

(No Model.)

D. J. STEVENSON.

CAR COUPLING.

No. 321,918.

Patented July 7, 1885.

Fig. 1.

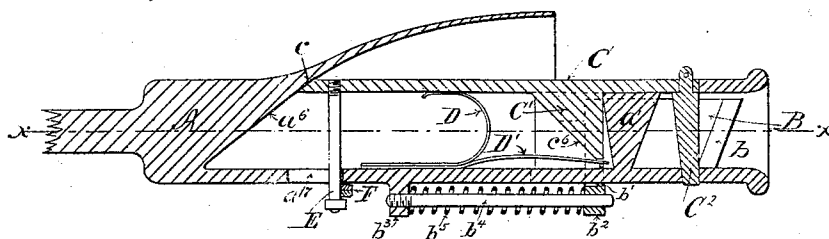


Fig. 2.

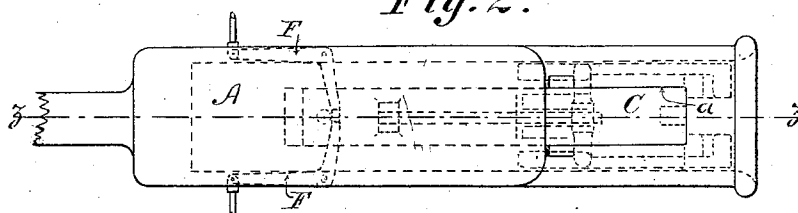


Fig. 3.

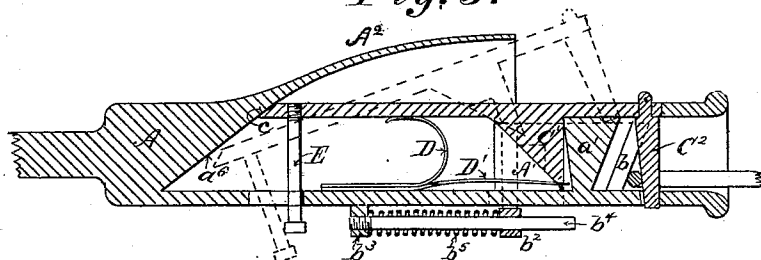


Fig. 4.

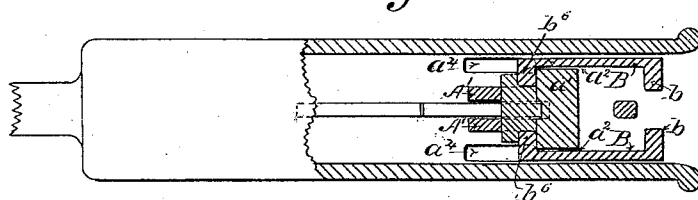
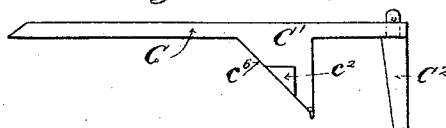


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

DAVID J. STEVENSON, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR OF ONE-HALF TO FREDERICK G. NOTT, OF SAME PLACE.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 321,918, dated July 7, 1885.

Application filed May 5, 1885. (No model.)

To all whom it may concern:

Be it known that I, DAVID J. STEVENSON, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented an Improved Automatic Car-Coupler, of which the following is a specification.

My invention relates to improvements in couplers for railroad cars; and the objects I have in view are to provide an automatic coupler that shall be simple and inexpensive in construction, efficient in operation, and adapted for coupling with any ordinary coupler or with another of the same kind.

In the accompanying drawings, forming part of this specification, Figure 1 is a longitudinal section on line $z z$ of Fig. 2, showing the parts in position for operation. Fig. 2 is a plan. Fig. 3 is a longitudinal section, with the link engaged by the coupler, and showing in dotted lines the pin elevated; Fig. 4, a plan, broken away in part to show the interior. Fig. 5 is a detail of the bar carrying the coupling-pin.

A in the drawings represents the draw-head of my improved coupler. This draw-head consists, preferably, of a single casting, of substantially the shape shown, having in its top the longitudinal slot a , and I prefer to provide the head with the part A^2 , that extends over and above the slot a to protect the bar C, hereinafter described. The head A is open at its forward end, and is provided with the cross-piece a' , which is cast integral with the main body of the draw-head, but leaving the openings $a^2 a^2$ in line with the inner walls of the same. At its forward end the walls of the draw-head are beveled off, substantially as shown, to direct the coupling-link into the draw-head, and the front wall of the cross-piece a' is inclined, as shown, so that when the end of the link strikes this wall it will be directed toward the lower part of the draw-head.

B B represents a slide in the draw-head A, having the inclined ends $b b$, against which the link strikes in coupling, and through which the moving parts of the coupler are operated. The forward faces of the ends $b b$ are of substantially the same inclination as the front wall of the cross-piece a' , and when the slide is pushed in by the links these ends di-

rect the link to the lower part of the draw-head, and both the end of the link and the ends of the slide are received in the space between the pin and the face of the cross-piece a' . The two parts of the slide extend through the openings a^2 in the cross-piece a' , and back of this cross-piece the slide is provided with vertical pieces $b^6 b^6$, and with the bolts $b' b'$, which extend through slots $a^4 a^4$ in the bottom of the draw-head, and have secured to them the cross-piece b^2 . A projection, b^3 , on the bottom of the draw-head has secured to it a rod, b^4 , surrounded by a spiral spring, b^5 . The rod b^4 extends through the cross-piece b^2 , and the spring b^5 bears thereon and tends to keep the slide in the position shown in Fig. 1.

