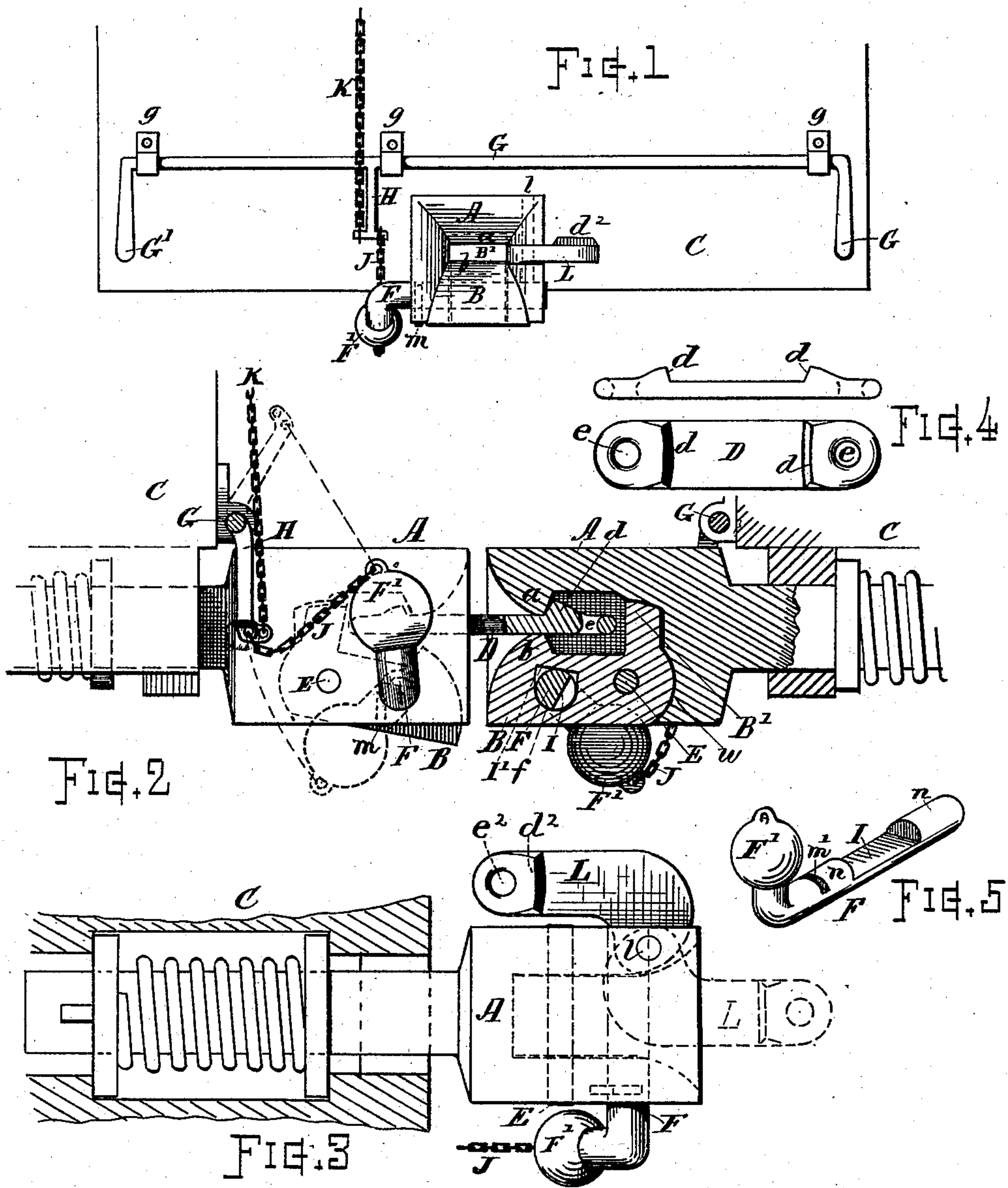


(No Model.)

G. M. ROBBINS.  
CAR COUPLING.

No. 383,991.

Patented June 5, 1888.

