(No Model.)

J. B. FORCE.

CAR COUPLING.

No. 349,153. Patented Sept. 14, 1886.

Fig. 1.

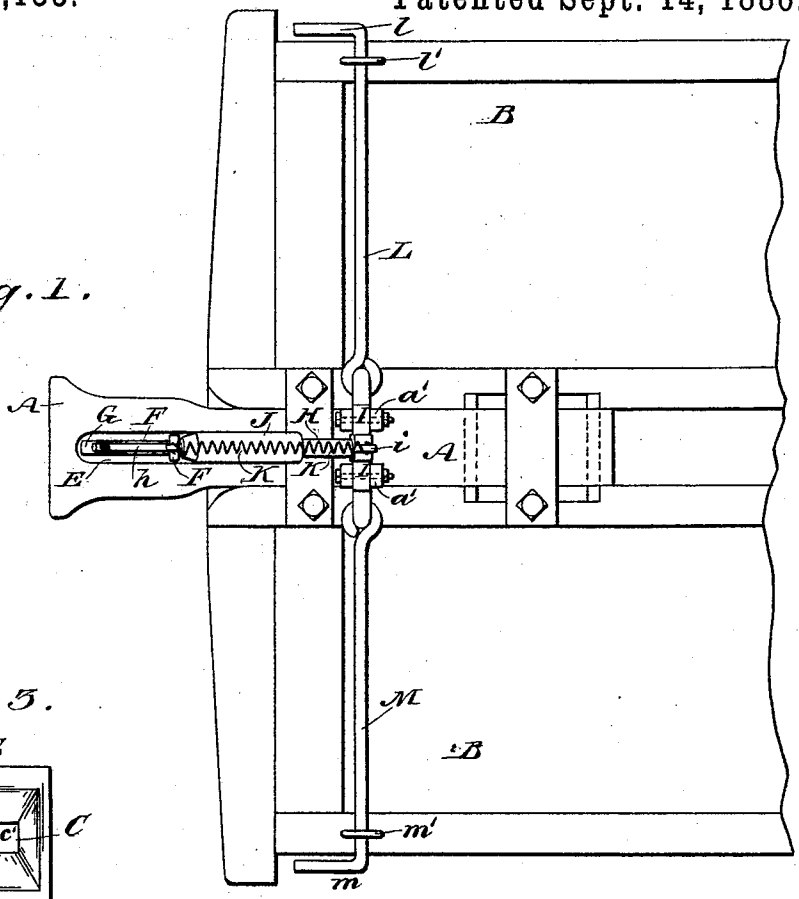


Fig. 3.

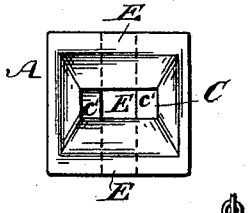
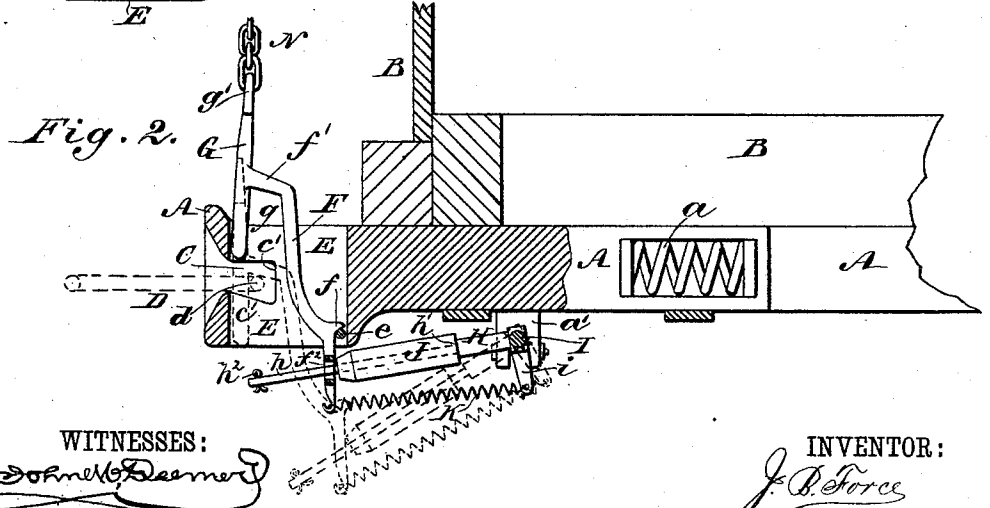


Fig. 2.



