

(No Model.)

5 Sheets—Sheet 1.

A. H. JELLY.
FENDER FOR CARS.

No. 519,472.

Patented May 8, 1894.

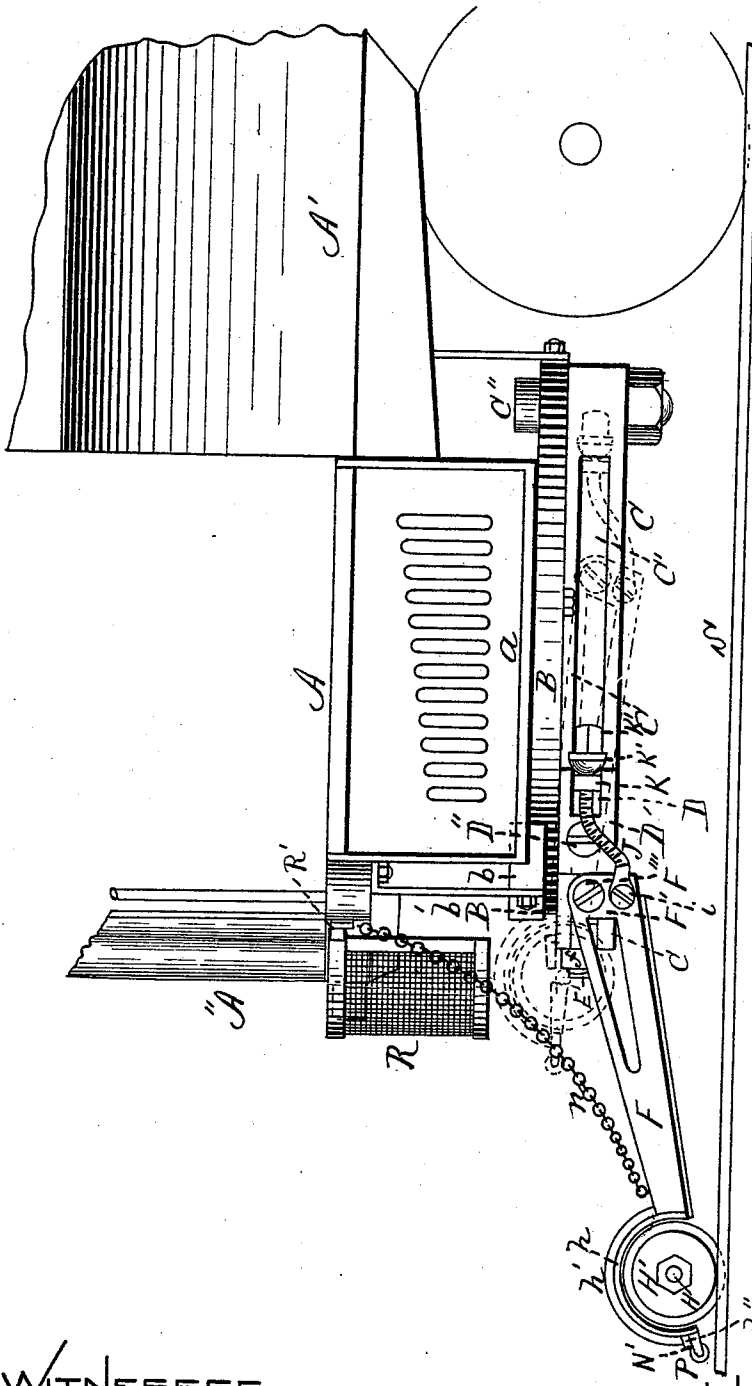


Fig. 1-

