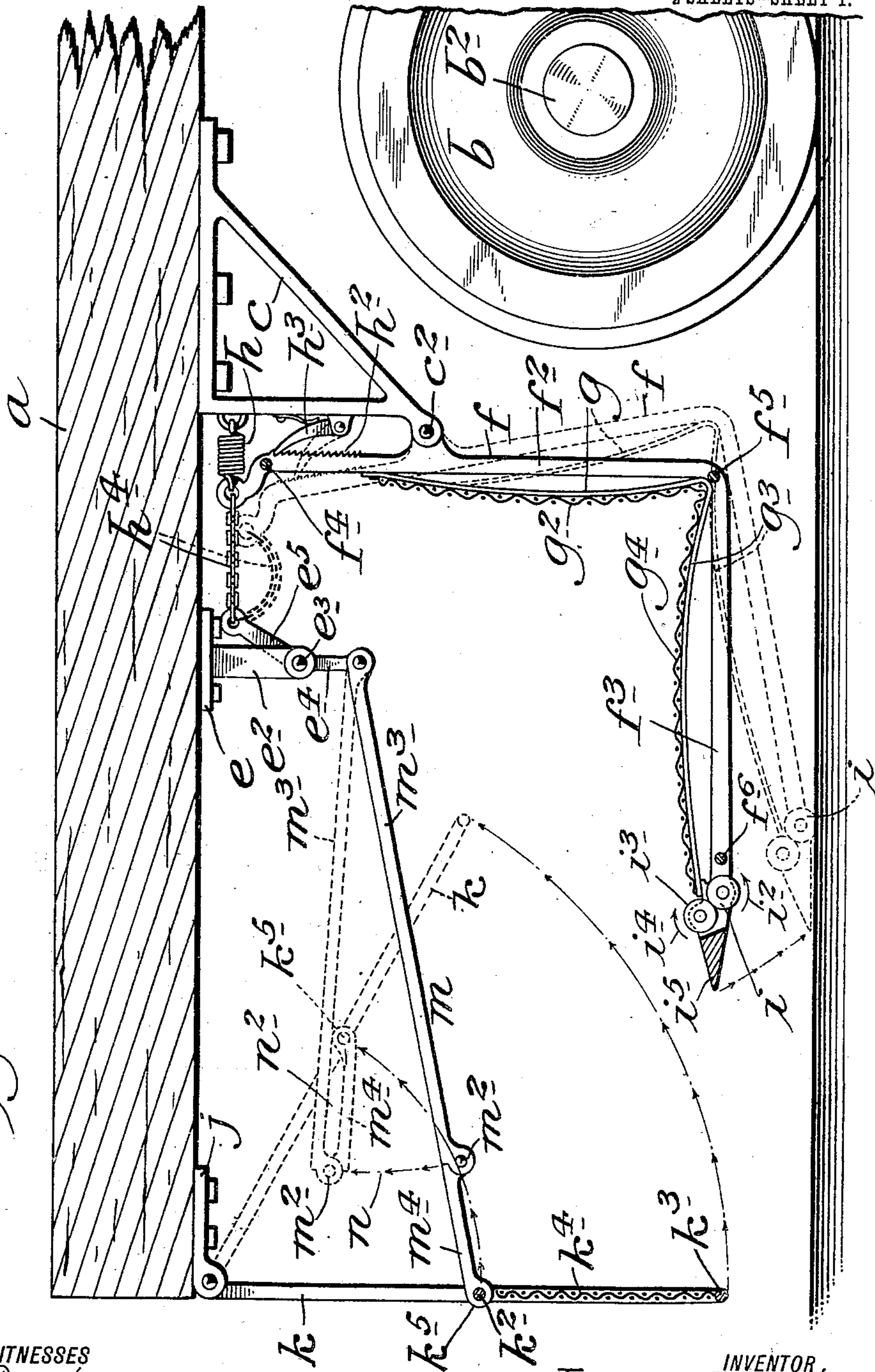


CAR FENDER OR GUARD.

Patented May 18, 1909.

2 SHEETS--SHEET 1.

Fig. 1.



