(No Model.)

C. R. HALL.

FENDER FOR STREET RAILWAY CARS.

No. 539,265. Patented May 14, 1895.

FIG. 1

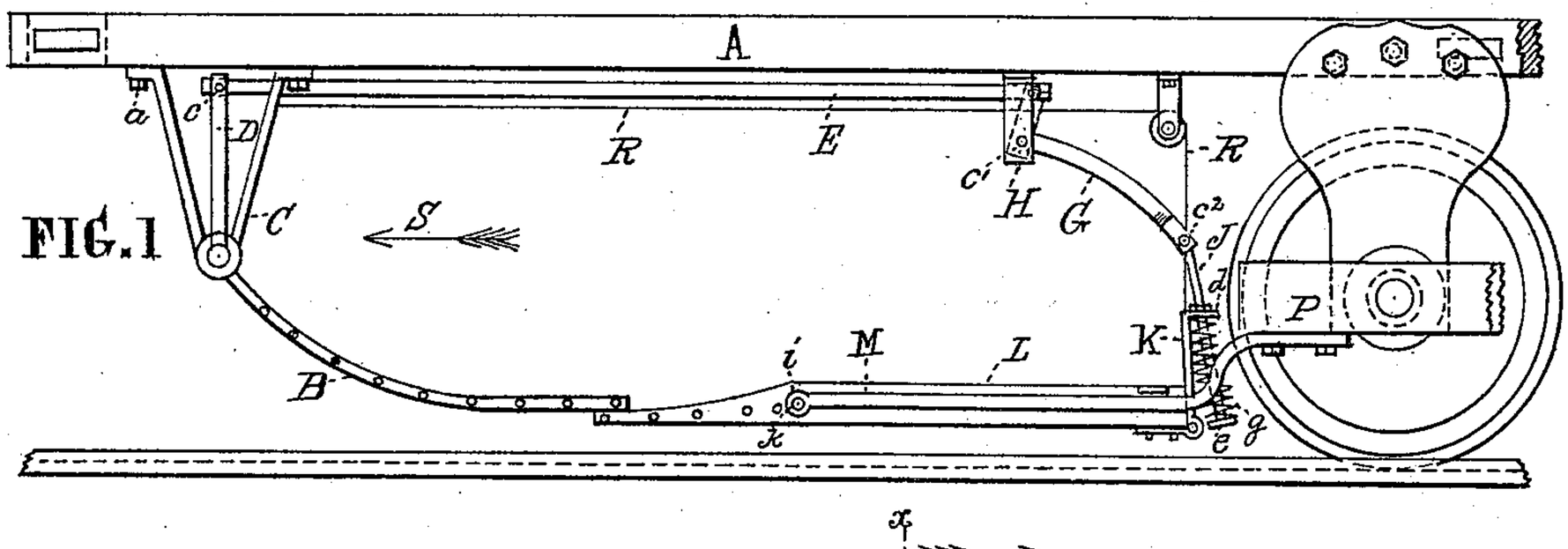


FIG. 2

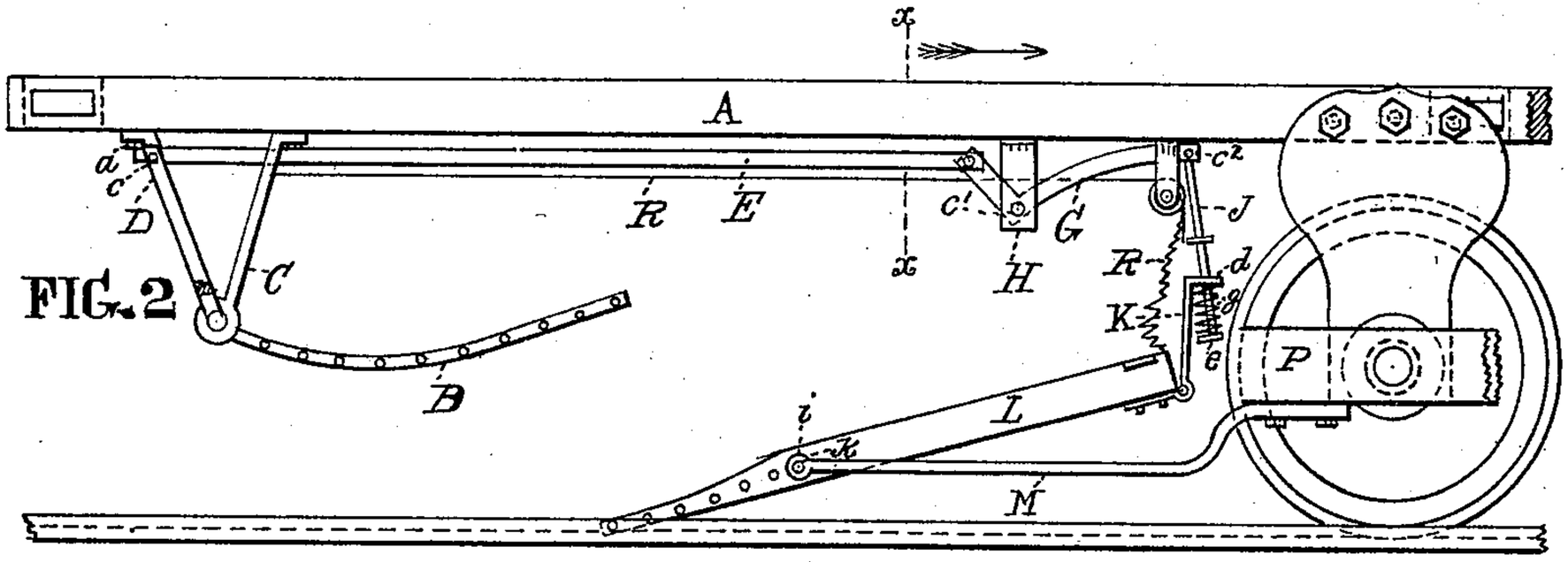


FIG. 3

FIG. 4

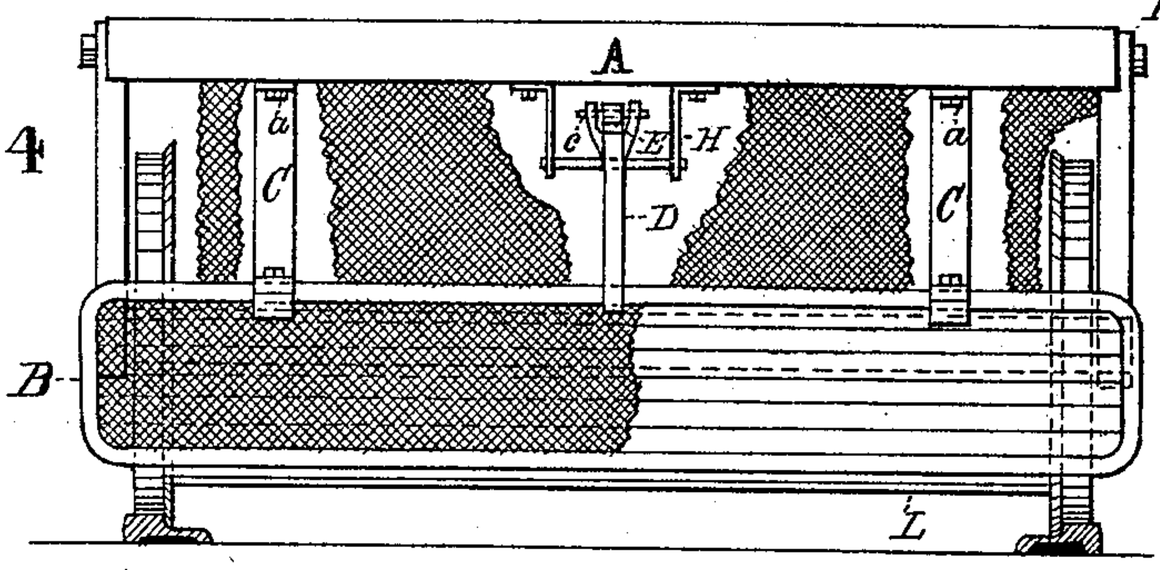


FIG. 5

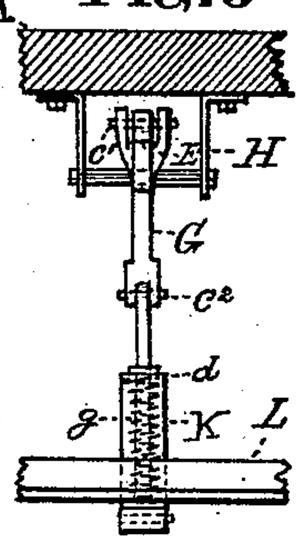
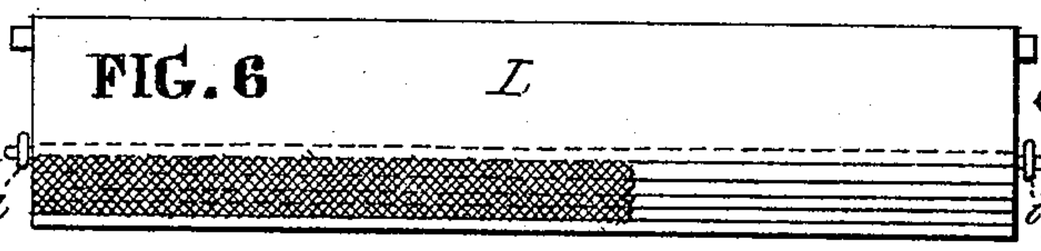


FIG. 6



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES R. HALL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-SIXTH TO LOUIS BASH, OF SAME PLACE.

FENDER FOR STREET-RAILWAY CARS.

SPECIFICATION forming part of Letters Patent No. 539,265, dated May 14, 1895.

Application filed September 29, 1894. Serial No. 524,470. (No model.)

To all whom it may concern:

Be it known that I, CHARLES R. HALL, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Fenders for Street-Railway Cars, of which the following is a specification.

My invention relates to a fender for street railway cars, by means of which a body, or obstructing mass of matter lying upon the surface of the roadway, or upon the rails of the track, is caused to be lifted therefrom and moved on to the surface of a bed suspended pivotally at its sides between the forward ends of two arms, whose rear ends are bolted securely to the sides of the frame of the car truck, said bed being over the surface of the road upon which the car traverses. The forward swinging frame work beneath the extreme forward end of the car platform, is constructed of a frame surrounding its exterior, and the inner area is composed of wire netting or strong canvas, said frame being suspended in bearings at its upper