

(No Model.)

D. L. RICHARDS.

CAR COUPLING.

No. 352,661.

Patented Nov. 16, 1886.

Fig. 1.

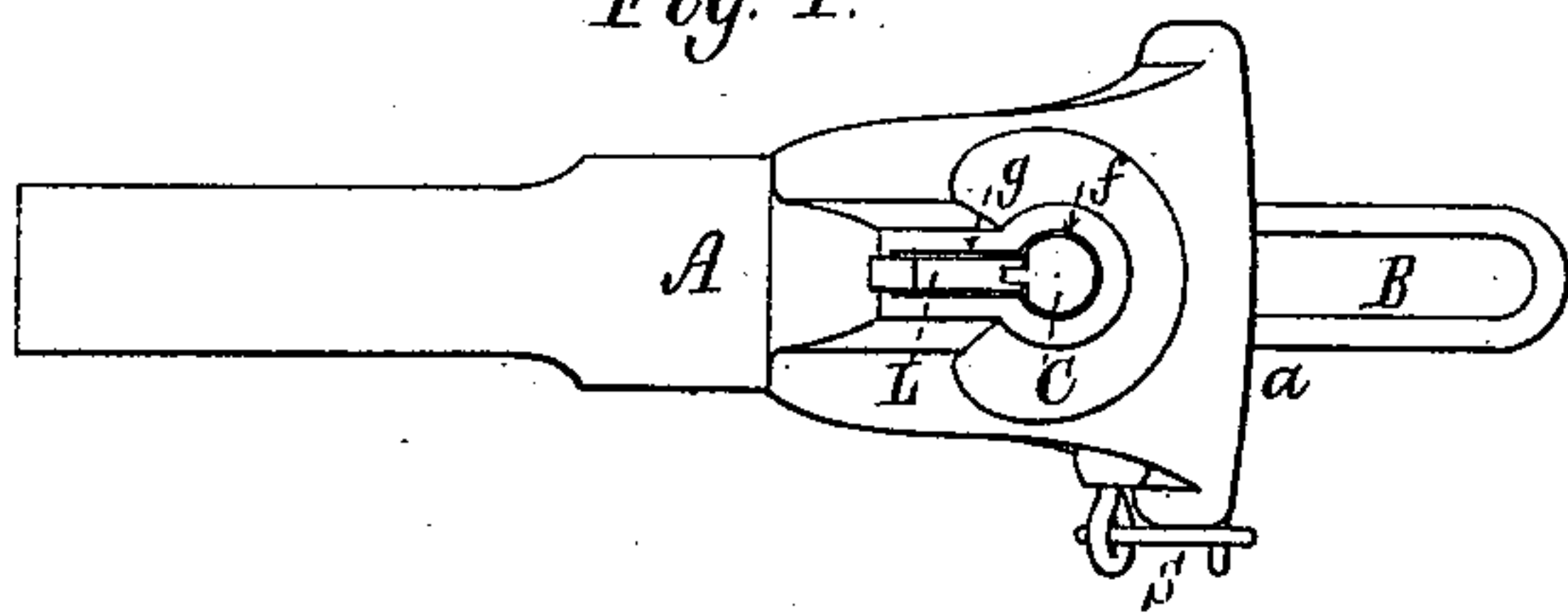


Fig. 6.

