

Patented July 10, 1883.

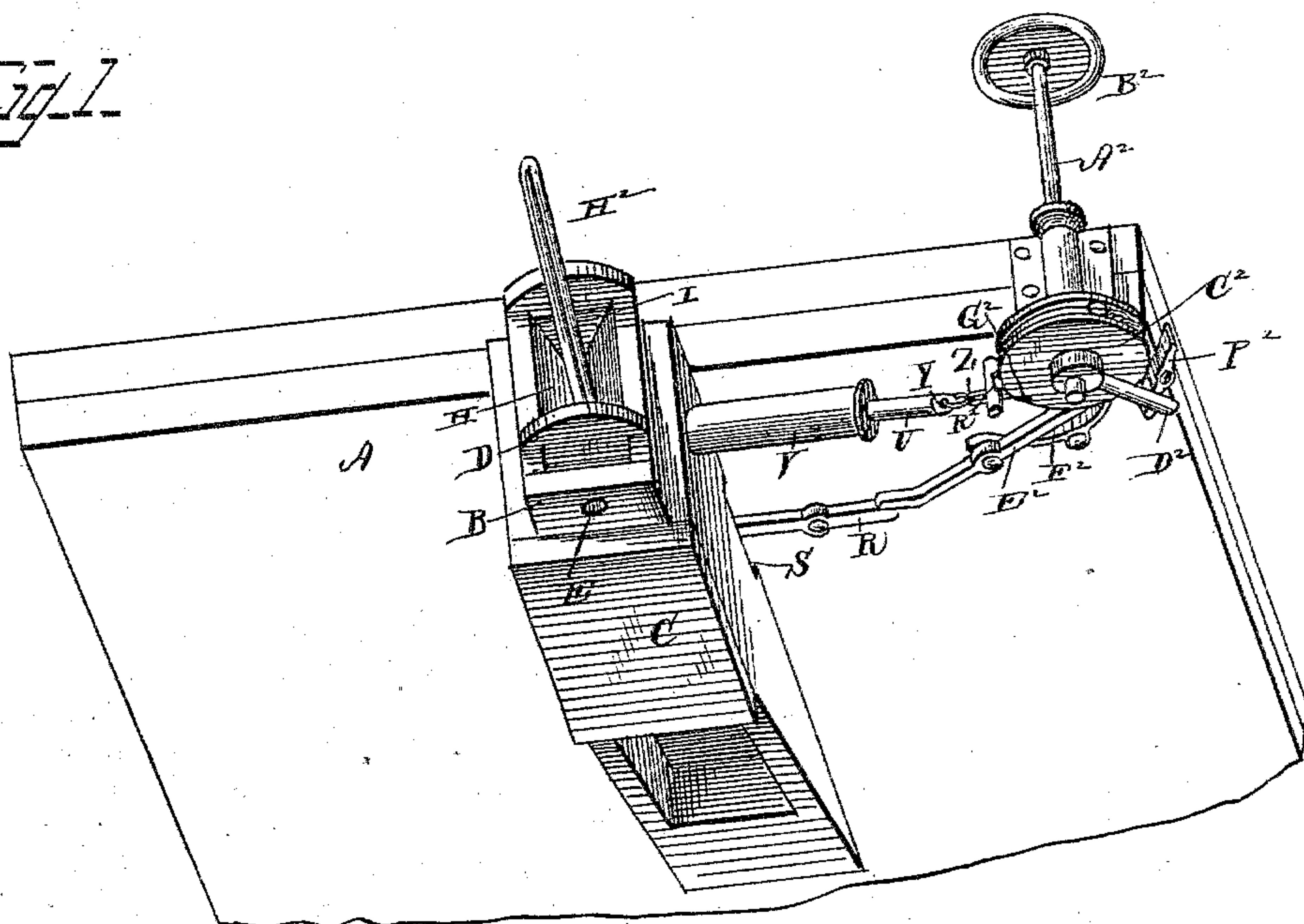


