(No Model.) 3 Sheets—Sheet 1.

E. A. OLMSTEAD.

CAR COUPLING.

No. 377,532. Patented Feb. 7, 1888.

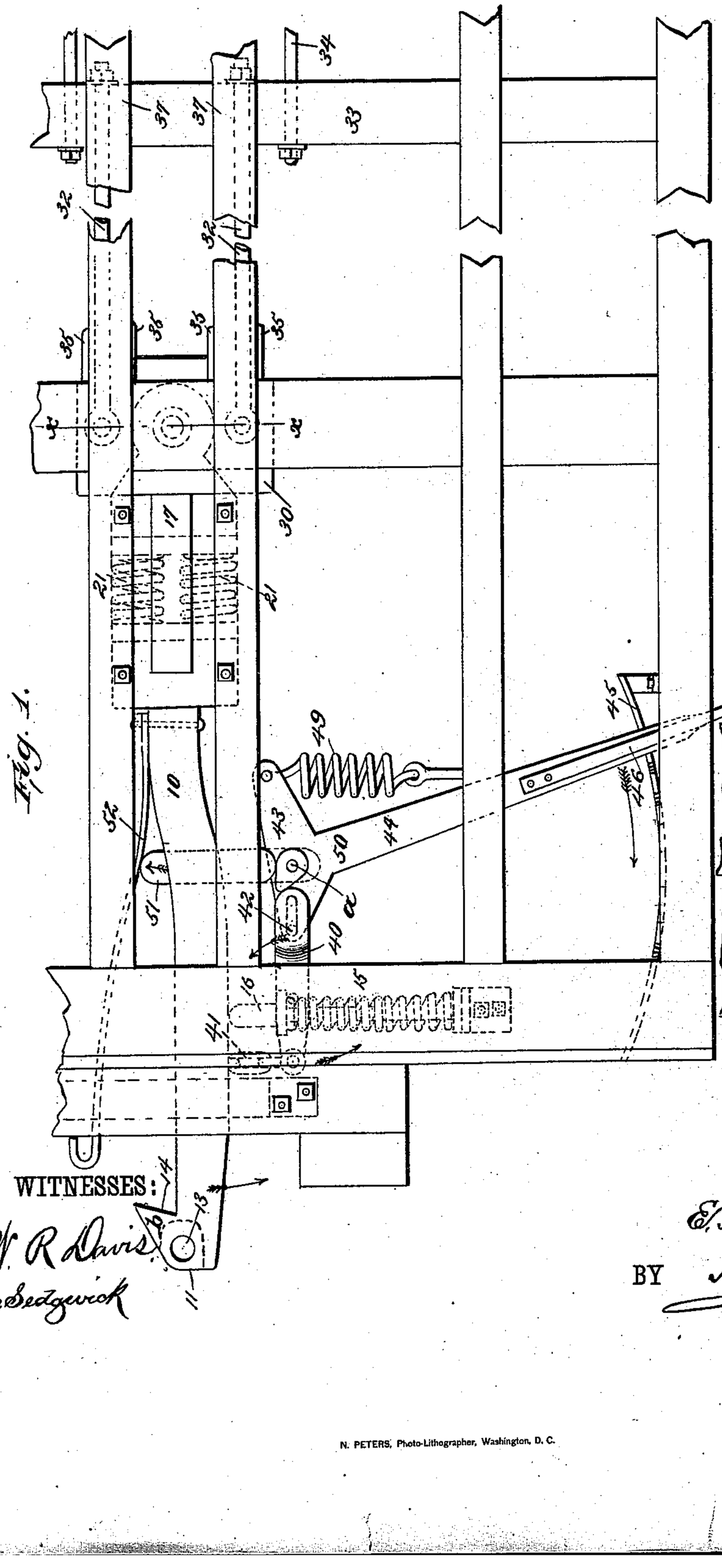

Fig. 1.

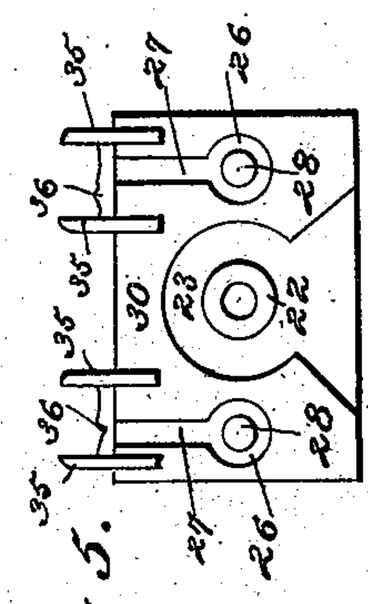

Fig. 5.

