

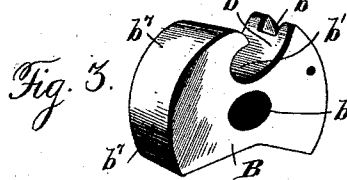
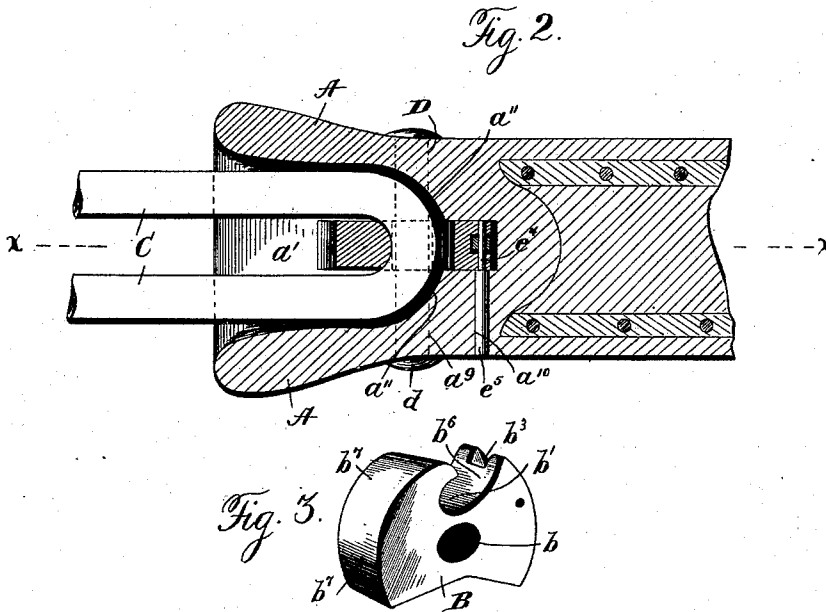
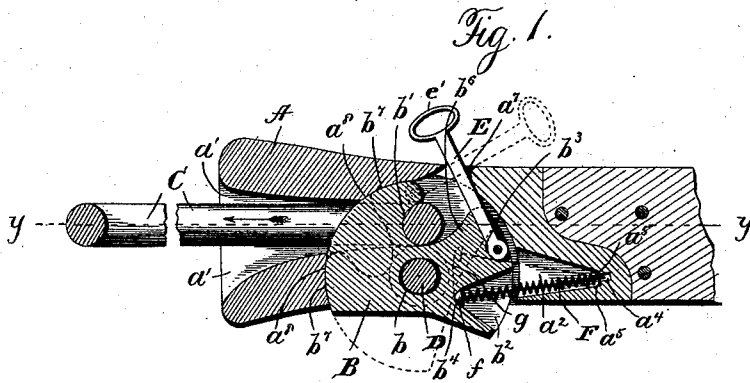
(No Model.)

2 Sheets—Sheet 1.

W. W. HUBBELL.
CAR COUPLING.

No. 476,273.

Patented June 7, 1892.



Witnesses:
Jas. Hutchinson.
R. S. Tyler.

Inventor.
Wm. W. Hubbell.

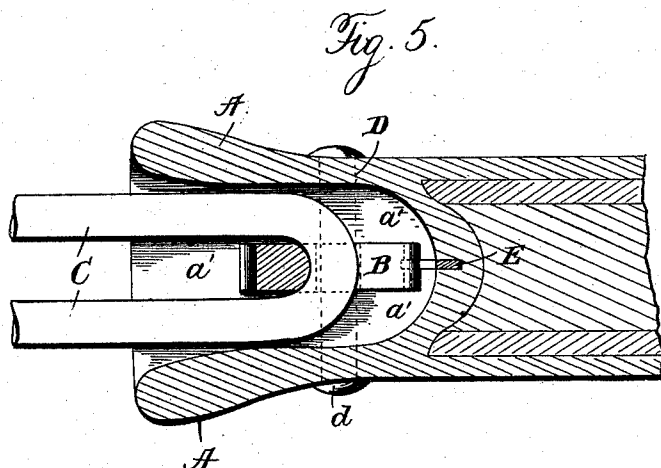
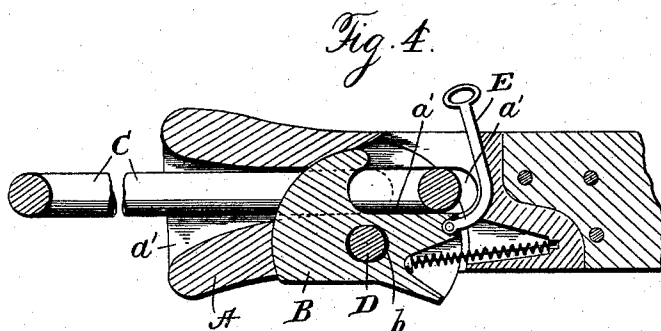
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Wm. Wheeler Hubbell

UNITED STATES PATENT OFFICE.

WILLIAM WHEELER HUBBELL, OF APPOMATTOX COUNTY, VIRGINIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 476,273, dated June 7, 1892.