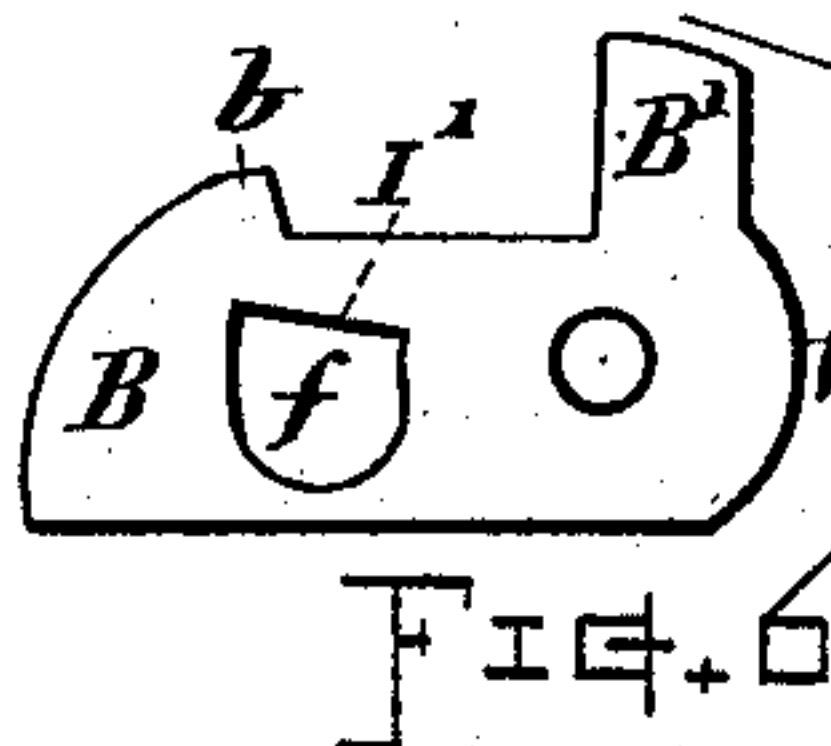


Witnesses.

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# UNITED STATES PATENT OFFICE.

GEORGE M. ROBBINS, OF WORCESTER, MASSACHUSETTS, ASSIGNOR OF TWO-THIRDS TO HENRY F. ARMS AND CHARLES C. BOSHER, OF SAME PLACE.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 383,991, dated June 5, 1888.

Application filed April 14, 1888. Serial No. 270,634. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE M. ROBBINS, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Car-Couplings, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

The object of my present invention is to provide a coupling for freight-cars that is simple, safe, and convenient, and which will efficiently meet the practical requirements of service under the various circumstances and conditions of use.

To this end my invention consists in the mechanism constructed and organized for operation as shown and described.

In the drawings, Figure 1 is an end view of the coupling and a portion of the car. Fig. 2 shows a side and a longitudinal section of the coupling mechanism. Fig. 3 is a top view of the mechanism. Fig. 4 shows a side and a plan of the link. Fig. 5 is a perspective view of the locking-bar, and Fig. 6 is a side view of the jaw.

Referring to parts, A indicates the draw-head, formed, as shown, with close top and sides, and having an interior chamber, and with a transverse downwardly-extending lip, *a*, across the front. The lower part of the chamber extends through the bottom of the head to receive the jaw B. The shank or bar of the draw-head may be of well-known form, and connected with the spring devices and body of the car C in the usual manner.

The jaw B is shaped as shown in Figs. 2 and 6, and is pivoted to work freely within the chamber of the draw-head on a horizontal pin which extends transversely through the head, as at E, so that the outer end of the jaw, which is provided with a transverse upwardly extending lip, *b*, corresponding with the lip *a*, can swing up and down for gripping and releasing the coupling-link D. The rear end of the jaw is provided with the upward extension B' and segmental bearing-surface *w*, as shown. The inner faces of the lips *a* and *b*

are backwardly inclined, as indicated in Fig. 2. The outer end of the draw-head and jaw are rounded inward in the usual tunnel form to facilitate the entrance of the link.

F indicates a locking-bar arranged transversely through the draw-head A and jaw B at the position indicated. Said locking-bar is provided with an offset counterweighted head, F', the gravity of which tends to keep the bar normally in position with said head depending, or as indicated in Fig. 1 and at the right in Fig. 2. The portions *n n* of the bar F, which take bearings in the sides of the draw-head, are made cylindrical and fit loosely in the cylindrical openings formed through the sides thereof, so as to rotate freely therein, while the portion of the locking-bar that passes through the jaw B is slabbed off at one side, leaving a flat surface, as indicated at I, and the opening *f* in the jaw B is made with a flat surface at its upper side, as indicated at I'. The form and size of the opening *f* is such that the cylinder-surface of the locking-bar will hold the jaw B in its elevated position, while the flat parts I and I' when brought into corresponding position will permit the jaw B to drop sufficiently to release the link from between the lips *a b*.

The locking-bar F is retained in connection with the draw-head by a key or pin, *m*, which enters a slot, *m'*, formed in the side of said bar. The pin *m* serves both for holding the bar in connection with the draw-head and also as a stop to prevent the bar from swinging forward when its weighted arm is in elevated position.

G indicates a rocker-shaft or operating-bar mounted in bearings *g* on the end of the car, substantially in ordinary manner, and provided at its ends with handles G', by which it can be conveniently turned upward by the attendant when standing at the side of the car.

J indicates a chain connecting the counterweighted arm of the locking-bar with an arm, H, fixed to said operating-shaft G, so that when said shaft is turned upward (see dotted lines, Fig. 2) said locking-bar will be partially rotated and its arm F' raised up to the position indicated in full lines at the right in Fig. 2, at which position it will be temporarily retained by the flat portion I' of the jaw B, resting



ing upon the flat portion I of said locking-bar, the weight being nearly in balance above the center of the bar, while the shaft G and arm H can swing downward to their normal positions.

K indicates the chain, which extends from the arm H to the top of the car, and by means of which the coupling mechanism can be operated from the top of the car.

The link D is made as a plate, provided near its ends with offsets or shoulders *d* on one side of the plate only. Said offsets or shoulders are made with engaging-surfaces outwardly inclined, as indicated. This link is provided with eye-holes *e* through its ends to facilitate coupling with a common draw-head, or one using the ordinary pin.

