

F. Z. HICKOX.  
Car-Coupling.

No. 223,509.

Patented Jan. 13, 1880.

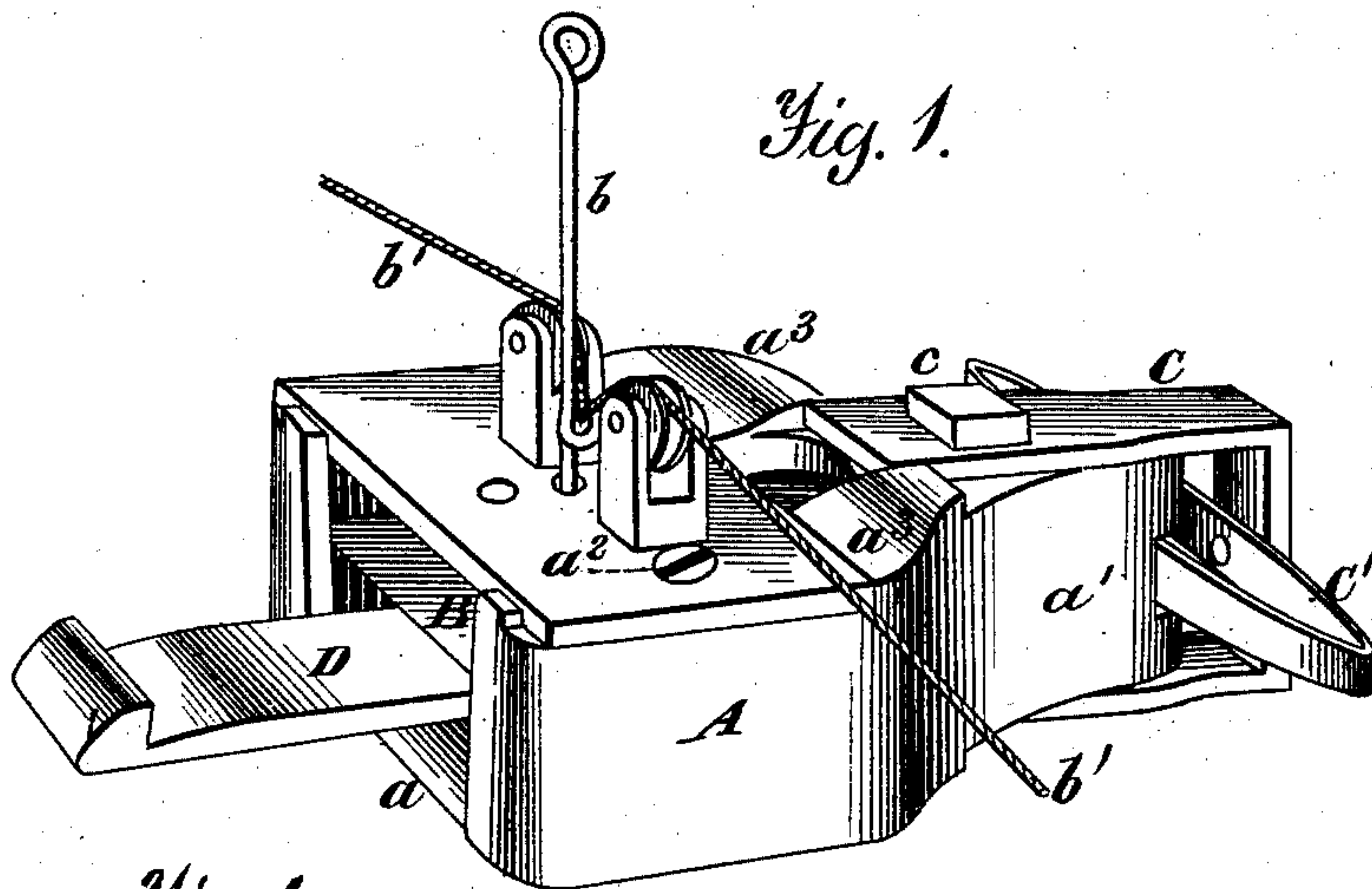


Fig. 4.