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By his Atty.
Henry Williams

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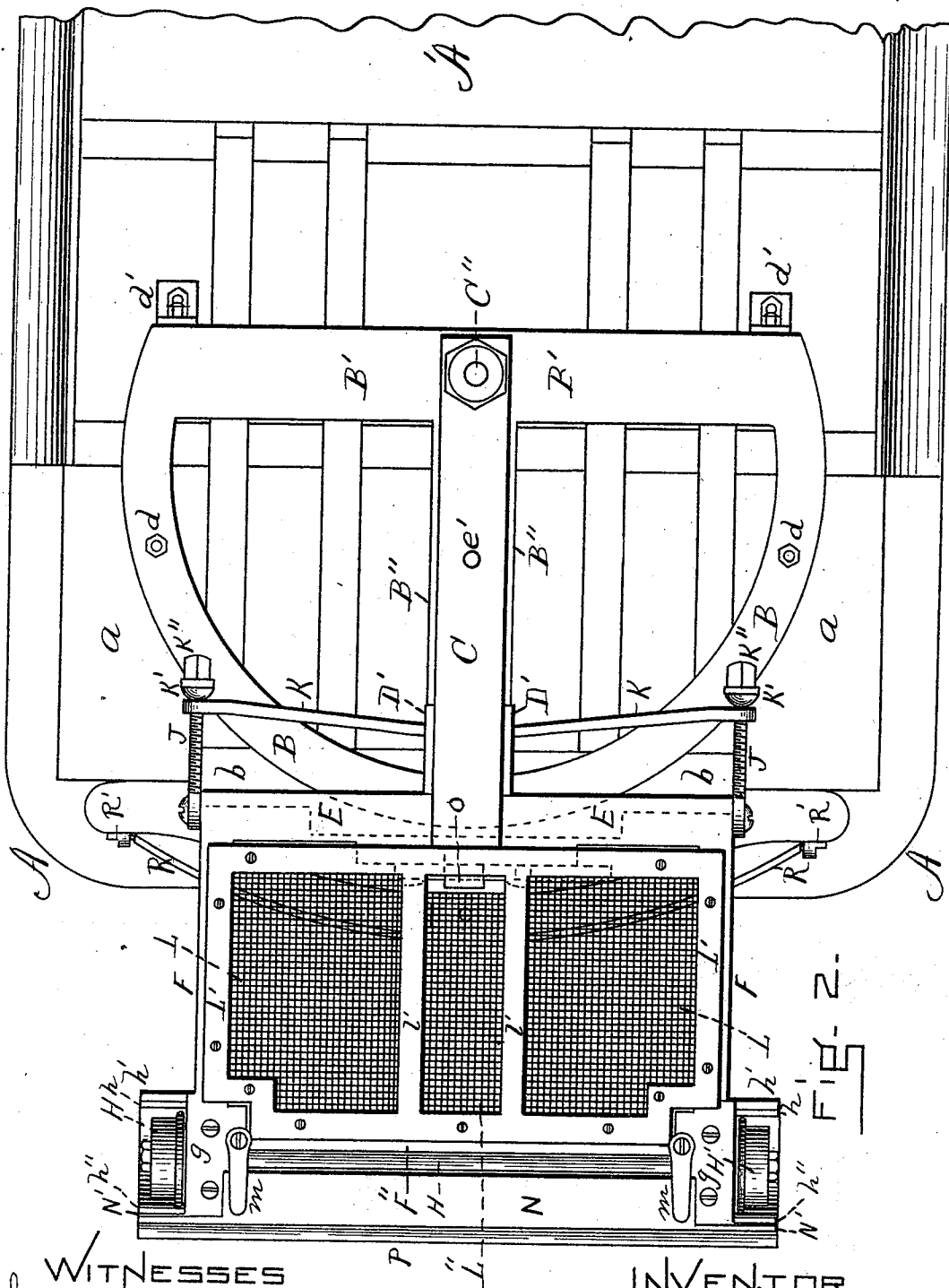


FIG. 2.