Fig 2

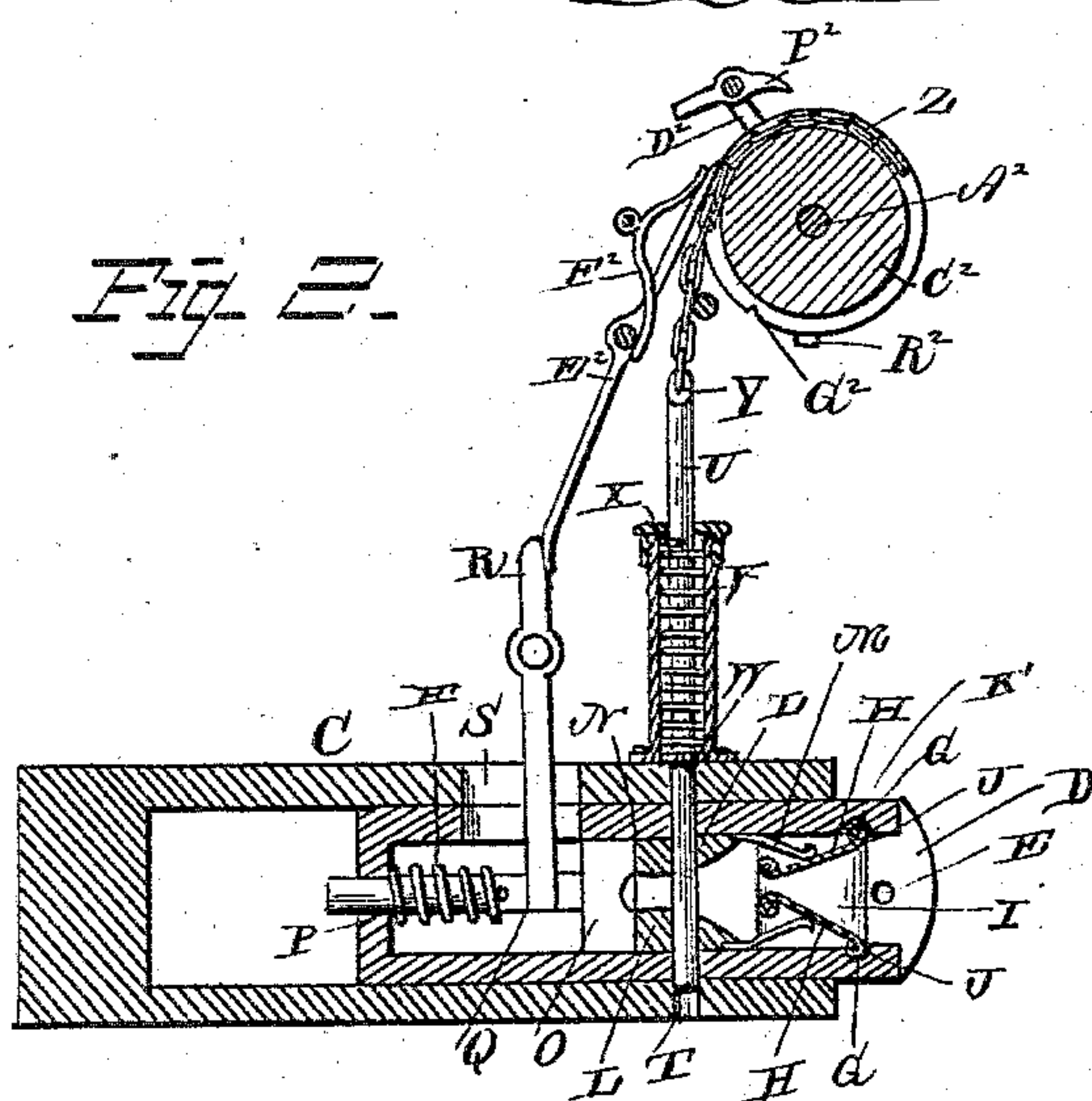