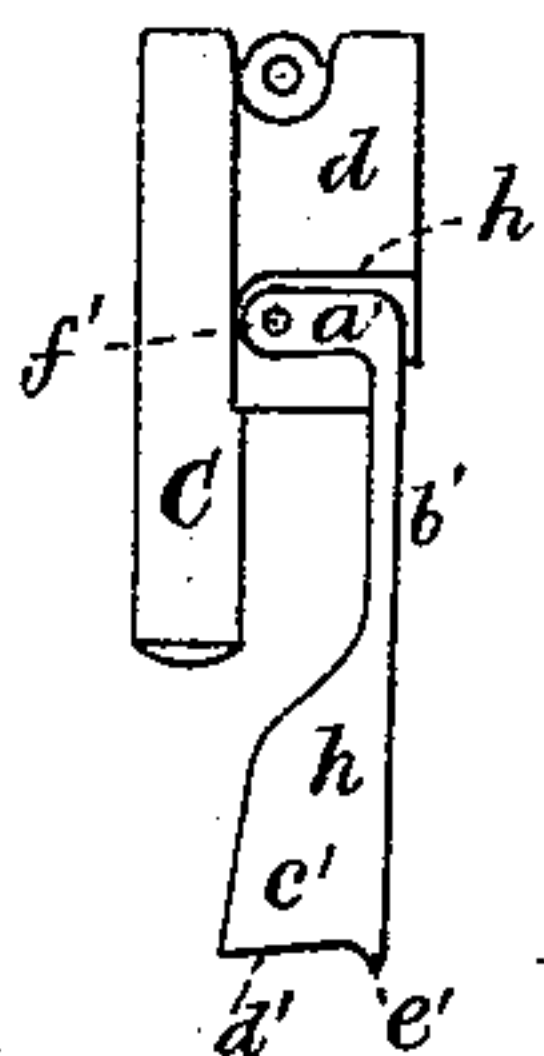


Fig. 7.

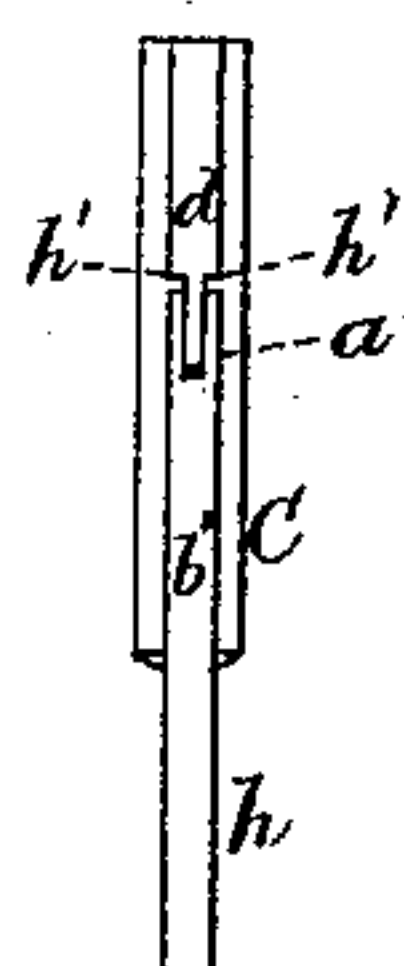


Fig. 2.

