F. W. MARSTON & O. JONES.

Car-Couplings.

No. 137,014. Patented March 18, 1873.

Fig 1.

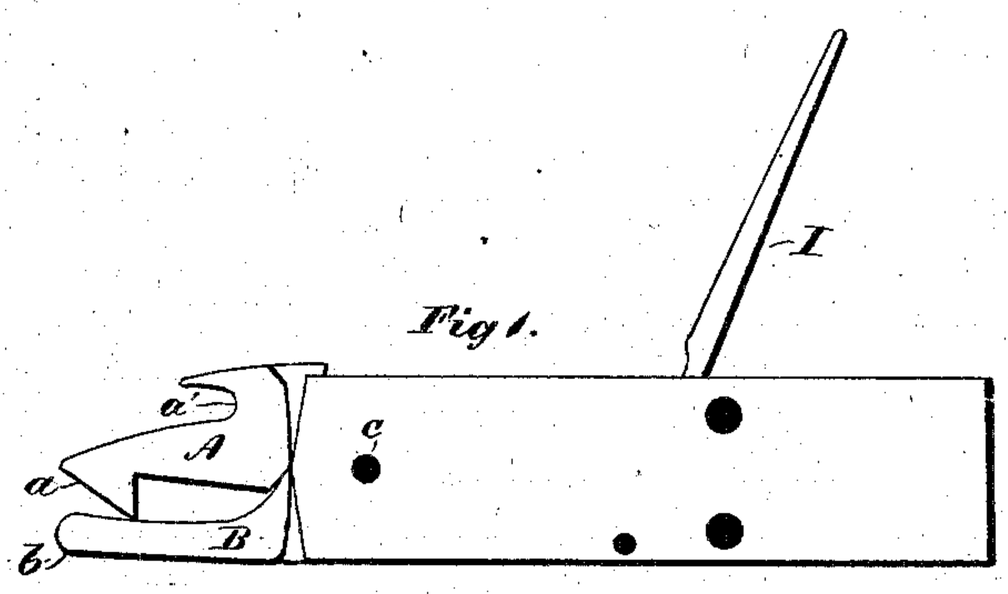

Fig 2

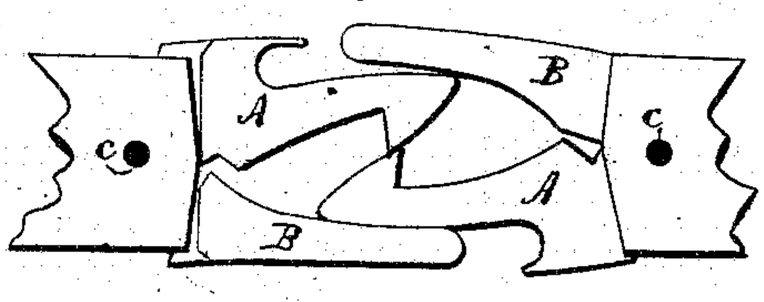

Fig 3

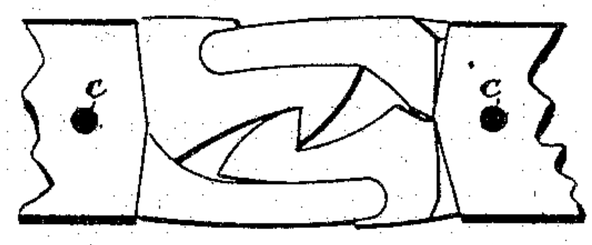

Fig 4.

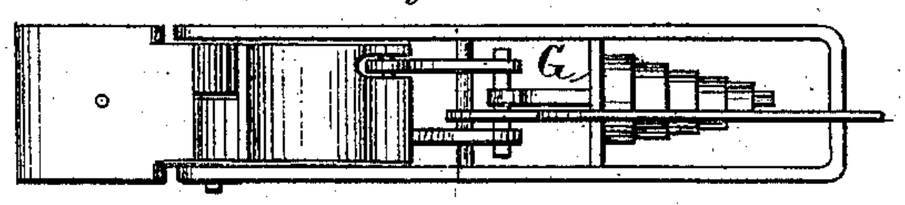

Fig 5

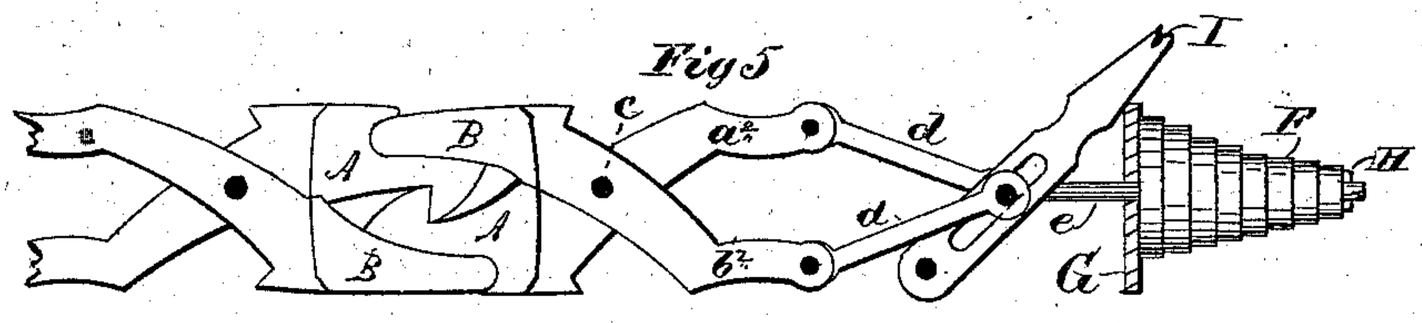

Fig 6.

