

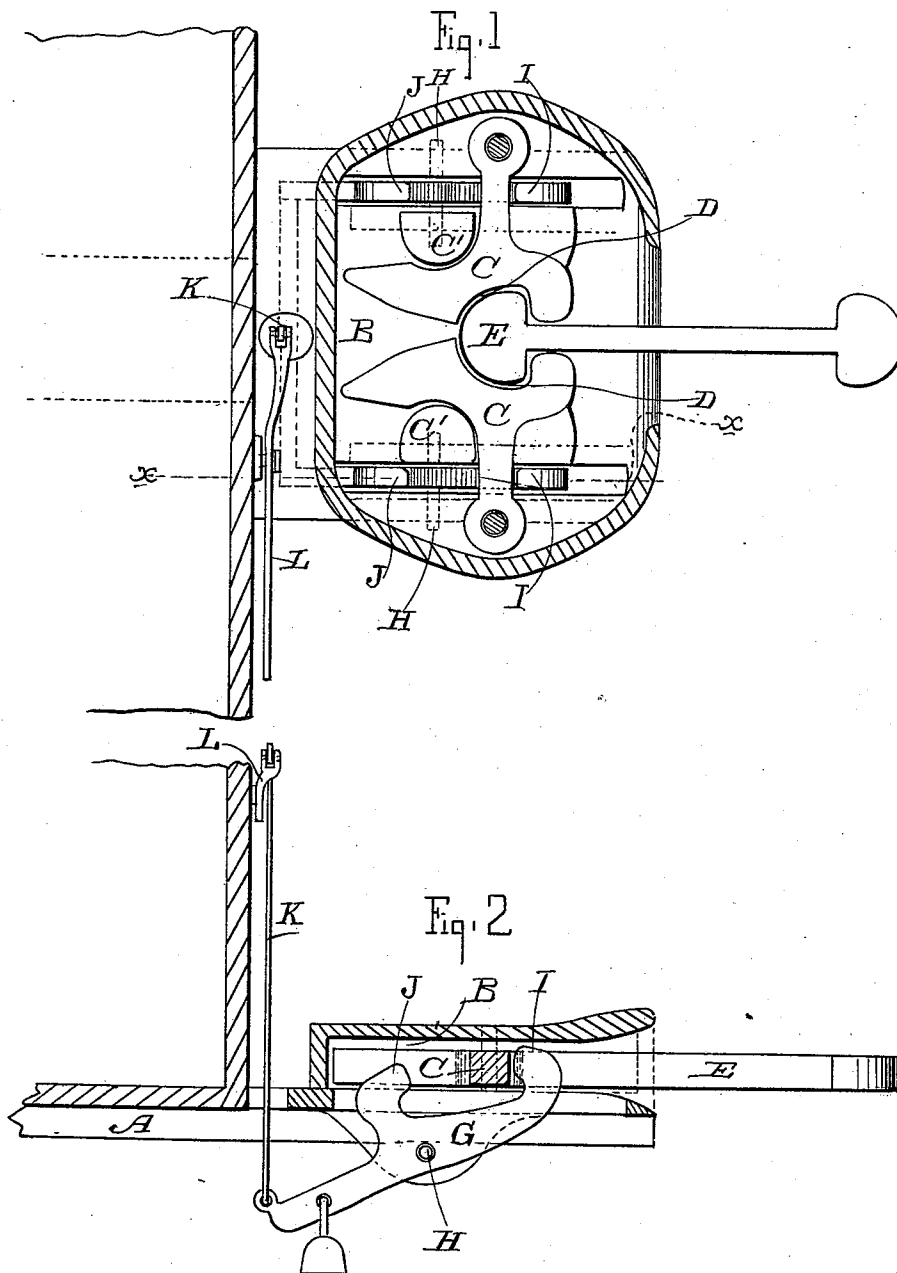
(No Model.)

2 Sheets—Sheet 1.

F. M. RYAN.
CAR COUPLING.

No. 488,718.

Patented Dec. 27, 1892.



