

No. 829,456.

PATENTED AUG. 28, 1906.

L. BOTTENSTEIN.
CAR COUPLING.

APPLICATION FILED MAR. 22, 1905.

2 SHEETS—SHEET 1.

Fig. 13.

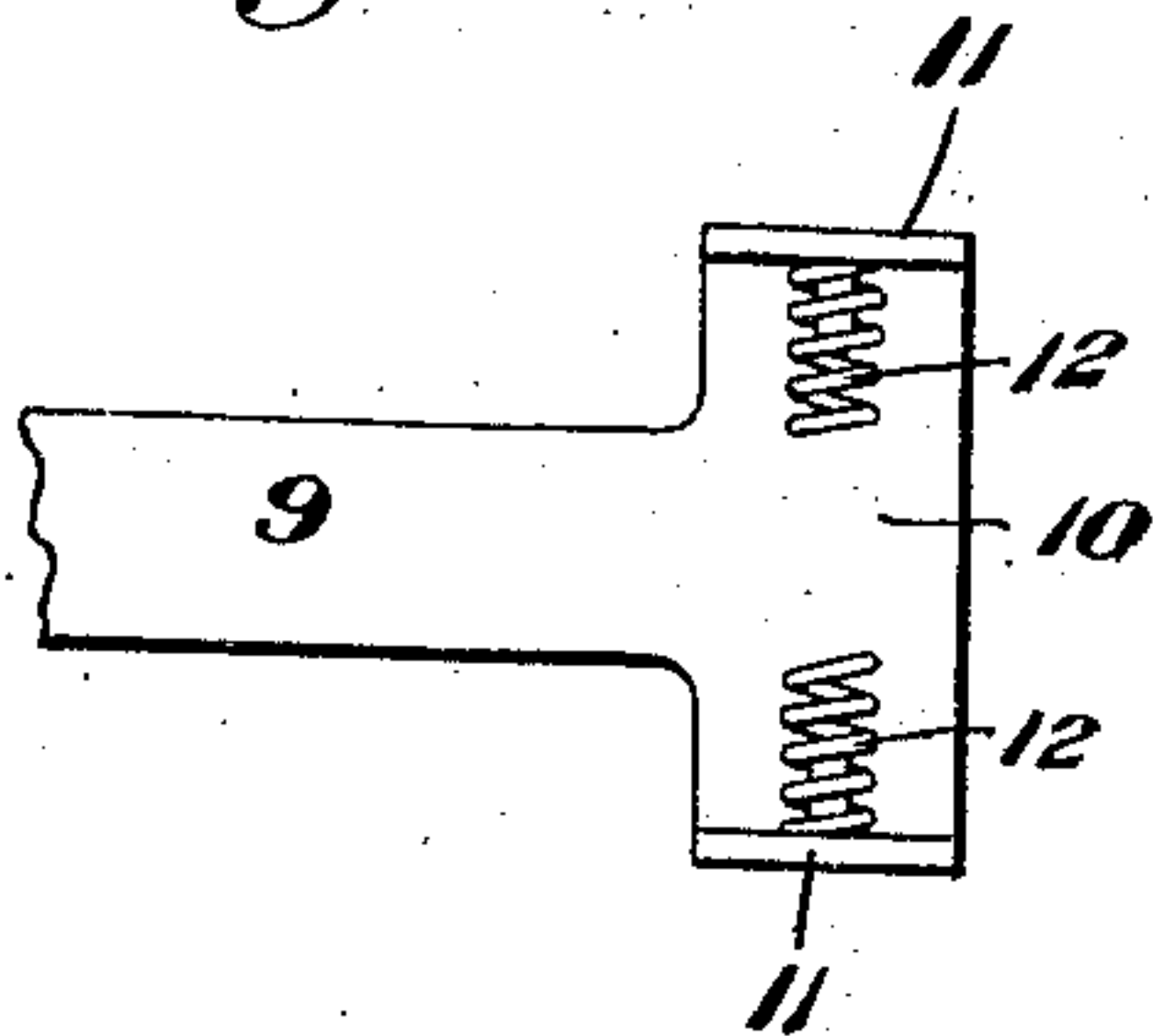


Fig. 3.

