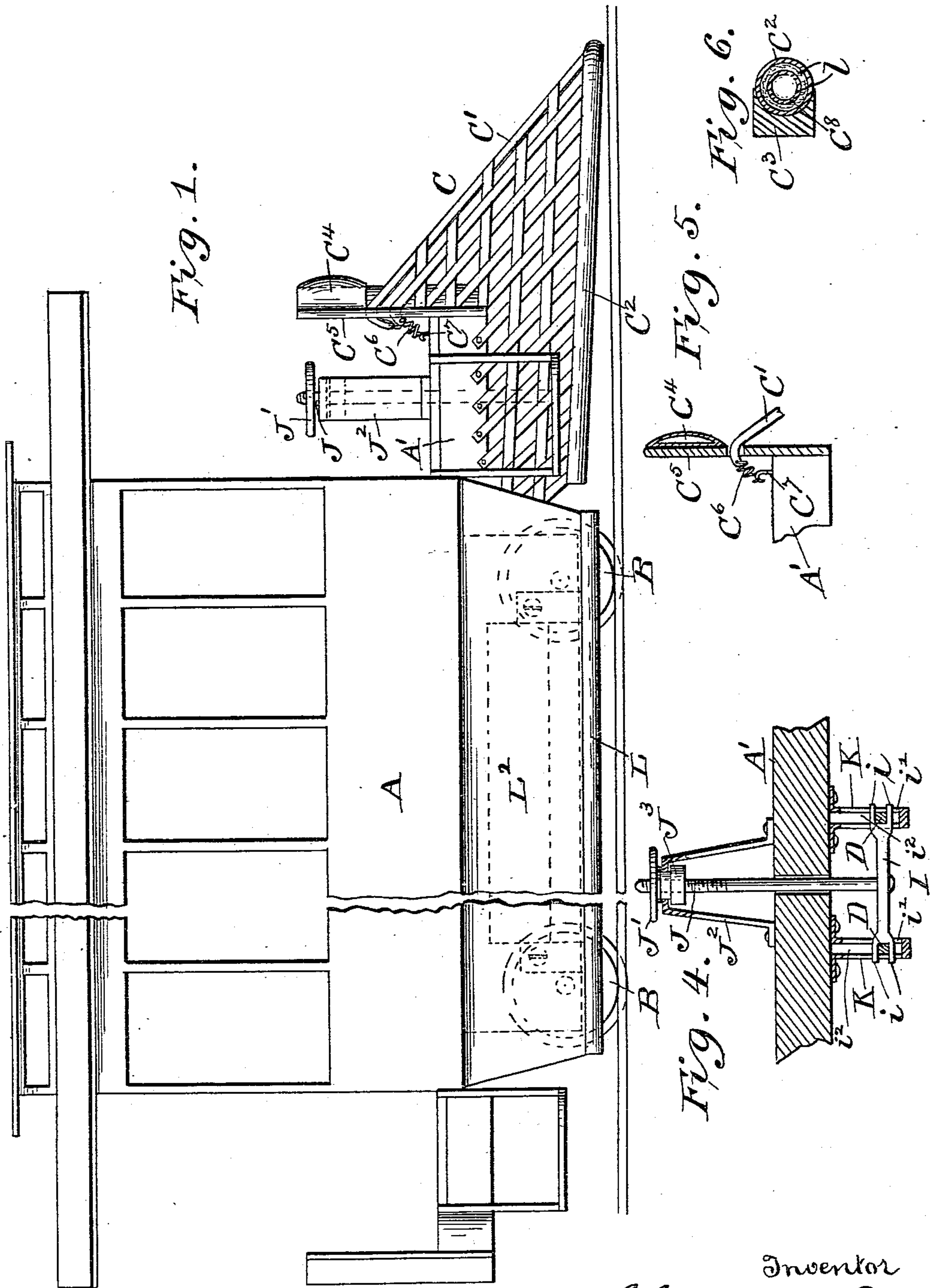


C. M. PRATT.
CAR FENDER.

No. 555,400.

Patented Feb. 25, 1896.



Witnesses
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Albert B. Blackwood.

