(No Model.)

F. W. PARSONS.

CAR COUPLING.

No. 395,402. Patented Jan. 1, 1889.

Fig. 1.

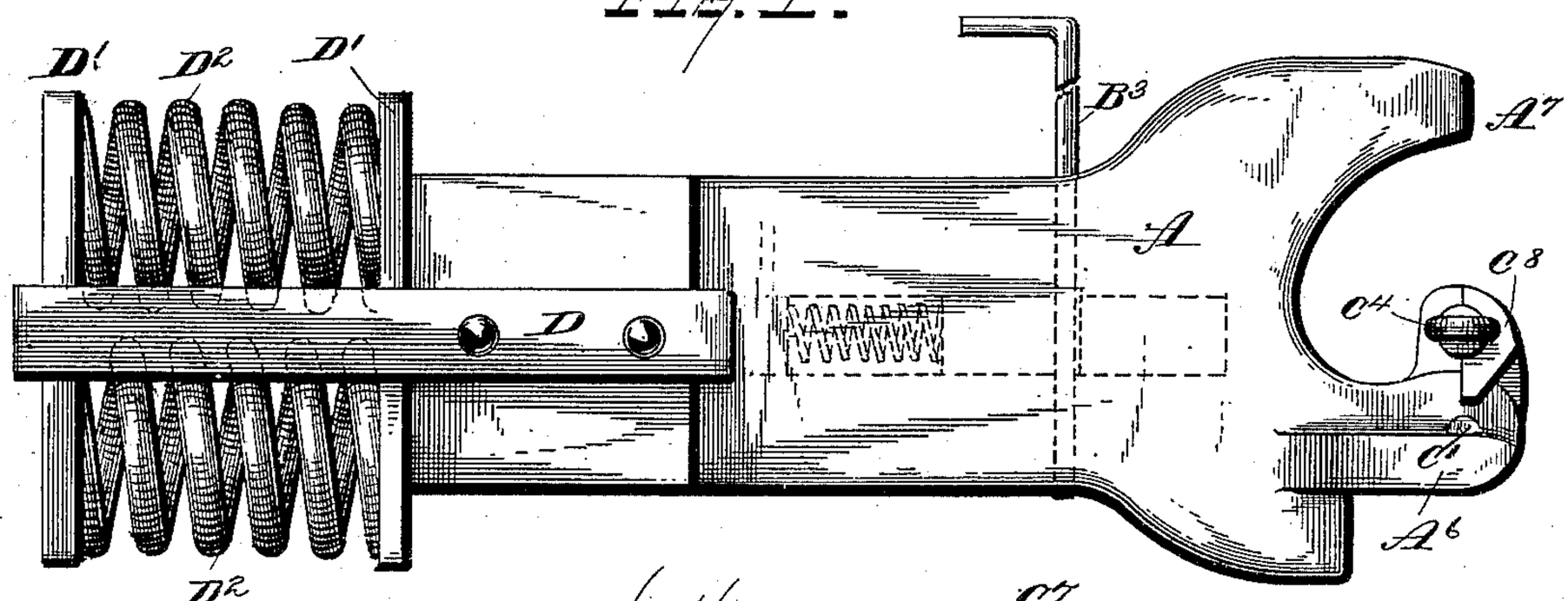


Fig. 2.

