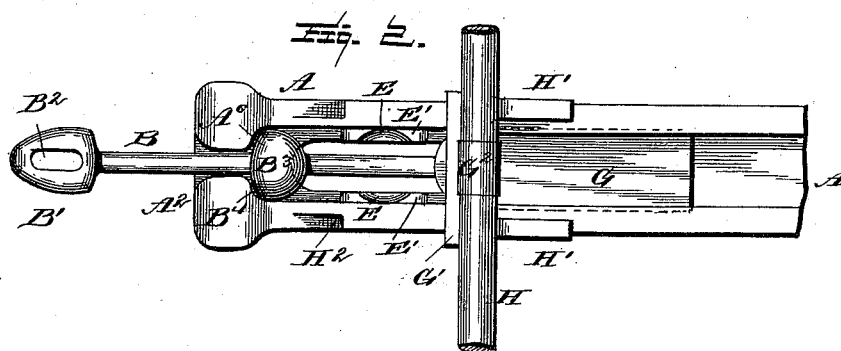
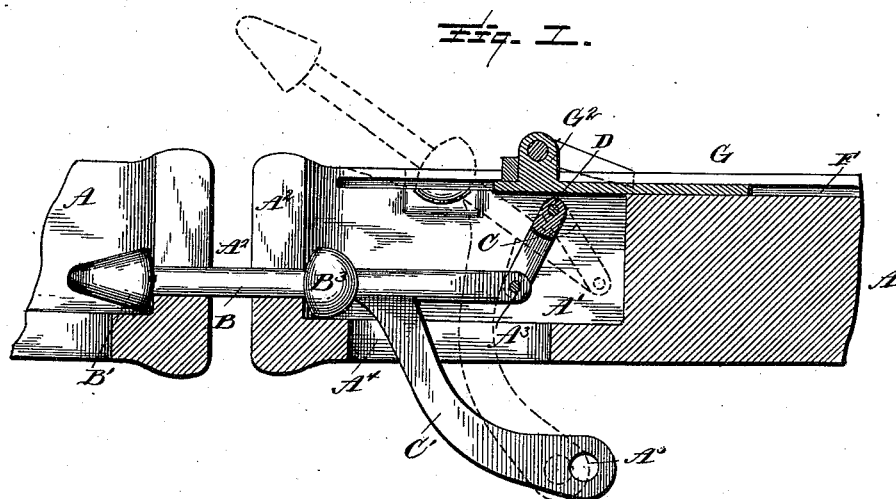


(No Model.)

R. BUTT.
CAR COUPLING.

No. 418,680.

Patented Jan. 7, 1890.



Witnesses

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UNITED STATES PATENT OFFICE.

REVERE BUTT, OF CLINTON, IOWA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 418,680, dated January 7, 1890.

Application filed October 10, 1889. Serial No. 326,537. (No model.)

To all whom it may concern:

Be it known that I, REVERE BUTT, a citizen of the United States, residing at Clinton, in the county of Clinton, State of Iowa, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in car-couplings; and it has for its object, among others, to provide an improved coupler, easily operated, efficient in its operation, and wherein provision is made for the prevention of the uncoupling of cars in case of the unequal elevation of either of the cars so coupled.

The novelty resides in the peculiarities of construction and the combinations, arrangement, and adaptation of parts, all as more fully hereinafter described, shown in the drawings, and then particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a longitudinal vertical section through a portion of a coupler constructed in accordance with my invention. Fig. 2 is a top plan of the same.

Referring now to the details of the drawings by letter, A designates a draw-head recessed at its forward end, as shown at A'. The forward end of the draw-head is provided with a vertical aperture A², through which the draw-bar B works. This draw-head is formed with a head B', of suitable form, preferably substantially arrow-shaped, as shown, and is provided with an aperture or perforation B², or otherwise shaped in the form of a link, so as to couple with cars adapted to the use of link-and-pin couplers. The rear end of this draw-bar B is pivotally connected at its rear end, as at A³, with one end of a link C, the other end of which is supported by the transverse shaft D, held in bearings in the walls of the recess of the draw-head. At substantially near its center the draw-bar is formed with a spherical or substantially-spherical portion B³, the front

portion of which is upon a less curve than its remaining portion, as shown at B⁴, for a purpose hereinafter described.

Rigidly attached to or formed integral with the draw-bar B is an arm C', which projects through an aperture A⁴ in the bottom of the draw-head and extending rearward, as shown in Fig. 1, being provided at its rear end with an aperture A⁵, for attachment of a chain or cord for the manipulation of the same at a distance from the coupler, or it may be actuated directly by engagement of the arm or handle, as preferred.

