

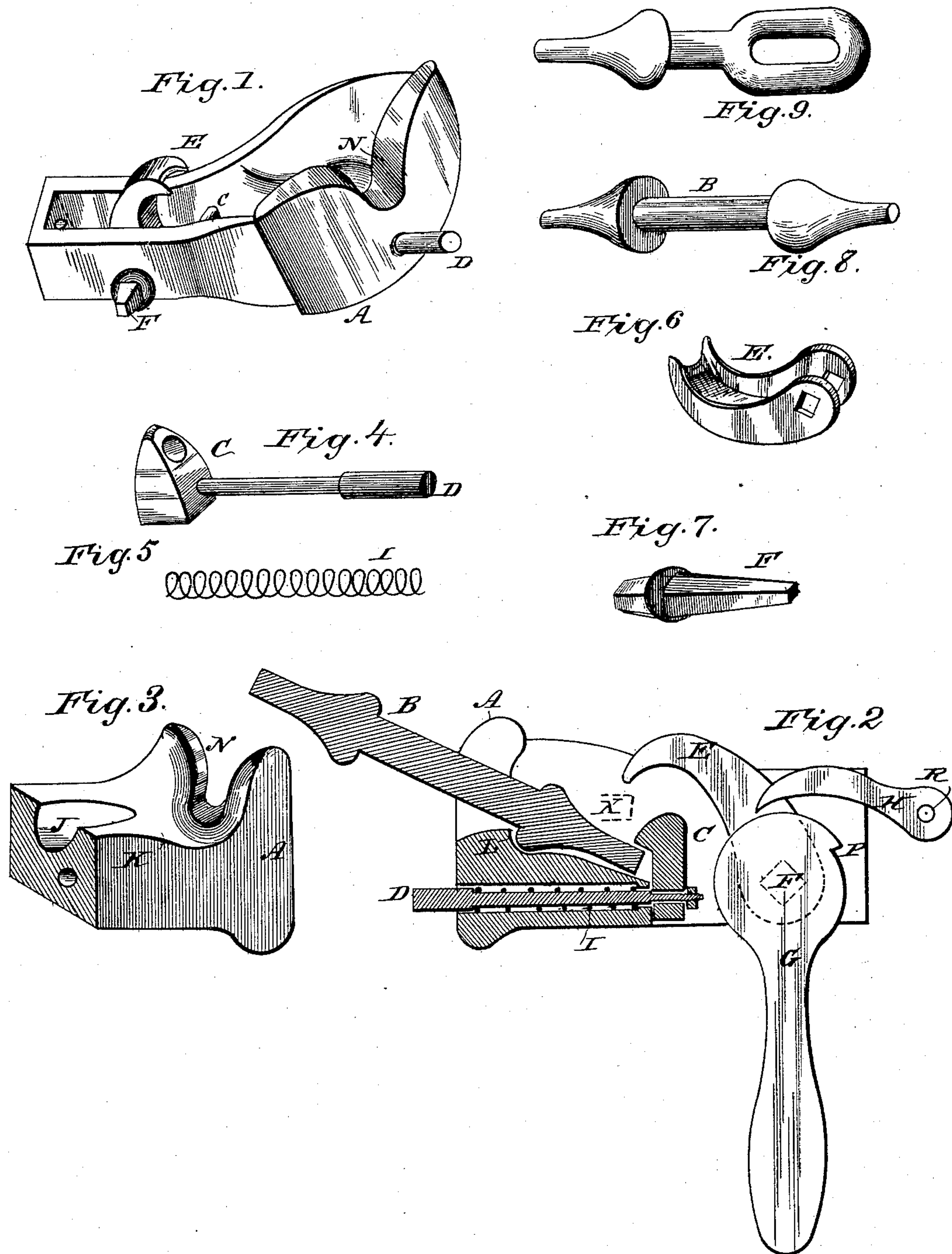
(No Model.)

T. D. DAVIS.

CAR COUPLING.

No. 327,387.

Patented Sept. 29, 1885.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 327,387, dated September 29, 1885.

Application filed June 1, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, THEODORE D. DAVIS, a citizen of the United States, residing at Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification. My invention relates to couplings for railway-cars, and the objects of my improvements are to provide cars with automatic couplings that will be positive in their action and absolutely certain to operate, and which can be uncoupled without going between the cars; and the invention consists, first, in providing draw-heads of car-couplings with a draw-bar that operates in a vertical plane, in connection with draw-heads having open tops and bell-shaped or flaring sides, whereby the force of gravity may be employed in placing the draw-bar in position when coupling; second, in the peculiar construction and arrangement of the devices for holding the draw-bar in position to couple, and in the manner of releasing the same; also, in the manner of uncoupling, as more fully hereinafter described.

In the accompanying drawings, forming a part of this specification, Figure 1 is a perspective view of a draw-head; Fig. 2, a longitudinal vertical central elevation of a draw-head with the draw-bar in position to couple; Fig. 3, a perspective of the inside of the front portion of the draw-head, shown as far as the arrow under the latch C in Fig. 2; Fig. 4, a perspective of the latch for holding the draw-bar in position; Fig. 5, the spring for securing the latch; Fig. 6, a perspective of the lever for operating the draw-bar; Fig. 7, a view of the spindle; Fig. 8, a perspective of the draw-bar, and Fig. 9 a perspective of a draw-bar for use in coupling with the ordinary draw-head.