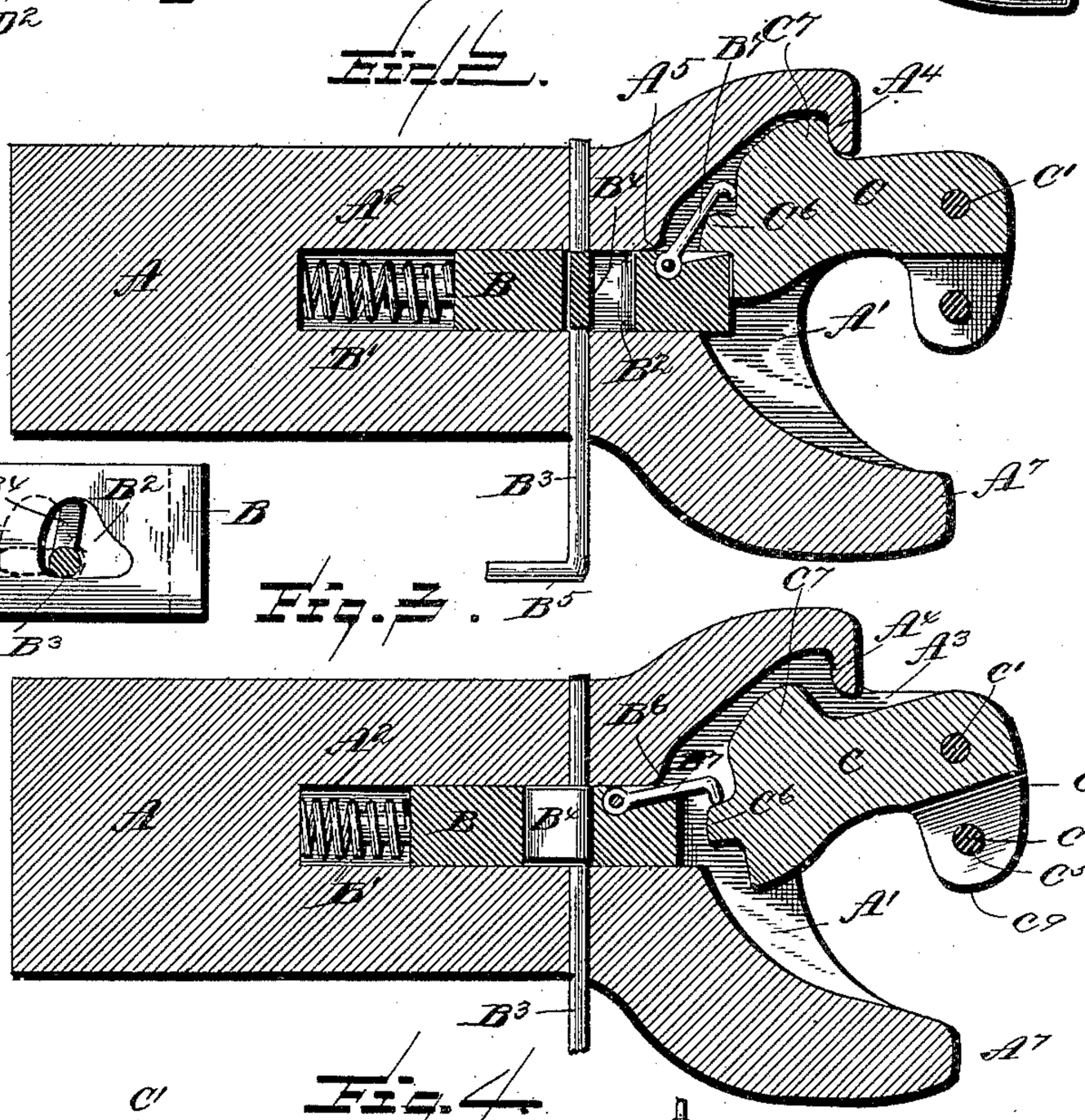


Fig. 5.

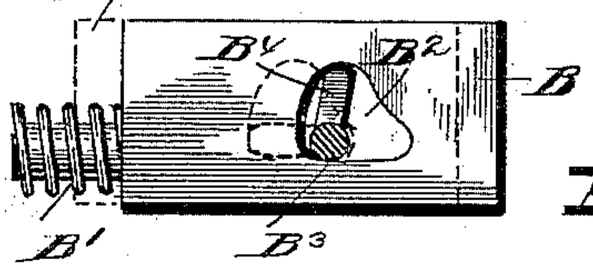
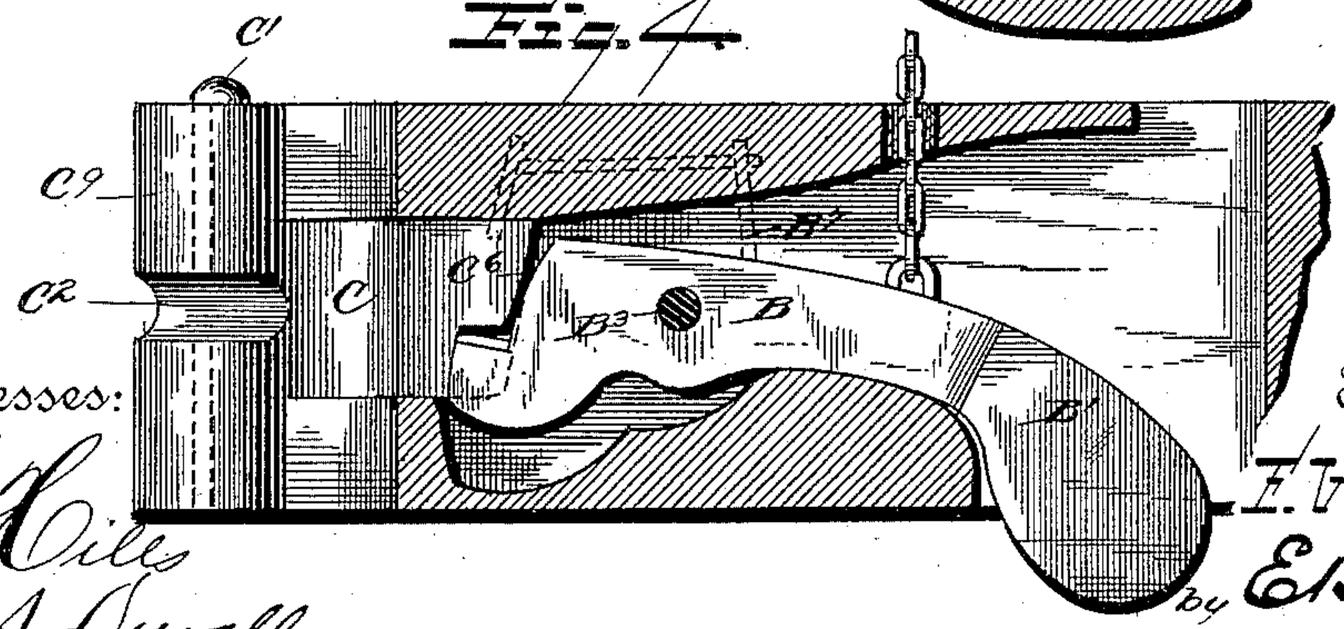


