

(No Model.)

W. H. BROCK.
FENDER FOR STREET CARS.

2 Sheets—Sheet 1.

No. 531,258.

Patented Dec. 18, 1894.

Fig. 1.

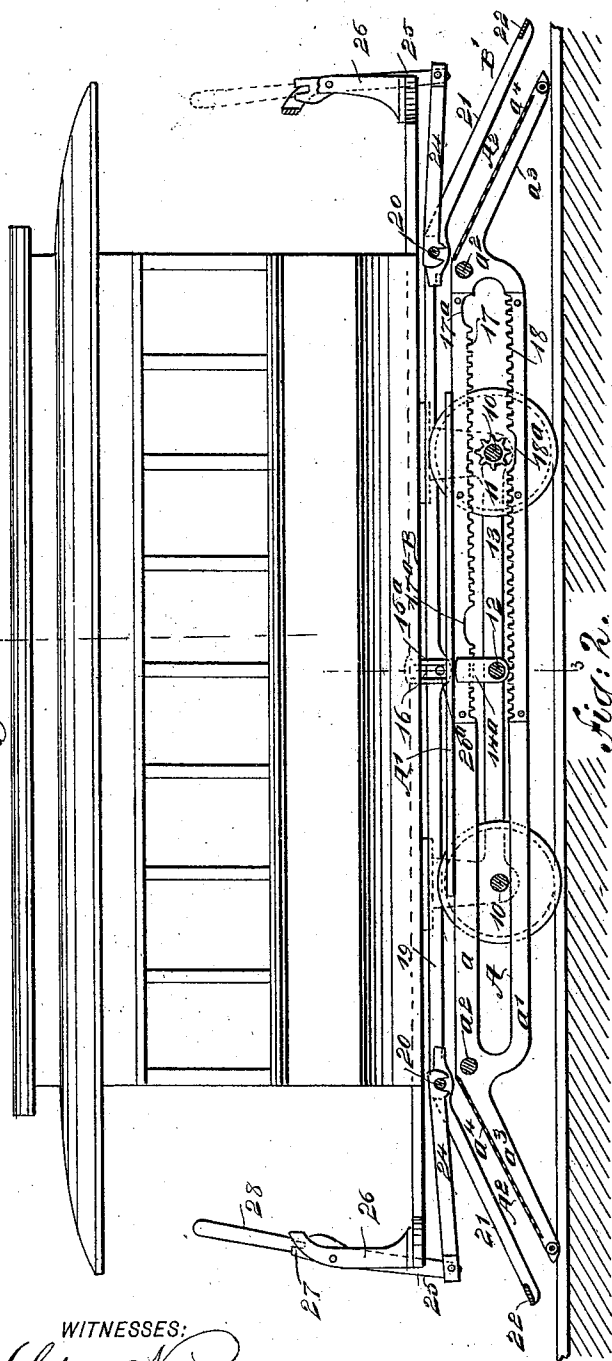
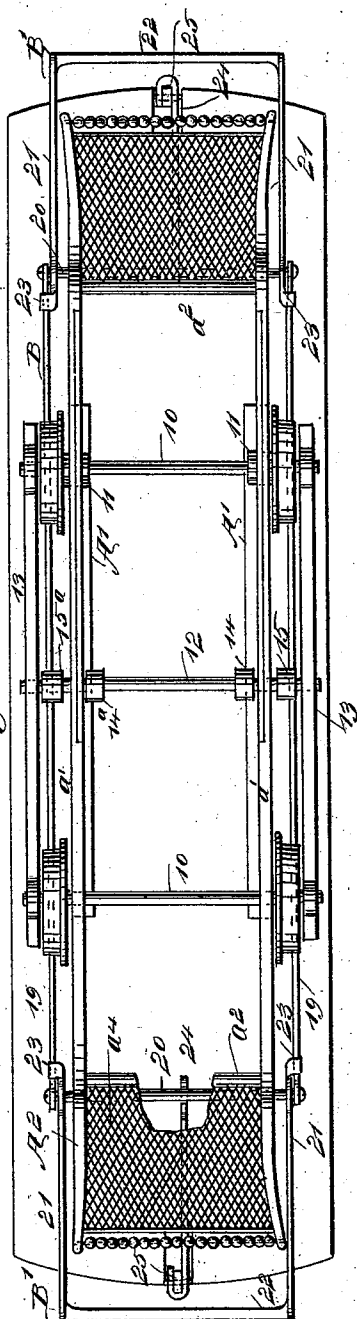


Fig. 2.