Fig 3

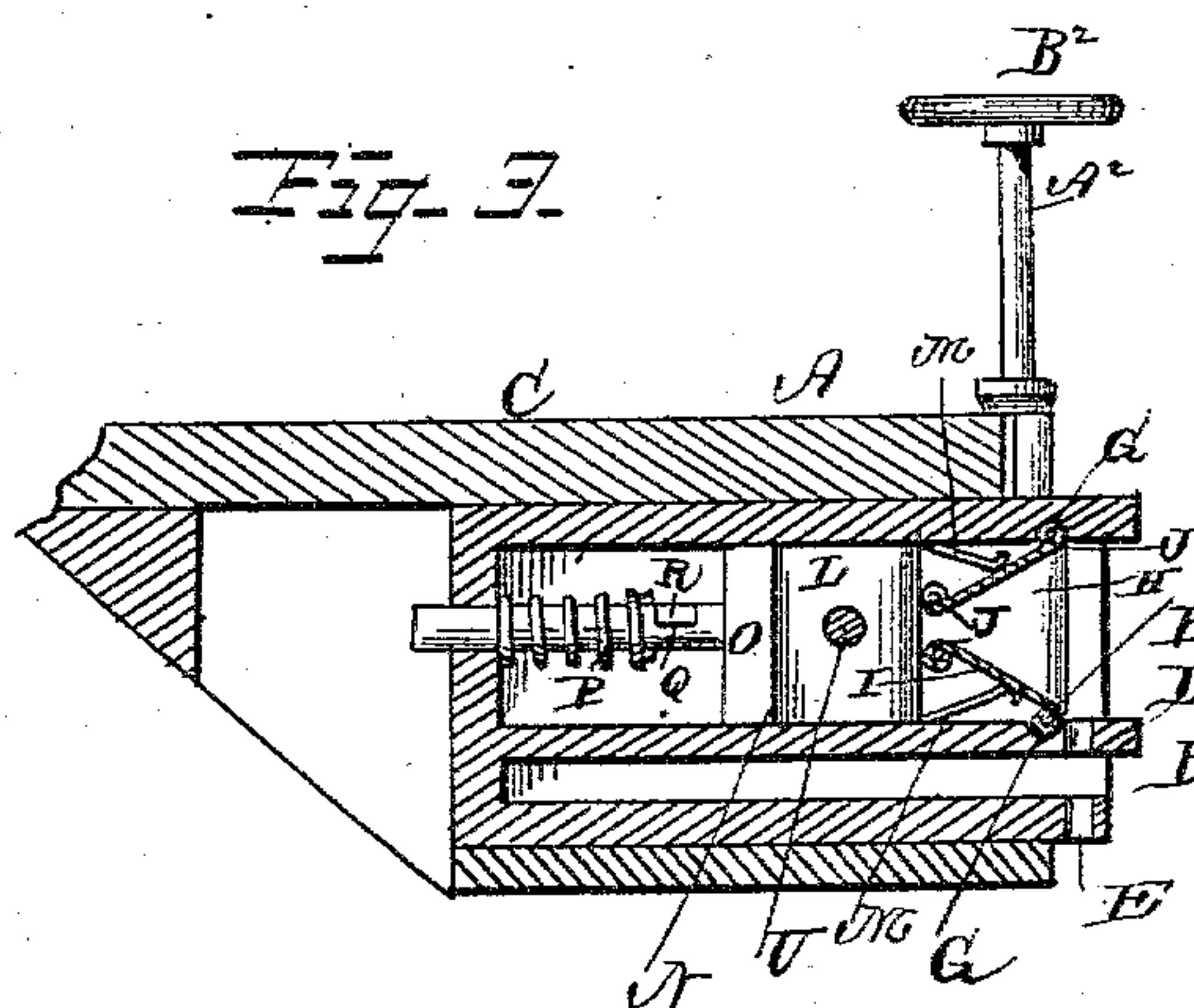
