recess, all arranged as set forth.

2. In a car-coupler, a removable side having a recess therein and operative parts located in said recess and a cover 20 therefor, all arranged as set forth.

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

AMBROSE S. RAY.

Witnesses:

A. BLANCHE UNDERWOOD,
WILLIAM H. KELLER.