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(No Model.)

2 Sheets—Sheet 2.

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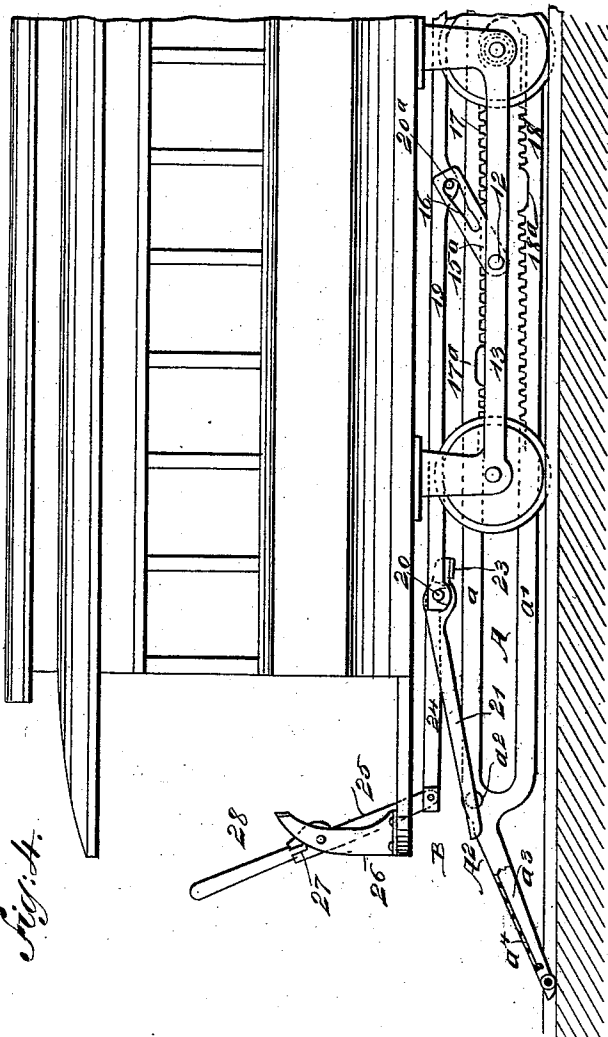


Fig. 4.

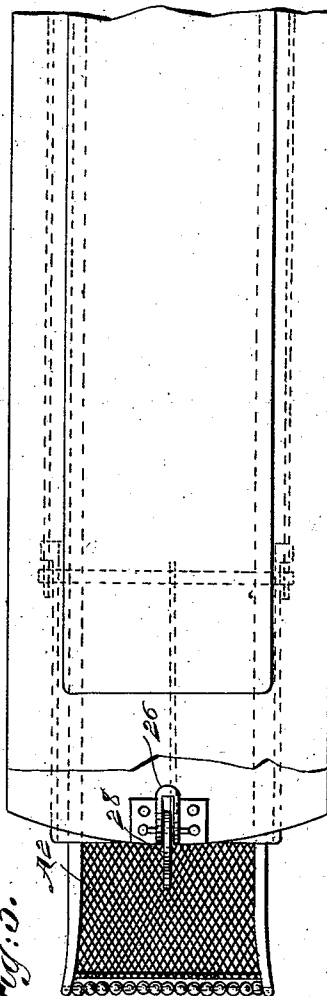


Fig. 5.

