

(No Model.)

W. H. BORCHERS.
CAR COUPLING.

No. 470,976.

Patented Mar. 15, 1892.

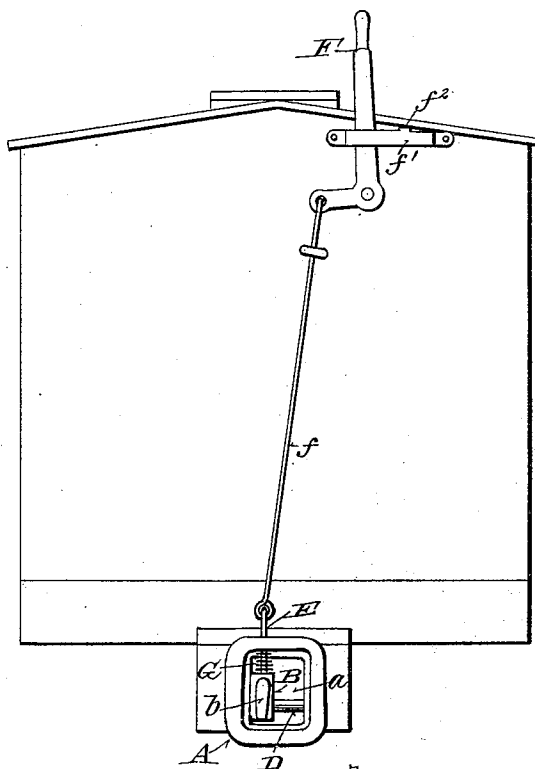


Fig. 1.

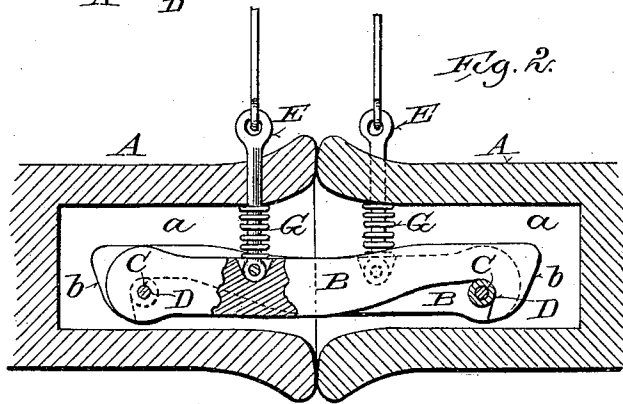


Fig. 2.

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CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 470,976, dated March 15, 1892.

Application filed May 18, 1891. Serial No. 393,065. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BORCHERS, of Pheasant Branch, in the county of Dane and State of Wisconsin, have invented certain new and useful Improvements in Car-Couplers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains 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.

The main object of my invention is to prevent accidents incident to coupling and uncoupling cars manually in the ordinary manner, and in case a car is derailed and upset to automatically disconnect the same from other cars.

It consists, essentially, of certain peculiarities in the construction and arrangement of the parts composing the coupling and its connections, hereinafter particularly described, and pointed out in the claims.

In the accompanying drawings like letters designate the same parts in both figures.

Figure 1 is an end elevation of a part of the coupling and a car to which it is applied; and Fig. 2 is a vertical longitudinal section of the coupling, on an enlarged scale, showing the two parts of the coupling when connected.

A represents a draw-head, which is attached to the car in the usual or any suitable manner, and is formed with a recess or opening at its outer end.

B represents a hook or dog hinged at the inner end upon a cross bar or pin C, passing horizontally through the draw-head and the recess *a* therein. This hook projects outwardly beyond the end of the draw-head A a sufficient distance to pass over and engage with the cross bar or pin C in the draw-head of an adjoining car and is capable of a sufficient vertical movement at its outer end to admit of its passing over said cross bar or pin into or out of engagement therewith. It is placed in one side of the recess *a*, as shown in Fig. 1, the opposite side of said recess being open to receive the corresponding hook of the adjoining car. The hook is held in place in one side of the recess in the draw-

head by a sleeve D, placed over the cross-bar C and bearing at one end against the side of the hook and at the opposite end against the inside of the draw-head.

The sleeves D are made to turn freely upon the cross-bar C, and the offsets or engaging surfaces of the hooks are made in approximately vertical planes or parallel with or tangential to their movement, so that when the train or coupling is subjected to draft the hooks will be easily raised out of engagement with the sleeves D, which turn and thereby facilitate the operation.

E represents an eyebolt pivoted to the hook B a little inside of the outer end of the draw-head and extending therefrom vertically through an aperture in the upper side of the draw-head and affording means for raising the hook out of engagement with the cross-bar C in the draw-head of the adjoining car.

