

(No Model.)

W. T. VOSE.
GUARD FOR STREET RAILWAYS.

No. 523,921.

Patented July 31, 1894.

Fig. 1.

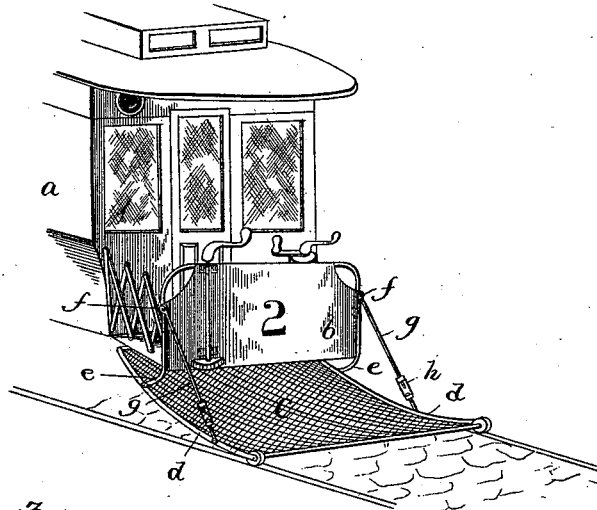


Fig. 3.

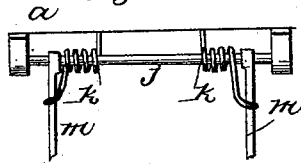
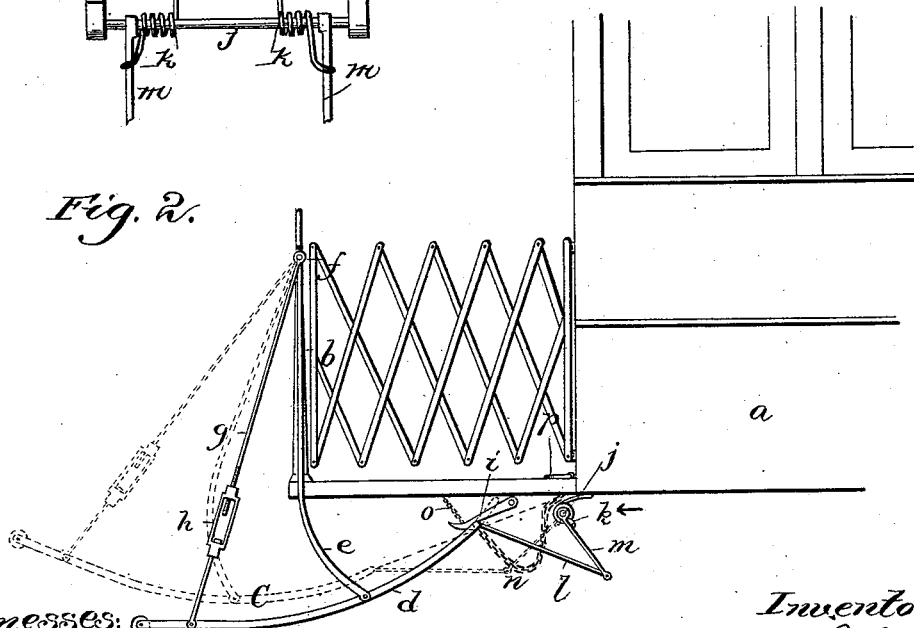


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM T. VOSE, OF NEWTON, MASSACHUSETTS.

GUARD FOR STREET-RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 523,921, dated July 31, 1894.

Application filed August 19, 1893. Serial No. 483,527. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM T. VOSE, of Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Guards for Street-Railways; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

This invention relates to certain improvements in guards for street cars, and more particularly to fenders or guards for use in connection with motor cars, cable cars or the like.

The object of this invention is to provide an improved guard for the purpose mentioned which will be exceedingly cheap, simple, and durable in construction and composed of a minimum number of parts, and which will be so constructed, mounted and arranged as to be yielding and thereby prevent injury to a person with whom it comes in contact.

A further object of this invention is to provide an improved guard for the purpose stated, so constructed and arranged as to automatically yield when striking an obstacle and then move forward and scoop up or lift the obstacle from the track, and carry or support the same against injury from the wheels or front of the car.