Inventor
C. Manville Pratt
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Attorney

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

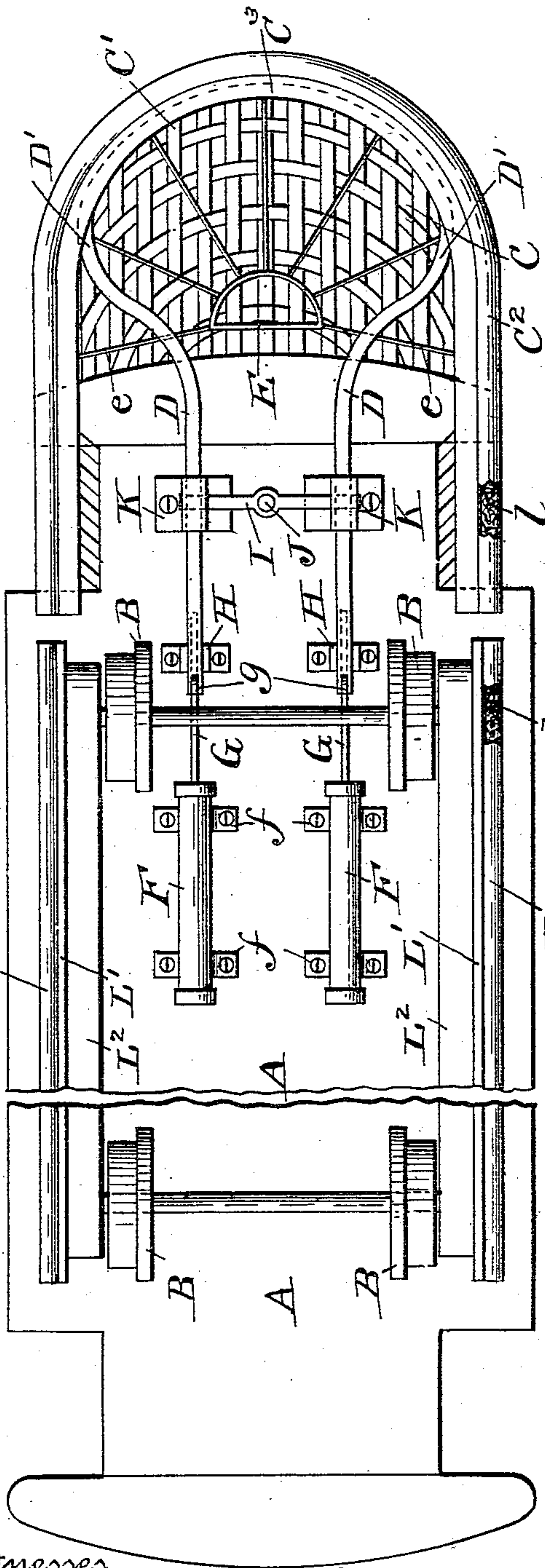
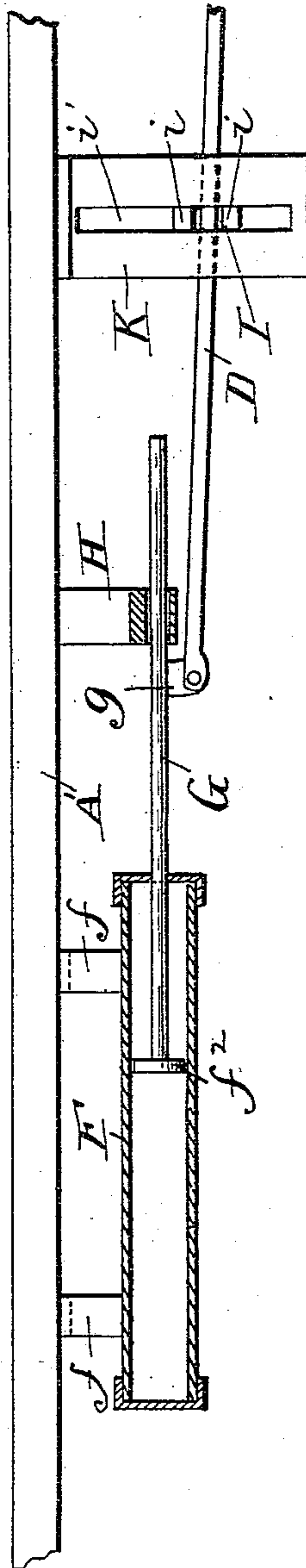


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES MANVILLE PRATT, OF TOWANDA, PENNSYLVANIA.

CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 555,400, dated February 25, 1896.

Application filed September 3, 1895. Serial No. 561,313. (No model.)

To all whom it may concern:

Be it known that I, CHARLES MANVILLE PRATT, a citizen of the United States, residing at Towanda, in the county of Bradford and State of Pennsylvania, have invented certain new and useful Improvements in Car-Fenders; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to an improvement in car-fenders; and it has for its object to provide a practical fender, capable of yielding upon striking a body and composed of great elasticity and adapted particularly to prevent the loss of life or serious injury to persons caught in front of moving cars.

