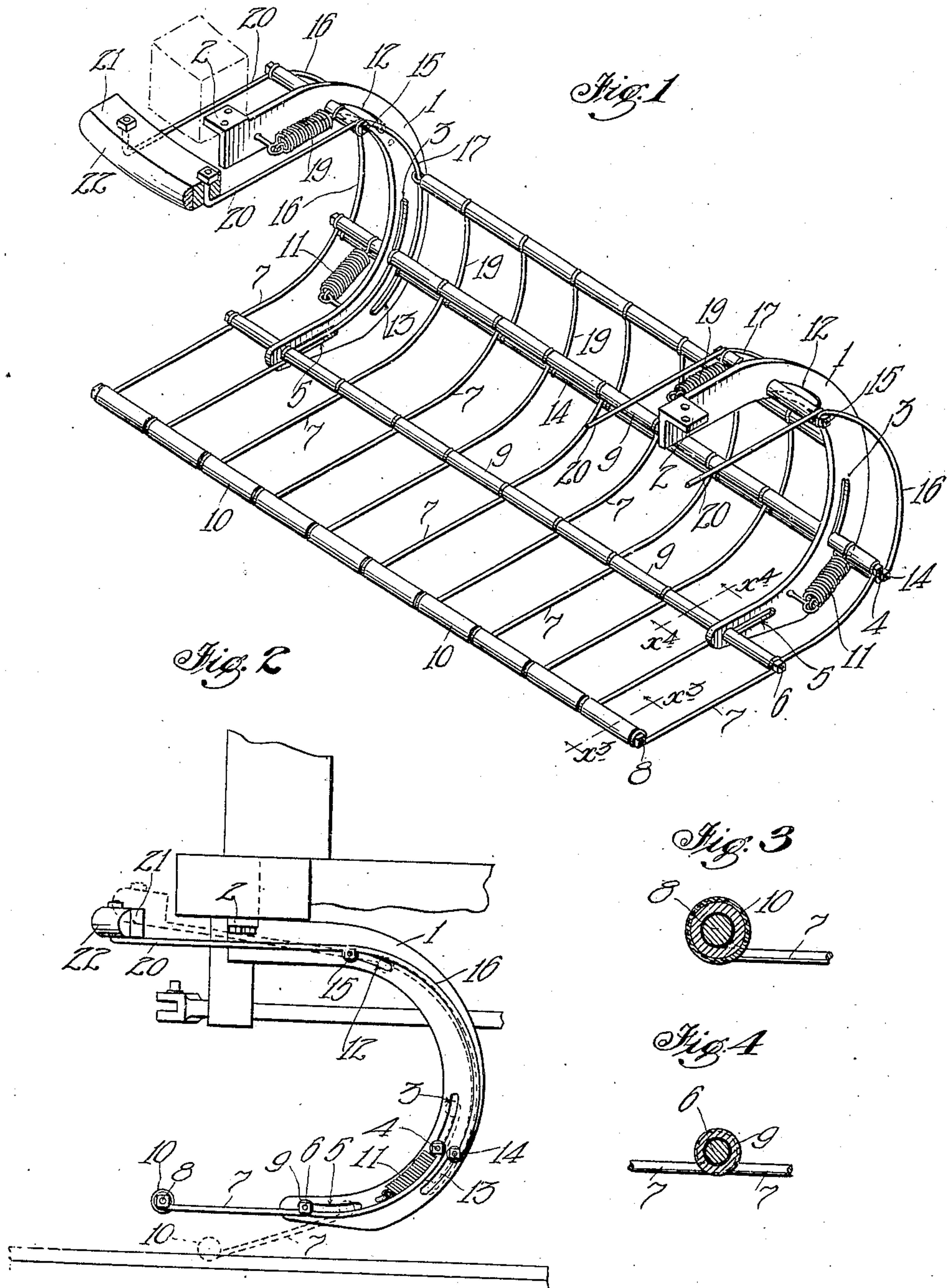


No. 832,206.

PATENTED OCT. 2, 1906.

J. A. McMILLAN.
AUTOMATIC CAR FENDER.
APPLICATION FILED OCT. 23, 1905.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES A. McMILLAN, OF SANTA PAULA, CALIFORNIA.

