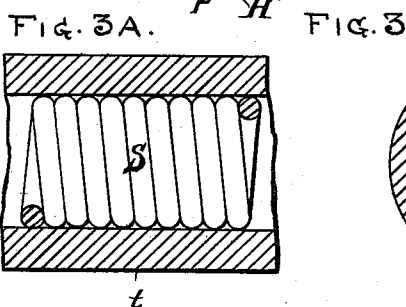
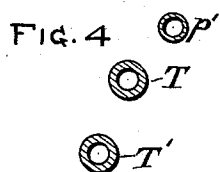
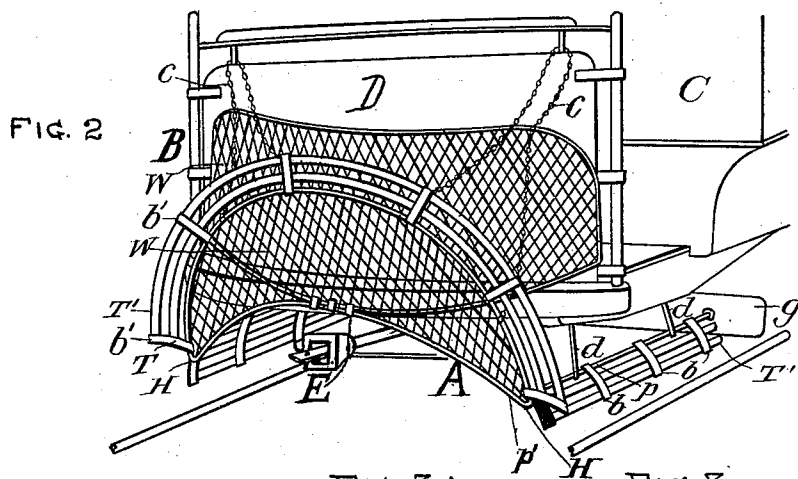
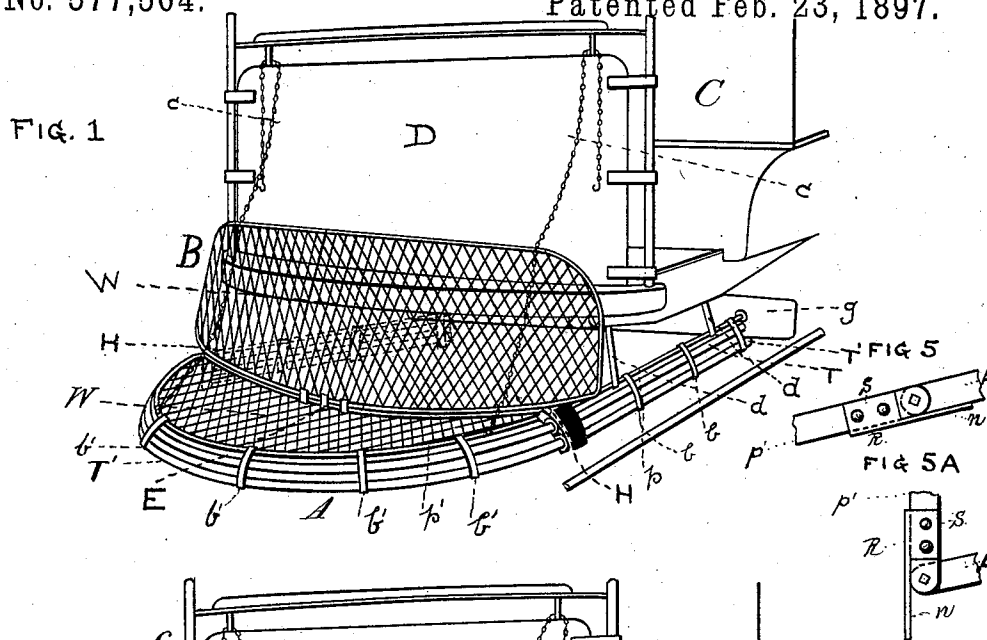


(No Model.)