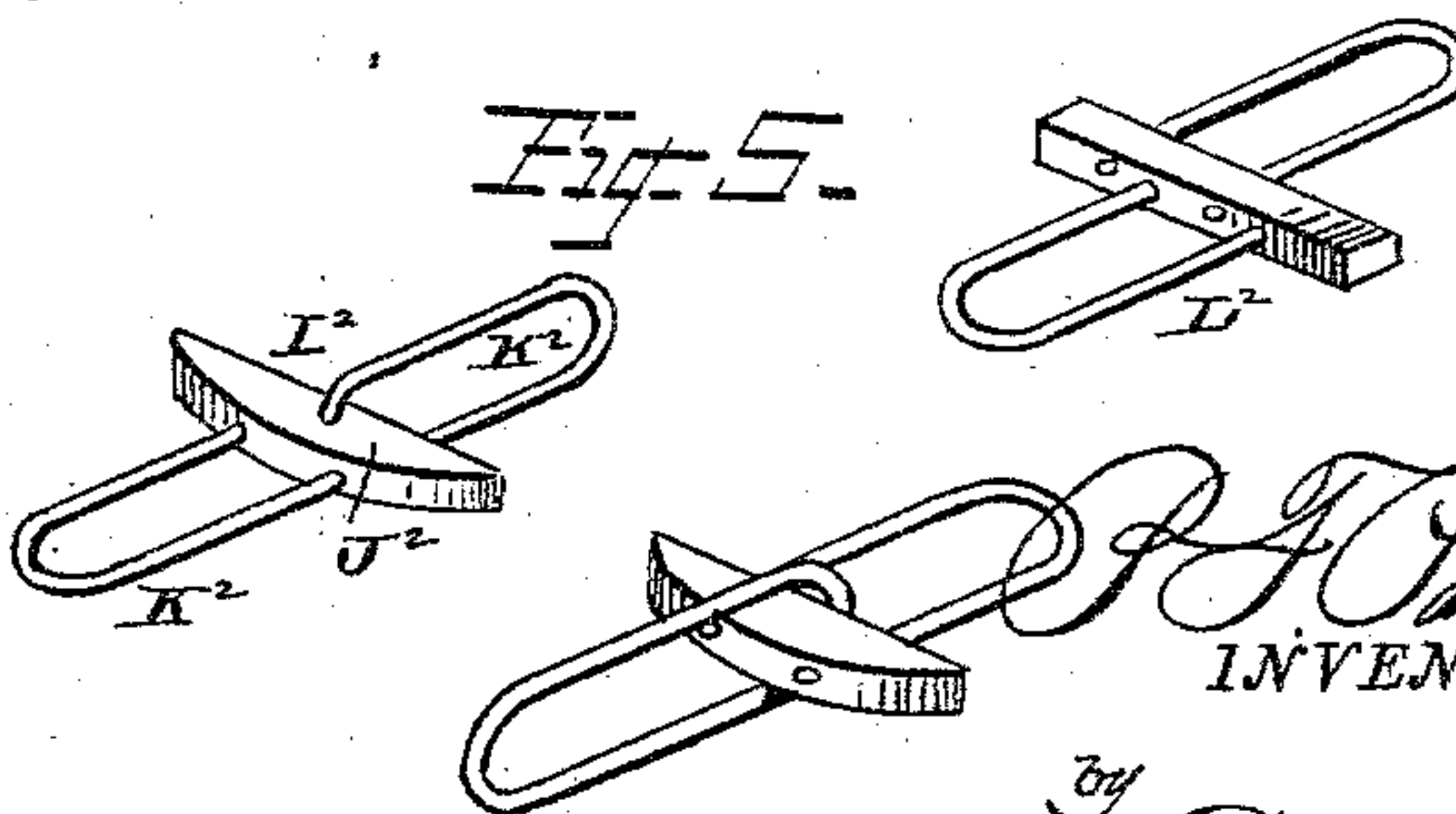


