

(No Model.)

2 Sheets—Sheet 1.

C. G. WHEELAND.
CAR COUPLING.

No. 428,872.

Patented May 27, 1890.

Fig. 1.

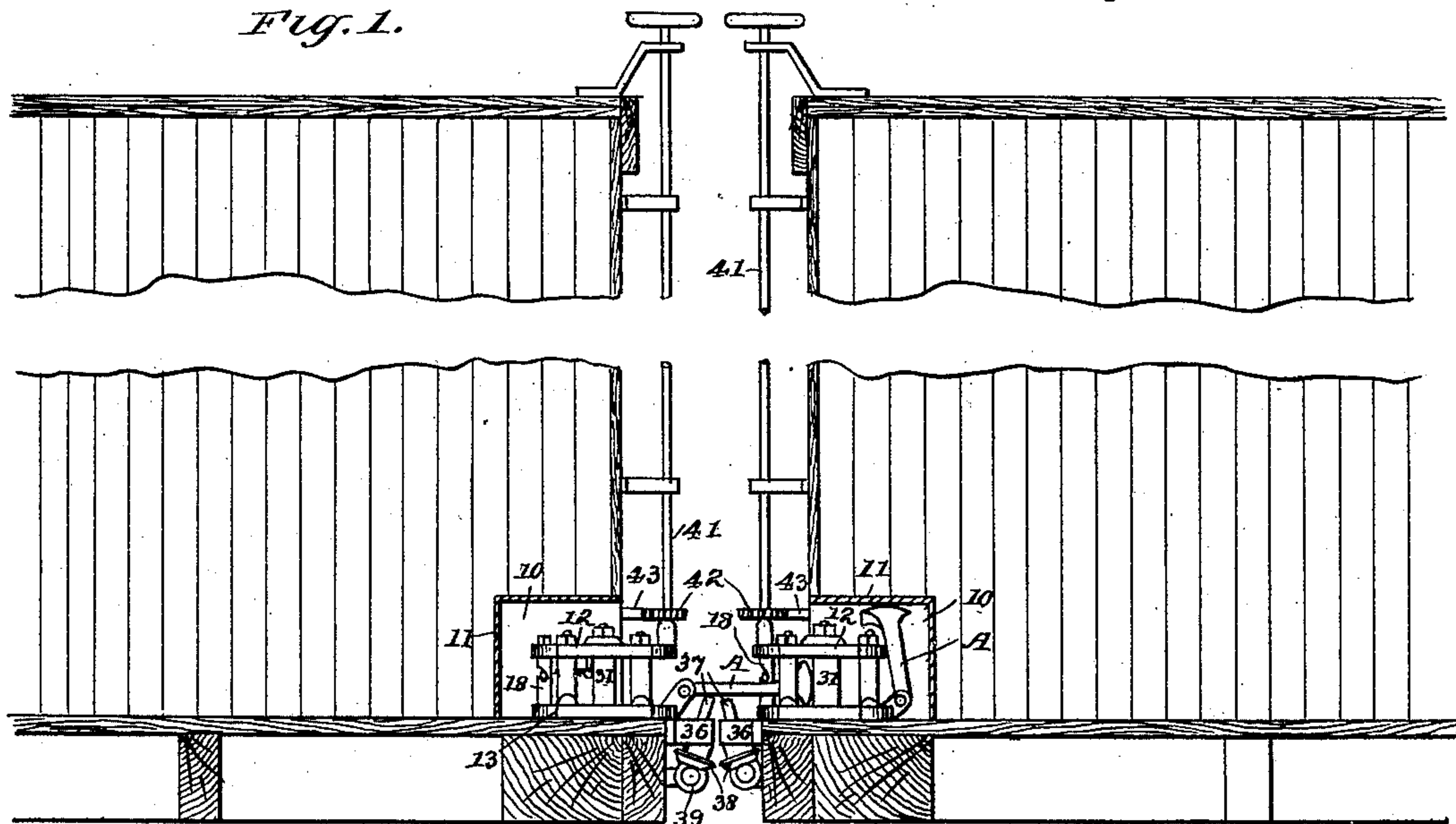
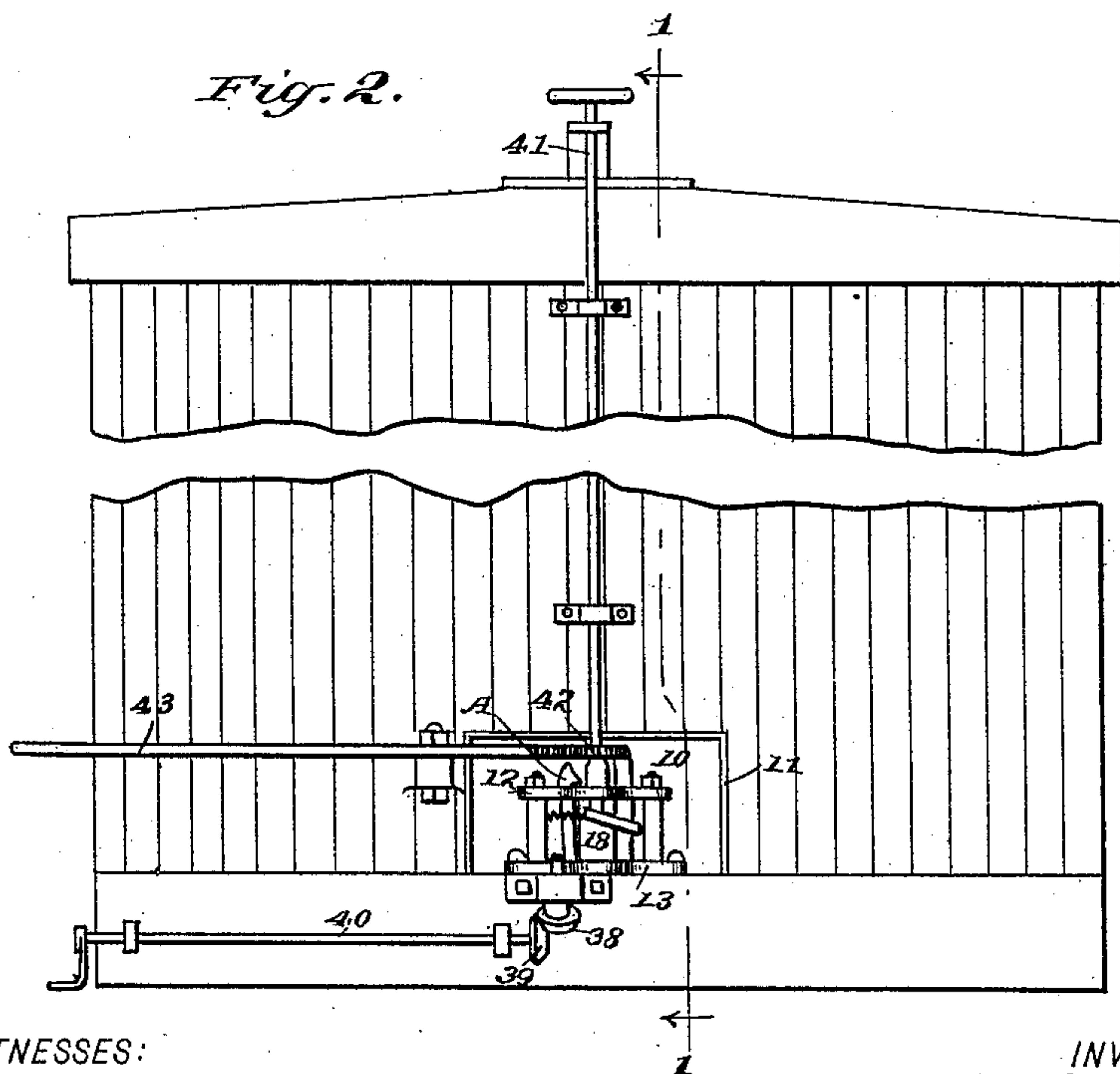