Application filed April 29, 1891. Serial No. 390,916. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WHEELER HUBBELL, a citizen of the United States, residing at Lamokin Farm, in the county of Appomattox and State of Virginia, have invented certain new and useful Improvements in Automatic Car-Couplers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, in which—
Figure 1 shows a vertical section of my car-coupler on line *xx* of Fig. 2; Fig. 2, a sectional view on line *yy* of Fig. 1, and Fig. 3 a perspective view of the coupling-hook. Figs. 4 and 5 show a modified form.

Letters of like name and kind refer to like parts in each of the figures.

My invention relates to that class of car-couplers known as the "automatic rotary," the object of which is to provide a coupler constructed of few parts, simple in their construction, and capable of being easily and securely put in place in a draw-head; and to this end my invention consists in the car-coupling and in the several parts thereof combined and arranged substantially as and for the purpose hereinafter shown and described, and more especially pointed out in the claims.

In the accompanying drawings, A represents a draw-head the exterior shape of which is substantially that of the ordinary draw-head, provided with a recess *a* for the reception of the rotary coupling-hook B, which recess terminates at its outer end in a bell-shaped mouth, a recess *a'* to accommodate the end of the coupling-link C, and a recess *a²* for the reception of one end of an automatic spring device for throwing and retaining the coupling-hook in its locked and unlocked positions. The draw-head opening is closed or solid on top to resist the pull of the coupling-hook and also exclude water and coal or stones, preferably made solid, as shown, except for a handle rod or bar, and the spring may be a U spring or spiral, as specifically hereinafter described.

The rotary coupling-hook B, preferably constructed of steel, is made from a flat piece of metal, the periphery of which is segmental in

shape, as shown in Figs. 1 and 3 of the drawings. While I prefer the segmental shape, I do not limit myself to such shape, as other forms can be used—as, for instance, a circular one and one with the curved front enlarged forward and upward and the head also adapted to fit it. Said hook B is provided with a longitudinally-elongated perforation *b* through it for the reception of a pin D, by which it is pivoted in the draw-head, a recess *b'* of a size and shape to accommodate one end of the coupling-link, a V-shaped recess *b²* for the reception of the outer end of the automatic spring device, and a recess *b³* for the purpose of receiving the lower end *e* of the handle-bar E.

Fig. 1 of the drawings shows the several parts of my device in their locked positions with the end of the coupling-link lying in the hook-shaped recess *b'*, in which position it can be coupled with another similar device or with any other form of coupler.

For throwing and retaining the coupling-hook in its locked and unlocked positions I employ the automatic spring device, which consists of the stem F, having on its outer end a rounded head *f*, that fits into and has play in a correspondingly-shaped socket *b⁴*, provided at the inner end of the V-shaped recess *b²* of the coupling-hook B. The inner end of said stem F is received by and has play in a recess *a⁴* at the inner end of the V-shaped recess *a²* of the draw-head A.

As shown in Fig. 1 of the drawings, at the juncture of the two recesses *a²* and *a⁴* shoulders *a⁵* *a⁵* are formed for the purpose of giving bearing to the inner end of a coil-spring that surrounds the stem F, the forward end of said spring having bearing against the inner side of the head *f*.

The handle-bar E projects upwardly and forwardly from its pivotal point in the recess *b³* of the coupling-hook B, through the hole *a⁷*, provided in the upper portion of the draw-head, and terminates at its upper end in a handle *e'*.

The special object of the handle-bar is to rotate the coupling-hook, which is accomplished by pulling on the handle when in its locked position until the automatic spring device has passed the dead-center between it

and the coupling-hook, when by action of said spring device the coupling-hook is quickly thrown to and held in its unlocked position, as shown in dotted lines of Fig. 1. In such
 5 unlocked position the part b^6 of the coupling-hook stands in the path of the coupling-link when entering the draw-head, and is consequently struck and rotated by said link until the automatic spring device passes the dead-
 10 center between it and the coupling-link, when by the action of said device the coupling-hook is thrown upward to and held in its locked position, as shown by full lines in Fig. 1. The recesses a^2 and b^2 are of such dimensions and
 15 shapes as to permit of the necessary reciprocatory movements of the said spring device. The path of the outer or headed end of said device is indicated by dotted line g on the drawings. The full lines show one and the
 20 dotted line the other limit of the movement of said spring device in Fig. 1.

With the parts in the position as shown in full lines of Fig. 1 a forward pull on the link or in the direction of the arrow will cause the
 25 portion b^7 of the periphery of the coupling-hook, both above and below the recess a^7 , to bear firmly upon the walls $a^8 a^8$ of the recess a^2 , and in consequence of the longitudinal shape of the perforation b of said hook, allow-
 30 ing longitudinal movement of the same, all forward strain is transferred to that portion of my device best able to stand it—viz., upon the front curved walls of the recess a^2 —with-
 35 out any tendency to rotate the coupling-hook B. In fastening my coupling-hook in the draw-head I place it into the recess a^2 and put a temporary pin in place, then take the permanent pin provided on one end with the head d after having heated it, and insert it
 40 into the opening a^9 in the draw-head when a continued forward movement of said heated or permanent pin will cause the temporary pin to move out and the heated one to take its place, after which the unheaded end of
 45 the heated pin is headed down and a permanent locking of the coupling-hook in the draw-head is effected. To remove said pin, it will be necessary to cut off one of its heads. This mode of fastening avoids all difficulty arising
 50 where bolts and nuts are used, as they are liable to become loose and lost.

