

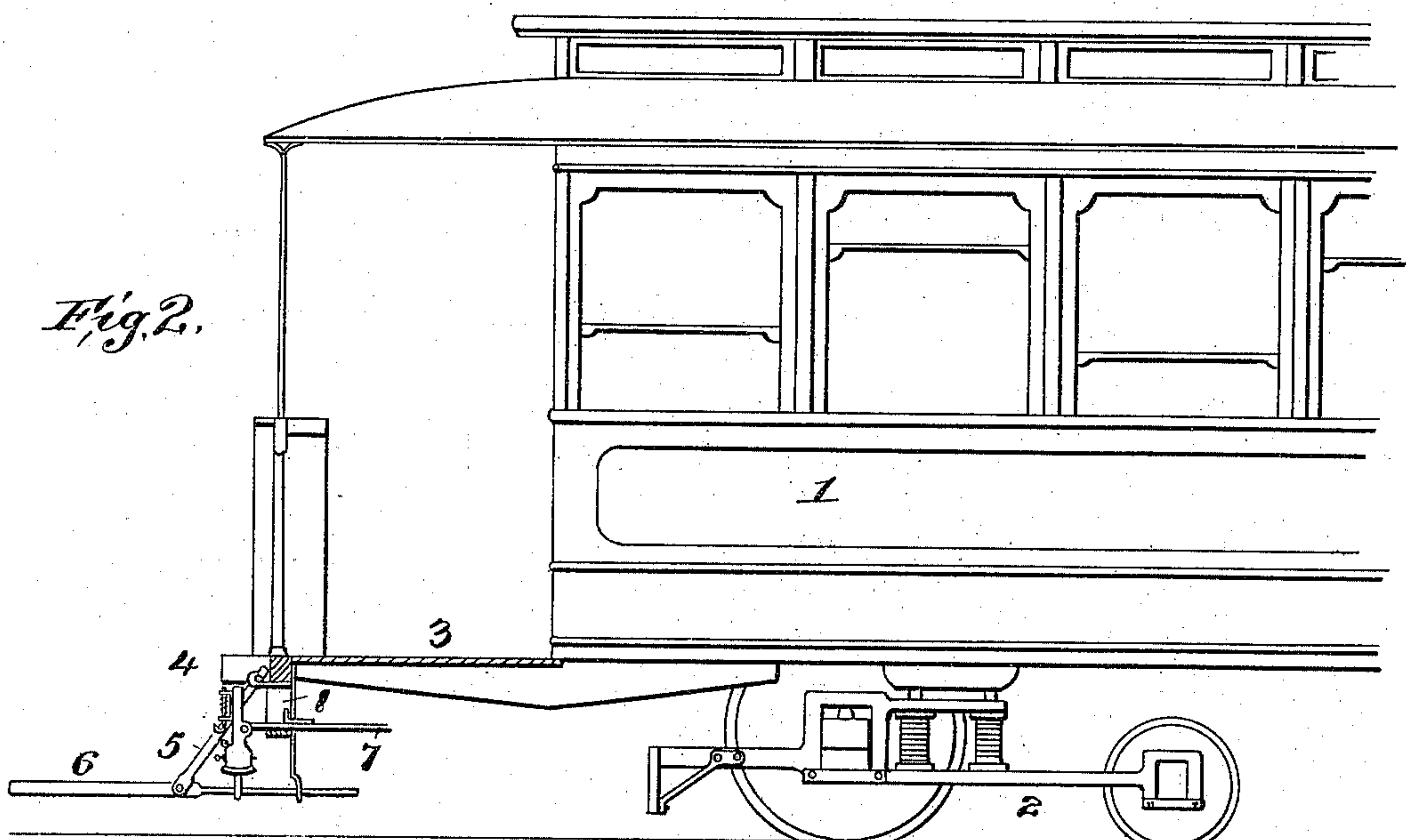