Fig. 2.



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2 Sheets—Sheet 2.

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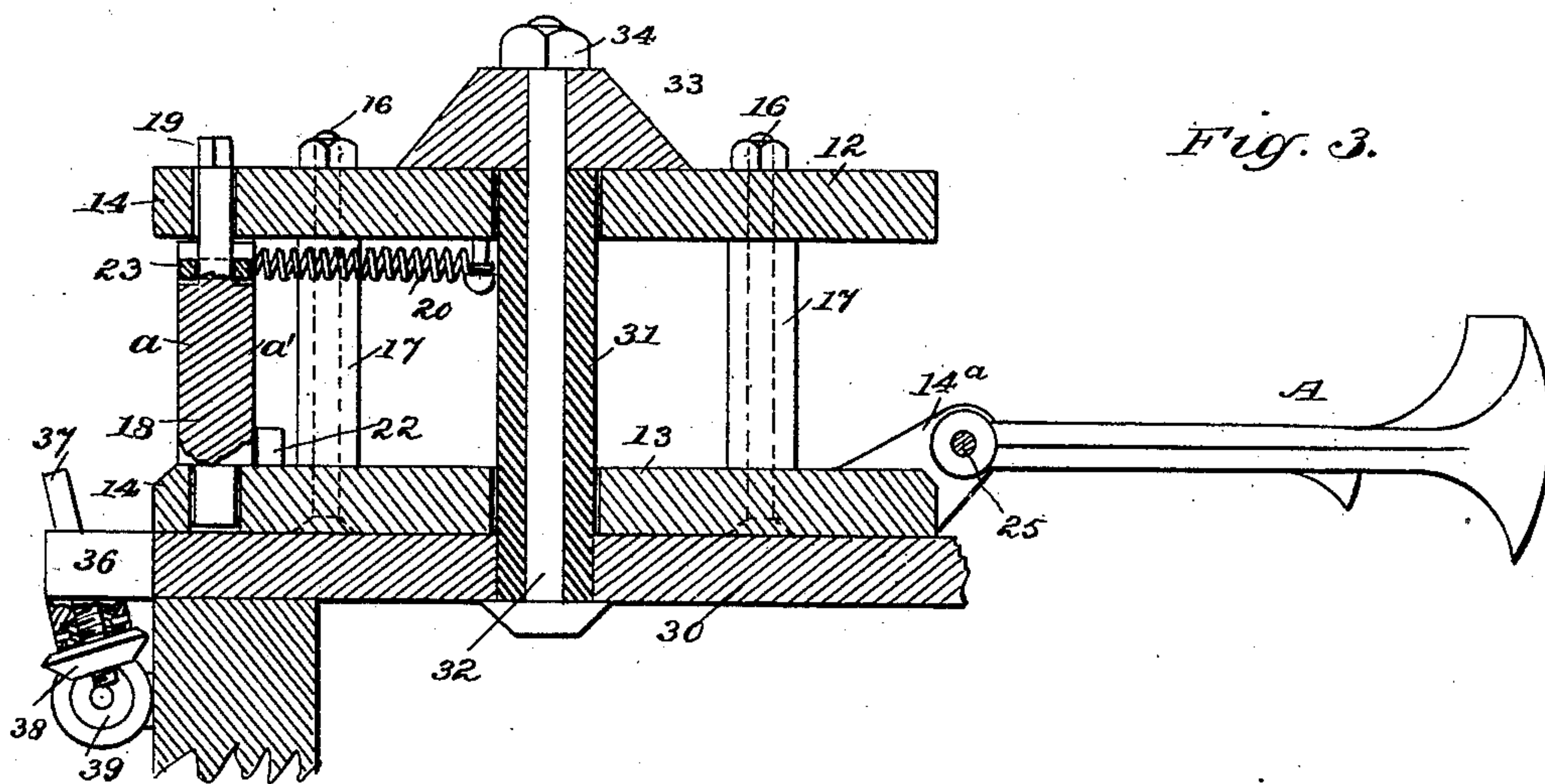


Fig. 3.

