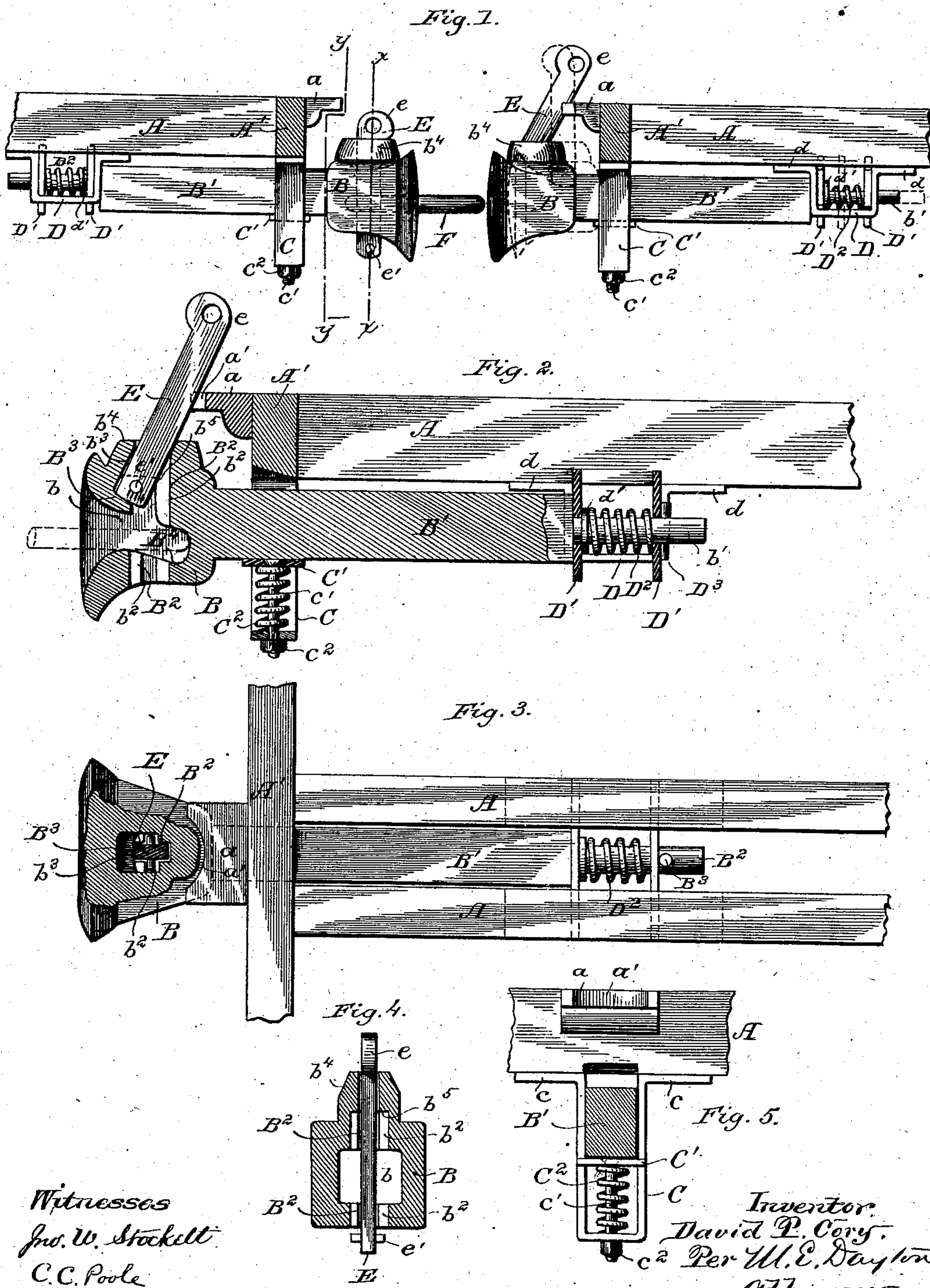


(No Model.)

D. P. CORY.  
CAR COUPLING.

No. 289,985.

Patented Dec. 11, 1883.





# UNITED STATES PATENT OFFICE.

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## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 289,985, dated December 11, 1883.

Application filed July 2, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID P. CORY, of Con-  
secon P. O., in the county of Prince Edward  
and Dominion of Canada, have invented cer-  
tain new and useful Improvements in Car-  
Couplings; and I do hereby declare that the  
following is a full, clear, and exact description  
thereof, reference being had to the accompany-  
ing drawings, and to the letters of reference  
marked thereon, which form a part of this  
specification.

This invention relates to an improvement in  
automatic coupling devices for cars. Its ob-  
ject is to provide an improved construction in  
such devices intended to be prompt and cer-  
tain in action, and adapted to be readily ap-  
plied to cars as ordinarily constructed.

To these and other ends that will appear the  
invention consists in the matters hereinafter  
described, and pointed out in the claims.

