(No Model.) 3 Sheets—Sheet 1.

G. BERKLEY.

FENDER FOR STREET CARS.

No. 541,914. Patented July 2, 1895.

Fig. 1.

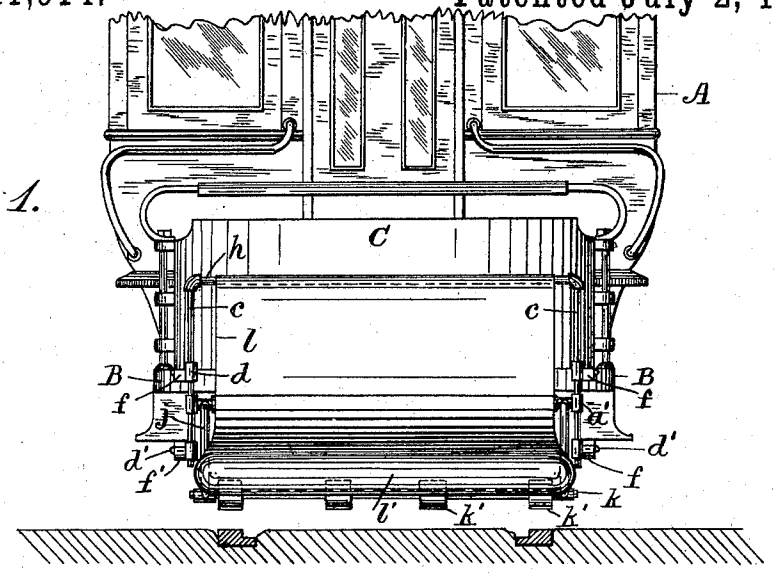

Fig. 2.

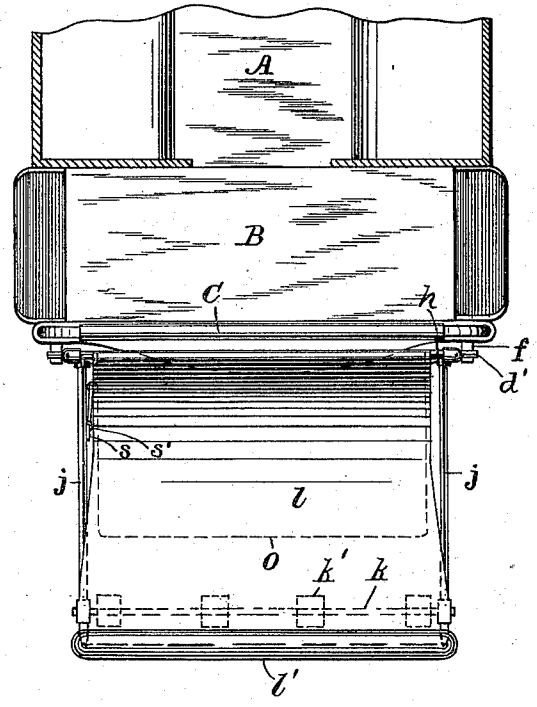

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Fig. 3.

