(No Model.) 2 Sheets—Sheet 1.

W. J. CALVERT.

FENDER FOR TRAMWAY CARS.

No. 594,855 Patented Dec. 7, 1897.

Fig. 1

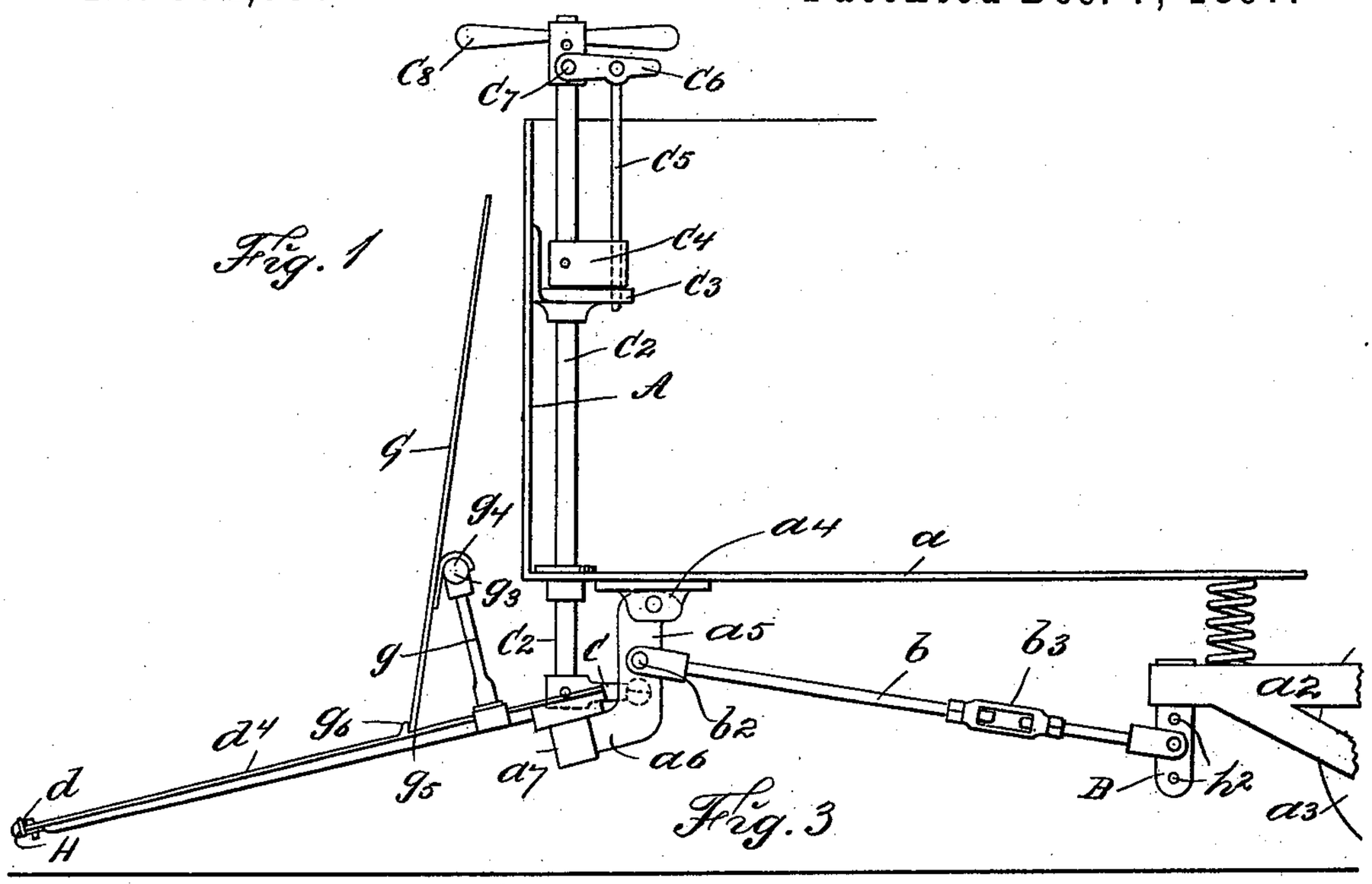


