

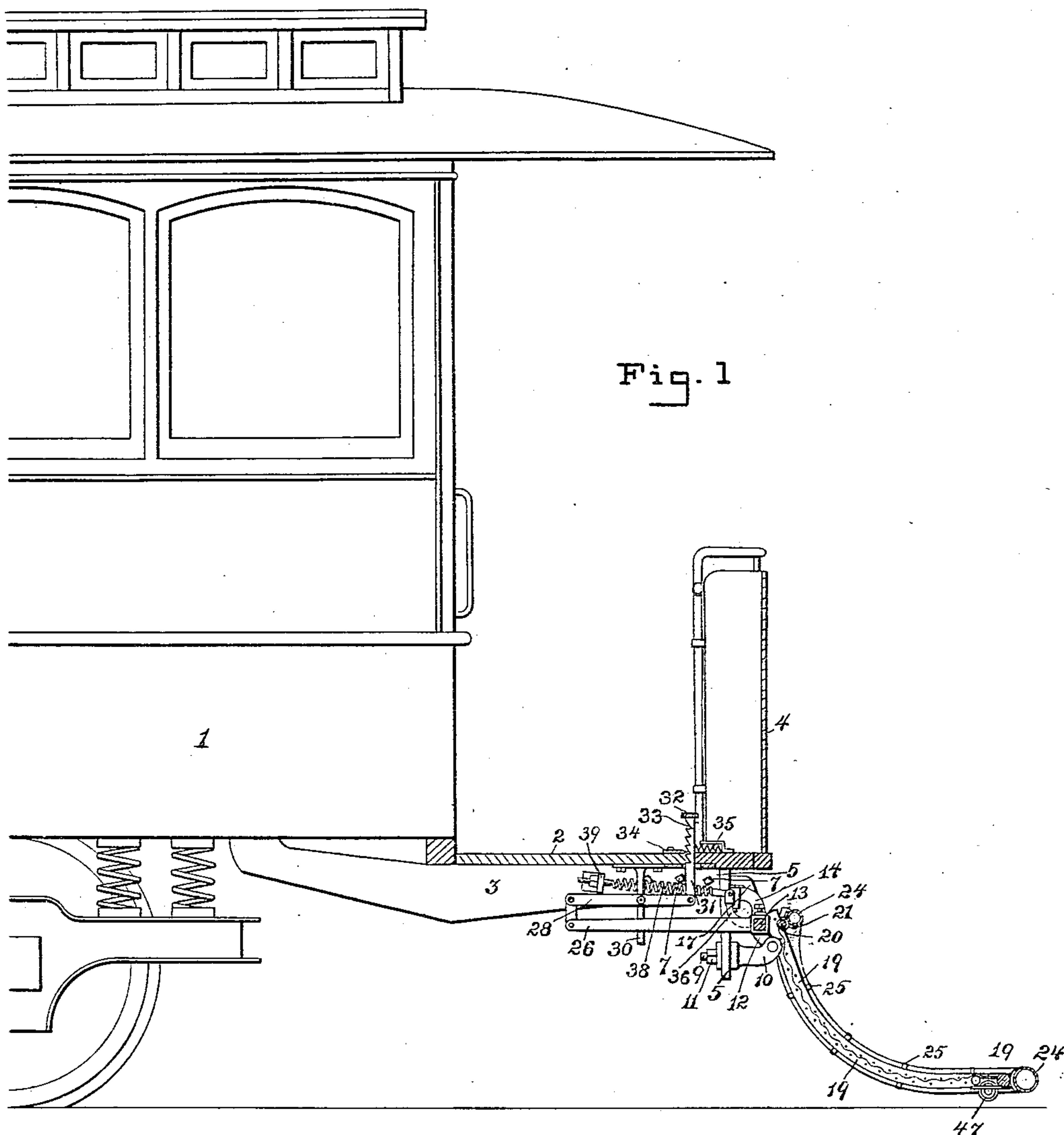
(No Model.)

3 Sheets—Sheet 1.

W. LEONHARDT.
CAR FENDER.

No. 555,103.

Patented Feb. 25, 1896.



WITNESSES:

C. R. Weaver
F. C. Gross.

INVENTOR:

Wm. Leonhardt
By S. B. Brashears Jr.
ATTORNEY.