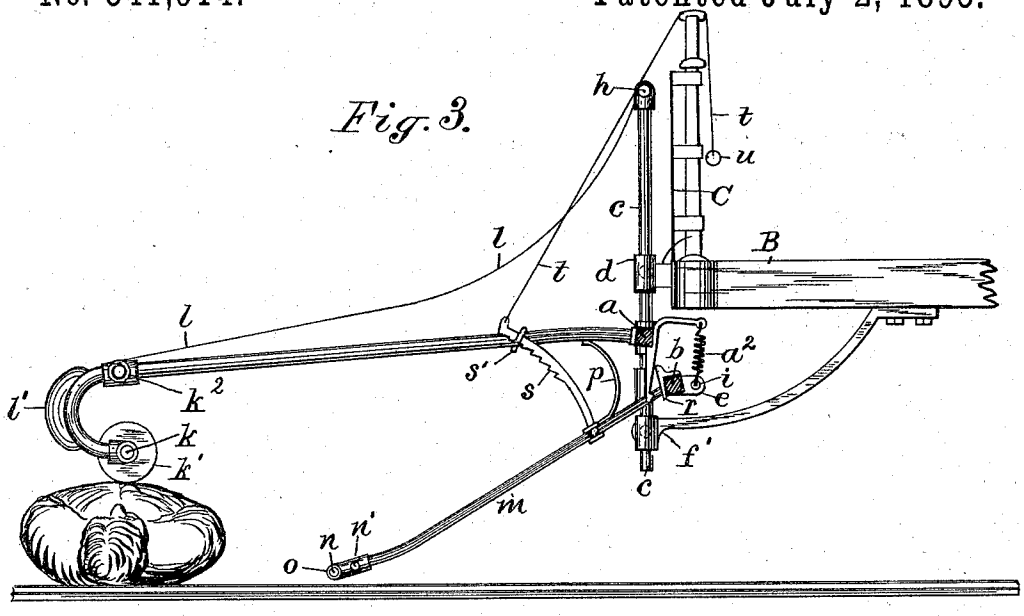
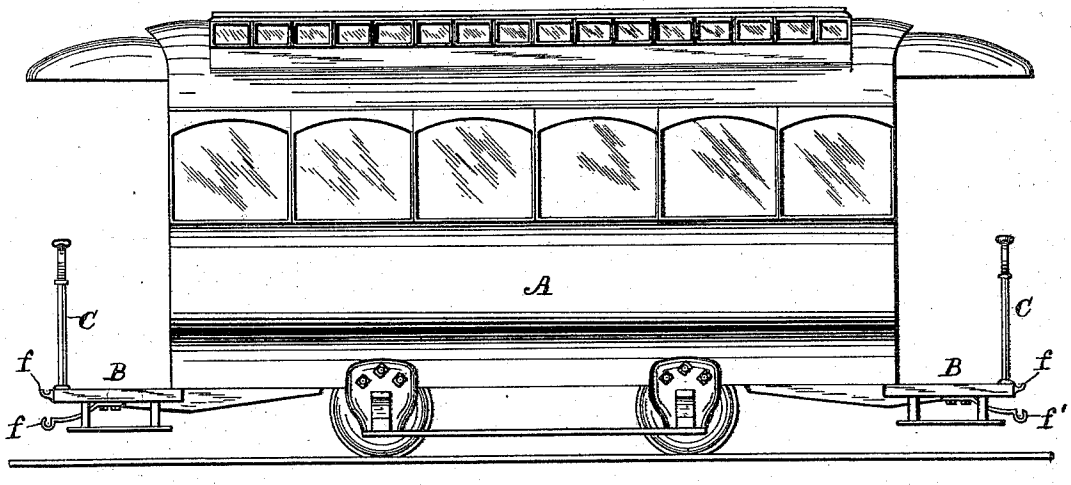


Fig. 4.



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(No Model.) 3 Sheets—Sheet 3.

G. BERKLEY.

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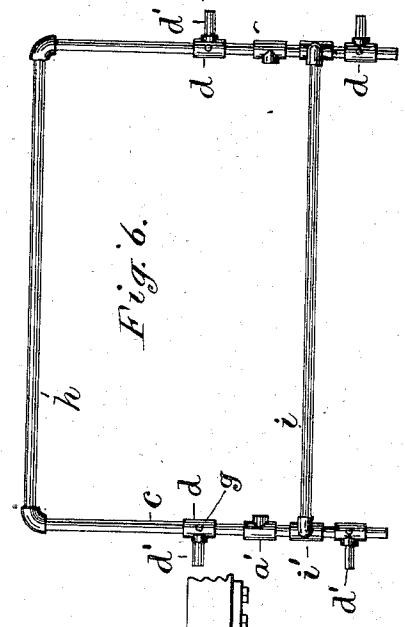