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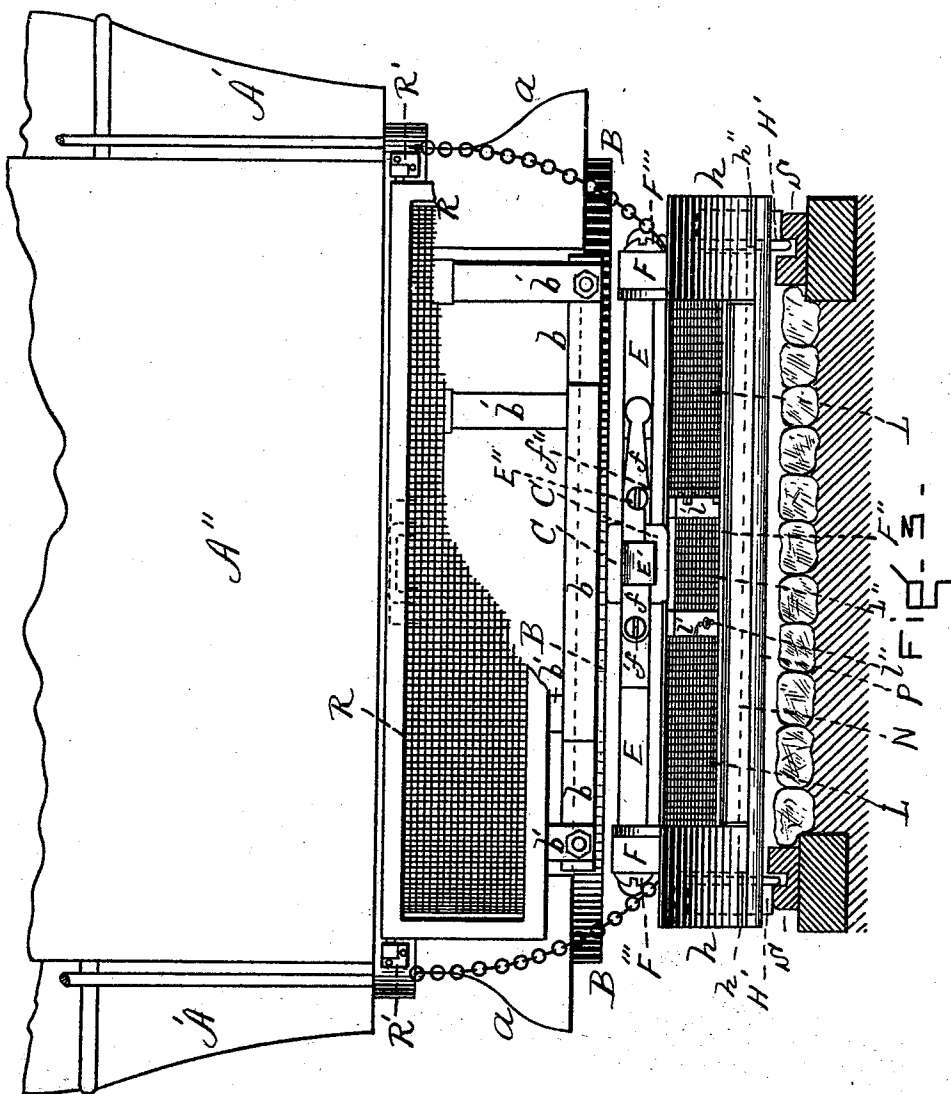
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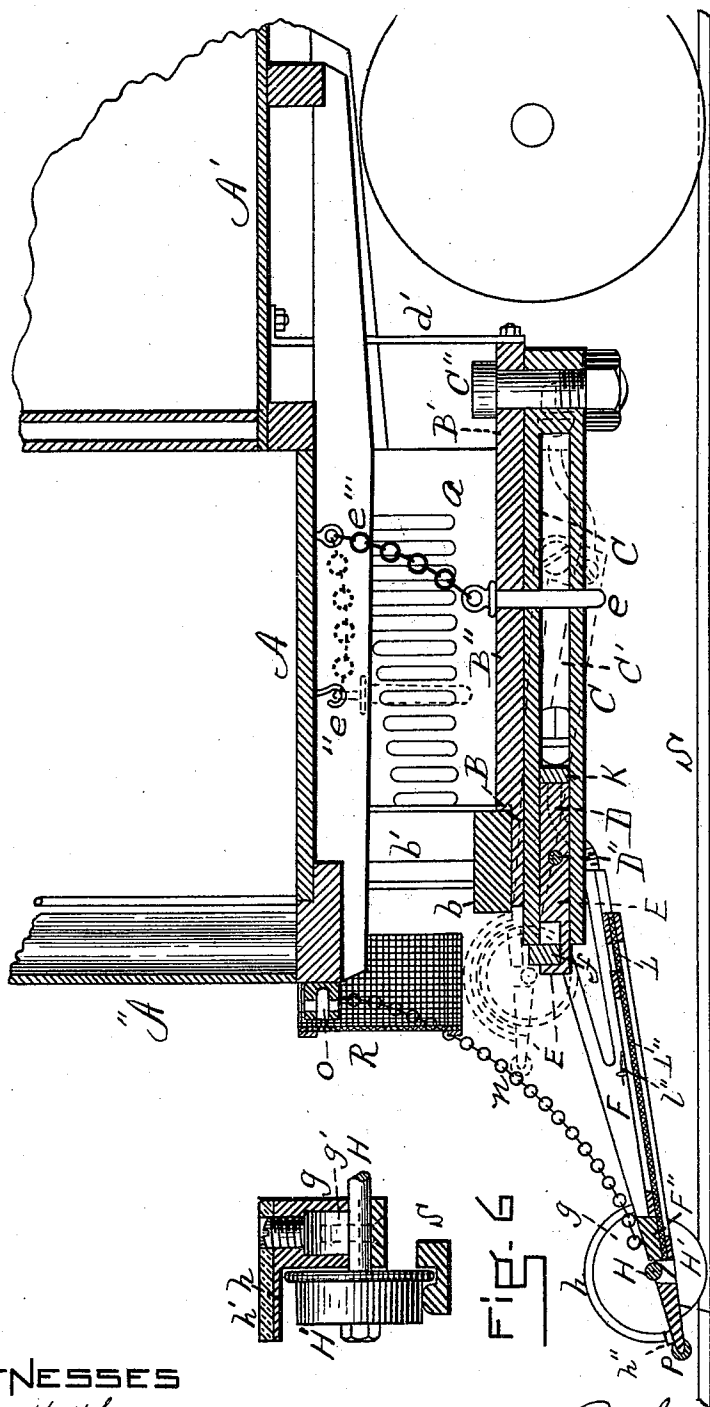


