

(No Model.)

2 Sheets—Sheet 1.

J. T. WARD.
CAR FENDER.

No. 572,587.

Patented Dec. 8, 1896.

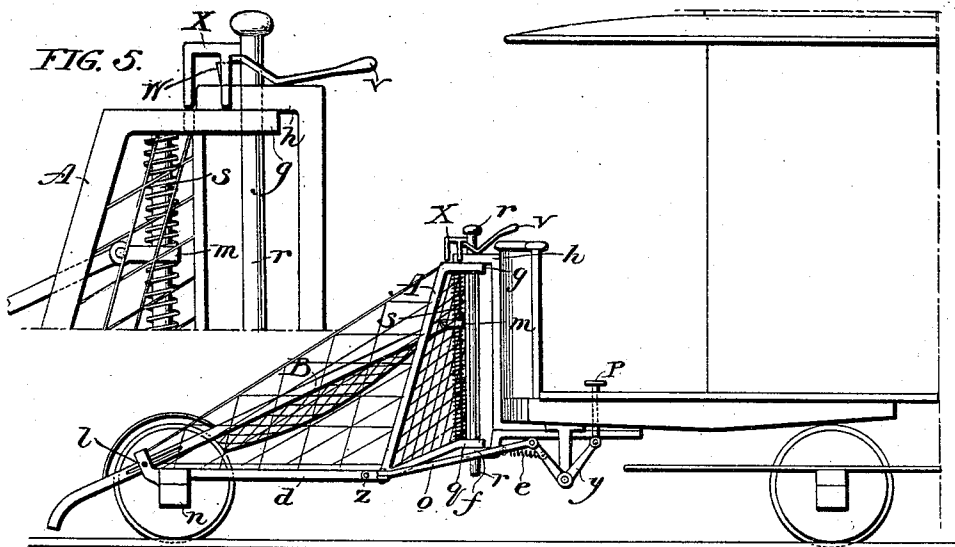


FIG. 1.

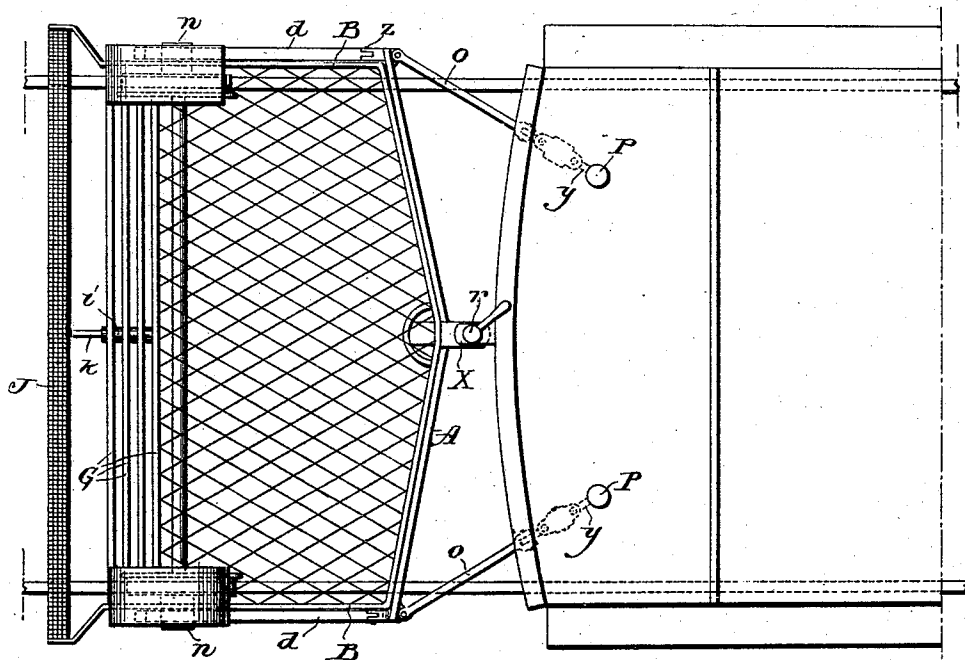


FIG. 2.

Witnesses.

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Thomas F Ferguson

Joseph T Ward Inventor.

