

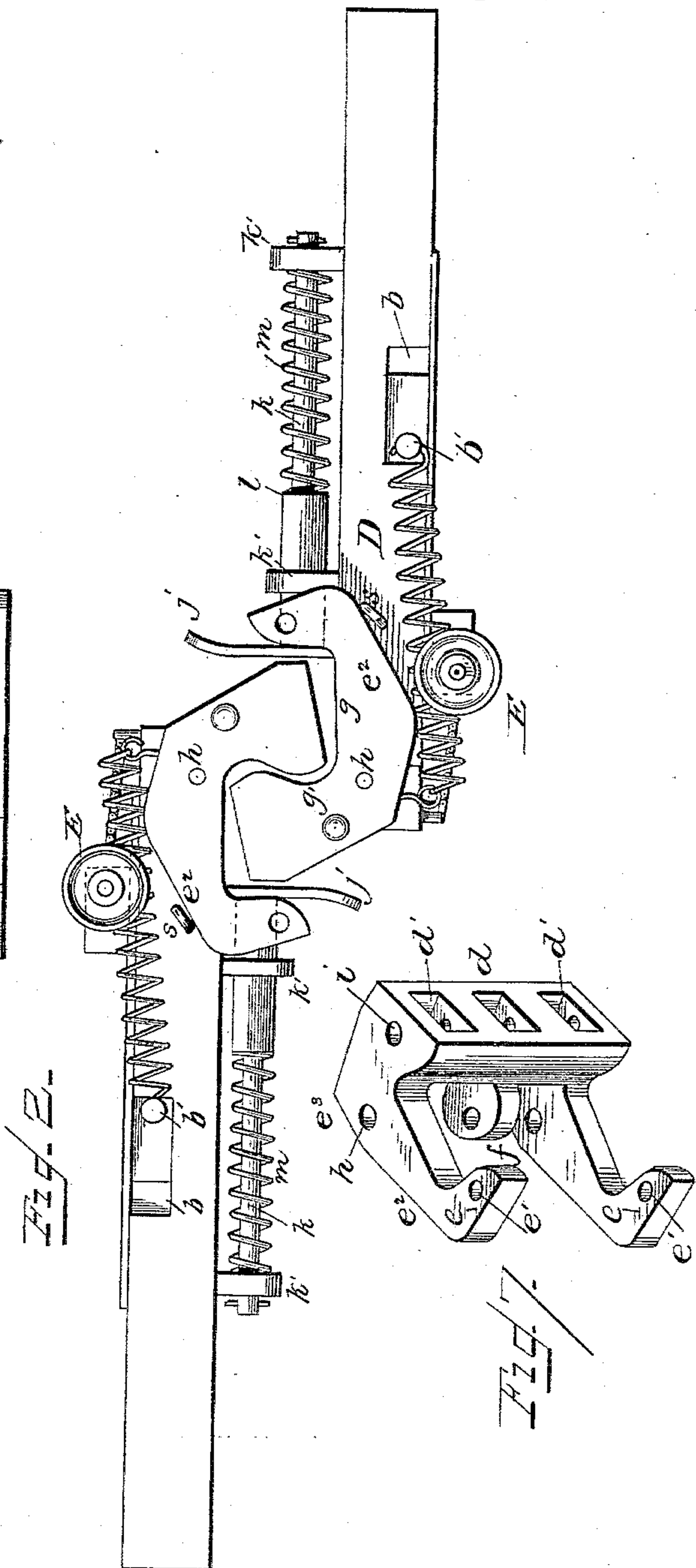
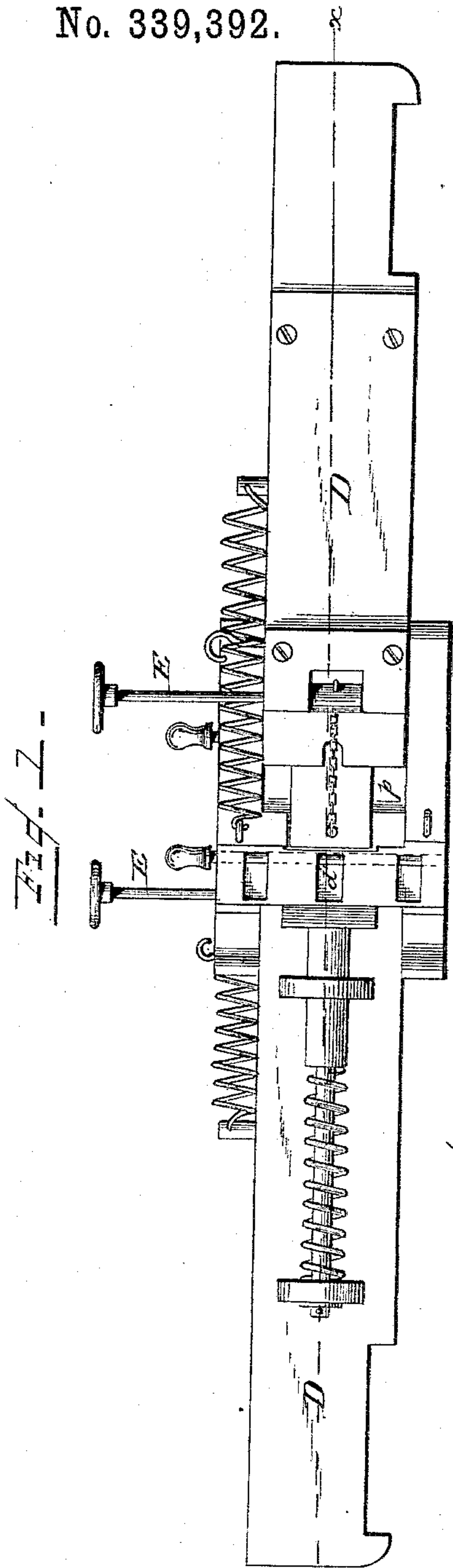
(No Model.)