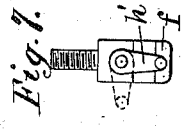

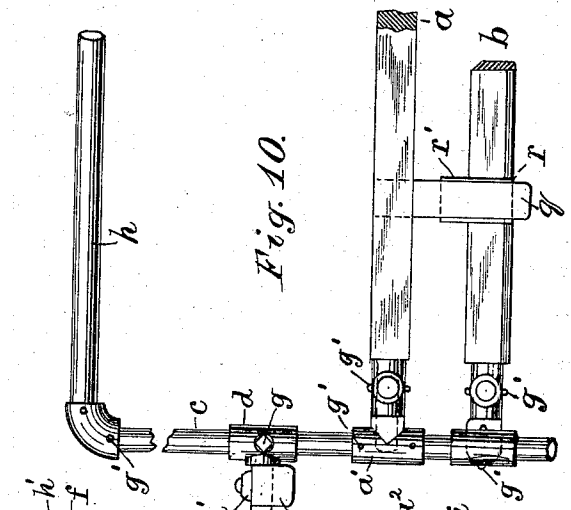

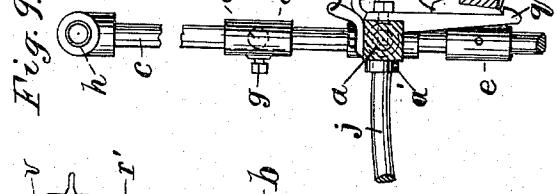

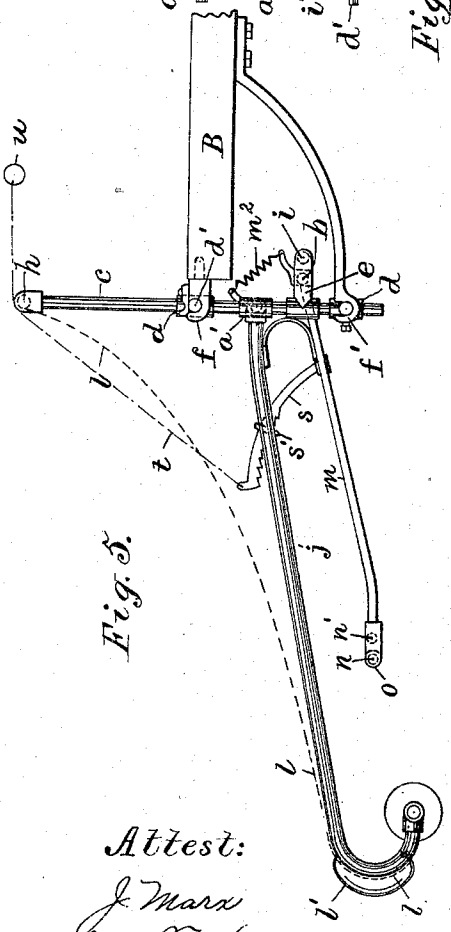

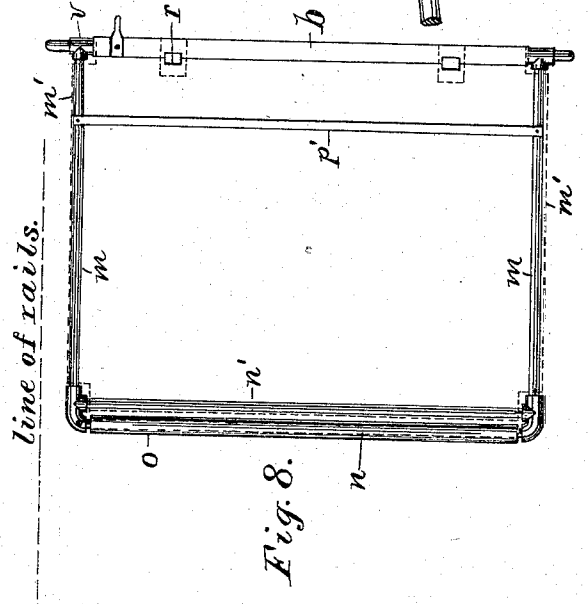

Attest:
J. Marx
Edw. F. Kinsey.

