

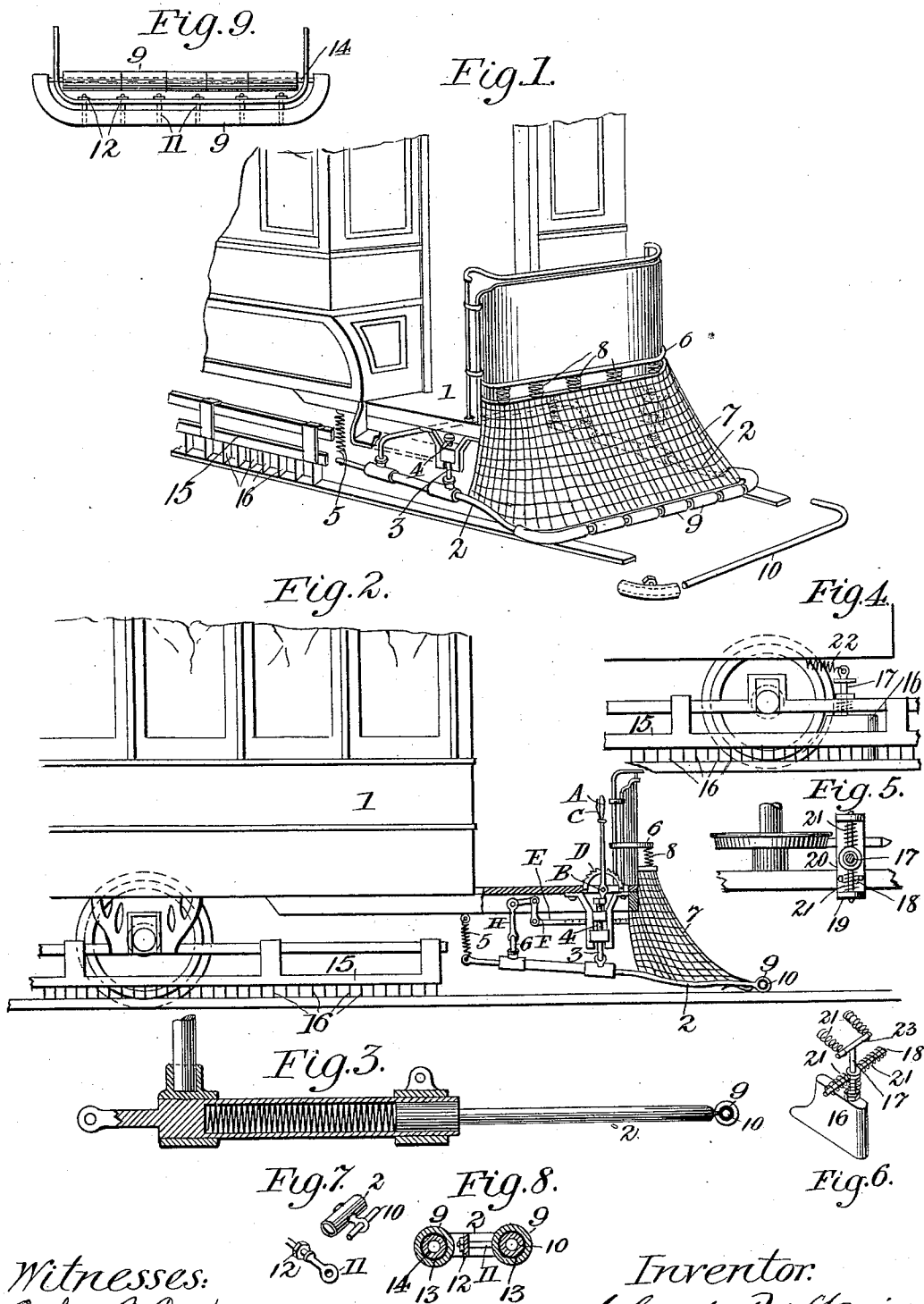
(No Model.)

2 Sheets—Sheet 1.

C. P. MAINS.
CAR FENDER.

No. 579,650.

Patented Mar. 30, 1897.