3 Sheets—Sheet 1.

T. P. EVANS.  
CAR COUPLING.

No. 339,392.

Patented Apr. 6, 1886.



WITNESSES

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*Thomas P. Evans*  
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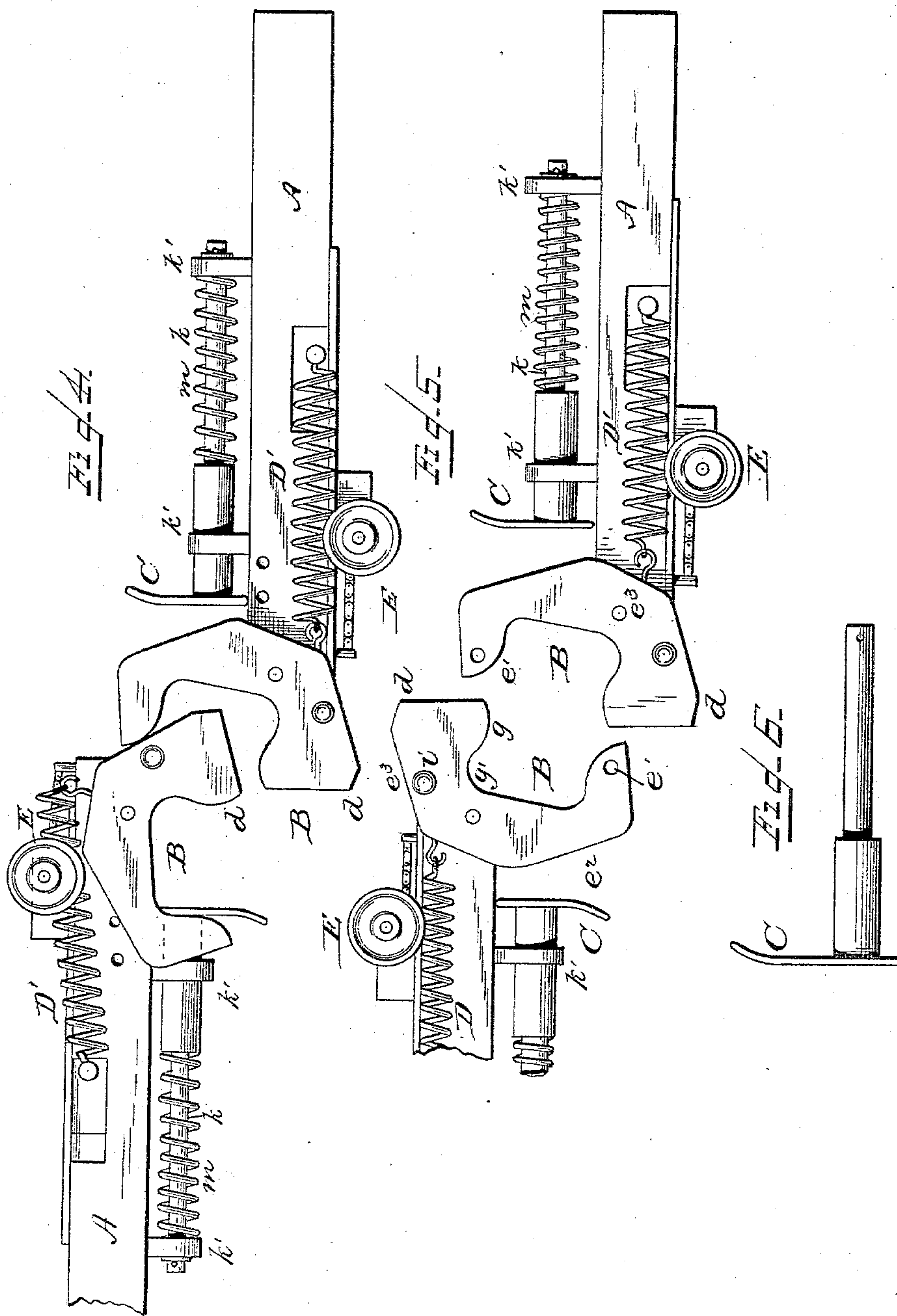
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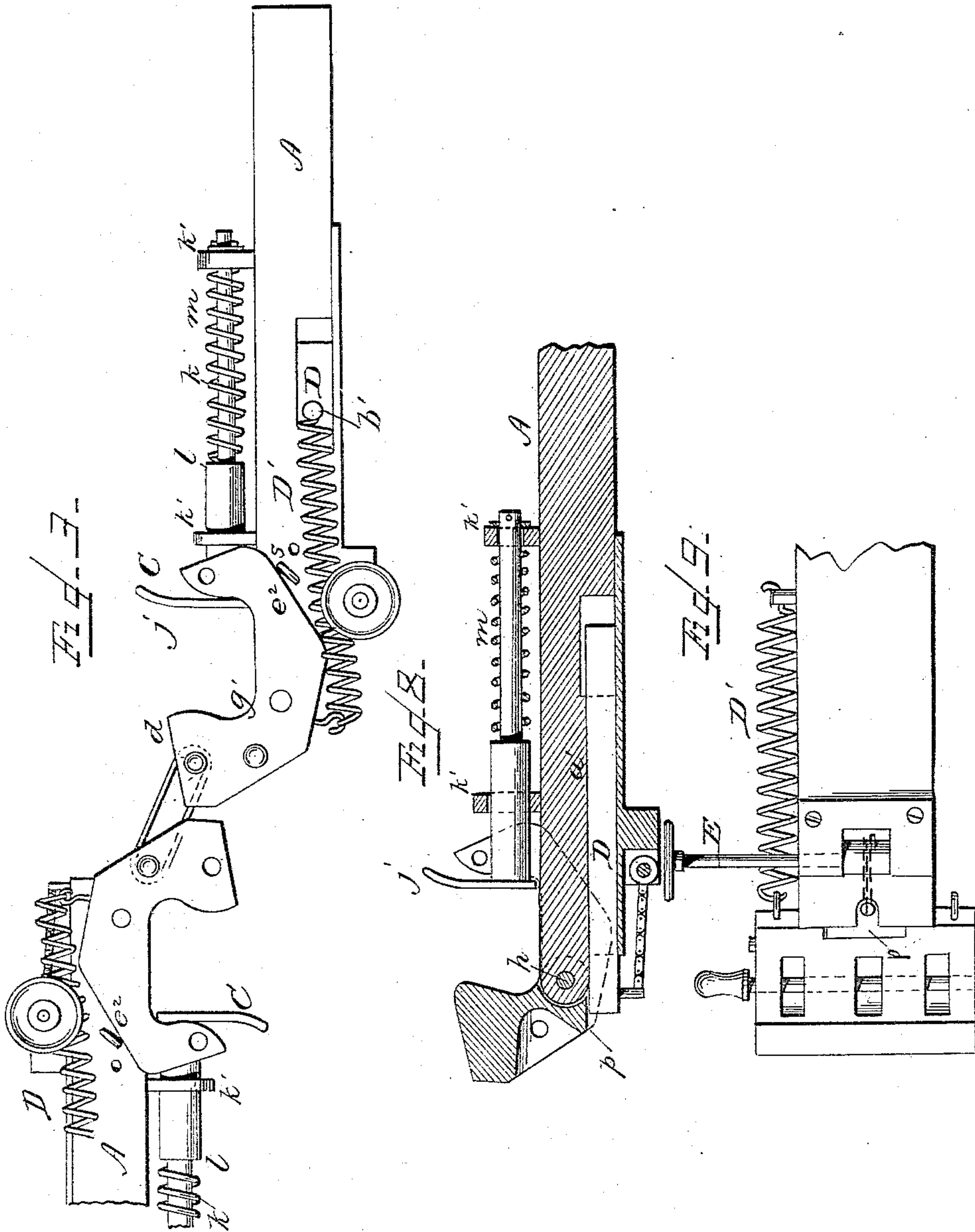
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# UNITED STATES PATENT OFFICE.