Inventor.
George Berkley,
per Thos. S. Crane, Atty.

UNITED STATES PATENT OFFICE.

GEORGE BERKLEY, OF NEWARK, NEW JERSEY.

FENDER FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 541,914, dated July 2, 1895.

Application filed August 16, 1894. Serial No. 520,433. (No model.)

To all whom it may concern:

Be it known that I, GEORGE BERKLEY, a citizen of the United States, residing at Newark, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Fenders for Street-Cars, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to the fenders which are applied to the forward ends of cable and electric cars to pick up people who accidentally get upon the track, and who would otherwise be killed or seriously injured, if struck by the car.

In the present construction, the opposite ends of the car are provided with similar sockets, and the device consists essentially of an attachment which is made to fit interchangeably to the sockets at either end of the car so that it may always be applied to the forward end. The attachment is provided with upper and lower fenders, one of which is arranged to catch the body of any person that may fall upon the track, if the other fender should fail to do so.

The device is furnished with a frame which may be adjusted vertically upon the car platform, and the two fenders are pivoted thereon and latched together so as to operate in succession.

The frame is preferably formed of pipe and fittings to secure lightness combined with stiffness, and the surfaces of the fenders are formed of any suitable woven fabric, as canvas or wire cloth, so as to possess a yielding or elastic character.

The construction will be understood by reference to the annexed drawings, in which—

Figure 1 represents the end of a car platform with the fenders attached and a section of the rails adjacent thereto. Fig. 2 is a plan of the same parts. Fig. 3 is a side elevation of the car platform with the fenders shown in section upon line *x*, *x*, in Fig. 2, and the lower fender unlatched by the lifting of the upper one. Fig. 4 is a side elevation of a street car with the duplicate fixtures at opposite ends to receive the fender frame interchangeably. Fig. 5 is a side elevation of the car platform like that shown in Fig. 1, with an elevation of the fenders latched together. Fig. 6 is a front elevation of the frame alone for supporting the fenders upon the car. Fig. 7 is a plan of one of the platform sockets for the fender frame. Fig. 8 is a plan of the lower or auxiliary fender. Fig. 9 is a section of the frame which supports the fenders, broken near the top for want of room upon the drawings, with sections of the fender axles to show their latch and spring connections; and Fig. 10 is a front elevation of the same parts with one of the platform sockets applied to the pin upon the frame.

The frame, which is supported removably upon the car platform, is formed with vertical side bars *c* connected at the top and bottom respectively by cross bars *h* and *i*. The fenders and the frame are shown formed of pipe connected by fittings. The fenders project forward from the frame, and are formed respectively with axles *a* and *b*, the axle *a* being journaled in pipe T's *a'* inserted in the bars *c*, and the axle *b* being journaled in T fittings *e* of special construction which project backwardly from the bars *c* and are tied together at their rear ends by the bar *i*.

Two adjustable sliders *d* are fitted upon the bars *c* at each side and are secured thereon by set screws *g*. Each slider is provided with a laterally projecting pin *d'*.

Fig. 4 shows the car A having the platform B at opposite ends, provided near their outer corners with sockets *f*, *f'*, to receive the pins *d'*, *d'*, the frame thus being fitted interchangeably to either platform. The sockets *f* are secured upon the front side of the platform, while the sockets *f'* are formed upon bracket arms secured to the under side of the platform. All the sockets are open at the top to admit the pins *d'*, and the sockets *f* are furnished with buttons *h'* which when turned over the pins, as indicated in full lines in Fig. 7, retain the frame and fenders securely in an operative position; but when turned sidewise, as shown in dotted lines, release the pins to permit the removal of the frame.

