(No Model.) 2 Sheets—Sheet 1.

G. HIPWOOD, H. C. BARRETT & S. PORTER.

CAR FENDER.

No. 507,655. Patented Oct. 31, 1893.

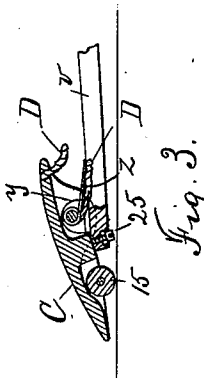

Fig. 3.

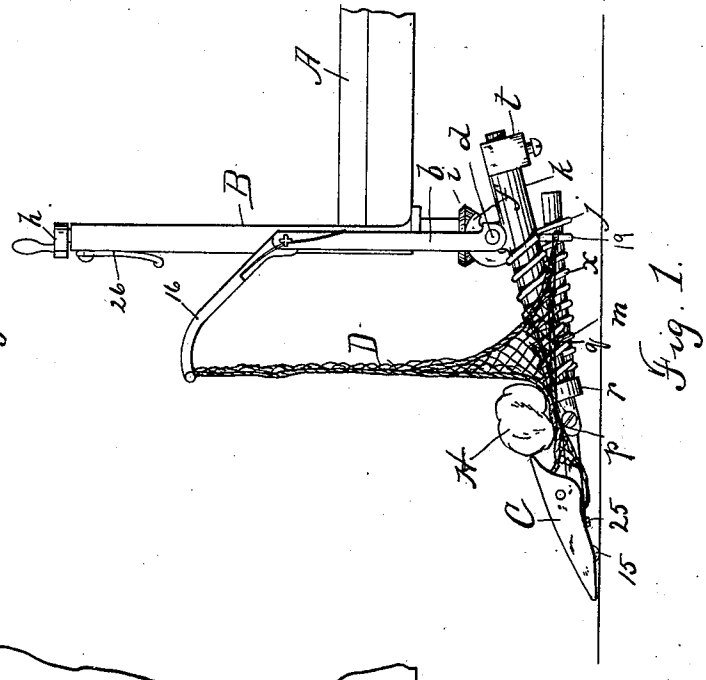

Fig. 1.

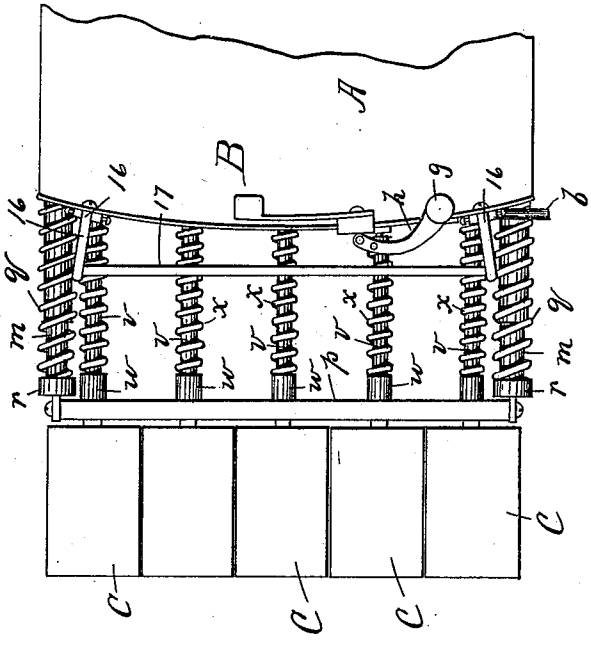

Fig. 2.

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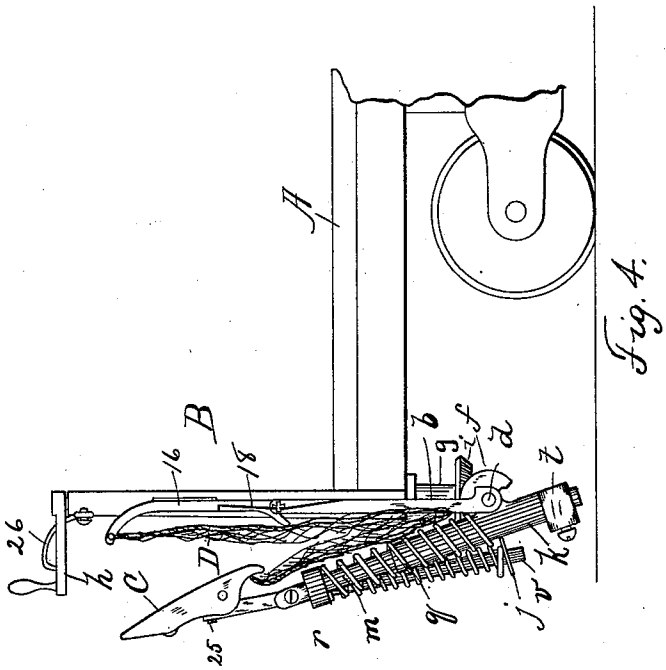

Fig. 4.