Fig. 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

FRANCIS W. PARSONS, OF PHILADELPHIA, PENNSYLVANIA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 395,402, dated January 1, 1889.

Application filed December 17, 1887. Serial No. 258,201. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS W. PARSONS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to that class of car-couplings known as "twin jaw," and among the objects in view are to provide a coupling of this class the pivoted coupling-jaw of which shall automatically lock or couple with a companion coupling, which may be uncoupled from the side of the car or platform thereof, thus avoiding the necessity of stepping between the cars, and to provide means whereby said coupling-jaw shall be positively uncoupled or set for coupling.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a plan of a car-coupling constructed in accordance with my invention, the parts being in the position assumed when locked or coupled. Fig. 2 is a horizontal longitudinal section of the same, the parts being in the same position. Fig. 3 is a similar view, the parts being in an unlocked or position for coupling. Fig. 4 is a modification of the locking mechanism; and Fig. 5 is a detail in side elevation, hereinafter referred to.

Similar letters of reference indicate like parts in all the figures of the drawings.

A represents the draw-head, which is formed with the locking-chamber A′ at its front end, which communicates with the usual bolt-receiving longitudinal recess, A^2, in which is mounted for movement the locking-bolt B, provided with a coiled spring, B′, which is interposed between the rear end of said bolt and the end of the recess A^2 and serves to throw said bolt to the front, so that the forward end thereof projects into the locking-chamber A′ of the draw-head and into the path of the pivoted or locking jaw, as will be hereinafter described.

The bolt B is formed with a transverse opening, B^2, which is of substantially triangular shape, but which may be of any shape adapted for the purpose, and through said opening, and journaled transversely through the draw-head, is a rock-shaft, B^3, which is formed with a blade, B^4, adapted to work in the opening B^2 in the bolt. The outer end or ends of the rock-shaft B^3 are bent to form operating-cranks B^5, which may extend to the sides of the car or be connected by suitable mechanism—such as, for instance, chains—to the platform thereof. The operation of the rock-shaft and the blade within the opening B^2 of the bolt B is at once apparent by reference to Fig. 5, in that the shaft, being journaled, will, when partially rotated, serve to throw the bolt B to the rear against the tension of the spring B′, and thus withdraw the forward end of said bolt from the locking-chamber A′.

The draw-head A is formed with the two vertically-opposite and parallel forwardly-projecting arms A^3, and between the same and at their outer ends is pivoted the locking or movable jaw C by means of a vertical pin, C′, passing therethrough, and through the arms A^3.

The jaw C is formed with a transverse opening, C^2, at its forward end, the upper and lower walls of which are perforated, as at C^5, for the passage of an ordinary coupling-pin, C^4, which pin is designed to pass through and couple an ordinary link received by the recess C^2 when it is necessary to couple with an ordinary link draw-head. The rear end of the pivoted jaw C is formed with a rearwardly-extending shoulder, C^6, under which the forward end of the bolt B takes when the coupler is in a locked position, as when coupled. In order to remove all strain from the pin C′, and thus obviate undue wear of the pin and its bearings, I form the jaw C with a shoulder, C^7, at one side of and in rear of its pivot, which shoulder, when the jaw is in a locked position, comes against and bears upon a shoulder, A^4, formed at the front or mouth of the draw-head. By these means all strain is transferred from the pin C′ and its bearing to the shoulder A^4.