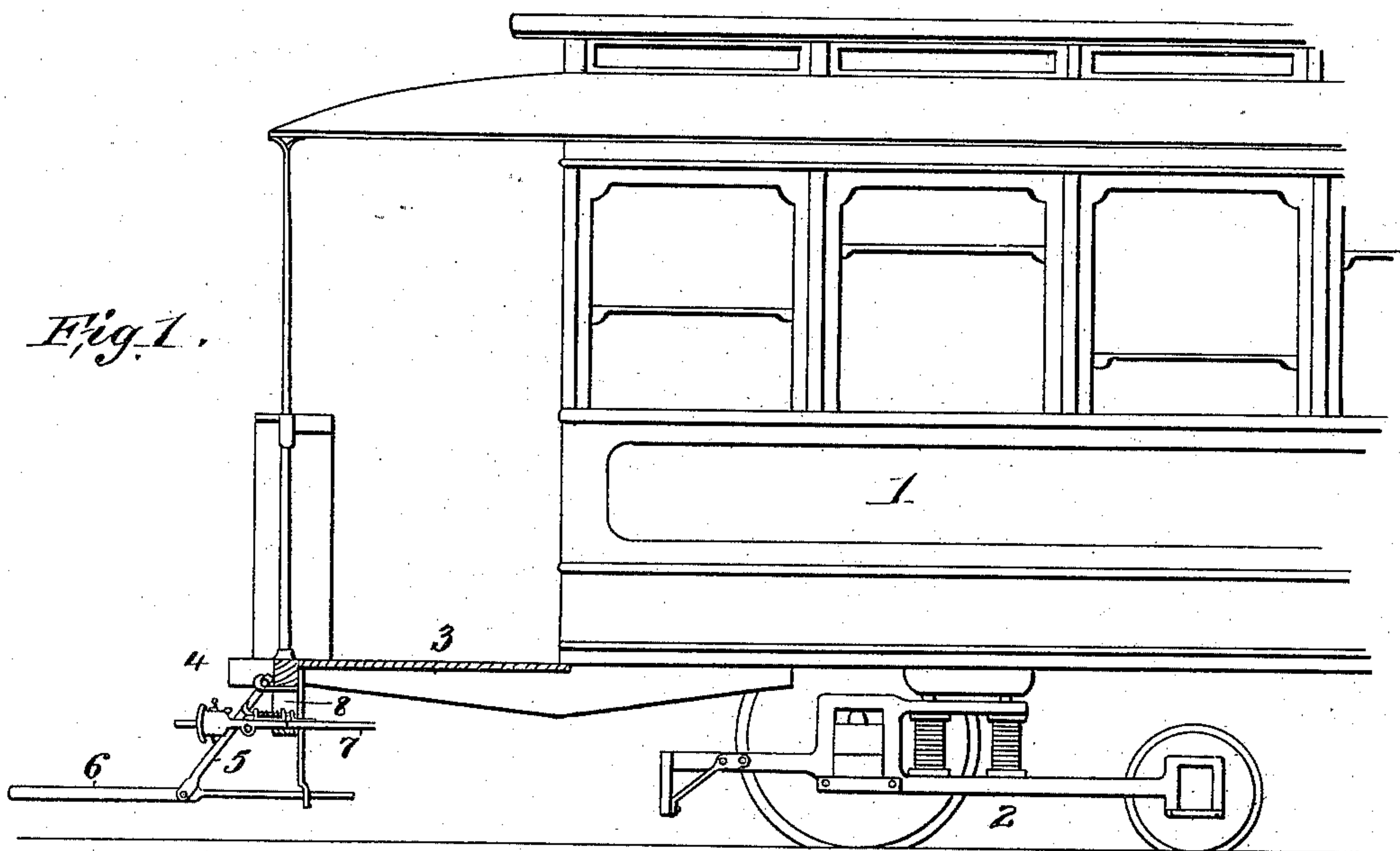
(No Model.)