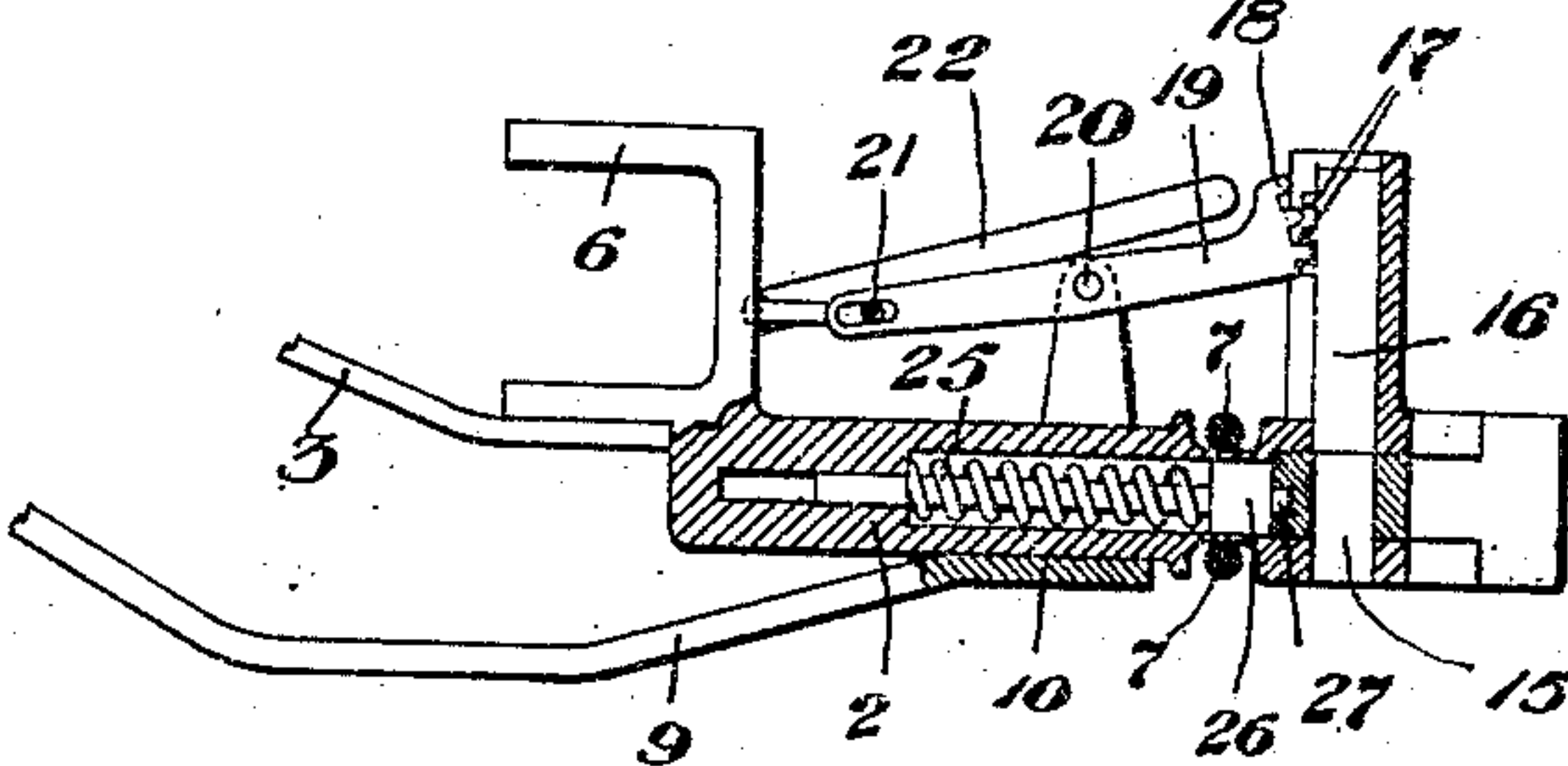


Fig. 1.