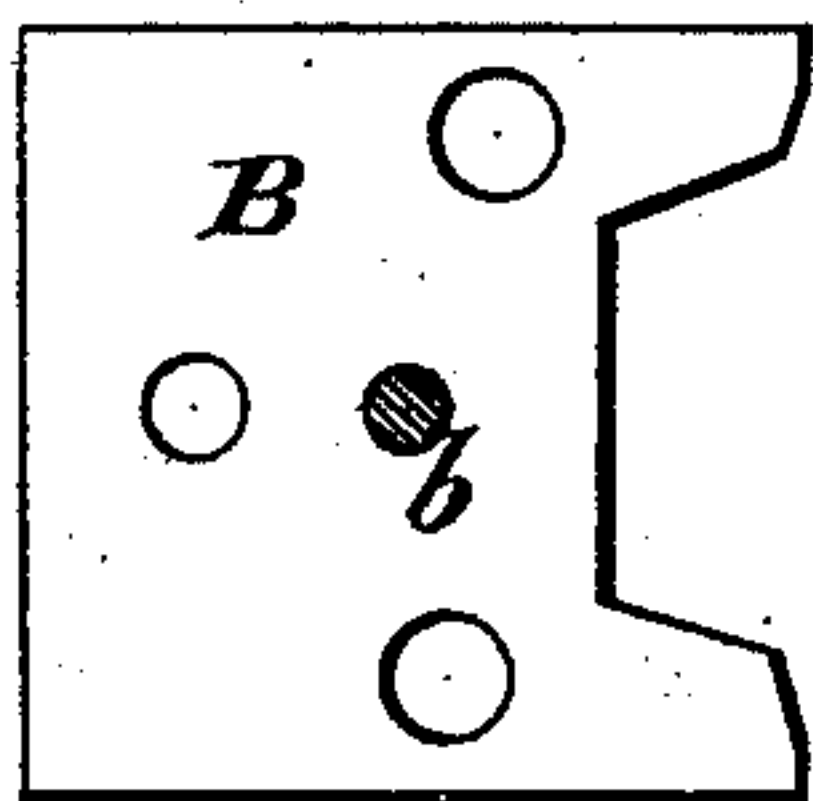


Fig. 5.

