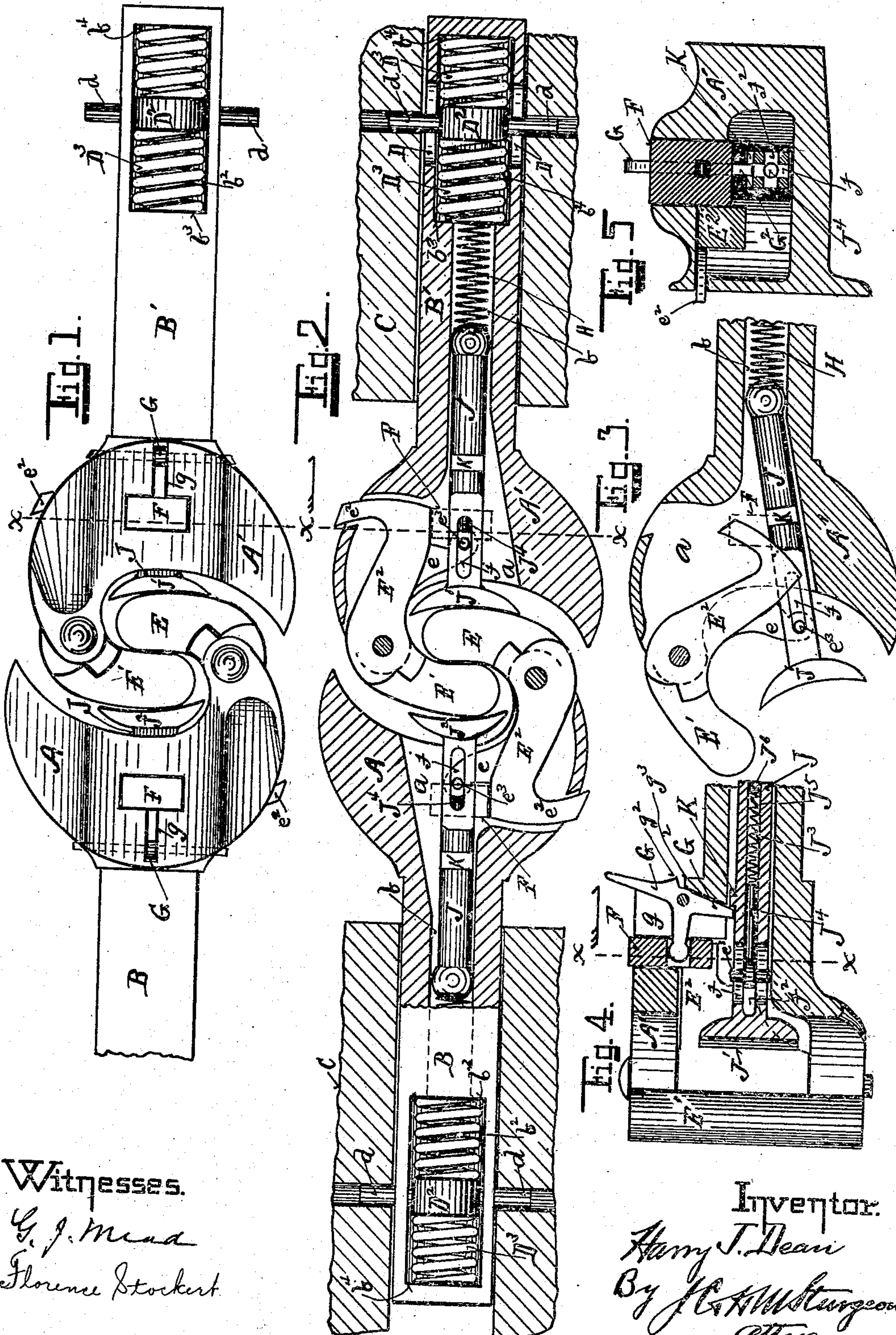


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CAR COUPLING.

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# UNITED STATES PATENT OFFICE.

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## CAR-COUPLING.

937,023.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed April 9, 1908. Serial No. 426,065.

*To all whom it may concern:*

Be it known that I, HARRY J. DEAN, a citizen of the United States, residing at Meadville, in the county of Crawford and State of Pennsylvania, have invented certain new and useful Improvements in 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, and to the letters of reference marked thereon, forming part of this specification.

My invention relates generally to car-couplers, and particularly to that class thereof known as the "Janney" type.

The objects of my invention are to provide a car-coupler with mechanism whereby when the unlocking mechanism on one half of a coupler is operated to unlock it, the other half of the coupler coupled thereto will automatically become unlocked, and the interlocking knuckles on each half will remain open until another coupling knuckle is thrust into place therein.

Another object is to provide a locking mechanism which will stay locked as long as the coupling knuckles grasp each other, and when they do not so grasp each other, to become unlocked and the knuckles remain open until the couplers are again pushed together.