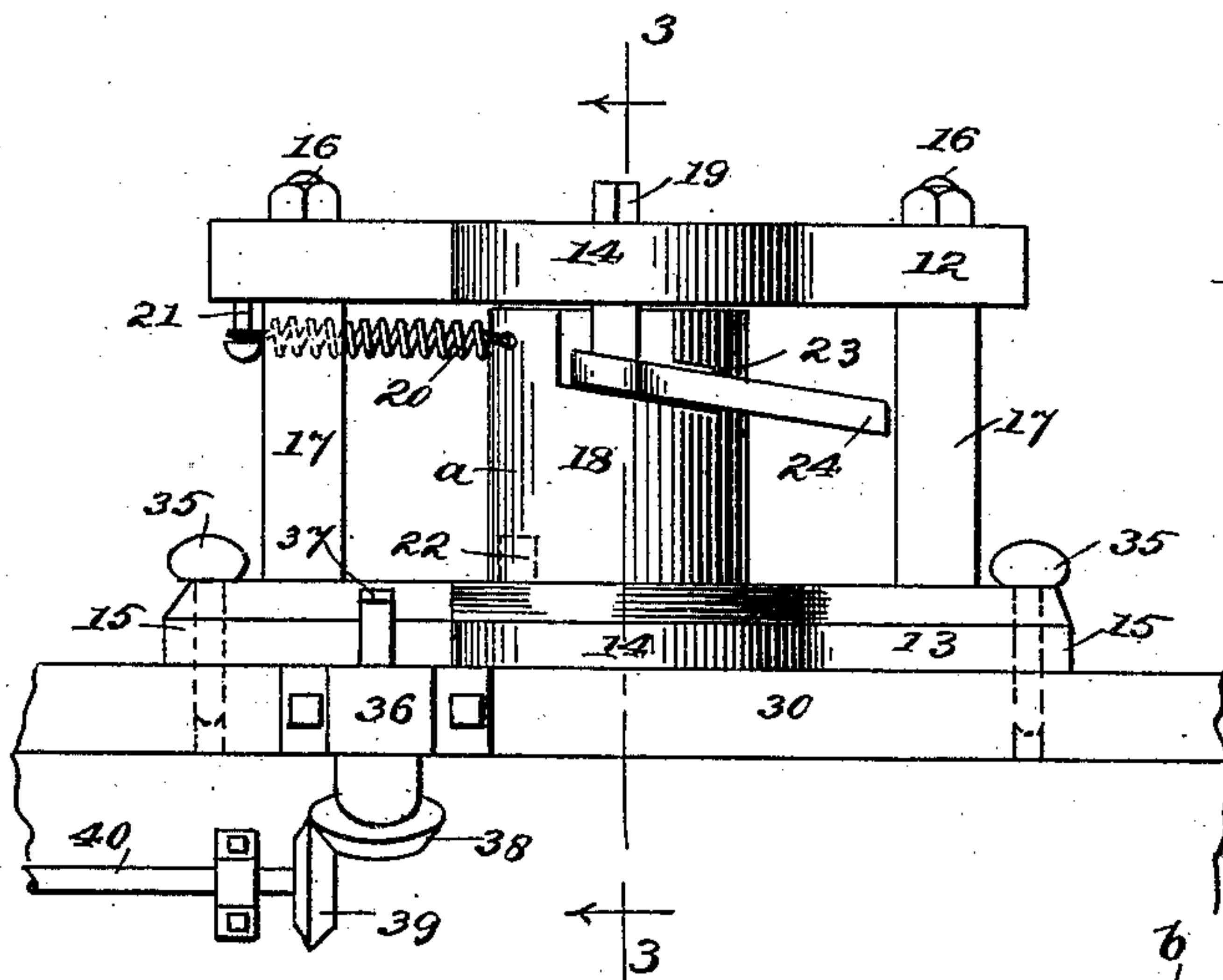


Fig. 4.

