

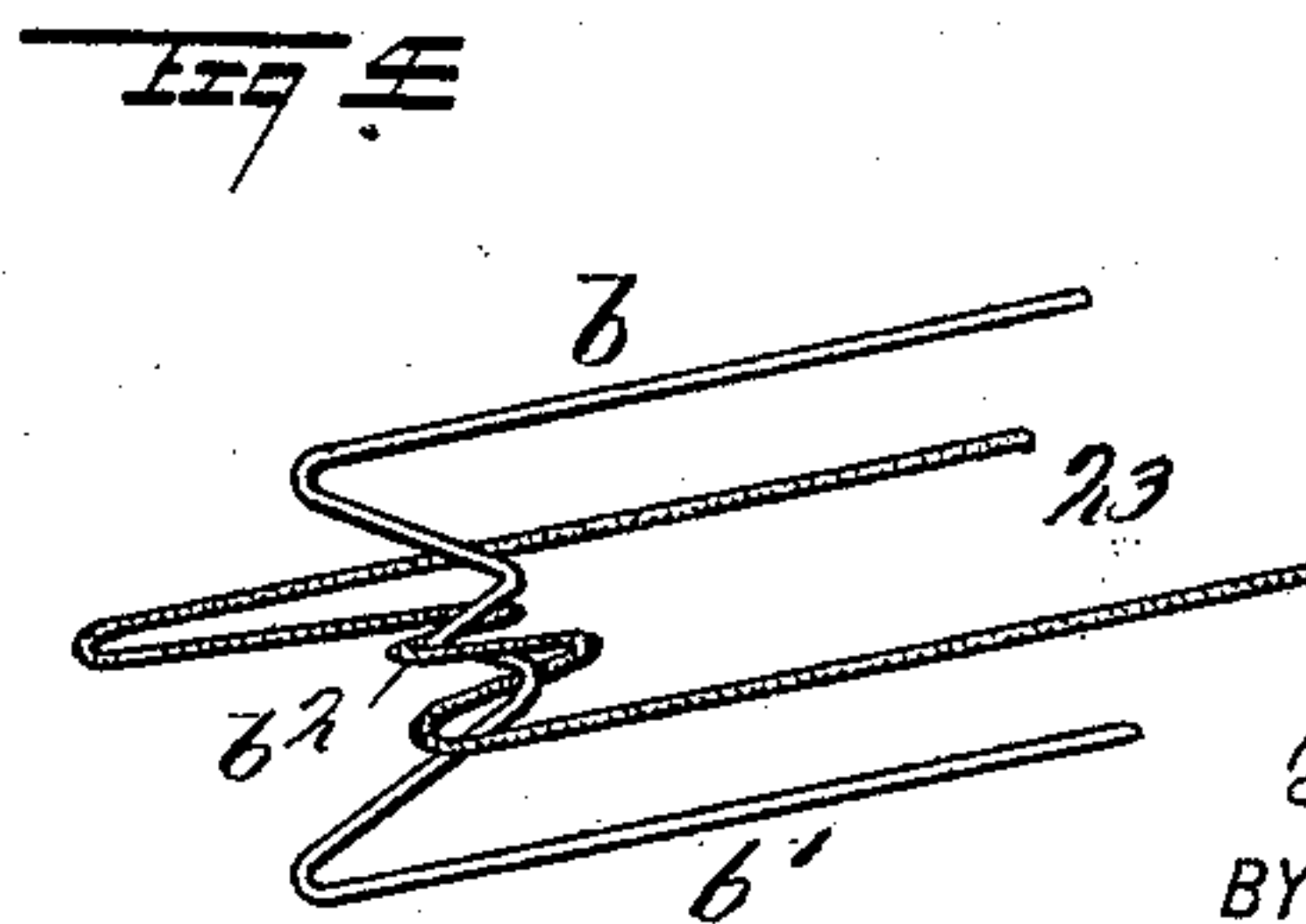
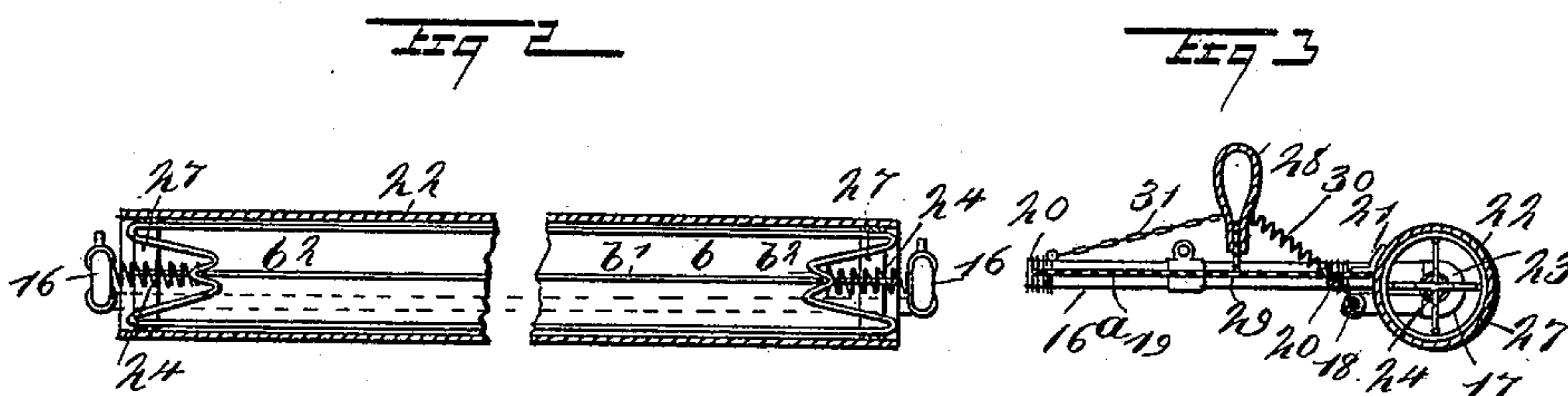