The hole marked a^{10} is for the purpose of allowing the pivot-pin e^4 of the handle-bar E to be put in place, which must be done after
 55 the coupling-hook is in its place in the draw-head. After said pin e^4 is in place a second pin e^5 is put in and caused to fill the hole a^{10} , thus preventing the pin e^4 from coming out.

As shown in Fig. 2, any strain caused by the
 60 backward movement of the coupling-link is taken by the walls $a^{11} a^{11}$ of the draw-head A, thereby relieving and protecting that portion of the coupling-hook immediately in rear of the said link. All the recesses of my device
 65 are sufficiently large to allow the several parts to work freely.

My invention as shown and described is of few parts, simple in construction, effective in its operation, cheaply made, and can be used with perfect safety to those operating it. 70

In Figs. 4 and 5 of the drawings I illustrate a modified form of my invention. The link-receiving recess a' of the draw-head A is extended back far enough to allow the outer ends of two adjacent draw-heads to meet or come
 75 together when two cars are being coupled or in the backing of the train of cars.

To accomplish the above with my improved coupler, as shown in Figs. 1, 2, and 3, that portion of the rotary coupling-hook B in rear
 80 of the link when in its locked position is removed to allow the end of the said link to pass into the back portion of the recess a' , as shown in Figs. 4 and 5. Obviously this form of my invention will throw all strain upon
 85 the front or bumper portion of the draw-heads in the coupling together or backing of the cars. The handle-bar E in this form of my device is, as shown in Fig. 4, from its
 90 point of connection with the coupling-hook, turned rearward and upward to avoid coming in contact with the coupling-link in its rearward movement, the hole a^7 being elongated to accommodate the necessary move-
 95 ment of said handle-bar E, which may extend by chain or lever to the top or side of the car. The curved front of the rotary hook may be dispensed with and an arm of the hook extended forward under a recess in the lower
 100 forward part of the draw-head and provided with a vertical pin extending through a hole in the head and to pass through the link in the usual manner, this pin being connected to the arm of the hook by a cross pivot or bolt in a slotted opening forward of the pin
 105 in the arm, and thus the hook-piece will operate the pin on the same principle as its curved front is operated by the pin bearing firm in its socket in front in the draw-head when pulling by the link; also, the link may
 110 be held vertically as it enters the draw-head by suspending the rotary hook on a vertical shaft, the hook operating horizontally, and the bar E to release the hook may extend to and be operated from the side of the platform
 115 or top of the car, all without changing the principle of construction and action of my invention.

Having thus described my invention, what I claim is— 120

1. In a car-coupling, in combination with the draw-head, a rotary coupling-hook provided with a recess for the reception of one end of the coupling-link, an elongated pivot-opening, and a handle-bar pivoted thereto,
 125 substantially as and for the purpose specified.

2. In a car-coupling, the draw-head provided with recesses for the reception of the coupling-link, coupling-hook, and one end of the spring device, in combination with the
 130 segmentally-shaped coupling-hook having the recesses for the accommodation of the coup-

ling-link, the front end of the spring device, and an elongated pivot-opening, substantially as and for the purpose shown and described.

3. In a car-coupling, the combination, with
5 the draw-head and the rotary coupling-hook, of an automatic spring device for throwing and retaining the coupling-hook in its locked and unlocked positions, consisting of a stem having its headed end adapted to have play
10 in a recess in the coupling-hook and its opposite end adapted to fit into and have movement in a recess in the draw-head and a spring surrounding the stem, one end of which bears against the headed end and the
15 other against an abutment formed in the said recess in the draw-head, substantially as and for the purpose described.

4. In a car-coupling, the combination, with
20 the draw-head and the rotary coupling-hook provided with a handle-bar, of an automatic spring device consisting of a stem having its headed end adapted to have play in a recess in the coupling-hook and its opposite end adapted to fit into and have movement in a
25 recess in the draw-head and a spring surround-

ing the stem, one end of which bears against the headed end and the other against an abutment formed in the said recess in the draw-head, substantially as and for the purpose shown and described.

5. In a car-coupling with recessed head, the rotary hook with front curved periphery bearing on the face of the recess above and below the link when the draft or pull comes on the link, so that the harder the pull the tighter
35 the front of the hook holds, substantially as and for the purpose described.

6. The circular or curved faced hook with longitudinal slot and recess in the draw-head, closed on top to fit the curved front face above
40 and below the link, in combination with the spring operating above and below the center of the hook, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WM. WHEELER HUBBELL.

Witnesses:

JAS. E. HUTCHINSON,
R. D. S. TYLER.