

(No Model.)

2 Sheets—Sheet 2.

L. H. FINNEY.

DROP FENDER FOR STREET RAILWAY CARS.

No. 537,762.

Patented Apr. 16, 1895.

Fig. 4,

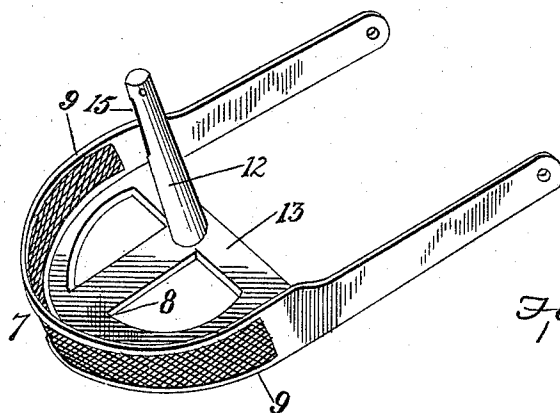
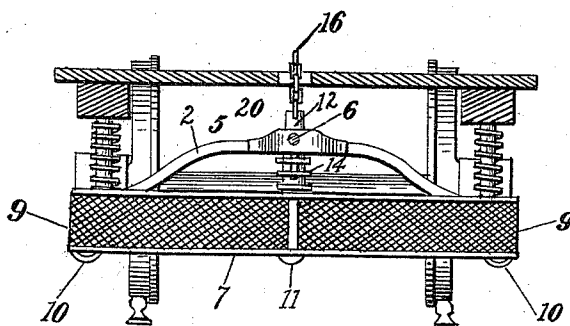


Fig. 5,

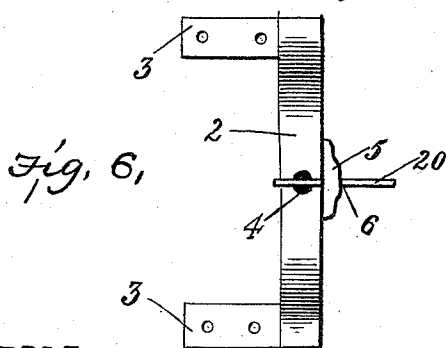


Fig. 6,

WITNESSES

L. W. Johnson,
H. R. Nottingham.

INVENTOR

Lewis H. Finney
By J. R. Nottingham
att'y

UNITED STATES PATENT OFFICE.

LEWIS H. FINNEY, OF RICHMOND, VIRGINIA.

DROP-FENDER FOR STREET-RAILWAY CARS.

SPECIFICATION forming part of Letters Patent No. 537,762, dated April 16, 1895.

Application filed October 4, 1894. Serial No. 524,911. (No model.)

To all whom it may concern:

Be it known that I, LEWIS H. FINNEY, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Drop-Fenders for Street-Railway Cars; and I do hereby 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.

This invention relates to certain improvements in fenders for street railway cars, more particularly to that class commonly known as "drop" fenders; and it consists in providing each end of the car, forward of the trucks, with a peculiar shaped fender having rearwardly extending arms, which are pivoted to the side-pieces of the truck-frame; the forward, or free end of the fender, being normally supported a short distance above the level of the tracks, by means of a reciprocating rod, which is arranged to have one end enter an elongated perforation made in a post or standard rising from the frame of the fender and the other end operated by a trip-gate, pivoted beneath the platform, at the forward end of the car, and the invention further consists in the detail construction and arrangement of the various parts, as will be hereinafter more fully described and specifically pointed out in the claims.

The principal object of the invention is to provide a fender or guard that can be readily attached to street cars, particularly those now in use, and which shall be normally held a distance above the track sufficient to clear ordinary obstructions, but which will be automatically dropped upon the track in the event the car encounters an extraordinary or bulky obstruction, and it is especially designed to effect, not only a saving of the life of both persons and animals, who may be struck by the car, but, at the same time, to also prevent injury to the car.

