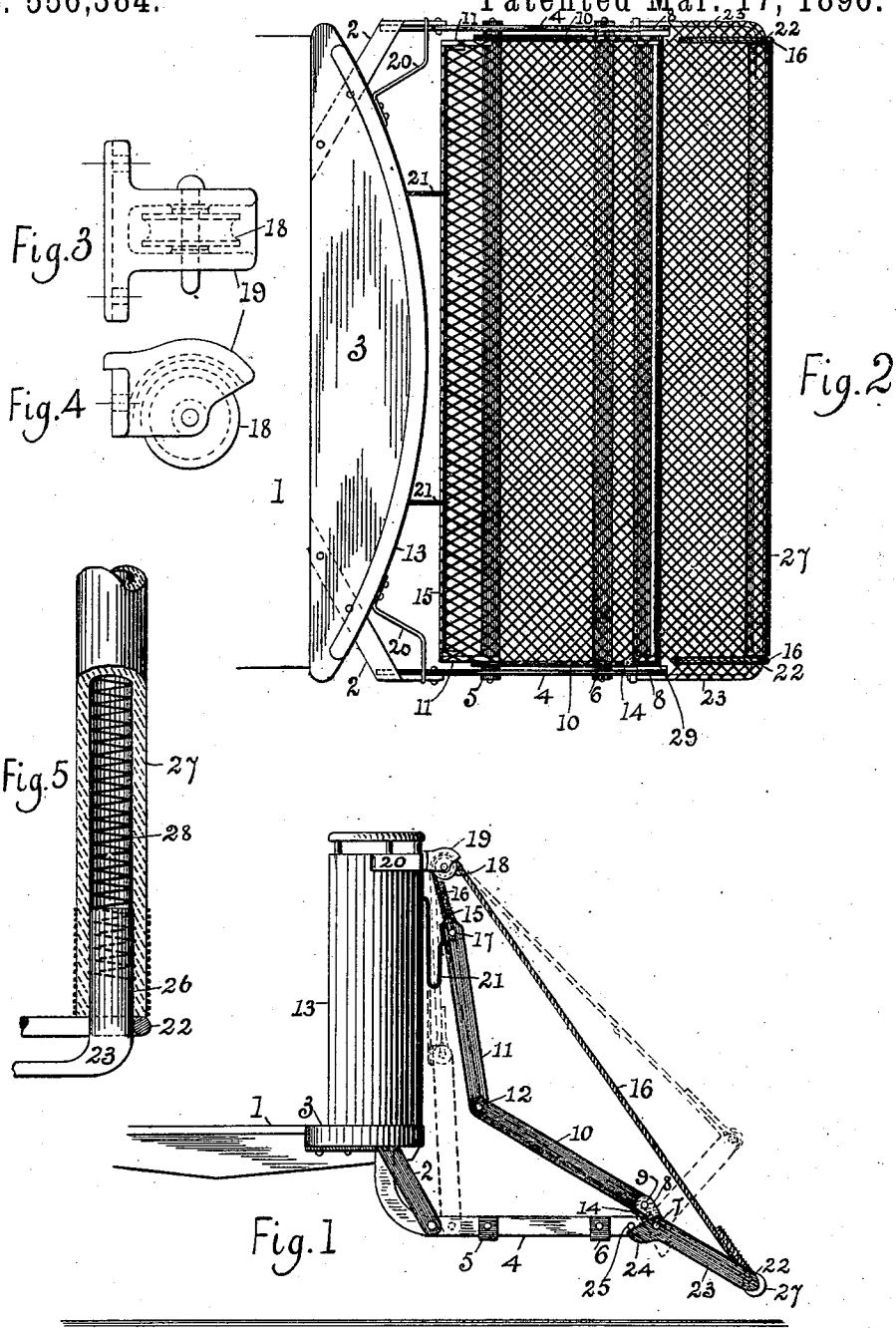


(No Model.)

C. A. THOMAS.
STREET CAR FENDER.

No. 556,384.

Patented Mar. 17, 1896.



—WITNESSES—
Wm. Hendrickson

—INVENTOR—
Conover A. Thomas
by his Attorney *R. C. Wright*

UNITED STATES PATENT OFFICE.

CONOVER A. THOMAS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF
TWO-THIRDS TO FRANK SCHOENER, OF SAME PLACE.

STREET-CAR FENDER.

