

No. 672,276.

Patented Apr. 16, 1901.

W. MAEK.

AUTOMATIC FENDER FOR STREET CARS.

(Application filed July 21, 1900.)

(No Model.)

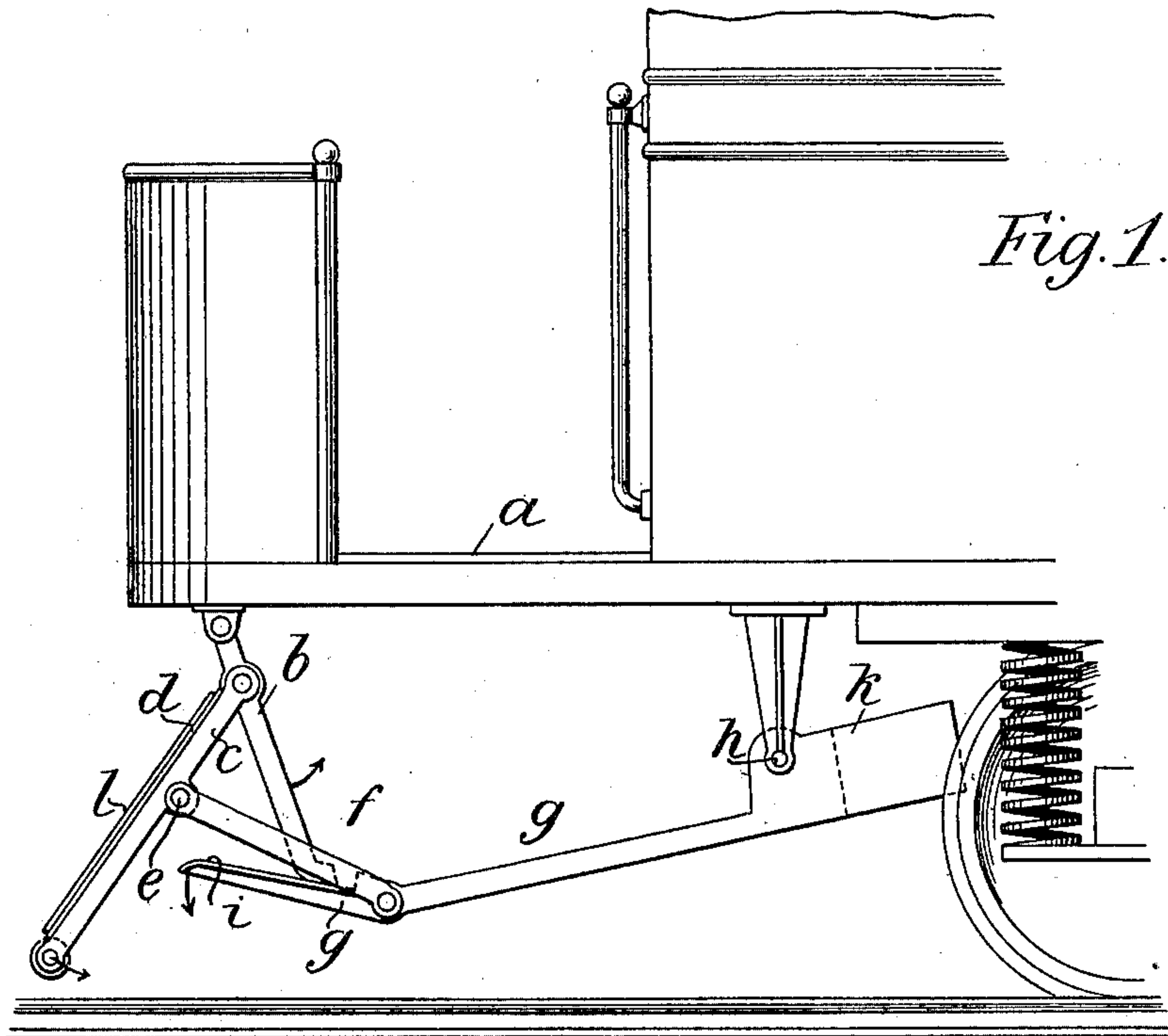


Fig. 1.