2 Sheets—Sheet 1.

J. A. BRILL.  
DRAFT APPARATUS FOR CARS.

No. 547,477.

Patented Oct. 8, 1895.



WITNESSES:

*C. W. Benjamin*  
*William Jacobus*

INVENTOR

*John A. Brill.*

BY

*Joseph L. Levy*

ATTORNEY

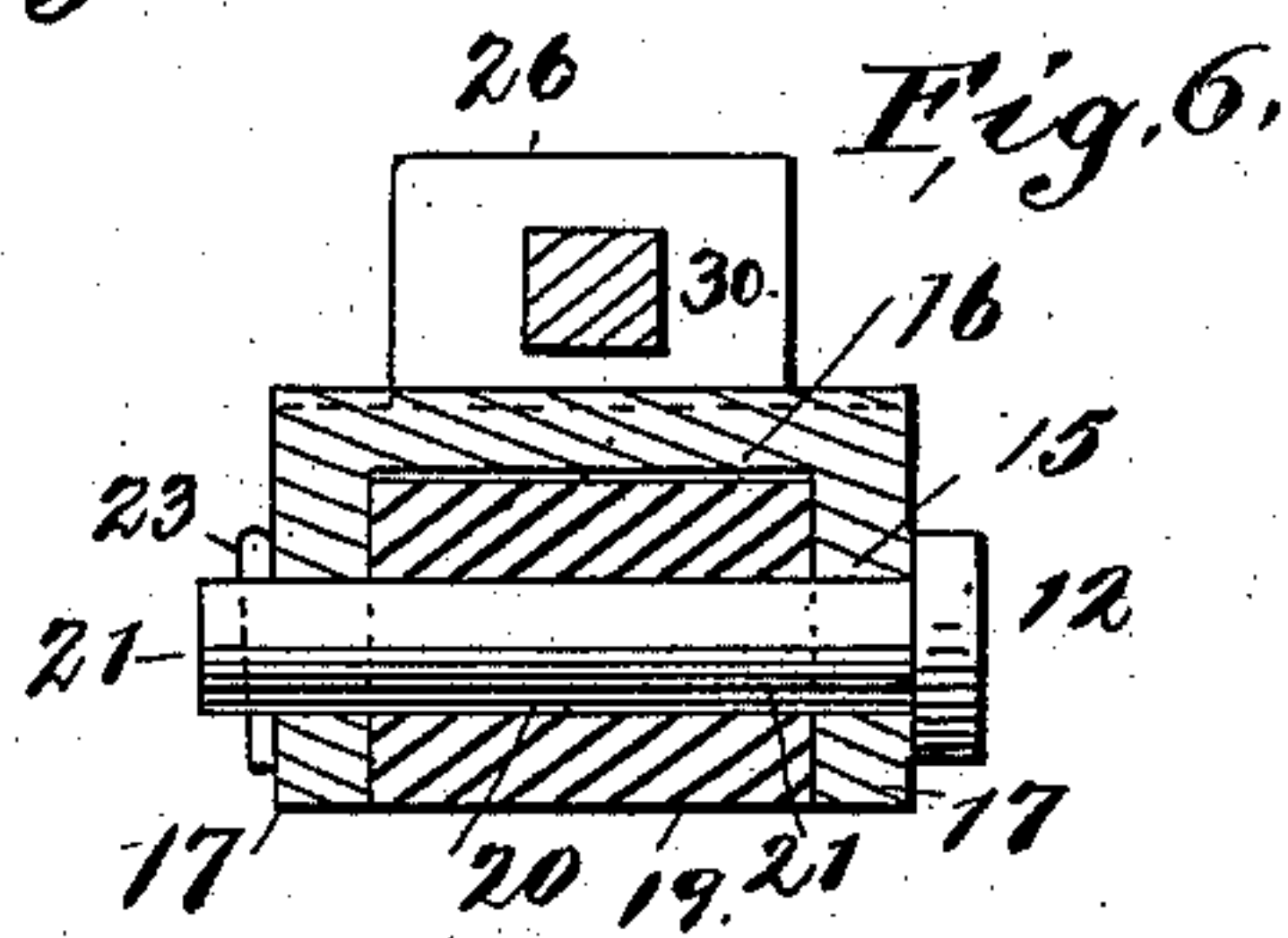
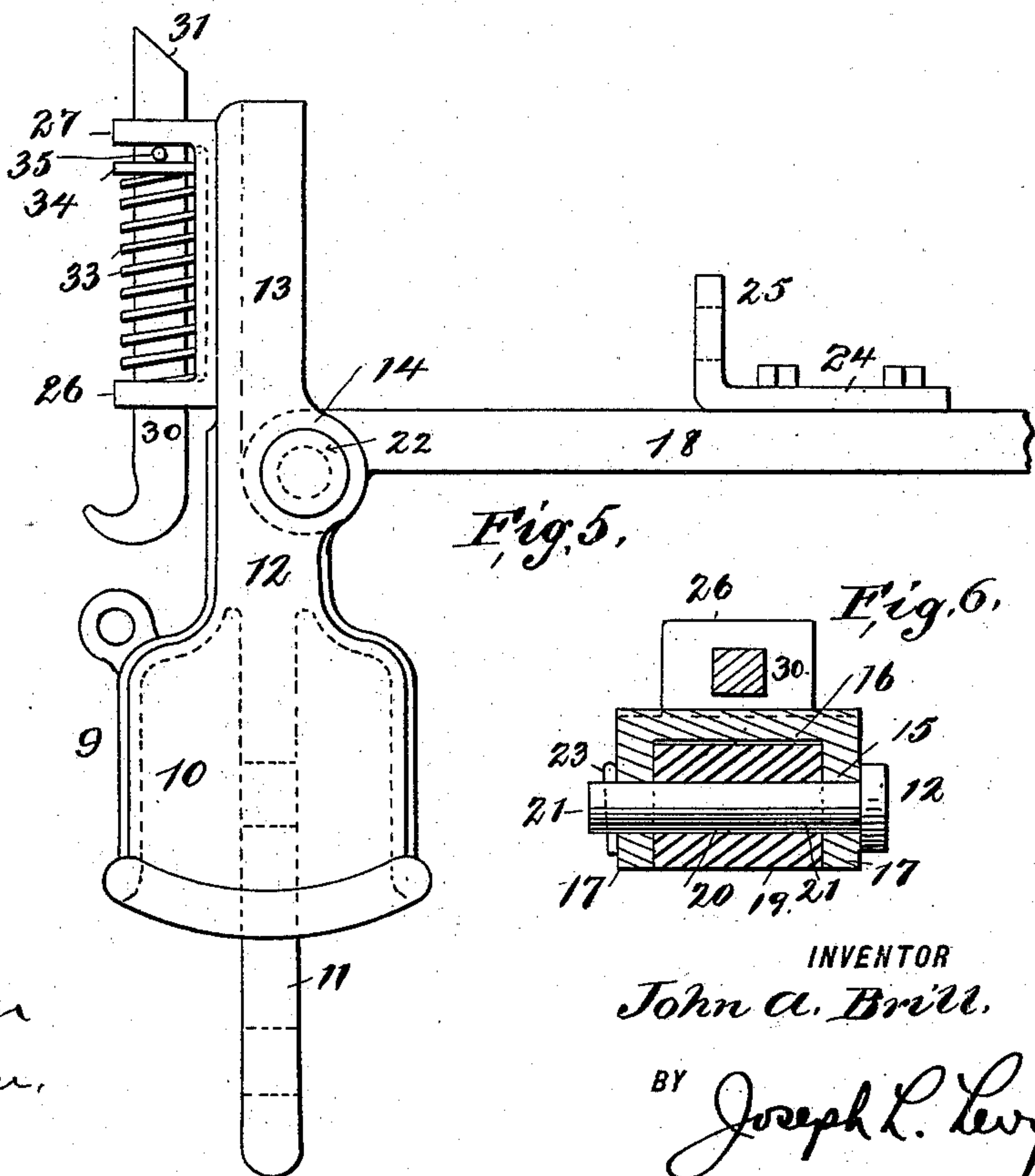
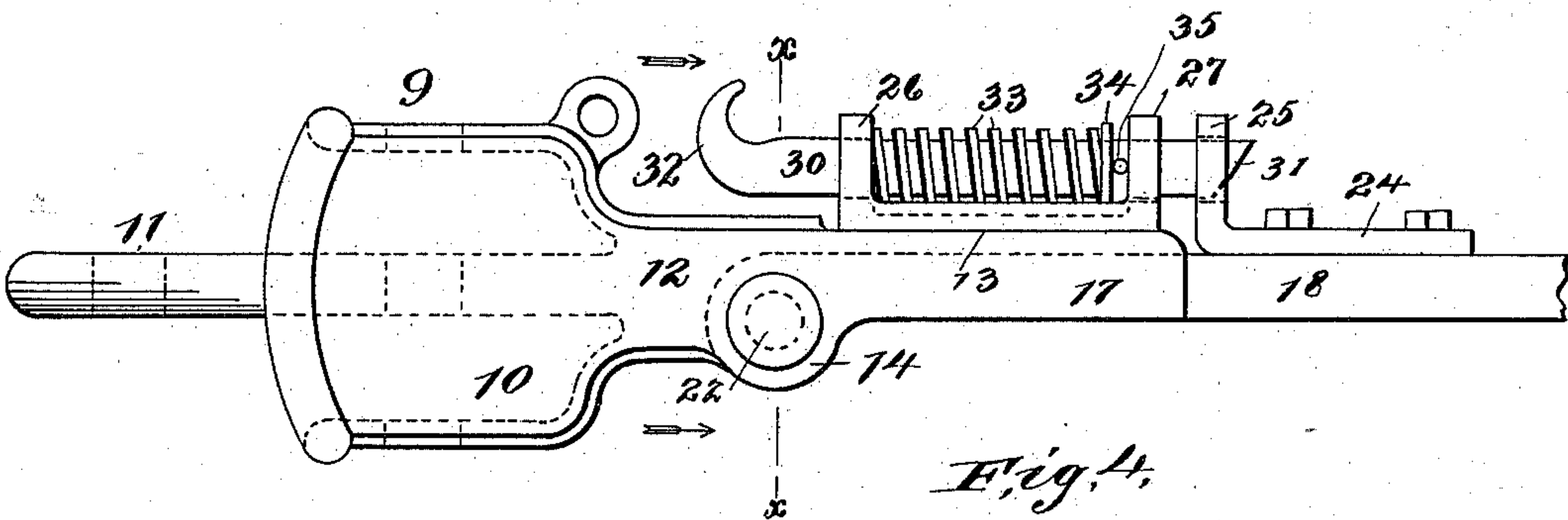