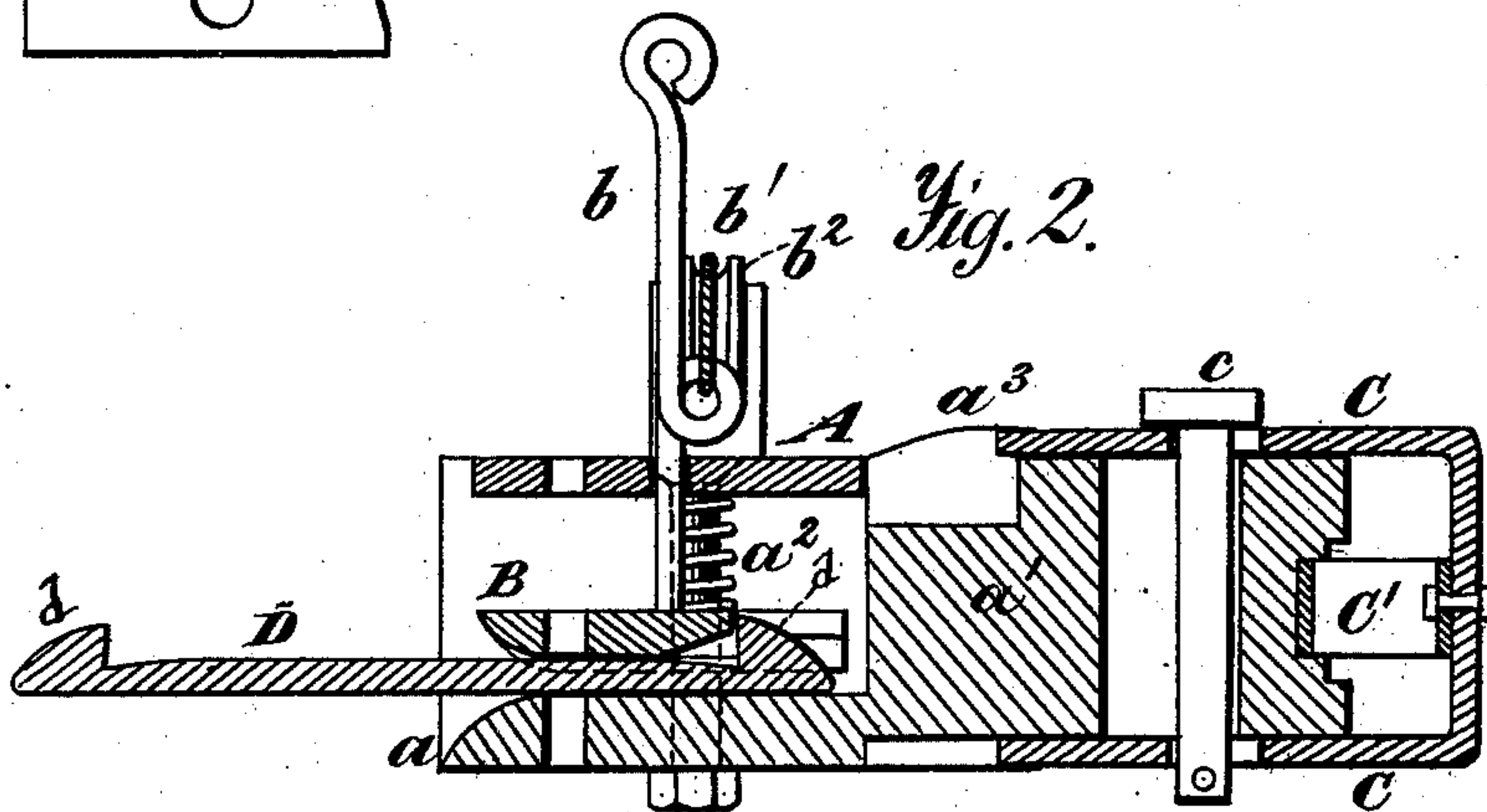
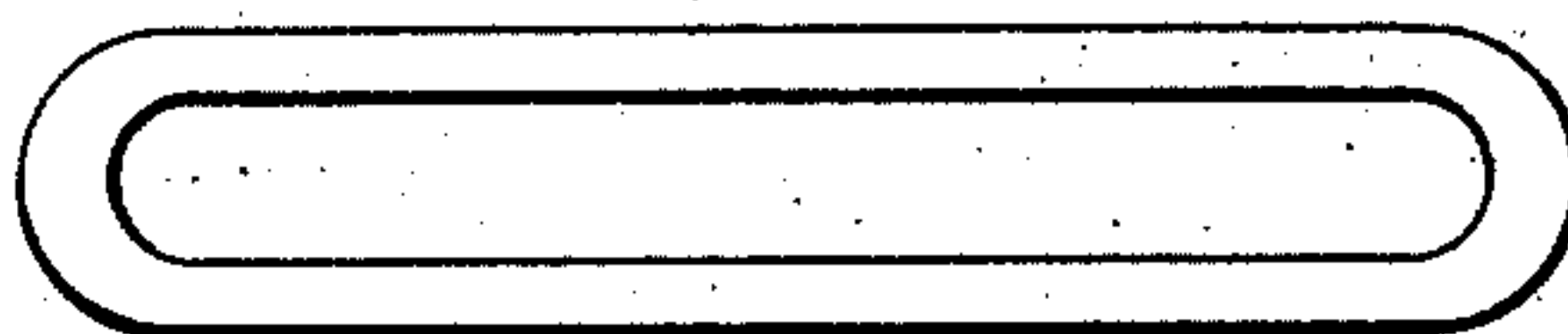


Fig. 2.

