

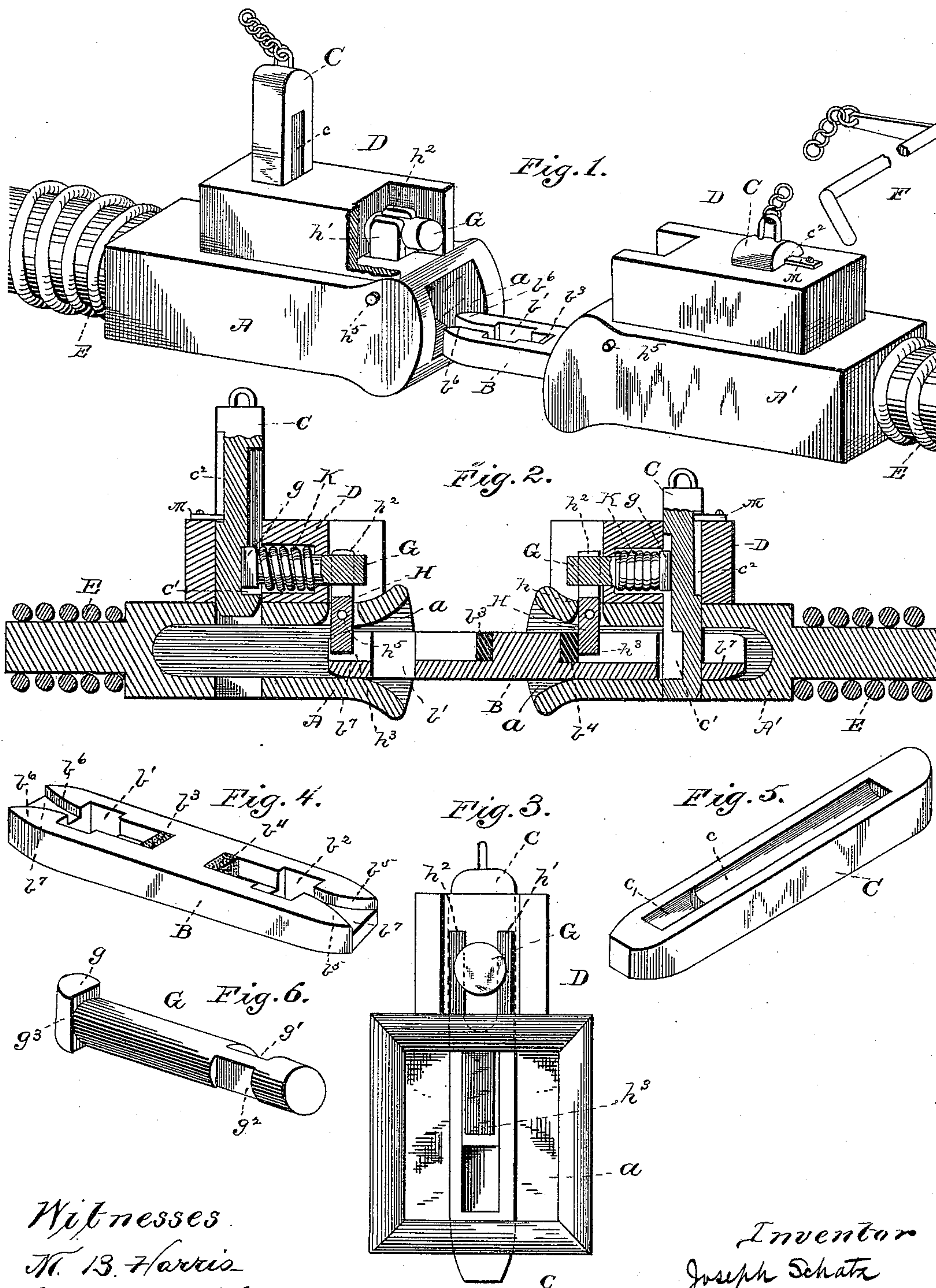
(No Model.)

2 Sheets—Sheet 1.

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CAR COUPLING.

No. 447,977.

Patented Mar. 10, 1891.



Witnesses  
N. B. Harris  
John C. Wilson.