The invention consists in certain novel features of construction, and combinations of parts more fully described hereinafter and particularly pointed out in the claims.

Referring to the accompanying drawings,—Figure 1 shows in perspective a portion of a motor car provided with my invention attached thereto showing the guard in the position it assumes on striking an obstacle of sufficient weight to operate the parts. Fig. 2 is a side elevation, the scoop or guard proper being shown in its normal position, and dotted lines showing it in its elevated and forward position. Fig. 3, is a detail elevation looking at the rear of the rock shaft in the direction of the arrow Fig. 2, and showing the spring or springs for operating the fender.

In the drawings the reference letter *a*, indi-

cates any ordinary street car, such as a motor car, gripcar, and *b*, indicates the dash board thereof.

c, indicates the scoop or guard consisting of a strong metallic frame *d* of suitable shape, rectangular if desired, such as shown in the drawings. The side bars of this frame are preferably curved as shown, so that when the scoop or guard is in its normal position, the rear upper bar of the frame will be located a suitable distance beneath the floor of the car, while the front lower bar of the frame will be located a distance above the surface of the road bed. This guard is pivotally or movably suspended by means of suitable hangers which enable the guard to have a back and forward swing under certain conditions. These hangers can be suitably arranged and constructed, although I prefer to arrange and connect them as shown in the drawings, wherein the hangers *e*, are at their upper ends pivotally joined to the end of the dash board at *f*, by strong and durable connecting pivots or the like at any suitable distance from the level of the platform. The hangers from thence extend downwardly and at their lower ends are preferably curved inwardly so as to avoid the steps and permit free swing, and at their lower ends are pivotally joined to the side bars of the guard at or about a point midway between the end bars of the frame.

Extensible braces *g*, extend from the front portion of the side bars of the guard upwardly through the hangers to uphold the front end of the guard, or if desired these braces can be mounted on the same pivots with the hangers, so that the braces and hangers and guards swing together. These braces are suitably formed so as to be extensible and permit free up and down play of the front end of the guard, so that if any small obstructions are encountered, or if the car sways vertically on its spring the guard will yield sufficiently to prevent injury or operation thereof as hereinafter described. In performing this swing movement just mentioned the guard moves or swings on the hangers *e*, or on the connections between said hangers, and the side bars of the frame. It should also be noted that said braces are formed longitudinally adjustable so that the front end of the guard can be

raised or lowered to the desired point. This longitudinal adjustment, and the extensibility of the braces are accomplished by the turn buckles *h*, or by other means if desired.

5 If desired the front end of the guard is provided with rollers as shown, although I do not wish to limit myself to any such devices.

The normal position of the front end of the guard is a suitable distance above the road-bed. 10 The guard is under a constant tendency to move forward and upward, but is held in its normal position by suitable means herein-after mentioned. The construction and arrangement are such that when the front end of the guard being a distance above the surface 15 of the road bed engages an obstruction, as a human being, the front end is thrown down and back so as to be able to move under said obstruction as the car moves forward and at 20 the same time to release said previously mentioned holding means and thereby permit the guard to move forward and upward, thereby lifting or scooping up the object encountered, and hence removing the same from all danger 25 or injury by the wheels or running gear of the car and drawing the object along with the car in the scoop.

The guard is constantly yieldingly pressed forward by means of one or more springs, or 30 any suitable spring, such as *k*, coiled on a rod *j*, if desired, beneath the car, and yieldingly pressing forward the arms *m*, connected with the rear end of the guard by means of the links *l*, so that free swing of the guard is permitted, and the spring constantly acts or 35 tends to swing the guard forward and upward through the medium of said arm and link.

i, indicates a suitable holding means, preferably a latch pivoted to the under side of the 40 car at its rear end, and so that its front end can freely swing vertically. This latch engages the rear bar of the guard, and holds the same in its normal position with the rear end of the guard a distance below the floor of the car so 45 that when the front end of the guard encounters an obstruction the guard moves upwardly and back thereby raising the latch and then suddenly under action of the spring moves downwardly and forwardly and so rapidly as 50 to release itself from the latch which of course does not move down as rapidly as the guard. By this means the guard automatically releases itself from its holding means, and is free to act under the tension of the spring 55 which is of suitable strength to cause the guard to scoop up and lift a human being of whatever weight. In this connection it should be observed that the spring does not have to be of sufficient power to lift the human being, 60 but merely to move the guard forward beneath the body and to swing the guard upwardly, the weight being carried by the braces and hangers.