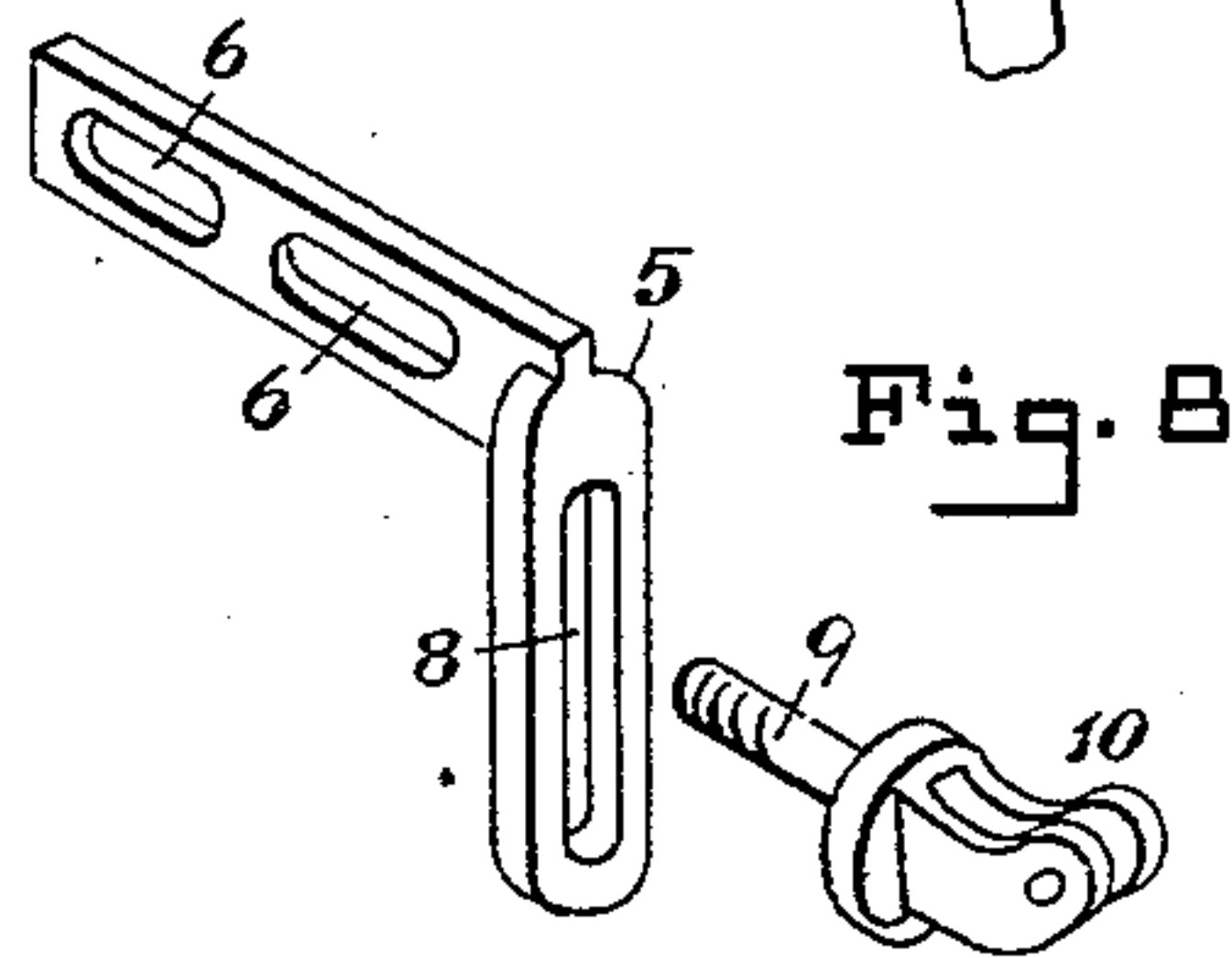
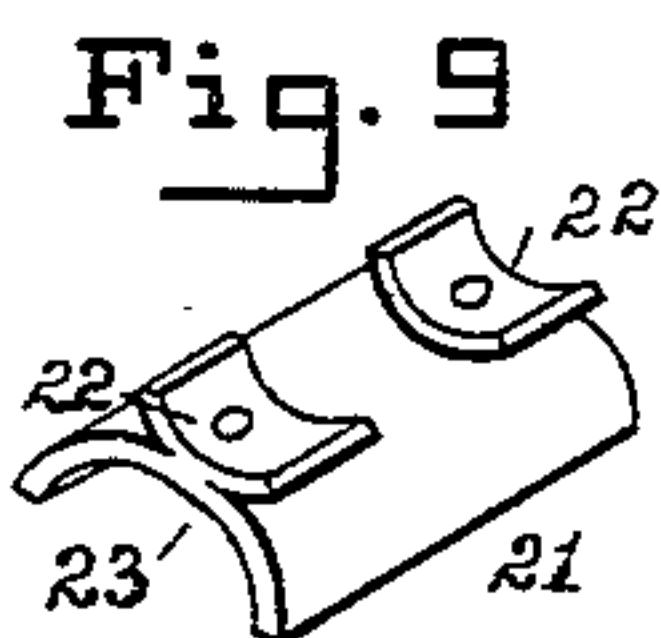