FIG- 4

FIG- 6

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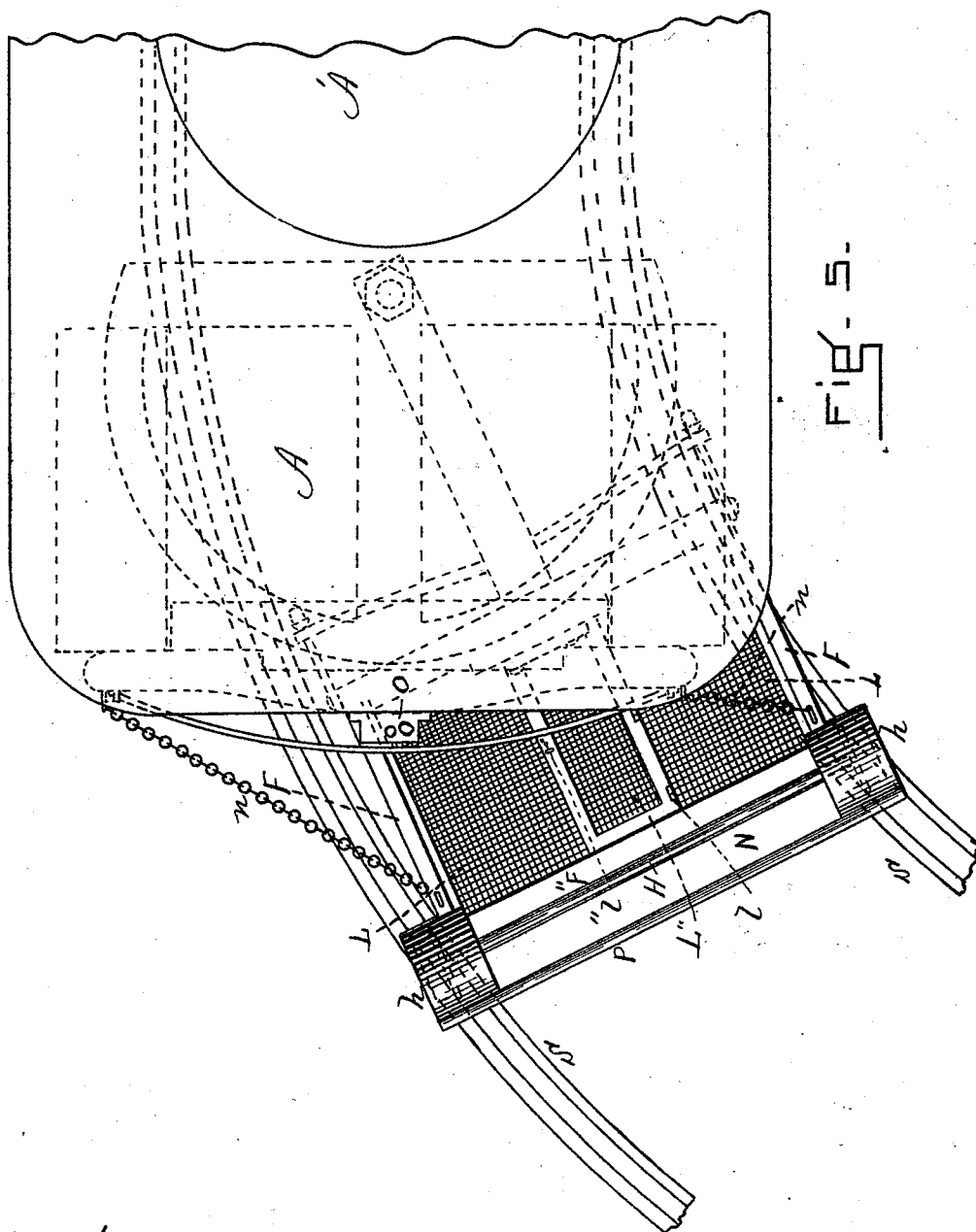


