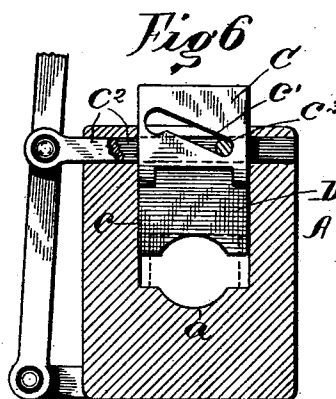
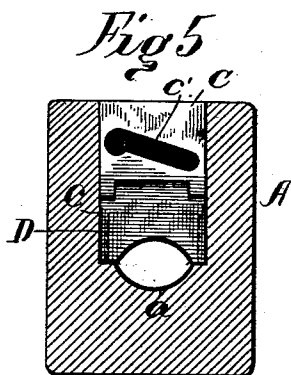
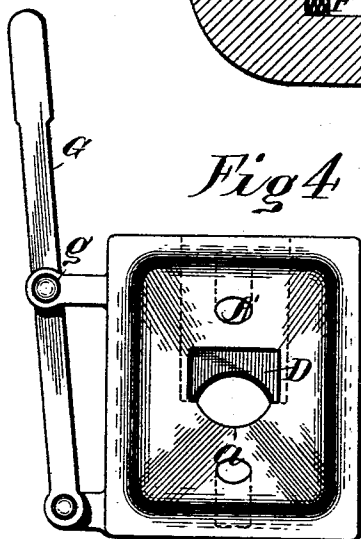
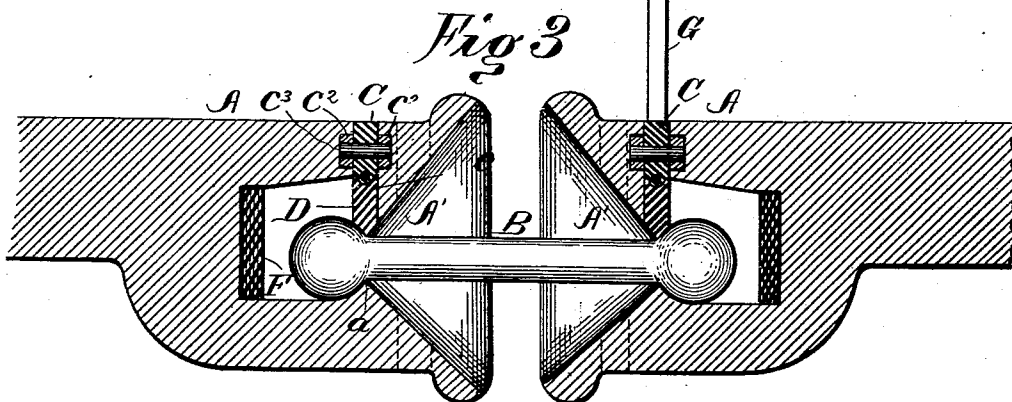
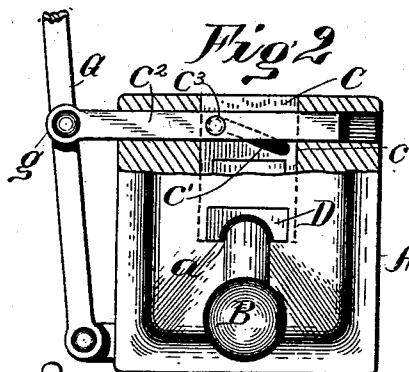
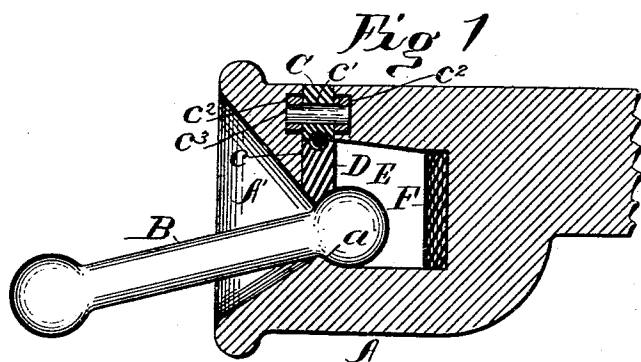


(No Model.)