Witnesses:
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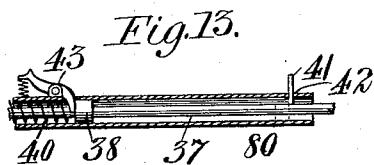
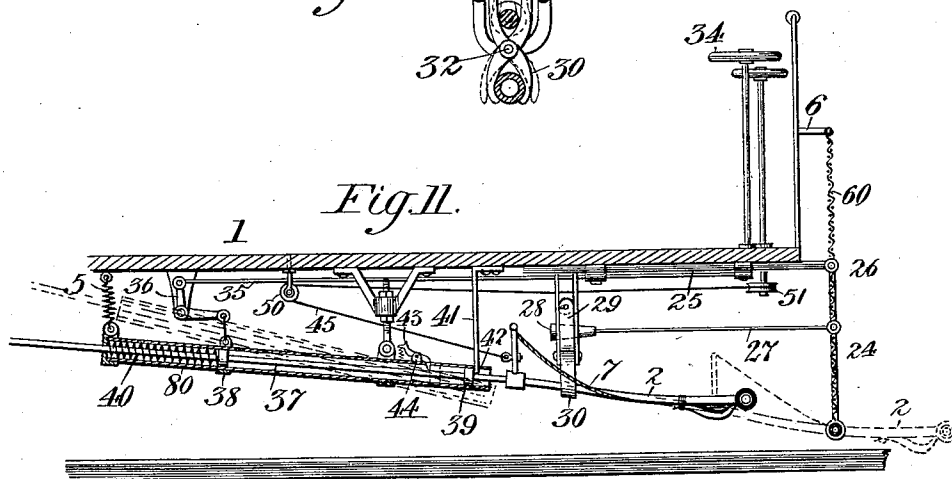
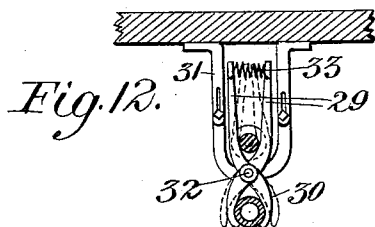
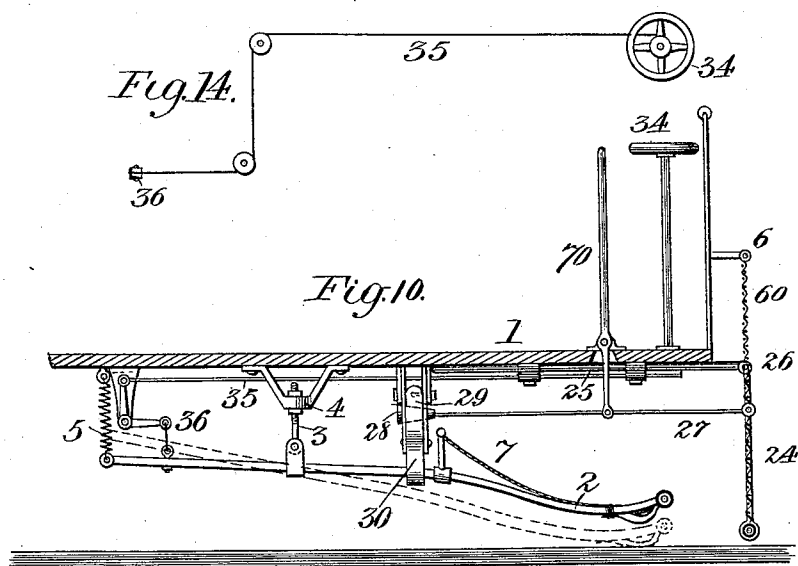
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2 Sheets—Sheet 2.

C. P. MAINS.
CAR FENDER.

No. 579,650.

Patented Mar. 30, 1897.



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UNITED STATES PATENT OFFICE.

CLAUDE P. MAINS, OF CLEVELAND, OHIO.

CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 579,650, dated March 30, 1897.

Application filed May 18, 1896. Serial No. 592,037. (No model.)

To all whom it may concern:

Be it known that I, CLAUDE P. MAINS, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Car-Fenders, of which I hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in street-car fenders; and the object of the invention is to provide means for preventing injury to living bodies struck by the car; and it consists in the depending net and buffers with the means for supporting and operating the same, and in the details of construction and combination of parts, as hereinafter described, shown in the accompanying drawings, and specifically pointed out in the claims.