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Joseph Schatz  
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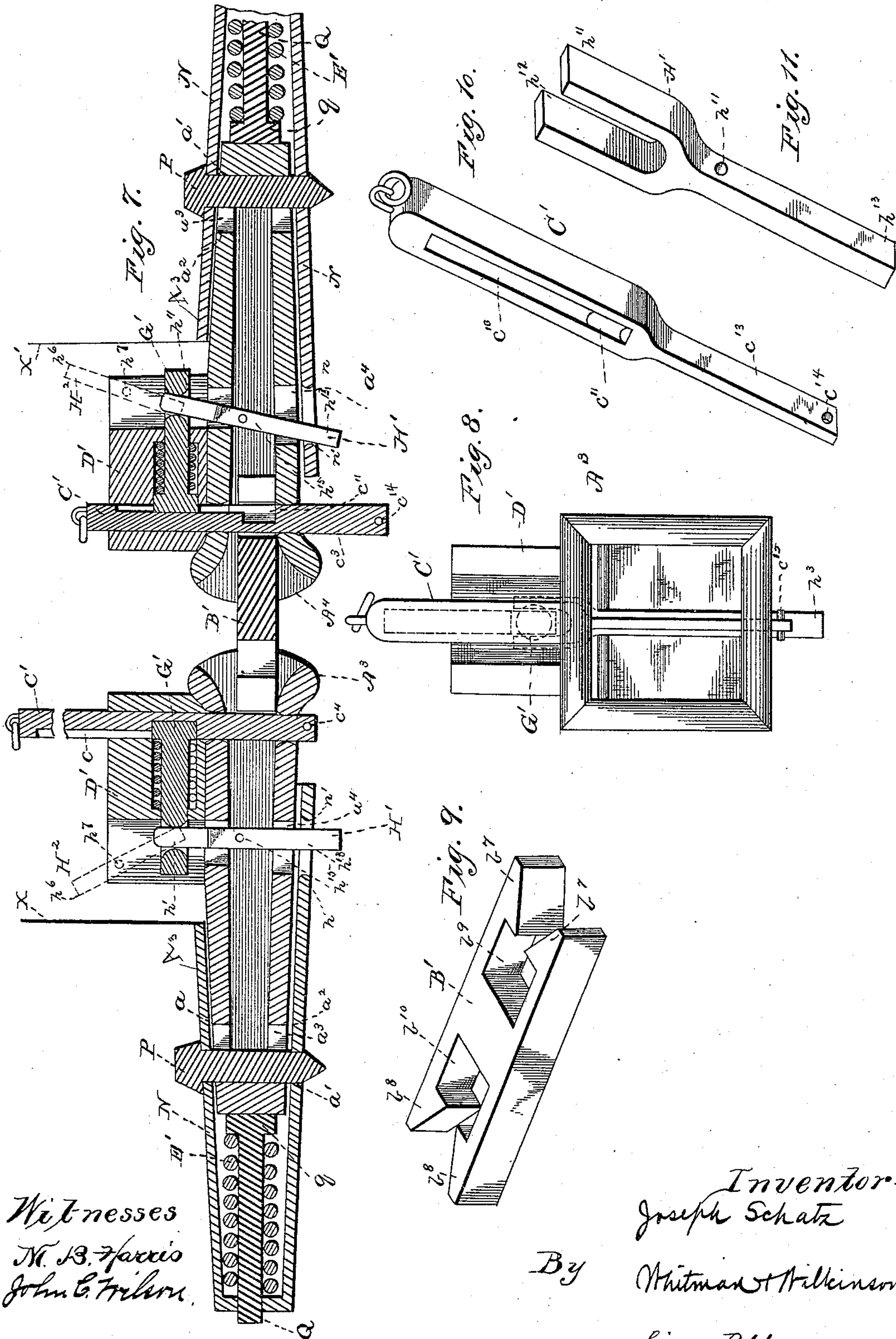
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2 Sheets—Sheet 2.

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# UNITED STATES PATENT OFFICE.

JOSEPH SCHATZ, OF NEWPORT, KENTUCKY.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 447,977, dated March 10, 1891.

Application filed December 5, 1890. Serial No. 373,678. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH SCHATZ, a citizen of the United States, residing at Newport, in the county of Campbell and State of Kentucky, have invented certain new and useful Improvements in Car-Couplings; 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.

My invention relates to car-couplers, and is especially applicable to that class of couplers known as "link-and-pin couplers."

The object of my invention is to provide a coupler which couples automatically, thereby preventing the danger and loss of life so frequently occasioned by the practice of stationing a man between the two cars to put in the coupling-pin when the two cars come together.