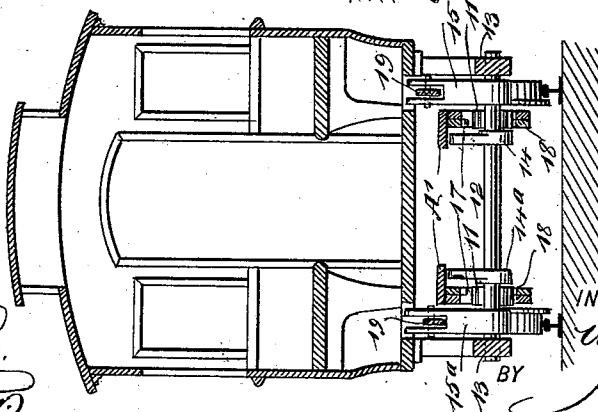


Fig. 6.

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UNITED STATES PATENT OFFICE.

WILLIAM H. BROCK, OF BROOKLYN, NEW YORK.

FENDER FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 531,258, dated December 18, 1894.

Application filed June 4, 1894. Serial No. 513,378. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BROCK, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Fender for Street-Cars, of which the following is a full, clear, and exact description.

My invention relates to an improvement in fenders for surface cars, and it has for its object to improve upon the construction shown in the patent granted to me February 27, 1894, No. 515,728, the said improvement consisting in providing a shifting device adapted as an auxiliary to the fender and through the medium of which, when the fender is drawn beneath the car and an object is in the path of the car, the said shifting device will be so acted upon by the object as to compel the fender to move outward to a position to receive said object, thus providing an automatic means for bringing the fender into operative position in the event the motorman, gripman or driver should fail to bring into requisition the ordinary shifting device for the fender, leading to the platform of the car.

A further object of the invention is to provide an automatic shifting device which will be simple, durable and exceedingly light in its construction, which will occupy but little room beneath the car, and which, furthermore, will not interfere with any attachments necessary to be located beneath the car body or platform.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of a car, illustrating the application thereto of the fender and the shifting device, the fender being in its inner position, or beneath the platform, and the shifting device in position to serve as a trip for the fender. Fig. 2 is a bottom plan view of the car, the fender and the shifting device being in the position shown in Fig. 1. Fig. 3 is a vertical section taken essentially on the line 3—3 of Fig. 1. Fig. 4 is a partial side elevation of the car, the fender being

shown in its outer or operative position, and the shifting device as beneath the car and within the front line of the platform; and Fig. 5 is a plan view of the car, the fender being in the position shown in Fig. 4.

In carrying out the invention, the fender that is here shown and which will be hereinafter particularly described, is substantially that shown in the patent referred to in the preamble. One of the axles 10 of the car is provided with a pinion 11 secured thereon near each of its ends as shown in Fig. 2, and a rock shaft 12, is located beneath the car body, preferably at the center, the said shaft being journaled in any convenient support, usually in the bar connecting the pedestals, or what is shown as the pedestal bar 13. The rock shaft is provided with two cam arms 14 and 14^a, located one at each side of the center, and near each outer end of the rock shaft a rocking arm is secured, designated respectively as 15 and 15^a, and the said rocking arms are provided with forked upper ends, and the members thus formed are provided with longitudinal slots 16, as shown in Figs. 1 and 4.

The fender-carrying frame A, comprises two parallel side bars *a* and *a'*, located one above the other, the bars being preferably connected at their ends, the two side bars of the frame being united by bars *a*² at their end portions, and each upper side bar *a*, is provided with an inwardly-extending longitudinal flange A'. A fender A², is located at each end of this frame, the said fenders having a downward and an outward inclination. These fenders are shown as consisting of downwardly and outwardly extending side bars *a*³, which may be attached to or form an integral part of the end portion of the frame A, the side bars of the fenders being connected by a netting, or equivalent substance, designated in the drawings as *a*⁴; and the lower portion of each fender is usually provided either with friction wheels or with cushions extending transversely thereof.