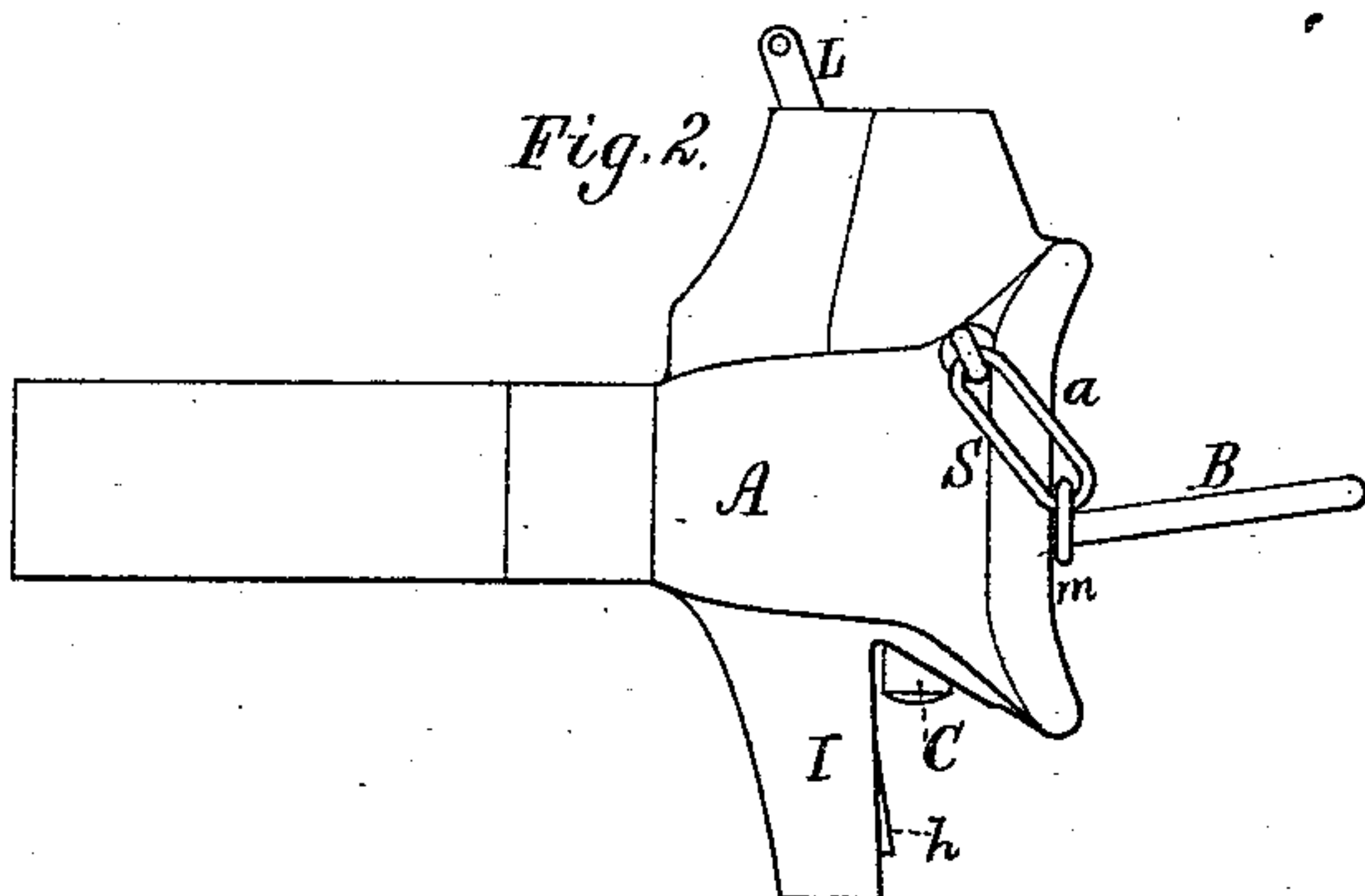


Fig. 3.