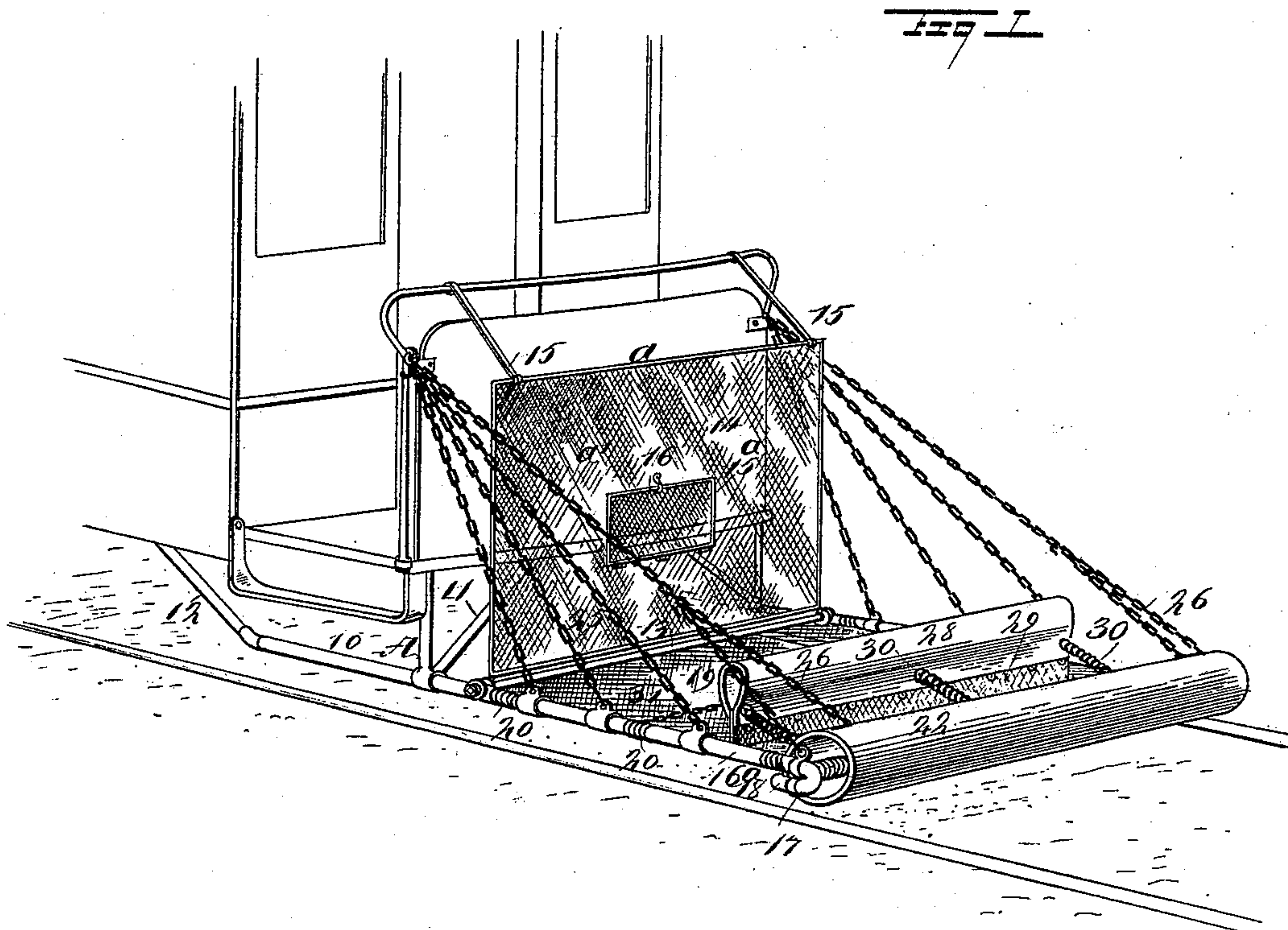
(No Model.)

