(No Model.) 2 Sheets—Sheet 1.

A. P. PREVOST.

CAR COUPLING.

No. 410,649. Patented Sept. 10, 1889.

Fig. 1.

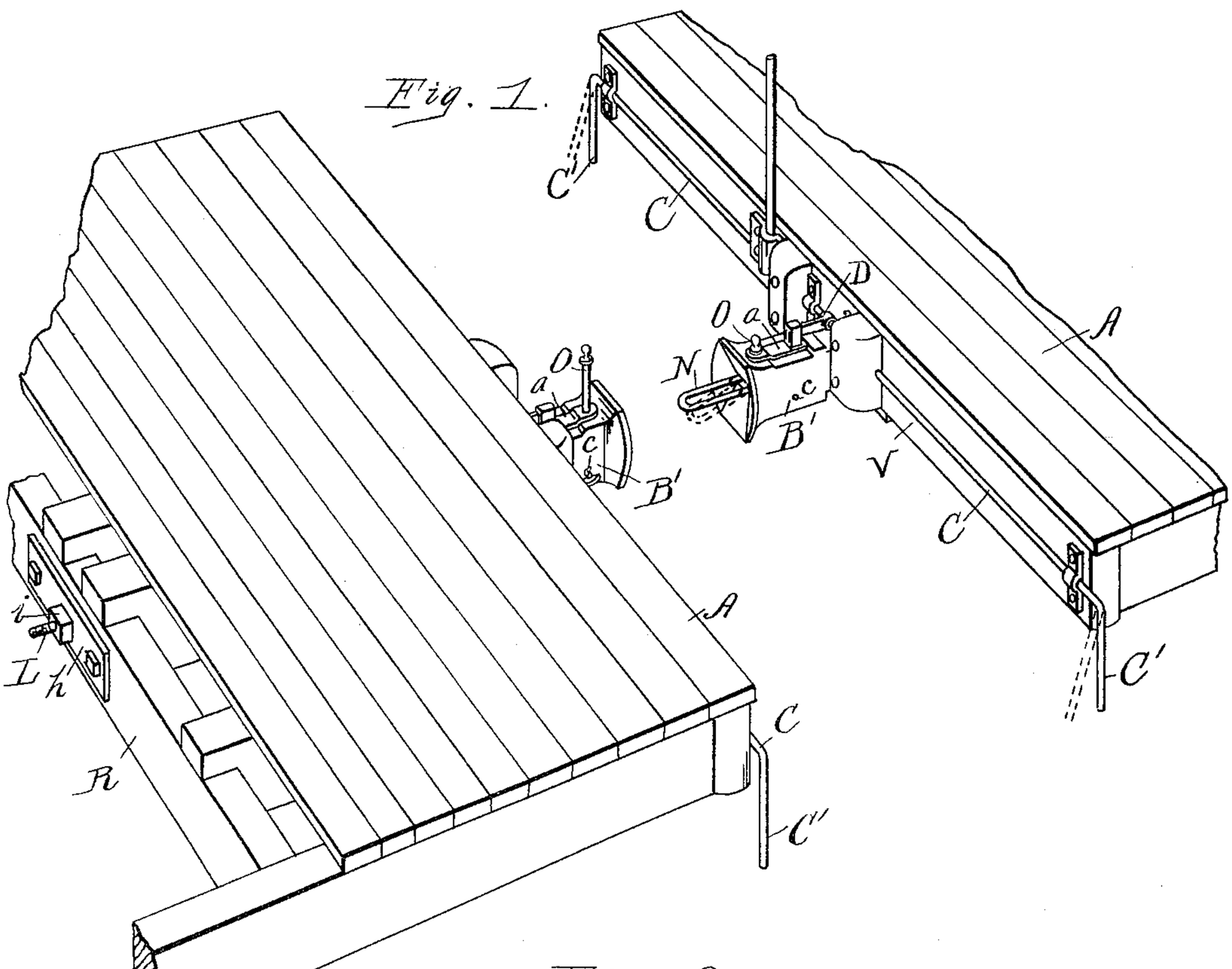
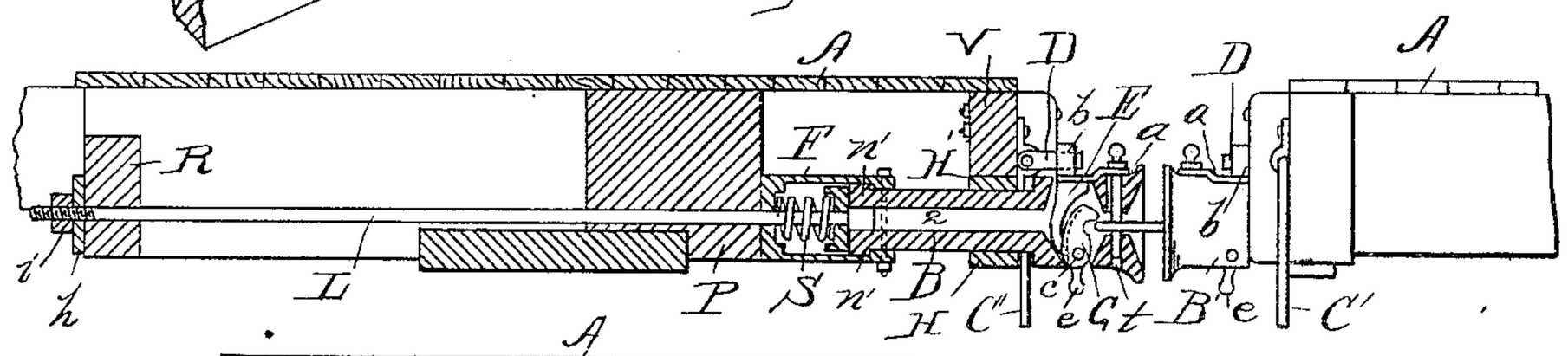