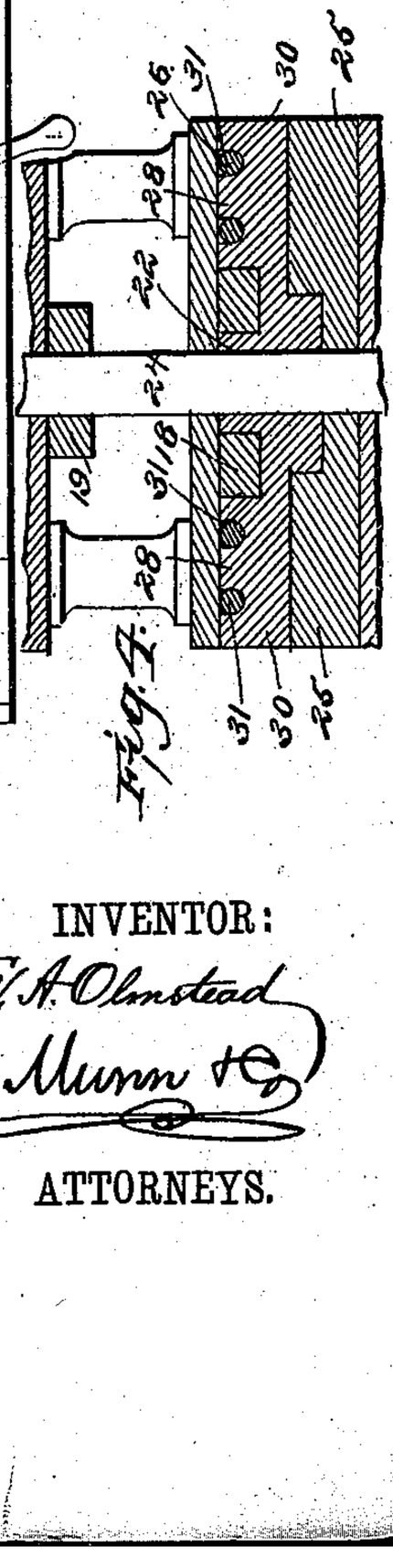

Fig. 4.

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(No Model.)

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E. A. OLMSTEAD.

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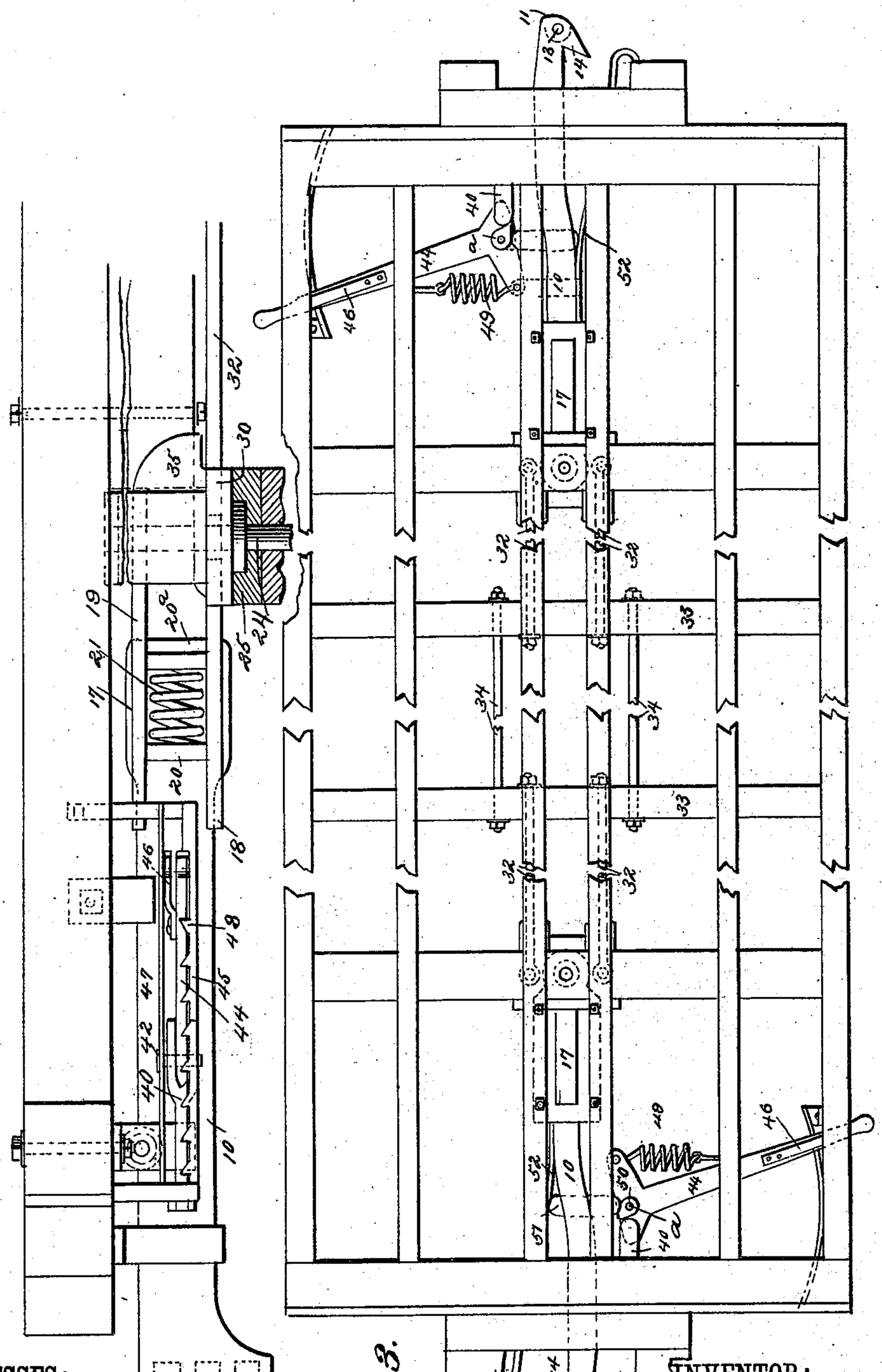