M. E. Doody.  
C. E. Ombrey

INVENTOR,  
Thomas F. Hayes,

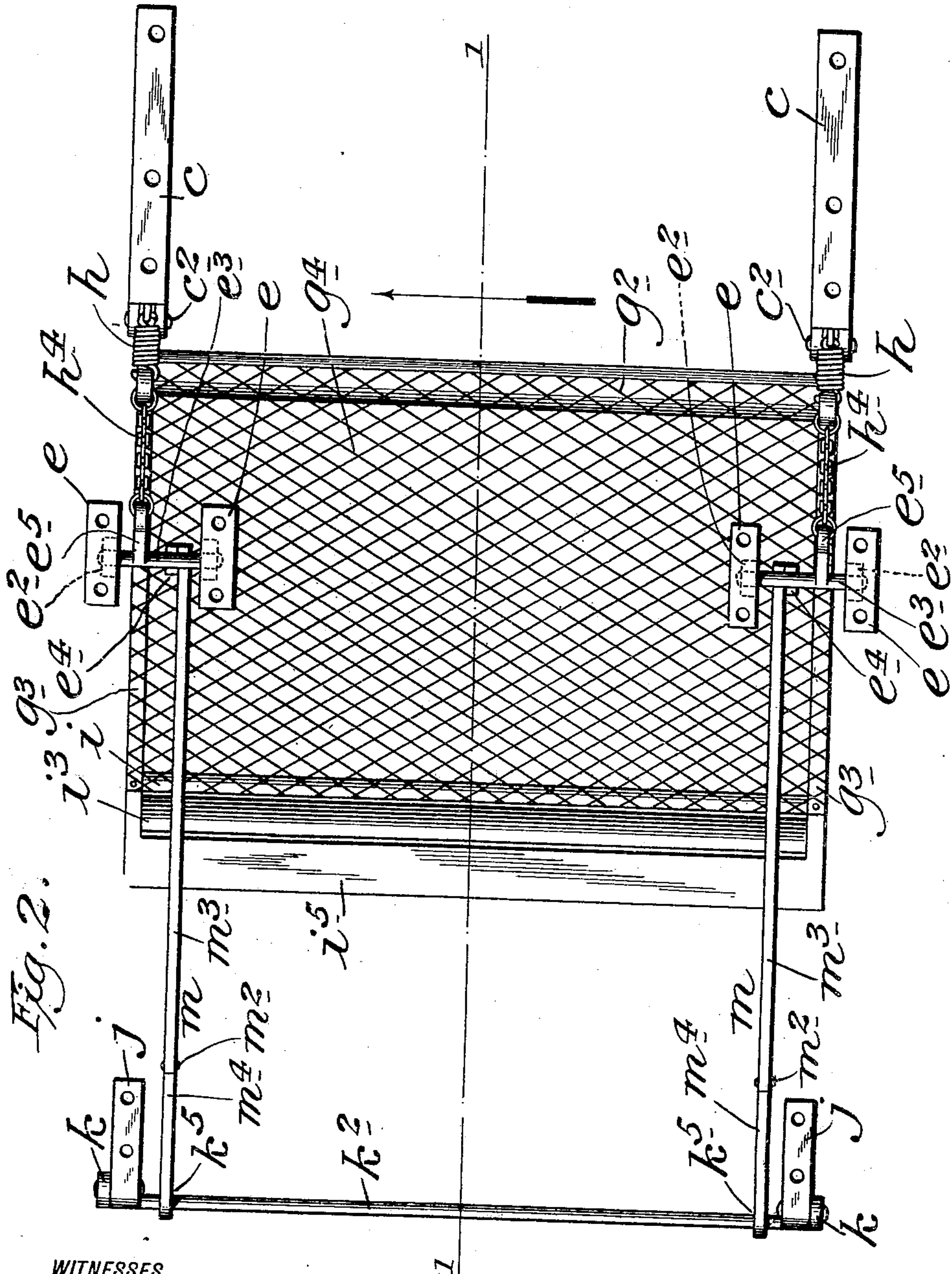
Edgar Tatel Co.

**ATTORNEYS.**

921,831.

T. F. HAYES.  
CAR FENDER OR GUARD.  
APPLICATION FILED MAY 1, 1908.

Patented May 18, 1909.  
2 SHEETS—SHEET 2.



WITNESSES  
M. E. Dwyer  
C. E. Mulhearn

BY

INVENTOR  
Thomas F. Hayes  
Edgar & Bates Co.  
ATTORNEYS



# UNITED STATES PATENT OFFICE.

THOMAS F. HAYES, OF NEW YORK, N. Y.

## CAR FENDER OR GUARD.

No. 921,831.

Specification of Letters Patent.

Patented May 18, 1909.

Application filed May 1, 1908. Serial No. 430,270.