In the drawings, Figure 1 is a perspective view of the device attached to a street-car. Fig. 2 is a side elevation of the same. Fig. 3 is a longitudinal section of buffer device. Figs. 4, 5, and 6 show details of wheel-fender. Fig. 7 shows a detail view of front rail attachment. Fig. 8 is a section, enlarged, through the rail and buffer attachments. Fig. 9 is a plan view of a modified form of buffer. Fig. 10 is a longitudinal section of car-platform, showing a fender withdrawn underneath the platform. Fig. 11 is a similar view of a modified form thereof. Fig. 12 is an enlarged elevation of clutch. Fig. 13 is a section through fender-cylinders, and Fig. 14 is a detail of operating-wheel and connections.

In the figures, 1 represents the car-body, from which depends the fender-rail 2 by means of the hanger 3, vertically adjustable at 4.

The fender-rail is operated by means of the hand-lever A, pivoted at B to the platform and provided with the pawl-and-ratchet segment C and D to secure the handle at any position. A chain or rod E leads therefrom to the bell-crank F, secured to the car-body, and a chain or rod H leads from thence to the cross-rod G, connecting the side bars of the fender. By means of this device the fender is quickly raised or lowered.

To insure a quick fall of the fender when

released, the springs 5 are attached to the rear extremities thereof and to the car-body.

6 is a rail secured to the front of the platform where it can be grasped by the hand of a person struck by the fender, and it is connected with the life-net 7, which is spread over the front of the fender-rail by means of springs 8, which lessen the shock to a body falling thereon.

9 represents rubber buffers sleeved over a rod or pipe 10, which extends across the track in front of the fender and is secured thereto by means of ring-bolts 11 with nuts 12.

A metal sleeve 13 within the rubber sleeve prevents wear upon the rubber as it revolves upon the rod 10. This device prevents a dead shock upon a body struck, since the rubber sleeves roll and tend to assist the body upward upon the net as they roll.

In Figs. 8 and 9 is shown an additional rod 14 inside the fender-rod and above the net. This rod is also provided with rubber sleeves and assists the outer fender-rail in supporting bodies until upon the net.

Side fenders for the car are shown at 15, and consist in side bars provided with depending springs 16, which will bend if they touch the rail or road-bed on either side thereof, but will prevent any person from falling in front of or between the wheels. This side fender can be placed wherever desired in continuation of the front fender.

A special wheel-fender is seen in Figs. 4, 5, and 6, where 16 is a boat-shaped block following the curve of the wheel and suspended by flexible bearings, so that if struck from either side by rigid parts of the pavement it will bend slightly and so escape breakage. The arrangement of the mounting is as follows: The vertical stem 17 is supported by the cross-rod 18, mounted in eyes 19 upon the bar 20. Springs on either side and above the bar at 21 make an elastic movement possible, and a cross-bar 23 at the top, provided with springs 22, secured to the car-body, returns the block to its alinement with the rail when thrown aside by a stone or other rigid object.

In the remaining figures is shown a modified form of the apparatus where the fender is placed underneath the car and also the lower portion of the net or apron, so that it may not interfere with passing objects in the

streets by protruding too far in front of the car-platform. In these views, 1 is the car-body; 2, the fender-rail; 3, the hanger, adjustable at 4, as in the other figures, but somewhat simpler in form. The springs 5 and forward rail 6 are also similar to other figures.

The fender and hangers are shown withdrawn entirely beneath the car, and the fender is supported above the rail by means of a device automatically released when a body falls in front of the car, so that the net will be lowered into place. This is accomplished by the following mechanism: 24 represents a net or screen depending vertically from adjustable hangers 25 underneath the front platform. Pivoted to the frame 26 of this net is the rod 27, which is provided with the terminal cone 28, inserted between the arms 29 of the clutch 30. (Shown in Fig. 12 in front elevation.) 31 is a bracket which supports the clutch and is also vertically adjustable.

