(No Model.) 2 Sheets—Sheet 1.

W. & S. L. CHRISTIAN.

CAR COUPLING.

No. 454,534. Patented June 23, 1891.

Fig. 1.

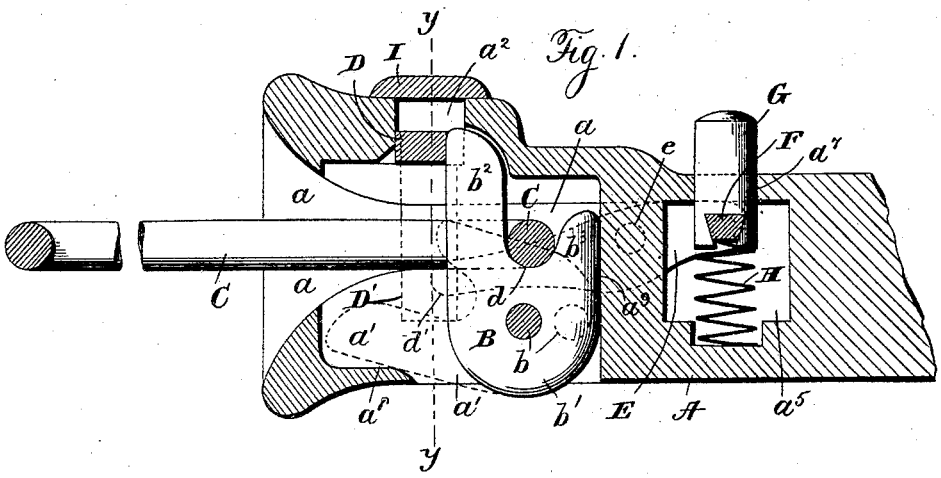


Fig. 2.

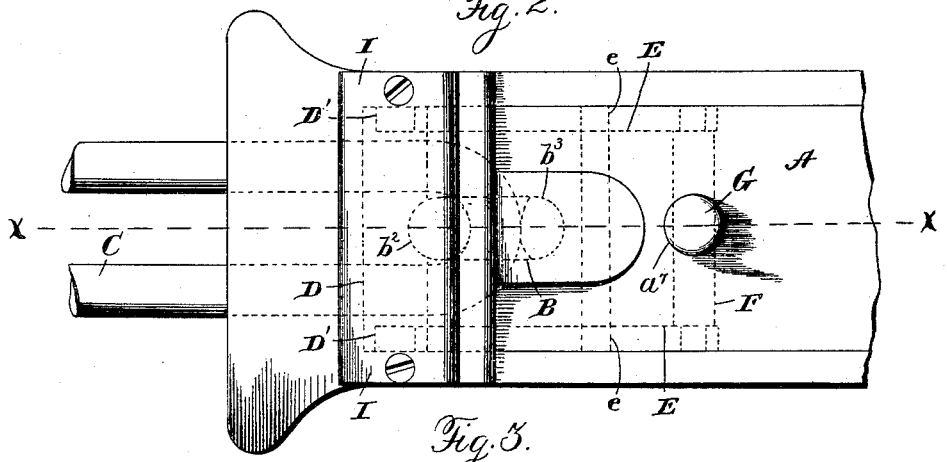
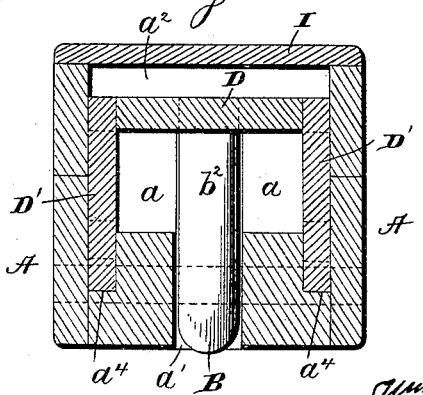


Fig. 3.



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(No Model.) 2 Sheets—Sheet 2.