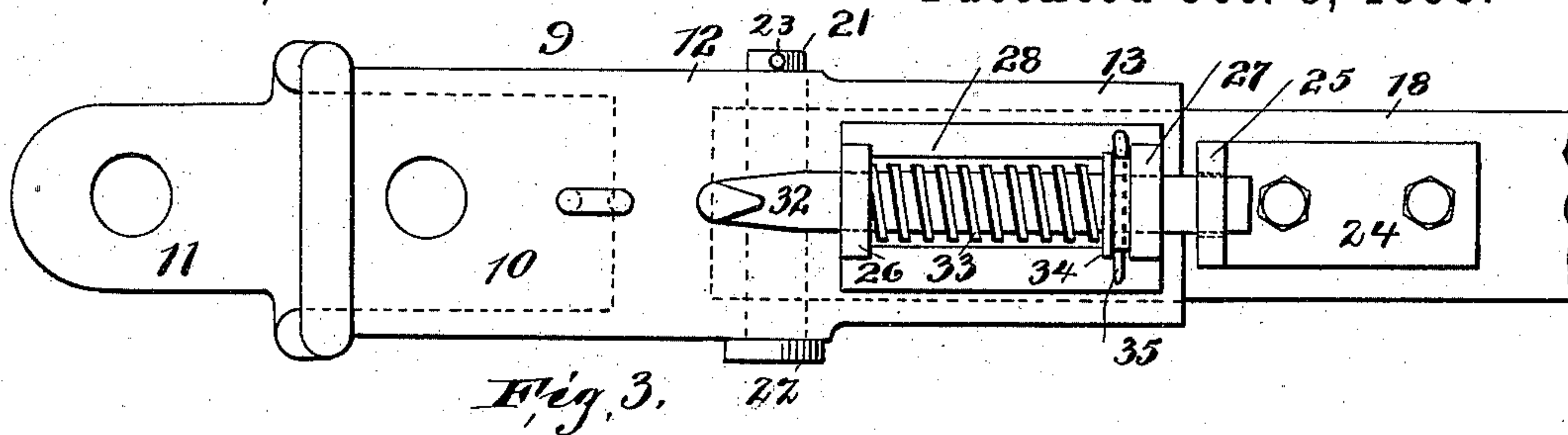
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WITNESSES:  
*C. W. Benjamin*  
*William Jacobson*