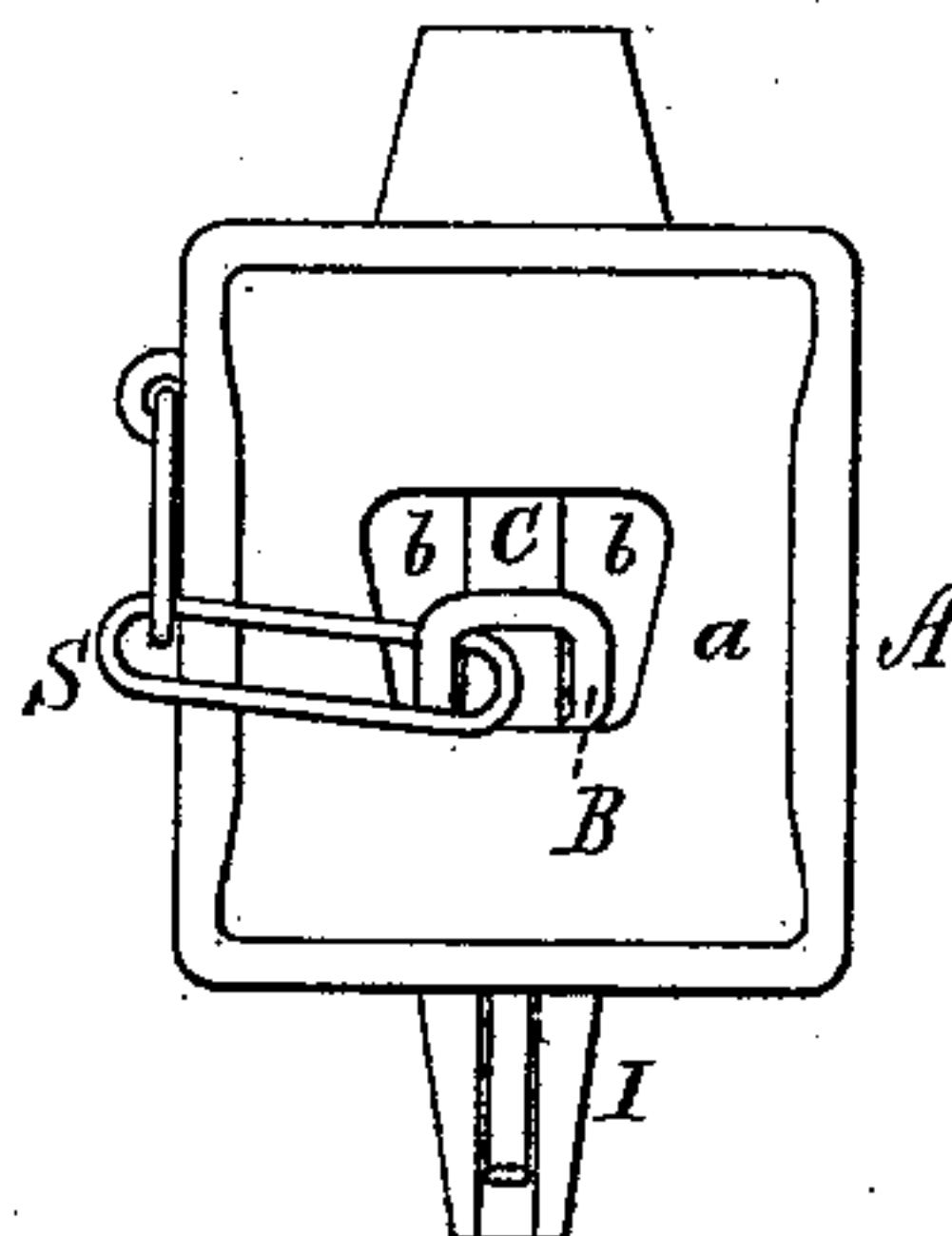


Fig. 4.