G. STADEMANN.
STREET CAR FENDER.

No. 577,564.

Patented Feb. 23, 1897.



WITNESSES.

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GUSTAV STADEMANN, OF PHILADELPHIA, PENNSYLVANIA.

STREET-CAR FENDER.

SPECIFICATION forming part of Letters Patent No. 577,564, dated February 23, 1897.

Application filed July 2, 1896. Serial No. 597,839. (No model.)

To all whom it may concern:

Be it known that I, GUSTAV STADEMANN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Street-Car Fenders, of which the following is a specification.

My invention relates to car-fenders for use on street-cars, more especially those propelled by electricity or some motive power other than animal power attached directly to the car; and the objects of the invention are, first, to prevent the body struck from being rolled or pressed under the fender and car; secondly, to prevent it, when falling, from striking the buffer or the dashboard.

I am aware that many fenders have been made which prevent bodies caught fairly in front of them from striking the draw-beam or the dashboard, but they have one of two defects—they either project rigidly in a rectangular form in front of the car, and consequently in passing round a corner swing to one side and leave a considerable part of the road-bed uncovered, at the same time projecting into the street on the other side and catching and throwing down unwary pedestrians pausing several feet away from the track, or they are carried on small trucks in front of the car in order to guide them on the track, and then they are of undue length and their trucks are clogged by very slight obstacles. I seek to avoid both these objections by adopting a form approximately semicircular, as fully set out in the specification and drawings following, in which—

Figure 1 is a view in perspective of the car and fender attached thereto and lowered as for use. Fig. 2 is a view in perspective of the car and fender attached thereto and drawn up against the dashboard as it is when not in use. Fig. 3 is a cross-section, and Fig. 3^A a longitudinal section, of the sheathing and spiral spring which surround the bottom of the fender. Fig. 4 is a vertical cross-section of the lower bar and sheathed spiral spring extended round the bottom of the fender. Figs. 5 and 5^A represent hinge H, straight and bent, respectively.

Similar letters refer to similar parts throughout the several views.

In the drawings, C represents the car-body,

and D the dashboard; A, the forward-projecting part of the fender with a semicircular contour in front; B, the upright portion protecting the buffer and dashboard; E, the hinges connecting the two parts of the fender in the middle in front; H H, the hinges at the sides on which the front portion of the fender rises and rests when down.

W W is the wire-netting covering the fender.

T T' are the rubber tubes, inclosing spiral spring, running in front of the fender next the ground and also along the sides of the car under the platform to the front wheels.

c c are chains attached to the fender and carried around the uprights of the dasher to hold it up when not in use, as shown in Fig. 2.

t is the rubber or other elastic covering of the tubes T T'.

S is the spiral spring coiled therein.

b b b' b' are clips or holders supporting T T'.

p p p' p' are hollow metal rods or small gas-pipe.

d d are hangers supporting the rod or pipe p.

g is the board immediately in front of the car-wheels.

In Figs. 5 and 5^A, R is a metal sleeve formed by taking a piece of pipe the diameter of whose core is slightly less than the external diameter of p p', and then cutting away one-half or two-thirds of the cross-section of the pipe for about two-thirds of its length, leaving a projecting lug or arm n. It should then be heated and the sleeve s slipped over p', so as to have the arm n projecting sufficiently to catch under p and hold A up from the ground when it is lowered. Rivets may be driven through s and p' also for additional security, if desired, but the shrinking of the sleeve when cooled will hold it firm; or if p p' are flat strips, R may be formed flat also and riveted to p'.