The draw-head is made externally of the ordinary length and width, to adapt it to cars now in use, and is attached to the plates of the buffer-spring in the usual manner. It may be of wrought, cast, or malleable iron or steel. A slot or aperture, N, is made in the front wall of the head, the bottom being semicircular, the sides extending upward a portion of its height in parallel lines, then tapered or flared to the outer edge of the face, the top being open, as shown, the sides of the slot forming ledges or flanges against which the draw-bar

pulls. The front portion of the head is enlarged and flanged to buff against, and its interior is chambered for the reception of the enlarged end of the draw-bar. The side walls of the chamber are beveled to an edge at the top. These and the flaring edges of the slot in the front wall are wide enough to catch the end of the draw-bar when it drops if the draw-heads are in an oblique position when they come together, and will guide the draw-bar into the slot when released from the latch C.

The draw-bar B is of the required length between the shoulders to allow for the slack necessary, and provided at each end with an oval or pear-shaped head and shank, and is kept in position to couple by the latch C, which is operated by the rod D, to which it is secured by a nut, as shown. The rod is enlarged at its outer end and extends outside in front of the face of the draw-head, for the purpose hereinafter described. The aperture in which it slides extends the full size of the end of the rod, nearly through the bed of the head.

A spiral spring, I, Fig. 5, surrounds the small portion of the rod, maintaining a constant pressure against the shoulder of the same, holding the latch C always in the position shown in Fig. 2, except when pressure is made against the end of the rod. The rod is placed at one side of the vertical center of the head in order that the rod in the opposite head will not strike it when the heads buff together. The latch C is kept in line by being made wide enough to nearly fill the opening between the walls of the draw-head in which it moves.

In coupling, the draw-bar being in the position shown in Fig. 2, the outer elevated end is carried over the front wall of the opposite draw-head as the cars come together, the head striking the end of the rod D, and forcing it into the aperture, carrying the latch away from the shank, when the elevated end of the draw-bar will drop into the chamber, the tapered walls of the slot N and the shoulder of the enlarged end or head of the bar abutting against the inside wall or flange of the head when the engine moves forward.

The device for uncoupling is shown in Fig. 2, in which the lever E, placed between the walls of the draw-head, is operated by the spindle F. The end of the lever is rounded



on its edge and tapered longitudinally, and its center of motion so placed that if the shank of the draw-bar strikes it when uncoupling it will oscillate on its spindle and allow it to pass. The lever has a semi-circular opening, S, (shown in Fig. 6,) which covers and embraces the shank of the bar when uncoupling. The walls at the front end are tapered from the center to their edges at T, and when pressed on the shank will bring it to a central longitudinal position. The lever is operated by the handle G, placed at the side of the car, the handle being attached to the end of a transverse shaft, the opposite end of which is connected with the projecting end of the spindle F by a loose-fitting socket, or in any manner that will permit a longitudinal movement of the draw-head. The handle is free to swing, but its movement may be limited, if desired, by a notch in its upper edge, in which the pawl H may engage.

The operation of uncoupling is as follows: The draw-heads being jammed together will strike the ends of the rods D, pushing them into the draw-heads, carrying the latches C C in each head inward as far as the slack of the bar B requires when all in one end, when either end of the draw-bar may be lifted out of its chamber by moving the handle G in the direction of the arrow, when the end of the lever E will embrace and cover the shank of the draw-bar in whatever position it may happen to be at the time, forcing it down into the recess shown at J, Fig. 3, and elevating the opposite or free end, when the cars may be pulled apart. The latches C C will then be free to move and will assume their normal position, the latch in the head containing the draw-bar covering the end of the shank when the handle G is dropped, and the coupling is again in position to be operated by the opposite car.

When desired to jam the cars together without coupling, the pawl H may be left in the notch P, holding the end of the lever E in contact with the shank, the latch C then being free to move away from the shank of the draw-bar without releasing the end of the bar when the rod D is pushed in by the opposite draw-head.

If desired, a handle may be placed on the opposite side of the car, and the cars uncoupled from either side, the pawl H being attached to a rod extending across the car,

and provided with a handle by which it may be operated. A vertical rod and handle may also be connected with the transverse shaft that operates the lever, whereby the uncoupling may be effected from the platform or top of the car.

The bed of the chamber of the draw-head on which the enlarged head of the draw-bar slides is inclined longitudinally, as shown at K, Fig. 3, and when the cars come together the shank of the draw-bar will be carried up the incline over the latch, the front or face of which is inclined, as shown, and will also insure the action of the draw-bar when in any position longitudinally, as it will easily slide down the inclined bed K into its seat when pressure is brought to bear on it by the lever E.

The rear of the front wall or flange of the draw-head against which the draw-bar pulls is inclined or curved backward, more or less, as shown in Fig. 2, which will insure the seating of the bar when the slack is taken up by the engine going ahead, and will also admit of a considerable variation in the heights of the draw-heads.

Fig. 9 represents a draw-bar for use in coupling with the ordinary couplers.

I claim—

1. The combination, substantially as before set forth, of the draw-head open on top, the draw-bar, the latch for holding the draw-bar in an inclined position ready for coupling, the latch-rod, and the spring.

2. The combination, substantially as before set forth, of the draw-head open on top, the draw-bar, the spring-latch, and a lever for uncoupling the draw-bar.

3. The combination, substantially as before set forth, of the draw-head open on top, the draw-bar, the spring-latch, a lever for uncoupling the draw-bar, and a pawl for locking the said lever to prevent the draw-bar from coupling notwithstanding its release from the spring-latch.

4. The combination, substantially as before set forth, of the draw-head open on top, and provided with incline K, the shouldered draw-bar, the spring-latch, and a lever for uncoupling the draw-bar.

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