Fig. 5.

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UNITED STATES PATENT OFFICE.

ARTHUR H. JELLY, OF CAMBRIDGE, MASSACHUSETTS.

FENDER FOR CARS.

SPECIFICATION forming part of Letters Patent No. 519,472, dated May 8, 1894.

Application filed July 11, 1893. Serial No. 480,113. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR H. JELLY, a citizen of the United States, residing at Cambridge, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Fenders for Cars, of which the following is a specification.

This invention relates particularly to fenders for use on street cars, especially those propelled by electric or cable power, or other means than horse power, and it belongs to the class of fenders in which the fender runs on the track in front of the car, when in ordinary use, and has a pivotal or swiveled connection with the car in order that it may pass safely around a curve in position on a line which is substantially a radius of the circle of which the curve is an arc.

The nature of the invention is fully described below, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved fender secured to a car in position for use. Fig. 2 is a plan view of the under side. Fig. 3 is a front elevation. Fig. 4 is a central longitudinal section. Fig. 5 is a plan view with the fender passing over or around a curve. Fig. 6 is an enlarged detail in vertical section and elevation, showing one of the wheels of the fender and its box and guard.

The broken lines in Figs. 1 and 4 indicate the position of the fender when it is pushed back under the car, as would be the case when it was out of use.

Similar letters of reference indicate corresponding parts.

A represents the platform of a street car, A' the car body, A'' the dash board, *a* the steps, and *b* the brake support sustained by suitable hangers *b'*. A horizontal segmental frame is supported under the platform, and consists of the curved portion or track B, rear connecting cross piece B' extending transversely with the car, and central brace B'' extending longitudinally with the car from the cross piece B' to the curved portion B. These three parts are preferably made integral, and the frame thus constructed is supported by the brake support, steps and car body, the curved portion B being secured to the brake support *b*, and to the steps *a* by

bolts *d*, and the portion B' being secured to the car body by hangers *d'*.

C is an arm provided with the horizontal slot or slide-way C' and with its rear end pivotally secured or swiveled horizontally by means of a bolt or pin C'' to the center of the cross piece B'. This arm is capable of being locked in a longitudinal position by dropping a bolt *e* (Fig. 4) through coincident holes *e'* (Fig. 2) in the arm C and bar B'', or unlocked by removing said bolt and hanging it on a hook *e''* suspended from the under side of the platform A, to which said bolt is also connected by a chain *e'''*.