edge to the under surface of the platform, where the frame is capable of oscillating, or swinging backward and forward in the longitudinal direction of the car. The swinging frame, and suspended bed are connected together by the intermediates consisting of an arm, having rigid connection at its lower end with the upper edge of said swinging frame, and is pivoted at its upper end by means of a pin with a horizontal rod, adjacent to, and parallel longitudinally with the under surface of the platform, the rear end of said horizontal rod being pivoted to the upper end of a bell crank lever, also hung in a bearing on the under face of the platform, the lower end of the bell-crank lever, being connected with a pivotal pin to an upright that passes through the arm of the free flap of a hinge, whose opposing flap is bolted to the under side of the bed frame at its rear edge. This upright rod is surrounded at its lower portion by a helical spring, which has play between the arm of the flap of said hinge, and a foot upon the lower end of said rod, the object of the spring being to lessen the force of the concussion imparted to a body suddenly thrown upon the surface of the bed. This movement will also permit of more extended opening between the swinging frame and the surface of the receiver, when the front edge of the latter has reached in its descent the surface of the road bed. A means is provided to prevent a body when taken upon the receiver, from injury by contact with the devices for operating the mechanism for the propulsion of the car, and also from that controlling the fender, which are situated beneath the platform at the forward end of the car, and also to prevent that which may be taken upon a receiver from the surface of the roadway from passing backward to the wheels of the car; and consists of a sheet, or webbing of cloth which is stretched over the area of surface between the operating mechanism suspended from the floor of the car body and the surface of the receiver or bed, which sheet, or webbing extends parallel longitudinally with said floor of the car, to and over a rod, or bar supported at its extremities in brackets bolted to said floor, thence downward and attached to the rear edge of the bed.

In the accompanying drawings, which make a part of this specification, Figure 1 represents a side view of my improved fender upon a car arranged in the normal position ready for propulsion. Fig. 2 represents a like view, showing the fender as it appears when swung inward by reason of having been brought into contact with an obstacle. Fig. 3 is a longitudinal section of the car-body with the fender in same position as shown in Fig. 1. Fig. 4 represents an end view with a portion of the wire-cloth of the swinging-frame fender broken away to more clearly illustrate a face view of the operating mechanism. Fig. 5 is a cross-sectional view, taken through the dotted line *x x* of Fig. 2, showing a portion of the platform A, with a face view of the bell-crank lever G, in connection with the upper flap of the hinge K and inclined platform or bed L. Fig. 6 is a face view of the receiver L, as shown elevated in Fig. 2.

Like letters of reference in all the figures indicate the same parts.