Fig. 3

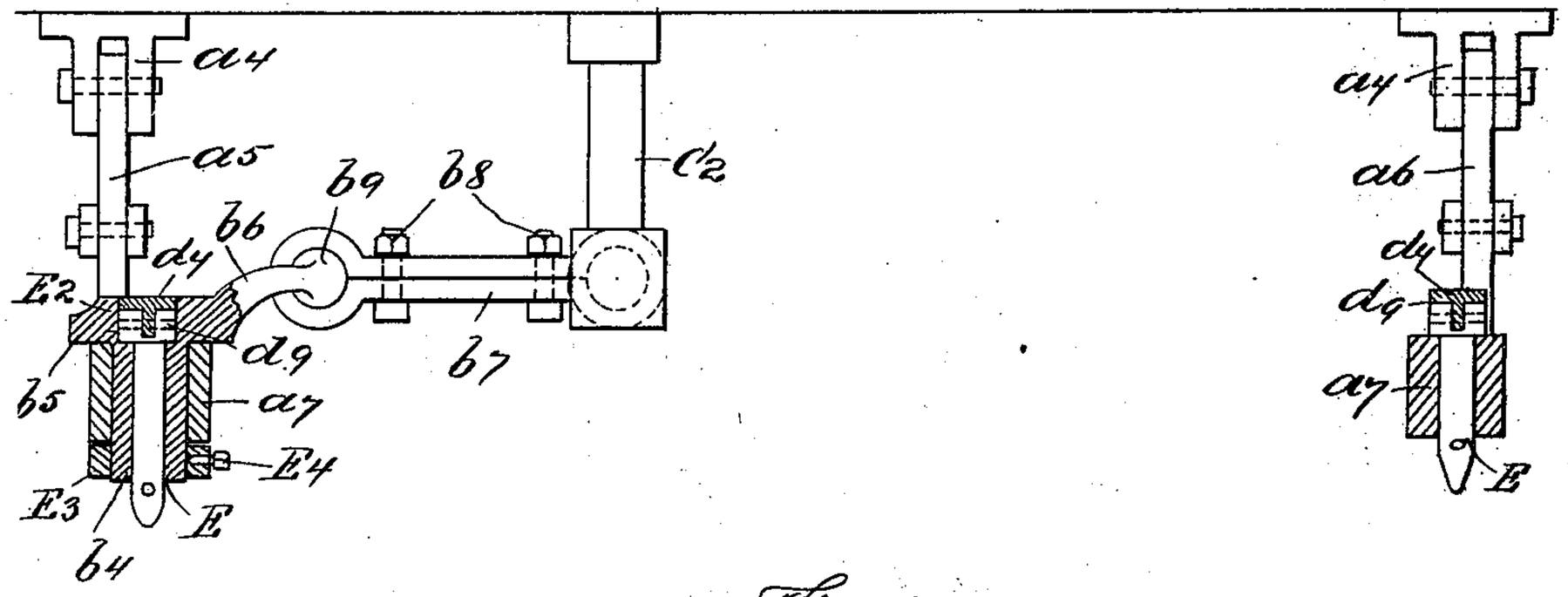


Fig. 4

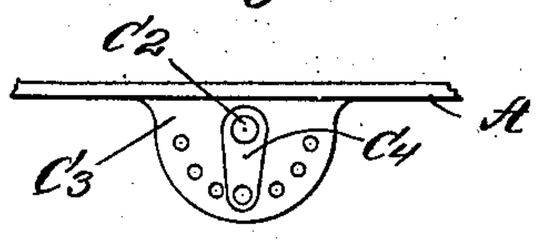
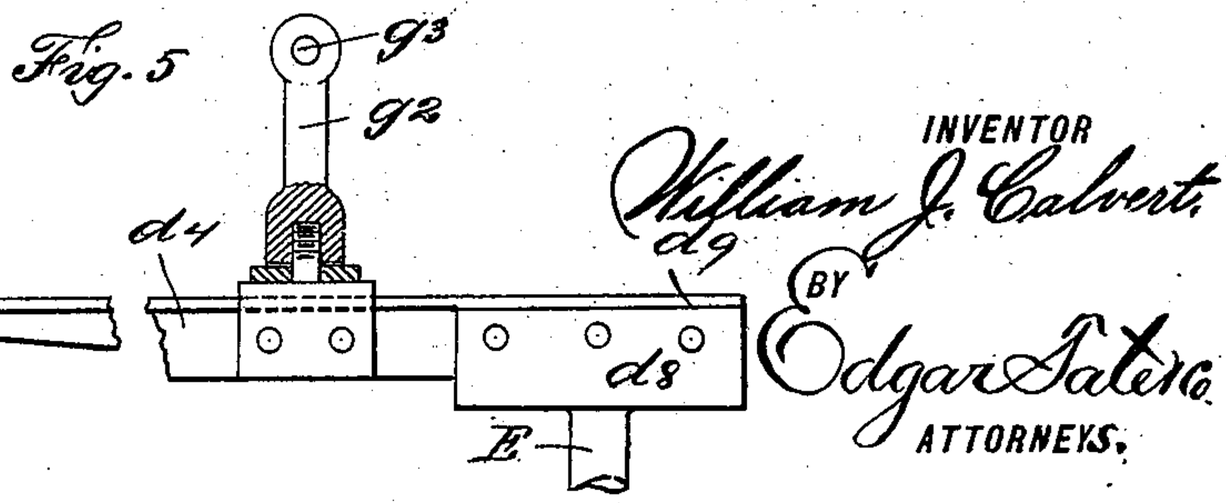