C is a metal bar, having integral with it the depending projection C' and the coupling-pin C². The coupling-pin may be a separate pin held by the bar C in any suitable manner. The bar C fits in the longitudinal slot a in the draw-head and its rear end is beveled at c , as shown. The rear inner wall of the draw-head is inclined, as shown at d^6 , and the forward end of the draw-head projects beyond the end of the bar C, so that the bar cannot be struck by the buffers when the cars come together. The projection C' is beveled or inclined at an angle of about forty-five degrees on its under side, as shown at c^6 , and it is provided on each side with a lug, c^2 , against which the pieces $b^6 b^6$ on the slide B strike when the slide is moved back against the tension of the spring b^5 .

D' is a spring within the draw-head, engaging the projection C', and tending to hold the bar C down in its normal position.

D is another spring that forms a support for the rear end of the bar C.

A' A' are projections within the draw-head, between which the spring D' passes. The upper surfaces of these projections are at an inclination of about forty-five degrees, and upon these inclined faces the projection C', having the oppositely-inclined face, rests.

In coupling cars this device operates as follows: The inclined ends $b b$ of the slide B are struck by the link and the slide is pushed back into the draw-head against the tension of the spring b^5 . In this movement the parts $b^6 b^6$ of the slide strike the lugs $c^2 c^2$ on the projection C' of bar C. The bar C is thereby

moved back in the same direction, its beveled
 end *c* passing down along the inclined wall at
 the rear of the draw-head, and the inclined
 face of projection *C'* riding up the inclined
 5 faces of projections *A' A'*. This movement of
 bar *C* is against the tension of the springs *D*
 and *D'*. As the rear end of the bar is de-
 pressed its forward end rises until it reaches
 substantially the position shown in Fig. 3.
 10 The coupling-pin *C²* is carried up by this
 movement of the bar, and the end of the link
 passes under the pin. As soon as the bar has
 been raised to substantially the point indi-
 cated by the dotted lines, the pieces *b⁶ b⁶* pass
 15 under and disengage from the lugs *c² c²*, and the
 springs *DD'* bring the bar back to its former po-
 sition, with the coupling-pin passing through
 the link and through an opening in the bot-
 tom of the draw-head. The parts *b⁶ b⁶* of the
 20 slide are then on the opposite side of lugs *c² c²*.
 The bottom of the draw-head is also provided
 with the slot *a'*, and a bolt, *E*, is secured to the
 bar *C*, and passes through this slot. Bell-
 crank levers *F F* are provided, one on each
 25 side, and arranged in position to move the
 bolt *E*, and thereby the bar *C*. This move-
 ment is similar to that given to the bar by the
 slide *B* when operated by the link, the rear
 end of the bar being depressed and its forward
 30 end raised. As will be seen, these levers may
 be used for uncoupling. As soon as the bar
C has been moved so that the lugs *c²* are above
 the ends of the pieces *b⁶ b⁶* the spring *b⁵* pushes
 the slide forward and forces the link from the
 35 draw-head. The bar may of course be moved
 by any other suitable means, when it is de-
 sired to uncouple the cars.

I claim as my invention—

1. In an automatic coupler, the combina-
 tion, with the draw-head *A*, having the in- 40
 clined projections *A' A'* and the inclined wall
a⁶, of the slide *B*, and bar *C*, having beveled
 end *c*, projection *C'*, and coupling-pin *C²*, sub-
 stantially as described.

2. In an automatic car-coupler, the combi- 45
 nation, with the draw-head *A*, of the bar *C*,
 having projection *C'* and pin *C²*, and the slide
B, having the inclined ends *b b*, vertical pieces
b⁶ b⁶, and the spring *b⁵*, all substantially as de-
 scribed.

3. The combination, with the draw-head *A*, 50
 having inclined projections *A' A'* and inclined
 wall *a⁶*, of the slide *B*, having pieces *b⁶ b⁶*,
 spring *b⁵*, the bar *C*, having coupling-pin *C²*
 and projections *C'*, the lugs *c² c²*, and the 55
 springs *D D'*, all substantially as described.

4. The combination, with the draw-head *A*,
 of the bar *C*, having pin *C²* and projection *C'*,
 the springs *D D'*, the bolt *E*, and the levers
F, all substantially as described. 60

5. The combination, with the draw-head *A*,
 having cross-piece *a'* and openings *a²*, the pro-
 jections *A'*, and the inclined wall *a⁶*, of the
 slide *B*, having inclined ends *b b* and ver-
 tical pieces *b⁶ b⁶*, the spring *b⁵*, the bar *C*, hav- 65
 ing inclined projection *C'*, beveled end *c*, lugs
c² c², and the coupling-pin *C²*, all substantially
 as described.

In testimony whereof I have hereunto set my
 hand this 24th day of April, 1885.

DAVID J. STEVENSON.

In presence of—

A. M. SMITH,

O. D. KINNEY.