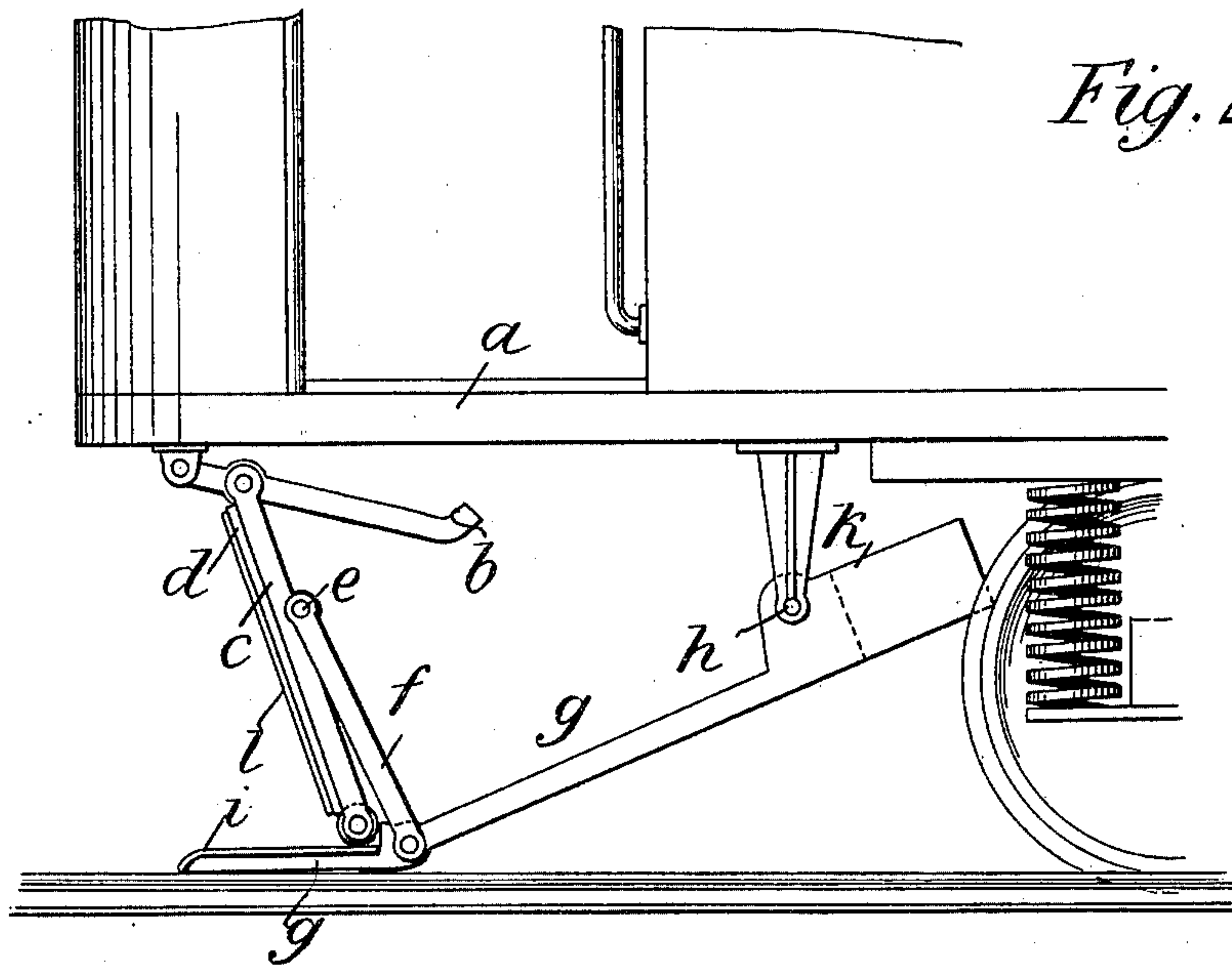


Fig. 2.

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WILHELM MAEK, OF HANOVER, GERMANY.

AUTOMATIC FENDER FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 672,276, dated April 16, 1901.

Application filed July 21, 1900. Serial No. 24,394. (No model.)

To all whom it may concern:

Be it known that I, WILHELM MAEK, engineer, a subject of the German Emperor, residing at Hanover, Germany, have invented
5 new and useful Improvements in Automatic Fenders for Street-Cars, of which the following is a specification.

The present invention relates to an improved automatic fender for street-cars.

10 My invention aims to provide a fender that will surely and safely pick up a person or any other obstacle in the track of the car no matter what speed the car travels at.

Another object of my invention is to provide a fender which is simple in construction,
15 readily applied to any car, inexpensive to manufacture, not liable to get out of order, and when injured may be quickly repaired at small cost.

20 My invention provides, further, a fender which when in action rests tightly on the track of the car, so that a person or any other obstacle in the way of the car cannot possibly get under the wheels of the car by passing
25 beneath the fender.

My invention provides, further, a plurality of sections so connected as to be capable of retaining the position of the fender above the track when in inoperative position.

30 With these ends in view the invention consists in certain novel features of construction, arrangement, and adaption of parts, as will be more fully explained hereinafter and the elements of which are recited in the appended
35 claims.

In the accompanying drawings, which illustrate the invention in a longitudinal view, Figure 1 shows the various organs of the fender in the inoperative position. Fig. 2 shows
40 same when in operative position after the obstacle has come in contact therewith.

In carrying into practice the present invention I employ a counterweighted lever arrangement in connection with the swinging
45 fender similar to that described in my previous patent, No. 650,406, of May 29, 1900.