Fig. 2.

Fig. 3.

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(No Model.) 3 Sheets—Sheet 3.

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CAR COUPLING.

No. 377,532. Patented Feb. 7, 1888.

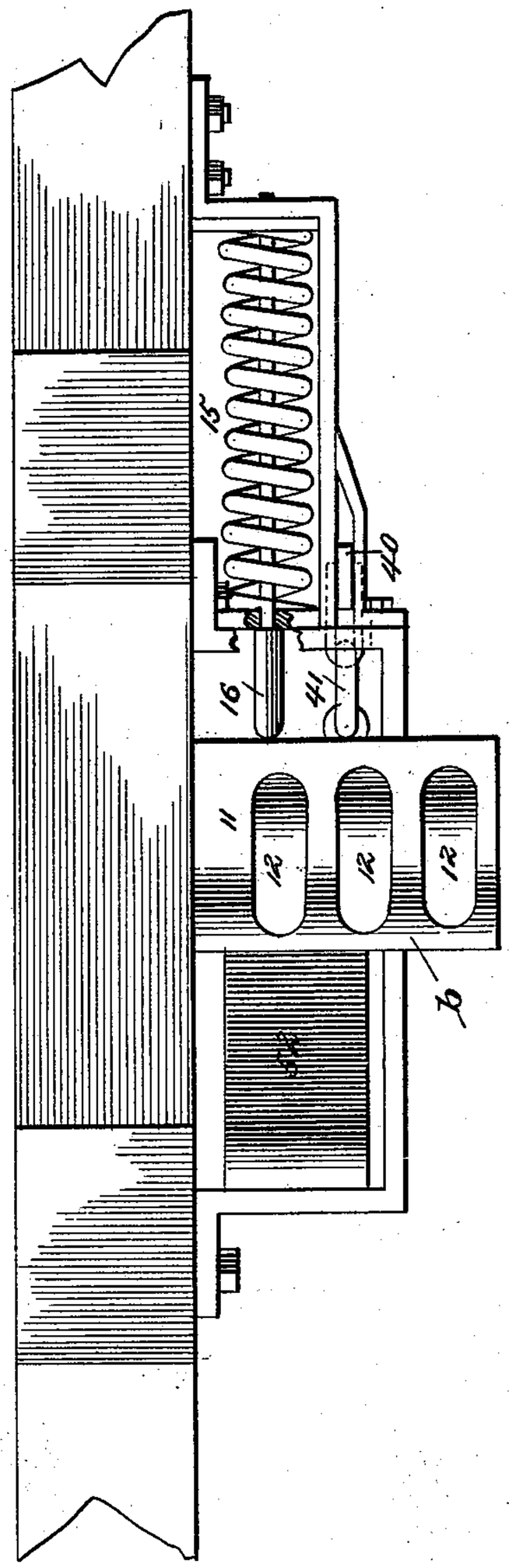

Fig. 6.