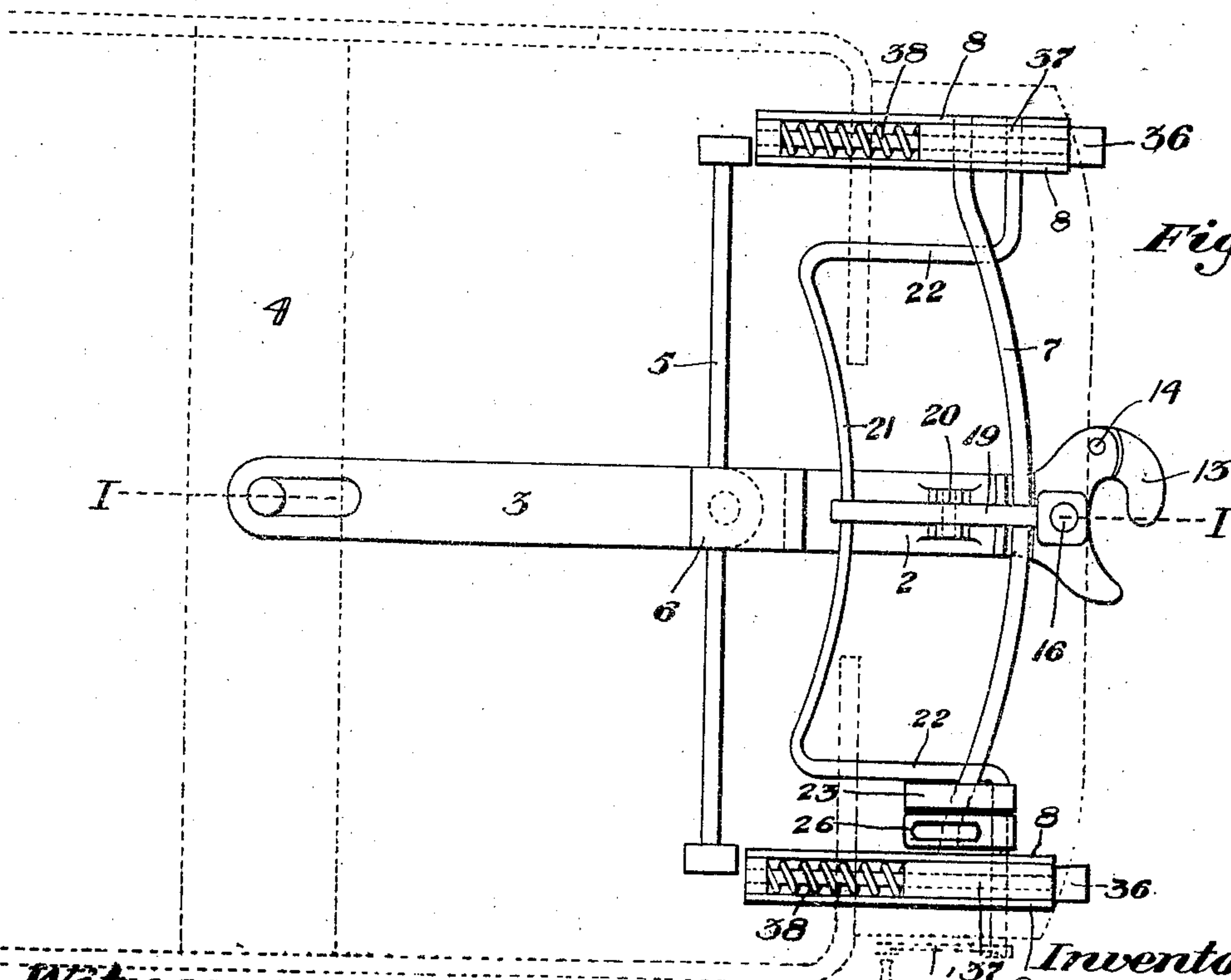
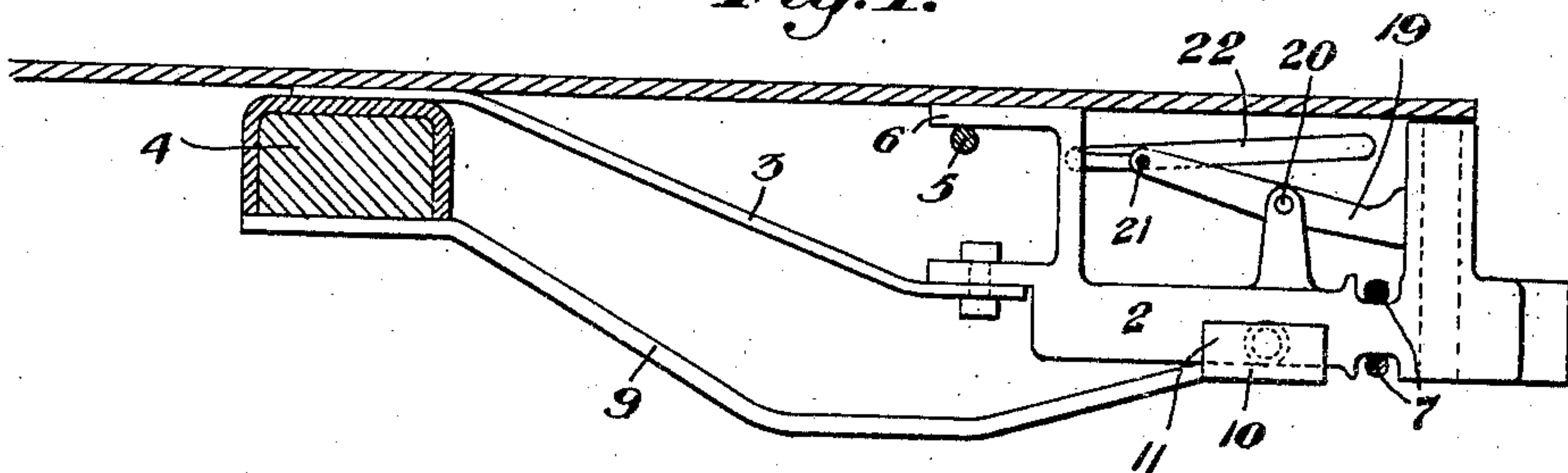