Each upper side bar *a* of the fender frame A, is provided with a racked or toothed surface 17 upon its under edge, extending usually from one end and terminating preferably at a point somewhat beyond the center; and in the said upper side bars, at one end thereof and near the termination of the opposite end

portion of the rack surface, concave recesses 17^a are produced; while upon the upper surface of the lower side bars of the fender frame correspondingly located rack surfaces 18, are produced, and at a point near the center of these rack surfaces a concave recess 18^a, is made.

In locating the fender frame upon the car, the axles of the car pass between the upper and lower side bars, and the pinions 11, are adapted for engagement with either the upper or the lower rack surfaces of the frame, according to whether the fender is to be drawn inward beneath the car, or carried outward to extend beyond the platform. When the pinions are brought in engagement with the lower racks the fender frame will be drawn inward until the fenders will be beneath the platforms of the car, at which time the pinions will have reached the recesses 18^a in the lower rack surfaces and the frame will then remain stationary while the car travels forward as usual; but when the fender frame is lowered in a manner to bring the pinions in engagement with the upper rack surfaces, the fender frame will be carried by the movement of the car outward in the direction in which the car is traveling, and when the fender at that end of the car has assumed a position beyond the front platform, the pinions, for example, will be opposite one of the recesses 17^a in the upper rack surfaces, the other recess being brought into requisition when the fender is carried toward the opposite end of the car.

The raising and lowering of the fender frame is accomplished through the rock shaft 12; and in fact, the arms 14 and 14^a attached to this shaft will serve as supports for the fender frame by engaging with the flanged surfaces A', thereof as shown in Fig. 1. When these arms are in the vertical position shown in Fig. 1, the frame will be raised, and the pinions will engage with the lower racks, and when the said arms occupy a diagonal position in direction of either end of the car, the frame will be tripped, and the upper rack surfaces will engage with the pinions.

The shifting frame B, through the direct medium of which the rock shaft 12 is manipulated, is located over the fender frame, and is preferably made to comprise two side bars 19, connected at their ends by cross bars 20. This frame is of practically the same length as the fender frame A, but not necessarily so; and the said side bars are provided with studs 20^a, which are made to extend into the slots 16 in the rocking arms of the rock shaft. The extension or trip sections B' of the shifting frame usually comprise two side bars 21, connected at their outer ends by a cross bar 22, and the said side bars are pivoted upon the end bars 20 of the shifting frame. While the trip extensions of the shifting frame are free to move upward to any desired extent, they are limited in their downward movement to an inclination corresponding substantially to that

of the fenders, which may be accomplished by carrying the side bars 21 inward beyond their pivoted supports, and providing them with studs or stops 23, adapted for engagement with the under edges of the side bars 19 of the shifting frame, as is clearly shown in Figs. 2 and 4.

When the fender frame is in a position to bring the fenders beneath the car platform, the trip extensions of the shifting frame will be located over the fenders, and will extend outwardly beyond a line drawn vertically in front of the platform, as shown in Fig. 1, whereby in the event an object should be upon the track in front of the car, as the car advances the object will be brought in contact with the forward trip extension of the shifting frame, and the entire frame will be carried in a rearwardly direction, imparting to the rocking arms 15 and 15^a the rearward inclination shown in Fig. 4, and the supporting arms 14 and 14^a of the rock shaft being carried in the same direction, the fender frame will drop, bringing the pinions in mesh with the upper racks, and the forward movement of the car will force the fender frame to travel in a forwardly direction, bringing the forward fender in position to receive the object, while the forward trip extension of the shifting frame will have been carried rearward out of the way, as shown in Fig. 4.

The fender frame in addition to the automatically acting shifting device heretofore described is under the complete control of the motorman, gripman or driver, since a link 24, is made to engage with each end cross bar 20 of the shifting frame, and the outer end of each link is connected with a lever 25, the said levers being fulcrumed in any suitable support 26, located upon the platforms of the car. Each lever 25, is preferably provided with a socket 27 in its upper end, receiving a removable handle 28. Thus when the driver, motorman or gripman leaves one platform in order to direct the car in an opposite direction from the opposite platform, the handle 28 is removed and placed in the socket of the lever located upon the platform from which the car is to be directed.