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# UNITED STATES PATENT OFFICE.

JOHN A. BRILL, OF PHILADELPHIA, PENNSYLVANIA.

## DRAFT APPARATUS FOR CARS.

SPECIFICATION forming part of Letters Patent No. 547,477, dated October 8, 1895.

Application filed May 6, 1895. Serial No. 548,197. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN A. BRILL, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have made certain new and useful Improvements in Draft Apparatus for Cars, of which the following is a specification.

My invention has special reference to improvements in the draft apparatus for street-railway cars, although it may be used in other relations.

In operating street-cars, and especially those which are propelled by cable or motor, draw-bars are used which project some distance beyond the buffer-beam of the platform, and great disadvantages have resulted and sometimes serious accidents have occurred by reason of the projection of these parts from the car, and, furthermore, when life-guards or fenders have been used upon cars provided with outwardly-extending draw-bars the fender has to be so modified as to be capable of manipulation without coming in contact with the draw-bar, and the projection of the draw-bar into the space above the fender makes the use of the same more dangerous on account of the increased liability of injury due to its presence there.

The object of my invention therefore is to improve the construction of the draft apparatus so as to allow of the manipulation of the fender without necessitating any alteration on account of its presence and to eliminate the liability of accident due to its projection into the space above the fender.

My invention therefore consists in the combination, with a suitable car or its platform and a fender secured thereto, of an articulated draft apparatus capable of being dropped when not in use, so as to lie within the end of the platform or its buffer-beam, leaving the space above the fender and beyond the end of the platform free and clear.

My invention further consists in the details of construction of the draft apparatus and in the combination of parts thereof, as hereinafter described, and finally set forth in the claims.

In the drawings forming part of this specification, Figure 1 is a side elevation of a portion of one end of a car and its platform, the platform being partly in section, showing my

improved draft apparatus in its particular relation to the fender and extended; Fig. 2, a like view showing the draw-head of the draft apparatus dropped; Fig. 3, a plan view of a draw-head and draw-bar constructed in accordance with my invention and enlarged; Fig. 4, a side elevation of the same; Fig. 5, a side elevation of the draw-bar and the draw-head, the draw-head having been pivotally vibrated downwardly; and Fig. 6, a sectional elevation on the line *x x*, Fig. 4.

Like numerals of reference indicate corresponding parts throughout the several views.

In the drawings, 1 represents a car of ordinary or desired construction, and 2 a suitable truck for supporting the same, and at 3 is the platform of the car and 4 its buffer-beam.

At 5 are hangers secured to the end of the platform, and which support a fender or guard 6 in front of the platform and buffer-beam.

It will be noticed that the fender 6 extends considerably beyond the buffer-beam of the platform and that the buffer-beam lies over or extends into the space above the fender.