SPECIFICATION forming part of Letters Patent No. 556,384, dated March 17, 1896.

Application filed August 2, 1895. Serial No. 557,932. (No model.)

To all whom it may concern:

Be it known that I, CONOVER A. THOMAS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Street-Car Fenders; and I do declare the following to be a full, clear, and exact description of the invention, such as 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 figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in life-saving devices for street-railway cars, which, owing to the introduction of more rapid transit since the advent of power-driven cars, has also increased the liability to accidents to pedestrians, especially upon city streets, where the cars every few hundred feet are compelled to cross other streets crowded with people passing across the railway.

I attain the objects of my invention by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation, and Fig. 2 is a plan view, of my fender. Fig. 3 is a plan, and Fig. 4 is an elevation, of the supporting-sheave pulleys. Fig. 5 is a section of an end of the resilient front piece, showing its attachment to the side bars of the pick-up frame.

Similar reference-figures refer to similar parts throughout the views.

Projecting in front of the platform 1 of the car at each side and attached thereto are hangers 2, which, to suit the construction of the car here shown, extend below the bumper 3. These hangers support the rectangular extension-bars 4 of my supporting-frame, but in back of the hangers 2 the extension-bars 4 are carried back and under the platform 1, against which they impinge to permit the front end from going downward beyond a desired distance.

Other constructions of cars having different-shaped platforms and dashers may require different-shaped and differently-attached hangers.

My supporting-frame is attached to the hangers 2, placed at each side of the car and

its platform, and consists of extension-bars 4 4, pivotally attached to the hangers 2 and projecting forward, being secured together parallel by cross-ties 5 6, which extend laterally and attach all together in a rectangular supporting-frame.

The extension-bars 4 at their forward end are provided with a rivet, bolt, or pin 7, which pivots them to links 8, lying within them. The links, as shown in the drawings, extend backward and upward and are pivoted at their upper end, 9, similarly to their lower end, to a receiving-frame. This frame is formed of lower bars, 10, and upper bars, 11, on each side of the car, the bars being pivoted together where they join, at 12. When the fender is at rest ready for action, the bars 10 are inclined backward at about an angle of sixty degrees from the track, and the bars 11 are but slightly inclined and stand up in front of the dasher 13. The bars 10 are connected together laterally by a cross-bar 14 at their lower end, and the bars 11 are connected laterally by a cross-tie 15 at their upper ends, so that 10 11 14 15 form a rectangular folding frame jointed at about its middle, at 12. This frame is covered with a bag-shaped wire-netting or canvas or other soft, pliable, or yielding material, which will not injure a person coming in contact with it. As before noted, this frame is pivoted at its lower end to links 8, and at its upper end it is suspended by means of flexible connections 16, attached at 17 and passing upward over sheave-pulleys 18, held in hooded guards 19, which in turn are attached by means of brackets 20 to the dasher 13.

In some constructions of cars the brackets 20 may not be necessary, as the hooded guards 19 may be so constructed as to attach directly onto the dasher. There are also two intermediate flexible supports 21 from the cross-bar 15 to the dasher and are long enough to not be in operative tension except when the fender has caught up a person. The flexible connections 16, after passing upward over the sheave-pulleys 18, emerge from the front of the hooded guards 19 and passing obliquely downward are attached to the front of the fender pick-up frame at 22.

At the extreme forward end of the fender

and attached pivotally to each frame 4 are the side bars, 23, of the pick-up frame, which extend downward toward the track, but are somewhat above the street surface. To insure their not touching the street I have continued them back of the pivot 7 at 24 and provided stops 25 above them to limit their downward movement. The side bars, 23, turn inward at their lower end 26 and are inserted into and secured, preferably by wiring or clamps, to a flexible cross connecting resilient tube 27, composed of rubber, leather, canvas, or other suitable soft and yielding material, and within this tube 27 I have placed a spiral spring 28 having yielding qualities and also sufficient resilient force to keep the tube from collapsing. This pick-up frame is also supported laterally by a rod or shaft 29, which reaches from the side bars 23 on one side to the side bars 23 on the opposite side, and to which on each end it is attached. Thus 23 23 29 27 form a rectangular frame with a yielding front, which I also cover with netting, intertwined rope or cords, canvas, sheet rubber, leather, or other suitable soft and yielding material, so that it may not damage any person it comes in contact with.