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UNITED STATES PATENT OFFICE.

EDWARD A. OLMSTEAD, OF BUFFALO, NEW YORK.

CAR-COUPLING.

SPECIFICATION forming part of Letters Patent No. 377,532, dated February 7, 1888.

Application filed October 12, 1887. Serial No. 252,129. (No model.)

To all whom it may concern:

Be it known that I, EDWARD A. OLMSTEAD, of Buffalo, in the county of Erie and State of New York, have invented a new and Improved Car-Coupler, of which the following is a full, clear, and exact description.

This invention relates to car-couplers, the main objects of the invention being to relieve the car-body timbers of all buffing or pulling strain, and at the same time to so mount the draw-bar that no actual strain will fall upon the king pin or bolt; and to these ends the invention consists of a body center plate that is recessed to receive the lower plate of the draw-bar cage and provided with an annular flange which extends upward through an aperture or opening formed at the inner end of the said lower plate of the draw-bar cage, the body center plate being further formed to receive eyes that are formed upon tie-rods which extend toward the center of the car and are connected to the needle-beams, the needle-beams in turn being connected by tie-rods.

The invention also consists of the construction of the device for uncoupling the draw-bars, all as will be hereinafter more fully described, and specifically pointed out in the claims.

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

Figure 1 is a plan view of a portion of the frame of a car body, representing the same as it appears when provided with my improved coupler. Fig. 2 is a side view of the construction illustrated in Fig. 1. Fig. 3 is a plan view showing both ends of the car-body. Fig. 4 is a cross-sectional view upon an enlarged scale, the view being taken upon line *x x* of Fig. 1. Fig. 5 is a plan view of the body center plate, and Fig. 6 is an end view of a portion of a car-body provided with my improved form of coupling.

In the drawings above referred to, 10 represents the draw-bar, of which the head 11 is vertically elongated and formed with a series of pockets, 12, adapted to receive the link of an ordinary pin-and-link coupling, the coupling-pin at such times being passed through an aperture, 13, that is formed in the draw-head. The draw-head 11 is provided with a hook, 14, and normally held in the position in which it is shown in Fig. 1 by the action of a spiral spring, 15, which is coiled about a plunger, 16, that bears against the outer face of the draw-bar.

The draw-bar pocket 17 is held within a cage made up of a lower plate, 18, and an upper plate, 19, follower-plates 20 and 20ª being placed as clearly shown in the drawings, and between these follower-plates I arrange draw-bar springs 21. The rear ends of the plates 18 and 19 are apertured, the aperture in the plate 18 being of sufficient size to fit over an annular flange, 22, that is formed about the central aperture of the body center plate 30, an annular recess, 23, being formed about said flange 22, in which recess the rounded end of the plate 18 rests. The upper plate, 19, is simply apertured to provide for the passage of the king pin or bolt 24.

The under face of the body center plate 30 is of the usual form and rests upon the truck center plate 25, as is best shown in Fig. 4, said body center plate 30 being, as usual, mounted directly beneath the bottom cord of the body-transom, while the upper plate, 19, rests directly beneath the top cord of the body-transom.

At either side of the recess 23 there are formed annular recesses 26, from which there extend straight recesses 27, studs 28 extending upward from the main body of the center plate at the centers of the recesses 26, the arrangement being such that the eyes 31 and a portion of the bodies of tie-bars 32 will rest within the recesses 26 and 27, the studs 28 passing upward through the eyes 31, as is best shown in Fig. 4. The tie-bars 32 extend to and through the approaching needle-beam 33 to engage with nuts, as indicated in dotted lines in Fig. 1, the needle-beams of the car-body being in turn connected by tie-rods or center draw-bars, 34, that are arranged as best shown in Figs. 1 and 3. An inspection of Fig. 3 will show that the mounting of the two draw-bars arranged in connection with the car is similar.

The center plate 30 is provided or formed with two pairs of flanges, 35, each pair being connected by a web, 36, the construction being such that pockets are formed for the reception of the center sills, 37.