The construction of the fender is as follows: Hangers d d are screwed fast under the platform on either side, and to their lower ends is made fast the rod or pipe p, fastened at one end to the board g in front of the wheels and running forward to a point somewhat in front of the buffer. To this rod or pipe p are attached parallel strips of tubing T T', held in place by clips or holders b b, each strip being set a little farther out than

the one above, as shown in the drawings. To this rod or pipe *p*, as a rigid base, is hinged the wire lunette *A*, the length from side to side or from hinge *H* to hinge *H* being about 5 six feet, and the diameter of the curve, if completed lengthwise of the car, being about six and a half feet. *A* is also hinged at *E* to the upright wire frame *B*, which fits in front of the car, as shown in the drawings, and 10 rests on *A* for its support. The lunette *A*, which is substantially the segment of a circle, is hinged at its outer extremities to the rods or pipes *p p* by the hinges *H H*, the front rod or pipe *p'* being continued under the hinge 15 *H* and under *p* by the lug or arm *n*, Fig. 5, so that the lunette *A* is supported thereby and prevented from falling any lower or dragging on the ground. Around the lower edge of *A* are run two or more strips of tubing attached 20 to *p'* by clips or holders *b' b'*, each strip of tubing being set a little farther out than the one above it, as shown. The object of this arrangement is to make the impact of the fender in striking a body on the street as gradual 25 as possible, and to break the force of the blow and to slide under a body when struck, instead of simply pushing it along in front. The curve of the fender likewise tends to push anything struck to one side and off the 30 track, and the tubes under the platform prevent the body from being drawn in or rolling onto the track again in front of the wheels. The frames *A* and *B* are covered with stout wire-netting, as shown, and are 35 built strong enough to carry the weight of a man or of any object likely to be thrown on them.

The tubing *t* is made of rubber cloth or other elastic substance and the core is filled 40 with a closed spiral spring of steel wire, thus producing an elastic buffer capable on pressure of moving in any direction from its normal position without breaking or injury to itself or any part of the machine and of re- 45 suming its position when the pressure is withdrawn. The tubing will be found sufficiently strong to resist the impact of any body likely to be struck and yet give way under the pressure of a child's body, for in- 50 stance, sufficiently to buckle down to the ground at once and sweep it and prevent the body from passing under the fender. The

preferable diameter of the tubing I find to be between one and two inches. The preferable weight of the spring I find to be about 55 three-quarters of a pound to the foot.

To put the fender on a car, the side pieces under the platform are first made fast, then the lunette *A* is hinged to them at *H H*, the screen *B* is set on it, and the hinges *E* fitted. 60 When *A* is horizontal or in position for use, *B* projects sufficiently to come in front of and cover the ends of the draw-beam and leans back from *E* against the buffer. The chains *c c* are then attached to *p'* and to the upper 65 rim of *B* at any suitable points and carried up round the dashboard-standards, and the fender is ready for use.

When not in use, the lunette *A* is raised by simply pushing it up, and by the same action 70 the screen *B* is pushed up ahead of it, and both are retained in position by the chains *c c*, the loose ends of which are then hooked to *A*.

What I claim as my invention, and desire 75 to secure by Letters Patent, is—

1. In a street-car fender the combination of side bars fixed below the steps at each side of the platform, an upright movable wire-netting screen resting thereon at each end, a 80 wire lunette reaching forward and hinged to the fixed side bars, and also hinged centrally to the movable upright screen, bands of elastic tubing with interiorly-coiled wire spring on the lower periphery of the lunette, sup- 85 ports for said tubes and means for elevating and depressing the wire screens, substantially as set forth.

2. In a street-car fender the combination of 90 side bars fixed below the steps at each side of the platform, an upright movable wire-netting screen resting thereon at each end, a wire lunette reaching forward and hinged to the fixed side bars, and also hinged centrally to the movable upright screen, bands of elastic 95 tubing with interiorly-coiled wire springs on the lower periphery of the lunette, clips or holders for supporting same, and means for elevating and depressing the wire screens, substantially as set forth.

GUSTAV STADEMANN.

Witnesses:

HAROLD GOODWIN,
WM. V. COLLIER.