n, is a suitable connection extending up 65 through the bottom of the car and provided with a handle or stop *p*, on its upper end and at

its opposite end attached to the rear end of the guard, so that the guard can be drawn back to its normal position after it has been forced forward, and the rear bar of the guard will 70 engage the upwardly curved end of the latch, and thereby raise the latch up so that it will automatically drop down behind the bar, and hold the guard in the ordinary normal position. 75

o, indicates a stop chain or support to limit the downward swing of the latch when it has been released from the guard.

It should be observed that the guard is so mounted that when its front end engages an 80 obstruction, it yields and does not strike the obstruction a hard rigid blow but yields backwardly and downwardly so as to pass beneath the obstacle and raise the same as the guard moves forward under the tension of the spring. 85 It will thus be observed that the guard in striking the human being is not supposed to injure him, but will pick him up and slide under him and roll him into the guard, which consists of the frame inclosed with bedding or 90 any suitable flexible material desired.

I do not wish to limit myself to any peculiar manner of connecting the spring with the guard, as the spring can be arranged to act 95 on the guard in any suitable manner. Nor do I wish to limit myself to any specific construction of latch or holding means.

It is evident that various changes might be made in the forms, constructions and arrangements of the parts described without departing from the spirit and scope of my invention, 100 hence I do not wish to limit myself to the exact construction herein set forth, but consider myself entitled to all such changes as fall within the spirit and scope of my invention. 105

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

1. The swinging car fender having means substantially as described for forcing it to its 110 limit of forward and upward movement and provided with an automatically detachable holding mechanism normally holding said fender against the action of said means at a point midway of its limits of up and forward 115 and back and down movements, substantially as described.

2. The herein described vertically swinging guard carried by swinging hangers pivotally from supports a distance above the floor 120 thereof, substantially as set forth.

3. A suspended fender for cars having means yieldingly pressing it forward, and provided with means substantially as described detachably holding the fender at a 125 point midway of its stroke so that the fender on striking an object will move back and under the same thereby releasing the fender from said holding means so that the fender will scoop up the object. 130

4. The herein described swinging fender provided with a spring constantly tending to

throw it forwardly and upwardly and with a latch detachably holding it at a point midway of its stroke, as and for the purposes set forth.

5 5. The herein described guard suspended by hangers so as to swing rearward and then downward, and upward and outward, a spring constantly tending to throw said guard upward and outward, and a vertically swinging latch engaging said guard to normally hold
10 the same in a position midway of its stroke, so as to permit the front end of the guard to move downward and rearward to pass under a body on engaging the same, substantially as set forth.

15 6. The herein described suspended swinging guard, arms mounted beneath the car, and connected to the rear end of said guard by links, a spring or springs tending to throw said arms forward and thereby swing the
20 guard upward and outward, a vertically swinging latch at one end having the curved outer end arranged to engage the rear bar of said guard and hold the guard in its normal position, and a connection to draw the guard
25 back when it has been released so as to engage said latch, substantially as set forth.

7. The herein described guard, consisting

of the guard proper, the hangers at the upper ends fulcrumed or pivotally joined to the dash board, and at their lower ends pivotally
30 joined to the side bars of the guard, and braces for upholding the front end of the guard.

8. The guard having the hangers supporting the same, and the longitudinally adjustable
35 braces upholding the front end of the guard, so that the front end of the guard can be raised to a limited degree as described.

9. The guard, the pivoted hangers supporting the same so that the guard can swing vertically, and the braces upholding the front end
40 of the guard, and freely extensible to a limited degree so that the front end of the guard has a limited vertical play.

10. A swinging car fender suspended and
45 swinging from pivots above the plane of the car platform floor, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WILLIAM T. VOSE.

Witnesses:

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