Fig 5.



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# UNITED STATES PATENT OFFICE.

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## CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 280,949, dated July 10, 1883.

Application filed May 19, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, PETER F. PANABAKER, a citizen of the United States, residing at Coon Rapids, in the county of Carroll and State of Iowa, have invented a new and useful Car-Coupling, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to that class of car-couplings which are coupled automatically by the coming together of the cars; and it consists in certain improvements in the construction of the same, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a perspective view of my improved car-coupling. Fig. 2 is a horizontal sectional view of the same. Fig. 3 is a longitudinal vertical sectional view. Fig. 4 is a detail view of the guard-plates; and Fig. 5 is a detail view, showing several forms of coupling-links adapted to be used in connection with my invention.

The same letters refer to the same parts in all the figures.

A in the drawings designates the end of a car-frame equipped with my improved coupling, and B the draw-head or buffer, which is attached to the car-frame in any suitable manner—for instance, as shown in the drawings, by a suitable hanger or boxing, C. The buffer has a horizontal partition, D, dividing it into two compartments, the upper one of which contains part of my improved automatic coupling mechanism, while the top and bottom of the lower compartment have vertical perforations E, to receive a coupling-pin when it shall be desired, for any reason, to use the ordinary pin-and-link coupling. The top, bottom, and sides of the upper compartment, F, of the buffer are provided, near the front end of the same, with grooves G to receive the front ends of the guard-plates H and I. The side guards, H, consist of plates of iron or steel, the front and rear ends of which are coiled so as to form tubes J, and their upper and lower edges are cut away slantingly from front to rear, as clearly shown at K in Fig. 4 of the drawings. The front and rear ends of the top and bottom plates, I, are likewise coiled

so as to form tubes J. The front tubes of all the guard-plates fit in the grooves G of the buffer, and receive pins K', by which the said plates are hinged in their respective places. The top and bottom plates rest or are accommodated in the recesses K of the side plates. The coils or tubes at the inner ends of the several plates are simply in the nature of bevels, to make a neat finish and to insure the smooth and easy operation of the device. The buffer-compartment F is provided with guide-plates L, secured to the inner sides, top, and bottom of the same, and beveled on their front sides, so as to guide the link in an inward or rearward direction. Between the front ends of these guide-plates and the walls of the buffer are clamped flat springs M, which bear against the inner ends of the guard-plates H and I, and hold the said plates closely together, as shown, without, however, interfering with their free movement upon their respective hinges. Suitably-arranged coiled springs may, when desired, be substituted for the flat springs M. The rear or inner ends of the plates L form shoulders N, that serve to limit the forward movement of a follower, O, sliding longitudinally in the rear part of the draw-head, and forced in a forward direction by a suitably-arranged spring, P. The rear end of the follower O has a notch or slot, Q, to receive the end of a lever, R, pivoted so as to swing horizontally under the car-frame, and working in a slot, S, in the side of the buffer.

T is an opening or perforation extending transversely through the sides of the compartment F of the buffer and the plates L, adjoining the sides, to receive the coupling-pin U, which slides in a tubular casing, V, secured to the side of the buffer. The pin U has an annular flange, W, between which and the outer closed end of the tube or casing V is interposed a coiled spring, X, serving to force the said pin automatically in an inward direction. The outer end of the coupling-pin extends through the casing, and is provided with an eye, Y, to which a chain, Z, is attached.

A<sup>2</sup> is a vertical shaft journaled in suitable bearings to the end of the car, and having a hand-wheel, B<sup>2</sup>, by which it may be conveniently manipulated, at its upper end, which



may extend to the platform or to the top of the car. The lower end of shaft  $A^2$  has a grooved wheel,  $C^2$ , to which the end of chain  $Z$  is attached. The under side of wheel  $C^2$  has  
 5 a handle or lever,  $D^2$ , by means of which it may be manipulated by a man standing on the ground, which is sometimes desirable.  $E^2$  is a lever or pawl pivoted under the car-frame. The outer end of this lever rests against and  
 10 is held in contact with the rear side of the wheel  $C^2$  by means of a spring,  $F^2$ , while its inner end rests against the outer end of the lever  $R$ . The wheel  $C^2$  has a notch,  $G^2$ , adapted to receive or engage the end of the pawl or  
 15 lever  $E^2$ , and it is also provided with a stud or ratchet,  $R^2$ , adapted to engage a pawl,  $P^2$ , which is pivoted to the car-frame, and which serves to retain the wheel  $C^2$  when it is desired to prevent the cars from coupling when  
 20 they come together.