A further object of the invention is to so shape and construct the fender in front of a car that it will act as a pilot in striking and casting aside objects obstructing the track or path of the cars.

A further object of the invention is to provide durable safety-guards along the sides of the cars to prevent people from falling or slipping in front of or under the wheels.

The invention consists in the novel construction and arrangement and combination of parts hereinafter described and claimed.

In the accompanying drawings similar letters of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of a car with my fender and safety-guard attached. Fig. 2 is a bottom plan view of the same, showing the air-cylinders and the manner of attaching the several parts of a fender to the bottom of a car. Fig. 3 is a vertical longitudinal section of one of the air-cylinders, showing it and the connecting-rods secured to the bottom of a car. Fig. 4 is a vertical cross-section of a portion of a car-bottom, showing my raising and lowering device. Fig. 5 is a vertical section of a dashboard of a car with my cushion attached and showing a portion of the car bottom and end of one of the strips attached to same by a spiral spring, and Fig. 6 a detail

in cross-section of a tube constituting part of the framework and provided with an inner pneumatic tube and an elastic substance.

A represents a street-car of ordinary construction. In carrying out the invention the fender C may be extended as far as desired in the direction of the center of the car A, and the bottom of its framework carrying the tube C² is given practically a semicircular shape in front, with its sides parallel with the sides of the car, and extending backward to meet or nearly meet tube L on the bottom of the side safeguard L².

The bottom framework of the fender is composed of the wooden rim C³, with its semicircular part lined with a metal bar D, which bar leaves the wooden rim at about the beginning of the circle, each side curving inwardly to points inside of the line of the car-wheels and thence rearwardly in a straight line under the car-bottom and ending near the car-axle.

The semicircular part of the metal bar D is sunken within a groove in the corresponding part of the wooden rim C³. Secured to the inner side of the rim C³ are several rods e, radiating from a metal half-circle center piece E, like the spokes of a wheel. The outer part of the rim C³ is concaved its whole length. Firmly secured within this concavity throughout its whole length is a tube C². The tube C² may be made of any suitable material, as rubber, leather, or canvas, (preferably of leather,) and is lightly stuffed with curled hair or equivalent material, as shown at l in Fig. 2, and in addition may be inflated with air, forming a pneumatic tube, and is provided with a separate inner pneumatic tube, C⁸. The outer tube being thus constructed and filled will not collapse if punctured.

The network C extends from rim C³ along its whole length upwardly on the sides to the platform of the car A' and in front to the dashboard C⁵ at a predetermined distance from the top thereof. The network C is constructed preferably of strips of rawhide leather, but may be made of other suitable material. If constructed of rawhide leather, as shown in Figs. 1 and 2, one end of each strip C' should be firmly secured to the rim C³ and the other end of the same, or that

portion of the net in front of the dashboard C⁵, should extend upward and backward to the dashboard, connecting with one end of a spiral spring, one spring for each strip, the other end of each spring being firmly secured to the dashboard, or preferably to the platform of the car, as shown in Fig. 5, each strip C' passing through an aperture in the dashboard and connecting with the spring C⁶ inside thereof, or the spiral springs may be placed outside of the dashboard and the several strips C' passed over a rod secured to the front of the dashboard below the cushion C⁴, and thence downward to the spiral springs, the object being to give great elasticity to the front part of the net, liable to come in sudden contact with a person.

Along the sides of the fender the upper end of the strips may be attached to the platform of the car in any convenient manner, as not so great elasticity is required in that part of the network. Strips of the same material are interwoven transversely across the upright strips C' and secured at each end, forming a complete network. A cushion C⁴ is secured to the dashboard C⁵ above the network to receive the shock and prevent injury to a person thrown suddenly against it. This cushion C⁴ is made of canvas or other suitable material and stuffed with curled hair or other elastic substance, or may be inflated with air.

The safety-guards L² are attached to each side of a car-bottom outside of the wheels B. They are made as a curtain, of suitable material, as canvas or leather, (preferably of leather,) and extend the whole length of a car, and downward from the car-bottom to a line sufficiently near the track or road-bed to prevent a person from slipping under the wheels B of a car.

The lower edge of each guard L² is provided with a tube L, like that described as C², around the front and sides of the fender C, and secured to a concave back extending along the bottom of the guards, from which backs curved spring-braces extend to the body or frame of the car-trucks, which serve to hold the guards in position while they allow them to readily yield to pressure.