At that side of the bolt B adjacent to the jaw C, and a slight distance in rear of the

front end thereof, is formed a recess, B^6, in which is loosely pivoted a hook-shaped arm, B^7, the forward or hook end of which extends beyond the forward end of the bolt B and is designed, when the pivoted jaw is in a locked position, to bear against the rear end thereof. The object of this hook-shaped lever is to promptly and positively swing the pivoted jaw to the front to the position for coupling after the same has been released from its locked position with the bolt.

In the operation of coupling, an approaching draw-head having an opposite pivoted jaw comes in contact with the outwardly-swung jaw C, which lies across the mouth of the draw-head, and is held against closing and locking by any slight jarring by the bolt B, which bears against the shoulder C^7, its further forward swinging movement being arrested by means of the stop C^8 upon the jaw C coming in contact with a suitable stop, as A^6, upon the head A. In this position the two approaching heads come in contact with each other, the knuckles C^9 of the two jaws C, striking each opposite jaw C about midway and forcing the same to swing rearwardly upon their pivots until the shoulder C^7 comes in contact with the shoulder A^4 of the draw-head and the shoulder C^6 of the jaw has passed by the end of the bolt B. When in this position, the two knuckles of the opposite jaws will have interlocked, and be prevented from withdrawal without being released by the locking mechanism by reason of the fixed opposite jaws A^7. In this position all strain is, as before stated, upon the shoulders C^7 A^4, and not upon the pin C′ of the jaws.

Referring more particularly to Fig. 2, in which the parts are shown as coupled, it is apparent that by turning or partly rotating the shaft B its blade B^4, by reason of the peculiarly-shaped slot B^2 in which it is seated, will cause the bolt B to be withdrawn from contact with the shoulder C^6. As the bolt B recedes within its recess, the shoulder A^5, formed at the juncture of the two recesses A′ A^2, meets the pivoted hook-shaped lever B^7 and forces the hooked end thereof down upon the inner face of the shoulder C^6, whereby the jaw is positively forced and swings to the front and the couplers disconnected, as clearly shown in Fig. 3.

Referring more particularly to Fig. 1, D represents a bail the ends of which are secured to the rear end of the draw-head A, and within the bail are arranged opposite plates D′, interposed between which are twin springs D^2, thus forming an efficient shock compensating or relieving buffer.

In Fig. 4 I have illustrated a modification of my invention. In this modified form I pivot the bolt B and weight the rear end thereof, thus doing away with the spring B′, and operate said bolt upon its pivot by means of a chain. As shown by dotted lines in said figure, I may mount an arm rigidly upon the pivoted bolt and in rear of its pivots, said arm extending forwardly and against the pivoted jaw C, so that when the bolt is raised at its rear end to unlock the pivoted jaw the forward end of the arm will be moved forward and positively eject the jaw. As a further means of positive ejectment of the pivoted jaw C, I may pivot the same in a slanting line, (see dotted lines,) in which case, when the jaw is released from confinement by the bolt, the same will swing out by gravity alone. These means, however, I do not consider as efficient and positive as in the instance first described.

Having described my invention and its operation, what I claim is—

1. In a car-coupling of the class described, the combination of a fixed jaw and a movable jaw with a locking-bolt arranged in rear of said movable jaw, and a pivoted arm mounted on said bolt and bearing on said movable jaw, substantially as specified.

2. In a car-coupling of the class described, a pivoted jaw having a shoulder at its rear end, in combination with a slotted spring-seated bolt and a rock-shaft provided with a blade seated in said slot and adapted to operate said bolt, substantially as specified.

3. The combination of the draw-head A, having the jaws A^7, arms A^3, and recesses A′ A^2, with the jaw C, pivoted, as at C′, in said arms and having the shoulders C^7 C^6, the bolt B, mounted in the recess A^2 and having a spring, B′, and slotted, as at B^2, and the shaft B^3, having the blade B^4, passing through said slot and adapted to actuate the bolt, substantially as specified.

4. The combination of the head A, having the recesses A′ A^2, fixed jaw A^7, the shoulders A^4 A^5, the arms A^3, carrying the pivoted jaw C, formed with the shoulders C^6 C^7 and knuckle C^9, and with the bolt B, mounted in said slot, having the spring B′, opening B^2, and pivoted arm B^7, and the shaft B^3, having the blade B^4, entering said slot and adapted to actuate the bolt, substantially as specified.

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

FRANCIS W. PARSONS.

Witnesses:

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