E. D. BROWN.

CAR-COUPLING.

No. 182,017. Patented Sept. 12, 1876.

Fig. 1.

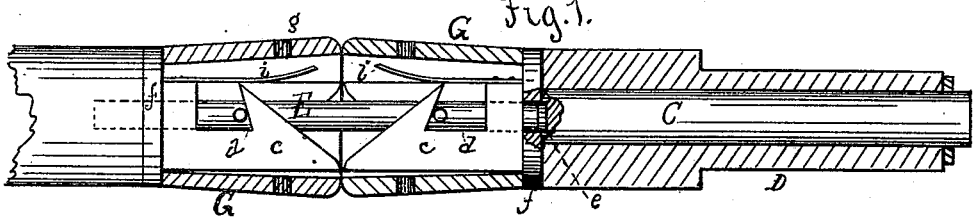


Fig. 2.

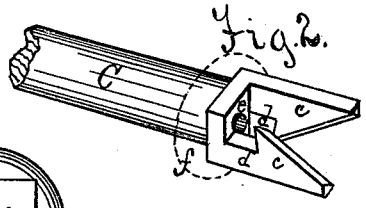


Fig. 5.

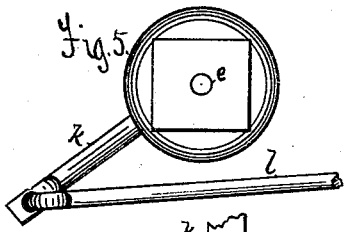


Fig. 3.

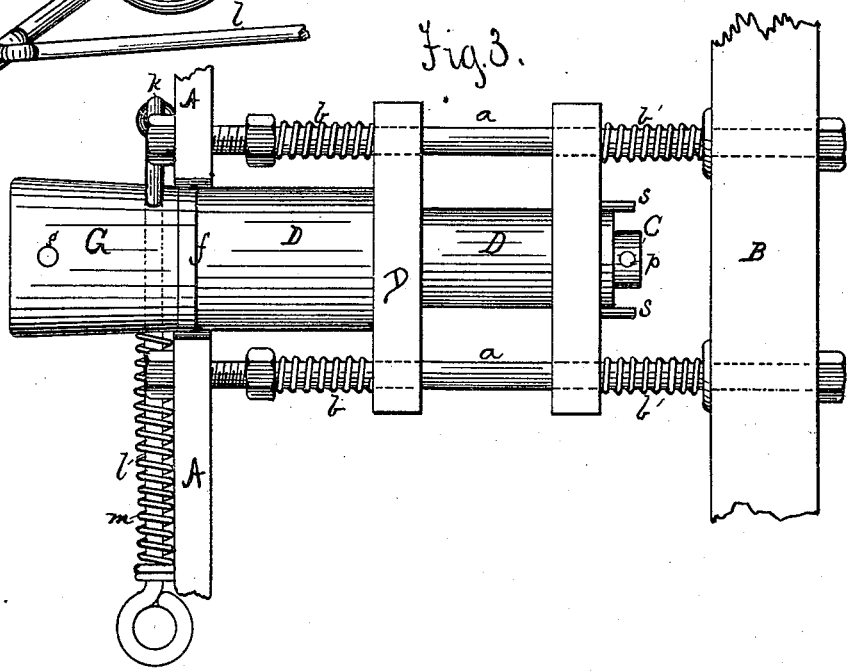
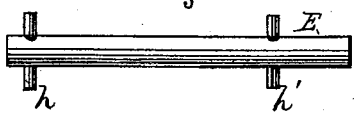


Fig. 4.



Witnesses:
T. H. Parsons.
J. R. Drake.

E. D. Brown
Inventor,
By his attorney
J. R. Drake.

UNITED STATES PATENT OFFICE.

ERASMUS D. BROWN, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO H. A. CLARK, OF SAME PLACE.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **182,017**, dated September 12, 1876; application filed May 8, 1876.

To all whom it may concern:

Be it known that I, ERASMUS DARWIN BROWN, of Buffalo, in the county of Erie and State of New York, assignor to myself and Hunloke Abbott Clark, of same place, have made certain Improvements in Car-Couplings, of which the following is a specification:

This is intended more especially for freight-cars; and the object of the invention is to provide a combined buffer, coupler, and draw-head in one device, and also an uncoupling arrangement connected therewith, all as hereinafter fully described.

In the drawings, Figure 1 is a longitudinal cross-section of the buffer and coupling parts; Fig. 2, perspective of the coupling-hooks and draw-bar; Fig. 3, a bottom plan view; Fig. 4, a plan of the draw-rod; Fig. 5, front view of the uncoupling devices.