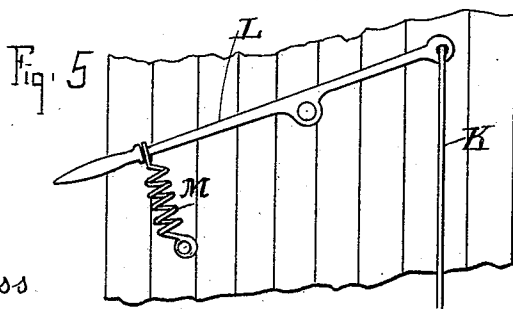
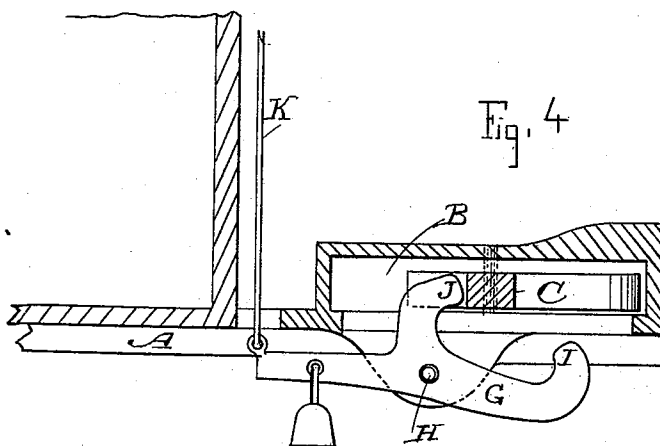
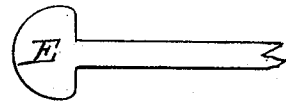
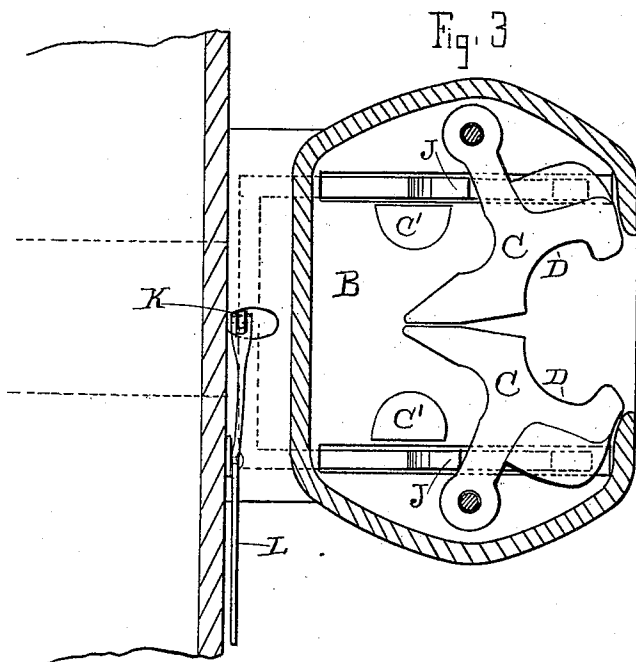
Witnesses,
J. A. Bayless

Inventor,
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UNITED STATES PATENT OFFICE.

FRANK M. RYAN, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR OF ONE-HALF
TO CROWSON SMITH, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 488,718, dated December 27, 1892.

Application filed October 10, 1892. Serial No. 448,424. (No model.)

To all whom it may concern:

Be it known that I, FRANK M. RYAN, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Car-Couplings; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a novel coupling for cars.

It consists of jaws pivoted transversely to the line of travel of the cars so as to swing in a horizontal plane, and having recesses formed in their meeting edges for the reception of the head of the draw pin. In conjunction with these are weighted or spring actuated levers pivoted to swing in vertical planes having upwardly projecting hooks or lugs which engage the shanks of the draw-pin holding levers to lock them in position when the coupling is complete, and to unlock and open them when the coupling is to be broken. In conjunction with these levers is a mechanism by which they may be actuated.

My invention also consists in details of construction which will be more fully explained by reference to the accompanying drawings, in which—

Figure 1—is a horizontal section of the coupling showing the jaws in position to hold the coupling link. Fig. 2—is a side sectional view of Fig. 1. Fig. 3—shows the jaws open and link released. Fig. 4, is a sectional view of Fig. 3. Fig. 5—shows a portion of the end of a car, with the lever and spring attachment.

In my invention I have only shown so much of the end of a car as to illustrate the device.

A is the draw-bar having upon its outer end a shallow horizontal chamber B of considerable width, at the opposite sides of which are pivoted the ends of the link holding jaws or levers C. These levers extend from the pivot pins toward each other, meeting in the center, and each one has a slot or depression D made in its face where the two meet so as to form a chamber for the reception of the head E of the coupling bar when the two levers are closed together.

Cushions or springs C' of any suitable construction may be fitted into the chamber be-

hind the levers to relieve the shock caused by cars coming violently together.