Fig. 5



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(No Model.) 2 Sheets—Sheet 2.

W. J. CALVERT.

FENDER FOR TRAMWAY CARS.

No. 594,855. Patented Dec. 7, 1897.

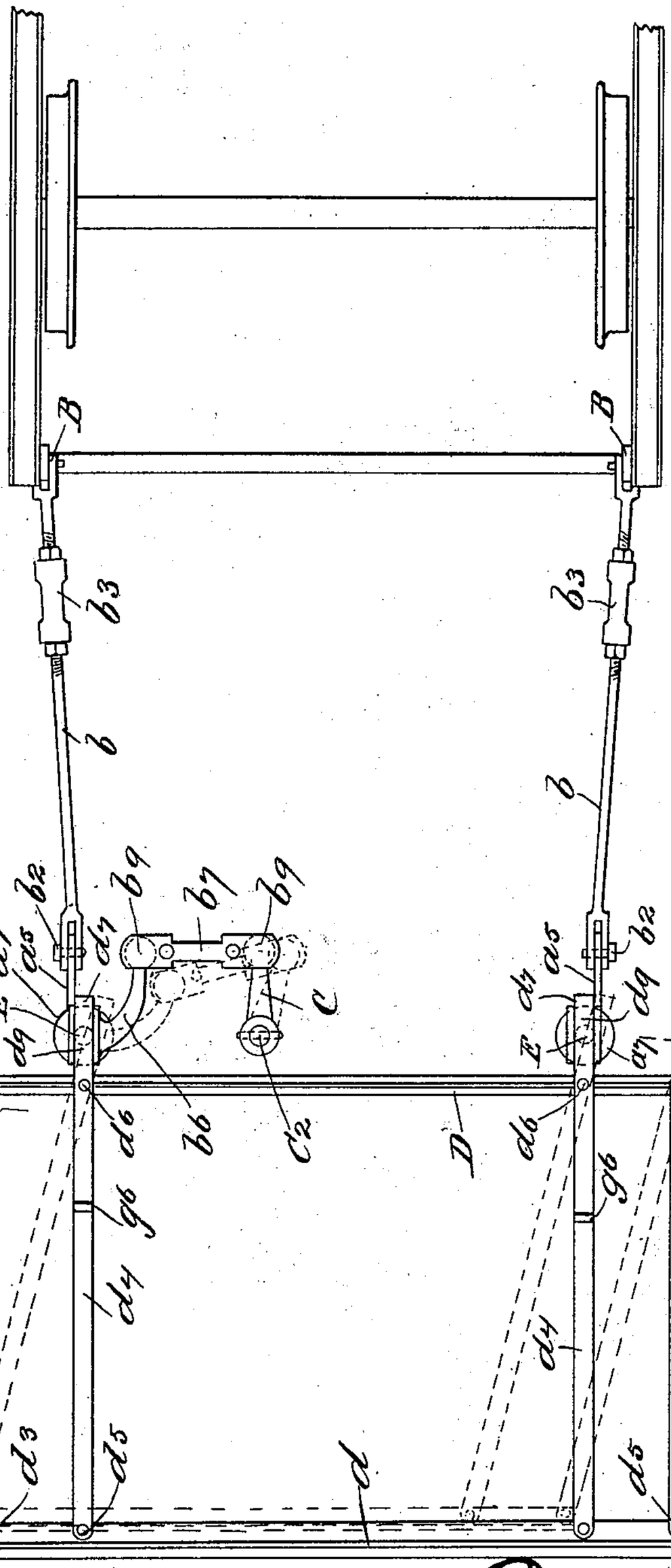

Fig. 2.