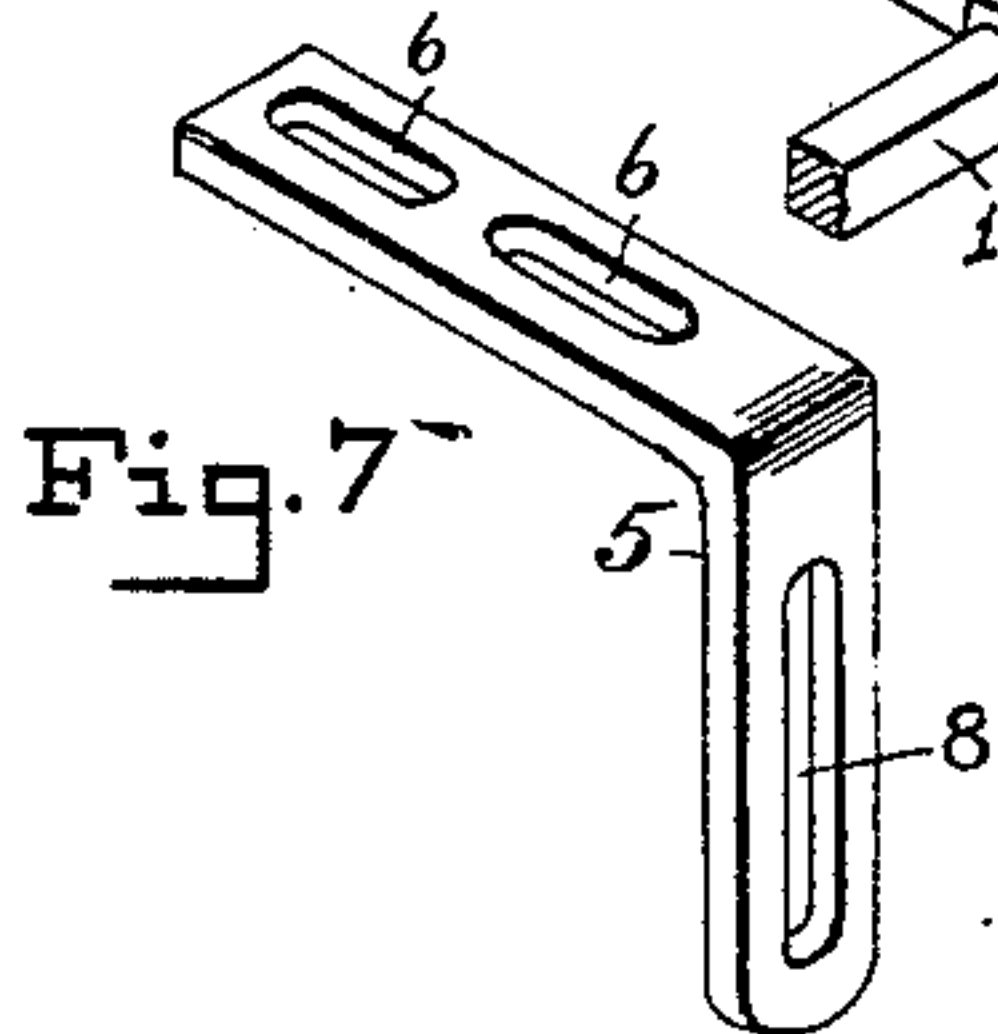
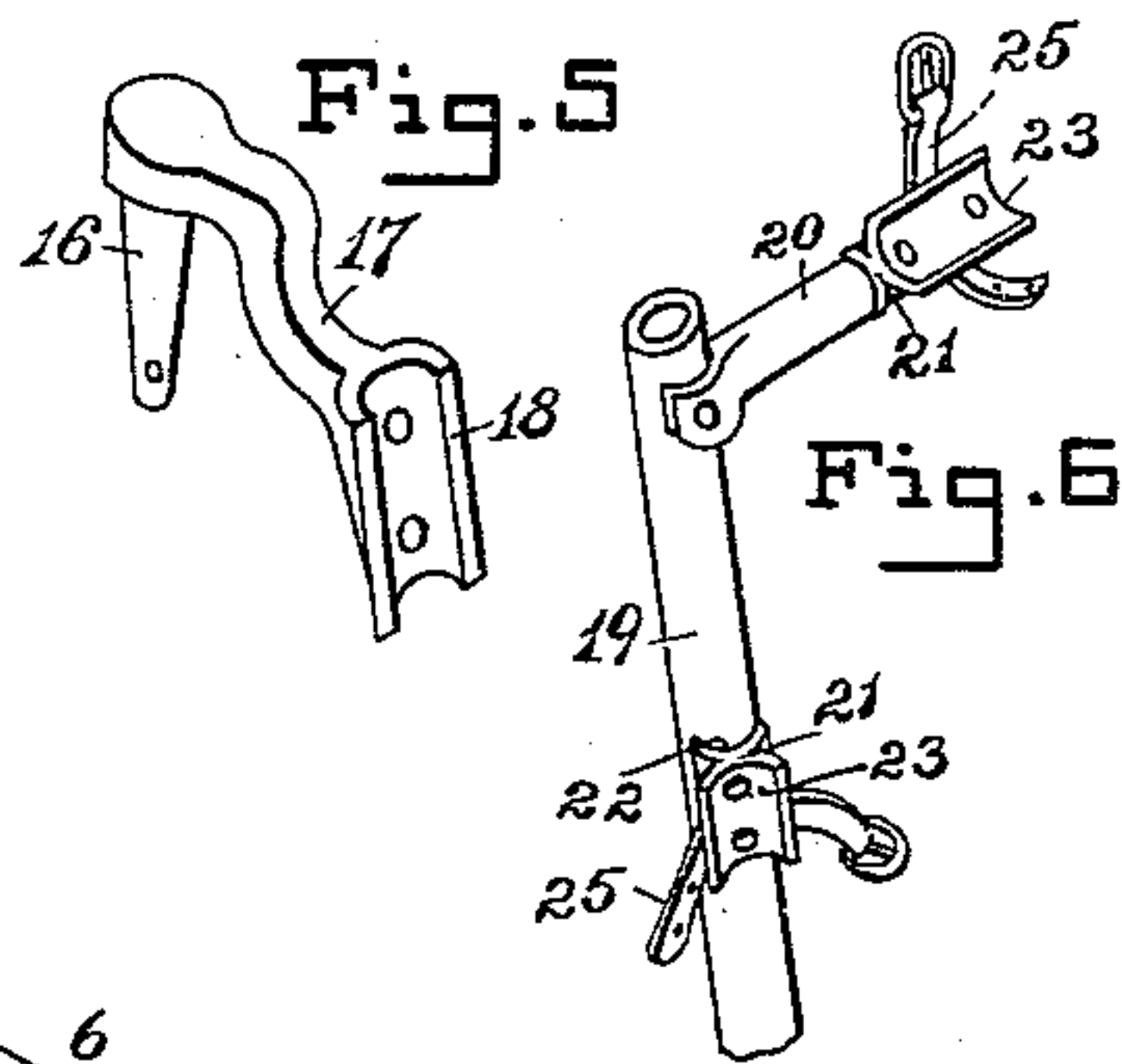