In action if any body strikes the hanging screen it will be thrown backward under the platform, and the cone at the extremity of the rod will be pushed beyond the arms of the clutch, pivoted together at 32, which will be brought together quickly by means of the spring 33 and so separate the jaws and release the fender, which drops at once to the track.

The fender can be raised again to its normal position above the track by means of a lever or hand-wheel, as shown, where 34 is the hand-wheel, and a rope, rod, or chain 35 connects from this to the bell-crank 36, by which the fender is lifted.

When not in use, the chain should hang loose, so as not to impede the instantaneous movement of the fender.

In Fig. 11 is seen a modified form, in which the side rails 37 of the fender are inserted in the cylinders 80 and provided with collars 38 and 39. The springs 40 in these cylinders are adapted to throw out the fender to the position shown in dotted lines when the fender is lowered. When it is raised, the bars 41 are inserted in openings 42 in the cylinders in front of the collars 39 and so lock the fender in place, but as soon as the fender falls away from the fixed bars 41 the fender will be released and the spring will shoot it forward. Only one side of the fender is shown in the figures in longitudinal section.

In Fig. 11 is shown the locking device to retain the fender when withdrawn and also a locking device to secure the fender when projected, somewhat enlarged. In this view 43 is a catch or trigger which is pivoted upon the cylinder at 44 and engages the collar 38, so as to prevent the return of the fender, but is easily passed by the collar when moving outwardly. This trigger must be released by hand, or mechanism could be supplied to depress it from the platform above, if desired.

A rope or chain 45 may be employed to

withdraw the fender. This may pass over pulley 50 and wheel 51 upon the platform.

In front of the car the netting may be extended from below to the projecting rail at 60, if desired. A lever 70 may be employed, if desired, to operate the rod 27 from the platform if an object is seen in front of the car and before the car strikes it.

The advantages of this device are obvious, since the action of the fender is automatic and requires no attention from the car-driver, while it is entirely withdrawn from contact with the road-bed and is preserved from injury. Furthermore, the open sides of the car, where accidents often occur unavoidably, are thoroughly protected.

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

1. In a street-car fender, outer and inner rods secured to the fender-rail, in combination with sectional rubber cylinders sleeved thereon, and provided with metallic linings, substantially as and for the purpose set forth.

2. In a street-car fender pivotally secured, the combination therewith of a clutch adapted to suspend the fender above the track, and means for automatically releasing the fender, consisting in a depending net in front of the platform and a rod and cone engaging said clutch, substantially as set forth.

3. In combination with a street-car platform, a fender pivotally secured underneath the same, upon adjustable bearings, clutch mechanism adapted to detachably support the fender above the rail, and automatically-operated mechanism for detaching the fender from the clutch, substantially as set forth.

4. In combination with a fender pivotally suspended underneath the car-platform, of a clutch adapted to detachably secure said fender above the rail, a net and frame depending from the front of the platform, and means for releasing the fender when the net or frame is struck by a body on the track, substantially as described.

5. In combination with a fender, pivotally suspended from a car-platform and underneath the same, a clutch adapted to detachably support said fender, a net and frame depending from the front of the platform, and a rod secured to said frame, and provided with a conical extremity adapted to engage said clutch, and release the fender therefrom when the said frame or net is struck by a body on the track, substantially as described.

6. In a street-car fender, front and side rods provided with a life-net in combination with cylinders into which said side rods extend, pivotal supports for the cylinders, a detachable clutch engaging the side bars and means for releasing the clutch, a locking-bar for the fender, springs within the cylinders, whereby the fender is thrown forward from the cylinders as soon as the clutch and locking-bar are disengaged, substantially as set forth.

7. In a car-fender, the combination with the

front and side rods, of cylinders provided with springs into which the side rods are inserted, a clutch detachably supporting the fender, means for releasing the said clutch and means for locking the fender in the cylinders until the clutch is released, and for locking the same when thrown out, substantially as described.

8. In a street-car-wheel fender, a boat-shaped block, provided with a vertical stem, in combination with means for flexibly sup-

porting the block, consisting of a cross-rod mounted in eyes upon a stationary slotted bar through which the stem projects, springs upon said rod on either side of said stem, and a cross-bar secured to the top of said stem, provided with springs secured to the car-body, substantially as described.

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Witnesses:

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