Fig. 2.

Witnesses

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Inventor:

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by C. M. Clarke
his attorney

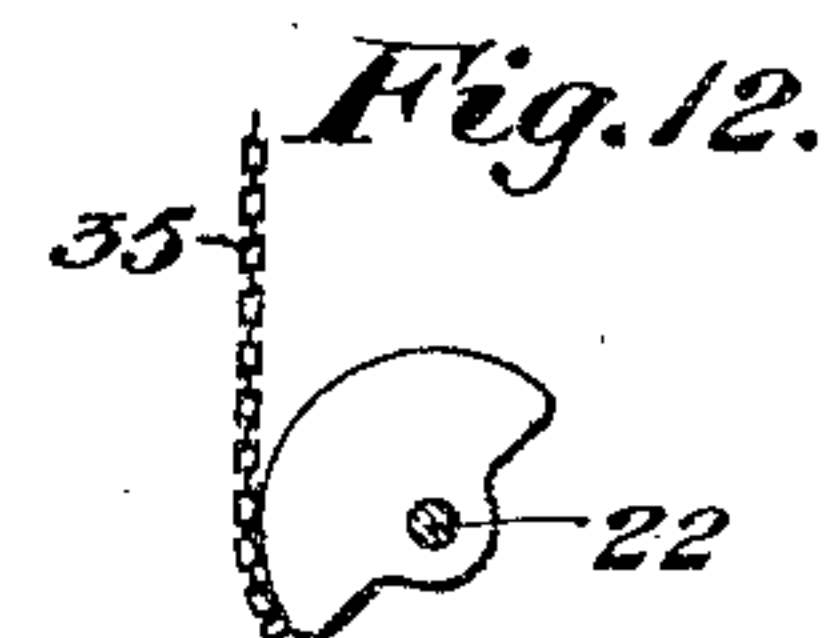
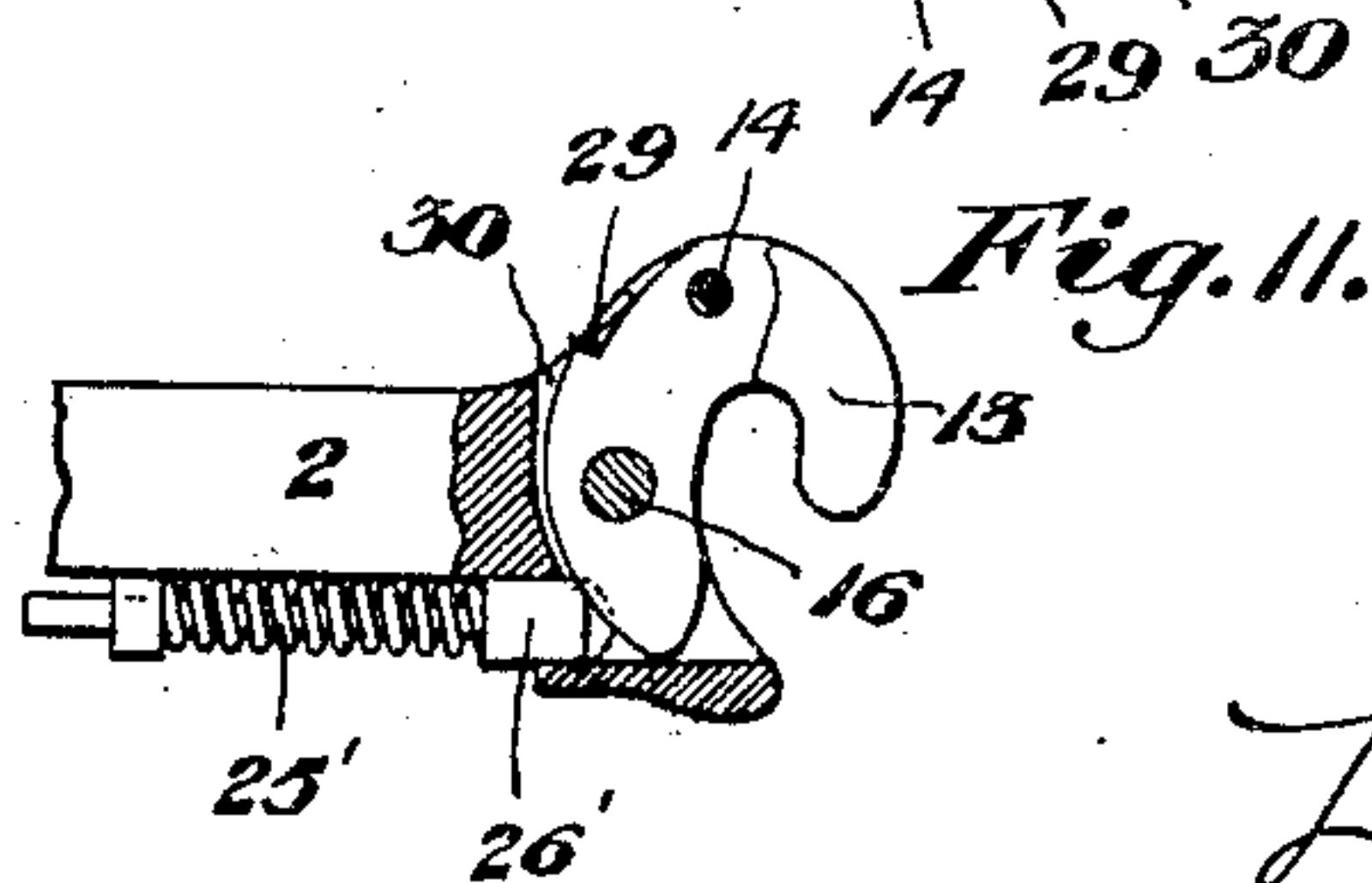
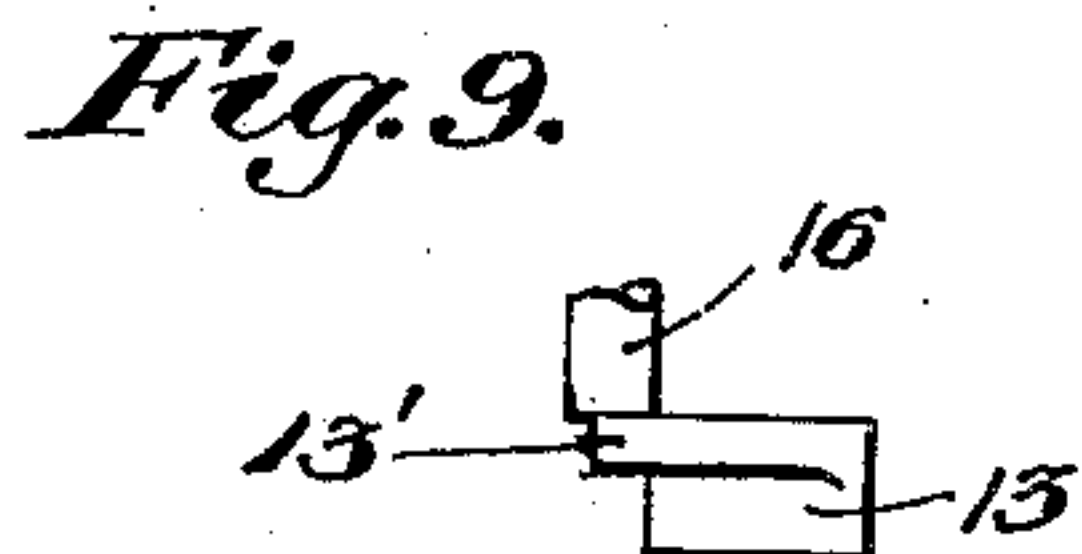
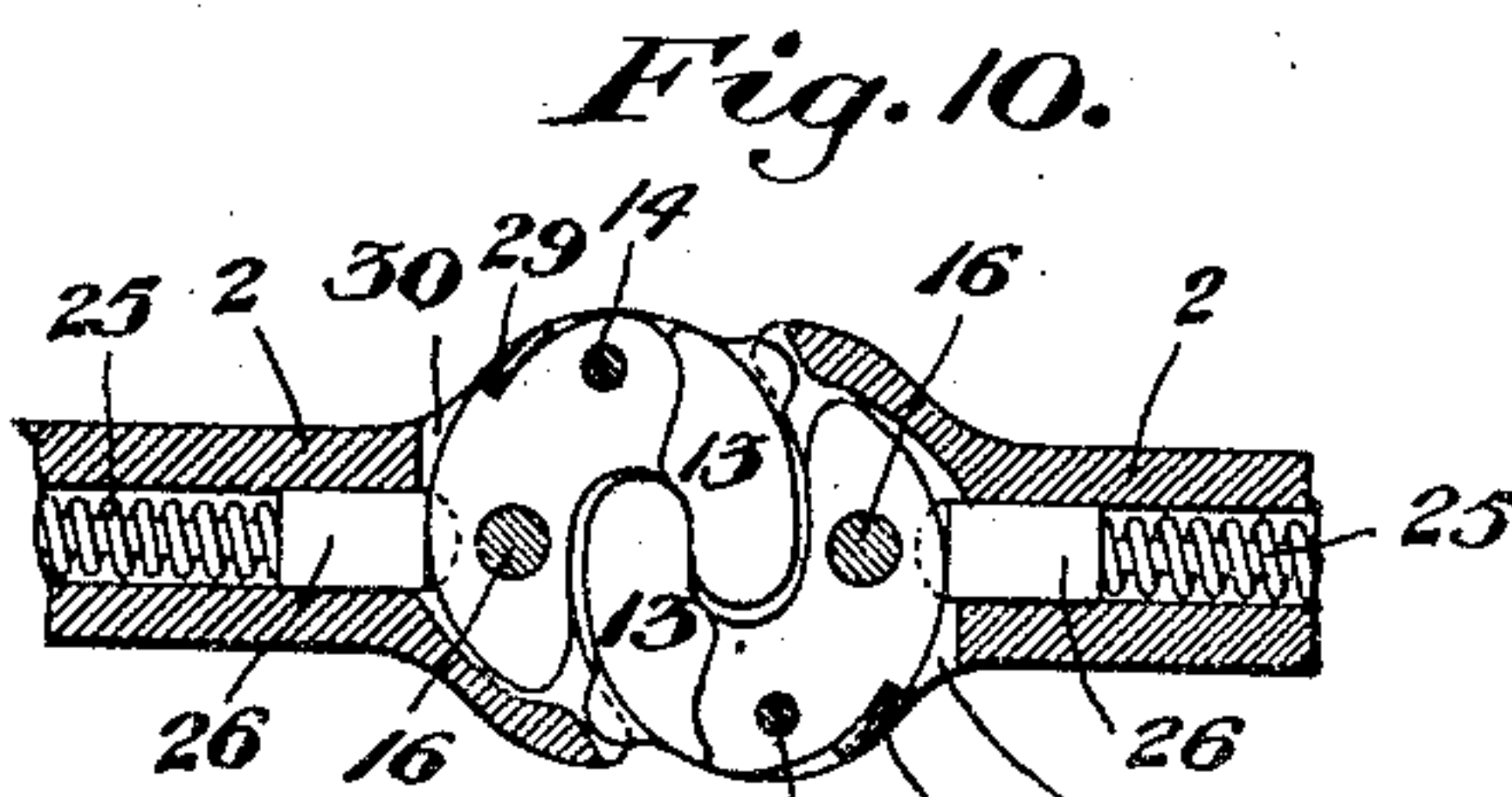
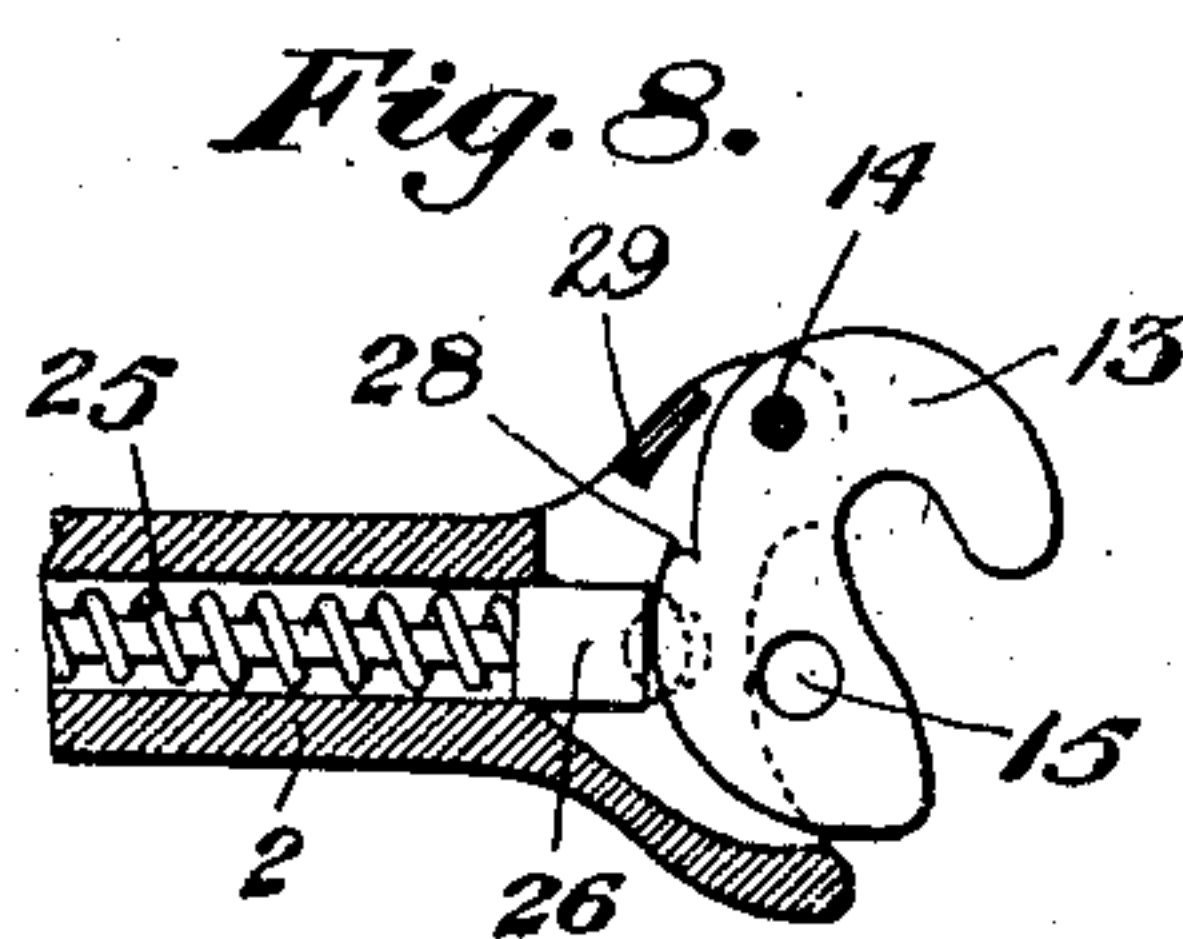