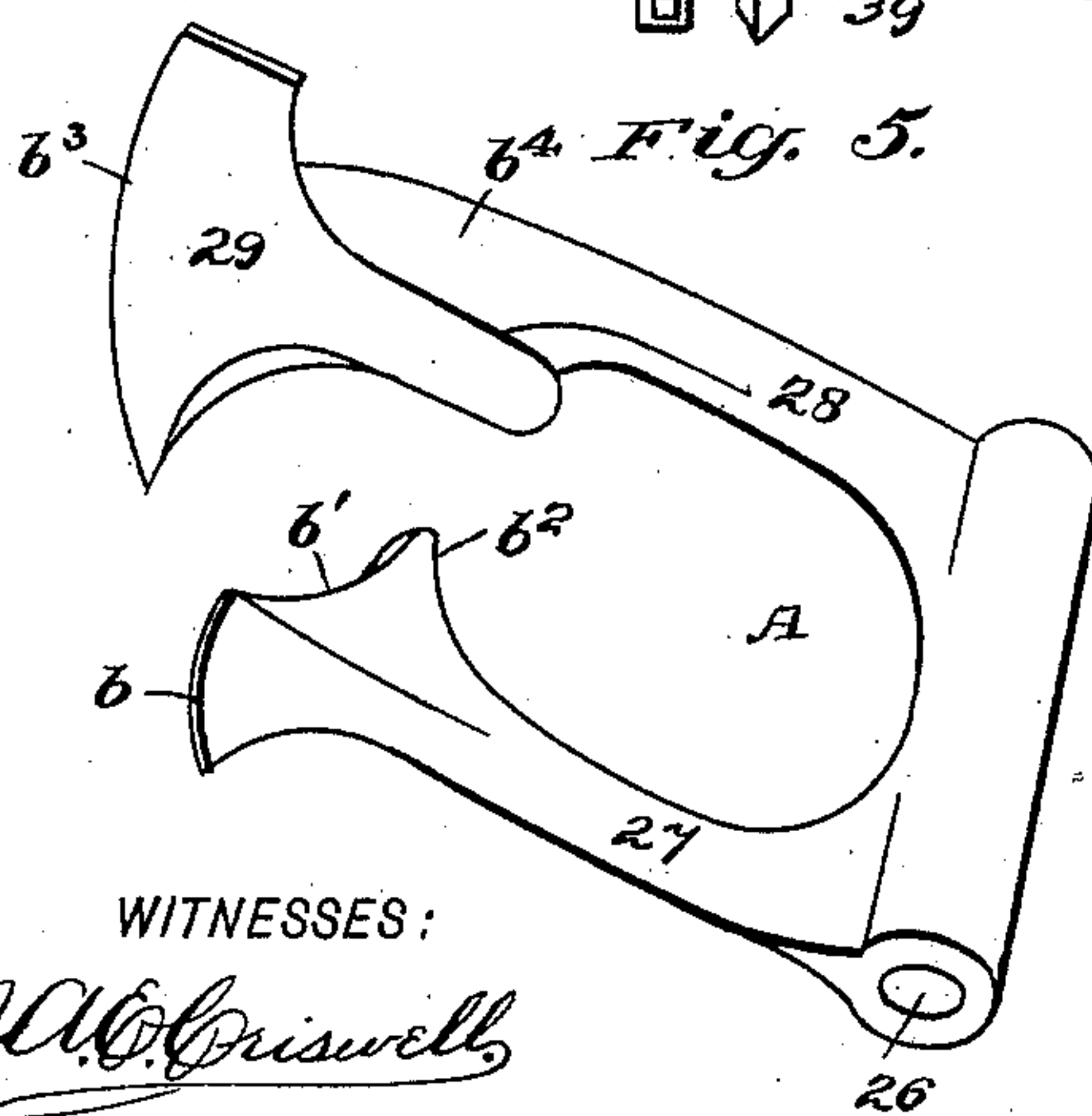


Fig. 5.