AUTOMATIC CAR-FENDER.

No. 832,206.

Specification of Letters Patent.

Patented Oct. 2, 1906.

Application filed October 23, 1905. Serial No. 283,976.

To all whom it may concern:

Be it known that I, JAMES A. McMILLAN, a citizen of the United States, residing at Santa Paula, in the county of Ventura and State of California, have invented a new and useful Automatic Car-Fender, of which the following is a specification.

This invention relates to a car-fender adapted for use on street-railway cars; and the main object of the invention is to provide a fender which on encountering an object will operate automatically to scoop the object up from the track and prevent the car from running over the object, the device operating absolutely automatically and requiring no attention or manipulation of any kind by the car-driver.

Another object is to provide a resilient buffer for lessening the shock upon the object when struck by the car.

The accompanying drawings illustrate the invention.

Referring to the drawings, Figure 1 is a perspective view of the invention with the greater part of the resilient buffer broken away to reveal the underlying features. Fig. 2 is a side elevation of the fender, showing but a portion of the lower front end of the car with the fender in position thereon. Fig. 3 is a cross-section on line $x^3 x^3$, Fig. 1. Fig. 4 is a cross-section on line $x^4 x^4$, Fig. 1.

The invention in general comprises a curved basket, which is attached to the car underneath the body at the front end, and a retractile scoop carried by the basket, with its free edge normally lying slightly above the track, but having a quick downward sweep toward the track when it is retracted.

The invention further comprises a resilient buffer arranged in front of the upper portion of the basket and in front of the car-buffer, which springs back when encountering an object and lessens the shock to the object.

In its preferred form the basket comprises a pair of substantially semicircular arms 1, the upper ends of which are provided with wings 2, by means of which the arms 1 are attached to the body of the car, the lower ends of the arms 1 lying slightly above the rails. Each arm is provided with curved slots 3. Extending across the space between the arms 1 and lying within the slots 3 is a rod 4. The lower ends of the arms 1 are substantially tangential to the curve of the arms and are provided with slots 5, through which a rod 6 extends. A retractile scoop is car-

ried by the rods 4 and 6, which in the present embodiment consists of a series of rods 7, the front ends of which are curled around a rod 8, the rods 7 at an intermediate point being curled around the rod 6, as clearly shown in Fig. 4, and at their rear ends being curled around the rod 4. In order to separate the rods 7, sleeves 9 are provided on the rods 4 and 6 between the rods 7, and these sleeves may be of any desired material. Sleeves 10 are also arranged on the rod 8 between the rods 7 and serve not only to space the rods 7, but also act as rollers, and it is preferred to construct the rollers 10 of a yielding material, such as rubber, which will serve as a cushion when encountering the object. The scoop is normally held in its forward position by means of a pair of coil-springs 11.

The arms 1 are also provided with curved slots 12 and 13, the slots 13 being arranged in the arms below the slots 3 and the slots 12 being arranged near the upper curve of the arms. Passing through the slots 13 is a rod 14, and passing through the respective slots 12 are rods 15. Each rod 15 at its outer end is connected by a curved wire 16 with the rod 14, and the inner end of each rod 15 is connected by a curved wire 17 with the rod 14. Connecting the inner wires 17 is a rod 18, which is connected by wires 19 with the rod 14, thus forming the basket which has a partial revoluble motion limited by the length of the slots 3.

The basket is normally held in position with the rod 14 in the upper ends of the slots 13 by means of coil-springs 19. The rods 16 and 17 after being curled around the rods 12 have straight forward extensions 20, to the front ends of which are fastened a buffer-bar 21, which extends across in front of the car, its forward edge being preferably provided with padding 22 to cushion the impact when striking a body. The springs 19 also furnish a resilient opposing force to soften the blow of the buffer against the object. The buffer 21 is preferably curved to conform to the curve of the front of the car.