WITNESSES:

Cornelius Deemer

C. Sedgwick

INVENTOR:

J. B. Force

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JAMES B. FORCE, OF PORTVILLE, NEW YORK.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 349,153, dated September 14, 1886.

Application filed February 4, 1886. Serial No. 190,875. (No model.)

To all whom it may concern:

Be it known that I, JAMES BUCHANNAN FORCE, of Portville, in the county of Cattaraugus and State of New York, have invented a new and Improved Car-Coupling, of which the following is a full, clear, and exact description.

My invention relates to car-couplings, and has for its object to provide a simple, inexpensive, and efficient coupling, which may be adjusted from either side or from the top of a car for coupling or uncoupling two cars, and without requiring the train-men to go between the cars and expose themselves to injury.

The invention consists in certain novel features of construction and combinations of parts of the car-coupling, all as hereinafter fully set forth.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is an under side view of the end of a car-body with my improved coupling applied thereto. Fig. 2 is a vertical sectional elevation of the coupling and adjacent parts of the the car-body, and Fig. 3 is a front view of the draw-head of the coupling.

The draw-head A of the coupling is supported by suitable straps and side bars beneath the car-body B, and so as to have longitudinal movement, and may be fitted with my approved buffer-springs, as at *a*, Fig. 2. At its front the draw-head has a horizontally-ranging socket, C, to receive one end of the coupling-link D, said socket having a flaring mouth, and its lower side or floor being slanted downward and backward, as at *c*, thus allowing the link to be rocked on the front ledge or angle of the floor of the socket to raise or lower the outer end of the link, to couple with a draw-head at a higher or lower level, as hereinafter more fully explained.

In the draw-head, and partly across the link-socket C, is formed a central vertically-ranging slot, E, across which, at the lower rear corner, is fitted in the draw-head a pin, *e*, onto which the stud or horn *f* of the shank F of the coupling-pin G may be set to hold the pin raised, said pin and its shank being made in one piece and so as to fit loosely in the draw-head slot E. The outbent upper end, *f'*, of the coupling-pin shank F connects about with the center of the pin, thereby providing a space, as at *g*, between the lower part of the pin and its shank, and between the end *f'* and stud *f* of the shank the latter is nearly straight at the upper part and describes a backward curve toward the stud, whereby ample room is given in the slot E for the free backward movement of the lowered coupling-pin and shank, as hereinafter more fully set forth.

Below the stud *f* the shank F is provided with a slotted hole, f^2, through which passes freely the stem *h* of a rod, H, which is fixed at its inner end to a short shaft, I, which is journaled in lugs *a' a'*, fixed to the under side of the draw-head A. The stem *h* of rod H is smaller in diameter than the back part of the rod, thereby providing a shoulder at *h'*, against which the weight J, placed loosely on stem *h*, may strike to limit its backward movement. The weight J is placed on stem *h*, behind the lower end of the coupling-pin shank F, and a spring, K, fixed at one end to the lower hooked extremity of the shank and at the other end to a lug or arm, *i*, fixed to shaft I, exerts its tension to draw the lower end of the shank F backward, and thereby hold its stud *f* onto the pin *e* when the coupling-pin is raised, at which time the back-pull of the shank F by the spring against the forward end of the weight J as a fulcrum forces the lower end of the raised coupling-pin against the front wall of the draw-head slot E, whereby the direct back-pull of the spring is aided by the frictional contact of the pin with the draw-head to hold the shank-stud *f* upon the pin *e*. The rod H has a slight downward incline toward its outer end, to facilitate the forward sliding at the proper time of the weight J on the stem *h*, which stem has a pin or cotter, h^2, at its outer end, to prevent loss of the weight off the stem.

To eyes at the opposite ends of the short shaft I are attached the inner ends of the rods L M, which extend to opposite sides of the car-body, where they have suitable support in eyes or staples *l' m'*, and at their ends have crank-arms *l m*, respectively, which may be grasped by an attendant standing at a side of the car, for lifting the coupling-pin by turning shaft I

and raising the rod H. The head g' of the coupling-pin is broader than the width of the draw-head slot E, and prevents fall of the pin clear through the slot, and to the pin-head is or may be attached a chain or rod, as at N, extending to the top of the car, to allow the pin to be raised therefrom for uncoupling two cars.