The operation of my fender is as follows: Figs. 1 and 2 show it set ready for duty, when, should it come in contact with a person as it moves along in its path with the car, the soft and yielding part 27 will strike about the height of the ankle or below the knee and will yield and go down to the street surface, closing the gap below its normal position and prevent a person from passing beneath it. The continued movement of the car will force the body backward, landing the heaviest part on the covering 28 of the inclined part of the receiving-frame, composed of bars 10 14. The weight so projected will force frame 10 down and on a level with bars 4, where it will rest upon cross-ties 5 6. Bars 10 will pull down bars 11 and close up the back, bringing also the flexible connections 17 down and by means of the sheave-pulleys 18 pull the flexible connections 17 up in front and with them the pick-up frame 23 23 27 29, thereby preventing the person from being thrown out or in any way damaged.

I have shown by dotted lines in Fig. 1 the position of my fender when closed after having picked up a person.

When not required for use, my fender folds backward and upward and rests against the front of the dasher, taking up very little room, so that if a car becomes disabled it can readily be coupled to another car without detaching the fender.

I claim as my invention—

1. In a street-car fender, a projecting pivotally-attached rectangular frame, adapted to have upwardly-swinging movement, swinging links attached to the front of said frame reaching upward and yieldingly supporting a folding receiving-frame covered with yielding material, substantially as specified.

2. In a street-car fender, a pivotally-attached projecting frame therefrom, carrying links at the front of the frame, yieldingly carried thereon at an angle to the track, and when forced by a weight, being seated upon the projecting frame, a back part of the folding frame, pivotally joined to the front part, and standing nearly upright in front of the dasher, the folding frame being yieldingly covered, flexible connections attached to the upper edge of the back part of the folding frame and means for their movable attachment to the car, substantially as specified.

3. In a street-car fender adapted to project from the front of the car, a projecting pivotally-attached framework, swinging carriers in the front thereof, yieldingly supporting a receiving frame or platform covered with yielding material, made in two parts yieldingly joined together, the back part projecting upward and suspended by flexible supports carried over revolving sheaves, attached to the dasher of the car, and at their forward end attached to an upwardly-swinging pick-up frame, substantially as specified.

4. In a street-car fender, a projecting pivotal frame in front of the car, a folding frame yieldingly supported thereon, flexible connections for the folding frame carried over yielding supports secured to the car and being at their front end secured to a pivotally-attached pick-up frame in such manner that the folding frame and pick-up frame shall be incapable of movement, one without the other, substantially as specified.

5. In a street-car fender, a projecting frame in front of the car and pivotally hinged thereto, the movement being limited to swinging upward; a pick-up frame pivotally connected to the front thereof, so constructed and attached as to incline from the track and prevented from more nearly approaching it, but capable of swinging upward and away therefrom, and at its front edge having across it from side to side a yielding and flexible tube, internally supported by a coil-spring, the tube and its internal anticollapsing support being capable of elongating and extending down to the street surface to a close contact, thereby preventing the passage of any obstacle lodged against it from passing under, substantially as specified.

6. In a street-car, a projecting fender, pivotally hung thereto and capable of upwardly swinging and folding against the dasher the folding front and back parts thereof, flexibly connected to act in unison, and roller-supports for the flexible connections fixed upon the dashers, and having hoods over the rollers or sheaves to prevent the connections from becoming entangled or inoperative, substantially as specified.

7. In a street-car fender, a supporting-frame pivotally attached to the car, its movement confined to upward swinging, an inclined receiving-frame linked to the front thereof normally inclined backward therefrom, hav-

ing a jointed back thereto in front of the
dasher, supported by flexible connections
over rolling carriers attached to the dasher,
the other end of the flexible connections be-
5 ing attached to a pick-up frame, pivotally
connected to the supporting-frame and nor-
mally inclining downward, the flexible con-
nections so attaching the pick-up frame and
receiving-frame that when a person or other
10 obstruction is met by the pick-up frame, and
projected upon the receiving-frame, it will

go down upon the supporting-frame and pull
the pick-up frame upward, thus forming an
inclosed receptacle for the retention of the
obstruction, substantially as specified. 15

In testimony whereof I affix my signature
in presence of two witnesses.

CONOVER A. THOMAS.

Witnesses:

GEO. W. REED,
R. C. WRIGHT.