The rod 8, which forms the edge of the scoop, is preferably arranged about on a line with the front end of the car, as shown in Fig. 2, while the resilient buffer is arranged slightly in advance of the rod 8, as shown in Fig. 2. When the car encounters an object, such as a person standing, the buffer 21 will first strike the person and spring back, stretching the springs 19, and thus softening

the blow against the body of the person. If the car is not moving very fast, this yielding movement of the buffer may result in preventing the person being knocked down. Thus two sources of injury are prevented. First, the impact of the buffer against the person is softened by the cushion 22 and the liability of bruising the person is prevented. Second, the liability of knocking over a person is avoided by the yielding backward bodily movement of the buffer. If, however, the speed of the car should be so great as to knock over the person or if the car should come upon a person lying on the track, as soon as the front edge of the scoop struck the person the resistance offered by the body would cause the scoop to retract as the car moved forward, and as the rods 6 slide back through the substantially tangential slots 5 and the rods 4 slide up through the curved slots 3 the front edge of the scoop is drawn down toward the track and the body of the person is rolled up on the scoop by the forward movement of the car, so that the person lies supported in the basket or on the scoop, or partly on both. Owing to the immediate automatic lowering of the front edge of the scoop when encountering the body, it is impossible for the fender to pass over the top of the body, and thus the body is kept out of contact with the wheels and saved from injury. The lowering action of the scoop also prevents the arms or legs of the person from getting under the fender, while the rubber sleeves 10 on the rod 8 prevent bruising the person.

It will be observed that the action of the fender is absolutely automatic and that owing to the simple construction there is little, if any, liability of any part failing to operate.

What I claim is—

1. A fender comprising a pair of curved arms, a scoop comprising cross-rods which lie in slots in the arms, wires uniting the cross-rods, the slots having variant paths to cause the front end of the scoop to lower when the scoop is retracted, means for yieldingly holding the scoop in forward position, and a basket supported by the arms with its lower portion arranged close to the scoop.

2. A fender comprising a pair of curved arms, a scoop comprising cross-rods which lie in slots in the arms, wires uniting the cross-rods, the slots having variant paths to cause the front end of the scoop to lower when the scoop is retracted, means for yieldingly holding the scoop in position, and a basket comprising cross-rods which lie in slots in the arms, wires uniting the cross-rods, the basket having a partial revoluble movement.

3. A fender comprising a pair of curved arms, a scoop comprising cross-rods which lie in slots in the arms, wires uniting the cross-rods, the slots having variant paths to cause the front end of the scoop to lower when the scoop is retracted, means for yieldingly holding the scoop in forward position, a basket comprising cross-rods which lie in slots in the arms, wires uniting the cross-rods, the basket having a partial revoluble movement, some of said latter wires projecting forward from the upper part of the basket, and a buffer-bar supported on the projecting wires.

4. A fender comprising a pair of curved arms, a scoop comprising cross-rods which lie in slots in the arms, wires uniting the cross-rods, the slots having variant paths to cause the front end of the scoop to lower when the scoop is retracted, means for yieldingly holding the scoop in forward position, and a basket comprising cross-rods which lie in the slots in the arms, wires uniting the cross-rods, the basket having a partial revoluble movement, the wires being attached to the cross-rods by being curled around the rods.

5. A fender comprising a pair of curved arms, a scoop comprising cross-rods which lie in slots in the arms, wires uniting the cross-rods, the slots having variant paths to cause the front end of the scoop to lower when the scoop is retracted, means for yieldingly holding the scoop in forward position, a basket comprising cross-rods, which lie in slots in the arms, wires uniting the cross-rods, the basket having a partial revoluble movement, the wires being attached to the cross-rods by being curled around the rods, and sleeves on the cross-rods for spacing apart the wires.

6. A fender comprising a pair of curved arms, a scoop comprising cross-rods, which lie in slots in the arms, wires uniting the cross-rods, the slots having variant paths to cause the front end of the scoop to lower when the scoop is retracted, means for yieldingly holding the scoop in forward position, a basket comprising cross-rods which lie in slots in the arms, wires uniting the cross-rods, the basket having a partial revoluble movement, the wires being attached to the cross-rods by being curled around the rods, and sleeves on the cross-rods for spacing apart the wires, the sleeves on the front rod of the scoop being formed of a yielding material.

In testimony whereof I have hereunto set my hand, at Los Angeles, California, this 14th day of October, 1905.

JAMES A. McMILLAN.

In presence of—

GEORGE T. HACKLEY,
BELL HALL.