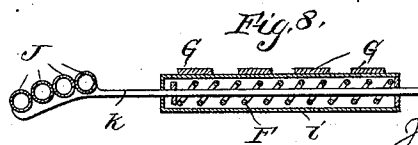
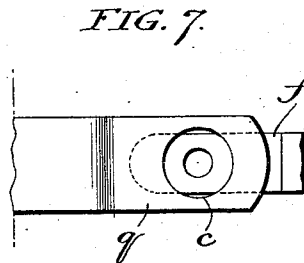
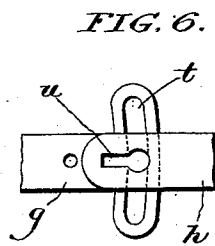
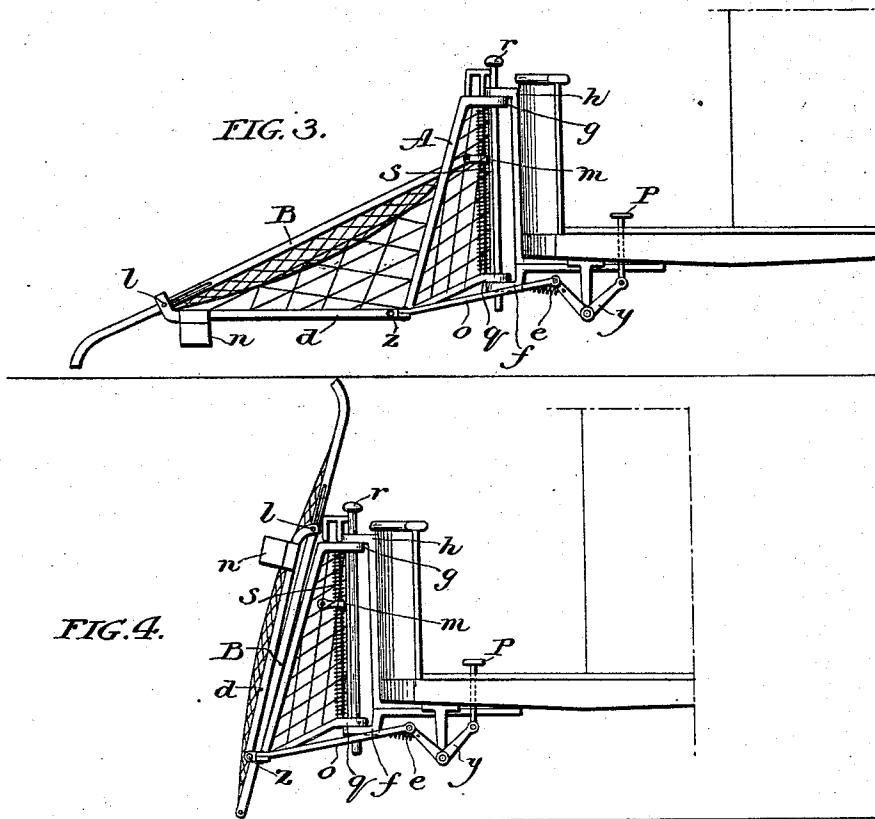
By *Wm E. Ward*

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UNITED STATES PATENT OFFICE.

JOSEPH T. WARD, OF PHILADELPHIA, PENNSYLVANIA.

CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 572,587, dated December 8, 1896.

Application filed October 9, 1895. Serial No. 565,175. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH T. WARD, a citizen of the United States, residing in Philadelphia, (Germantown,) county of Philadelphia, State of Pennsylvania, have invented a new and useful Car-Fender, of which the following is a specification.

My invention relates to improvements in car-fenders.

10 The chief object of my improvement is to provide car-fenders capable of saving from injury people who may be run down by rapid-transit cars—first, that will equally cover track when the car is on a curve as when on
15 a straight road; second, that will maintain an even distance between its front edge and the ground during the jolting and undulation of the car in crossing uneven places; third, that will dip its front edge toward the ground
20 when it comes into contact with an obstacle, thus tending to get under the obstacle and to throw it over into the network of frame B, whereupon, the weight being transferred from the front of pivots L to rear of said pivots,
25 the frame is borne down to nearly a horizontal position while the front edge is elevated, thus tending to hold the obstacle or person struck safely in the network of frame B until the car can be brought to a stop; fourth, that
30 will fold up neatly against the front of the car when not in actual service. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the fender, its
35 front end mounted on wheels. Fig. 2 is a top view of the fender, showing portion of car to which it is attached. Fig. 3 is a side view of the fender without wheels. Fig. 4 is a side view of the fender folded back against the
40 front of the car when not in use. Fig. 5 is a view in detail of the upper portion of the fender, showing portion of rod securing fender to car and lever lifting same. Fig. 6 is a top view in detail of the upper rear bar of fender
45 and upper arm that protrudes from car, to which the former is held by rod shown in Fig. 5. Fig. 7 is a view in detail of a portion of the lower rear arm of fender and also arm which projects from car, to which the former
50 is attached by the rod shown in Fig. 5. Fig. 8 is a side sectional view of the rod *k* and cyl-

inder *i* shown in Fig. 2, which supports the spiral springs J.

Similar letters refer to similar parts throughout the several views.

The fender consists principally of two
55 frames A and B. The frame A is slightly inclined from the perpendicular, having projecting backward from the middle of its top and bottom edges arms *g* and *q*, to engage,
60 by means of pivot-rod, with arms *h* and *f*, projecting from the front of the car. The said framework slopes away from the car on either side, allowing room for the same to swing to the right or to the left upon the
65 pivot-rod *r*, securing the same to the car. From the lower corners *z* of either side of said frame extend arms *d*, hinged at *z*. The second frame B is nearly rectangular, except its side toward the car being bent toward the
70 middle to conform with the shape of frame A, within which it fits. Frame B is pivoted at *l* on either side to the arm *d* at their extreme front ends. Directly in front of the
75 pivot-rod *r* is a second rod *s*, being a part of frame A. This rod is provided with two spiral springs which together cover its entire length. These springs are of such length,
80 respectively, as to hold the loop or ring *m*, adapted to slide upon said rod between said springs, in such a position as to maintain at the proper inclination frame B, to which said ring or loop is attached.