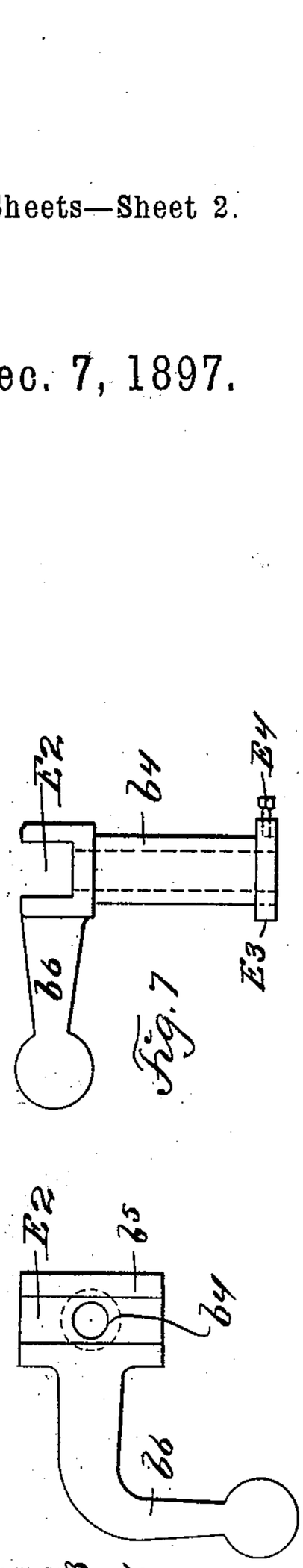

Fig. 7.

Fig. 6.

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WILLIAM J. CALVERT, OF NEW YORK, N. Y.

FENDER FOR TRAMWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 594,855, dated December 7, 1897.

Application filed July 16, 1897. Serial No. 644,827. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. CALVERT, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Fenders or Guards for Tramway-Cars, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to fenders or guards for tramway-cars; and the object thereof is to provide an improved device of this class which is adapted to be held at any desired position above the rails of the track and which will maintain said position at all times, a further object being to provide a fender or guard for tramway-cars which may be shifted to either side in such manner that the fender or guard will always project directly over the track when the car is moving around a corner or a curve, a further object being to provide a fender or guard which will not be affected by the oscillation of the car-body, but will be held parallel with and at a predetermined distance above the rails of the track when the end of the car is depressed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a side view of my improved fender or guard and showing the method of connecting the same with a car; Fig. 2, a plan view of the operative parts of the brake and showing also a part of the truck of the car; Fig. 3, a section on the line 3 3 of Fig. 2; Fig. 4, a plan view of a detail of the construction; Fig. 5, a sectional side view of one side of the fender or guard frame; Fig. 6, a plan view of a crank-lever by which the fender or guard is shifted, and Fig. 7 a side view thereof.

In the drawings forming part of this specification the separate parts of my improvement are designated by the same letters of reference in each of the views, and in said drawings, reference being made to Fig. 1, I have shown at A the dashboard of a car and at a one of the platforms at the end thereof, and I have also shown at a^2 a part of the truck-frame and at a^3 one of the wheels, and in the practice of my invention I secure to the bottom of the platform near the front thereof and at each side hangers a^4, to which are pivoted crank-levers a^5, and the lower ends of these levers project forwardly, as shown at a^6, and the forwardly-directed extensions a^6 of said levers are each provided with a tubular head a^7.

Connected with the truck-frame a^2 at each side is a hanger B, to which is pivoted a connecting-rod b, and these connecting-rods at each side are pivotally connected with the crank-levers a^5, as shown at b^2, and said connecting-rods are composed of two sections, which are connected by a turnbuckle b^3, by means of which the length of the connecting-rods b may be adjusted.

Mounted in one of the tubular heads a^7 of one of the crank-levers a^5 is a tube b^4, provided with a circular head b^5, on which is formed a curved arm b^6, which is connected with a connecting-link b^7, which is composed of two parts bolted together, as shown at b^8, this connection being made by means of a ball-and-socket joint, as shown at b^9, and the opposite end of the connecting-link b^7 is also connected, by means of a ball-and-socket joint, as shown at b^9, with an arm C, which is rigidly secured to a rod C^2, which passes up through the platform of the car and through a plate C^3, secured to the dashboard, and on which is formed or to which is secured a keeper C^4, through which passes a rod C^5, secured to a lever C^6, which is pivotally connected with the upper end of the rod C^2, as shown at C^7, and said rod C^2 is provided at its upper end with a handle C^8.