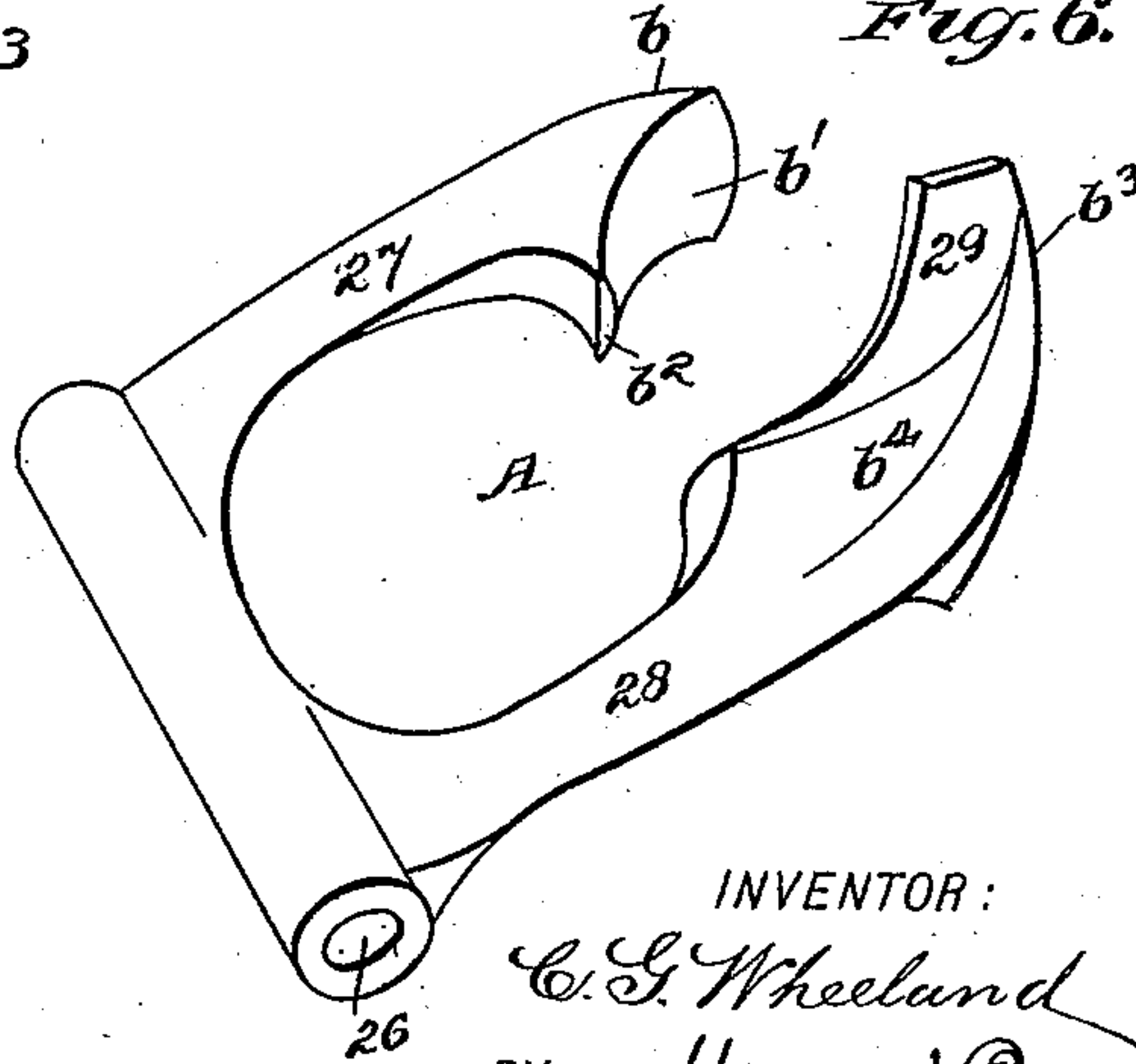


Fig. 6.

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UNITED STATES PATENT OFFICE.

CHARLES GRIER WHEELAND, OF BRUSH CREEK, IOWA.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 428,872, dated May 27, 1890.

Application filed January 28, 1890. Serial No. 338,338. (No model.)

To all whom it may concern:

Be it known that I, CHARLES GRIER WHEELAND, of Brush Creek, in the county of Fayette and State of Iowa, have invented a new and useful Improvement in Car-Couplers, of which the following is a full, clear, and exact description.

My invention relates to an improvement in car-couplers, and has for its object to provide a coupler capable of manipulation from the sides or from the top of a car, and also capable of being reversed or turned end for end.

A further object of the invention is to provide a means whereby the link may be vertically adjusted from the side of the car to couple with an opposed draw-head of greater or of less height, and wherein the coupling of two draw-heads may be made automatic when desired.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters and figures of reference indicate corresponding parts in all the views.

Figure 1 is a partial vertical section through two cars coupled with my improved coupler, the section being taken on line 1 1 of Fig. 2. Fig. 2 is a partial end view of a car having the coupler applied. Fig. 3 is a central vertical section through the coupler taken on line 3 3 of Fig. 4. Fig. 4 is a front elevation of one end of the coupler, and Figs. 5 and 6 are perspective views of the coupling-link detached.

In carrying out the invention a recess 10 is made in each end of the car at or near its center, the said recess being provided with an interior casing or hood 11, as best shown in Figs. 1 and 2.

The draw-head consists of an upper plate 12 and a lower parallel plate 13, which plates are preferably essentially rectangular in general contour, being, however, provided ordinarily with a central extension 14 at one end, lugs 14^a at the opposite end, and extension-corners 15. The two plates 12 and 13 are united by bolts 16, which pass vertically through them near their corners and through

pillars 17, located between the inner opposed faces of the plates, as illustrated in Figs. 3 and 4.

Between the central end extensions 14 the coupling-pin 18 is pivoted, the said coupling-pin being provided with a cylindrical outer face *a* and a flat inner face *a'*. The coupling-pin is usually pivoted in the top and bottom plates 12 and 13 by trunnions formed integral with the upper and lower surfaces of the pin, being journaled in suitable apertures in said plates. The upper trunnion, however, may be carried upward beyond the top plate and fitted with a square upper extremity 19 for a purpose hereinafter set forth.