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UNITED STATES PATENT OFFICE.

FRANK W. MARSTON AND OWEN JONES, OF PHILADELPHIA, PA.

IMPROVEMENT IN CAR-COUPLINGS.

Specification forming part of Letters Patent No. **137,014**, dated March 18, 1873.

To all whom it may concern:

Be it known that we, FRANK W. MARSTON, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, and OWEN JONES, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Car-Coupling; and we do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

This invention relates to that class of car-couplings which are designed to couple automatically when the cars come together; and consists mainly, first, in the combination of a hooked catch with a buffer-bar; second, in the construction of the hooked catch, it being provided with a recess adapted to receive the end of the buffer-bar upon the coupling of the adjacent car; third, in the construction and arrangement of the parts for operating the catch and buffer-bar, all of which will be fully described hereinafter.

In the drawing, Figure 1 represents a plan view of our improved coupling. Fig. 2 represents a similar view of a pair of couplings as they appear when the act of coupling is nearly completed; Fig. 3, a view of the same with the coupling completed. Figs. 4 and 5 views of the couplings with the operating mechanism; and Fig. 6, a view showing devices for using the improved coupling with the ordinary coupling.

To enable others skilled in the art to make and use our invention, we will now proceed to fully describe its construction.

A represents a catch, provided with a hook, a, and recess a^1, as shown. B represents the buffer-bar, having the projecting portion b, as shown. These two parts A and B extend out in front of the draw-head equal distances, and are halved together and pivoted near their center on a single central pin, c, as shown, located near the front edge of the draw-head, their rear ends forming the arms a^2 b^2, as shown. d d represent short rods or bars, pivoted to the arms a^2 b^2, by means of which the latter are connected to the central bar or rod e, the parts being secured together by a pin, by means of which a knuckle-joint is formed. F represents a volute spring, which incloses that portion of the bar e which extends rearward through the transverse beam G, and is secured upon the same by means of a broad-faced nut, H, as shown. The base of the volute spring rests against the beam G, which is strongly secured in any proper manner in the draw-head. I represents the operating-lever, which is connected to the knuckle-joint at the point of union of the bars a^2 b^2, by means of a slot, as shown, its short arm being pivoted to a stud properly located in the draw-head.

A coupling thus constructed is located at each end of the car, the relative position of the catch and buffer-bar being, of course, reversed—that is, at one end of the car the catch would be upon the right side and the buffer-bar upon the left, while at the other end the position of these parts would be just the opposite.

The operation of our improved coupling is as follows: As the cars come together, whether straight or at an angle, the inclined faces of the catches meet, and, moving by each other, the spring yielding sufficiently to permit each hook and buffer-bar to separate from each other, slip into place, and complete the coupling.

When thus coupled it will be observed that the front end of each buffer-bar rests in the recess of the hook of the adjacent coupling, and is securely held in that position by the union of the two catches. The parts are also further held from separation by the action of the springs, which exert their force to press the buffer-bars and hooks together.

When it is desired to uncouple the cars the lever is properly operated, by which means the rear ends of the catch and buffer-bar are separated, and consequently the front ends are separated. The opening of the parts of one coupling operates to open also the parts of the other, the catch of the coupling being operated upon, forcing back the buffer-bar of the adjacent coupling and the buffer-bar, by means of the projection upon the side of the recess, the other catch.

The catches and buffer-bars are made of considerable depth so that cars of unequal heights may be readily coupled together.

With this construction it is not essential that both the couplings shall be in the same horizontal line.

The volute spring by means of its nut may be adjusted to exert just the amount of force

desired. Of course other forms of springs may be employed, if desired.

In consequence of the construction and arrangement of the parts the coupling is capable of turning on its central pin, the spring yielding for that purpose, by which means it can readily adjust itself to the varying position of the cars in passing curves. The tendency of the spring, however, is to keep it always in a straight line with and in the draw-head.

The coupling may be adapted for use with the ordinary draw-head in various ways. I preferably employ, however, for this purpose the device shown in Fig. 6, consisting of a bar, *x*, provided at its rear end with arms resting in sockets in the hook and catch, these sockets being back far enough to prevent interference with the hook of the adjacent coupling when the cars come together. The bar *x* has connected to its front end a link, x^1, which has attached an ordinary hook, x^2. When not in use this device hangs down out of the way, the bar *x* swinging on its arm as a pivot. This device may be also used to connect the cars when it is desired to pass the short curves, which are necessarily used in cities in tracks connecting the yards of individuals with the main track.

The advantages of this particular construction are simplicity, certainty of action, adaptability to cars of different heights, and for use in sharp curves, security of fastening, and the ease with which it may be uncoupled.

It will be understood, of course, that in using this coupling no liability whatever of danger is experienced by the brakeman.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the catch A and buffer-bar B, substantially as described.

2. The combination of the catches A A having recesses a^1 a^1 with the buffer-bars B B having projections *b b*, as shown.

3. The combination of the catch and buffer-bar, constructed and arranged as described, with the connecting-rods a^2 b^2, bar *e*, spring F, and lever I, as described.

4. The combination of the bar *e* having the nut H with the volute spring F and the cross-bar G, the spring being made adjustable, as described, for the purpose set forth.

5. The combination of the slotted lever, the spring-bar *e*, and the connecting-rods *d d*, with the short arms a^2 b^2, as described.

6. In combination with a coupling of substantially the described construction, the bar, link, and hook, *x* x^1 x^2, adapted to hang down between the cars when not in use, as and for the purpose described.

This specification signed and witnessed this 21st day of January, 1873.

FRANK W. MARSTON.
OWEN JONES.

Witnesses:
JOHN MARSTON, Jr.,
GEO. F. PRATT.