A indicates the end of the car; B, the center cross-piece. C is a draw-bar, working inside a cross-head frame, D; the latter works back and forth on guide-rods *a a*, with surrounding springs *b b'*, to return the parts to position when forced back or drawn out. These guide-rods *a a* may extend the entire length of the car, if desired, so that one set would do for the cross-heads at each end of the car, which would allow both to run on the same guide-rods, both draw-heads pulling from the center. The end of the draw-bar C is constructed with hooks *c c*, the catching part set in opposite directions and the inclines beveled inwardly, as shown in Fig. 2, for the purpose to be hereinafter mentioned. It has a slanting outward cut in the hook part and a space, *d*, for the necessary play of the coupling bar or link E, (see Figs. 1 and 4,) also an opening, *e*, in the center of the draw-bar C, to admit the end of the coupling-bar, to hold it in a longitudinal position ready to couple again when the opposite car is disconnected. A circular collar, *f*, is also formed in this draw-bar, and against which the combined draw-head and buffer G sets, and which is attached to the draw-bar by rivets, pins, or other suitable means. It is made independent as a matter of construction, and also to get at the inside of the draw-head easily, to repair it, if necessary. The mouth of the draw-head is made flaring, as is customary, and has holes, *g*, for the admission of the ordinary pin for use with old style of cars when one is to be coupled to my device. This draw-head acts as a buffer by its connection with the draw-bar and collar *f*, and the cross-head frame D, running on the guide-rods *a a*, and is returned to place by the springs *b' b'*, while the other springs *b b* return the head to position when the drawing force is spent. The hooks *c c* in opposite cars will be reversed in position to facilitate uncoupling, and the beveled inclines of the hooks is to couple and uncouple with greater certainty by turning the draw-bar by the pins *h h'*.

The construction of the coupling-rod E is peculiar: It is a simple round rod, as shown in Fig. 4, having two pins, *h h'*, set at right angles to the main rod at either end. One pin, *h'*, is set a little further from the end of the pin than the other one. This is to leave a sufficient length of rod to set in the hole *e*, before described in the draw-bar C. These pins slide up the beveled inclines of the hooks *c c*, and, passing the apex, sink into the recessed space *d* behind the hooks. Springs *i i*, (see Fig. 1,) are fastened into the draw-bar, so as to cover the space *d* in the hooks, and to keep the pins from being jolted out. The extreme end of the spring is curved, so as not to interfere with the entrance of the pin. The coupling-bar is, of course, reversible, so that it can be held by the long end in either of the draw-heads. The reason that both ends are not made long is, that it may allow of any side-swaying of the cars, or their going on curves, and when the draw-heads are of unequal height. This comprises the buffing and coupling of the cars.

The uncoupling devices are as follows: The buffer-head G and hooks and draw-rod C are set in the frame of the cross-head D, as before described, and turn therein. This is to aid in the uncoupling. Attached to the draw-head G is an arm, *k*. (See Figs. 3 and 5.) This is set at an angle, as shown. To its end is attached a long spring-rod, *l*, which, at the point of attachment, forms a knuckle-joint. This rod *l* terminates in a handle at the side of the car, and, when pulled, (by the brake-

man or other person,) turns the head G and draw-bar C in the cross-head frame D far enough to throw the pins *h h'* on the coupling-rod E in the opposite car in such a position that they will disconnect from their hooks *c c*, and slide out of that draw-head, leaving the coupling-rod in the opposite head. If it is desired to keep the cars uncoupled if they should come together again for the purpose of backing up, the rod *l*, when drawn out, is set by a notch in it, and a catch attached to the end car, so that if the coupling-rod E enters the head again it will not connect with the hooks, and will draw out again when the car is started. When the rod *l* is released from the catch it throws back the head G, and hooks, &c., in position by means of the spring *m* or its equivalent. Any kind of spring attachment will serve for this purpose. If a car should, by accident, be thrown from the track and should tip, it would at once uncouple that car from the others, as it would throw the pins *h h* in such a position as to slide them off the inclines of the hooks *c c*. If the opposite car tipped it would uncouple that car, making these uncouplers self-working in case of accident. The car need only tip a quarter of a circle—even less—and the coupling-rod is displaced from its drawing position. This is an important feature of my invention. Each spring-rod *l* uncouples the opposite car by turning the pins and coupling-rod in such a position in the opposite draw-head as to disengage them from the hooks. The buffer will operate in any position, whether turned or not.

The uncoupling devices are all operated from the outside of the car, or from the top, if desired. The draw-bar C is kept from drawing out of the cross-head frame by a pin, *p*, or equivalent device, and when the draw-bar is turned by the uncoupling device it can go only so far by reason of stops *s s* fastened to the end of the cross-head.

The combined buffer and draw-head may be constructed in one piece with the draw-bar C, and work in connection with the spring cross-head and without the uncoupling device, if desired. This would make a simple buffer and draw-head, in which could be used the old link and pins.

I claim—

1. The draw-bar and coupling devices consisting of the bar C, with the hooks *c c* attached thereto, collar *f*, in combination with the draw-head G and coupling-rod E *h h'*, as and for the purpose specified.

2. The draw-head G, draw-bar C, with hooks *c c d d*, hole *e*, and collar *f*, in combination with the cross-head D, working on two guide-rods, *a a*, substantially as specified.

3. The coupling-rod E, with the pins *h h'*, in combination with the beveled hooks *c c* and draw-bar C, as and for the purpose specified.

4. The loose draw-bar C, having the hooks *c c*, and turning in the frame D, in combination with the uncoupling devices, substantially as specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

E. D. BROWN.

Witnesses:
J. R. DRAKE,
H. A. CLARK.