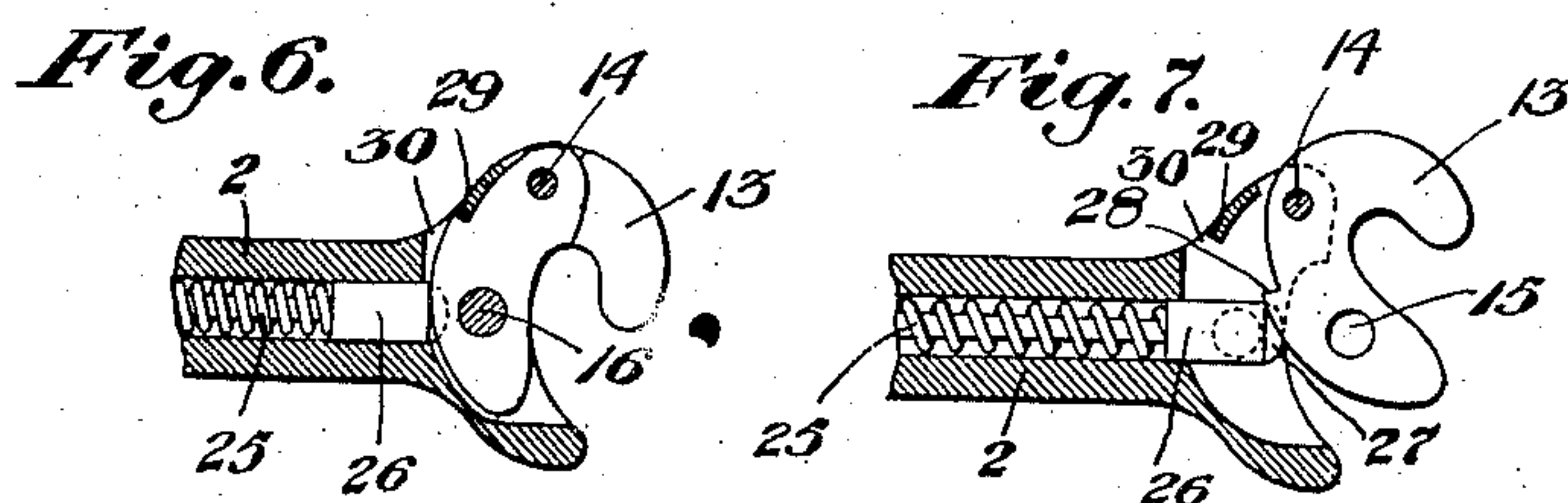
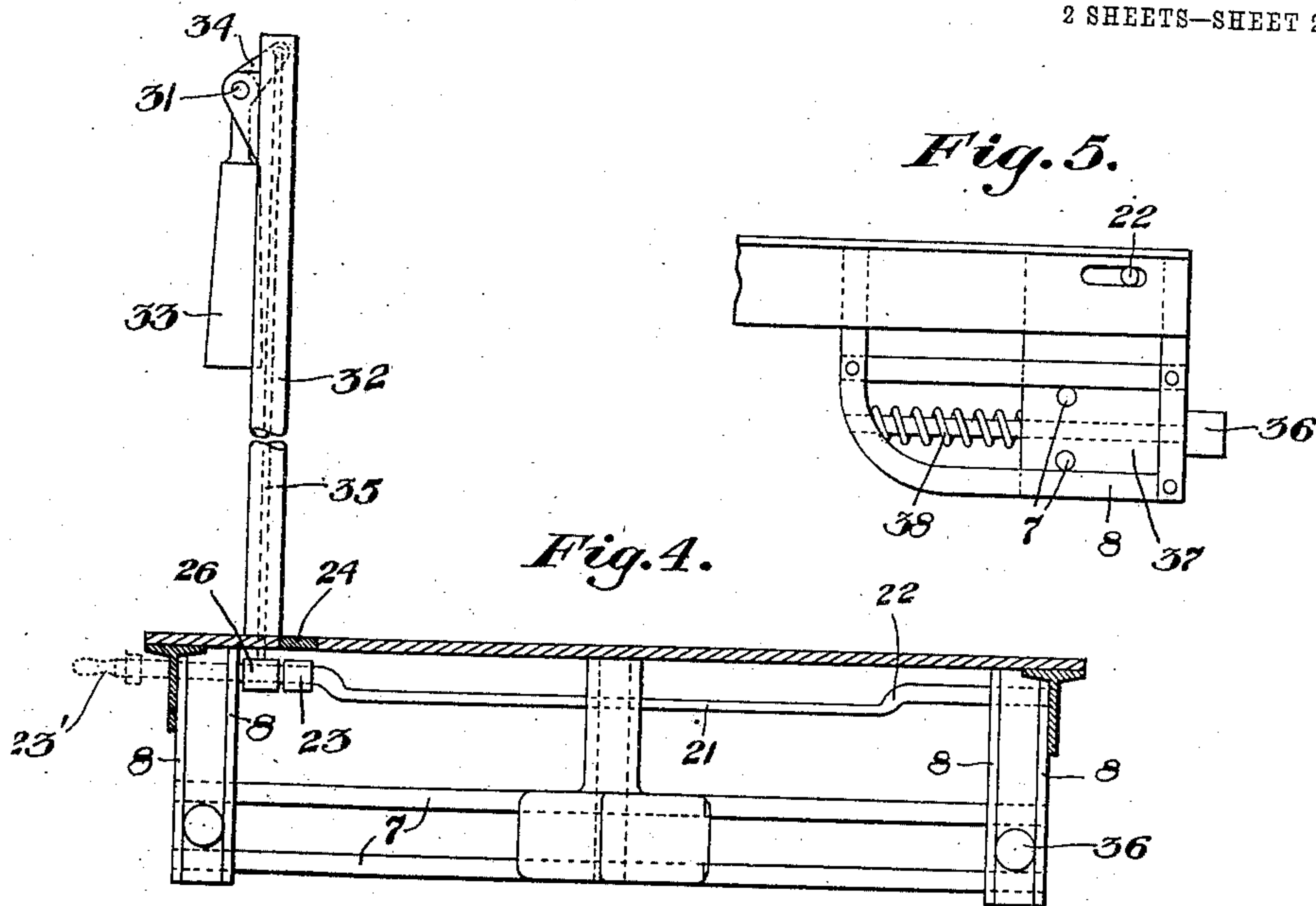
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2 SHEETS—SHEET 2.