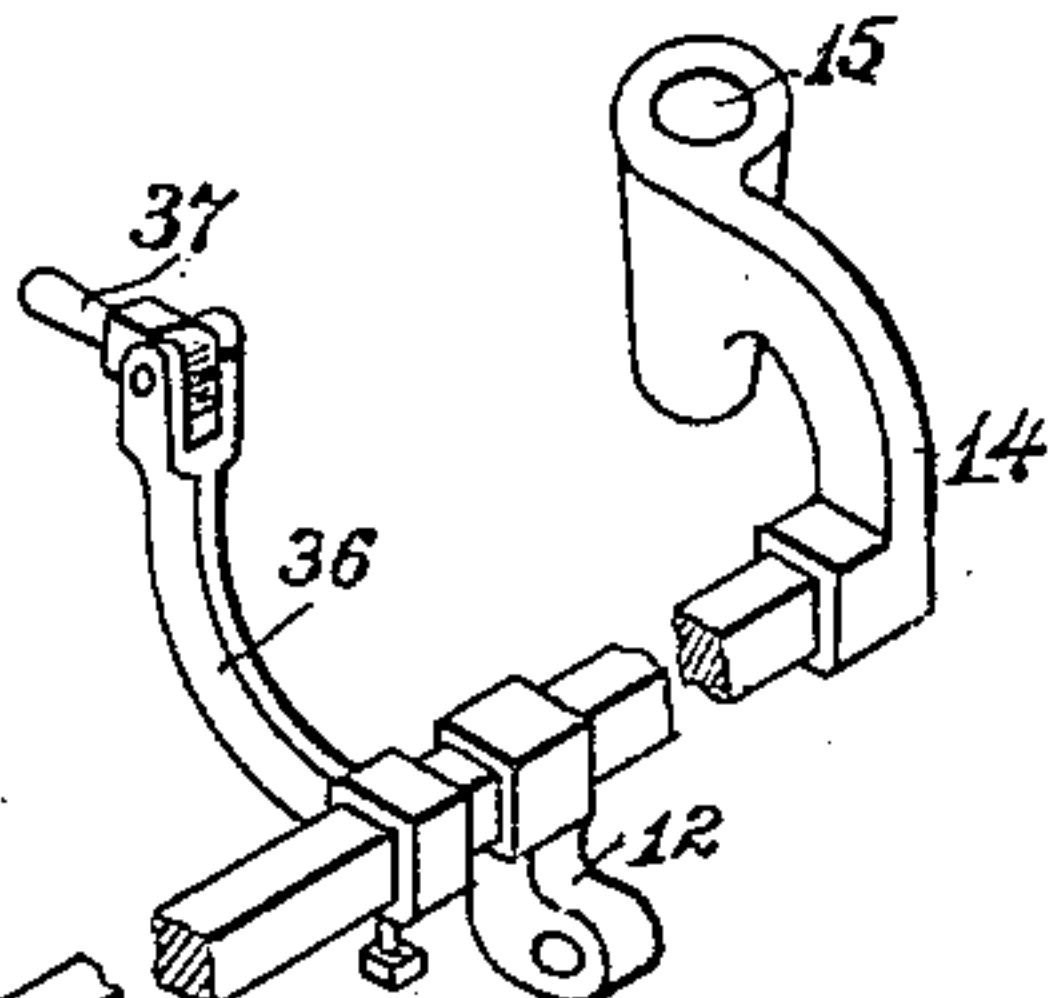
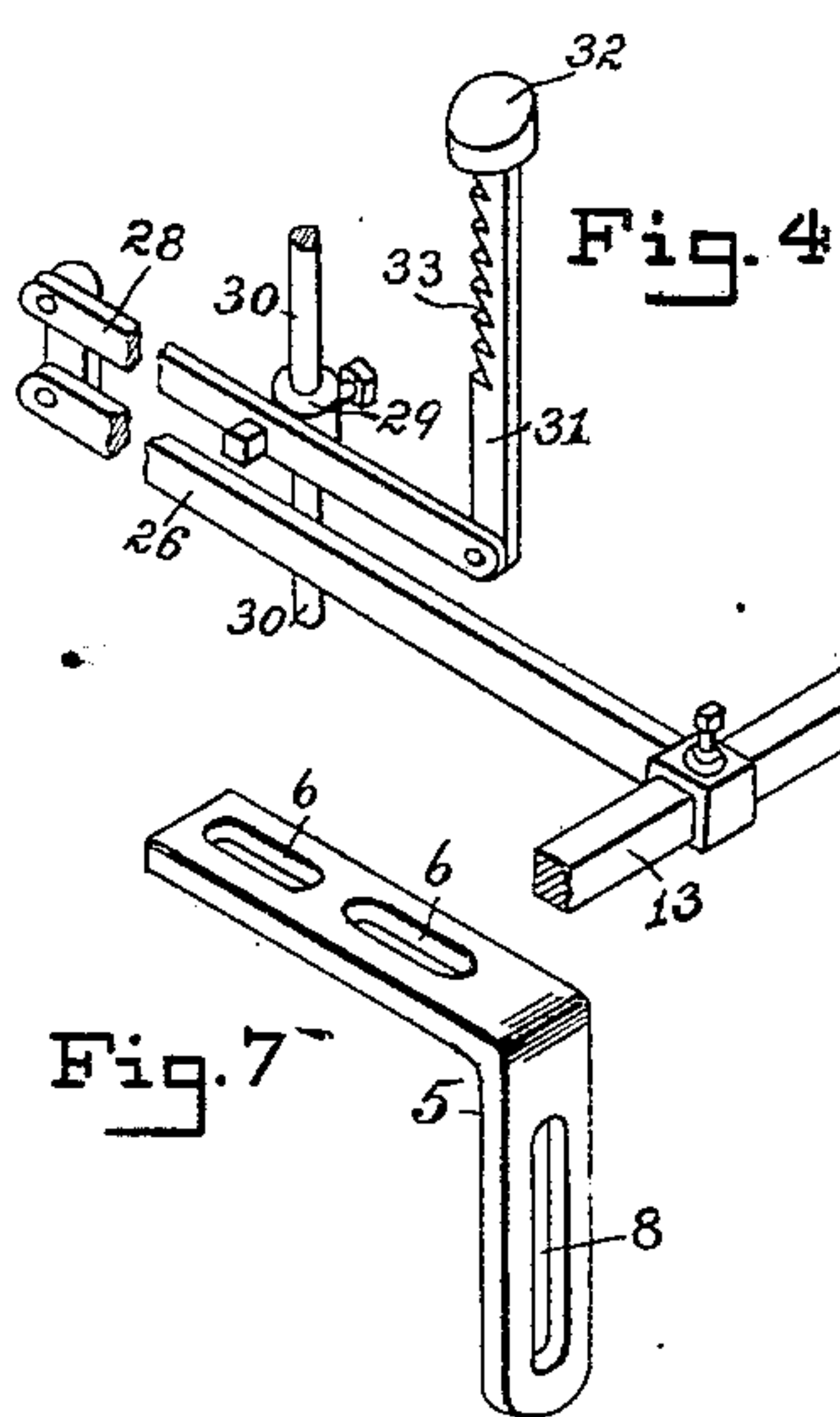
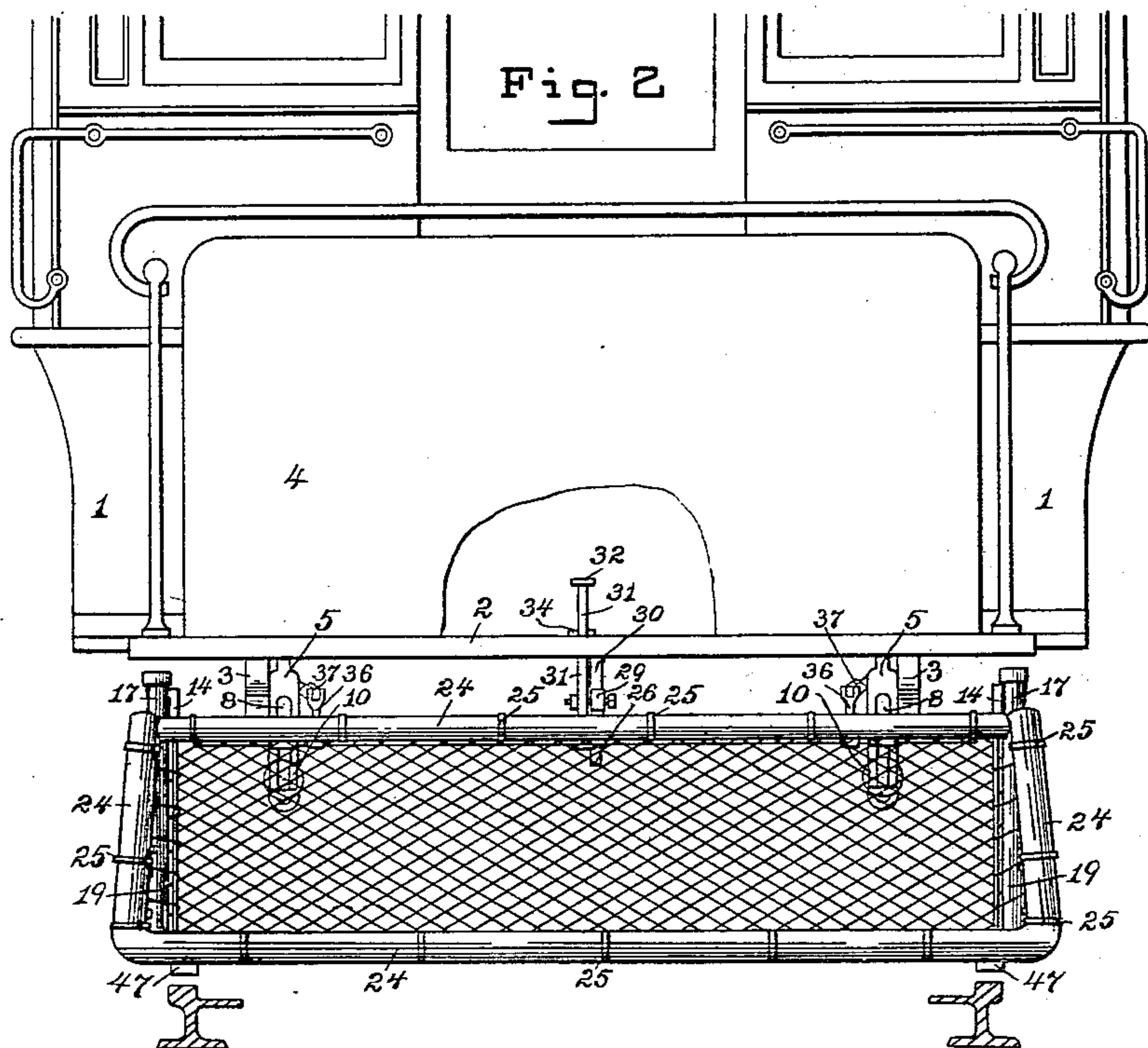
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3 Sheets—Sheet 2.