The above mentioned object is attained by the mechanism illustrated in the accompanying drawings, in which--

Figure 1, represents a side elevation of a car, showing my improved fender attached at each end thereof, one fender being held in its normal position above the track and the other

in dropped position; Fig. 2, a central vertical longitudinal section of one end of a portion of a car and the fender attached thereto, the fender being shown in normal position; Fig. 3, a front view of the trip-gate; Fig. 4, a transverse vertical section on line *xx* of Fig. 2; Fig. 5, a perspective view of the fender detached, and Fig. 6 a plan view of the arched-bar support detached.

Referring to the drawings, the numeral 1 indicates the side pieces of the truck-frame, which are connected together, at their respective ends, by an arched-bar, 2, which is provided or formed with right-angled arms 3, by means of which said bar is bolted to the side pieces. The crown of the arched-bar is perforated at 4 and provided with a lug, 5, having an aperture, 6, the purpose of which will be hereinafter explained.

The numeral 7 indicates the fender, which consists, preferably, of a skeleton frame, 8, having a curved front and provided with a vertical rim, 9, the sides of which extend rearwardly and serve as arms, by means of which the fender is pivoted to the side-pieces of the truck-frame. These arms are of a length sufficient to permit the pivotal connection being made, preferably, at a point slightly in rear of the wheels, so that when the fender is dropped the inclination will not be sufficiently great to cause the forward end of said fender to dig into the road-bed.

The under side of the fender is provided, at opposite sides, with shoes, 10, preferably of metal, which are adapted to rest and slide upon each rail of the track, when the fender is dropped. A similar shoe, 11, somewhat shorter than the others, is secured at the forward point of said fender and serves to cause the fender to ride easily over any slight obstruction, when down, thus preventing injury to the forward end of the fender.

The numeral 12 indicates a post or standard, which rises from a cross-bar, 13, of the skeleton frame and passes through the perforation 4, in the arched-bar 2. Between the said bar 2 and the cross-bar 13, surrounding the post or standard, is a spiral-spring, 14, which tends to press or force the fender down upon the track when released by the action of the trip-gate and reciprocating-rod, which will be hereinafter described. The post or stand-

ard near its upper end, is provided with a slot, 15, and a short distance above said slot with a chain 16, which passes up through a hole made in the floor of the car, and serves
5 as a means for raising the fender to its normal position after having been dropped.

The numeral 17 indicates a gravity trip-gate, which is pivoted at each end of the car between two hangers, 18, depending from the
10 under side of the car platform. This trip-gate consists preferably of an open-work frame and is pivoted sufficiently high above the road or track-bed, to clear any ordinary obstruction, but may be encountered by obstructions of a
15 more bulky character, such as the body of a human being, or animals of large size, and be turned backward or inward on its pivots. The upper edge of said trip-gate, above its pivotal point, is provided with a bifurcated
20 lug, 19, between the arms of which is pivoted or hinged one end of a reciprocating-rod, 20, the other end of which passes through the aperture 6, of the lug 5, on the arched-bar, and is adapted to enter the slot 15, of the post
25 or standard 12.

Various modifications of my invention may be made without sacrificing the principle or departing from the spirit thereof, such, for instance, as changing the location of the trip-gate to any convenient or desired position
30 beneath the car-platform, or the employment of any suitable trip-gate, so long as it is loosely hung and there is a sufficient amount of leverage above its pivotal or hinged points, to reciprocate the rod when said trip-gate is
35 pushed or forced inward or drops by gravity back to its normal position.

It is highly important in this class of fenders, that when the fender is dropped it
40 should set close to the track-bed without the objectionable "jumping" or intermittent up and down motion, which is common to many fenders of this character, during the attempt to stop the car on meeting or encountering an
45 obstruction, and it is one of the purposes of this invention to overcome this very objectionable feature which is accomplished by pivoting the fender at a point quite distant from the forward end of said fender, so that
50 when the fender is dropped the inclination will be very slight, but I do not wish it to be understood that said fender may not be pivoted at a point much closer to its forward end than that shown in the drawings and not be
55 productive of good results, for such is not the case, as it can be pivoted at a point co-incident with the front of the wheels and produce equally good results, but I prefer to pivot it at the point shown in the drawings.