A, is the platform of the car-body, framed together of timber, in the customary method of construction, and to the under surface of which the hangers, or bearings, with the frame

B, and the operating mechanism of the fenders are connected.

The frame B, is constructed of metallic pipe, to give strength and rigidity thereto, and the space contained within its inner area, is covered with strong canvas, or wire netting, as seen clearly in Fig. 4, and has bearings in the hangers G, which are secured to the under side of the platform by means of screw bolts *a*. This frame hangs downward, and in a curvilinear form transversely from said bearings, and has projected upward from the top bar the arm D, which has a pivotal connection with the horizontal bar, or rod E, upon its forward end by means of the pin *c*, which permits of oscillatory motion being imparted thereto. The rod E, that extends horizontally toward the rear of the platform, and parallel therewith, is connected at the inner end to the upper end of the bell crank lever G, hung on the fulcrum pin *c'*, in the bearing H, bolted upon the under surface of platform A. To the lower end of said bell crank lever is attached the upper end of the vertical rod J, by means of the pin c^2, passing through the cheeks thereof. This rod passes through an orifice in arm *d*, of the free flap of the hinge K, and is provided with a foot *e*, upon its extremity.

Surrounding the lower portion of the rod J, is the helical spring *g*, which has play between the inner surfaces of said arm *d*, and foot *e*, of the free flap of the hinge, to permit vibratory motion to the bed L,—the opposite flap of the hinge being bolted to the under surface of said bed.

M, shows a pair of side bars, rigidly bolted at their rear ends to the side of the brace P, of the truck of the car. At the forward ends of said bars are the eyes *i*, into which the pins *k*, pass, that protrude laterally from the sides of the bed L, and upon which they have pivotal action.

R, is a sheet of cloth whose front end is attached to the forward end of the car and extends rearward over the pulley S, thence downward to the rear end of the bed, which serves to prevent a body from contact with the operating mechanism.

The method of operation, is detailed in the following description; the swinging fender frame B, being in the position represented in Figs. 1 and 3, the car is ready for propulsion forward in the direction indicated by the arrow S, see Fig. 1, of the sheet of drawings, with the bed L, supported in its bearings, and nearly level upon its surface sufficient space being permitted between its under surface, and that of the road bed, to permit of the free traverse of said bed, and with the edge of the lower bar of the frame B, resting upon the upper edge of the forward end of the receiver L, which securely retains both parts in the position shown in Figs. 1 and 3. Upon the car in its forward passage meeting with an obstruction, striking the lower surface of the swinging frame B, it causes said frame to ascend from its lower edge, thereby moving the arm in an arc of a circle, which in turn draws forward the horizontal rod E, and therewith the connected upper arm of the bell crank lever G, which causes an elevation of the lower end of the latter, thereby elevating the rear end of the bed, or receiver L, and a consequent depression of its forward end to a point approaching the surface of the road bed, when the obstruction is lifted thereon, and by virtue of its pivotal connection when the weight is shifted to the back portion, said bed rises and engages with the lower edge of the swinging frame B, thereby securely retaining the occupant.

The bed, or receiver L, has a series of ropes stretched laterally across its front end so that when an obstacle upon the track is struck by it, they yield somewhat, and prevent injurious effects being directed thereon, which would be otherwise severe when inflicted by an unyielding edge of a receiver. The face of the frame B, may also be covered in like manner.

I claim as my invention and desire to secure by Letters Patent—

1. The swinging frame B, having its upper bar hung in bearings of the hangers C, upon the under surface of the platform A, the bearings being arranged in any suitable position beneath the platform, said upper bar having the arm D, extended vertically from its surface, and the horizontal rod E, connected thereto by the pin *c*, the bell crank lever G, suspended on the pin *c'*, in bearing *d*, rod J, spring *g*, surrounding said rod, hinge K, and bed, or receiver L, supported upon the pivotal pins, or journals K, in the side bars M, substantially in the manner herein shown and described for the purpose set forth.

2. In a fender for street cars, the swinging frame B, supported from its upper bar in bearings arranged in any convenient position upon the under side of the platform, the pivotal receiver, or bed L, constructed and actuated as described, for simultaneous movement with said frame B, and the protecting sheet of cloth extending between said receiver; and the bracket C and the operating mechanism upon the under surface of the platform, substantially in the manner herein shown and described for the purpose set forth.

CHARLES R. HALL.

Witnesses:
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HARRY J. FRANZ.