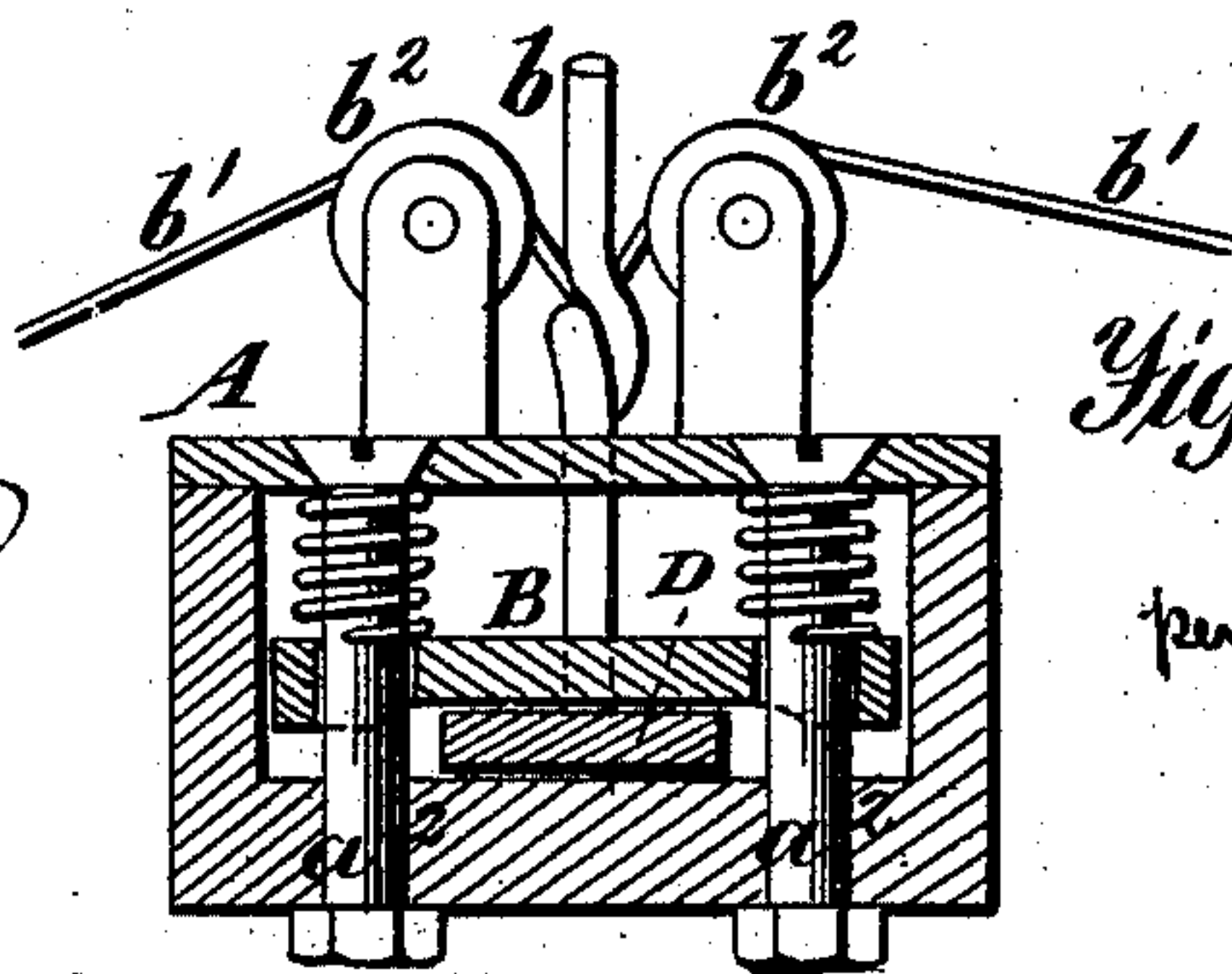


Fig. 3. Francis J. Hickox.  
Inventor.  
per Edson Bros.,  
Attorneys.

Witnesses.  
A. Ruppert,  
James H. Lange.



# UNITED STATES PATENT OFFICE.

FRANCIS Z. HICKOX, OF UTICA, NEW YORK, ASSIGNOR TO HIMSELF,  
CHARLES H. BENDER, AND MICHAEL J. DWYER, OF SAME PLACE.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 223,509, dated January 13, 1880.

Application filed September 24, 1879.

*To all whom it may concern:*

Be it known that I, FRANCIS Z. HICKOX, of Utica, in the county of Oneida and State of New York, 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 letters of reference marked thereon, which form a part of this specification, and in which—

Figure 1 is a perspective view of my improved car-coupler. Fig. 2 is a longitudinal vertical section of same. Fig. 3 is a transverse vertical section through the draw-head immediately in front of the spring-encircled bolts. Fig. 4 is a plan view of the catch or holding-plate, and Fig. 5 is a similar view of an ordinary coupling-link which may be used with my coupler.

Corresponding parts in the several figures are denoted by similar letters of reference.