W. LEONHARDT.
CAR FENDER.

No. 555,103.

Patented Feb. 25, 1896.



WITNESSES:

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INVENTOR:

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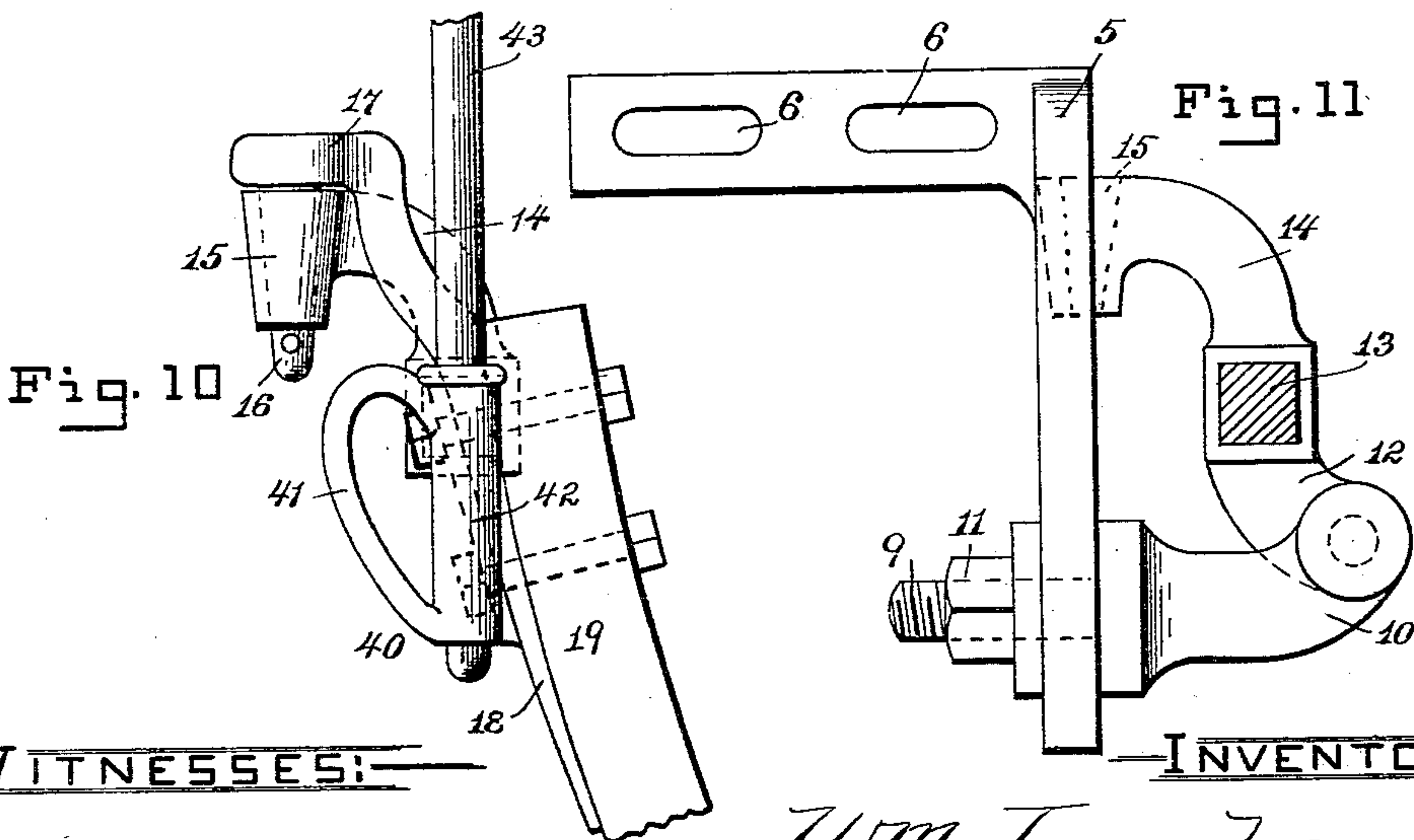
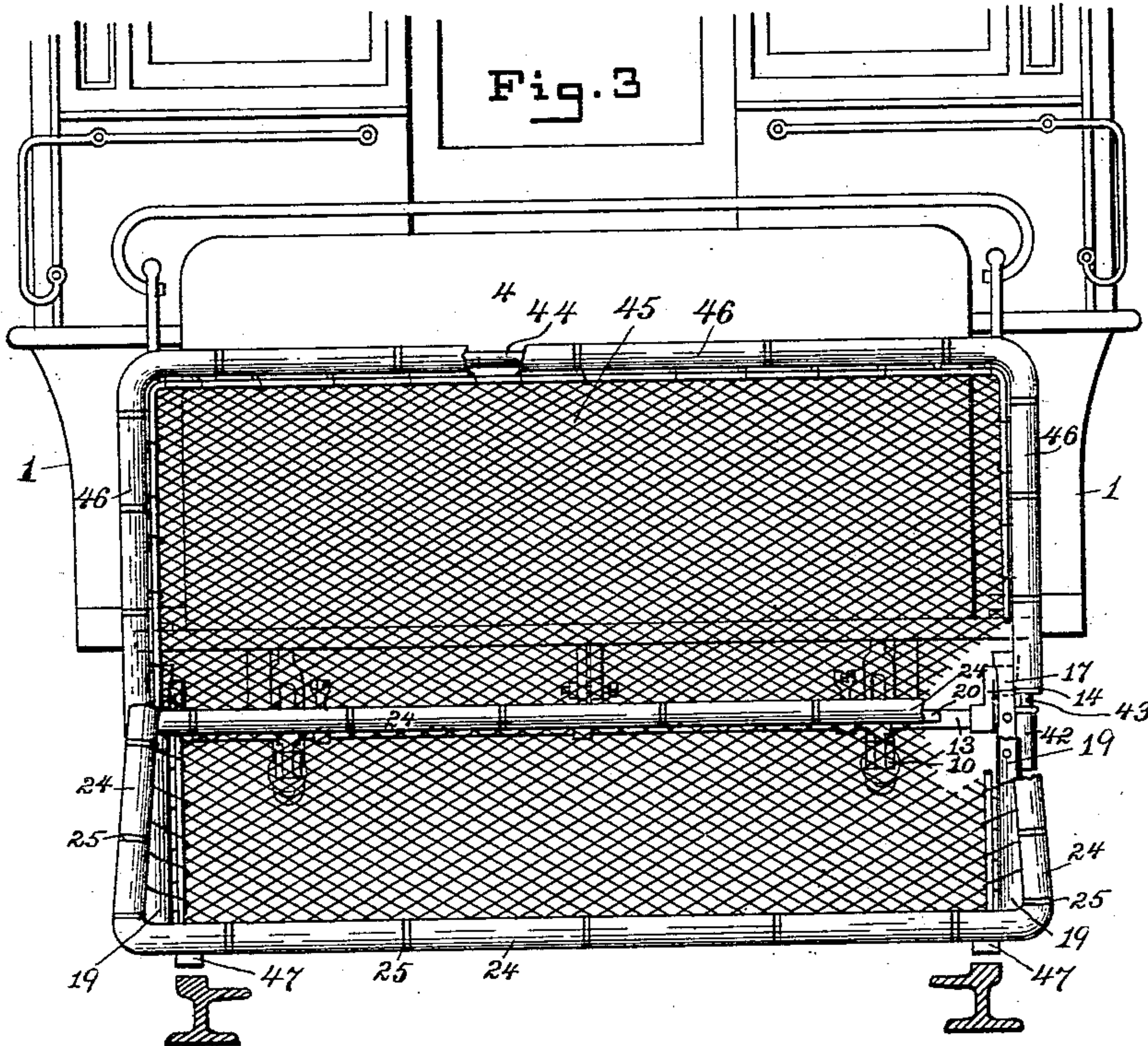
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3 Sheets—Sheet 3.