In a car-coupling embodying my invention  
the draw-head is preferably of the general  
form of those ordinarily used, having an end  
opening for the admission of the link and a  
vertical aperture for the coupling-pin. The  
draw-bar is connected to the car so as to yield  
backwardly when the cars are brought together  
in the act of coupling, and like those com-  
monly in use may be also adapted to draw  
outward from its normally advanced position  
when subjected to pulling strain. In the draw-  
head the portion of the aperture for the coup-  
ling-pin above the link-opening is provided  
with an offset or projection constructed to sup-  
port and retain the coupling-pin elevated and  
in a position with its upper end inclined to  
the rear, or toward the body of the car, the  
aperture for the coupling-pin being otherwise  
so constructed that when the pin is thrown  
into a vertical position the lower end thereof  
will be released from said support, and the  
pin will descend into position for holding the  
link. A stationary part, usually a notched  
projection placed upon the end of the car  
above and adjacent to the draw-head, is ar-  
ranged to engage the upper end of the coup-  
ling-pin when the draw-head is forced back-  
ward by the forcible contact of the cars in  
coupling, so that the pin will be thrown into  
a vertical position, and thus disengaged from

the support mentioned, and allowed to de-  
scend by gravity through the end of the link in  
the draw-head.

Other features of improvement having ref-  
erence to the form of the link-opening and its  
effect in facilitating the desired action of the  
coupler in operation, and still others relating  
to the spring-support of the draw-head, will be  
hereinafter more fully explained.

In the accompanying drawings, Figure 1 is  
a side elevation of a car-coupling constructed  
in accordance with my invention. Fig. 2 is a  
vertical longitudinal section of the draw-head.  
Fig. 3 is a plan view of the same. Fig. 4 is  
a section of the draw-head, taken upon line *x*  
*x* of Fig. 1. Fig. 5 is a section taken upon  
line *y y* of Fig. 1.

A A are two longitudinal frame-pieces of a  
car, and A' is one of the transverse end tim-  
bers thereof.

B is a draw-head upon a draw-bar, B', which,  
as here shown, is supported by spring-con-  
nections, which permit said draw-head to yield  
both longitudinally and vertically, as will be  
hereinafter more fully described. As a pref-  
erable construction, the draw-bar B', at its  
rear end, is provided with a rearwardly-di-  
rected projection, b', fitted to apertures in the  
plates D', which are supported movably by and  
between two parallel loop-straps or brackets,  
d, secured one to each of the frame-pieces A  
in the position shown. Between the plates D' D'  
is interposed a coiled spring, D<sup>2</sup>, and a pin,  
D<sup>3</sup>, exterior to the rearmost plate, confines  
said plates and spring in place. By these  
means the draw bar and head are held in a po-  
sition from which they are moved backward  
or forward, according as outward strain or in-  
ward pressure is applied to said bar or head.  
The draw-bar, near the head, is confined in a  
fixed loop-strap, C, embracing the bar and de-  
pending a few inches below the bar, in the  
lower portion of which is located a coiled  
spring, C<sup>2</sup>, that upholds the bar. The ex-  
pansive movement of the spring C<sup>2</sup> is limited  
by a bolt, c', inserted through a plate, C', above  
the spring, and passing downward through  
the interior of the spring and loosely through  
the lower horizontal part of the strap C', be-  
neath which it is provided with a nut, c<sup>2</sup>. The



plate C' is constructed to project both in front and rear of the strap or bracket C, so as to maintain the spring in an upright position while the draw-bar slides thereon. The object of the construction last described is to sustain the draw-bar in a normally horizontal position, but to allow it to be depressed when the car having said bar is connected with another car having a less elevated draw-head.

The draw-head B is provided with the bell-mouthed opening or recess *b*, for the entrance of a coupling-link, F, of ordinary construction, and with a vertical aperture, B<sup>2</sup>, for the insertion of a coupling-pin, E. The walls of the aperture B<sup>2</sup> are upwardly extended at the top of the draw-head, as shown at *b*<sup>1</sup>, Fig. 2, so as to give more than ordinary length to the portion of the said aperture B<sup>2</sup> above the link-opening *b*. In the front wall of said upper portion of the aperture is formed a recess, *b*<sup>3</sup>, to allow the pin E to be tilted and supported in the rearwardly-inclined position, (shown in Fig. 2,) with its lower end resting upon the bottom surface, B<sup>3</sup>, of the said recess, and its rear surface resting against the top and rear edge of the aperture B<sup>2</sup>. Upon the end piece, A', of the car-frame, when having the relative position shown, is fixed a projecting part, *a*, the front edge of which proximates the pin E when said pin is supported in the rearwardly-inclined position described, so that when the draw-head is forced inwardly by contact with the opposing draw-head of another car at the time that the cars come together in the act of being coupled the bolt will strike against the projection *a* and will be thrown forward into a vertical position. In this operation the lower end of the pin is obviously swung off the supporting projection B<sup>3</sup>, and the pin is allowed to fall through the head and through the link introduced from the adjacent car.