The operation is as follows: To set the pin G for coupling, either of the cranked rods L M will be turned or the chain or rod N will be drawn upon, to lift the pin and its shank F and weighted rod H to the positions shown in full lines in Fig. 2, where they will be held up by the engagement of the shank-stud f with the pin e, and as the cars come together, and the link D, held by the opposing car, enters the draw-head socket C, the shock of contact of the two draw-heads will cause the weight J by its inertia to slip or move forward on the stem h and trip the shank-stud f from the pin e, and allow the pin G to fall within the link D, as indicated in dotted lines in Fig. 2, and couple the cars. To uncouple the cars the pin G of one car will be lifted by turning one of the rods L M or drawing on the chain N, and the cars then may be drawn apart. When the cars are coupled, the end d of the link D stands within the space g between the pin G and its shank F, and as the link cannot be forced back farther than to the back shoulders, c', of the socket C the shank F of the coupling-pin cannot be broken by the link, and should the pin G be down and the link of an opposing car be forced against it the slot E will allow the pin and its shank G to be driven inward by the link, and the latter will strike the socket-shoulders c', leaving the pin and its shank in the slot E behind it and unharmed; hence when the coupling-pin is down cars may be bunted together without coupling them when it is desired to shunt the cars about the yard or onto a side track, and if a coupling of contacting cars is desired it only is necessary to lift a pin, G, and drop it through the link. The bent upper end, f', of the shank F of the coupling holding the link rests on the end of the link, and to adjust the outer end of the link up or down, to enter a higher or lower draw-head of an opposing car, it only is necessary to slightly lower the coupling-pin and shank or raise them.

It is obvious that cars may be coupled or uncoupled by my improved coupling without requiring train-men to stand between the cars and expose themselves to injury, and cars having the common link-and-pin coupling draw-head may readily be coupled to cars fitted with my coupling. Should the pin e become worn, it may readily be replaced by a new pin.

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

1. In car-couplings, the combination, with a draw-head having a horizontally-ranging link-socket, C, and a vertically-ranging slot, E, crossing socket C and extending back of it, and a pin, e, crossing slot E, substantially as specified, of a coupling-pin and shank, G F, provided with a stud, f, adapted to pin e, for supporting the coupling-pin, substantially as herein set forth.

2. In car-couplings, the combination, with a draw-head having a link-socket, C, and a vertical slot, E, provided with a pin, e, of a coupling-pin and shank, G F, provided with a stud, f, adapted to pin e, a shaft, I, journaled to the draw-head and adapted for operation from the sides of the car, and an arm, H, fixed to shaft I and connected loosely to the coupling-pin shank, substantially as and for the purposes set forth.

3. In car-couplings, the combination, with the draw-head socketed at C and slotted at E, a pin, e, crossing slot E, and the coupling-pin G, having a shank, F, provided with a stud, f, adapted to pin e, of a shaft, I, journaled to the draw-head, an arm, H, fixed to shaft I and connected loosely to shank F, and a spring, K, drawing the pin-shank backward, substantially as herein set forth.

4. In car-couplings, the combination, with the draw-head socketed at C and slotted at E, a pin, e, crossing slot E, and the coupling-pin G, having a shank, F, provided with a stud, f, adapted to pin e, of a shaft, I, journaled to the draw-head, an arm, H, fixed to said shaft and connected loosely to shank F, a weight, J, placed loosely on arm H behind the shank, and a spring, K, drawing the shank backward, substantially as and for the purposes herein set forth.

5. In car-couplings, the combination, with a draw-head, A, socketed at C and slotted at E, of a coupling-pin, G, having a shank, F, connected to it above its lower end, as at f', and said slot E, extended behind the inner wall or shoulders, c', of socket C, substantially as shown and described, whereby the pin and its shank, whether raised or lowered, cannot be damaged by an entering link nor by the back-thrust of a link held by the pin, as set forth.

6. In car-couplings, the combination, with a draw-head, A, provided with a horizontally-ranging link-socket, C, having a downwardly and backwardly inclined floor, c, and a vertically-ranging slot, E, crossing said socket and extending back of it, substantially as specified, of a coupling-pin, G, a shank, F, connected therewith by a stem, f', providing a space at g between the pin and shank, and means for vertically adjusting the lowered pin and shank, substantially as shown and described, whereby the outer end of the link may be adjusted higher or lower to enter an opposing draw-head, as set forth.

JAMES B. FORCE.

Witnesses:
ABRAM FORCE,
JOE EMERSON.