D (Fig. 4) is a slide moving in the slot C', and provided with guides D' which flank the arm C on opposite sides, and are secured to the slide by screws D'' or in any suitable manner; see Figs. 1 and 2. Secured to the front of this slide or integral with it as shown, within the slot, is a bar E, which, of course, slides in the slot C' with the slide D. On the front end of the bar E is secured centrally a lip E' which projects through the front end of the arm C and receives a latch *f* which is pivoted at *f'* to the front side of the bar E on one side of the lip, and is provided with a slot *f''* which catches over a button E'' on the bar on the other side of the lip. See Figs. 3 and 4. By this means the bar and slide may be secured rigidly in a forward position.

F F are parallel side arms narrowing in thickness toward the front ends, and with their rear ends F' of considerable thickness vertically, as shown in Fig. 1. The rear ends are pivotally secured at their upper portions at F''' to the ends of the bar E so that they swing vertically therein, while their front ends are connected by a bar F'' so that the bars F F F'' constitute a fender frame. The fender is provided at its front end with an axle H supporting wheels H' fitting on the tracks S, said axle being supported in boxes *g*, having chambers *g'* for oil and waste, (Fig. 6) and provided on their upper surfaces with wheel guards *h* extending outwardly over the wheels so that a person caught by the fender would not come in contact with the wheels thereof. The rear ends F''' of the arms F have pivotally secured to them at *i*, links J

extending through openings in the opposite ends of a spring K which extends horizontally through the slot C' and bears centrally against the rear of the slide D. See Figs. 1, 2, and 4. These links J are screw threaded and are provided with suitable nuts K' K'', so that the tension of the spring is regulated. This spring, by pulling on the lower ends of the rear portions F''' of the side bars F, holds the wheels H' of the fender down on the track, and also tends to hold the swinging arm C up against the curved track B which makes a portion of the segmental frame. By means of the pivotal connection of the side bars F and cross bar E, the wheels of the fender will accommodate themselves to different heights. By means of the pivotal connection C' of the swinging arm C and bar B', the fender and the wheels accommodate themselves to the different curves of the track, the axle H being always radial with said curves. The latch f prevents the fender from sliding back in the arm C.

The fender is provided with a grating or network as L, secured in any desired manner to a frame L' which is attached by screws or other suitable means to the different portions, as F, F'', constituting the frame of the fender. The grating or network is provided centrally, however, with a suitable swinging door L'' hinged at l to a suitable frame l', said door being provided with a latch, hook, or other means l'' for fastening it in position.

The forward end of the fender is provided with a supplemental guard or tipping bar N, which extends toward the rails to within a very short distance thereof, and has wings or extensions N' in front of the wheels H'. This guard or tipping piece has its bearings in the fender frame just forward of the axle H, and it is held in its normal position, that is to say, about on a line with the direction of the fender, by springs m, see Fig. 2—whose rear ends are secured to the under side of the fender frame, and stops h'' on the guards h, see Figs. 1, 2, and 4.

In case a person is struck by the fender, the first contact is usually with the tipping bar N, and the effect is to tip the front edge of said bar down until it strikes the ground or rails, and to effectually close the space between the fender and the ground, so that no portion, such as a hand or foot of a person, can be crowded under the fender. The second effect is apt to be to throw the person upon the network or grating L.

In order that the fender may be lifted in case of an emergency, as in the event of a severe storm, for instance, chains n may be attached to the car and extend to the frame of the fender if desired, such chains being of course easily accessible to the motor-man or driver.

When the fender is not to be used, as in the case of the return trip of the car, it is stowed away under the car, in the position shown in broken lines in Figs. 1 and 4, by

first lifting the latch f so as to release the slide D, then swinging back the door L''; then lifting the front edge of the fender forcibly and pushing it back, the slide D sliding in the slot C' until the front end of the swinging bar C extends through the space produced by folding back the door L'', and under the front bar F'' of the frame of the fender, which hence rests on and is supported by the swinging bar C in a raised position. The bolt e, which is supposed to be hung up on the hook e'' while the fender is in use on the track, allows the slide to move back in the slot C', and may then be placed in the holes e' and serve to prevent the bar C from swinging, and also to prevent the fender from being drawn out.