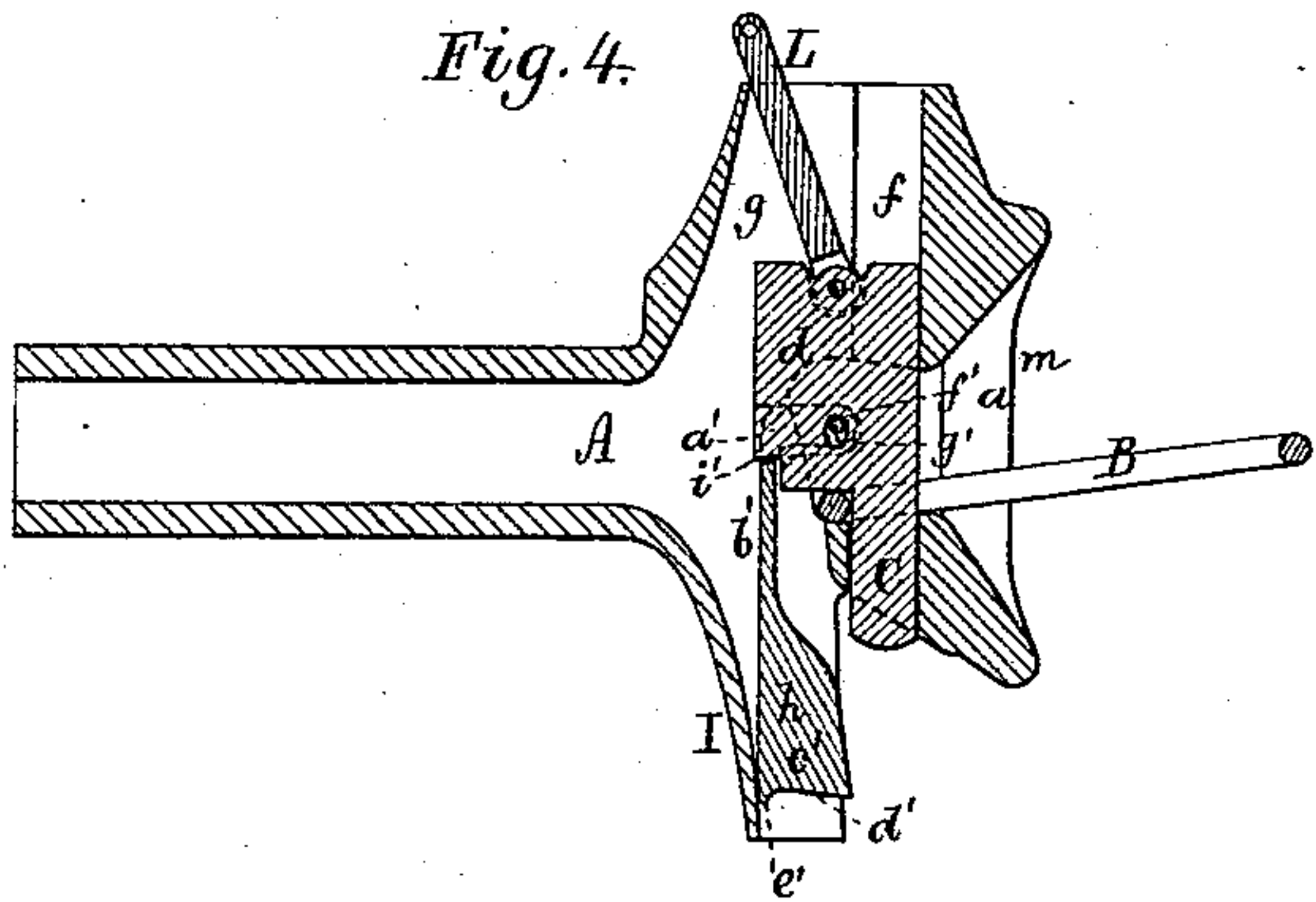
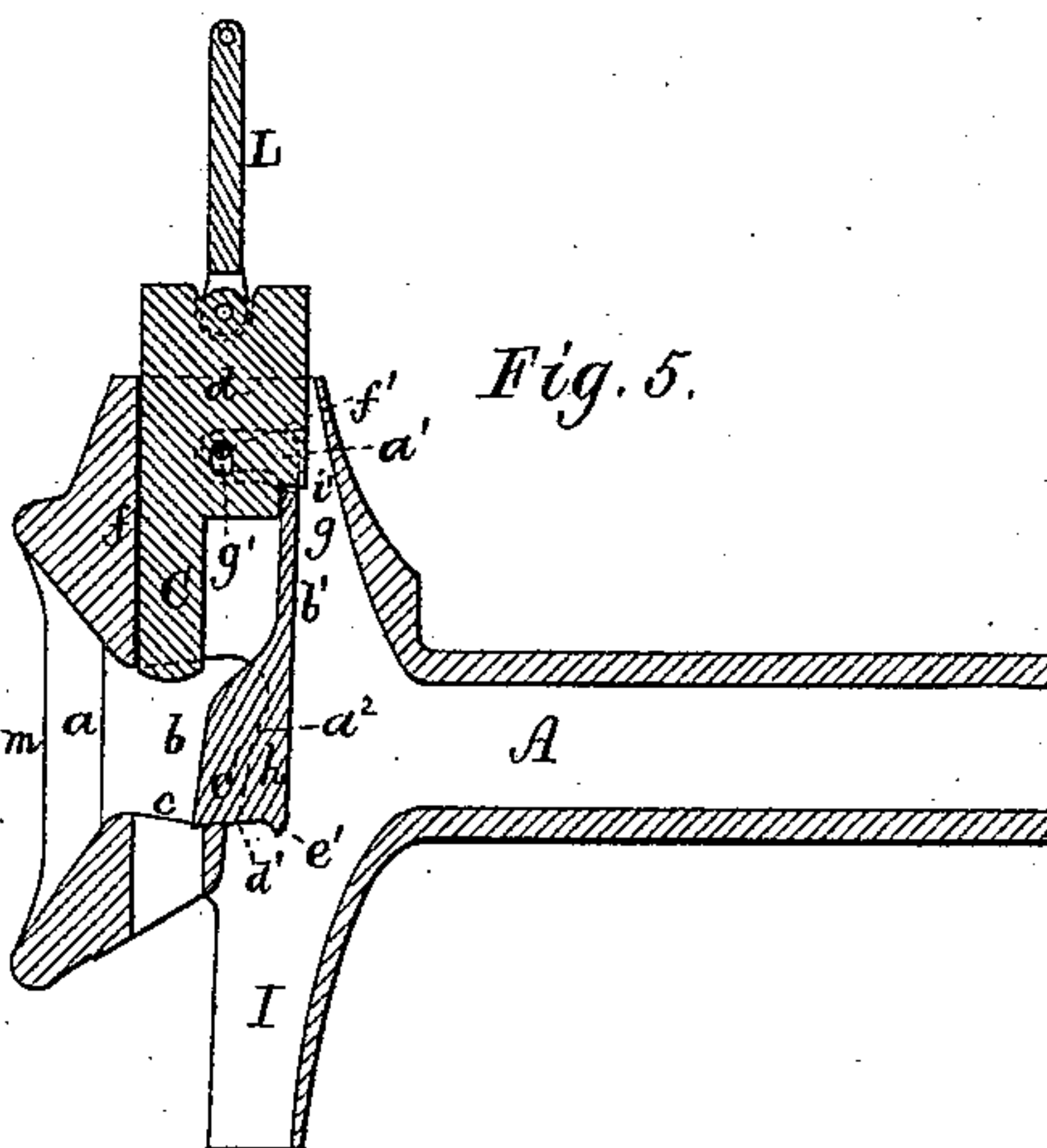