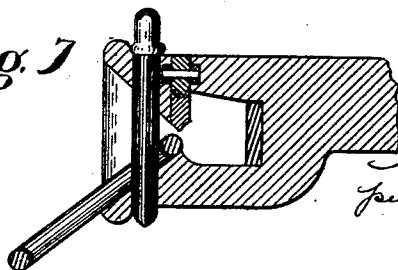
A. E. WOOLF.
CAR COUPLING.

No. 478,492.

Patented July 5, 1892.



Attest;
C. C. Burdine
J. B. Owens



Inventor,
Albert E. Woolf
per D. Boies & Co.
ATTYS

UNITED STATES PATENT OFFICE.

ALBERT EDW. WOOLF, OF NEW YORK, N. Y., ASSIGNOR TO ROSAMOND WOOLF AND THOMAS J. MONTGOMERY, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 478,492, dated July 5, 1892.

Application filed March 11, 1892. Serial No. 424,572. (No model.)

To all whom it may concern:

Be it known that I, ALBERT EDW. WOOLF, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Car-Coupler; 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 an improvement in car-couplings, and more particularly to those that are automatic.

The objects are, first, to attain increased strength and reduce the number of parts and cost of construction to a minimum; second, to provide a coupling which will yield to the tendency of cars to swing and twist and readily accommodate itself to cars of different heights in the coupling operation; third, to provide one which will withstand strain without sustaining material damage or in any way losing its original strength; fourth, to provide a coupling which may be readily applied to any car; fifth, to permit slack between the drawheads, whereby a long train may be started, and lastly, and above all, to provide a coupler which may be manipulated without the operator going between cars. These several objects are attained by the peculiar features and combinations of parts more fully described hereinafter, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a longitudinal section through a draw-head, showing the various parts of my invention, with a coupling-link in position. Fig. 2 is a view in front elevation, partly in section. Fig. 3 is a view in longitudinal section, resembling Fig. 1, except that two draw-heads are shown coupled together. Fig. 4 is an end elevation. Fig. 5 is a view in transverse section showing the slotted locking-slide, and Fig. 6 a similar view with hand-operating mechanism attached. Fig. 7 represents a modified form, in which the old style coupling-pin and link is applied.

A represents a bell-mouth draw-head provided internally with an enlarged cavity E, to which the converging walls of the bell-mouth A' lead. This cavity is much larger than the inner end of the bell-mouth, for a purpose which will be explained presently, and the rigid lip *a*, which separates the mouth from the cavity, is preferably rounded out, as shown in Figs. 5 and 6. The object of this construction is to form a socket for an end of the double-headed or dumb-bell-shaped coupling-link B, which is naturally centered by the converging walls of the bell-mouth, and finally reaches the socket formed, if the draw-heads come near enough together.

Co-operating with the parts described are two others, consisting of a slide C, operating in a vertical recess *c*, formed above the lip *a*, and a gravity-drop D, hinged to the slide. The drop D hangs across the inner end or vertex of the bell-mouth, thereby forming a yielding lip, which co-operates with rigid lip *a* to hold the coupling-link in its socket. It will be observed that the forward wall of the recess *c* forms a stop, which prevents the drop D from being swung outward, whereas on the other hand the cavity E at the rear is large enough to permit the drop to be swung back instantly when struck by an approaching link, and that the weight of the drop is sufficient to cause it to drop back into place in front of the enlarged end of the link to hold the latter in place. The drop may be beveled on its forward lower edge to conform in shape to the bell-mouth and be beveled or rounded, if desired, to correspond with the shape of lip *a*, as shown in Fig. 5.