This invention appertains to certain improvements in self-locking car-couplings, the object of which is to effectively couple two cars without requiring manual labor in the act of coupling, and also to prevent, to a great extent, the jar caused by the adjacent draw-heads of two cars striking together in the act of coupling being communicated to the cars; and to these ends my invention consists of the combination and arrangement of parts substantially as hereinafter described, and pointed out in the claims.

In the annexed drawings, A marks the draw-head, preferably of a rectangular shape, having the forward part or edge of its bottom beveled in an upward and inward direction, as shown at *a*, and provided with a rearwardly-extending triangular-shaped extension, *a'*. Arranged within the draw-head A is a catch or holding-plate, B, having its forward end beveled in a downward and inward direction and working on two spring-encircled bolts or rods, *a*<sup>2</sup>, the latter passing down through the draw-head and secured on its under side by nuts. The springs which encircle the bolts are interposed between the catch-plate B and the top of the draw-head, the latter of which is made remov-

able to allow of new springs being placed around the rods when required.

Firmly secured to and about midway of the catch-plate B is a rod, *b*, which passes up through the top of the draw-head, and to which is attached, above said top of draw-head, a chain or rope, *b'*, the ends of which pass each over a separate pulley, *b*<sup>2</sup>, journaled in uprights secured to the top of the draw-head and arranged on opposite sides of said rod *b*, as clearly shown in Figs. 1 and 3.

The rear end of the catch-plate B is beveled on its lower side to permit of the more easy removal of the plate D, by requiring the plate B to be raised a less distance, as will be clearly understood by reference to the second figure of the drawings.

An oblong frame, C, consisting of a top, a bottom, and one end piece, is arranged at and secured to the extension *a'* by a bolt, *c*, which passes down through slots in the top of frame C, extension *a*, and bottom of said frame, respectively, and is held therein by a nut or pin, as desired. The slots in the frame and extension allow the latter a certain amount of endwise movement.

Secured to the end piece of the frame C, and arranged between said end piece and the end of the extension *a'*, is a spring, *C'*, which is preferably an elliptic one. The extension having, as stated heretofore, endwise movement, the spring *C'* prevents, to a great extent, the jar caused by the adjacent draw-heads of two cars striking together in the act of coupling being communicated to the cars.

A groove or mortise may be made in the end of the extension *a'* to allow the spring *C'* to rest therein, as shown in Figs. 1 and 2.

The coupling link or plate D may be of any suitable size or shape, and is provided at its ends with a catch or lug, *d*, having an inwardly-beveled outer surface and a vertical inner surface, as clearly illustrated in Figs. 1 and 3. These links may be also provided with one or more perforations to receive a holding-pin, which, for additional security, may pass down through the draw-head, catch-plate, and link.

An ordinary coupling-link, as shown in Fig. 5, may be used with my coupler, having a holding-pin passing down through it.



Operation: My coupler being properly attached to a car, the coupling link or plate D, having the beveled catch or lug, is forced between the beveled catch-plate and bottom of draw-head until the catch or lug  $d$  passes beyond the inner end of the catch-plate, when the springs encircling the rods  $a^2$  will press said catch-plate below the upper edge of said catch or lug  $d$  and securely hold the link in the draw-head, when said link is in position to enter and lock itself in the coupler of another car.

To remove the link from the draw-head, raise  
the catch-plate by means of power being ap-  
plied to the cord or chain passing over the  
pulley until the end of said plate is above the  
lug d, when, by drawing the link outwardly, the  
said lug will slide along the beveled portion of  
catch-plate and be withdrawn from the draw-  
head.

Instead of the pulleys and rope, levers may be pivoted in the uprights and connected to the rod *b*, by which, when power is applied to said levers, the rod carrying the catch-plate will be raised.

The draw-head may have lugs  $a^3$  formed on its upper surface, between which guides the top of the frame C moves.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

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1. The combination of the draw-head A, provided with the slotted extension  $a'$  and lugs  $a^3$ , with the slotted frame C, spring C', and bolt c, substantially as and for the purpose set forth.

2. The herein-described coupler, consisting of the draw-head A, having the spring-encircled bolts  $a^2$ , catch-plate B, rod  $b$ , rope  $b'$ , pulleys  $b^2$ , slotted extension  $a'$ , slotted frame C, spring C', and bolts  $c$ , all arranged and constructed substantially as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand.

F. Z. HICKOX.

[illegible]

MICHAEL J. DWYER,

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