As before stated, the draw-bar is normally held in the position in which it is shown in the drawings by a spring, 15; but in order that the draw-bar may be drawn back when it is desired to uncouple the cars, I connect an equalizing-lever, 40, to the outer side of the draw-bar by means of a link-connection, as 41, the lever being pivotally connected to the bracket in which the spring 15 is housed. The end of this lever 40 carries a stud, 42, which rides in a slot formed in the head 43 of an operating-lever, 44, said lever being fulcrumed at *a* and extending outward beyond one of the sills of the car, there to engage with a rack, 45, with which it is held in engagement by a spring-arm, 46, that bears against a horizontal curved bar, 47, the lever being normally held in engagement with the last tooth, 48, of the rack 45 by the action of a spring, 49, which is connected to one arm of the head of the lever and arranged as best shown in Fig. 1.

Above the lever, and rigidly connected thereto, there is mounted a nose, 50, which, when the lever is thrown in the direction of the arrow shown in Fig. 1, will bear against a plunger, 51, that is housed in an aperture formed in the draw-bar and bears against a flat spring, 52, the inner end of which is connected to the draw-bar, this spring 52 being employed to assist in holding the draw-hooks 14 in engagement when the cars are coupled, as will be hereinafter explained.

When it is desired to couple cars provided with my improved form of coupler, the parts are adjusted as represented in the drawings. Then as the cars come together the inclined faces *b* of the draw-hooks 14 will meet, and the draw-bars will be moved outward against the tension of their springs 15 until the point of the hook of one draw-bar has passed in beyond the point of the hook of the other draw-bar, immediately after which the springs 15 will act to force their draw-bars forward, so that the hooks 14 will be brought into engagement, the springs 52 bearing at this time against the outer sides of the draw-heads and tending to hold the two hooks in engagement.

When it is desired to uncouple the cars, the lever 44 is thrown in the direction of the arrow shown in connection therewith in Fig. 1, and brought into engagement with such of the teeth of the rack 45 as is proper to hold the draw-bar in the required position, the movement of the lever 44 tending to throw the lever 40 in the direction of its arrow, thus drawing the draw-head in the direction of the arrow shown in connection therewith; but as the lever 44 is thrown as last above described, the nose 50 will act to force the plunger 51 forward, so that the spring 52 will be held in about the position in which it is shown in the drawings, the nose 50 being properly shaped to bring about this result.

By broadening the draw-head vertically I provide for the coupling of cars of unequal height when both of such cars are provided with my improved form of coupler; and by forming a number of recesses in the said draw-head I arrange for coupling with the ordinary form of pin-and-link coupling with cars of different height; and by connecting the draw-bars to the body center plates, and in turn connecting said center plates by tie bars or rods, I relieve the frame proper of the car-body of all strain incident to the drawing or the backing of the cars.

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

1. A body center plate formed with a central recess defined by a central flange, 22, said flange being adapted to enter an eye formed at the inner end of one of the draw-bar cage-plates.

2. A body center plate formed with a recess, 23, a flange, 22, studs 28, annular recesses 26, and other recesses, 27, substantially as described.

3. A body center plate provided with flanges that are connected by webs and formed with recesses adapted to receive tie-bars, and studs adapted to enter eyes formed in said tie-bars, and a central recess defined by a central flange, substantially as described.

4. The combination, with a draw-bar provided at its inner end with cage-plates, of a body center plate provided with a central flange, said flange being adapted to enter an eye formed at the inner end of one of the draw-bar cage-plates, substantially as described.

5. The combination, with the body center plate formed with recesses 26 and 27 and studs 28, of the tie-bars 32, provided at their ends with eyes, said eyes being adapted to receive the studs 28, substantially as described.

6. The combination, with a draw-bar, of a forwardly-extending spring, 52, connected thereto, a lever, 40, connected to the draw-bar by a link or links, 41, a lever, 44, to which the lever 40 is connected, a nose carried by the lever 44, and a plunger, 51, arranged in connection with the nose and with the spring 52, substantially as described.

7. The combination, with a draw-bar formed with a hooked end, of a plunger, 16, a spring by which the plunger is held against the draw-bar, a lever, 40, connected to the draw-bar by a link or links, a lever, 44, to the head of which the lever 40 is connected by a stud, a spring, 49, connected to the head of the lever 44, a nose, 50, carried by the lever 44, a plunger, 51, that is borne upon by the nose, a spring, 52, that is borne upon by the plunger, a rack, 45, a bar, 47, arranged above the rack, and a spring-arm, 46, carried by the lever 44, substantially as described.

EDWARD A. OLMSTEAD.

Witnesses:
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EDGAR TATE.