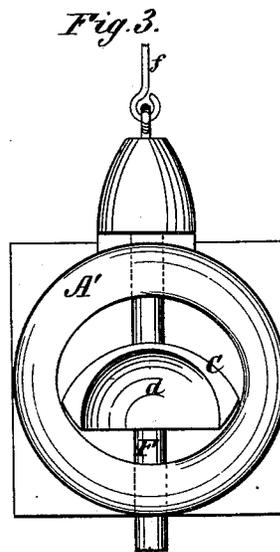
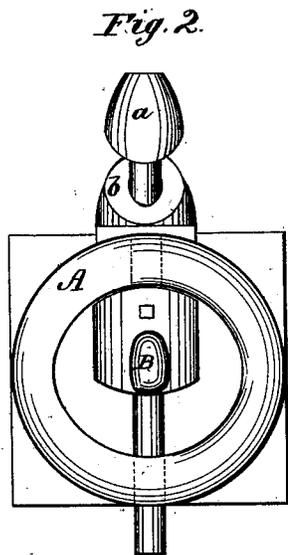
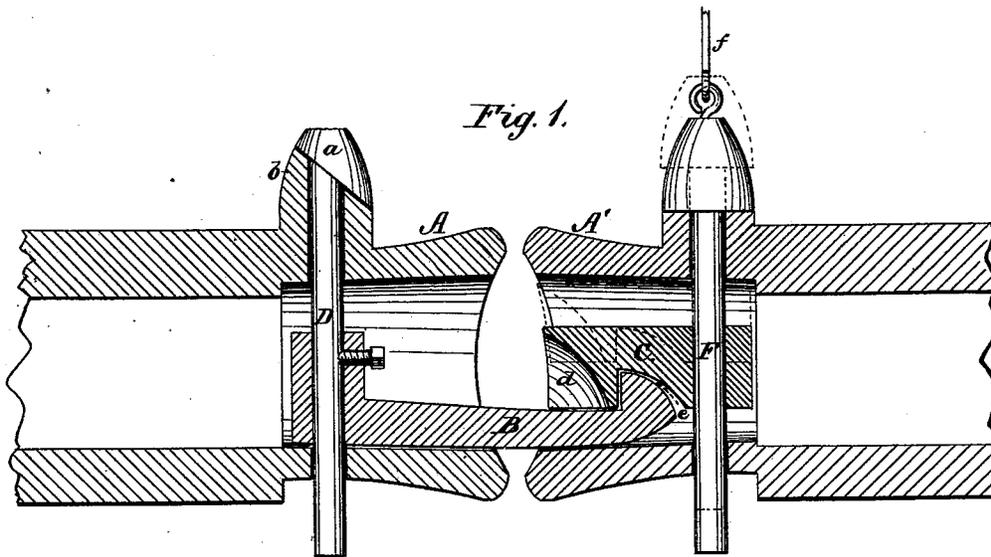


E. B. MIDDLETON.

CAR-COUPLING.

No. 190,775.

Patented May 15, 1877.



WITNESSES:

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UNITED STATES PATENT OFFICE.

EDWARD B. MIDDLETON, OF CHARLESTON, SOUTH CAROLINA.

IMPROVEMENT IN CAR-COUPINGS.

Specification forming part of Letters Patent No. **190,775**, dated May 15, 1877; application filed March 28, 1877.

To all whom it may concern:

Be it known that I, EDWARD BARNEWALL MIDDLETON, of the city and county of Charleston and State of South Carolina, have invented a new and Improved Car-Coupling; and I do hereby declare that the following is a full, clear, and exact description of the same.

The invention is an improvement in automatic car-couplings, and relates to the construction and arrangement of parts, as hereinafter described and claimed.

In the accompanying drawing, forming part of this specification, Figure 1 is a vertical central section of the coupling, the hook and catch being shown engaged. Fig. 2 is a front-end view of the draw-head provided with the hook, the latter being raised in order to show the form of the oblique shoulders or contact-surfaces. Fig. 3 is a front-end view of the draw-head provided with the catch-blocks.

The draw-heads A A' have preferably a cylindrical or bell-mouthed shape, and may be attached to the bed of a car in the usual way. The draw-head A is provided with a coupling-hook, B, and is designed for attachment to one end of a car, while the draw-head A' has a gravitating-catch, C, and is designed for attachment to the other end of the same car. The hook is rigidly attached to a pivot-pin or rod, D, which passes vertically through the draw-head A, so that the hook is maintained in a horizontal position, while free to move or swing laterally; but in order to cause it to tend to maintain a position in line with the car lengthwise—*i. e.*, parallel with the plane of the longer sides of the car—I provide the pin or rod D with a head, *a*, which is inclined or cut away obliquely on the under side, corresponding to the form of the upper side of a projection, *b*, on which the head rests when the hook is in the normal position.

The inclined or oblique surfaces of the parts *a b* being held in contact by the weight of the rod D and hook B, the latter is prevented from swinging laterally, except either when force is intentionally applied for that purpose, as required when it is desired to couple two cars upon a curved track, or when the draft is applied in a direction oblique to the

axis of the draw-head, as when two coupled cars are passing around a curve.

The catch-block C has the form of a longitudinal section of a solid cylinder; but its front end is beveled on the under side at *d*, and a recess with a square or vertical shoulder, *e*, is formed directly in the rear thereof. The block C is rigidly attached to a rod, F, which passes vertically through the draw-head A'.

When two cars provided with my improved coupling devices are brought together, the projecting end of the hook enters the mouth of the opposite draw-head A', strikes the beveled portion *d* of catch C, raises the latter, together with its rod F, and engages with the shoulder of recess *e*, thus completing the "lock" automatically. The parts are held so engaged so long as required by the gravity of block C.

In order to uncouple, the catch C is raised by the rod *f*, which is attached to its rod F, and may be connected with and operated by a lever (not shown) pivoted to the end of the car, or by a rod extending to the top of the car.

It will be seen, however, that the coupling devices will disengage automatically in case one car is turned at right angles to the other, since the arm of the hook B will then be turned out of the recess in the catch-block; hence the cars will not remain coupled in case of an accident whereby one of them leaves the track and is overturned.

The rigidity of the hook itself, and its rigid attachment to the sliding rod D, secures the result that the shoulder of the hook remains parallel to the shoulder *e* of the catch while engaged therewith; whereas, in the other couplings of this class, in which the hook is jointed, it assumes an angle to the catch, and is thus liable to become disengaged whenever the height of the draw-head to which the hook is attached is less than that of the other.

What I claim is—

1. In a car-coupling, a draw-head, a hook fixed on a rod adapted to slide vertically, and having an oblique shoulder or head, and a correspondingly-shaped projection on the draw-head, all combined substantially as

shown and described, to operate as specified.

2. In a car-coupling, the rigid hook B and its vertically-sliding rod D, the two being rigidly connected, in combination with the catch having bevel *d*, and recess with shoulder *e*, the rod F, and the draw-heads A A', all as shown and described, whereby, when

the draw-head A' is raised above the other, the said hook will maintain the same position relative to rod D and the catch, as specified.

EDWARD BARNEWALL MIDDLETON.

Witnesses:

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