

UNITED STATES PATENT OFFICE.

BENJAMIN OWEN, OF DAYTON, OHIO.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 565,025, dated August 4, 1896.

Application filed August 8, 1895. Serial No. 558,637. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN OWEN, of Dayton, county of Montgomery, State of Ohio, have invented a new and useful Improvement 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 letters of reference marked thereon, which form a part of this specification.

My invention relates to new and useful improvements in car-couplers, and has for its object to provide a coupler that is simple and positive in operation and free from complicated or intricate mechanism.

Referring to the annexed drawings, Figure 1 is a view looking on the under side of an end of a car having my improved coupler attached thereto. Fig. 2 is an end view of the same. Fig. 3 is an enlarged longitudinal section. Fig. 4 shows detached end, top, and side views of the integral coupling link and lug; Fig. 5, a detail view in elevation of one of the guide-plates.

In a detailed description of the drawings similar letters of reference indicate corresponding parts.

A designates the platform or floor of a car, the central portion of which is provided with a square longitudinal recess or groove B. *a* and *a'* designate plates which are mounted in the sides of said groove and are made secure therein.

b designates a draw-bar which is inclosed by a spiral spring *c*. The ends of said spring are in turn inclosed by followers or washers *d* and *d'*, the former of which is maintained in position by shoulders *g* on the plates *a* and *a'*, and the latter of which is maintained in position by the shoulders *g'*, also on said plates. The draw-bar is secured by means of a nut *e* on the outside of the washer *d'*. The plates are concaved and provided with sufficient space to enable the washers to move under the expansion and contraction of the spring *c*.

h designates a transverse plate bolted to the under side of the floor A and which is adapted to support the front end of the draw-bar.

The parts specified in the foregoing are

common and well-known features, and are only mentioned herein to aid the description to follow.

b' designates the head of the draw-bar, which has the usual opening, but from the upper part of which projects a lug *c'*. The said draw-head has, further, journal-openings *i*, in which arms *i'* of the coupling-link are journaled. The coupling-link has an excess of weight on the link end, or the end which is provided with the slot *k'*. The excess of weight referred to causes said link to occupy a vertical position, as shown in full lines in Fig. 3. This view shows a similar coupling-link in a horizontal position in the act of making a coupling. As shown in Figs. 3 and 4, the lug *k* curves backwardly from the trunnions *i'*. When the slotted end *k'* of a similar link, to wit, the horizontal link, is thus inserted in the draw-head, it comes in contact with the coupling-lug *k* on the opposite end of the vertical link. This causes the latter link to turn on its axis, to wit, the arms *i'*, until the slot in the inserted link reaches a position to permit said lug *k* to enter it. The coupling is then effected and the inner end of the inserted link drops and rests upon the upper inclined surface of two ribs *f*, which project from the lower interior of the draw-head. Draft upon the links will bring the lug *k* on the vertical link in contact with the projection *c'*, against which it will be rigidly held, and the horizontal link will be drawn off of the ribs *f* and will then rest upon the arms *i'*. The journals or arms *i'* have in their outer ends oblong slots *i''*, in which the inner ends of two crank-shafts *m* and *m'* are connected.

n and *n'* designate bearing-plates of the form and mounting substantially as shown in the drawings. These plates are rigidly attached to the under side of the floor of the car, and their function is to provide bearings for the outer ends of the crank-shafts *m* *m'*, which are loosely mounted therein. The angular form of these shafts, as clearly shown in Figs. 1 and 2, are essential, as is also the flexible connection between said shafts and the arms *i'*, as these connections are required to have somewhat of a yielding nature under the vibrations of the car and when one car is being coupled to another. The functions of the cranks are to effect an uncoupling, or to bring

an approaching link to a position to effect a coupling. In either event the link affected by said cranks is brought at an approximately horizontal position, as shown in Fig. 1, thus
 5 permitting a withdrawal of the link that was coupled therewith. Fig. 2 shows the positions of the crank-shafts and coupling-link when the latter is uncoupled.

As hereinbefore stated, Fig. 3 shows the
 10 links in the act of being coupled. The broken lines show the coupling effected.

I am aware that it is not new to construct a coupling pin and link in one piece of metal. Therefore I do not claim such construction
 15 broadly.

Having fully described my invention, I claim—

In a car-coupler, the combination with a draw-head having a lug *c'* projecting downwardly from its outer end, and inclined ribs
 20 *f* projecting upwardly from the lower portion thereof, of a coupling-link provided with trunnions *i'* having slots in their ends, and a coupling-lug *k* extending from said arms essentially on a curve, and angular cranks
 25 flexibly connected to said arms and extending around on the sides of the car, substantially as shown and described.

In testimony whereof I have hereunto set my hand this 26th day of July, 1895.

BENJAMIN OWEN.

Witnesses:

R. J. MCCARTY,
 I. LONGENECKER.