THOMAS P. EVANS, OF DENVER, COLORADO.

## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 339,392, dated April 6, 1886.

Application filed January 18, 1886. Serial No. 188,928. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS P. EVANS, a citizen of the United States, residing at Denver, in the county of Arapahoe, State of Colorado, have invented certain new and useful Improvements in Car-Couplers, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a side elevation of my improved automatic car-coupler detached from car-beds. Fig. 2 is a top plan view of the same. Fig. 3 is a plan view of two couplers, the cars being uncoupled and the coupling-hooks being arranged for use in the yard, where a common link may be used, if desired. Fig. 4 is a similar view of the same parts, showing the coupling-hooks adjusted for automatic coupling when cars come together. Fig. 5 is a view showing the hooked couplers adjusted for coupling when both are open. Fig. 6 is a top view of my improved spring-actuated buffer. Fig. 7 is a perspective view of one of my improved coupling-hooks. Fig. 8 is a section taken horizontally through one of the couplers in the plane indicated by the dotted line *xx* on Fig. 1. Fig. 9 is a view of the back of a coupler.

This invention relates to certain novel improvements on couplings for railway cars and coaches, which improvements have especial relation to what are denominated "self-couplers," or automatic couplings of the hooked kind, as will be fully understood from the following description when taken in connection with the annexed drawings.

This invention is applicable to cars as now constructed. Therefore I do not illustrate, in the drawings hereto annexed, car-beds. A designates a draw-bar; B, my improved automatic or self-coupling hook, and C the spring-actuated buffer.

The draw-bar A may be provided with the usual spring-cushion and hung beneath the platform and bed of a car in any well-known or other suitable manner. This draw-bar is recessed longitudinally at *a* on one side, to receive a slide, D, which is allowed to receive endwise movements, and which is suitably "capped." The said draw-bar is also recessed at *b* vertically to allow play for a stud, *b'*, which is the rear attachment for a helical

spring, D', located on top of the draw-bar and suitably linked at its front end to the back of the coupling-hook.

The front end of the slide D is connected by a chain to the windlass of a vertical hand-wheel shaft, E, which should be conveniently arranged for a brakeman, both for coaches and freight-cars.

I will now describe my improved automatic coupling-hook. Both hooks are made alike. Therefore the following description of one hook will apply to both.

The letter *d* designates an abutting surface which is on the heel of my hook, which surface is in or nearly in a plane at right angles to the road, or, in other words, at right angles to the length of the car when the coupling-hook is in the position shown in Figs. 4, 5, and 9 of the annexed drawings. This heel *d* is slotted horizontally at many points, as indicated by the letter *d'*, for the purpose of receiving a common coupling-link, and to allow the adjustment of the same for platforms or car-beds of different heights, and in combination with these link-receptacles the heel of the hook is provided with a receptacle, *i*, for a coupling-pin. At the opposite end of the heel *d*, I form two hooks, *e e*, which may or may not be perforated at *e' e'*. The object of these perforations is to receive a coupling-pin for a common coupling-link. On the inner side of the said heel are formed surfaces *g g'*. These are impinging surfaces for the corresponding sides of another coupler.