*To all whom it may concern:*

Be it known that I, THOMAS F. HAYES, a citizen of the United States, and residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Car Fenders or Guards, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to fenders or guards for use in connection with tramway cars, and the object thereof is to provide an improved device of this class which is placed beneath the platform of a car at one or both ends thereof, and which is designed to prevent the serious and sometimes fatal accidents resulting from a person being struck by a car when in motion; and with this and other objects in view, the invention consists in a car fender or guard constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:—

Figure 1 is a longitudinal vertical section on the line 1—1 of Fig. 2, and showing my improved fender or guard applied to a car, and;—Fig. 2 a plan view of the fender or guard detached from the car.

In the drawings forming part of this specification, I have shown at *a* one of the end platforms of a car, and at *b* one of the wheels which is mounted on one of the axles *b*<sup>2</sup>, and in the practice of my invention I secure to the bottom of the platform over and in front of the first pair of wheels at the end of the car, brackets *c* which are preferably triangular in form, and forwardly of which are secured plates *e* provided with hangers *e*<sup>2</sup> which are arranged in pairs at the opposite sides of the platform, and mounted in said hangers are shafts *e*<sup>3</sup>, each of which is provided with a downwardly directed arm *e*<sup>4</sup>, and an upwardly and backwardly directed arm *e*<sup>5</sup>.

Pivoted to the brackets *c* at *c*<sup>2</sup> is a main fender or guard frame *f* composed of a vertically arranged member *f*<sup>2</sup>, at the bottom of which is a forwardly directed member *f*<sup>3</sup>, and said frame is preferably composed of side

bars connected by transverse rods *f*<sup>4</sup>, *f*<sup>5</sup> and *f*<sup>6</sup>, and secured to the front side parts of the vertically arranged portion *f*<sup>2</sup> of said frame are forwardly curved spring bars *g*, to which is secured a net work *g*<sup>2</sup> of wire or any other suitable material and which closes the central portion of the vertically arranged part *f*<sup>2</sup> of said frame, and secured to the side bars of the forwardly extending portion *f*<sup>3</sup> of said fender or guard frame are upwardly curved spring plates or bars *g*<sup>3</sup> to and between which is secured a net work *g*<sup>4</sup> of wire or any other suitable material and which closes the central portion of said part *f*<sup>3</sup> of the said fender or guard frame.

The side bars of the vertically arranged part *f*<sup>2</sup> of the main fender or guard frame are extended upwardly approximately to the bottom of the platform *a*, and connected with the upper ends thereof and with the brackets *c* are spiral springs *h* which normally serve to pull the top part of said frame rearwardly as shown in full lines in Fig. 1, and the back sides of the side bars of said part *f*<sup>2</sup> of said frame, above the pivotal point at *c*<sup>2</sup> are provided with ratchet teeth *h*<sup>2</sup>, and spring operated pawls *h*<sup>3</sup> are pivoted to the brackets *c* and operate in connection with said ratchet teeth. I also connect with the upper end of the vertically arranged part *f*<sup>2</sup> of the main fender or guard frame or with the tops of the side bars thereof, chains *h*<sup>4</sup> which are also connected with the arms *e*<sup>5</sup> of the shafts *e*<sup>3</sup> which are mounted in the hangers *e*<sup>2</sup>.

Mounted transversely of the front end portion of the forwardly directed part *f*<sup>3</sup> of the main fender or guard frame *f* and in the bottom thereof is a roller *i* which is adapted, when said part of said frame is depressed as shown in dotted lines in Fig. 1, to bear on the ground and to turn in the direction of the arrow *i*<sup>2</sup>, and mounted above and forwardly of the roller *i* is another roller *i*<sup>3</sup> which bears thereon and is adapted to be turned thereby in the direction of the arrow *i*<sup>4</sup>, and said part *f*<sup>3</sup> of the main fender or guard frame is provided forwardly of the rollers *i* and *i*<sup>3</sup> with a transverse wedge-shaped member *i*<sup>5</sup> which is normally supported close to the ground, or to the tracks when the said frame is held in its normal position shown in full lines in Fig. 1.

Secured to the bottom of the front end portion of the platform *a*, and at the oppo-



site sides thereof are plates  $j$  to which is pivoted a depending supplemental fender or guard frame  $k$  provided with a central transverse rod  $k^2$  and with a bottom transverse rod  $k^3$ , and the bottom portion of said frame is filled in with a net work  $k^4$  of wire mesh or any suitable material. Pivoted on the transverse rod  $k^2$  of the frame  $k$  and inwardly of the side members of said frame, as shown at  $k^5$ , are link rods  $m$  which are pivoted at their rear ends to the arms  $e^4$  of the shafts  $e^3$ , and said link rods are composed of two parts connected by an elbow-hinge joint at  $m^2$ , the rear end portions  $m^3$  of said rods being much longer than the front end portions  $m^4$  thereof, and the rods  $m$  serve to pull the main fender or guard frame  $f$  into the position shown in dotted lines in Fig. 1, and against the operation of the springs  $h$ , when the supplemental frame  $k$  is operated as hereinafter described.