Witnesses:

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Inventor:
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UNITED STATES PATENT OFFICE.

LEOPOLD BOTTENSTEIN, OF PITTSBURG, PENNSYLVANIA.

CAR-COUPLING.

No. 829,456.

Specification of Letters Patent.

Patented Aug. 28, 1906.

Application filed March 22, 1905. Serial No. 251,423.

To all whom it may concern:

Be it known that I, LEOPOLD BOTTENSTEIN, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Car-Couplings, of which the following is a specification, reference being had therein to the accompanying drawings, forming part of the specification, in which—

Figure 1 is a longitudinal vertical sectional view of my improved coupler on the line I I of Fig. 2. Fig. 2 is a plan view of the apparatus, showing it in relation to the car-frame. Fig. 3 is a sectional detail view of the draw-head, showing the locking-pin raised. Fig. 4 is an end view showing my improved buffers and signal incorporated with the apparatus. Fig. 5 is a detail view, in side elevation, illustrating the mounting of the buffer-frame. Fig. 6 is a horizontal sectional view of the draw-head, showing the jaw in coupling position. Fig. 7 is a similar view showing the jaw extended in position for coupling. Fig. 8 is a similar view showing a modified construction of the coupling-jaw, whereby it supports the coupling-pin. Fig. 9 is a detail view, in side elevation, of the coupling-jaw, showing such construction. Fig. 10 is a horizontal sectional view showing two coupling-jaws in operative engagement. Fig. 11 is a view similar to Fig. 6, showing a modified construction of the opening-spring. Fig. 12 is a detail view showing a segment attachment at the end of the lever adapted to actuate the signal-chain and maintain it in alinement at all times. Fig. 13 is a detail plan view of a portion of the underneath support for the draw-head.

My invention refers to improvements in car-couplers; and it has for its objects to provide a simple, reliable, automatic coupling which may be coupled with another similar one or with the ordinary coupling-link and is as to the coupling-head of the type known as the "Janney" coupler.

The invention also provides for the incorporation with the draw-head of draft connections combined with laterally-arranged buffers, also a buffing and head-ejecting spring incorporated with the draw-head, together with the improved mechanism for operating the jaw and for providing for free lateral movement of the draw-head in rounding curves, together with various other details of

improvement and construction, as shall be more fully hereinafter set forth.

The device is so constructed as to insure certainty of operation and prevent accidental uncoupling, while meeting the various conditions and requirements usual with this class of apparatus. It is entirely automatic in its action and designed to avoid all danger of accident or injury, while materially reducing the shock incident to the coupling of the cars.

Referring to the drawings, 2 is the draw-head, connected at its back portion with a tongue or strap 3, secured centrally of the usual body-bolster 4 midway between the wheels of the truck, and so arranged to permit of lateral movement of the draw-head and tongue to the right or left, as indicated in Fig. 2. The draw-head is supported by a cross-bar 5, extending across underneath the car-body, upon which the draw-head rests by means of an upward and backward L-shaped bracket 6 or other suitable support. Similar lateral-extending supporting-bars 7 7, curved to the radius described by the draw-head, extend across underneath the car at its front portion, being secured in the buffer-blocks, which are slidingly mounted in the frames 8 8 at each side. These curved supporting-bars pass through the upper and lower portion of the draw-head or engage supporting slotted portions thereof, as shown in Fig. 1, sufficient clearance being provided to permit of free movement to the right or left, as will be readily understood. The draw-head is also further supported by means of a bracket 9, secured underneath the bolster 4, as shown, extending forwardly and provided with a widened bearing-shoe 10, having terminal flanges 11 11 with cushion-springs 12 12, against which the draw-head may bear at one side or the other. By these means the draw-head is well supported and also maintained in approximate alinement with the center of the car, being still capable of sufficient lateral movement to provide for the various positions assumed in coupling.

13 is the coupling-jaw, pivoted in the draw-head at 14 and provided with an opening 15, into which the coupling-pin 16 enters downwardly, so as to securely hold the jaw in closed position. The pin 16 may be raised in any suitable manner; but I prefer to employ the construction shown in Figs. 1, 2, and 3, in which the upper portion of the pin is provided with rack-teeth 17, engaged by the

segment-teeth 18 of a lever 19, pivoted at 20 in a bracket extending upwardly from the draw-head, the lever 19 engaging by a terminal slot an elongated wrist-pin 21 of actuating-lever 22. The wrist-pin 21 is also curved, like bars 7, to correspond with the radial movement of the draw-head, and crank 22 is preferably made in one piece, as shown in Fig. 2, having suitable bearings in the buffer-frames 8. This operating-lever is actuated by a foot-lever 23, extending backwardly beneath the platform and in register with a foot-opening covered by a hinged gate or door 24, which may be laid down even with the floor.

By depressing lever 23 the back end of lever 19 will be depressed, lifting coupling-pin 16 to allow for outward opening of the jaw 13. To facilitate the opening of the jaw, I employ a spring 25, which in the closed position of the jaw is under tension and bears forwardly against a terminal bolt 26, having a lip 27 engaging a corresponding slot in the back portion of the coupling-jaw, the bolt 26 being guided in longitudinal alinement with the draw-head. By this construction when the pin 16 is raised the coupling-jaw will be thrown outwardly into coupling position. (Shown in Fig. 7.)