Fig. 2.



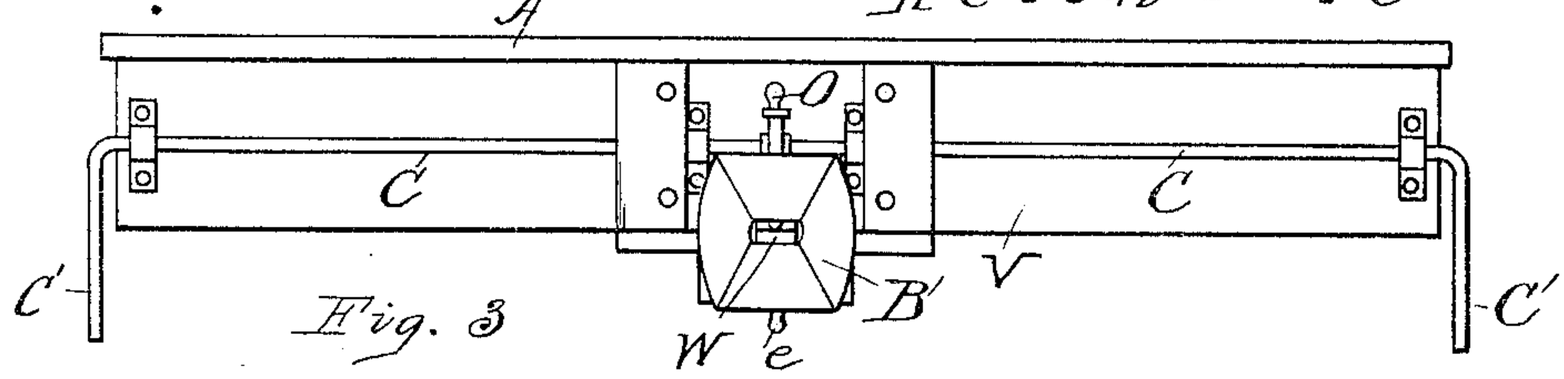


Fig. 3

Attest.
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(No Model.)

2 Sheets—Sheet 2.

A. P. PREVOST.

CAR COUPLING.

No. 410,649. Patented Sept. 10, 1889.

Fig. 4.