Fig. 5.



Witnesses.

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# UNITED STATES PATENT OFFICE.

DAVID LAWSON RICHARDS, OF ST. JOHN, NEW BRUNSWICK, CANADA.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 352,661, dated November 16, 1886.

Application filed March 11, 1886. Serial No. 194,835. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID LAWSON RICHARDS, now or late of St. John, in the Province of New Brunswick, of the Dominion of Canada, have invented a new and useful Improvement in Railway-Car Couplings; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view; Fig. 2, a side elevation; Fig. 3, a front end view. Figs. 4 and 5 are longitudinal sections of a draw-bar provided with my invention, the nature of which is defined in the claims hereinafter presented, a shackling-link being shown as connected by a chain to the draw-bar. Fig. 6 is a side elevation, and Fig. 7 a rear view, of the coupling-pin, its lifter and latch to be described.

In Fig. 4 the shackling-pin is shown as down, or in its lowest position, whereas in Fig. 5 it is represented as up, or in its higher position.

In such drawings, the draw-bar A is shown as having in rear of its flaring or trumpet mouth *a* a recess or chamber, *b*, whose bottom is inclined in manner as represented at *c*, such inclined bottom being for the coupling-link B to rest on in order to bring it into a proper position for coupling with another draw-bar. The coupling-pin shown at C has extending rearward from it a projection, *d*, which I term the "link-holder," such projection when the pin is down through the link being to rest on such link and hold it in its position on the inclined plane *c*.

In the draw-bar head there is in rear of the shackling-pin passage *f* another passage, *g*, which is for the projection *d* and the gravitating latch *h*, extending down therefrom, to pass through.

In raising the pin to the position as shown in Fig. 5, the latch by its specific gravity will fall forward and rest on the inclined plane *c*, and in so doing will hold the pin in its elevated position. On the link being forced into the chamber or recess *b*, and against the latch, the latter will be crowded off the inclined plane *c*, so as to allow the pin to drop downward through the link and shackle it to the draw-bar.

There is pivoted to the projection *d* at its upper part a bar or lifter, L, which by a chain may be connected with the draw-bar, such chain being to prevent the pin from being ac-

cidentally extracted or pulled upward out of the draw-bar.

The vibratory or gravitating latch *h* is a weighted arm, formed as shown, its upper part, *a'*, being furcated and standing at or about at a right angle to the part or shank *b'* below it, such shank terminating in a foot or weight, *c'*, whose lower end or bottom is inclined, as shown at *d'*, and to a stop or projection, *e'*, extending down therefrom. The part *a'* embraces the projection *d*, and is connected solely thereto by a pin, *f'*, going through such part *a'*, and a short slot, *g'*, formed vertically in the projection *d*. Such projection *d* is chambered on each of its opposite sides, as shown at *h'*, to receive the prongs of the fork or part *a'*, the latch having a thickness corresponding to that of the projection. The part of the projection that extends between the said prongs is inclined on its lower edge, as shown at *i'*.

The latch has a slight vertical play or movement relatively to the projection *d*, in order to relieve the connection-pin of the latch from wear, for when the latch is resting on the inclined plane *c* the projection *d* will not bear down upon the said connection-pin *f'*, but will rest directly upon the top of the latch. So when the pin C is in an elevated position the upper part of the latch will be supported by the projection *d*, without the connection-pin *f'* bearing on the bottom of the slot through which it passes.

By pulling the lifter upward the coupling-pin C may be elevated, so as to enable the latch to move forward and rest on the inclined plane *c*.