The fender is essentially composed of two principal parts, the front portion, which comes into contact with the obstacle, and the rear
50 portion which is adapted to press on the track and receive the obstacle. Beneath the plat-

form of the car, and more particularly below the stand *a* of the car operator, two vertical arms *b* are pivoted. To the upper portion of these arms are pivoted the supporting-rails *c c* 55 for the fender-frame *d*. These rails are transversely connected by a metal rod *e* to steady their relative position and for a further purpose hereinafter explained. The metal rod *e* carries at either end a connecting-bar *f*, the 60 other end of these connecting-bars *f* being pivoted to levers *g* of the rear part *i* of the fender, which is destined to receive the obstacle after same has come in contact with the fender. The levers *g* are mounted on a transverse rod 65 *h*, journaled in brackets secured to the under side of the car shortly in front of the wheels in such a manner that their shorter extremities point toward the wheels. These shorter 70 extremities of the levers *g* are counterweighted to normally hold the fender off the track, a massive cross-beam *k* suitably serving for the purpose. The front extremities of the levers *g* carry the receiver *i*, which is fitted with bearing-plates at the side parts which 75 are to come in contact with the metal track. These bearing-plates can, however, also be applied directly to the lower surface of the lever extremities. The receiver *i* is cushioned or provided with an elastic or soft cover in 80 any suitable manner. The fender-frame *d* is likewise fitted up so as to offer a soft or yielding surface to the obstructing object, an elastic cover *l* preferably serving for the purpose, which may be made of any well-known and 85 suitable material.

It is of importance that the fender *d* is pivoted to the arms *b* in such a manner that it can swing backward beyond the vertical plane until it is arrested at the rear end of the receiver *i*, which latter during the movement of the fender *d* approaches the track. It is further essential to construct the fender *d* of a size which permits same to describe the 90 aforesaid swinging movement at a limited distance above the track, said distance preferably being just sufficient to permit the receiver *i* to advance underneath the bottom edge of the fender.

The operation of the device is as follows: 100 The fender-frame *d*, which is arranged so as to slightly protrude in front of the car and

located a short distance above the road-surface, coming in contact with an obstruction, will be pressed back, thereby causing the vertical arms *b*, to which its guide-rails *c* are pivoted, to turn upward and toward the other end of the car, while simultaneously the connecting-bars *f*, pivoted at *e* to the fender-frame *d*, move backward and being pivoted with their other ends to the oscillating levers *g* press these levers downward, overcoming the counter action of the weighted shorter extremities of these levers *g*. The downward turning of the levers *g* will be arrested when the receiver *i*, in connection with the front ends of same, rests with its bearing-surfaces tightly on the metal track. The receiver *i* having assumed this position, the fender-frame *d* will be situated at the rear end of the receiver, as shown in Fig. 2, so that the obstacle which comes in contact with the frame *d* will be deposited thereon. The frame *d* and the receiver *i* remain in this position until the obstruction is removed from the latter, whereupon the parts will return to their original position by virtue of the weighted beam *k* on the shorter extremities of the levers *g*, the weight of which beam is so chosen that it will normally hold the receiver and fender above the road-surface, the free extremities of the arms *b b* insuring their proper inoperative position by coming to bear against the extremities of the levers *g* or against the receiver-frame *i*, respectively.

It is obvious that the connection between the fender *d*, receiver *i*, the vertical arms *b*, connecting-rods *f*, and levers *g* must be chosen so as to enable a limited pressure against the fender to counteract the force of the weighted extremities of the levers *g*.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a car-fender, the combination with the fender *d*, pivoted to vertical movable arms *b* at the under side of the platform, and the receiver *i*, mounted on the longer extremities of the counterweighted oscillating levers, said receiver being adapted to take up a position in front of the fender of connecting-rods *f*, which press the receiver downward onto the road-surface when an obstacle comes in con-

tact with the fender, substantially as described and shown.

2. In a car-fender, the combination with the fender *d*, pivoted to vertical movable arms *b* at the under side of the platform of the receiver *i*, which is adapted to take up a position in front of the fender, said receiver secured to the front extremities of counterweighted oscillating levers *g* and means for pressing the latter downward to the road-surface, when an obstacle comes in contact with the fender, substantially as described and shown.

3. In a car-fender, the combination with the fender *d*, pivoted to vertical movable arms *b* at the under side of the platform, of the receiver *i* which is adapted to take up a position in front of the fender, said receiver secured to the front extremities of counterweighted levers *g* pivoted in brackets at the under side of the platform, and connecting-rods *f* for causing the receiver to be pressed downward onto the road-surface when an obstacle comes in contact with the fender, substantially as described and shown.

4. In a car-fender the combination with the fender *d*, pivoted to vertical movable arms *b* at the under side of the platform, of the receiver *i* which is adapted to take up a position in front of the fender, said receiver secured to the front extremities of counterweighted levers *g*, pivoted in brackets at the under side of the platform, of the connecting-rods *f* for causing the receiver to be pressed downward onto the road-surface when an obstacle comes in contact with the fender and of means for arresting the upward turning of the levers *g* carrying the receiver by virtue of the counterweight, so as to insure the proper inoperative position of fender and receiver, substantially as described and shown.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILHELM MAEK.

Witnesses:

LEONORE KASCH,
T. A. BRYCE.