It is obvious that my invention may be applied to cars already in use, by simply removing the usual cross-beam or connecting-piece, between the respective ends of the truck-frame, and substituting therefor the arched-bar shown in the drawings, or, in some cases
65 simply securing an arched bar, without the right-angled arms, to the usual cross-bar and

pivoting the arms of the fender to either the side-beams or fender-boards of the truck-frame, or to the side-sills of the car-body, but I prefer, when it can be done, to pivot the fender to some side portion of the truck frame, in which case it will not partake of the motion of the car body.

The operation of my invention is obvious
75 without further description, other than to state that when the trip-gate encounters an extraordinary obstruction, the lower end of the gate will be forced inward and the upper portion outward, and, as one end of the reciprocating-rod is attached to the latter it will
80 be seen that the other end of said rod will be withdrawn from the slot 4 in the post or standard 2, letting the forward end of the fender drop instantly, in time, to encounter the obstructing object and, if it be a human being
85 push it to one side or the other out of the way of all danger or harm, the space between the fender and steps being sufficiently large for this purpose. After the obstruction has
90 been removed and the car ready to proceed on its journey, the chain, which is furnished with a ring, is given a strong pull, so that the end of the reciprocating-rod may enter the slot in the post or standard, which is accomplished by the trip-gate resuming its normal
95 position by gravity, and restore the fender to its normal position. Thus it will be seen that the fender is tripped and reset automatically.

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

1. The combination, with a car-truck, of a pivoted fender having a cross-bar from which arises a vertical standard provided with a slot, a reciprocating-rod adapted to engage
105 said slot to normally hold the front end of said fender above the track, and a gravity trip-gate arranged to automatically operate said rod to drop the fender and relock the same, when raised.

2. The combination, with a car-truck, of a pivoted spring-pressed fender having a cross-bar carrying a vertical standard provided with a slot, a reciprocating rod arranged to engage said slot to normally hold said fender
115 above the track, a gravity trip-gate, whereby the front end of the fender is automatically dropped and relocked, when raised.

3. The combination, with a car truck, of a fender having rearwardly extending side-arms, pivoted to the sides of the car truck, an arched-cross-bar, secured to the end of the truck frame a vertical post or standard secured to said fender and passing up through
125 a perforation in the arched-bar, a reciprocating-rod having one end adapted to enter a slot in the vertical post or standard and its other end hinged to a gravity trip-gate, and the gravity trip-gate whereby the front end of the fender is automatically dropped and
130 reset.

4. The combination, with a car-truck having its ends connected together by a cross-bar

provided with a central aperture, of a fender having its side-arms pivoted to the sides of the truck and provided with a vertical central post or standard passing up through the aperture in said cross-bar, a gravity trip-gate, hinged or pivoted beneath the car-platform, and a reciprocating-rod having one end loosely connected to said gate and its other end adapted to normally rest in a slot made in the vertical post or standard, to hold the front end of the fender normally above the track.

5. The combination, with a car-truck having its ends connected together by an arched cross-bar, centrally apertured, of a fender having side arms pivoted to the sides of the car truck, its front end normally held above the track, and provided with a vertical post or standard passing up through the aperture in the cross-bar, and mechanism for automatically dropping said front end of the fender, and resetting the same.

6. The combination, with a car-truck having its ends connected together by an arched cross-bar having a central aperture and provided with a perforated guide, of a fender having side arms pivoted to the sides of the car truck, and provided with a vertical post or standard passing up through the aperture in said cross-bar, a gravity trip-gate pivoted or hinged beneath the car-platform, and a reciprocating-rod having one end hinged to said gate and its other end passing through said guide and adapted to enter a slot in the vertical post or standard to normally hold the front end of the fender above the car-track.

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

LEWIS H. FINNEY.

Witnesses:

J. R. NOTTINGHAM,
E. A. PAUL.