W. LEONHARDT.
CAR FENDER.

No. 555,103.

Patented Feb. 25, 1896.



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UNITED STATES PATENT OFFICE.

WILLIAM LEONHARDT, OF BALTIMORE, MARYLAND, ASSIGNOR TO THE
LEONHARDT PNEUMATIC SAFETY CAR FENDER COMPANY, OF SAME
PLACE.

CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 555,103, dated February 25, 1896.

Application filed October 13, 1894. Serial No. 525,806. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM LEONHARDT, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Car-Fenders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it apper-
tains to make and use the same.

My invention relates to car-fenders, and has for its object to generally improve their construction, insure their proper operation, reduce their cost, and increase their effectiveness.

With these objects in view my invention consists in the improved construction, arrangement, and combination of parts hereinafter fully described and afterward specifically pointed out in the subjoined claims.

In the accompanying drawings, Figure 1, Sheet 1, is a view of one end of a car with my improved fender attached thereto, the body and truck of the car being shown in side elevation and the platform and guard with my improved fender in longitudinal vertical section. Fig. 2, Sheet 2, is a view in front elevation of the portion of the body of a car with my improved fender attached thereto, a section transversely through the rails of the track being also shown. Fig. 3, Sheet 3, is a view of the same parts shown in Fig. 2, a part of the fender at each side being broken away and the guard-net attachment being shown in position. Fig. 4, Sheet 2, is a detail view in perspective of some of the supporting and operating parts of my fender in position for use and broken away to foreshorten the illustration. Fig. 5, Sheet 2, is a detail view in perspective of the supporting-hook. Fig. 6, Sheet 2, is a detail view in perspective of one of the corner joints. Fig. 7, Sheet 2, is a detail perspective view of one form of suspending-bracket. Fig. 8, Sheet 2, is a similar view of another form of suspending-bracket and the pivotal fork. Fig. 9, Sheet 2, is a detail perspective view of one of the pneumatic-tube-securing plates. Fig. 10, Sheet 3, is a detail view in side elevation of the supporting socket, hook, and adjacent parts. Fig.

11, Sheet 3, is a similar view of the suspending devices for the main supporting-bar.

Like numerals of reference mark the same parts wherever they occur in the various figures of the drawings.

Referring to the drawings by numerals, 1 is the body, 2 the platform, 3 the platform-supporting beam, and 4 the guard or dashboard of an ordinary electric, cable, or other tramway car, and all these parts may be of any ordinary or preferred construction.

5 is a suspending-bracket. (Shown most plainly in Figs. 7 and 8, Sheet 2.) The form shown in Fig. 7 is intended to be secured to the bottom of the car by bolts passing through the slots 6 6, while that shown in Fig. 8 is secured by bolts 7 7 (see Fig. 1) passing through slots 6 6 and the beam 3.

The vertical pendent portion of the bracket 5 is slotted nearly its entire length, and through this slot 8 passes a bolt 9 having a forked head 10 and secured at any desired height by nut 11. There is a bracket 5 and bolt 9 near each side of the car, and in each forked head 10 is pivoted a bearing-piece 12 having a square hole through it. Through these square holes passes a transverse square bar 13 extending from side to side of the car, and at each end is mounted an arm 14 carrying at its upper end a vertical socket 15 to receive a hook 16 on an arm 17, which carries at its other end a curved plate 18, to which the piping 19 of the fender-frame is secured.

As just intimated, the fender-frame is made of piping, 19 being one of the sides and 20 the upper or rear bar. On these bars or pipes are secured brackets or plates 21, having inner curved sides, 22, to fit the pipes and outer curved sides, 23, of greater radii to fit the pneumatic tubing 24, with which my fender is cushioned. Straps 25 are secured to the curved plates to encircle and secure the pneumatic tubes in position.

On the cross-bar 13, near its mid-length, is secured an arm 26, which extends horizontally rearward and is at its rear end connected by an upright link to a lever 28, pivoted near its center to a collar 29 and adjustably secured to an upright bar 30 depending from the bot-

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tom of the platform. The forward end of lever 28 is pivotally attached to the lower end of an upright pedal-bar 31, which passes up through the platform close to the guard and
 5 has at its upper end a head 32 upon which the motorman may press with his foot. On the front edge of the pedal-bar 31 are formed teeth 33 pointing upward and engaging under the edge of a plate 34 secured on top of the
 10 platform. A spring 35 bears against the opposite edge of the pedal-bar to keep its teeth normally in engagement with the plate 34; but there is sufficient room in the opening through the platform in which the pedal-bar
 15 works to enable the motorman to press it forward against the force of spring 35 until its teeth are disengaged from plate 34 and it is free to move up or down.