H. S. ROBINS.

SAFETY FENDER FOR TRAM, ELECTRIC, OR CABLE CARS.

No. 525,233.

Patented Aug. 28, 1894.



WITNESSES:

H. Walker
E. M. Clark

INVENTOR

H. S. Robins
BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

HENRY STUART ROBINS, OF PHILADELPHIA, PENNSYLVANIA.

SAFETY-FENDER FOR TRAM, ELECTRIC, OR CABLE CARS.

SPECIFICATION forming part of Letters Patent No. 525,233, dated August 28, 1894.

Application filed September 16, 1893. Serial No. 485,543. (No model.)

To all whom it may concern:

Be it known that I, HENRY STUART ROBINS, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Safety-Fender for Tram, Electric, or Cable Cars, of which the following is a full, clear, and exact description.

My invention relates to a safety fender especially adapted for tram, electric and cable cars, and it has for its object to improve upon the fender for which Letters Patent were granted to me October 24, 1893, No. 507,167.

The invention consists in simplifying the construction of the fender, and providing a means whereby the body may be made in two sections, one section separated from the other, and whereby also the flexible guards will be in the shape of tubes of elastic material, and have spring connection with the frame, and whereby also the forward guard may be elevated or lowered to approach the track more or less closely.

A further feature of the invention is to provide a means whereby access may be readily obtained to the coupler of a car when two cars are to be coupled together, and likewise to provide a means whereby the horizontal member of the fender will be supported from the car fender, its weight being distributed equally on the sides of the fender.

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 perspective view of the fender illustrated as applied to the car. Fig. 2 is a longitudinal vertical section through the forward guard of the fender. Fig. 3 is a partial longitudinal section through the horizontal member of the body of the fender, the section being taken through both of the guards; and Fig. 4 is a broken perspective view of the support for the forward guard or cushion.

The stationary frame A of the fender is secured to the bottom of the car at one end thereof, and consists of side bars 10 and front and rear brackets 11 and 12, whereby the side

bars are held a predetermined distance from the ground. The side bars extend forwardly beyond the plane of the front face of the platform, as shown in Fig. 1, and are connected by a front cross bar 13, and upon this front cross bar a screen 14, is erected, which screen extends upward in front of the dash board of the car, being removed a predetermined distance therefrom, and it is preferably supported at its upper end through the medium of bracket arms 15, attached to the upper portion of the dash board near its ends, and to the upper portion of the screen. The screen 14, usually consists of a frame *a* and a body portion *a'* of woven wire or equivalent material, the body portion of the screen 14 being provided with an opening surrounded by a border 15^a, the opening being normally closed by a door 16, of like material as the body; the door is preferably hinged to the body, and the opening is so located that when the door is opened access may be readily obtained to the drawhead of the car, thus enabling a coupling to be effected with a second car when desired.

The screen 14, comprises one section of the body of the fender; the second section is horizontally located, and is placed in front of the lower end of the screen or stationary section, the horizontal section being adapted to be raised and lowered when desired.

The movable, horizontal, forward section of the fender consists of side bars 16^a, which at their inner ends are preferably given a hinged connection with the forward extremities of the side bars 10 of the stationary frame A. At the forward ends of the side bars 16^a, an elbow or return bend 17, is located, and a cross bar 18 connects the return bends of the opposite side bars 16^a, as shown in Fig. 3, the cross bar being located back of the forward extremities of the said side bars. A bed 19, of woven wire or wire netting is located between the side bars 16^a, and is connected with said side bars through the medium of springs 20, located at intervals along the side edges of the bed; and at intervals upon the bed at its forward end cleats 21, are located, as shown in Fig. 3, and it may here be remarked that the bed does not extend to the forward end of the side bars 16^a, but is stopped a predetermined distance rearward of said ends in

order to provide a space to accommodate the forward guard or cushion 22. This guard or cushion is preferably made of rubber tubing of suitable diameter, the said rubber tubing being held expanded through the medium of a support 23, adapted to be located within the tubing. This support, as shown in Figs. 2 and 4, is preferably made up of two rectangular skeleton frames b and b' , preferably made of stout wire. The ends of the wire are bent inward substantially in the shape of a letter **M**, and the two frames are placed at right angles to each other and are made to cross one another at their centers, being interlocked at their end portions, as illustrated in Fig. 4. By shaping the ends, as heretofore stated, substantially as the letter **M**, a central finger b^2 , is obtained at each end, and in interlocking these two frames these two fingers are brought together. The fingers are employed as a medium for attaching to the support 23 a spring 24, one spring being located at each end; and the outer ends of the springs are secured in any suitable or approved manner to the forward extremities of the side bars of the adjustable or forward member of the fender, and the guard is held in engagement with the bed by attaching the guard to the cleats 21.