At 7 is the draw-bar of a suitable draft apparatus, which draw-bar, when the same is pivoted at the rear so as to swing, is supported in a suitable hanging frame 8, secured under the platform, the rear of the draw-bar being connected with springs by draw-irons in the usual or desired way, it being here understood that the particular form of connection of the draw-bar with the car forms no part of my present invention, as the same is applicable to draw-bars of varying constructions, and these being thoroughly understood and well known in the art I have not illustrated the connection of the draw-bar with the car.

I will now describe the application of my invention to a draft apparatus of the kind illustrated herein.

At 9 is a draw-head, having an enlargement or housing 10, constructed in the usual way, and a central and outwardly-projecting septum 11, forming a suitable bar or link connection to enable it to be connected with another car. This form of draw-head or any other suitable form can be employed. Extending rearwardly from the draw-head is a shank or stem 12, having an extension 13 and an enlargement 14. The enlargement 14 is provided with an aperture 15, (see Fig. 6.)



and the extension 13 is channeled from a point forward of the enlargement to the end of the extension, which forms a wall 16 and depending lips 17, of which the enlargement 14 is a part. The channeled end or extension 13 is adapted to receive the end of the draw-bar 18, in this case formed of a solid flat bar, the forward end of which is formed with a rounded enlargement or boss 19, through which passes an aperture 20, the boss lying within the end of the channel in the extension 13, which is conformed to receive it, as shown in dotted lines in Fig. 4, which boss is embraced by the enlargement 14 of the lips 17, the enlargements forming bearing-faces for the connecting-pin 21, which passes through the apertures 15 in the lip and which has a head 22 on one end and a cotter 23 or other equivalent device on the other end for securing the pin in position, which pin passes through the shank of the draw-head and the end of the draw-bar and pivotally unites them together, so as to enable the draw-head to be swung on its pivot and suspended, as shown in Figs. 2 and 5.

For firmly uniting the draw-head and draw-bar together and maintaining the draw-head horizontally projected, as shown in Figs. 1, 3, and 4, I employ a spring-latch, which will now be described.

Secured upon the flat portion of the bar 18 is a flat plate 24, having an upwardly-extending lug 25 with a central and squared aperture 26 therein. The lug 25 can either be secured to the bar 18, as shown, or be formed integrally therewith.

At 26 27 are upwardly-extending lugs formed either integrally with the extension 13 of the draw-head, above which they extend, or they can be formed in one piece with a plate 28 and secured to said extension by bolts or otherwise, the lug 27 lying in close proximity to the lug 25 on the draw-bar, which lugs 26 27 are provided with preferably squared apertures.

At 30 is a bolt, which extends through the lugs 26 27 and at times through the lug 25, and which is adapted to slide in the apertures of said lugs, one end of the bolt being provided with an inclined face 31 and the other with a hook 32, by means of which the bolt can be drawn outwardly to free it from the lug 25. It is preferred that the bolt be square in cross-section, so as to prevent it from turning within the lugs 26 27; otherwise it may be of any desired shape.

Around the bolt 30 is a spiral spring 33, which abuts at one end against the lug 26 and at the other end against a plate 34, held in place on the bolt by means of a pin 35 passing therethrough. The spring 33 acts to force the bolt 30 forward and maintain its end within the lug 25, and thus prevent the disengagement of the draw-bar and draw-head at this point, while the bolt 21 firmly and pivotally unites the draw bar and head and forms

a fulcrum point for the draw-head on the bar and takes the strain due to the draft.