To set the link of one for coupling with the draw-bar of another car, the shackling-pin of such first car is to be dropped, so as to extend through the link and cause the link-holder to rest upon the link and hold it in an inclined position on the bottom or inclined plane of the link-chamber. The shackling-pin of the second car should be raised so as to cause its latch to rest on the inclined plane below it. On the link being driven into the draw-bar, the latch will be forced backward off the inclined plane, and the shackling-pin will drop through the link and shackle it to the draw-bar.

From the draw-bar there extends downward a projection, I, which is grooved or chambered vertically, so as to surround the latch when it



is down, or in its lowest position, such projection being to serve as a guard to prevent the latch when down from being accidentally struck, injured, or bent by any object.

5 The shackling-link B is connected with the draw-bar by a short chain, S, which prevents loss of the link when not in a draw-bar. To prevent the said chain S from being jammed and injured by the draw-bars when butting  
10 together, I provide each draw-bar with a recess or notch in the part of the butting end about which the chain extends in going from the link to the eye or attachment of the chain to the draw-bar, the said recess or notch being shown at *m*. It may have a depth a little  
15 greater than the width of the chain in order for the said draw-bar to operate with another draw-bar unprovided with such a recess.

By having the gravitating latch furcated in  
20 its upper part, and such part bent at or about at a right angle to the shank, and by having the link-holder chambered or recessed on its opposite sides to receive the said upper part of the latch, the chamber and said upper part  
25 constitute stops to prevent the latch from being driven too far back within the draw-bar.

Some of the advantages of my improved car-coupling may be thus enumerated: It is simple in construction, and therefore economical  
30 in cost. It will couple automatically under most, if not all, conditions, whether with a draw-bar of like or different construction, and on a curved or straight track, with the draw-bar of one car above that of the other. It is easy to  
35 uncouple from another one a car provided with it, and, if desirable, it can be set so as not to couple. It cannot readily be accidentally uncoupled by jarring or straining of the cars while running. Its link cannot be easily lost,  
40 as it is connected with the draw-bar by a chain; nor can its coupling or shackling pin be easily lost. It meets most, if not all, the requirements of train-men while coupling together a series of cars in order to form of them  
45 a train, or in uncoupling them in order to break up or separate them when in train. By having the inclines *d'* and *i'* to the latch and link-holder, as explained, they operate to prevent the latch from being accidentally thrown  
50 backward off the inclined plane in case of the car being struck in rear by another one. When two cars are coupled, the gravitating power of the latch causes it to swing forward when the pin is lifted to uncouple them, and to rest on  
55 the link when such link is in such chamber and in position for the cars to be separated.

In coupling two cars, the link in one draw-bar enters the mouth of the other draw-bar and shoves the latch therein off the inclined bottom or plane of the link-chamber, thereby enabling the pin to drop through the link, so as to couple the cars. In uncoupling them the attendant is to lift the pin high enough to draw it out of the link and carry the latch above the link, in order for the latch to move forward  
65 and rest on the link until the cars are separated. The opening at the top of the draw-bar I usually cover with a cap having a hole through it for the passage of the lifter, such cap serving to prevent snow or rain or other  
70 matter from getting into the said passage.

To centralize the link and prevent it from choking in the link-chamber, such chamber tapers on its sides, it decreasing in width from its top downward, and, besides, its back slopes  
75 or curves upward, as shown at *a'*, so as to cause the chamber to be deeper in its upper part than it is at its bottom.

I do not herein claim a car-coupling constructed as described, and represented in the  
80 United States Patent No. 312,657 dated February 24, 1885, and granted to me. My present coupling, although analogous thereto in several respects, differs therefrom in the combination and application of its latch.  
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I claim—

1. The link-holder chambered on its opposite sides and provided with the vertical slot, in combination with the gravitating latch, having its upper part furcated and bent at or  
90 about at a right angle to the shank, and connected solely to the link-holder by a pin going through the slot and the prongs of the said upper part, such holder also having the incline *i'*, all being substantially as set forth.  
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2. The link B and its chain S, in combination with the draw-head having the vertical notches *a*, as set forth.

3. The combination of the link-holder provided with the incline *i'* with the gravitating  
100 latch provided with the incline *d'*, and connected with such link-holder, substantially as described.

4. The link-chamber decreasing in width and depth from its top downward, as described.

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Witnesses:

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