The fender or guard proper consists of a frame composed of a cross-bar D, a front cross-bar d, and side bars d^2, which are pivotally connected at d^3 with the rear cross-bar D and the front cross-bar d, and the front cross-bar d is preferably composed of angle-iron, and the rear cross-bar D and the side cross-bars d^2 may also be composed of angle-iron, and arranged transversely of this frame are transverse bars d^4, which are pivotally connected with the front cross-bar d and with the rear cross-bar D, as shown at d^5 and d^6, respectively, and these cross-bars d^4 are projected backwardly, as shown at d^7, and are provided at their rear ends, as best shown in Fig. 5, with plates d^8, which are bolted to the rear ends thereof, so as to form heads d^9, which are

rectangular in cross-section, and the bottoms of said heads are provided with pins E, which are secured thereto or formed thereon, and the head d^9 of the bar d^4 at one side rests upon the tubular head a^7 of the crank-lever a^6, and the pin E passes through said head, as clearly shown in Fig. 3, while the head d^9 of the other cross-bar d^4 rests in a transverse chamber E^2, formed in the head b^5 of the arm b^6, which is connected with the link b^7, as shown in Fig. 3, while the corresponding pin E passes through the tube b^4, as is also clearly shown in said figure, and the lower end of the tube b^4 is provided with a collar E^3, which is held in place by a set-screw E^4 or in any desired manner.

The form of the head b^5, with which the arm b^6 is connected, is best shown in Figs. 6 and 7, and the construction and operation of these parts will be readily understood from the foregoing description, when taken in connection with the accompanying drawings.

I also provide a shield or guard-plate G, which is supported by arms g, which are secured to the cross-bars d^4 of the frame of the fender or guard, as shown in Figs. 1 and 5, and said arms g^2 are connected at their upper ends by a cross-rod g^3, and the guard-plate G is provided with hooks g^4, by means of which it is suspended from said rod, and the lower side thereof rests on the bars d^4, as shown at g^5, and is prevented from slipping forward by upwardly-directed lugs or projections g^6, formed on said bars. The shield or guard-plate G is to prevent a person or object when struck by the fender or guard from being thrown backward against the dashboard of the car, and said shield or guard is preferably composed of spring material in order that it will yield slightly.

The front cross-bar d of the main fender or guard frame is provided with a buffer G, of rubber or similar material, the object of which is to break the force of the blow if a person or object should be struck by the car when in motion, and the body portion of the fender or guard is preferably composed of small transverse strips or slats, which are pivotally connected with the rear cross-bar D and the front cross-bar d of the main fender or guard frame, so as to admit of the shifting of said fender or guard, or said body portion may be composed of any desired material that will yield to allow of the shifting of the fender or guard, as hereinafter described.

It will be understood that the fender or guard is normally held directly in front of the car, as shown in Figs. 1 and 2; but whenever the car is turning a curve or a corner the fender or guard may be correspondingly shifted, as shown in dotted lines in Fig. 2, by means of the rod C^2, and in this operation the lever C^6 is raised until the rod C^5 is drawn out of or disconnected from the plate C^3, and the said rod C^2 is then turned in the required direction by means of the handle C^8, and this operation will shift or turn the fender or guard as shown in dotted lines in Fig. 2, or in the opposite direction, this result being accomplished by means of the arm b^6 of the head b^5 and the link b^7, which is connected with the arm C on the rod C^2, as hereinbefore described, and it will be understood that the fender or guard may be locked in any desired position of lateral adjustment or in the position shown in Figs. 1 and 2 by means of the rod C^5, connected with the lever C^6.

It will also be seen that the hangers B are provided with a plurality of openings h^2, and by means of this construction the rear ends of the connecting-rods b may be raised or lowered, and when the car is in motion the connecting-rods b serve to hold the fender or guard in the same relative position with reference to the track at all times. If the end of the car be depressed, the connecting-rods b will serve to force the lower ends of the crank-levers a^5 forwardly, and this operation will raise the forward end of the fender or guard, and as the end of the car rises to its normal position the lower ends of the levers a^5 will drop downwardly into the position shown in Fig. 1, and the front end of the fender or guard will thus be always caused to maintain the same relative position.