My invention will be better understood by reference to the accompanying drawings, wherein corresponding parts are indicated by similar letters.

Figure 1 represents a perspective view of two draw-bars coming together as in coupling, part being broken away. Fig. 2 represents a vertical longitudinal section of the same. Fig. 3 represents a front view of a draw-head, showing my improved coupling-pin and attachments. Fig. 4 represents a perspective view of one form of my improved link. Fig. 5 represents a perspective view of my improved coupling-pin. Fig. 6 represents a perspective view of the locking-plunger for my coupling-pin. Fig. 7 shows a longitudinal section of two draw-heads coming together, showing modifications of the device shown in Fig. 1, one form of unlocking-lever being shown full and the other in broken lines. Fig. 8 shows a front view of a draw-head, showing the long coupling-pin seen in Fig. 10 and other parts of my device. Fig. 9 shows one form of my improved link. Fig. 10 shows one form of my coupling-pin. Fig. 11 shows one form of my forked lever for automatically dropping the coupling-pin.

In order that the various modifications of my invention may be more easily understood, I will describe fully the device shown in the first sheet of drawings, and then indicate any

modifications that are shown in the other sheet.

A represents the draw-bar, having open draw-heads with flaring lips, and being generally similar to those now in use with link-and-pin couplings.

B represents my improved link. This has two rectangular scores, flaring at the outer ends, cut in the upper portion thereof, with rectangular apertures  $b^1$  and  $b^2$  cut entirely through the link. At the inner ends of the two scores I have buffers  $b^3$  and  $b^4$ , which may be faced with rubber or leather, but this is unnecessary. The ends of the link and the corresponding walls of the slot  $b^5$   $b^5$  and  $b^6$   $b^6$  are curved, as shown.

C represents the coupling-pin. This I make, preferably, rectangular in section, rounded somewhat at the angles. On one side of this coupling-pin I have a recess or chamber  $c'$ , adapted to receive the head  $g$  of the spring-plunger G, and above this chamber I have a guide-score  $c$  registering with the rounded face  $g^3$  of the head of the said plunger.

On the back of C, I have a score  $c^2$  cut part of the way down the center. In this score engages a lug-piece M, attached to the frame D. This lug-piece thus limits the motion of the pin C, preventing it from being accidentally pulled out farther than is necessary.

To the upper end of the coupling-pin I attach a chain, which may be connected to an ordinary lifting-bar F or to any lifting device.

D represents a suitable frame-work, which may be cast or screwed upon or otherwise secured to the upper part of the draw-head. The function of D is merely to furnish a guide for the pin C and plunger G and a bearing for the spring K, and hence the shape of D is not material, provided it be adapted to meet those requirements.

E is the spring at the rear of the draw-bar to take up the buffing strains. The head  $g$  of the plunger G is normally held against the coupling-pin by the spring K, and when  $g$  engages in the chamber  $c'$  the pin C is prevented from falling. To allow the pin to fall, I have a trip-lever H, forked at the upper end. These forks  $h^1$  and  $h^2$  engage in the



slots  $g'$  and  $g^2$  of the plunger G. The trip-lever turns on a pivot  $h^5$ , let into the draw-head or secured to the upper face thereof. The draw-head is cut away to allow for the insertion of the lower arm  $h^3$  of the said trip-lever. Suppose now the draw-bar A, Fig. 1, with pin C raised, to be attached to a car approaching the one carrying the draw-bar A' and link B. When the cars come together, the link B will enter the draw-bar A until the face  $b^3$  strikes the lower arm  $h^3$  of the trip-lever H. This will throw the upper or forked arm of that lever backward, withdrawing the head  $g$  of the plunger from the chamber  $c'$  in the coupling-pin and allowing that pin to fall into the opening  $b'$  in the link. This opening is made somewhat longer than the depth of the pin to allow for play and also for any inequalities in the distance between the coupling-pins when two draw-heads are in contact. The links should be so made that the distance between the centers of the pin-holes in the links may be the same as that between the centers of the pin-holes on two draw-bars when buffing together. To uncouple, lift up either pin by means of its appropriate lifting-bar.

In Figs. 7, 8, and 10 the tripping device is placed on the opposite side of the coupling-pin, which enables me to use a shorter link. This tripping effect I produce by using the forked trip-lever pivoted to the draw-bar or to some part attached to the draw-bar and actuated by striking some fixed part of the car when the draw-bar is buffed back. To prevent accidents to my coupling mechanism should the draw-bar be pushed back too far, I must limit its motion in some way.