The cylindrical face of the coupling-pin is normally held to face outward and the flat surface inward by means of a spring 20, attached at one end to one upper corner of the coupling-pin and at its other extremity to a pin 21, or its equivalent, secured to the under face of the upper plate 12 of the draw-head, which pin is located usually about centrally between the ends of the plate at one side of the same, the said spring being adapted to exert a tension upon the side of the coupling-pin to which it is attached and cause the flat face of the coupling-pin at that side to bear against a stop 22, attached to the lower plate 13.

In the cylindrical face of the coupling-pin a downwardly-inclined or diagonal slot or recess 23 is produced at the upper end, which recess or slot extends from the center or pivotal point of the pin in the direction of the side opposite to that having the spring 20 applied, and within said recess one end of a trip-arm 24 is pivoted upon the upper trunnion of the pin. Thus when the trip-arm 24 is pressed inward it bears against the under wall of the slot or recess 23 and causes the pin to be turned against the tension of the spring 20, and through the medium of the link, hereinafter described, contacting with the said trip-arm, the pin in process of uncoupling is turned edge to the front.

In each of the corner-extensions 15 apertures are produced, and in the end lugs 14^a the inner extremity of a link A is pivoted, preferably by means of a pintle 25, passed through said lugs and a horizontal bore 26 in the link.

The link A is of peculiar construction, being straight at its pivotal end and essentially rectangular a greater portion of its length. The sides 27 and 28 of the link are not connected at the outer ends, and their inner faces are preferably so curved as to produce essentially an oval space between them. The side arm or bar 27 of the link is shorter than its opposed arm or bar 28, and the said side bar 27 is slightly curved inward upon the outer face at its forward extremity, as illustrated at *b* in Fig. 6, and positively concaved upon its inner face at said extremity, as illustrated at *b'*, and the inner end of the concaved portion is carried inward and horizontally in the direction of the opposite side bar a sufficient distance to form practically a nose or latch-head *b²*. The opposite side bar or arm 28 of the link is decidedly concave upon its outer face at its extremity, and the said extremity is provided with a chisel-edge *b³*, which edge is adapted for contact with the trip-arm 24 of the coupling-pin when the draw-heads are automatically coupled.

The upper and lower surfaces of the said side bar 28 are made flat immediately to the rear of the chisel-edge, as illustrated at *b⁴*. The inner face of the side bar 28 of the link at its outer extremity is recessed to receive a web 29, which web is somewhat T-shaped, as illustrated in Fig. 5, its lower end being made to terminate with the lower edge of the chisel-edge *b³* of the side bar 28. The upper edge of the web, however, is made to project above the upper surface of the said chisel-edge and the upper flat surface *b⁴*. This web serves to control the length of time in which the coupling is to be effected.

The draw-head is pivoted upon the floor of the recess 10 upon a wear or anchor plate 30, placed to receive it, by means of a tubular cylindrical pivot 31, which extends through the anchor-plate and through the top and bottom plates of the draw-head. Through this tubular pivot-pin a bolt 32 is passed, the head whereof contacts with the lower surface of the anchor-plate 30, and the upper end of the bolt, which is threaded, is made to pass through a cap-washer 33, having a bearing upon the upper surface of the upper plate 12, and the said upper end of the bolt is provided with a suitable nut 34, which contacts with the said cap-washer, as illustrated in Fig. 3. By loosening the bolt 34 the draw-head, which is in the nature of a turret, may be turned so that its ends are reversed—thus, should the link be at the rear of the recess, it may be brought to the front to couple with an opposed draw-head in which the coupling-pin is at the front, and vice versa.

The draw-head is held in position upon the anchor-plate by pins 35, passed through the apertures in the corner-extensions 15 in the lower plate into suitable openings in the anchor-plate, as shown in Fig. 4.

A bearing 36 is formed upon the outer end of the anchor-plate in such position that when

the link end of the draw-head is brought to the front the said bearing will be beneath one of its side bars, and in said bearing, which is threaded, a screw 37 is introduced, adapted to project upward and contact with one of the side bars of the coupling-link, which screw may be manipulated from the side of the car in many ways, that illustrated consisting in attaching a friction bevel-gear 38 to the lower end of the screw, which gear contacts with a similar gear 39, secured to one end of a shaft 40, journaled at the side of the car and extending out therefrom. Thus by turning the shaft 40 the screw 37 may be raised or lowered to elevate or to depress the link to enable it to couple with an opposed draw-head of greater or less height.