The front arms *d* of frame A, just back of pivots *l*, securing same to frame B, are provided with boxes or shoulders *n*, adapted to
85 engage with the axles of wheels to run upon track in front of car to guide or support fender.

The arm *g* is provided with a long transverse slot *t*, and at right angles therewith
90 from its front side a short square slot *u* opening into it, as shown in Fig. 6.

The arm *h* is provided with a round hole adapted to accommodate the pivot-rod *r*, with the square slot *u* opening into it, as shown
95 in Fig. 6.

The pivot-rod *r* is provided at its upper end just under its head with a wedge-shaped key
100 *w*, adapted to fit into the square slot *u* in arms *g* and *h*, locking them rigidly together. By raising the said rod *r* by means of lever *v* the wedge *w* is withdrawn from the slot in arm

g, thus releasing the said arm to turn freely on the rod r. As a further means of locking the arms g and h to make them rigid, an arm x may be extended above the wedge w from the front of the rod r, provided with pins extending down on either side of the arms g and h, and one extending downward in front of arm h and inserted into the middle of arm g. The arm g is provided with a hole C larger in circumference than that of the rod R, which passes through it, adapted to allow play upon the rod r, so that the framework A may accommodate itself to the jolting of the car without varying its uniform distance between its front end and the ground.

The rear ends of arms d are hinged at z to lower corners of frame A, so that the arms d may be turned upward toward the front of the car, and the rear end of frame B, being disengaged from the loop or ring m, drops down and permits the folding of the fender against the car, as shown in Fig. 4. The hinge-joint at z is so shouldered that the arm d cannot fall below a horizontal position, as shown in Figs. 1 and 3.

Upon approaching curves the rod r is raised by the lever v, releasing the arm g from the pins and the wedge w, so that the whole framework may turn freely upon the said rod r and may be guided by the wheels attached to the arms d and running in the track. The fender is thus made to cover the track upon the curves as well as upon the straight road and not to project over to one side, as is the case with the ordinary fenders now in use.

In case wheels are not used to guide the front of the fender, by connecting the lower rear corners on each side of frame A by levers to be operated by bell-crank and pedals p, protruding upward from the platform of the car, the motorman may at will swing the fender to the right or the left, as may be necessary, upon curves or to avoid obstructions. The levers are provided with springs e, adapted to bring the fender to its original position, that is, straight in front of the car, when the pedals are released. When the fender has resumed a straight position, the rod r may be dropped, and the wedge w, engaging the slot u, makes the structure rigid again with the car.

The front end of frame B is provided with a series of four spiral springs J, one behind another, held at their extremities by arms extending on either side of the front of the frame. These springs are supported in the middle by an arm k, movable in a cylinder i and acted upon by springs F and adapted to bear the vertical weight of the springs and to yield to force applied from the front of the fender. The cylinder i is attached to the iron slats G. The frame B is further supplied, a few inches back of the spiral springs, with a series of six, more or less, slats. The balance of the framework is filled with a net-

ting of rope or other suitable yielding material, and in case wheels are used guards are also provided for use, as shown in Figs. 1 and 2. The frame A is also provided with a similar network.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with a car-fender centrally pivoted to the car in front of the dashboard so that it will swing to right or left of levers actuated by pedals protruding above platform of car as means of swinging the fender to right or left and springs acting upon levers as means to retain fender in normal position when pedals are released, substantially as described.

2. A car-fender composed of two frames, the rear one inclined slightly from the perpendicular and receding from the pivot-rod securing same to car and having hinged at its lower corners on each side arms extending forward horizontally; said arms supporting at their front ends a second frame adapted to fit between said arms and extend nearly to the rear middle line of first frame and detachably secured to a link adapted to move between spiral springs upon a perpendicular bar placed in front of the pivot-rod, said second frame also provided with long slots adapted to permit it to slide upon the pivots at the front ends of the arms extending from the first frame, substantially as described.

3. A car-fender centrally pivoted to end of car having pivot-bar engaging the two arms of the fender with the two arms of the car, said bar provided with wedge shaped key adapted to drop into slots in arm of fender and arm of car to form a rigid joint; with the lever to act upon and raise pivot-rod and release key from arms for the purposes substantially as described.

4. A car-fender composed of two frames, the rear frame inclined slightly from the perpendicular and receding from the pivot-rod securing same to car on each side away from the car, said frame having hinged at its lower front corners on each side arms extending forward nearly horizontally provided near their front ends with shoulders adapted to engage with car-wheels, and at their extreme front ends pivoted to a second frame adapted to fit between the said two arms and extending nearly to the rear middle line of the first frame, said second frame at its rear middle point detachably secured to a link adapted to move between spiral springs upon a perpendicular bar placed in front of the pivot-rod, the said second frame provided with long slots adapted to permit said frame to slide upon the pivots at the front ends of the arms of the first frame substantially as described.

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Witnesses:

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