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

1. A car fender comprising a frame extending from end to end of the car with fending devices at both ends, gearing for propelling the said frame from the car axle, mechanism for raising and lowering the frame out of and into gear with the axle, and an automatically operated trip and a lever mechanism at each end of the car and connected with said raising and lowering mechanism.

2. A fender for cars, having longitudinal movement beneath the car, a transverse rock shaft below and between the ends of the fender and provided with cams adapted as supports for the fender, the fender being capable of movement independent of the cams, a shift-

ing frame also capable of longitudinal movement, and an actuating connection between the shifting frame and the said rock shaft, as and for the purpose specified.

5 3. A fender for cars, adapted to be operated from the car axle having longitudinal movement beneath the car, and provided with downwardly inclined ends at opposite ends of the car a shifting device also capable of
10 longitudinal movement and serving likewise as a support for the fender, inclined ends of the said shifting device extending beyond the fender when the latter is in inner position, substantially as described, whereby the inner
15 movement of the shifting device consequent upon meeting an object will operate to place the fender in position to travel outward for the purpose specified.

4. A car fender capable of longitudinal
20 movement beneath the car, the said movement being effected by the rotation of an axle of the car, and a shifting device having movement in a like direction to that of the fender, the outer end of the shifting device being provided with a trip extension, adapted in one
25 position of the fender to extend forwardly beyond the same, a rocking support for the fender, and a connection, substantially as shown and described, between the shifting device
30 and the said support, whereby the latter, through the medium of the trip, may be placed in operative connection with the axle to accomplish the outward movement of the fender, substantially as shown and described.

35 5. The combination, with a car, a fender carried thereby and movable longitudinally of the car, and means, substantially as shown and described, for actuating the fender by the rotation of the car axle, of a shifting device capable of placing the fender in reversing
40 position, a trip device connected with the shifting device and adapted to extend beyond the fender when the latter is in an inner position, and means, substantially as described, for operating the shifting device from the
45 platform of the car, the trip device acting automatically and independently of the platform operating mechanism, as and for the purpose set forth.

50 6. The combination, with a car, a fender

carried thereby and movable longitudinally of the car, and means, substantially as shown and described, for actuating the fender by the rotation of the car axle, of a shifting device
55 capable of operation from the platform of the car and provided with a trip extension adapted to extend over the fender and beyond the same when the latter is in a predetermined position, a supporting device sustaining the fender, and a connection between the shifting device
60 and supporting device, whereby the fender may be raised or lowered, as and for the purpose set forth.

7. The combination, with a car, a fender carried thereby, a frame connected with the
65 fender and having longitudinal movement beneath the car, and a gear upon one of the car axles, adapted for engagement with either the upper or lower racks located upon the fender frame, of a rock shaft, cams carried
70 by the shaft and adapted as supports for the said fender frame, rocking arms also carried by the said shaft, a shifting frame connected with the said rocking arms, and trip devices located at the end portion of the shifting
75 frame, as and for the purpose set forth.

8. The combination, with a car, a fender carried thereby, a frame connected with the
fender and having longitudinal movement beneath the car, and a gear upon one of the
80 car axles, adapted for engagement with either the upper or the lower of the racks located upon the fender frame, of a rock shaft, cams carried by the said shaft and adapted as supports for the said fender frame, rocking arms
85 also carried by the shaft, a shifting frame having longitudinal movement and connected with the rocking arms, said frame being provided with pivotally connected trip sections adapted to extend over and beyond the fender
90 when the latter is in an inner position, and a hand lever likewise connected with the shifting frame, whereby the said frame may be operated either by the motorman or automatically through the medium of the said trip
95 section, as and for the purpose set forth.

WILLIAM H. BROCK.

Witnesses:

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