The coupling-pin is turned edgewise to admit of the withdrawal of the link in the opposed draw-head, either from the top or from the side of the car, and this operation may be also accomplished in many ways, that illustrated consisting in journaling perpendicularly upon the end of the car a shaft 41, having a hand-wheel at its upper end and a gear-wheel 42 secured at or near its lower end, the lower end of the shaft being recessed to fit over the square end of the upper trunnion of the coupling-pin. Thus when it is desired to reverse the draw-head the shaft 40 may be raised and disconnected from the coupling-pin. The coupling-pin is manipulated from the side of the car by means of a rod 43, held to slide laterally at the end of the car, which rod is provided with a raked surface at its inner end to engage with the gear 42 of the perpendicular shaft 41.

In the operation of coupling the chisel-edge of the link contacts with the trip-arm 24 and presses the same inward against the tension of the spring 20, thereby gradually turning the coupling-pin edge to the front, whereby the side bars of the link are enabled to pass inward upon each side of the pin, and when the link has passed a sufficient distance within the draw-head the extremity of the trip-arm will have passed the inner edge of the web and be thereby released, whereupon the pin is returned by the spring 20 to its normal position. Uncoupling cannot now be effected until the coupling-pin is again turned edge to the front, either from the top or from the sides of the car, through the mechanism illustrated.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with an anchor-plate, of a draw-head pivoted thereon, capable of being turned end for end, and means, substantially as shown and described, for locking the said draw-head upon the said plate, as and for the purpose specified.

2. The combination, with an anchor-plate or similar device, of a draw-head centrally pivoted thereon and capable of being turned end for end, the said draw-head being pro-

vided with a link at one end and a coupling-pin at the opposite end, substantially as and for the purpose specified.

3. The combination, with an anchor-plate
5 or similar device, of a draw-head pivoted thereon and capable of being turned end for end, the said draw-head being provided with a link pivoted at one end and a coupling-pin at the opposite end, and an adjusting-screw
10 carried by the anchor-plate and adapted for contact with the link, whereby it may be raised or lowered, substantially as and for the purpose set forth.

4. The combination, with a draw-head, of a
15 spring-controlled coupling-pin pivoted at one end thereof, having a cylindrical outer and a flat inner face and provided with a diagonal recess in its outer face and a trip-arm held to turn in said recess, and a coupling-link piv-
20 oted to the opposite end of the draw-head, open at its outer end, one of the side bars being provided at its outer extremity with a concaved inner face and the opposite side bar with a chisel-edge and an attached web-
25 section, substantially as shown and described, and for the purpose specified.

5. The combination, with a draw-head, of a
spring-controlled coupling-pin pivoted at one
30 end, having a cylindrical outer and a flat inner face and provided with a diagonal recess in its outer face and a trip-arm held to turn in said recess, and a coupling-link pivoted to the opposite end of the draw-head, open at its outer end, one of the side bars being pro-
35 vided at its outer extremity with a concaved inner face and the opposite side bar with a chisel-edge and an attached web-section, and

means for elevating and depressing the link and for manipulating the coupling-pin, sub-
stantially as shown and described.

6. The combination, with an anchor-plate
40 or similar device and a draw-head pivoted thereon and capable of being turned end for end, of a spring-controlled coupling-pin piv-
45 oted in one end, provided with a cylindrical outer and a flat inner face, the said coupling-pin having a diagonal slot in its cylindrical
50 face and a trip-arm pivoted at one end in said slot, a link pivoted to the opposite end of the draw-head, open at its outer extremity, the
55 inner face of one side bar at its outer extremity being concaved, and the outer extremity of the opposite side bar provided with a chisel-head and an attached essentially T-shaped
web, and means, substantially as shown and
described, for elevating or depressing the said
link, as and for the purpose specified.

7. A coupling-link, substantially as shown
and described, the same consisting of side
bars united at their rear ends and separated
60 at their forward ends, the forward end of one side bar being provided with a concavity upon its inner face and an integral nose section,
and the opposite side bar having a chisel-
65 shaped outer end, a flat top and bottom sur-
face to the rear of the chisel end, and an es-
sentially T-shaped web-section secured to its inner face at the said chisel end, as and for the purpose specified.

CHARLES GRIER WHEELAND.

Witnesses:

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