The operation will be readily understood from the foregoing description, when taken in connection with the accompanying drawings and the following statement thereof. It will be understood that the supplemental fender or guard frame  $k$  extends downwardly to a short distance above the ground, and if a person be struck by the car when in motion and knocked down, the lower end portion of the frame  $k$  coming in contact with such person will be thrown backwardly into the position shown in dotted lines in Fig. 1. The rods  $m$  will move upwardly at the joint  $m^2$  thereof as indicated by the arrows  $n$  and the shorter end portions  $m^4$  of said rods will swing backwardly, downwardly and upwardly, the separate parts of said rods  $m$  assuming the position shown in dotted lines at  $n^2$ . At the beginning of this movement of the rods  $m$ , the shafts  $e^3$  in the hangers  $e^2$  will be rotated and the arms  $e^4$  of said shafts will be forced backwardly, the arms  $e^5$  forwardly, and the springs  $h$  will force the main fender or guard frame into the position shown in dotted lines in Fig. 1, and the spring operated pawls  $h^3$  will move downwardly over the ratchet teeth  $k^2$  and will hold said frame in said position. In this position of said frame the bottom roller  $i$  in the front will bear on the ground, and the part  $i^5$  will pass beneath the body of the person struck, and such person will move backwardly into the main fender or guard frame and will be prevented from passing beneath the car. At the end of the above operation of the separate parts of the fender or guard, comprising the frames  $f$  and  $k$ , the supplemental frame  $k$  may be pulled down into the position shown in full lines in Fig. 1, and in order for the main fender or guard frame  $f$  to assume the position shown in full lines in Fig. 1 the pawls  $h^3$  must first be released and re-adjusted as shown in full lines in said figure.

As shown and described, it will be seen, that the separate parts of the main fender

or guard frame  $f$  are substantially at right angles to each other, and the bottom part  $f^3$  thereof is normally supported at a predetermined distance above the ground, as is also the bottom part or end of the supplemental frame  $k$ , this construction being necessary in order to provide for a slight vertical movement of the platform  $a$  in the operation of the car.

My invention is not limited to the exact details of construction herein shown and described, and various changes therein and modifications thereof may be made, within the scope of the appended claims, without departing from the spirit of my invention or sacrificing its advantages.

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

1. A fender or guard for tramway cars suspended beneath an end platform thereof and comprising main and supplemental frames, the supplemental frame being suspended from the end portion of the platform and the main frame being suspended rearwardly of the supplemental frame and being L-shaped in form and being pivotally supported and adapted to swing in a vertical plane, one part thereof being normally held in an upright position, and the other part extending forwardly from the bottom of the first named part, tension devices operating in connection with the top portion of said frame for holding said frame in its normal position, a shaft mounted in front of the main frame and provided with upwardly directed arms which are connected with the top portion of said frame and with downwardly directed arms, and link rods connected with the supplemental frame and with the downwardly directed arms of said shaft, said link rods being provided with joints adapted to swing upwardly.

2. A fender or guard for tramway cars suspended beneath an end platform thereof and comprising main and supplemental frames, the supplemental frame being suspended from the end portion of the platform and the main frame being suspended rearwardly of the supplemental frame and being L-shaped in form and being pivotally supported and adapted to swing in a vertical plane, one part thereof being normally held in an upright position, and the other part extending forwardly from the bottom of the first named part, tension devices operating in connection with the top portion of said frame for holding said frame in its normal position, a shaft mounted in front of the main frame and provided with upwardly directed arms which are connected with the top portion of said frame and with downwardly directed arms, and link rods connected with the supplemental frame and with the downwardly directed arms of said



shaft, said link rods being provided with joints adapted to swing upwardly, said main frame being also provided with ratchet devices adapted to hold the bottom part thereof in a depressed position.

presence of the subscribing witnesses this 30th day of April 1908.

THOMAS F. HAYES.

Witnesses:

M. E. DOODY,  
C. E. MULREANY.

In testimony that I claim the foregoing as my invention I have signed my name in