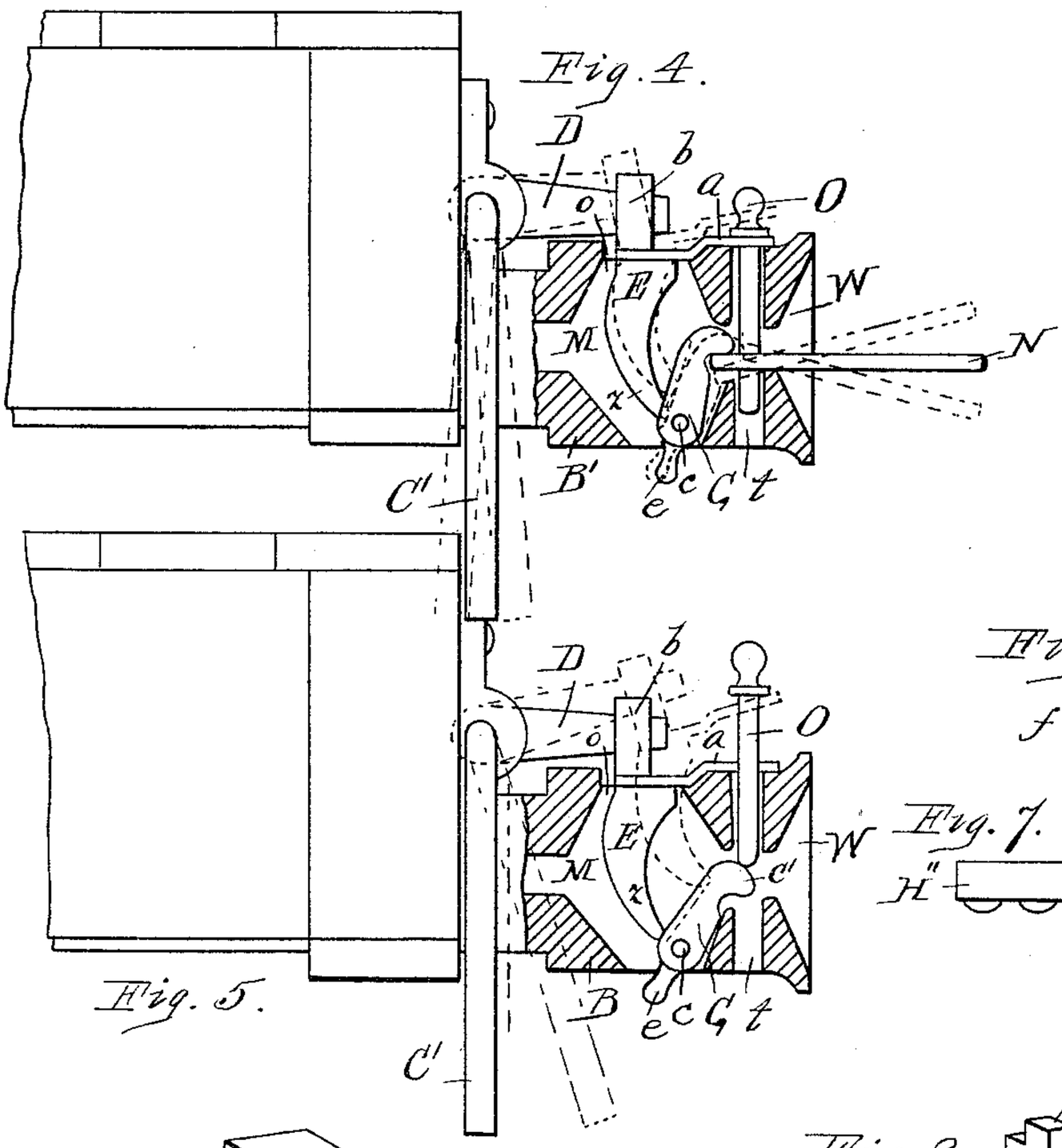


Fig. 6.

