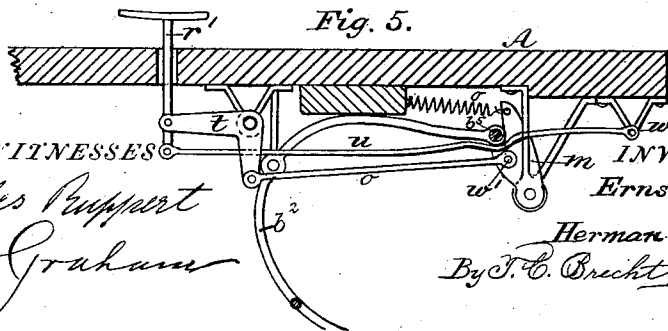
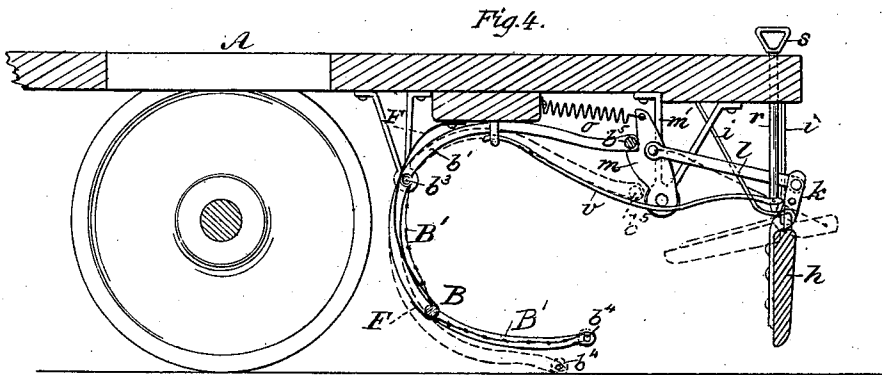
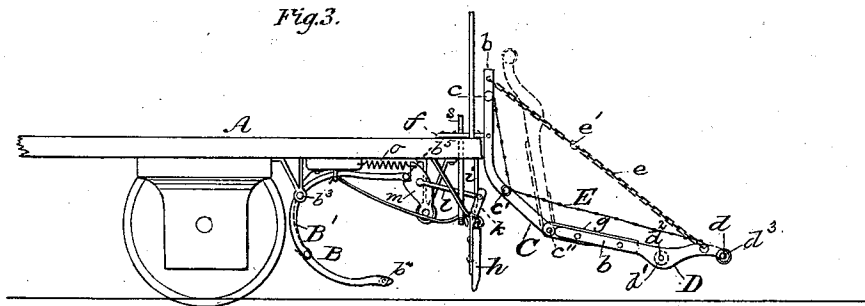
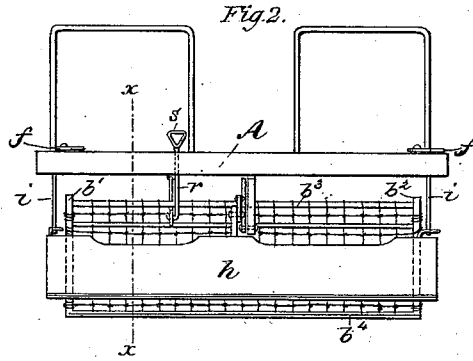
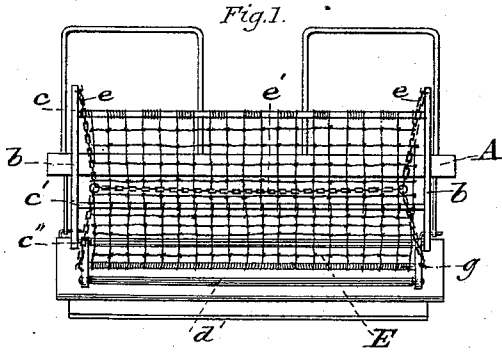


(No Model.)

E. GERSTENBERG & H. BARGHAUSEN.  
FENDER FOR CARS.

No. 540,733.

Patented June 11, 1895.



WITNESSES:  
*Charles Puppert*  
*C. L. Graham*

INVENTORS:  
*Ernst Gerstenberg,*  
*Herman Barghausen,*  
By *J. C. Bricht,* Attorney.

# UNITED STATES PATENT OFFICE.

ERNST GERSTENBERG AND HERMAN BARGHAUSEN, OF WASHINGTON,  
DISTRICT OF COLUMBIA.

## FENDER FOR CARS.

SPECIFICATION forming part of Letters Patent No. 540,733, dated June 11, 1895.

Application filed November 22, 1894. Serial No. 529,571. (No model.)

*To all whom it may concern:*

Be it known that we, ERNST GERSTENBERG and HERMAN BARGHAUSEN, citizens of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Fenders for Cars; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Our invention relates to improvements in fenders for street and other railway-cars of any description.

The objects of our invention are, to produce a fender for any surface, or overhead or underground cars, by which the fearful loss of life, as well as the maiming of bodies of persons, &c., now occurring, can be effectually prevented; also to produce these fenders in such manner, that they are always reliable, and will accomplish the purpose for which they are intended without fail; furthermore, to produce the fender of very simple construction, so that they can be easily and quickly manipulated by the gripman or any other person; also that they can be readily attached to old as well as new cars, and, finally, that they can be produced at a comparatively small expense.