I prefer to provide the front edge of the tipping bar N with a rubber tip or sheath P, preferably of approximately circular shape in cross section, in order to lessen the possibility of injury from a blow from the front edge of the said tipping bar, and also to protect the tipping bar when it strikes the pavement. The wheel boxes and guards are also provided with rubber shields or buffers h', as shown in Fig. 6. In order to prevent a person from being thrown against the bunter O or between the fender and the platform, I provide a substantially vertical wire frame or grating R, which is secured at R' to the front of the car, and substantially covers the space between the dash board and fender. In order that this guard may not interfere with the bunter or coupling mechanism O, I make it horizontally in the form of a curve, see Figs. 1, 4, and 5. Its connection with the car is preferably pivotal in order that it may be swung up if desired.

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

1. In combination with a fender pivotally secured to the car and traveling on the rails whereby it is held radial to the curvature of the track, a curved track against which the supporting swinging arm of the fender bears, said track being supported below and secured to the car step, brake support and car, substantially as set forth.

2. A car fender, comprising a frame supported by the car, a horizontally swinging arm pivotally supported by the frame, a slide traveling longitudinally on or with relation to said arm, and a vertically swinging fender or scoop pivotally connected with the slide, substantially as described.

3. A fender adapted to travel on the rails and be held radial to the curvature of the track, comprising a frame and a horizontally slotted and horizontally swinging arm whose rear end is pivotally supported by said frame, a slide traveling longitudinally in said slot, and a vertically swinging fender or scoop whose rear portion is pivotally connected with the front end of said slide, substantially as set forth.

4. A fender adapted to travel on rails and

be held radial to the curvature of the track, comprising a frame and a horizontally slotted and horizontally swinging arm whose rear end is pivotally supported by said frame, a slide 5 traveling longitudinally in said slot, a vertically swinging fender or scoop whose frame is pivotally connected with the front end of said slide, and a spring bearing against the rear portion of the slide and connected with 10 the frame of the fender whereby the front portion of said fender is held normally on the track, substantially as described.

5. In combination, the segmental frame B B' provided with the longitudinal brace B'', 15 and the swinging arm C for supporting the fender, pivoted near its rear end to said frame and adapted to be locked to said brace, substantially as set forth.

6. In combination, the horizontally swinging arm C pivoted to a frame secured beneath 20 the car, the slide D D' moving in said slot, the cross bar E rigid with said slide, and the vertically swinging fender arms F pivotally secured to the opposite ends of said cross bar, 25 substantially as described.

7. In combination, the fender frame comprising the parallel side arms F having the vertically broad rear ends or heels F'', and the horizontal bar E, the said rear ends being 30 pivotally connected with the said bar so as to swing vertically, the slide D, slotted arm C, spring K bearing against said slide within the slotted arm, and the adjustable threaded links J the rear ends of which are secured to 35 the opposite ends of said spring and the front ends of which are pivotally secured to said rear ends F'' below the connection of said ends with the bar E, whereby the forward end of the fender is held normally down, sub- 40 stantially as set forth.

8. A car fender, comprising a bar sliding longitudinally with relation to a suitable support sustained by the car, a fender or scoop

hinged vertically to said bar, and a spring bearing against said bar and acting on the 45 fender, whereby the front end of said fender is held normally down on the car track, substantially as described.

9. In combination, the fender frame, supplemental guard N pivotally secured to the fen- 50 der and held normally raised by the springs *m* bearing on its under side, said guard being provided with the end wings or extensions N', and the wheel guards *h* provided on their forward sides with the stops *h''*, substantially as 55 described.

10. The fender frame provided with the wheel boxes *g* having the chambers *g'* and wheel guards *h* extending from said boxes over the fender wheels, substantially as de- 60 scribed.

11. The fender frame provided with the wheel boxes *g* having the chambers *g'* and wheel guards *h* extending from said boxes over the fender wheels, said guards being pro- 65 vided externally with the elastic shields *h'*, substantially as set forth.

12. The fender provided with the stationary nettings or grates L and the central swinging door L'' of substantially the same material, 70 substantially as described.

13. In combination, the bar E provided with the lip E' and button E'' and the latch *f* pivoted at *f'* and provided with the recess 75 *f''*, substantially as set forth.

14. In combination with the fender and car, the bunter guard R secured to the car in front of the bunter and above the fender and acting as a supplement to the latter, said guard R being curved centrally forward to clear the 80 bunter, substantially as set forth.

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Witnesses:

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