From the foregoing it is clear that upon one of the rounded or spherical ends of the coupling-link striking within the bell-mouth at any point it will be guided to the position shown in Fig. 1, the drop D being pushed momentarily aside until the head passes behind it, when it will again assume its normal position and lock the link in its socket; but, owing to its construction and the flaring shape of the bell-mouth and the peculiar formation of the other parts, it will admit of great latitude of movement in order to respond to the swinging and sudden jerking of the cars.

In addition to these features means are pro-

vided for uncoupling the cars. As one of many expedients for effectually accomplishing this, I provide the slide C with a diagonally-disposed slot or groove c' , and one, or better still, two bars or rods $c^2 c^2$ are passed endwise through holes formed for them in the draw-head at either side of the slide. A pin c^3 connects these bars or rods and passes through the slot c^2 , as shown in Fig. 6. A lever G, fulcrumed at one side of the draw-head, has a slip or loose joint connection at g with this bar or bars, and in this manner it is merely necessary to swing the lever back and forth to raise or permit the slide to fall. When in the position shown in Fig. 6, the slide is of course raised to its highest elevation. When the lever is at its opposite throw, the slide is locked in its depressed position. So to uncouple the cars, it is simply necessary to swing the hand-lever in one direction. As soon as the cars draw apart, the lever is thrown back and the parts are ready to effect an automatic coupling.

To lessen the jar caused by the link striking the inner wall of the cavity E in the draw-head, and also to deaden sound as much as possible, a cushion or buffer F, of elastic material—such as rubber or a spring—is placed in the cavity, as shown in Fig. 1.

In Fig. 7 a modification is shown in which the draw-head is provided with a vertical hole to receive an old-style coupling-pin, so that an ordinary link can be used in coupling with an old-style draw-head.

That a variety of slight changes might be resorted to is obvious. For instance, a chain might be used instead of the hand-lever, and the shape and arrangement of the several parts comprising the coupling might be largely altered without departing from the spirit and scope of my invention, and hence I do not wish to be limited to the precise construction herein set forth.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a car-coupling, the combination, with a bell-mouthed draw-head, of a slide loosely connected with the draw-head and a drop hinged to the draw-head and located in position to be pushed aside by the coupling-link and constructed to drop back automatically

into position to retain the link in the draw-head, substantially as described.

2. In a car-coupling, the combination, with a draw-head, of a slide, a drop hinged to the slide and located in position normally to be struck and pushed aside by a coupling-link upon passing into the draw-head, and a bar or bars having a loose sliding connection with the slide, whereby the latter is moved by an endwise movement of the bar or bars, substantially as described.

3. The combination, with a bell-mouthed draw-head having an enlarged cavity formed therein and a lip at the junction between the mouth and cavity, said lip rounded or concaved, the draw-head provided with a recess leading into the cavity approximately over the lip, the forward edge of this recess forming a stop, of a slide located in the recess, and a drop hinged to the slide in position to extend across the throat of the draw-head and be struck and pushed aside by an entering link until the latter has passed into the cavity, after which the drop falls into place and locks the link in position, substantially as described.

4. The combination, with a draw-head, of a slide, a drop hinged thereto and adapted to automatically lock a link upon the latter passing into the draw-head, the slide provided with a diagonal guide or slot, a bar or bars having a pin which enters the slot, and a hand-lever or equivalent device connected with the bar or bars, whereby they are moved endwise, substantially as described.

5. The combination, with a draw-head and link constructed substantially as described, of a gravity-drop and a movable support from which the drop depends, as specified.

6. The combination, with a bell-mouthed draw-head having a cavity formed therein, the latter having a cushioned inner wall, of a slide, means for operating the latter, and a drop hinged to the slide and adapted to cooperate with the lip to hold a link, substantially as described.

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

ALBERT EDW. WOOLF.

Witnesses:

ROBERT QUINLAN,
CHAS. M. ROWLEY.