Another object of my invention is to provide a yielding draft mechanism between the coupler mechanism and the body of the car.

These and other features of my invention appear hereinafter in the specification and claims, and are illustrated in the accompanying drawings, in which:

Figure 1 is a top or plan view of a car-coupler embodying my invention. Fig. 2 is a horizontal section of the same. Fig. 3 is a like view of one portion of said coupler, showing the same unlocked and open. Fig. 4 is a longitudinal central section of the same. Fig. 5 is a cross-section of the same on the line  $x-x$  in Figs. 1, 2 and 4.

In these drawings A and A' are duplicate car-coupler bodies, and B and B' are the draw-bars by which they are attached to the car-bodies C. The duplicate portions of my coupler are, in this description given different reference characters (as A and A') for convenience in describing the operation

of the coupler. But as they are exact duplicates of each other a description of the construction of one portion thereof is sufficient, without definite reference to the other portion of the coupler. I will therefore proceed to describe the construction of one half, giving to like parts in the duplicate half like letters of reference with the prime (') mark to distinguish them in the description of the operation hereinafter given.

The body A and draw-bar B of my improved coupler is provided with a central opening  $a$  and  $b$ , extending backward from the front of the coupler to the rear end of the draw-bar B where it terminates in a recess  $b^2$  somewhat larger in cross-section than the opening  $b$ , the portion of the central opening  $a$  is enlarged so as to receive the mechanism hereinafter described. At the front end of the recess  $b^2$  there is a shoulder  $b^3$  and the rear end  $b^4$  of the recess  $b^2$  is closed. In the sides of the recess  $b^2$  I provide slots D (see Fig. 2). Within the recess  $b^2$ , I place a block  $D^2$ , with trunnions  $d$  passing outward through the slots D in the side walls of the recess  $b^2$ , the trunnions  $d$  being intended to be secured in the underframing C of the car in any suitable manner. Within the recess  $b^2$  on each side of the block  $D^2$  I place a coil spring  $D^3$  of sufficient resistance to form a suitable resilient draft mechanism for the coupler, which will allow of a limited movement of the draw-bar in the car frame.

The coupler A has a knuckle E pivoted in one side thereof in the usual manner. This knuckle is provided with an arm  $E^2$  which is substantially at a right angle thereto and extends backward into the coupler body A a sufficient distance to be engaged by the lock-bar F (see Figs. 1, 4 and 5 and in broken lines in Figs. 2 and 3), located in a vertical slot in the coupler body. For operating this lock-bar F to unlock the coupling, I provide a bell-crank lever G which is pivoted in the coupling body in a slot  $g$  therein, said lever G being provided with a shoulder  $g^2$  adapted to engage a shoulder  $g^3$  on the body of the coupling for the purpose of limiting the movement of the lever G and lock-bar F. The arm  $E^2$  of the knuckle E is provided with an arm  $e$  on the front side thereof, and with an arm or plate  $e^2$  on the rear side thereof. Within the opening  $b$  in the draw-bar B I place a coil-spring H



which extends through the central opening in the coil-spring  $D^3$  and rests against the block  $D^2$ . I then place in the opening  $b$  a hollow bar  $J$ , having on the front end thereof a head  $J^2$ . Just back of the head  $J^2$  the bar  $J$  is provided with a vertical slot  $j$  and with a horizontal slot  $j^2$  each of which is parallel with the central opening  $J^3$  in the bar  $J$ . The arm  $e$  on the arm  $E^2$  of the knuckle is placed within the horizontal slot  $j^2$ , and a pin  $e^3$  is secured in an opening in said arm  $e$ , the ends of said pin  $e^3$  extending vertically through the slot  $j$  in the bar  $J$ . Within the central opening in the bar  $J$  and bearing against the arm  $e$  in the slot  $j^2$  I place a short rod or pin  $J^4$ , and back of the rod  $J^4$  I place a coiled spring  $J^5$  which is secured in said opening by means of a screw plug  $J^6$ . On the upper side of the bar  $J$  I provide a shoulder  $K$  adapted to engage the extension  $G^2$  of the lever  $G$ . The object of the spring pressed pin  $J^4$  and spring  $J^5$  in the bar  $J$  is to permit the bar  $J$  to slide forward far enough to cause the lever  $G$  to raise the lock-bar  $F$  before the bar  $J$  forces the knuckle  $E$  open, the knuckle  $E'$  remaining closed while the spring  $H$  in the draw-bar forces the rod  $J$  forward, thereby compressing the spring  $J^5$  until the shoulder  $K$  on the rod  $J$  operates the lever  $G$  to raise the lock-bolt  $F$ , and thereby to permit the springs  $H$  and  $J^5$  to throw open the knuckle  $E$ .