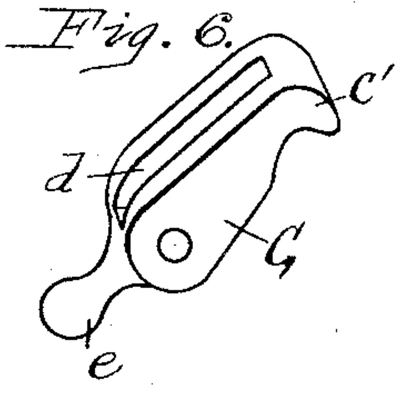


Fig. 8

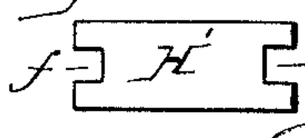


Fig. 7.

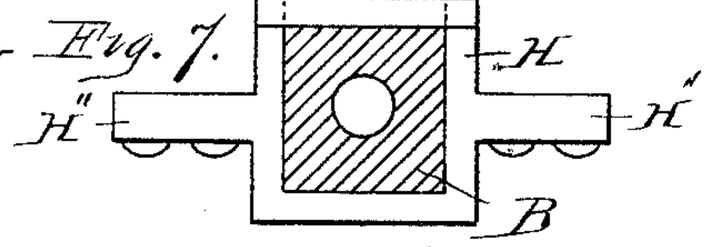
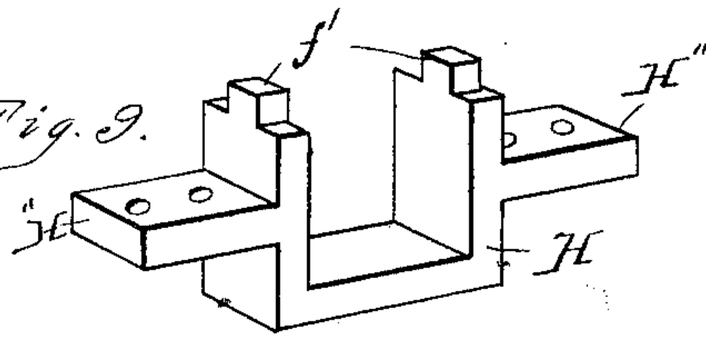


Fig. 5.

Fig. 9.



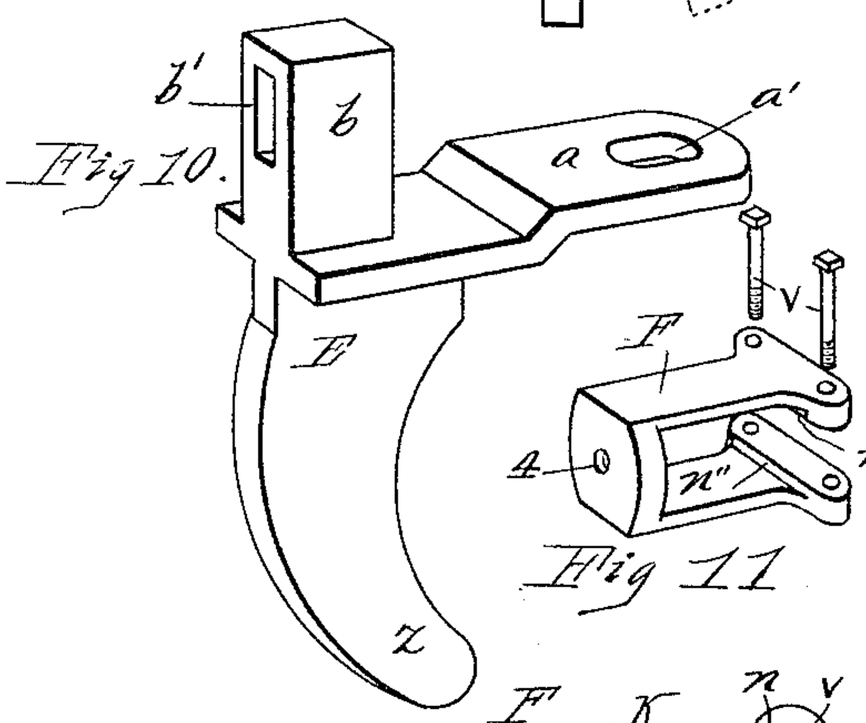


Fig 10.