The upper fender consists of side bars *j* united at the inner end by the axle *a*, and at the outer end by a cross bar *k* upon which are fitted a number of wheels or rolls *k'*.

The side bars are reflexed downward and

backward at their front ends, and a woven fabric *l*, as of canvas or wire cloth, is attached to the cross bar *h* of the supporting frame, and to the side bars *j* at their reflexed portion.

A cushion *l'* is extended across the front of the fender at such point of attachment, and is thus carried in advance of the wheels *k'*. By attaching the cushion to the reflexed curves of the bars *j*, its lower edge partially covers and guards the wheels *k'*. The axle *b* of the lower fender is pivoted below and in the rear of the axle *a* and the fender is formed of side bars *m* connected at the front by tie-bars *n*, *n'*.

The forward tie-bar *n* is provided with a pipe roll *o*, as shown in Fig. 8, and a woven fabric *m'* is stretched between the bars *m* and attached to the bar *n'*. To avoid obscuring the bars *m* and *n'* only the margin of the woven fabric *m'* is shown in Fig. 8, indicated by dotted lines. A strip of canvas *p* is attached to the fenders just forward of their axle and extended between the same to form a bumper, as hereinafter described. Bars *p'*, one of which is represented in Fig. 8, may be secured between the side bars of each fender for the attachment of the bumper cloth *p*. The axles *a* and *b* are made square, and a latch-bar with hook *q* is fastened to, and projected downward, from the axle *a* and is adapted to engage a shoulder *r* upon the lower corner of the axle *b*, and operates when thus engaged to hold the lower fender raised, as indicated in Fig. 5.

A shoulder *r'* is projected from the upper corner of the axle *b*, toward the latch-bar, to automatically raise the lower fender when the upper fender is depressed. The two fenders are shown in their normal position in Fig. 5, with the wheels *k'* of the upper fender held several inches above the line of the rails, and the lower fender held by the latch *q* in a still higher position.

If a man or similar body is struck by the cushion *l'* it may be thrown upon the fender cloth *l* and the lower fender not be called into operation. If however the body be thrown down, the lower fender would be lifted by the rolls *k'* passing over the body, as indicated in Fig. 3, and such lifting of the upper fender operates to detach the latch-hook *q* from the axle *b*, thus permitting the lower fender to drop.

A spring m^2 is shown in Figs. 5 and 9 applied to the axle of the lower fender to throw it down promptly in such case, as is indicated in Fig. 3, and thus enable it to pick up the body and prevent the latter from passing under the car. When the body is thus received upon the lower fender, the strip of fabric *p* operates as a bumper to prevent the body from contact with the metallic axles and adjacent parts; being distended to form a sort of wall or cushion, by the separation of the two fenders. To counterbalance the weight of the upper fender and enable it to lift easily when encountering a body, it may be provided with a spring a^2, as shown in Figs. 3 and 9.

To prevent the upper fender from falling when the wheels have passed over the body and thus pressing it against the lower fender, a ratchet bar *s* is provided which may be pivoted to the lower fender or to the frame bars *c*. The ratchet bar is shown pivoted to the lower fender in Figs. 2 and 3, and operates to hold both fenders separated, for the convenient removal of any object upon the lower fender. The rack bar is shown passed through a staple *s'* upon the bar *j*, one edge of which staple serves to engage the teeth of the rack bar; and a cord *t* with handle *u* at the inner end is shown in Fig. 3 extended over the dash board C upon the car, to detach the rack bar and restore the fenders to their normal position, when desired. When the rack bar is thus disengaged from the staple *s'*, the falling of the upper fender throws the upper part of the latch bar *q* into contact with the upper shoulder *r'* upon the axle of the lower fender, as indicated in Fig. 3, and lifts the lower fender automatically to its normal position, as shown in Fig. 5.