In operation when it is desired to unlock my improved coupler the lever  $G$  in the coupler  $A$  is forced backward to raise the lock-bar  $F$  so that the arm  $E^2$  of the knuckle may pass under it, and when the lever  $G$  is released while the knuckle is open the lock-bar  $F$  rests upon the arm or plate  $e^2$  which also prevents the lever  $G$  returning to its locked position until the lock-bar  $F$  again falls in front of the arm  $E^2$ . When the knuckle  $E$  is opened and slides out of the grasp of the knuckle  $E'$  the spring  $H$  in the draw-bar  $B'$  will force the bar  $J$  in the coupler  $A'$  forward until the shoulder  $K$  thereon contacts with the extension  $G^2$  on the lever  $G$  and forces it forward thereby raising the lock-bar  $F$  of the coupler  $A'$  up, and allowing the knuckle  $E'$  to be thrown open by the action of the spring  $J^5$  behind the bar  $J^4$ , when the coupler sections  $A$  and  $A'$  will remain in the position shown in Fig. 3. When, however, the sections  $A$  and  $A'$  are again brought together, the knuckle  $E$  will contact with the head  $J'$  of the bar  $J$  in the coupler  $A'$ , and the knuckle  $E'$  will contact with the head  $J^2$  of the bar  $J$  in the coupler  $A$ , and as the two are pressed together the respective bars  $J$  will be forced backward into the coupler bodies, and close the knuckles  $E$  and  $E'$  into grasping or interlocking position, as shown in Fig. 1, and the locking bars  $F$  will fall in front of the

arms  $E^2$ , and thereby securely lock them in that position, as long as the knuckles are interlocked.

It will thus be seen that I have constructed a coupler, each half of which will stay closed and locked as long as the other half is interlocked therewith, but which will instantly unlock and open when the opposing half thereof becomes disengaged therefrom from any cause whatever.

Having thus fully shown and described my invention so as to enable others to construct and use the same, what I claim as new and desire to secure by Letters-Patent is:

1. The combination in a car coupler of a coupler body, a coupler knuckle pivoted thereto, locking mechanism adapted to retain said knuckle in a closed position, a lever adapted to operate said locking mechanism, an extension on said lever, a hollow spring actuated slide-bar having horizontal and vertical slots therein, a shoulder on said bar adapted to engage the extension on said lever, a spring actuated pin within said slide-bar, an arm on said knuckle the free end of which extends into the horizontal slot in said slide-bar and is engaged by said spring actuated pin, and a pivot pin passing through said vertical slot and secured in said arm, substantially as set forth.

2. The combination of a coupler body, a coupler knuckle pivoted thereto, a horizontally extending arm thereon, locking mechanism adapted to retain said knuckle in a closed position, lever mechanism adapted to operate said lock, a hollow spring actuated slide-bar having horizontal and vertical slots therein adapted to be engaged by the knuckle of another coupler and be pressed backward thereby, a spring actuated pin within said hollow slide-bar, an arm on said knuckle the free end of which extends into the horizontal slot in said slide-bar, a pivot pin secured in said free end of said forwardly projecting arm and extending into said vertical slot, a shoulder on said slide-bar, an arm on said lock operating lever adapted to be engaged by said shoulder, substantially as set forth.

3. The combination in a car coupler, of a coupler body, a coupler knuckle pivoted therein, a spring actuated bar adapted to throw the knuckle back when it is unlocked and retain it in that position, locking mechanism adapted to lock said knuckle in a closed position, a lock operating lever adapted to be engaged by said spring actuated bar to operate said lock, and a shoulder on the coupler body adapted to limit the movement of said lever, substantially as set forth.

4. The combination in a car coupler section of a coupler body, a coupler knuckle pivoted therein, locking mechanism for retaining said knuckle in a closed position, a spring actuated bar adapted to disengage



5 said locking mechanism, swing said knuckle open and retain it in an open position when said coupler section is disengaged from another coupler section, substantially as set forth.

10 5. The combination in a coupler section, of a coupler body, a coupler knuckle pivoted therein, mechanism for locking said knuckle in a closed position, and a spring actuated bar adapted to release said knuckle, swing it open and yieldingly retain it in such unlocked open position until another coupler section contacts with said coupler section, substantially as set forth.

15 6. The combination of duplicate car coupler sections, each comprising substantially a coupler body, a coupler knuckle pivoted therein, means for locking the coupler knuckle in a closed position, a spring actu-

ated bar adapted to disengage the knuckle 20 locking mechanism, and operating, when the couplers move apart to automatically release and open the coupler knuckle on each coupler section and yieldingly retain the knuckle on each section in such unlocked open position 25 until the coupler sections are again brought together when the knuckle locking mechanism of each coupler section automatically operates to lock the knuckle on each coupler section in a closed position as long as the 30 two knuckles grasp each other, substantially as set forth.

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

HARRY J. DEAN.

Witnesses:

W. K. DEAN,  
JNO. R. DEAN.