

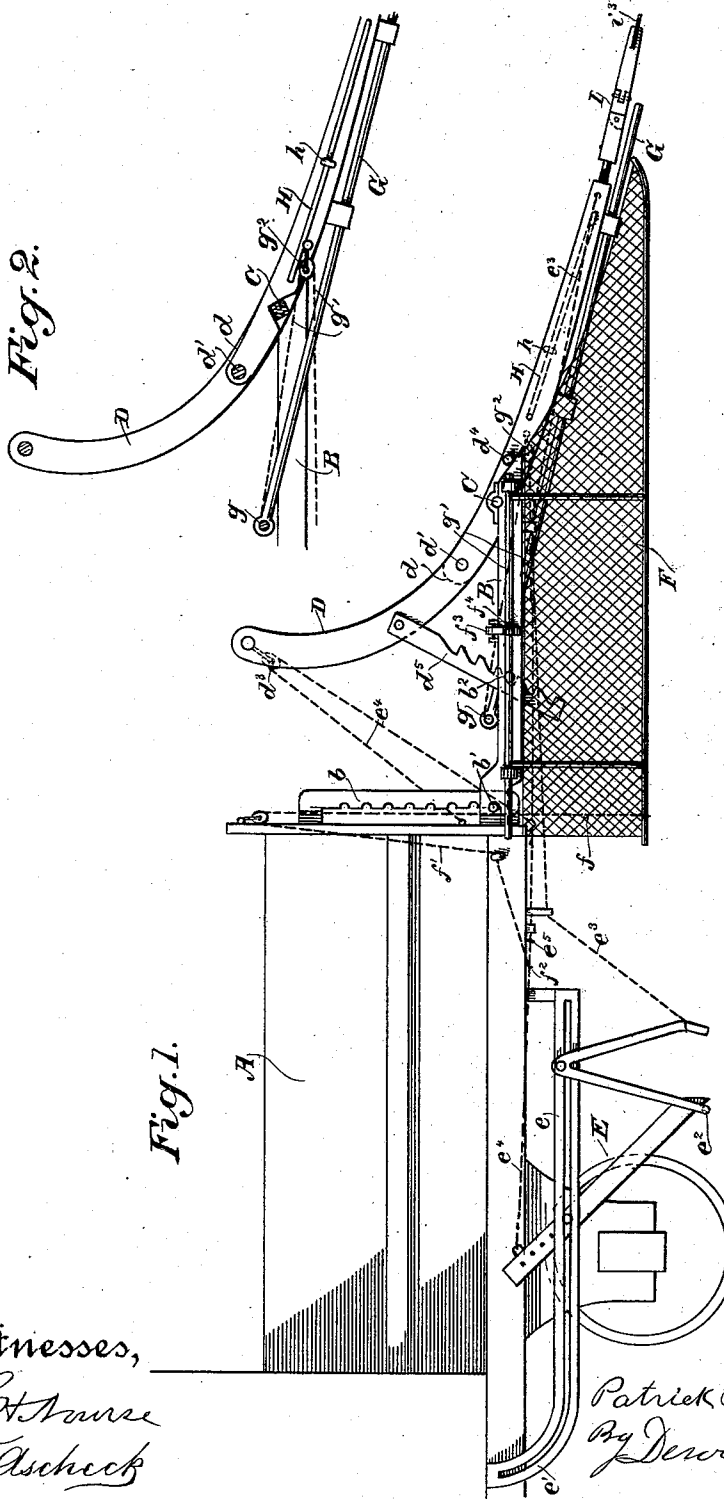
(No Model.)

2 Sheets—Sheet 1.

P. HENNESSY.
STREET CAR FENDER.

No. 567,388.

Patented Sept. 8, 1896.