Fig 11

Fig. 13

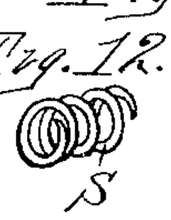


Fig. 12.

Fig. 14.

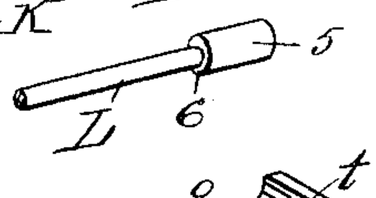


Fig. 15.

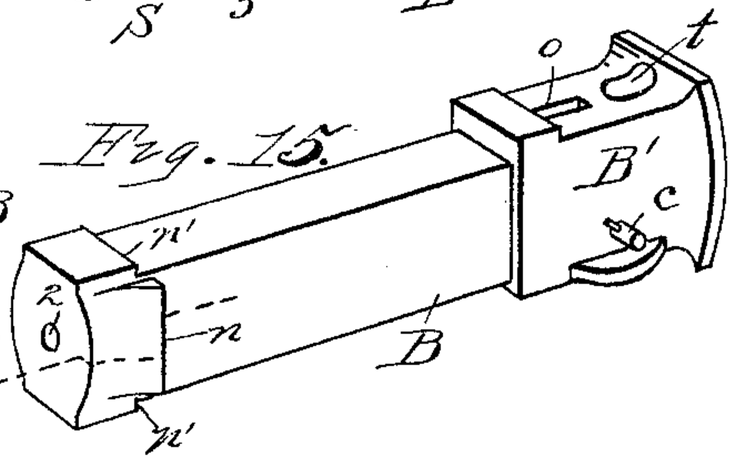
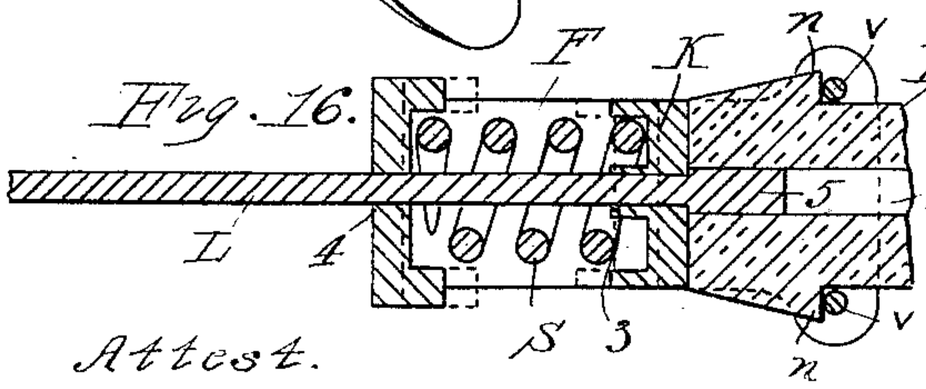


Fig. 16.



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UNITED STATES PATENT OFFICE.

AUGUST P. PREVOST, OF KAWKAWLIN, MICHIGAN.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 410,649, dated September 10, 1889.

Application filed April 15, 1889. Serial No. 307,374. (No model.)

To all whom it may concern:

Be it known that I, AUGUST P. PREVOST, a citizen of the United States, residing at Kawkawlin, in the county of Bay and State of Michigan, have invented certain new and useful Improvements in Car-Couplers; and I do 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 and figures of reference marked thereon, which form a part of this specification.