Our invention consists in the construction of certain details and the arrangement of parts, as will be more fully described hereinafter and specifically pointed out in the claims, reference being had to the accompanying drawings, and the letters of reference marked thereon.

Like letters indicate similar parts in the different figures of the drawings, in which—

Figure 1 represents a front view of our improved fender attached to the front of a car. Fig. 2 is a front view of the same, with the preliminary fender removed. Fig. 3 is a side elevation of Fig. 1. Fig. 4 is a sectional view, on line *xx* of Fig. 2, of the main fender on an enlarged scale. Fig. 5 is a detail view of modified operating devices for the main fender.

In the drawings, A, represents the front part of an ordinary car of any suitable construction, to which the fender is attached. It consists of what we term the main fender B and the primary or preliminary fender C, which latter may be dispensed with, if desired.

The preliminary fender is made of a framework in two parts and consists of the side-pieces *b* and the cross-bars *c*, *c'*, *c''*, to the latter of which the part D is hinged. This is provided at its forward end with two cross-bars *d<sup>2</sup>*, *d<sup>3</sup>*, upon which the rubber rollers *d* and *d'*; see Fig. 3, are placed. Between the sides of the part D of the fender C and extending from the rear bar *c* to the front bar *d<sup>3</sup>* is secured a continuous strong wire rope or any equivalent netting, E, being slightly elastic. From the upper end of the framework *b* to the lower end of the part D extends on each side a chain *e* and a cross-chain *e'* connects the two. The object of these chains is to prevent a person, when caught upon this fender, from falling off and to assist him, by holding on to the cross-chain *e'*. Between the sides of the part D is arranged a board or shield *g* to prevent any part of the body from protruding through the netting.

The preliminary fender is hinged to the hooks *f* on each side of the car, so as to be readily detachable, when desired.

The main fender B consists first of a shield or cross-piece *h*, extending to within a few inches of the rails or road-bed, and is hinged to brackets *i* on each side of the car. To the rear side of said shield *h* is secured a lug *k*, having holes in it, for adjusting the bar *l*, attached to a spring-trigger *m* pivoted to the bracket *m'* and having a spring *o*, secured to its upper end for throwing the piece *h* into its normal position, as shown in full lines in Fig. 4 and in dotted lines, when tripped. A short distance behind the shield *h* is arranged the final carrier B, that consists of the side-bars *b<sup>1</sup>*, *b<sup>2</sup>*, of the curved form shown best in Fig. 4, and connected by an upper and lower cross-bars *b<sup>3</sup>*, *b<sup>5</sup>*. Between these bars and the sides is placed a strong netting B', and the front bar may be provided with a rubber roller, if desired. The upper ends of the side-bars are extended forward and connected by an-

other cross-bar  $b^4$ . When set for action, this cross-bar  $b^5$  engages with the notch on the trigger  $m$  and touches the road bed and the lower front end of the fender B comes within a short distance of the road bed, being thrown backward by the curved spring F, secured to the car. When released, said front of the fender touches the road bed, as shown in dotted lines in Fig. 4, being detached from the trigger and thrown backward. The rod  $r$  has a suitable handle  $s$  for operating it by hand, and to reset the main fender B, after it has been tripped. The handle and rod  $r$  are connected to the end of the bent rod  $v$ , and as the bar  $b^5$  rests upon it, it is raised into the notch of the trigger  $m$ , and when said handle is pulled up the bar  $b^5$  engages with the trigger  $m$ , which is actuated by the coiled spring  $o$ .

If desired, the fender B may be operated by the devices shown in Fig. 5, which consists of the vertical rod  $r'$ , having a foot-treadle, upon which the gripman places his foot, and pressing down, it moves the bell-crank lever  $t$ , hinged to a bracket attached to the car and connected by the bent rod  $u$  to a short pin or shaft supported in the bracket  $w$ . The other end of the bell-crank  $t$  is connected by a rod  $o$  to a pin  $w'$ , on the trigger  $m$  and when the rod  $r'$  is acted on, the trigger is thrown backward by said rod  $o$ , until again engaged with the notch in said trigger and the rod  $b^5$  is placed in position.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The main fender B, consisting of the curved side bars  $b^1, b^2$ , connected by the cross bars  $b^3, b^4, b^5$ , and provided with the netting B' and supported in its normal position on a notch in the spring trigger  $m$ , that is actuated by the rod  $l$  attached to the lug  $k$  secured to the pivoted shield  $h$  and actuated by the vertical rod  $r$  having the handle  $s$  and the curved rod  $v$ , all arranged as specified.

2. The combination of the main fender B, consisting of the curved side bars  $b^1, b^2$ , connected by the cross bars  $b^3, b^4, b^5$ , and provided with the netting B' and supported in its normal position on the notch in the spring trigger  $m$ , that is actuated by the rod  $l$  attached to the lug  $k$ , secured to the pivoted shield  $h$  and actuated by the vertical rod  $r$  having the handle  $s$ , and the curved rod  $v$ , in combination with the fender C, provided with the section D having netting E, chains  $e$  and cross chain  $e'$  and the rollers  $d, d'$ , all constructed as shown and specified.

In testimony whereof we affix our signatures in presence of two witnesses.

ERNST GERSTENBERG.  
HERMAN BARGHAUSEN.

Witnesses:

CHARLES RUPPERT,  
C. G. GRAHAM.