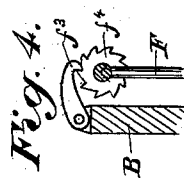
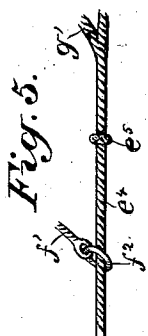
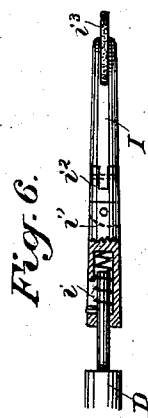
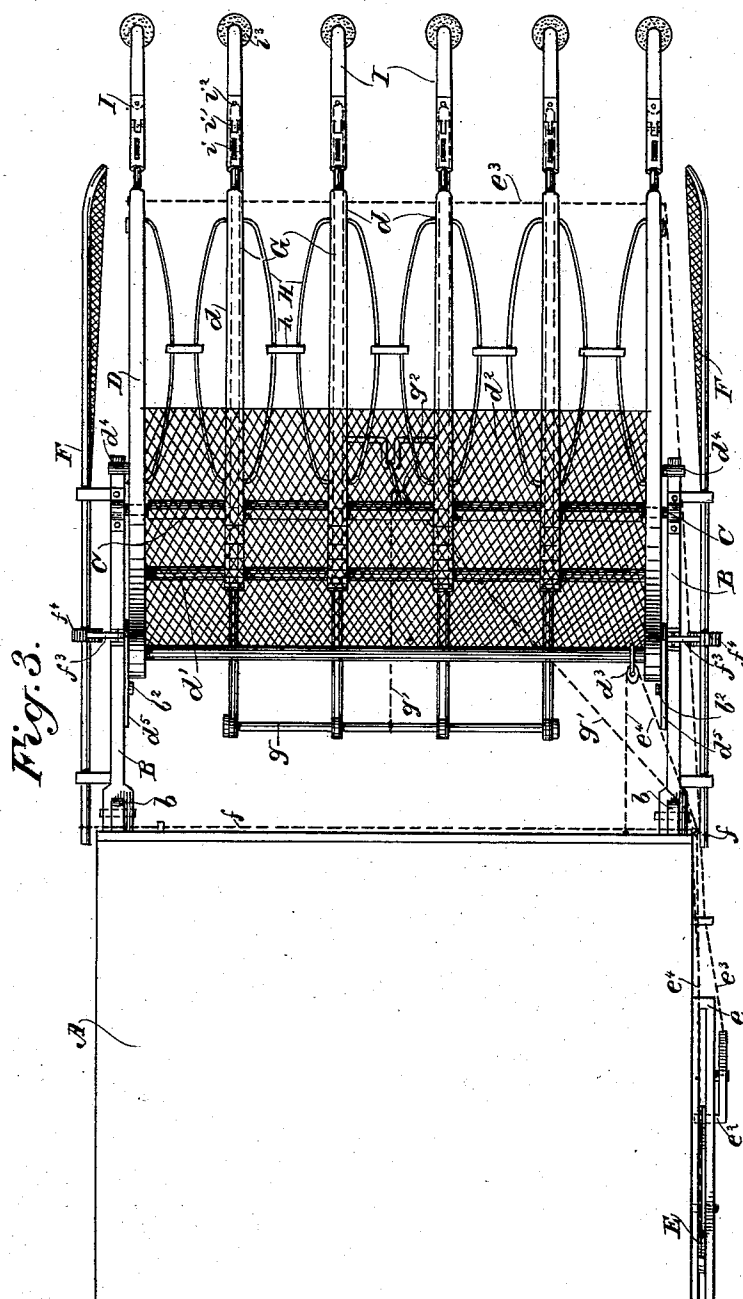
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STREET CAR FENDER.

No. 567,388.

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UNITED STATES PATENT OFFICE.

PATRICK HENNESSY, OF SAN FRANCISCO, CALIFORNIA.

STREET-CAR FENDER.

SPECIFICATION forming part of Letters Patent No. 567,388, dated September 8, 1896.

Application filed April 24, 1896. Serial No. 582,891. (No model.)

To all whom it may concern:

Be it known that I, PATRICK HENNESSY, a citizen of Canada, residing in the city and county of San Francisco, State of California, have invented an Improvement in Street-Car Fenders; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of fenders or safety-guards for cars.

It consists in the novel construction, arrangements, and combinations hereinafter fully described.

Referring to the accompanying drawings, Figure 1 is a side elevation of my car-fender. Fig. 2 is a detail of the apron D and supplementary frame G. Fig. 3 is a top view of the fender. Fig. 4 is a detail of the side-wing retainer. Fig. 5 is a detail of the connection of side-wing line f' with main line e^4 . Fig. 6 is a detail of the front fingers I.

The object of my invention is to provide means for picking up automatically and safely an obstructing body, so that it will not be dragged or rolled, but will be raised and carried securely and without material injury.