Fittings of special construction are shown at the forward corners of the lower fender and also where the cross bar *i* unites the side bars *c*; but in other respects the entire device may be made of ordinary fittings with threaded joints or smooth joints having pins *g'* to hold the parts in place, as indicated in Fig. 10. The side bars of the fenders are connected with their respective axles by means of T's *v* (see Figs. 8 to 10) through which the rounded ends of the axles are extended and rigidly secured, as by pins *g'*, the extreme ends of the axles (see Fig. 8) being fitted to turn in the side openings of the fittings *a'* and *e*. (See Fig. 6.)

The whole construction is thus very cheap, light and stiff, and requires no finished workmanship, while it possesses the qualities to certainly remove any obstacle from the track, while it is well adapted to prevent injury if such object be a living person.

I am aware that it is not new to employ upper and lower fenders; but I am not aware that any attachment has ever been constructed for street cars with a frame having pins at opposite sides to fit sockets at the opposite ends of the car body, an upper fender pivoted thereon with rollers at its forward end, a latch attached to its axle, and a lower fender pivoted to the frame and supported by said latch.

It is obvious that any form of attachment analogous to the pins *d'* and sockets *f*, *f'* may be used to secure the fender frame detachably to the car platform.

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

1. An attachment for street cars, consisting of a frame with pins at opposite sides to fit sockets at opposite ends of the car body, an upper fender pivoted thereon with rollers at

its front end, and a latch attached to its axle, and a lower fender pivoted to the frame and supported by the said latch.

2. An attachment for street cars, consisting of a frame having the cross-bar *h* at the top, the tie-bar *i* at the bottom and the axles *a* and *b* pivoted therein, the fenders projected forward from the axles as set forth, and the latch upon the axle *a* to engage a shoulder upon the axle *b*.

3. An attachment for street cars, consisting of a frame having upper and lower fenders pivoted thereon with their axles in contiguity, and a cushion sustained between the fenders adjacent to the axles.

4. An attachment for street cars, consisting of the frame having the cross bar *h* at the top, the vertical bars *c* at the sides, and the tie bars *i* at the bottom, two fenders pivoted to the frame by the axles *a* and *b* and projected forward from the axles as set forth, a latch connection between the axles to support the lower fender detachably, and the pins *d'* secured adjustably to the bars *c*, as herein set forth.

5. The combination, with the frame having side bars *c* with bearings therein, of the axle *a* journaled in said bearings, the fender bars *j* attached at their inner ends to the axle *a* and projected forward from the frame and at their front ends bent downward and backward, the cross bar *k* connecting the reflexed ends of the bars *j*, the wheels *k'* journaled thereon, and the cushion *l'* extended between the front curves of the reflexed bars in advance of the wheels *k'* to partially guard the same, substantially as set forth.

6. An attachment for street cars, consisting of the frame having the cross bar *h* at the top, the tie bar *i* at the bottom, and the vertical bars *c* at the sides connected with the cross bars by pipe-fitting joints, two fenders pivoted to the frame by the axles *a* and *b* and projected forward from the axles, as set forth, a latch connection between the axles to support the lower fender detachably, and the sliders *d* fitted adjustably upon the bars *c* and provided with the pins *d'* and the set screws *g*, substantially as set forth.

7. The combination, with an upper fender movable upon an axle *a*, of a lower fender having an axle *b* below and in the rear of the axle *a*, a latch-bar projected downward from the axle *a*, and a shoulder *r'* upon the upper side of the axle *b* to contact with the latch-bar and thus lift the lower fender automatically as the upper fender is lowered, substantially as herein set forth.

8. The combination, with an upper fender movable upon an axle *a*, of a lower fender having an axle *b* below and in the rear of the axle *a*, a latch-bar projected downward from the axle *a* with the hook *q* at the bottom, and shoulders *r* and *r'* formed respectively upon the lower and upper corners of the axle *b*, and adapted to operate with the latch-bar, substantially as herein set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

GEORGE BERKLEY.

Witnesses:
JACOB J. DARST,
THOMAS S. CRANE.