When the cars are coupled, the cars assume the position in which they are indicated in full lines in Fig. 1, the spherical portion B³ of the draw-head finding a bearing at its forward side B⁴ against corresponding shoulders A⁶ at the forward end of the recess in the draw-head, as shown in Fig. 2. The act of uncoupling is performed by a forward movement of the handle or arm C', which elevates the portion of the draw-bar between the head B' and the spherical portion B³, which has heretofore been confined between the walls of the vertical slot A² in the mouth of the draw-head, and the longitudinal movement of the draw-bar when in the position indicated in Fig. 2 being limited by the head B' in one direction and the said spherical portion in the other direction. When the arm C' has been moved forward sufficiently to bring the portion of the draw-bar forward of the spherical portion out of the slot A², a further movement of said arm brings the parts rearward into the position in which they are indicated by dotted lines in Fig. 1, the spherical portion being then seated in a rest or socket E, formed by projections or lugs E' on the inside walls of the draw-head forward of the transverse shaft D, the said socket or rest being concave, as shown, to correspond with the curvature of the spherical portion.

With the parts in the position indicated in dotted lines in Fig. 1 to couple the cars it is only necessary to lift the draw-bar slightly by means of the handle or arm C', when the spherical portion will be lifted from its seat or socket, and the draw-bar falls into its

proper position by gravity. Thus the act of coupling with another car is completed and maintained by gravitation.

The manipulation of the handle or arm C' may be accomplished in a variety of ways, and I do not wish to restrict myself to any particular construction in this regard. A rod may be provided extending across the car and provided with a crank and handle for this purpose, or various other means might be employed.

As it is necessary in order to uncouple that the draw-bar should be lifted out of the vertical slot at the forward end of the draw-head, it might possibly occur sometimes, in case of unequal elevation of either of the cars coupled, that the cars would become accidentally uncoupled. Although this is not likely to occur, yet I provide against such accidental uncoupling in the following manner: Along the upper portion of the draw-head I have guide grooves or ways F, in which work the edges of a plate G, free to be moved back and forth therein when desired. This plate carries a cross-bar G', provided with depending lugs upon opposite sides, which serve, also, to guide the plate in its movement upon the draw-head, and is also formed or provided with an upwardly-extending lug or boss G², in which is journaled the shaft H, which may extend upon opposite sides of the car and be provided with suitable cranks or handles for operating the same. This shaft is prevented from movement lengthwise, but is free to rotate in its bearing when desired. It carries two lugs or fingers H', which are adapted to engage recesses H² in the upper face of the draw-head upon opposite sides thereof and form the square shoulder H³, against which the ends of the fingers contact to limit the movement of the plate. When the cars are coupled, this plate is moved over the forward end of the chamber in the draw-head, and the fingers H' engage the shoulders H³ of the recesses H² and prevent the forward end of the draw-bar from being elevated out of its slot A². When it is desired to uncouple, the shaft H is turned in its bearings, so as to engage the fingers when the plate is moved back, so that the draw-bar may be elevated and its spherical portion rest in its socket.

What I claim as new is—

1. In a car-coupler, the combination, with the recessed draw-head slotted vertically at its forward end, of the draw-bar pivoted to a swinging link within the recess of the draw-head and working in the slot thereof and capable of movement vertically and longitudinally, substantially as described.

2. The combination, with a recessed draw-

head having vertically-slotted forward end, of the draw-bar loosely pivoted to a swinging link within the recess of the draw-head and provided with a substantially-spherical portion near the center of its length, as set forth.

3. The combination, with a recessed draw-head and the draw-bar carried by a swinging link within the same, as described, of a movable lock to prevent vertical displacement of the draw-bar, substantially as described.

4. The combination, with a recessed draw-head and the draw-bar, of the plate moving in guides on the draw-head, and stops or fingers moving with said plate, substantially as and for the purpose specified.

5. The combination, with a recessed draw-head having vertically-slotted forward end, and the draw-bar capable of vertical movement, as described, of the plate movable on the draw-head, and the transverse shaft having bearing on said plate and provided with fingers to engage the draw-head, substantially as described.

6. The combination, with a recessed draw-head having vertically-slotted forward end, and the draw-bar pivotally connected with the draw-head, of the plate movable in guides upon the draw-head and provided with upwardly-extending lug, the transverse shaft rotatable in said lug, and the fingers carried by said shaft and adapted to engage stops on the draw-head, substantially as and for the purpose specified.

7. The combination, with the recessed draw-head and the draw-bar pivotally connected therewith and formed with spherical portion near the center of its length, of a seat for said spherical portion within the recess of the draw-head, substantially as described.

8. The combination, with a recessed draw-head having vertically-slotted forward end, of the draw-bar pivotally connected within the recess of the draw-head and formed with spherical portion, and the lugs on the draw-head within the recess formed with concavities, substantially as and for the purpose specified.

9. The combination, with the recessed draw-head, of the transverse shaft supported in the walls of the recess thereof, the link hung on said shaft, and the draw-bar having its rear end pivotally connected with said link and provided with a handle, substantially as and for the purpose specified.

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

REVERE BUTT.

Witnesses:

ROBT. R. BALDWIN,
G. A. SMITH.