W. & S. L. CHRISTIAN.

CAR COUPLING.

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Fig. 4.

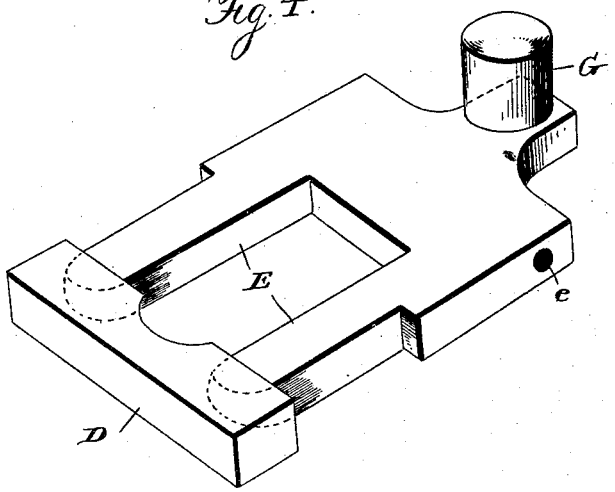
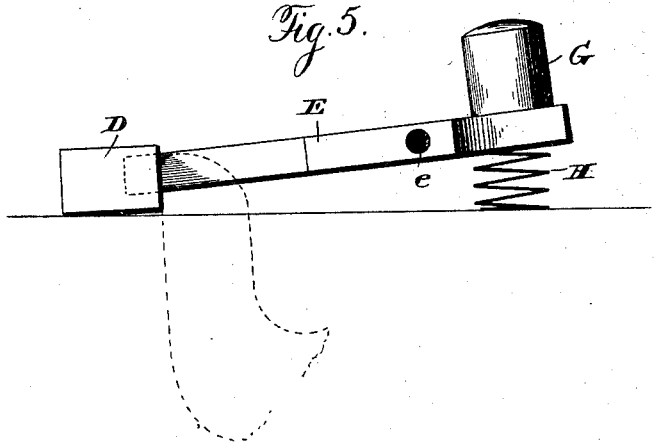


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM CHRISTIAN AND SAMUEL L. CHRISTIAN, OF LANTZ'S MILL, VIRGINIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 454,534, dated June 23, 1891.

Application filed March 25, 1891. Serial No. 386,402. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM CHRISTIAN and SAMUEL L. CHRISTIAN, citizens of the United States, residing at Lantz's Mill, in the county of Shenandoah and State of Virginia, have invented certain new and useful Improvements in Car-Couplers for Use on Railroads; and we 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 longitudinal sectional view on line *x x* of Fig. 2 of our car-coupler; Fig. 2, a plan view of the top of the same; Fig. 3, a cross-section on line *y y*, Fig. 1; Figs. 4 and 5, views of a modified form of our locking and releasing mechanism.

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

Our invention relates to an improvement in car-couplers, the object being to provide a coupler constructed of few parts and designed to automatically engage and lock a link carried by an opposing draw-head, thereby enabling the cars to be automatically coupled, consequently lessening the danger ordinarily encountered in coupling with the ordinary coupler.

A further object is to provide an automatic coupler designed for use with the ordinary link, whereby a car having our improved coupler thereon can be readily and quickly coupled to a car having the ordinary pin-coupler thereon.

With these ends in view our invention consists in the parts and combinations of parts, as will be more fully described, and pointed out in the claims.