To facilitate lifting the hook B for uncoupling cars, I provide a lever F, located at some convenient accessible point on the car, and connect the same by a rod *f* with the eyebolt E, as shown in Fig. 1. The keeper or guide *f'*, in which the handle of the lever is held, is preferably provided with a catch or projection *f''*, by which the lever may be engaged, so as to hold the hook B in its elevated position out of engagement or range with the cross-bars C of the draw-heads of other cars.

The hooks B are beveled at their outer ends, as shown at *b b* in Fig. 2, so as to automatically pass over and engage with the cross-bars C C. It will thus be seen that when two cars are brought together the hooks B B will pass by each other side by side and will automatically ride over the cross-bars C into engagement therewith.

Springs G G, placed around the eyebolts E between the upper sides of the draw-heads A and the hooks B B, hold the latter normally in their lower position or in engagement with the cross-bars C. In case a car is derailed and upset it will automatically release itself from adjoining cars, the hooks B and the cross-bars C connected therewith being turned so as to disengage themselves from the corresponding hooks and cross-bars of the couplings of the adjoining cars. In this way serious damage may oftentimes be averted.

To uncouple cars furnished with my improved device, it is not necessary to pass between them into a position of danger; but the disengagement of the hooks is effected by means of the levers F or any other suitable devices which may be substituted therefor to lift the hooks. It is obvious that the levers F may be located in different positions on the car, wherever they will be most convenient and accessible. On passenger-cars they would naturally be located on the platforms. Levers or other suitable connections for lifting the hooks may, if desired, be placed at the sides of the cars, so as to be accessible from the ground without passing between the cars or climbing upon them.

Various changes in the details of the device may be made within the intended scope of my invention.

My improved coupler will be found of especial advantage and convenience in switching and making up trains, since if the operating-lever or connections of the hook B on one of the cars to be coupled is released, so as to leave the hook free, it will operate automatically and the cars will be safely and securely coupled and held together by the single hook in case the hook on the car to be picked up is raised and held out of operating position. For instance, when it is desired to pick up a car on a side track the brakeman releases the lever F on the rear end of the last car of the train, dismounts from the car, opens the switch, and the train then passes over, and the car to be taken up is automatically coupled therewith in the manner hereinbefore explained. The train then passes back upon the main track, and the brakeman closes the switch and mounts the train. Considerable time is saved, and trouble, as well as danger, are thus avoided.

I claim—

1. In a car-coupler, the combination of a draw-head having an outwardly-opening recess in the end, a vertically-swinging hook hinged on a cross-bar, passing horizontally through said recess, a rod pivoted to said hook within said recess and passing vertically through the draw-head, and a spiral spring placed upon said rod between said hook and the upper part of said draw-head so as to hold the hook normally in its lower position, substantially as and for the purposes set forth.

2. In a car-coupler, the combination of a draw-head having an outwardly-opening recess in the end, a vertically-swinging hook hinged on a cross-bar, passing horizontally

through said recess and having its offset or engaging surface in a plane approximately parallel with its vertical movement, the opposite side of said recess being left open for the reception of the corresponding hook on another car, a rod pivoted to said hook outside of the cross-bar upon which it is mounted and passing upwardly through the draw-head, a spring holding said hook normally in its lower position, and a lever connected with said rod and arranged to lift said hook, substantially as and for the purposes set forth.

3. In a car-coupler, the combination of a draw-head having an outwardly-opening recess, a vertically-swinging hook hinged in one side of said recess on a bar passing horizontally through the same, the opposite side of said recess being left open for the reception of a corresponding hook on another car, and a sleeve mounted and capable of turning freely upon said bar and bearing at one end against said hook and at the other end against the inside of the draw-head, said hook having its offset-or engaging surface in a plane approximately parallel with its vertical movement and arranged to engage with the sleeve on the cross-bar of a corresponding coupling, substantially as and for the purposes set forth.

4. In a car-coupler, the combination of a draw-head having an outwardly-opening recess in the end, a vertically-swinging hook mounted in one side of said recess on a bar passing horizontally through the same, the opposite side of said recess being left open for the reception of a corresponding hook on another car and the offset or engaging surface of said hook being in a plane approximately parallel with its vertical movement, so as to be readily disengaged from the cross-bar of a corresponding coupling when subjected to draft, and having its end beveled so as to automatically pass over said cross-bar into engagement therewith, and a sleeve mounted and capable of turning freely upon said cross-bar and bearing at one end against said hook and at the opposite end against the inside of the draw-head, so as to hold said hook in place and to facilitate the disengagement of the hook of a corresponding coupling, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WILLIAM H. BORCHERS.

Witnesses:

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