The projection *a* may manifestly be so placed as to furnish the rear support for the upper end of the pin E, instead of providing such support in the draw-head; but the construction shown is considered preferable for obvious reasons. The front edge of the projection *a* is notched, as shown at *a*' in Figs. 2, 3, and 5, so as to hold the upper end of the pin from lateral movement, such construction being especially desirable when an ordinary round pin is used, instead of a pin in the form shown in the drawings.

The support or rest B<sup>3</sup>, although shown in the drawings as forming the lower wall of a recess, *b*<sup>3</sup>, formed in the draw-head, may be constructed in any other desired or preferred manner. It may, for instance, be a separate cross piece or bar placed in the proper position to hold the end of the pin, as in the case of an open or skeleton draw-head; or it may be constructed to engage a projection upon the edge of the pin instead of its end; or the same result may be obtained by projections upon the side walls of the draw-head openings constructed to engage lateral projections upon the pin.

The coupling-pin E is provided, as shown in the drawings, at its lower end with lateral projections formed by a pin, *e*', thrust through the coupling-pin, for the purpose of preventing the removal of the said pin from the draw-head, the aperture B<sup>2</sup> having grooves *b*<sup>2</sup> in its lateral faces, as shown more plainly in Fig. 3, to permit the vertical passage of the said projections *e*'. The said grooves *b*<sup>2</sup> terminate at a point slightly above the ledge or support B<sup>3</sup>, as indicated in dotted lines at *b*<sup>2</sup>, Figs. 2 and 4, and are extended into the sides of the recess *b*<sup>3</sup>, so as to permit the pins *e*' to enter said recess when the lower end of the coupling-pin is thrown forward upon the said support. The pins *e*' described are not essential to the main features of my invention, and other well-known devices may be used to prevent the entire withdrawal of the pin; or such devices may be dispensed with and a loose coupling-pin of the ordinary construction used; or the coupling-pin may be attached by a chain to the car in order to prevent its being lost or misplaced.

For the purpose of supporting a link placed in the draw-head previous to coupling in a substantially horizontal position, and so that its projecting end will be in position to enter an opposite draw-head when two cars come together, the upper wall of the link-opening *b* in the draw-head is downwardly and rearwardly inclined, the inner portion of said wall being so arranged with reference to the lower surface of the said aperture that the inner end of a link placed in the aperture will rest against the top surface thereof, and its outer end will thereby be supported in a horizontal position. (Shown in Fig. 2, in which the link is indicated in dotted lines.) The lower wall or floor of the aperture *b* is also downwardly and rearwardly inclined, as shown at B<sup>4</sup>, Fig. 3, so that the inner end of the link will be free to move downwardly, and thereby permit the outer end thereof to be lifted so as to enter a draw-bar placed at a higher level. In the construction of the draw-head described downward movement of the outer end of the coupling-link is provided for by the spring C<sup>2</sup>, which supports the outer end of the draw-bar in the bracket C.

The spring-connection between the rear end of the draw-bar and the car-frame is, preferably, constructed as shown, in order to permit the said draw-bar to yield longitudinally in both directions, or to allow the draw-head to move toward the car under the impact of the opposite draw-head, as before set forth, and to also allow the draw-bar to yield outwardly when the couplings are under tension. The rearward or inward movement of the draw-head is, however, alone essential to my invention. The plates D' and D<sup>4</sup> are constructed to move vertically in the guides D to a slight extent, so that the outer end of the draw-bar may yield downwardly when the draw-head is depressed.

I claim as my invention—

1. The combination, with the projection *a*, having a notch, *a*', secured to the car above



the draw-bar, of a backwardly-yielding draw-head having an opening for the link and a vertical aperture for the insertion of a coupling-pin, said aperture being provided with an offset or projection above the link-opening, constructed to support the coupling-pin in a backwardly-inclined position, substantially as described.

2. The combination, with a car, of a downwardly-yielding draw-head provided with a link-aperture, *b*, having both its upper and lower walls inwardly and downwardly inclined, and a spring for upholding said draw-head, substantially as and for the purpose set forth.

3. The combination, with a car, of a draw-head, *A*, provided with a link-aperture, *b*, having downwardly and rearwardly inclined walls, a draw-bar, *B'*, attached to said draw-head and flexibly connected to the car-frame at its rear end, and a spring, *C*<sup>2</sup>, constructed to support

the forward end of the said draw-bar, substantially as described.

4. The combination, with the car-frame provided with a supporting-bracket, *C*, of the draw-bar *B'*, flexibly supported at its end to the car-frame, a sliding plate, *C'*, and a spring, *C*<sup>2</sup>, substantially as and for the purpose set forth.

5. The combination, with the car-frame provided with a supporting-bracket, *C*, of the draw-bar *B'*, flexibly connected at one end to the car-frame, a sliding plate, *C'*, a rod, *c'*, a nut, *c*<sup>2</sup>, and a spring, *C*<sup>2</sup>, substantially as and for the purpose set forth.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

DAVID PITKIN CORY.

Witnesses:

WILLIAM CHAS. KILLIP,  
S. ED. MADDEN.