Another arm 36 is secured to cross-bar 13, which projects upward and backward and has pivoted in its upper forked end a plug 37, to which is attached a spring 38, whose inner or rear end is secured adjustably to a bracket 39 secured to a fixed part of the car—in this in-
 25 stance to the beam 3.

Secured to the hook-arms 17 are castings 40, which are formed with hand-holds 41 and upright sockets 42. In these sockets are placed the lower ends of a frame consisting of
 30 uprights 43 and cross bar or pipe 44. The uprights are long enough to reach about two-thirds up the dashboard or guards of the car, and with the cross-bar are located in front of and but a short distance away from the guard. In this frame is secured a net 45, which extends from cross-bar 44 down to the upper bar, 20, of the fender-frame and may be secured thereto. A pneumatic tube 46 is secured, in the manner hereinbefore described,
 40 to the uprights and cross-bar 44.

The net 45 and its frame are omitted in Figs. 1 and 2 to prevent confusion in the lettering of the adjacent parts.

From the foregoing description it will be
 45 seen that the fender is entirely supported from the cross-bar 13, that the cross-bar 13 is supported on pivots located in front of it, passing through forked head 10 of bolt 9 and head of bearing-piece 12, and that the fender
 50 is carried on hook-arms 17, whose hook 16 rests in socket 15 located at the end of arm 14 at some distance in rear of cross-bar 13. In this way the pivotal point of the fender is thrown a considerable distance forward of the
 55 socket which supports its weight and the fender is to some extent counterbalanced. This counterbalancing is assisted by the action of the spring 38 attached to arm 36.

The fender is thus supported with its forward end a slight distance above the track, and is provided with wheels or rollers 47 to give a rolling contact with the track when the fender is lowered close to it.

When the motorman or gripman sees an
 65 obstruction on the track he presses his foot down on head 32 of pedal-bar 31, which, through the connections before described,

causes the cross-bar 13 to turn in the proper direction to tilt the forward part of the fender down close upon the track. 70

Should a person be struck, the force of the blow would be modified by contact with the pneumatic tubing, and should the person fall high up on the fender the upper extension-net, supported by the upper frame, 43 44, in
 75 front of the guard of the car, will prevent injury by coming in contact with the guard.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is— 80

1. A car-fender supported upon a rocking lever having the pivotal support of the lever on one side thereof (toward the front of the car) and the point of attachment of the fender on the opposite side, substantially as set
 85 forth.

2. A car-fender supported upon a rocking lever having the pivotal support of the lever on one side thereof (toward the front of the car) and the point of attachment of the fender on the opposite side, and connected with the car by a spring extending from an upward-projecting arm upon said bar, to a fixed part of the car, substantially as set forth. 90

3. In a car-fender, angular brackets pendent from the car, each bracket having slots in its horizontal upper arm and vertical slots in its vertical arm, in combination with forked-head bolts carried by said brackets substantially as set forth. 95 100

4. In a car-fender, angular brackets pendent from the car, each bracket having holes in its horizontal upper arm and vertical slots in its vertical arm, in combination with forked-head bolts adjustably carried by said brackets, the arms 14 and a transverse bar 13 supported in said arms substantially as set forth. 105

5. In a car-fender, angular brackets pendent from the car each bracket having holes in its horizontal upper arm and vertical slots in its vertical arm in combination with the forked-head bolts adjustably carried by said brackets, arms 14 projecting upward and rearward and having fender-supporting sockets, and the transverse bar 13 substantially as set forth. 110 115

6. In a car-fender, angular brackets pendent from the car, each bracket having slots in its vertical arm, in combination with pivot-bolts 10 adjustably carried by said brackets, the transverse bar 13, arms 14 projecting rearward and upward and having hooked upper ends provided with fender-supporting sockets substantially as described. 120

7. In a car-fender a rocking cross-bar upon which the fender is supported, an arm projecting rearwardly therefrom, a lever above said arm, substantially parallel thereto and pivoted to the car, a link connecting the rear ends of said arm and levers, a pedal-bar at the front end of the lever extending through the platform and having upward pointed teeth and a plate secured to the platform to engage said teeth, as set forth. 125 130

8. In a car-fender, angular brackets pendent from the car, each bracket having slots in its vertical arm, in combination with pivot-bolts 10 adjustably carried by said brackets, the transverse bar 13, arms 14 projecting rearward and upward and having hooked upper ends provided with fender-supporting sockets, and a supplementary cushioned frame supported in said sockets substantially as described.

9. In a car-fender, angular brackets pendent from the car, each bracket having vertical slots in its vertical arm, in combination with forked-head bolts adjustably carried by said brackets, the transverse bar 13, its bearings 12, the rearwardly-bent arm 36 secured to the bar 13, a plug 37 pivoted to the arm 36 and a spring pressing against said plug substantially as described.

10. A car-fender having a framework of pipes or bars provided with pneumatic-tube cushions secured to said framework by plates having rear curved surfaces to fit the framework, front curved surfaces of greater diameter to fit the pneumatic tubing, and straps to encircle the pneumatic tubing as set forth.

11. In a car-fender an arm carrying a supporting-hook at its upper rear end and secured to the fender-frame at its lower front end, provided with a casting having a hand-hold and a socket for carrying a supplementary net-frame as set forth.

12. In a car-fender angular brackets pendent from the car, each bracket having vertical slots in its vertical arm, a cross-bar supported on pivots at a slight distance to the front of said brackets, in combination with an arm secured thereto, extending rearward therefrom and carrying the fender-frame, an arm extending upward and rearward from the cross-bar, a spring connecting said arm to a fixed part of the car and tending normally to raise the fender, and a pedal having a ratchet-bar and connecting levers and arms for depressing the fender against the action of said spring, as set forth.

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

WILLIAM LEONHARDT.

Witnesses:

S. BRASHEARS,

ARTHUR O. BABENDREIER.