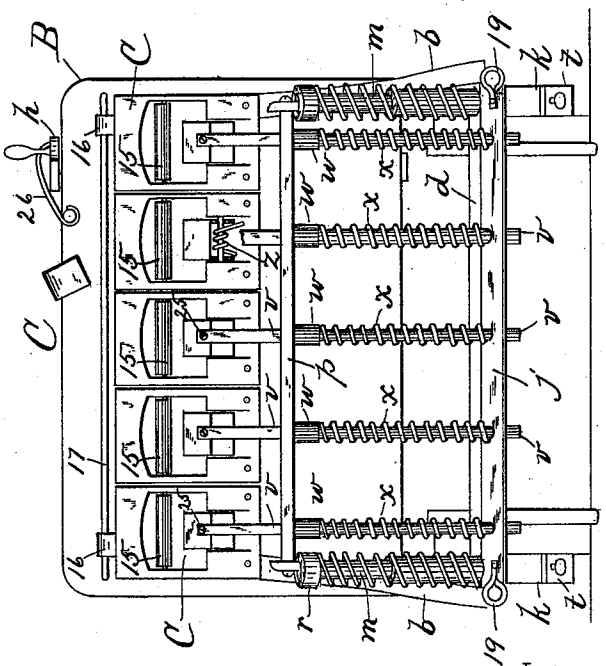

Fig. 5.

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UNITED STATES PATENT OFFICE.

GEORGE HIPWOOD, HORATIO C. BARRETT, AND STEPHEN PORTER, OF BOSTON, MASSACHUSETTS.

CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 507,655, dated October 31, 1893.

Application filed July 11, 1892. Renewed September 30, 1893. Serial No. 486,912. (No model.)

To all whom it may concern:

Be it known that we, GEORGE HIPWOOD, HORATIO C. BARRETT, and STEPHEN PORTER, all of Boston, in the county of Suffolk, State of Massachusetts, have invented certain new and useful Improvements in Car-Fenders, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation showing a portion of a car platform with our improved fender depressed into position for use; Fig. 2 a top plan view of the same; Fig. 3 a sectional view of one of the tilting shoes; Fig. 4 a view similar to that shown in Fig. 1 showing the fender elevated; and Fig. 5 a front elevation looking from the left in Fig. 4.

Like letters and numerals of reference indicate corresponding parts in the different figures of the drawings.

Our invention relates especially to fenders which are adapted for use on electrically propelled street-cars, the object being to produce a device which will "pick up" and sustain a form prostrated on the track.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the car platform and B the fender. From each end of the fender there is pendent a lug, *b*, rigidly secured to said fender and projecting below the platform. In the lower ends of said lug a horizontally arranged shaft, *d*, is journaled said shaft bearing a beveled gear, *f*. A vertical rod, *g*, is journaled in the platform and on the inner face of the dasher, said rod being provided with a hand crank, *h*, at its upper end, and on its lower end with a beveled gear, *i*, meshing with the gear, *f*. By rotating said rod the shaft, *d*, may be actuated to elevate the fender in manner hereinafter described. Fast to the shaft, *d*, there is a longitudinally arranged plate, *j*, at either end of which there is fixed a laterally arranged hollow sleeve or tube, *k*. In each of these tubes a rod, *m*, is fitted to slide longitudinally. Said rods are connected at their outer ends by a cross-bar, *p*. Push springs, *q*, are disposed around the rods and bear against a collar, *r*, said springs acting expansively to cushion the bar, *p*. Stop collars, *t*, are set-screwed onto the inner ends of the rods, *m*. Said rods and the bar, *p*, with the bar, *j*, constitute the supporting frame of the fender proper. Said fender proper comprises a series of parallel rods, *v*, mounted to slide longitudinally in the bars, *p*, *j*. Collars, *w*, are secured on said rods adjacent the bar, *p*, and springs, *x*, are mounted on said rods between the collars and the bar, *j*, said springs acting expansively to force the rods outward from the dasher. Each rod, *v*, bears a curved pivoted shoe, C, shown in detail in Fig. 3. These shoes are pivoted to swing vertically on an ear, *y*, on each rod, *v*, and a torsion spring, *z*, best shown in Fig. 5 wound on the pivot of each shoe tends to hold its toe downward into engagement with the ground as hereinafter described.