In connection with my improved car-coupling, an ordinary coupling-link,  $H^2$ , may be used, when placed on edge, so as to receive and engage the transversely-sliding coupling-  
 25 pin. For coupling with cars having the old-fashioned coupling, I avail myself of the link  $I^2$  (shown in Fig. 5,) which consists of a central plate,  $J^2$ , to the sides of which semi-links  $K^2$  are secured at right angles to each other.

30  $L^2$  designates a link having a central plate, to the opposite sides of which the semi-links are secured, one above the other, for coupling cars of different heights.

From the foregoing description, taken in  
 35 connection with the drawings hereto annexed, the operation and advantages of my invention will be readily understood. By turning the wheel  $C^2$  so as to partly wind the chain  $Z$ , the coupling-pin is withdrawn. The pawl  $E^2$  will  
 40 then engage the notch  $G^2$ , thereby keeping the coupling-pin withdrawn from the buffer. When the cars come together, the link of the opposite car will enter the draw-head, being properly guided by the spring-plates  $H$  and  
 45 plates  $L$ , until it strikes the follower  $O$ , which it forces in a rearward direction, thus operating the lever  $R$  and disengaging the pawl  $E^2$  from the wheel  $C^2$ , when the spring  $X$  will force the coupling-pin inward and complete  
 50 the coupling. The buffers will receive the concussion of the cars coming together in the usual manner.

The front end of the follower  $O$  may be provided with a vertical groove, as shown, to  
 55 receive the inner end of the link.

The cars may be prevented from coupling as they come together by throwing the pawl  $P^2$  into engagement with the stud  $R^2$  of wheel  $C^2$ .

I claim as my invention and desire to secure by Letters Patent of the United States— 60

1. In a car-coupling, the herein-described buffer having a horizontal partition, the grooves in the upper compartment, near the front end of the same, the guide-plates hinged  
 65 in said grooves, and suitable springs arranged to force the inner ends of said plates together, as set forth.

2. The combination, with the buffer, of the hinged side guard-plates having tapering recesses in their upper and lower sides, the  
 70 hinged top and bottom guard-plates resting in said recesses, and suitable springs arranged to hold or force the inner ends of said plates together, as set forth.

3. The combination of the buffer, the hinged  
 75 guard-plates, the fixed guide-plates beveled at their front ends, and springs clamped between said guide-plates and the walls of the buffer, and acting against the inner ends of the hinged plates, which are thereby forced  
 80 together, as set forth.

4. The combination of the buffer, the guide-plates secured in the same, and the longitudinally-sliding follower, the forward movement of which is limited by the shoulders formed  
 85 by the rear or inner ends of the said guide-plates, as set forth.

5. The combination of the buffer, the hinged guard-plates, the guide-plates, the follower, the lever engaging the rear end of the latter, the  
 90 tubular casing upon the side of the buffer, the coupling-pin arranged in said casing, the spring arranged to force said coupling-pin in an inward direction, the horizontal grooved wheel having a notch in its rear side, a chain  
 95 connecting said wheel with the coupling-pin, a lever or pawl adapted to engage the notch in the chain-wheel, and having its inner end arranged to rest against the end of the lever operated by the follower, and a spring ar-  
 100 ranged to force the said pawl into contact with the notch in the chain-wheel, as set forth.

6. A coupling-link consisting of a central plate having semi-links secured to opposite sides thereof at right angles to each other, as  
 105 set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

PETER FRANKLIN PANABAKER.

Witnesses:

J. B. PANABAKER,  
 C. S. KAUFFMAN.