When it is desired to disengage the draw-head from the draw-bar in order to permit of its being lowered, the bolt is moved forward against the stress of the spring by the hook 32, which will disengage the bolt from the lug 25 and permit the draw-head to swing downwardly, as shown in Figs. 2 and 5. When the draw head and bar are to be united again, the draw-head is raised until the end of the bolt strikes the lug 25, when the inclined surface will permit of the bolt being drawn forward, and when the bolt is in line with the aperture in the lug the spring is allowed to force the bolt into the aperture, and thus the parts are again rigidly held in position. The lips 17 of the extension 13 by embracing the sides of the draw-bar relieve the bolt 21 of lateral strain, and the wall 16 of the extension 13, bearing on top of the bar 18, relieves the bolt 21 of strain due to upward movement of the draw-head. In case the position of the draw-head should be reversed—that is, should the draft apparatus be so arranged that the draw-head is vibrated upwardly instead of downwardly—then the inner end of the draw-head will act as a stop to prevent further downward movement of the head, in which case the locking mechanism would not be essential, but could be used to insure against upward movement. By this arrangement of pivotally uniting the draw-head to the draw-bar, and so adjusting the parts that the draw-head and appendages will lie to the rear of a line drawn vertically from the face of the buffer on the platform the draft apparatus is entirely removed from the space above the fender, as shown in Fig. 2, and thus liability of accident or injury due to the projection of the draw head and bar into such space is obviated.

Besides the use of my invention as above set forth it can be advantageously employed in other relations.

I believe myself the first to have employed a draw-head so united to a draw-bar that when used in connection with a car-fender it can be expeditiously removed from out of the space above the fender and again secured in its projected position when such fender is not to be used.

It is apparent that many changes and modifications can be made in the embodiment of my invention without departing from the spirit of the same.

I claim—

1. In a draft apparatus, the combination, with a draw bar, of a draw head having a rearward extension, the draw head being pivotally secured to the draw bar between its ends, the extension bearing on the end of the draw bar and acting as a stop for the draw head, substantially as described.

2. In a draft apparatus, the combination, with the draw bar, of a draw head pivoted to



the draw bar between its ends, and means carried by the draw head for locking the head and bar together, the inner end of the draw head acting as a stop, substantially as described.

3. In a draft apparatus, the combination, with a draw bar, of a draw head pivotally secured to the draw bar between its ends, and adapted to be vibrated downwardly thereon, and means on the inner end of the draw head for automatically locking the head and bar together, substantially as described.

4. The combination, with the draw bar, of the draw head pivotally secured thereto, a bolt carried by the draw head, and means on the draw bar for engaging the bolt to prevent vibration of the draw head on the bar, substantially as described.

5. The combination of the draw bar and the draw head, means for pivotally uniting the draw head and bar, a spring actuated bolt on the draw head, and an apertured lug on the draw bar for engaging the end of said bolt, substantially as described.

6. The combination of the draw head having a shank and channeled extension thereof, a draw bar having an apertured boss lying within said extension, a pin uniting the draw bar and draw head together, and means for preventing the vibration of the draw head on the draw bar, substantially as described.

7. The combination with the draw head having the shank 12, the channeled extension 13 thereof having the depending lips 17 and enlargements 14, a draw bar 18 having the rounded boss 19, both the bar and boss lying within said channel, and an aperture in said

boss and enlargements, a pin extending through the boss and enlargements and uniting the draw bar and draw head together, and means for preventing vibration of the draw head in relation to the draw bar, substantially as described.

8. The combination with the draw head having the shank 12 and channeled extension 13, the extension comprising the wall 16 and depending lips 17, the draw bar having the apertured boss lying within said channel and between said lips, the wall 16 bearing on top of the draw bar, a pin uniting the draw head and boss of the draw bar together, a latch carried by the extension 13, and means on the draw bar for engaging said latch, substantially as described.

9. The combination with the draw head having the shank 12 and channeled extension 13, said channel having a rounded inner end, depending lips 17 and enlargements 14 thereof adjacent the rounded end of said channel, a draw bar embraced by said depending lips and having a rounded boss lying within the rounded end of said channel and enlargements 14, an aperture in said boss, a pin passing through said apertured enlargements and boss, a spring actuated bolt on the extension 13, and a lug on the draw bar to be engaged by said bolt, substantially as described.

Signed at Philadelphia, in the county of Philadelphia and State of Pennsylvania, this 2d day of May, 1895.

JOHN A. BRILL.

Witnesses:

M. H. McNEIL,  
HENRY C. ESLING.