A is the car. Projecting from its front are carrying-arms B, the height of which may be adjusted to suit the elevation at which it is desired to carry the fender by means of suitable devices—such, for example, as the notched brackets b , into any of the notches of which a bolt b' is adapted to fit and which secures the arms B rigidly. Journaled in the outer ends of the arms B is a rock-shaft C, to which is secured the concave frame constituting the guard or apron D. This frame consists of two side or end bars, a top cross-bar, and a number of separated or spaced intervening bars d parallel with the side or end bars, said intervening bars being carried by a cross-rod d' between the end bars and notched freely on the rock-shaft. The upper portion of this frame or apron may be covered with suitable material, such as netting d^2 , but the lower portion is open in the spaces between the bars of the frame. On the side of the car is located an operating-lever E. This lever is pivoted and is adapted to slide freely in a slotted bracket e secured to the side of the car, said bracket being upturned at its rear portion, as shown at e' . Secured

to the bracket is a latch e^2 , the lower end of which engages and holds upwardly from the ground the lower end of the lever E. With this latch a cable or line e^3 is connected, which extends forwardly through suitable guides and passes transversely across the forward ends of the bars of the guard or apron frame D, as is shown. Secured to the lever E at a point above its sliding pivotal center is a cable or line e^4 , which extends forwardly through suitable guides and passes around a pulley d^3 on the rear upper end of the guard-frame D, and thence down to the front of the car, at which point it is attached.

The operation of the device as far as described is as follows: When in an operative position, the guard-frame D lies with the forward extremities of its bars as close to the roadway as may be desired, and it is held in this position by its own weight, and is limited by means of stops d^4 on the sides of the frame coming in contact with the forward ends of the arms B. The lever E is at its forward limit of its supporting slotted bracket, and its lower end is held up from the ground by means of the latch e^2 . Now, if an obstructing body is met, it will pass between the forward ends of the bars or guards of the fender-frame D, and will come into contact with the cross line or cable e^3 , so as to pull upon it, and this pulling will cause the latch e^2 to release the lever E, whereupon the lower end of said lever will drop down into contact with the ground, and at a forward inclination, so that it will engage firmly with the ground and be stopped. As soon as this engagement is effected, the continued forward movement of the car A (the slotted bracket e slipping over the lever) will cause the line or cable e^4 to be pulled upon, which will have the effect of pulling back on the upper rear end of the guard-frame D, so that said guard-frame will swing, and will thereby raise its forward end and will lift the obstructing body and support it upon itself, as in a basket or cradle.

Ratchet-bars d^5 , secured to said frame and engaging with fixed pins b^2 projecting from the inner sides of the arms B, serve to hold the apron or fender frame D in whatever position it may be drawn back. As soon as the lever E reaches the rear upturned end e' of its bracket, said lever will be raised, and will thus

disengage itself from the ground, and thus leave the guard or fender frame in its carrying position.

In order to provide the sides of the device with suitable protection, and to further the result of carrying the obstructing body safely and securely, I have the side guard-wings F, which consist of suitable frames filled in with netting, as shown. These frames are hinged along their upper ends to the sides of the arms B, and when in operative position they hang down vertically, or substantially so, and thus inclose the sides.

To the lower sides of these wings are secured lines or cables f , which extend upwardly through suitable guides and join a single line or cable f' , which is brought downwardly through a suitable guide, and is fitted by means of a sliding ring f^2 upon the line or cable e^4 . A fixed stop e^5 is secured upon this last-named line or cable in advance of the sliding ring f^2 , so that as it is pulled back it will come in contact with and pick up said ring, and will thereby pull upon the line or cable f' . When, now, the operation takes place which has heretofore been described, by pulling backwardly on the line or cable e^4 its fixed stop e^5 will come in contact with the ring f^2 , and will thereby pull the single line or cable f' , which, through its branches f , will cause the side wings F to lift about their pivotal or hinged upper sides until they also come to an upward inclination, and thus complete the sides of the basket or cradle formed by the backwardly-tilting guard D, so that the obstructing body will not have any tendency to roll out of the guard or fender. The side wings are held in the position to which they are raised by means of a pawl f^3 engaging the ratchet f^4 .