On the posterior side of my improved self-coupler, as shown in Fig. 8, is a seat or bearing, *p*, which is shouldered above and below and adapted to serve in combination with the slide or bolt D, to lock positively the coupling-hook when it is in the position indicated in Figs. 1, 2, 3, and 8. This coupling-hook which I am describing has its axis of motion at *h*, by means of a vertical pivot, which passes through ears formed on the end of the draw-bar, through the hooks near the heel, and also through an ear, *f*, formed on the coupling-hook near the heel *d*. It is about the vertical axis of motion of the pivotal pin *h* that my improved hook vibrates. When the hook is in the position indicated in Figs. 5 and 9, the face *e'* abuts against the end of the draw-bar. When the hook



is in the position indicated in Figs. 1, 2, 3, and 8, the face  $e^2$  abuts against a stop,  $s$ , which may be inserted into the top of the draw-bar, to be used in combination with a chain for taking  
 5 up slack. The flat-faced heel, slotted or not, the angular face  $e^3$ , the face  $e^2$ , and the peculiar shaped hook, together with the curved crotch on the inner side of the heel  $d$ , constitute the  
 10 essential features of my improved automatic coupling-hook, the said faces being perpendicular to the roadway.

It will be seen from the above description of my improved coupling-hook that it will accommodate itself to road-curves, also to  
 15 vertical inequalities, and also to lateral thrust or shucking without liability of detachment. At the same time the coupling-link affords abutments without coupling in changing cars on tracks in the yard.

20 The buffer  $C$  is located on the opposite side of the draw-bar  $A$  to the locking bolt or slide above described. This buffer consists of a curved plate,  $j$ , which may be made of steel, having a cushioned face, the inner end of  
 25 which abuts against and is guided by the side of the draw-bar, and the outer portion is bent backward, so that when the nose of the hook of a coupler impinges against it in the act of coupling cars, the free end of the coupler will  
 30 be directed inward and a coupling positively effected. This buffer  $j$  is rigidly fixed on the end of a rod,  $k$ , which has endwise movement through guides  $k'$   $k'$ , and is shouldered at  $l$ . Between the shoulder  $l$  and the rear guide a  
 35 helical spring,  $m$ , is coiled around the rod  $k$ , which cushions the shocks against said buffer-plate.

The position of the buffer-plate with respect to the laterally-curved end of the car-platform  
 40 is such that car-platforms can be brought ap-

proximately close together, and thus practically "make up" a solid train, which will move without undue concussion.

Having described my invention, I claim—

1. In a car-coupler, the combination of a  
 45 pivoted coupling-hook, a spring-actuated slide, and a spring-actuated curved buffer-plate, substantially as described.

2. For the purpose described, a coupling-hook having a flat-faced heel, the angular  
 50 abutting surfaces, the hooked portion, and the curved crotch, substantially in the manner and for the purposes described.

3. A coupling-hook consisting of a heel having a flattened abutting surface slotted  
 55 horizontally and perforated vertically, as and for the purpose described, in combination with the posterior angular surfaces  $e^2$   $e^3$ , the hooking portion, and the curved crotch, as shown and described.

4. The combination, in a car-coupler, of the  
 60 draw-bar, the spring-actuated locking bolt or slide, the pivoted hooked coupler, constructed substantially as described, the spring connecting this coupler with the said draw-bar, and a  
 65 device for retracting said locking bolt or slide, substantially as described.

5. The combination, in a car-coupler, of a coupling-hook having a slotted heel and piv-  
 70 oted to the end of a draw-bar, a locking-bolt connected to said hook by means of a spring, a retracting device for the hook, and a buffer-plate guided and cushioned, substantially in the manner and for the purpose described.

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

THOMAS P. EVANS.

Witnesses:

JOHN T. SUTER,  
 R. T. CAMPBELL.