To more effectually absorb the shock and prevent injury to a person struck by the front of the fender, as well as to cause the net to slacken at the moment a person is landed upon it, I provide air-cylinders F, which are firmly secured to the bottom of the car A' in any suitable manner, as shown at f. One is placed on each side of the car-bottom inside the line of the wheels and in direct line of the rear ends of the bar D of the fender-frame. Each cylinder is provided with a piston f² and a piston-rod G, to which the rear ends of the rod D, carrying the fender-frame, are connected at predetermined points g between the cylinders and the outer end of the rod.

The piston end of the rods G being within the cylinders, their opposite ends are loosely

mounted in bearings H, in which they are adapted to play back and forth, and which bearings are firmly secured to the bottom of the car.

The bars D pass through the raising and lowering device, Fig. 4, and under the bearings H, inclining upward, and at their rear ends are jointed with the piston-rods G between the heads of the cylinders F and the bearings H. The cylinders F being hollow with solid ends, except the openings through which the piston-rods play, form tight air-chambers.

To raise or lower the fender to any desired distance above the car-tracks, I provide the device shown in Fig. 4.

Rigidly secured to the bottom of the front part of the car-platform A' are two U-shaped loop-supports K, with transverse vertical slots through their sides, as shown in Fig. 3. Between the sides of these supports K the straight part of the bars D pass, and the two supports are connected by a yoke I, bifurcated at each end, having its forks, one prong above the other, within the slots. The bars D of the fender-frame pass between these forks i. To the middle of yoke I is rigidly secured a vertical lifting-rod J, which extends through the car-platform A' to a convenient distance above the floor thereof, and is screw-threaded on its upper end, which end is provided with an internally-screw-threaded hand-wheel J'.

A support J² is rigidly secured to the floor of the platform A' and extends upward to brace the rod J and supports its hand-wheel J'. On the under side of this wheel and integral with it is a sleeve which is internally screw-threaded and extends downward through a close-fitting aperture in the upper part of the brace-supports, where the sleeve is surrounded by a collar J³. The sleeve of the hand-wheel J' screws around the top of the rod J.

In operation the fender is raised or lowered and set at a desired distance above the car-tracks by turning the hand-wheel J', which lifts or lets fall the yoke I, carrying within its forks i the bars D of the fender-frame. The rear ends of the bars D being hinged at g to the piston-rods G are by the action of the lifting-rod J tilted up or down, sliding within the U-shaped supports K and their cross-slots i', and carrying the fender-frame.

In practice it is best that the fender be held rigidly as near the road-bed as practicable to prevent the possibility of it passing over a person caught in front of it.

A person struck by the fender herein described is relieved from a sudden shock by the action of the air-cylinders F and the elasticity of the tube C² and easily landed on the net, the tension of which is at that moment slackened by the backward motion of the fender-frame, and the shock of landing is eased by the action of the spiral springs C⁶.

It is plain that one air-cylinder might be substituted for the two described, but two are preferable.

5 A feature of this fender is that it presents in front no metal or hard substance against which a person struck by it can be thrown, and thus serious injury is avoided.

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

15 1. A car-fender having the lower outer portion of its framework surrounded with an elastic tube, stuffed with curled hair or equivalent material, and the tube provided with an inner pneumatic tube substantially as described and for the purpose specified.

20 2. In combination with a car-fender the within-described raising and lowering device consisting of U-shaped loop-supports pending from the bottom of a car, and having transverse vertical slots through their sides, and a yoke with each end bifurcated, connecting the supports, the forks of the yoke being within the slots, one prong above the other, and a vertical lifting-rod attached to the center of the yoke, the top of the rod screw-threaded, and engaging with an internally-screw-threaded hand-wheel resting on a standard extending upward from the car-plat-

form, the pending supports being adapted 30 for the bars, carrying a fender-frame, to pass longitudinally between their sides, and between the forks of the yoke, and rise and fall within the same, substantially as described and shown.

35 3. In combination with a car-fender, the jointed longitudinal bars, connecting with and forming a part of the fender-frame, the yoke connecting the bars, the slotted supports in which the yoke and bars move, and the 40 lifting vertical screw-rod secured to the yoke, and provided with a hand-wheel at its upper end, substantially as described and shown.

45 4. In combination with a car-fender the jointed longitudinal bars, connecting the frame of the fender with air-cylinders, the yoke connecting transversely the bars, the slotted supports in which the yoke and bars move, and the lifting vertical screw-rod secured to the yoke and engaging with an 50 internally-screw-threaded hand-wheel at its upper end, substantially as described and shown.

In testimony whereof I affix my signature in presence of two witnesses.

C. MANVILLE PRATT.

Witnesses:

J. P. VAN FLEET,
E. B. PIERCE.