In order to extend the practical or working length of the guard or fender so that when the obstructing body is picked up it will have no chance to roll forward again and off, I provide an extensible supplementary supporting-frame G, consisting of bars or rods and a suitable cross-head g . These bars or rods are supported under the bars of the main fender or apron frame D in suitable hangers in which they may freely slide. To the cross-head of this frame is secured a line or cable g' , which extends forwardly and around a suitable pulley g^2 and thence back to the line or cable e^4 , to which it is secured. The normal position of this supplementary frame G is withdrawn, so that its ends do not project beyond the extremities of the main fender-frame D, but when the operation heretofore described of dropping the lever E takes place and its engagement with the ground is effected, the line or cable g' will pull the frame G forward, so that the extremities of its bars project beyond the extremities of the guard-frame D, and thus extend it sufficiently to insure against the rolling forwardly of the obstructing body. Said supporting or sup-

plementary frame being carried by the main fender-frame will, of course, rise with it.

In order to pick up and hold the obstructing body when it gets between the bars of the fender-frame D, I have the clamping-springs H. These are secured to the bars of the frame and they extend in pairs toward one another on curved lines, whereby they present flaring entrances to the obstructing body. Extending between adjacent springs is a sliding clamp h , which, when set forwardly in its operative position, will receive the contact of the obstructing body and be forced backwardly thereby, so that it will in this movement draw the springs together, and thus cause them to clamp upon the obstructing body and prevent it from falling through between the bars, holding it securely and giving the fender a chance to elevate and carry it. The extremities of the bars of the fender-frame D are made adjustable, and they consist of fingers I, which are fitted telescopically upon the bars and are controlled by springs i , which hold them projected and yet enable them to yield backwardly upon contact, so that they act as cushions. The fingers are jointed at i' by a hinge, which enables them to yield upwardly but not downwardly, and they are also jointed at i^2 by a spring-controlled hinge, which enables them to yield laterally to each side, so that no matter what their contact may be they will yield in every necessary direction to break the force of the blow, and to further this result the extremities of the fingers are provided with cushioned buffers i^3 , of rubber or other suitable material. The intervening bars d of the fender-frame are themselves pivotally mounted at their upper ends upon the upper cross-shaft, so that they, too, may yield to passing obstructions and avoid injury to themselves, and for a similar purpose the bars of the supporting-frame G are pivotally mounted upon their cross-head g , so that they may yield also.

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

1. In a car-fender having a swinging guard or apron, a lever slidably mounted on the car and so connected with the guard that the contact of an obstructing body will cause the lever to contact with the ground and be held while the car continues its movement and causes the guard to move into its carrying position.

2. A street-car fender, consisting of a swinging guard or apron, a lever slidably mounted on the car and adapted when thrown in contact with the ground to be arrested, while the car moves forward, and connections from said lever to the guard or apron, to swing it upwardly to its carrying position.

3. A street-car fender, consisting of a swinging guard or apron, a lever slidably mounted on the car and adapted when thrown in contact with the ground to be arrested, while the

car moves forward, connections from said lever to the guard or apron, to swing it upwardly to its carrying position, and the ratchet-bars and fixed pins, to hold the guard or apron in the position to which it is swung.

4. A street-car fender, consisting of a swinging guard or apron, a lever slidably mounted on the car and adapted when thrown to the ground to be arrested during the continued movement of the car, a latch for holding said lever normally out of contact with the ground, connections between said latch and the guard or apron whereby the contact of the obstructing body will trip the latch, and connections between the lever and the guard or apron whereby the latter is swung upwardly to its carrying position.

5. A street-car fender consisting of a swinging guard or apron, a lever slidably mounted on the car, a latch normally supporting said lever out of contact with the ground, and adapted when tripped to permit it to fall into contact therewith, whereby it is arrested as the car proceeds, a line extending from said latch and crossing the front of the guard or apron whereby an obstructing body acts to pull upon said line and trip the latch, and a line extending from the lever to the guard or apron and adapted to swing said guard upwardly to its carrying position.

6. A street-car fender consisting of a swinging guard or apron, a lever slidably mounted on the car, a latch normally supporting said lever out of contact with the ground, and adapted when tripped to permit it to fall into contact therewith, whereby it is arrested as the car proceeds, a line extending from said latch and crossing the front of the guard or apron whereby an obstructing body acts to pull upon said line and trip the latch, a line extending from the lever to the guard or apron and adapted to swing said guard upwardly to its carrying position, and the ratchet-bars and fixed pins to hold the guard or apron in the position to which it is swung.

7. In a street-car fender, and in combination with the swinging guard or apron, the sliding lever, the latch of said lever, and the lines by which the latch is tripped and the lever is caused to swing the guard, the slotted bracket upon the side of the car in which the lever is freely pivoted, said bracket having the upcurved rear end adapting it to withdraw the lever from contact with the ground when its function is completed.