This invention relates to car-couplers; and it consists in the construction and arrangement of parts whereby the cars may be coupled or uncoupled, the pin withdrawn, the link adjusted or thrown from the draw-head by the operator standing at the side of the car without any risk of injury between the meeting ends of the cars, and a further arrangement of parts making the draw-bar a spring-buffer as well as a spring-draw, all of which will be fully hereinafter set forth, and the essential feature of my device pointed out particularly in the claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a perspective of a section of the meeting ends of two flat cars provided with my improved coupler, showing position of parts before coupling. Fig. 2 is a view of same after coupling is made, the longitudinal section through the left-hand car and draw-bar showing the interior arrangement of parts in the draw-head and the spring-buffer at the rear end of the draw-bar. Fig. 3 is an end elevation of a car and draw-head, showing position of pin before coupling. Fig. 4 is a longitudinal section through the draw-head, showing position of parts when coupled, and by dotted lines how the link may be actuated. Fig. 5 is a view of same, showing the pin resting on the nose of the gravitating dog as in position before coupling. Fig. 6 is a view of the gravitating dog detached from the draw-head, showing the elongated groove in said dog. Figs. 7, 8, and 9 represent a square iron collar, which is let into the end of the car, and which environs and supports the outer end of the draw-bar. Fig. 10 is an enlarged detail of the reciprocating head. Figs. 11, 12, 13, and 14 are details to be referred to. Fig. 15 is a view of the draw-bar. Fig. 16 is a detail in section showing spring-buffer at the end of the draw-bar.

In the drawings, A represents a section of the ends of flat cars to which my improved coupler is attached; B, the draw-bar, having the draw-head B′, provided with the mouth or orifice W. C represents the actuating-rod; E, the reciprocating head; G, the gravitating dog; N, the link, and O the pin.

The draw-bar B is provided with the draw-head B′, said draw-head having the chamber M. Located in said chamber and pivoted at *c* is the gravitating dog G. The slot *o* in said draw-head communicates with the chamber M and receives the spur *z* of the reciprocating head E, said head also having the upright post *b*, with the opening *b′* therein, and the extended plate *a*, having the hole *a′*. The channel *t* in the draw-head receives the pin O, and the mouth or orifice W the link N. (See Fig. 2, Sheet 1, and Figs. 4, 5, and 15, Sheet 2.) The forward end of the draw-bar is supported by the square collar H, having the cap-piece H′ and the projecting wings H″. The cross-beam V on the end of the car is mortised in its under face to receive the upper part of the collar, which extends above the wings H″. The cap H′ is removed and the collar placed on the draw-bar from the under side, the cap replaced, the mortises *f f* of said cap receiving the tenons *f′ f′* of the collar, which secures the cap in place. Said collar is then placed in the mortise of the beam V and secured therein by bolting through the wings H″ into the under face of said beam. (See Fig. 2, Sheet 1, and Figs. 7, 8, and 9, Sheet 2.) The collar H fits loosely around the draw-bar B, permitting said draw-bar to have longitudinal play.

The rear end of the draw-bar B is provided with the shoulders *n n′* and hole 2. The shoulders *n′* engage with the projections *n″* on the inner face of the extended sides of the basket-frame F, and the shoulders *n* of said draw-bar engage with the bolts *v v*, which pass through and connect the outer ends of said basket-frame. (See Fig. 16, Sheet 2.)

Located in the frame F is the cup K and the coiled spring S. The cup K rests against the rear end of the draw-bar, and the spring S is held between said cup and the annular end of the frame F. The draw-rod L passes through the hole 3 in the cup, the coiled spring, and the hole 4 in the annular end of the frame F. The head 5 of the draw-rod L lies in the hole 2 in the end of the draw-bar, and the annular shoulder 6, formed by the head 5, prevents the rod L from drawing through the cup. The rear end of the draw-rod passes through the cross-beam R of the car-frame, the plate *h*, and is secured by the nut *i*, as clearly shown in Fig. 2, Sheet 1.

The actuating-rod C crosses the end of the car and is secured by clips bolted thereto. The bent end portions C′ form the crank or handle by which said rod is operated. Permanently secured to the center of the rod C is the arm D, which engages with the post *b* of the reciprocating head E, for purposes hereinafter described.

The operation of the coupler is as follows: When wishing to make the coupling, the pin O in the draw-head to be coupled to is raised to the position shown in Fig. 1, Sheet 1, and Fig. 5, Sheet 2, by throwing the crank or handle C′ ahead, when the rod C will be rotated, elevating the end of the arm D, said arm engaging with the post *b* of the reciprocating head E. Said head is drawn up, raising the plate *a*, the pin O passing through the hole *a′* in said plate, the plate engaging with the head of said pin. The pin is therefore drawn out of the channel *t* past the dog G, the spur *z* traveling in the groove *d* of said dog, and by its own gravitation the dog will fall forward and support the pin O on the nose *c′* thereof, as clearly shown in Fig. 5, Sheet 2. The link N of the meeting draw-head, entering the mouth or orifice W, will push the dog back, when the pin will drop, making the coupling, as shown in Fig. 2, Sheet 1, and Fig. 4, Sheet 2.