L indicates a plate pivoted in the side of the draw-head by the vertical pin *l*, and having at its end the outwardly-inclined shoulder *d*<sup>2</sup> and the eye *e*<sup>2</sup>, which plate is arranged to swing around to a position in line with the axis of the head, as indicated by dotted lines, Fig. 3, to take the place of and serve the purpose of the link D when required.

The interior chamber between the draw-head and its jaw is made of sufficient height to allow the link to lie at an inclination without its end striking at the top or bottom of said chamber, so that the coupling will operate when one draw-head is at higher level than the other.

In the operation, when it is desired to connect the cars the attendant swings up the bar G, which lifts the weighted end F' of the locking-bar F to the position shown in full lines at the left of Fig. 2. This sets the coupling or allows the jaw B to drop open, its inner surface, I, falling upon the flat part I' of the bar. (See dotted lines, Fig. 2.) The coupling can then be automatically coupled by bringing the heads together. The end of the link, entering the opening, strikes against and forces backward the upward projection, B', thereby lifting the front of the jaw and raising the flat surface I' from the flat surface I of the locking-bar, so that the weight of the head F' will overbalance and cause said bar to turn over to the position indicated in the section at the left in Fig. 2, bringing the cylindrical part of the bar F uppermost. This locks the jaw onto the link D, so that the lips *a* or *b* engage the shoulder *d* with an unyielding grip, so that said link cannot escape. On the other hand, when the locking-bar is down the link cannot be forced into the coupling; hence there is no liability of cars coupling together except when the coupling is set for that purpose. For uncoupling the cars the jaw B is released by swinging up the arm H and head F' either by the handles G' at the side of the car or by the chain K from the top of the car, and the coupling can, owing to the backwardly-inclined surfaces, be easily released at any time regardless of the amount of strain or draft which may at the instant be on the link. This

is a feature of much importance, as it facilitates the uncoupling of trains when moving, as when making flying switches and when cars are standing on grades, without the necessity of reversing or backing up to relieve the strain.

Among the advantages incident to my improved coupling may be mentioned the following: It is automatically operative in its coupling action when set with the locking-bar head raised up. It is impossible to couple automatically or accidentally when it is not set for that purpose. It can be operated with ease and safety, and while it securely holds against the draft on the train with a grip which cannot be parted short of breaking the link, it can with the greatest ease be uncoupled by the attendant, regardless of the amount of strain which may at the time be on the coupling. The top and sides of the draw-head being closed, there is no opportunity for snow and ice to collect in the joints and interfere with the proper working of the mechanism. The parts are few, simple, strong, and durable, and are so disposed that they will withstand rough usage without liability of breaking or derangement, and the operation of the mechanism is such as will facilitate the labor and trouble of separating, shifting, and connecting the cars in the distribution and making up of trains.

I am aware that car-couplings have heretofore been provided with movable jaws of various kinds for gripping headed links, and that such links have been made in various forms; hence it will be understood that I do not claim such features, except as embodied in the mechanism constructed and operating as herein illustrated and described.

I am also aware that shafts or bars on the end of the car have been employed for working coupling mechanism, and I do not therefore claim the invention of such means, except in its combination with other particular devices named.

What I claim as of my invention, and desire to secure by Letters Patent, is—

1. The within-described car-coupling, consisting of the draw-head A, provided with the lip *a*, the jaws B, formed with the lip *b* and upward extension B', and having the opening *f*, with flat top surface, I', the pivot-pin E, and the locking-bar F, having the weighted offset-arm, and the flattened side I, as and for the purpose set forth.

2. The combination, as described, of the draw-head A, having the lip *a*, the jaw B, having lip *b* and upright back B', the locking-bar F, having the counterweighted head F' and flattened side I, the pivot E, and the chain J, and rocker-shaft G, with arm H, as and for the purpose set forth.

3. The combination, with the draw-head A and pivoted jaw B, having lips *a* and *b*, formed with backwardly-inclined inner surfaces, and the locking-bar F, arranged for



working said jaw, as set forth, of the link-plate D, having upon one side thereof the shoulders  $d$ , formed with outwardly inclined surfaces, as shown and described.

5 4. The plate  $D^2$ , having the backwardly-inclined shoulder  $d^2$ , and the eye  $e^2$ , pivoted at  $l$  in the side of the draw-head, in combination with the draw-head A, vertically-swinging jaw B, respectively provided with the  
10 lips  $a$  and  $b$ , and the counterweighted locking-bar F, as shown and described.

5. The combination, with the horizontally-pivoted jaw B, having the opening  $f$ , with

flattened surface  $I'$ , and the draw-head A, having cylindrical openings in its sides, of the 15 locking-bar F, having the flattened surface I, cylindrical bearings  $n n$ , and counterweighted offset end, and the stop  $m m'$ , and chain J, for limiting the rotative movement of said bar, substantially as set forth. 20

Witness my hand this 10th day of April, A. D. 1888.

GEORGE M. ROBBINS.

Witnesses:

CHAS. H. BURLEIGH,  
ELLA P. BLENUS.