8. In a car-fender, a swinging guard or apron, vertical side guards or wings hinged along their upper ends to the apron, and a lever slidably mounted on the car and so connected with the apron and side guards that the contact of an obstructing body will cause the lever to contact with the ground and be held while the car continues its movements and swings the apron and guards into their carrying positions.

9. A street-car fender, consisting of a swinging apron or guard, swinging side guards

or wings, and connections with said apron and wings adapted to be operated by the movement of the car, to swing said apron and wings upwardly to their carrying positions, consisting of the lever slidably mounted upon the car and adapted to be arrested by contact with the ground, and the lines or cables connecting said lever with the apron and wings.

10. A street-car fender, consisting of a swinging apron or guard, swinging side guards or wings, and connections with said apron and wings, adapted to be operated by the movement of the car, to swing said apron and wings upwardly to their carrying positions, consisting of the lever slidably mounted on the car and adapted to be arrested by contact with the ground, the lines or cables connecting said lever with the apron and wings, the trip-latch controlling said lever, and the line extending from said latch across the front of the apron whereby contact with an obstructing body trips the latch and calls the lever into action.

11. A car-fender, consisting of a swinging main guard or apron, a lever slidably mounted on the car and connections therefrom operated by the movement of the car for swinging said guard or apron to its carrying position, a projectable supplementary guard-frame under the main apron or guard, and connections operated by the movement of the car for projecting said supplementary guard when the main guard is swung upwardly.

12. A street-car fender, consisting of a swinging main guard or apron, a projectable supplementary guard carried and adapted to slide under said main guard, a lever slidably mounted on the car and adapted to be arrested by contact with the ground while the car continues, said lever having a tripping device, and means operated by the contact with the obstructing body for tripping said device, and the lines connecting said lever with the swinging main guard whereby it is raised to its carrying position, and with the supplementary guard, whereby it is simultaneously projected beyond the main guard.

13. A street-car fender, consisting of a swinging main guard a projectable sliding guard under said main guard, swinging side wings, and mechanism operated by the movement of the car, for swinging upwardly the main guard, projecting the supplementary guard and swinging upwardly the side wings.

14. A street-car fender, consisting of a swinging main guard a projectable sliding guard under said main guard, swinging side wings, and mechanism operated by the movement of the car for swinging upwardly the main guard, projecting the supplementary guard and swinging upwardly the side wings, consisting of the lever slidably mounted on the car and adapted to come in contact with the ground and to be arrested while the car proceeds, and the lines connecting said lever with the main guard, the supplementary guard, and the side wings.

15. A street-car fender, consisting of a swinging main guard a projectable sliding guard under said main guard, swinging side wings, and mechanism operated by the movement of the car for swinging upwardly the main guard, projecting the supplementary guard and swinging upwardly the side wings, consisting of the lever slidably mounted on the car and adapted to come in contact with the ground, and to be arrested while the car proceeds, the lines connecting said lever with the main guard, the supplementary guard and the side wings, the trip-latch controlling said lever, and its operating line extending across the front of the main guard, and adapted by contact with the obstructing body, to operate the trip-latch.

16. In a street-car fender, and in combination with the guard or apron consisting of forwardly-projecting separated bars the intervening clamping-springs, and the sliding clamps thereon whereby an obstructing body is caught and prevented from falling through between the bars of the guard.

17. In a street-car fender, the combination of the swinging guard or apron, consisting of separated forwardly-projecting bars, mechanism operated by the movement of the car

for swinging said guard or apron to a carrying position, and the clamping-springs between the bars of the guard having the sliding clamps thereon and adapted to catch and hold an obstructing body from falling between said bars.

18. In a street-car fender, the swinging side wings, means operated by the movement of the car to swing them upwardly, and the pawl and ratchet for holding said side wings in the position to which they are swung.

19. In a street-car fender, the combination, with the frame-bars of the swinging guard or apron, of the front fingers slidable upon the extremities of said frame-bars, and spring controlled, said springs having joints by which they are adapted to yield in all necessary directions, and means for swinging the guard comprising a lever slidably mounted on the car and adapted to contact with the ground and connections from the lever to the guard.

In witness whereof I have hereunto set my hand.

PATRICK HENNESSY.

Witnesses:

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JESSIE C. BRODIE.