The fender or guard proper is detachable from the tubular heads a^7 of the crank-levers a^5, and each end of the car is provided with all the operative parts of the apparatus, and the fender or guard may be moved from one end of the car to the other whenever desired.

It will thus be seen that I accomplish the object of my invention by means of a device which is simple in construction and operation and which is perfectly adapted to accomplish the result for which it is intended, and it will be apparent that changes in and modifications of the construction herein described may be made without departing from the spirit of my invention or sacrificing its advantages.

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

1. A fender or guard for tramway-cars consisting of crank-levers pivotally suspended from the platform at each side thereof, and the lower ends of which project forwardly, connecting-rods pivotally connected with said crank-levers and with the truck-frame, said crank-levers being also provided at their lower ends with tubular heads, and a fender or guard proper which is pivotally connected with said tubular heads, and means whereby said fender or guard proper may be shifted to one side of the car, substantially as shown and described.

2. A fender or guard frame consisting of crank-levers pivotally suspended from the bottom of the platform at each side thereof, and which are provided at their lower ends with forwardly-directed extensions on which are formed tubular heads, connecting-rods pivotally connected with said crank-levers, and with the truck of the car, a fender or

guard comprising a frame which is composed of a front cross-bar, a rear cross-bar and end cross-bars which are pivotally connected therewith, said fender or guard frame being also provided with cross-bars which are pivotally connected therewith and which project backwardly, and are pivotally connected with the tubular heads of said crank-levers, and a vertical rod which passes through the platform of the car, and is in operative connection with the backwardly-directed extension of one of said cross-bars, substantially as shown and described.

3. A fender or guard frame consisting of crank-levers pivotally suspended from the bottom of the platform at each side thereof, and which are provided at their lower ends with forwardly-directed extensions on which are formed tubular heads, connecting-rods pivotally connected with said crank-levers, and with the truck of the car, a fender or guard comprising a frame which is composed of a front cross-bar, a rear cross-bar and end cross-bars which are pivotally connected therewith, said fender or guard frame being also provided with cross-bars which are pivotally connected therewith and which project backwardly, and are pivotally connected with the tubular heads of said crank-levers, and a vertical rod which passes through the platform of the car, and is in operative connection with the backwardly-directed extension of one of said cross-bars whereby the fender or guard frame may be shifted by turning said rod and means for locking said rod and said fender or guard frame in any desired position, substantially as shown and described.

4. A fender or guard for tramway-cars consisting of crank-levers pivotally suspended from the platform at each side thereof, said crank-levers being provided at their lower ends with forwardly-directed extensions which are provided with tubular heads, connecting-rods pivotally connected with said crank-levers and with the truck of the car, a fender or guard proper comprising a frame composed of a front cross-bar, a rear cross-bar, and side bars pivotally connected therewith, said fender or guard frame being also provided with other cross-bars which are pivotally connected therewith, and the rear ends of which project backwardly and one of which is provided with a pin which projects into the tubular head of one of said crank-levers, and the other being provided with a pin which passes through a tube mounted in the head of the other crank-lever, and which is provided with a head having an arm which is connected by a ball-and-socket joint with a link which is pivotally connected with an arm formed on or secured to the lower end of the rod which passes upwardly through the platform of the car, substantially as shown and described.

5. A fender or guard for tramway-cars consisting of crank-levers pivotally suspended from the platform at each side thereof, said crank-levers being provided at their lower ends with forwardly-directed extensions which are provided with tubular heads, connecting-rods pivotally connected with said crank-levers and with the truck of the car, a fender or guard proper comprising a frame composed of a front cross-bar, a rear cross-bar, and side bars pivotally connected therewith, said fender or guard frame being also provided with other cross-bars which are pivotally connected therewith and the rear ends of which project backwardly and one of which is provided with a pin which projects into the tubular head of one of said crank-levers, and the other being provided with a pin which passes through a tube mounted in the head of the other crank-lever and which is provided with a head having an arm which is connected by a ball-and-socket joint with a link which is pivotally connected with an arm formed on or secured to the lower end of the rod which passes upwardly through the platform of the car, and means for operating said rod so as to shift said fender or guard frame to either side of the car, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 14th day of July, 1897.

WILLIAM J. CALVERT.

Witnesses:
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A. C. VAN BLARCOM.