In order to retain the coupling levers in position after the head of the coupling bar is in place, and also to open and separate these levers to release the bar, I have shown the vertically fulcrumed levers G pivoted beneath the chamber B as shown at H, these levers moving about their horizontal pivot pins in vertical planes. The front end of each of these levers has a hook I and the rear portion has a corresponding hook J. The rear end of the lever may either be sufficiently weighted to throw the front end and the hooks I upward, or it may be actuated by a spring, if preferred, for the same purpose. The rear ends of the lever are connected by a cross bar and this bar is connected by a rod or chain K with the lever L, which is fulcrumed upon the end of the car and by which the lever G is moved for the purpose of releasing the head of the coupling bar and uncoupling the cars. The hooks I and J are adapted to engage the coupling levers C at points between their fulcrums and the meeting faces, one of said levers engaging each of the levers C, as shown in the plan view.

The operation of my coupling will then be as follows:—When the hand lever L is moved so as to draw up the rear portion of the levers G, the lugs or hooks J are thrown upward and forward against the rear portion of the horizontal coupling levers C. This action turns the levers C about their fulcrum pins and forcing them forward opens the coupling jaws as shown in Fig. 3. The device is retained in this position with the jaws open, because the jaws cover the lugs I and prevent them from being thrown up, until the jaws are forced back by the entrance of the coupling bar which forces the levers C back and uncovers the lugs I. When this takes place, and the head of the coupling bar (the opposite end of which is already connected with another car) enters the jaws and forces the levers C to turn about their fulcrum pins, the meeting faces of the jaws close together so as to clasp the head of the coupling bar and retain it between them. This movement forces the jaws J backward and downward, and as soon as the shanks of the levers C have passed

the jaws I of the levers G, the latter will be thrown upward by the weight or the spring before described, and will thus stand in front of the shanks of the lever C and lock them in place so as to prevent the jaws which hold the head of the coupling bar from being opened by any pull which may take place. This condition of the coupling will remain as long as it is desired to retain the cars together, but if it be desired at any time to uncouple the cars the hand lever L is moved so as to draw the lever G upward, and this reverses the position of the jaws I and J, depressing the jaws I which are in front of the coupling levers and throwing up the jaws J which are behind them. The jaws J then act to force the levers C forward moving around their fulcrum pins until the jaws which hold the head of the coupling bar are sufficiently open to allow the latter to be withdrawn. To prevent the cars from coupling when it is not desired a spiral or other spring M of sufficient stiffness to overcome the weight of the lever G is temporarily connected with the lever L. This spring will allow the lever and connected parts to move when two cars come together with a coupling bar in place, but the spring M immediately returns the parts to the position in which the jaws remain open, as soon as the cars separate.

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

1. A coupling consisting of the levers fulcrumed to move in a horizontal plane about the central line of the coupling, jaws formed in the meeting faces of said levers, a coupling bar having a head which is clasped by said jaws, vertically swinging levers having hooks or lugs at the front which engage the shanks of the coupling levers to lock them in position when the jaws are closed whereby the bar is retained and the coupling completed, substantially as herein described.

2. In a car coupling, the levers fulcrumed at their outer ends to move in a horizontal plane, having jaws formed in their meeting faces to receive and hold the head of a coupling bar, levers fulcrumed to swing in vertical planes having lugs or hooks adapted to

engage and hold the front portion of the coupling lever shanks after the coupling is made, and other hooks or lugs which move upwardly behind the shanks of the coupling levers simultaneously with the withdrawal of the front locking lugs, whereby the jaws are released and forced open to release the head of the coupling bar, substantially as herein described.

3. In a car coupling, the horizontal fulcrum levers having recesses and jaws formed in their meeting faces to receive and hold the head of a coupling bar, and elastic stops against which the rear of the levers abut when the jaws are closed and the coupling completed, vertically swinging levers fulcrumed beneath the coupling levers, having hooks at the front adapted to engage the shanks of the coupling levers and retain them in position when the coupling is completed, and other hooks or lugs adapted to engage the rear of the shanks of the coupling levers when the front hooks are disengaged so as to force the coupling jaws open to release the head of the coupling bar, a hand lever and a connection between it and the locking lever whereby the latter may be actuated to open the coupling, substantially as herein described.

4. A car coupling consisting of levers fulcrumed to swing in a horizontal plane about the central line of the coupling bar, jaws formed in the meeting faces of said levers, a coupling bar having heads to be clasped by the jaws, vertically swinging levers having lugs at the front and rear, which engage corresponding sides of the coupling lever shanks, a hand lever and connection whereby the locking lugs are actuated, and a spring connected therewith whereby the parts are allowed to yield to pressure when cars come together, and are returned so as to leave the jaws open when the cars are separated, substantially as herein described.

In witness whereof I have hereunto set my hand.

FRANK M. RYAN.

Witnesses:

S. H. NOURSE,
J. A. BAYLESS.