In Fig. 11 I show a modified construction wherein the spring 25' and bolt extension 26' are mounted to one side of the center, thus increasing the leverage. The coupling-pin 26 when not in register with the hole 15 ordinarily rests upon the top of bolt 26 or upon a backward shelf-like extension 13' of the coupling-jaw, as shown in Fig. 9. The coupling-jaw is also provided with a supplemental locking-shoulder 28, adapted to engage a corresponding shoulder 29 in the draw-head, against which it will bear and perform its functions if for any reason pin 14 should become broken or displaced, thereby preventing accidental pulling out of the coupling-jaw in such emergency. It will be seen also that the draw-head is recessed or open, as at 30, thus providing sufficient clearance for the shoulder 28, which may be of any suitable size and which will be flush with the outer surface of the draw-head. Pivoted at 31 in the upper end of a suitable frame, consisting principally of a hollow pipe-support 32, is a semaphore-signal 33, having a short crank-arm 34, attached by a connecting chain or cable 35 to a lever 26, secured upon crank 22. By this means when a coupling is opened by operation of an outside crank 23' the signal will be raised, indicating the condition of the car. Located at each side of the car-body are the buffer-frames 8, which may be of any suitable construction, as plates or bars, as shown in Figs. 4 and 5, respectively, which frames are solidly incorporated with the main framework of the car. Located substantially on a level with the draw-head are

the buffers 36, forming the outer portion of sliding blocks 37, mounted between the plates 8 and bearing backwardly against stiff buffer-springs 38, adapted to receive the shock of impact. The bars 7 are connected with the blocks 37 and move backwardly and forwardly with them and also by motion received from the draw-head will transmit corresponding backward and forward motion to the buffers. It will thus be seen that the buffer construction is so incorporated with the draw-head that each is dependent on the other, and together they will work in unison. By this manner of mounting the draw-head it will be seen that sufficient provision is made at all points for ample backward and forward and also lateral travel independent of the car-frame, while the pulling power exerted through the coupling-jaw is transmitted to the substantial portions of the framework.

The operation of my invention will be readily understood from the foregoing description, and it will be found to provide an efficient device for the objects in view and to perform its functions continuously in a satisfactory and efficient manner. Various changes or modifications may be made in the design, proportions, or various details of construction by the skilled mechanic; but all such are to be considered as within the scope of the following claims.

What I claim is—

1. In a car-coupler, the combination with a draw-head having a pivoted locking-jaw, a coupling-pin and an operating-lever therefor; of a curved raising-lever for the coupling-pin lever extending transversely above the draw-head, and having a radius corresponding to the radius of the draw-head on its pivotal center, substantially as set forth.

2. In a car-coupler, the combination with a draw-head having a pivoted locking-jaw, a coupling-pin and an operating-lever therefor; of a curved raising-lever for the coupling-pin lever in sliding engagement therewith, extending transversely above the draw-head having a radius corresponding to the radius of the draw-head on its pivotal center, and provided with an operating device at one end, substantially as set forth.

3. In a car-coupler, the combination with a draw-head having a pivoted locking-jaw, a coupling-pin and an operating-lever therefor; of a raising-lever for the coupling-pin lever in sliding engagement therewith, extending transversely above the draw-head and provided with a depressible foot-lever at one end, substantially as set forth.

4. In a car-coupler, the combination with a draw-head having a pivoted locking-jaw, a coupling-pin and an operating-lever therefor; of a raising-lever for the coupling-pin lever in sliding engagement therewith, extending transversely above the draw-head and pro-

vided with an operating device at one end, and an automatic signal device connected with said lever mechanism, substantially as set forth.

5 5. In a car-coupler, the combination of a laterally-swinging longitudinally-movable draw-head provided with a coupling-jaw, a coupling-pin therefor provided with raising and lowering mechanism, and means for
10 actuating said raising and lowering mechanism at varying lateral positions of the draw-head, with bars extending laterally across underneath the car engaging the draw-head and provided with buffing devices, substan-
15 tially as set forth.

6. In a car-coupler, the combination of a draw-head provided with supporting devices permitting lateral and longitudinal movement, buffing devices located at each
20 side of the draw-head provided with compressible springs, cross-bars extending between said buffing devices and engaging the draw-head, and a laterally-arranged lever slidably engaging the means for coupling
25 and uncoupling the locking-jaw, substantially as set forth.

7. In a car-coupler, the combination with a draw-head having a pivoted locking-jaw, a coupling-pin, and actuating mechanism for
30 the coupling-pin; of an operating-lever for the coupling-pin mechanism in sliding engagement therewith, extending transversely of the draw-head and provided with a foot-lever, substantially as set forth.

35 8. In a car-coupler, the combination with a draw-head having a pivoted locking-jaw, a coupling-pin, and actuating mechanism for the coupling-pin; of an operating-lever for the coupling-pin mechanism in sliding engage-
40 ment therewith, extending transversely of the draw-head, an automatic signal device connected with said lever, and means for

actuating the lever, substantially as set forth.

9. In a car-coupler, the combination with 45 a laterally-movable draw-head having a pivoted locking-jaw, a coupling-pin, and a lifting-lever for the coupling-pin; of a transversely-arranged actuating-lever in sliding engagement with said lifting-lever for opera- 50 tion either upwardly or downwardly, extending laterally therefrom at both sides of the center and having bearings in opposite sides of the car structure, substantially as set forth.

10. In a car-coupler, the combination of a 55 laterally-swinging draw-head provided with a coupling-jaw, a coupling-pin therefor, a longitudinal coupling-pin lever fulcrumed on the draw-bar, and a transverse actuating- 60 lever in sliding engagement with the coupling-pin lever and adapted to raise or lower it, said transverse lever projecting at both sides of its center and being mounted in bearings located in the side portions of the 65 car structure, substantially as set forth.

11. In a car-coupler, the combination of a laterally-swinging draw-head provided with a coupling-jaw, a coupling-pin therefor, a longitudinal coupling-pin lever fulcrumed on 70 the draw-bar, and a transverse actuating-lever in sliding engagement with the coupling-pin lever and adapted to raise or lower it, said transverse lever projecting at both sides of its center and being mounted in 75 bearings located in the side portions of the car structure, with an operating-crank for said transverse lever, substantially as set forth.

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

LEOPOLD BOTTENSTEIN.

Witnesses:

C. M. CLARKE,

CHAS. S. LEPLEY.