To uncouple, the crank or handle C′ is thrown ahead, raising the reciprocating head E and drawing up the pin O, when the link N will be released and the cars uncoupled, the pin O remaining in position for recoupling, as before described.

In making couplings where the draw-heads vary in height the projecting end of the link may be thrown up or down, as the case requires. To raise the outer end of the link, pull back on the crank or handle C′, which will cause the arm D to bear down on the head E, whereby the spur *z* of said head is thrown forward against the dog G, forcing the nose *c′* of said dog down on the inner end of the link, elevating the outer end of the link, as clearly shown by dotted lines in Fig. 4, Sheet 2. To lower the outer end of the link, pull ahead on the handle C′ sufficiently to slightly raise the head E, when the dog will be partly released and the outer end of the link will drop, as shown by dotted lines, same figure.

The link may be thrown from the draw-head by pulling ahead on the handle C′ until the pin is withdrawn from the link. The spur *z* will force the dog against the link and expel it from the draw-head. The pin O may also be thrown from the draw-head by a quick forward pull on the handle C′.

It will be observed that the arrangement at the rear end of the draw-bar of the frame F, cup K, rod L, and spring S, as shown in Fig. 2, Sheet 1, and Fig. 16, Sheet 2, affords a spring-buffer and a spring-pull to the draw-bar. When the draw-heads meet in making the coupling, the rear end of the draw-bar (by the concussion) is forced against the cup K. Said cup moves against the spring S, the spring being between the cup and the annular end of the frame F, and the end of said frame resting against the cross-beam P. The force of said cars is resisted by said spring, as shown by dotted lines in Fig. 16, Sheet 2. In pulling ahead the shoulders *n n′* on the rear end of the draw-bar engage with the projections *n″* and bolts *v* of the frame F and draw the annular end of said frame against the spring S, forcing the spring against the cup K, the cup engaging with the head 5 of the draw-rod L, said head sliding loosely in the hole 2 in the draw-bar B, and the rear end of the rod L being secured to the cross-beam R the force of the pull therefore comes on the spring S, as shown by dotted lines in Fig. 16, Sheet 2.

The herein-described car-coupler is simple, cheap, and durable, and reliable in operation, and is actuated from the side of the car, avoiding all risk of injury between the meeting ends of the cars.

Having thus fully set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. For supporting the outer end of a draw-bar, the collar H, having the wings H″ and the cap-piece H′, said collar adapted to environ the outer end of the draw-bar and support it by being bolted to the end cross-beam of the car, substantially as and for the purposes specified.

2. A draw-head provided with the chamber M, having the gravitating dog G pivotally located therein, the reciprocating head E, having the spur *z*, extended plate *a*, and post *b*, said head adapted to be actuated by the arm D and operate the pin and dog, for the purposes specified.

3. The basket-frame F, containing the cup K and spring S, and having the rod L passing therethrough, said frame adapted to be secured to the rear end of a draw-bar, and all of said parts arranged to operate as and for the purposes specified.

4. In a car-coupler, in combination with the frame of a car, the draw-bar having the head B′, provided with the chamber M, the dog G, located in said chamber and having the groove *d*, the pin O, link N, the reciprocating head E, having the spur *z*, post *b*, and plate *a*, the

actuating-rod C, having the arm D, and the collar H, said parts arranged to operate for the purposes specified.

5. A car-coupler comprising the following elements: the draw-bar having the head B′ and shoulders *n n′*, the collar H reciprocating head E, dog G, pin O, and link N, the actuating-rod C, having the arm D, the frame F, cup K, spring S, and rod L, when arranged as and to operate for the purposes set forth.

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

AUGUST P. PREVOST.

Witnesses:

JOHN MCGUINESS,

FRANK PREVOST.