The side bars of the adjustable section of the fender are supported in their horizontal position through the medium of chains 25, which are connected to the bars at intervals in their length, as shown in Fig. 1; and all of the chains are grouped together at their inner ends and connected preferably in a detachable manner with the upper end portions of the dash board of the car. A comparatively short length of chain 26, is attached to the inner face of the guard 22 at or near each end, and these latter chains are provided with hooks, as shown in Fig. 1, adapted to engage with the links of the forward supporting chains 25; and by means of the chains 26 the guard 22 may be raised or lowered in a manner to regulate its distance from the track. Preferably the supporting frame 23 of the guard is strengthened at its ends by bands 27, as illustrated in Fig. 2. The guard 22, virtually forms a flexible partition on the yielding bed of the advance section of the fender; and a second yielding partition 28, is formed upon the yielding bed of the said advance fender section a predetermined distance to the rear of the guard or forward partition 22. The rear partition 28, consists of a tube of yielding material such as rubber, or a sheet of the same bent practically to a tubular form; and the tube or sheet of yielding material, whichever is used, is firmly secured at its lower end to the base 29, which may consist of a wire panel, the said base being secured to the yielding bed 19 transversely thereof, and it extends practically from side to side.

The yielding portion of the rear flexible guard or partition 28 is connected with the

frame of the wire bed portion of the fender through the medium of a series of springs 30, whereby the rear guard or partition may yield in a rearwardly direction; but the said guard or partition 28, is prevented from moving in a forwardly direction by chains 31, which are attached to the said rear partition or guard near its ends at its back, and to the side bars 16^a of the advance frame. It will thus be observed that should a person be on the track and should be struck by the forward guard or partition 22, it being very near the ground, will cause the person to fall upon the yielding bed 19 back of the rear partition or guard 28, and the latter will cause the feet of the person falling to be raised from the ground, as the legs will be elevated at the knee, and the rear partition will likewise serve to prevent persons falling off at the front of the fender, or from attempting to escape in that direction, being particularly a safe-guard when a child is thrown upon the bed of the fender; as both of the guards or partitions are of a yielding material the person struck will not be hurt to any appreciable extent, and as the bed upon which the person must fall is yielding and spring supported, there is also but little jar of an injurious character.

When desired the advance section of the fender may be removed from the stationary fender at one end of the car and transferred to the corresponding fender section at the opposite end of the car; and when the car is to be placed in the car house, or when occasion may demand, the advance fender section may be raised substantially parallel with the rear and fixed section.

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

1. A fender for cars, comprising a frame, a bed carried by the frame, and transverse guards of a tubular character, the said tubular guards being formed of soft elastic material, substantially as shown and described.

2. A fender for cars, comprising a frame, a yielding bed carried by the frame, a tubular guard formed of soft elastic or yielding material, said guard being located at the forward portion of the bed, and means for holding said tubular guard expanded, substantially as shown and described.

3. A fender for cars comprising a frame, a yielding bed carried by the frame, a yielding guard located at the forward portion of the bed, and means for raising and lowering said guard, independent of the movements of the bed substantially as shown and described.

4. A fender for cars, comprising a frame, a yielding bed carried by the frame, and a guard or partition located at the forward portion of the bed, the same consisting of a tube of yielding material, a spring frame located within the tube, and springs connected with the tube frame and with the fender frame, substantially as shown and described.

5. A fender for cars, the same consisting of a frame provided with a yielding bed, a tubular spring supported guard located at the forward portion of the bed, a second yielding partition or guard located upon the bed at the rear of the forward guard, the rear partition or guard being capable of a rearward movement only, substantially as shown and described.

10 6. A fender for cars, the same consisting of a frame provided with a yielding bed, a tubular spring supported guard located at the forward portion of the bed, a second yielding partition or guard located upon the bed at

the rear of the forward guard, a spring connection between the forward surface of the rear partition or guard and the frame of the wire bed portion of the fender, and chains connecting the rear portion of the rear partition with the frame of the fender, whereby the rear partition is capable of a spring-controlled rear movement, but not a forward movement, substantially as described.

HENRY STUART ROBINS.

Witnesses:

EDWD. F. DAVIS,
CHAS. MCGLATHERY.