In Fig. 7 I have shown a hollow draw-bar A<sup>3</sup>, having a wide slot  $a^3$  near its rear end, with a rectangular pin P narrower than the said slot and so arranged that the draw-bar will bring up against P before the frame D' strikes the front of the car-timber X. Behind P the draw-bar may be either pushed out by the usual spring, or it may have a separate plunger Q, with head  $q$  pushed out by the spring E'.

N is a metal box in which the draw-bar slides; but the pin P and slot  $a^3$  may be made horizontal, in which case the side timbers would take the place of the box, while a small cross-piece protruding under the draw-bar might be arranged to strike the lower arm  $h^{13}$  of the trip-lever H'. The lower arm  $h^{13}$  of this lever works in a slot cut in the draw-bar, while the upper arm passes through a similar slot in the draw-bar and engages the plunger G'. This trip-lever H' may be pivoted at  $h^{15}$  or at any other convenient place. I may also have the lever H<sup>2</sup> (shown in broken lines) pivoted to the frame-work and engaging the plunger. This lever H<sup>2</sup> may be in lieu of or auxiliary to the lower lever H'.

I have also shown another form of coupling-pin C' in Fig. 10. This differs from that

shown in Fig. 5 only in having a long guide-piece  $c^{13}$  in lieu of the short end. In  $c^{13}$  I have a hole  $c^{14}$  for a pin  $c^{15}$  to keep the coupling-pin from being accidentally taken out. This guide-piece at the bottom of the pin necessitates a link open at both ends, as shown in Fig. 9. Now suppose the draw-head A<sup>3</sup> to be approaching the draw-head A<sup>4</sup> for coupling, A<sup>4</sup> carrying the link, and A<sup>3</sup> having its coupling-pin up ready for automatic coupling. As the link B' enters the draw-head A<sup>3</sup> the guide-piece  $c^{13}$  passes between the jaws of the link  $b^7$  and  $b^8$  and the two draw-heads buff together, each spring E' yielding. As A<sup>3</sup> goes back the lower arm  $h^{13}$  of the trip-lever H' or the upper arm  $h^6$  of the trip-lever H<sup>2</sup> (or both, if both be used) strikes a rigid part of the car  $n$ , (or X, respectively,) the plunger G' is withdrawn, and the pin C' falls, coupling the car.

I do not desire to limit myself to the construction shown and described, for many modifications would readily suggest themselves to a skilled mechanic, which could be used without departing from the spirit of my invention.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a car-coupling, the combination, with an H-shaped link having double-hooked arms and an enlarged aperture for the coupling-pin, of a coupling-pin moving in guides attached to the draw-head and having a longitudinal groove and a deeper chamber on one side of the said pin, a spring-plunger also attached to the draw-bar and having a head engaging in the said chamber and capable of sliding in the said groove, and a tripping device for withdrawing the said plunger from the said chamber, substantially as described.

2. In a car-coupling, the combination, with an H-shaped link having double-hooked arms and an enlarged aperture for the coupling-pin, of a flat coupling-pin moving in guides attached to the draw-head and having a longitudinal groove and a deeper chamber on one side of the said pin, a spring-plunger also attached to the draw-bar and having a head engaging in the said chamber on the coupling-pin and sliding in the said groove, a lever pivoted to the draw-head and engaging the said plunger, and any suitable device for actuating the said lever and withdrawing the said plunger when the cars come together, substantially as described.

3. In a car-coupling, the combination of an H-shaped link B', having double-hooked arms  $b^7$  and  $b^7$ ,  $b^8$  and  $b^8$ , with an opening between the same and an enlarged rectangular chamber near each end of the link for the coupling-pins, with a rectangular coupling-pin having a long guide-arm moving in a slot in the lower portion of the draw-head, a pin near the extremity of the said lower arm, a longitudinal groove and a deeper chamber on one side of the coupling-pin, a spring-plunger also attached to the draw-bar and having



a head engaging in the said chamber on the coupling-pin and sliding in the said groove, a lever pivoted to the draw-head and engaging the said plunger, and any suitable device for actuating the said lever and withdrawing the said plunger when the cars come together, substantially as described.

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

JOSEPH SCHATZ.

Witnesses:

JOSEPH WEINGARTNER,  
PH. J. VEITH.