In the toe of each shoe on its under face there is a roller, 15, which is designed to travel on the ground and support the toe of said shoe and within an inappreciable distance of the pavement. The heels of the shoes are extended beyond their pivots so that when weight is applied thereto they will tilt. The shoes are of such breadth that being arranged in the same plane in parallelism they completely cover the space the width of the track.

To the top of each hanger, *b*, an arm, 16, is pivoted said arms being connected at their tops by a cross-bar, 17. Each arm is tensioned by a spring, 18, holding it against the dasher. A netting, D, is secured to the cross-bar, 17, to eyes, 19, (see Fig. 5) and to the heels of the shoes, said netting completely filling the space from the shoes to the dasher, as shown in Fig. 1. The torsion spring, *z*, which tensions the shoes can be regulated by a screw, 25.

In the use of our improvement, the parts are normally in the position shown in Fig. 1 the rollers, 15, of the shoes resting on the ground. The netting, D, is loose or looped over the body of the frame forming the fender. Should an obstruction be met on the

track the toes of the shoes, C, pass thereunder. Said shoes being inclined vertically in manner shown such obstruction or body is forced up on the shoes and reaching their heel portions, said shoes are tilted by the weight of such body, dropping the same into the netting, as shown by H in Fig. 1. The heels being again elevated when released from the weight of the body by their springs, *z*, form a guard which prevents such body from rolling out from the netting. The spring-tensioned arms, 16, also afford sufficient play to hold the body in the netting.

By cushioning the shoes and employing a series thereof in the manner described should the body or obstruction on the track be placed diagonally the shoes striking it give in succession preventing injury to said body and assuring its being picked up thereby. This construction also prevents the arms or legs of a person being caught or injured in picking them up.

Any obstruction of great weight will readily be picked up by the fender as the shoes are under less spring tension than the frame supporting their rods. Said shoes are forced backward by contact with the object until they meet the frame bar, *p*, when the rods, *m*, will also push backward, and as soon as the body has begun to pass onto the shoes, the springs will force the shoe bearing rods outward under said body.

To elevate the fender when not in use the handle, *h*, is rotated driving the shaft, *d*, and tilting the sleeves, *k*, therewith until the fender reaches the position shown in Figs. 4 and 5. In this position the handle, *h*, is locked by a latch, 26, pivoted on the fender.

When the handle is released from the latch the weight of the fender will cause it to drop. Any suitable treadle mechanism may be employed so that the driver or motor man can trip or release the fender and any other means of elevating the same than that shown may be employed if preferred.

We do not confine ourselves to employing the particular method of mounting the shoes described as the springs and rods may be disposed in any desired manner to effect the result.

Having thus explained our invention, what we claim is—

1. In a car fender a spring-tensioned frame supported from the car, one or more shoes fitted to slide longitudinally of said frame and pivoted to swing vertically thereon and tensioned springs for regulating both movements of said shoes, substantially as set forth.

2. In a car fender, a spring-tensioned frame supported from the car, a series of spring-tensioned tilting shoes pivoted on the forward end of said frame and fitted to yield longitudinally of the car and a netting connecting said frame adjacent the shoes with the car dasher, substantially as described.

3. In a car fender, a series of spring-tensioned rods supported from the car and fitted to slide longitudinally thereof in combination with a series of tilting spring-tensioned shoes mounted on the forward ends of said rods and a netting connecting said shoes with the car-dasher the netting support being spring-tensioned, substantially as set forth.

4. In a car fender a spring tensioned frame pivotally supported from the car and fitted to slide longitudinally thereof in combination with a series of spring-tensioned pivoted shoes mounted on the forward end of said frame and fitted to slide longitudinally thereof and means for elevating said frame.

5. In a car fender a longitudinally sliding spring-tensioned frame supported from the car in combination with a series of spring-tensioned rods fitted to slide in said frame longitudinally of the car; shoes as C, pivoted to the outer ends of said rods and adjusting mechanism for said shoes, substantially as described.

6. In a car-fender a series of spring-tensioned rods fitted to slide longitudinally of the car, said rods acting independently in combination with shoes as C, pivoted on the outer ends of said rods and provided with rollers for engaging the pavement, substantially as described.

7. In a car fender, a series of spring-tensioned shoes supported from the car in the same plane and fitted to slide longitudinally thereof, said shoes being pivoted to swing vertically and arranged to move independently, substantially as described.

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