In the drawings, A represents a draw-head of usual exterior form, provided with an interior recess *a* for the reception of the common coupling-link, and terminates at its outer end in a rectangular bell-mouth of ordinary form. Mounted loosely within a recess *a'* in the forward portion of the draw-head is the coupling-hook B, which is pivoted and capable of rotation upon the pin *b*. This hook consists of the body portion *b'* and the long and short arms b^2 b^3, respectively, the space between the arms b^2 b^3 forming a semicircular recess, which is adapted to receive and contain the ordinary coupling-link C, as illustrated in the drawings. The coupling-hook when in its locked position rests with its two arms b^2 b^3 upright, the longer arm b^2 being near the outer end of the draw-head, as shown in Fig. 1. For retaining the said coupling-hook in its locked position and releasing it when desired, we employ the following mechanism. In a recess a^2 in the upper forward portion of the draw-head is located a locking-bar D, attached to and depending from each end of which is a bar D', the lower end of each of which is supported upon the draw-head at a^4. Formed within the rear side near the lower end of each depending bar D' is a semicircular recess *d*, into which fits the forward correspondingly-shaped end of a vertically-swinging lever E, fulcrumed at *e* to the draw-head, the two levers E and E being secured at their rear ends to a bar F, located in the recess a^5 in the rear portion of the draw-head. The bar F is of dovetailed shape in cross-section for the purpose of receiving and supporting in position the operating-pin G, that projects from the longitudinal center of said bar up through an opening a^7 in the upper side of the draw-head.

For holding the coupling-hook retaining and releasing mechanism in its locked position, we provide the coiled spring H, the upper coil of which is secured to the under side of the bar F below the operating-pin G, while its lower coil rests within a smaller recess provided in the bottom of the recess a^5 of the draw-head.

For the purpose of putting the several parts of our coupling-hook retaining and releasing mechanism in place, a portion of each side of the draw-head is made removable, as seen in Figs. 2 and 3 of the drawings, and over the recess a^2 is placed a cap-plate I, secured to the draw-head in any desired manner.

With the coupling-hook occupying the position shown by dotted lines in Fig. 1 of the drawings, the long arm b^2 resting in the lower part of the recess *a'* upon the part a^8, with the short arm b^3 projecting above the lower side of the recess *a*, the parts of our device are in position for the insertion of the coupling-

link. When the parts are in this position, the short arm rests in the path of the link entering the draw-head, and the link entering the recess *a* strikes the projecting arm b^3, causing it to rotate upon its pivot until the said arm b^3 comes in contact with the wall a^9 at the rear end of the recess *a*. The long arm b^2 in the above-described movement of the coupling-hook strikes the under side of the locking-bar, which lies in its path, causes it to move upward, and passes beyond it, when instantly, under the pressure of the spring H, the locking-bar and its connecting parts return to their normal positions, the locking-bar, as will be seen in full lines of Fig. 1, securely fastening the coupling-hook in its locked position.

To unlock the coupling-hook and release the coupling-link, pressure is applied to the operating-pin, which movement, through the swinging bars E, raises the locking-bar out of the path of the arm b^2, allowing it to rotate in a forward direction.

By locating the pivot of the hook B at a point approximately in line with the shorter arm b^3 of the hook, as shown in dotted lines, Fig. 1, it will be seen at a glance that as soon as the locking-bar is elevated to release the hook the weight of the link will cause the hook to turn to an unlocked position.

In Figs. 4 and 5 of the drawings we show a modification of our locking and releasing mechanism. In this modified form we connect the swinging levers E directly with the locking-bar D, thus dispensing with the depending bars D′. Obviously, in order to accomplish the above, the swinging levers must be located in substantially the same plane with the locking-bar.

Having thus described our invention, what we claim is—

1. In a car-coupler, the combination, with a draw-head and the pivoted U-shaped hook, of the vertically-sliding horizontal locking-bar and a vertically-operating pin connected to said locking-bar, substantially as set forth.

2. In a car-coupler, the combination, with a draw-head and the U-shaped pivoted hook, of the vertically-sliding horizontal locking-bar, the swinging levers connected to said bar, a cross-bar connecting the swinging levers, and an operating-pin secured to the cross-bar, substantially as described.

In testimony whereof we affix our signatures in the presence of two witnesses.

WM. CHRISTIAN.
SAMUEL L. CHRISTIAN.

Witnesses:
S. E. TOMLINSON,
A. A. HAYES.