

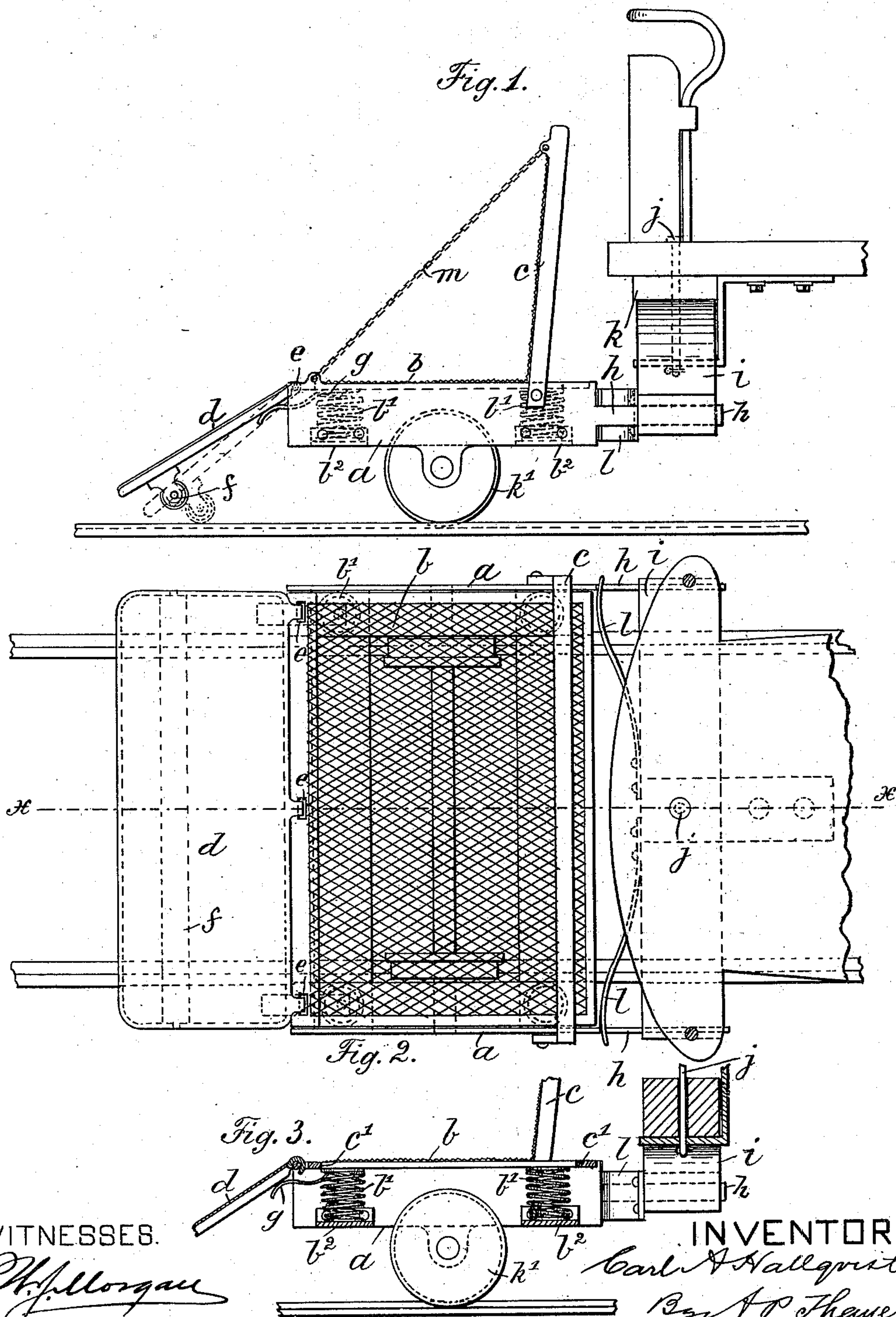
(No Model.)

2 Sheets—Sheet 1.

C. A. HALLQVIST.  
FENDER FOR STREET CARS.

No. 559,029.

Patented Apr. 28, 1896.



WITNESSES.

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*S. H. Morgan*

INVENTOR.

*Carl A. Hallqvist*  
*By A. P. Thayer*  
*att'y*

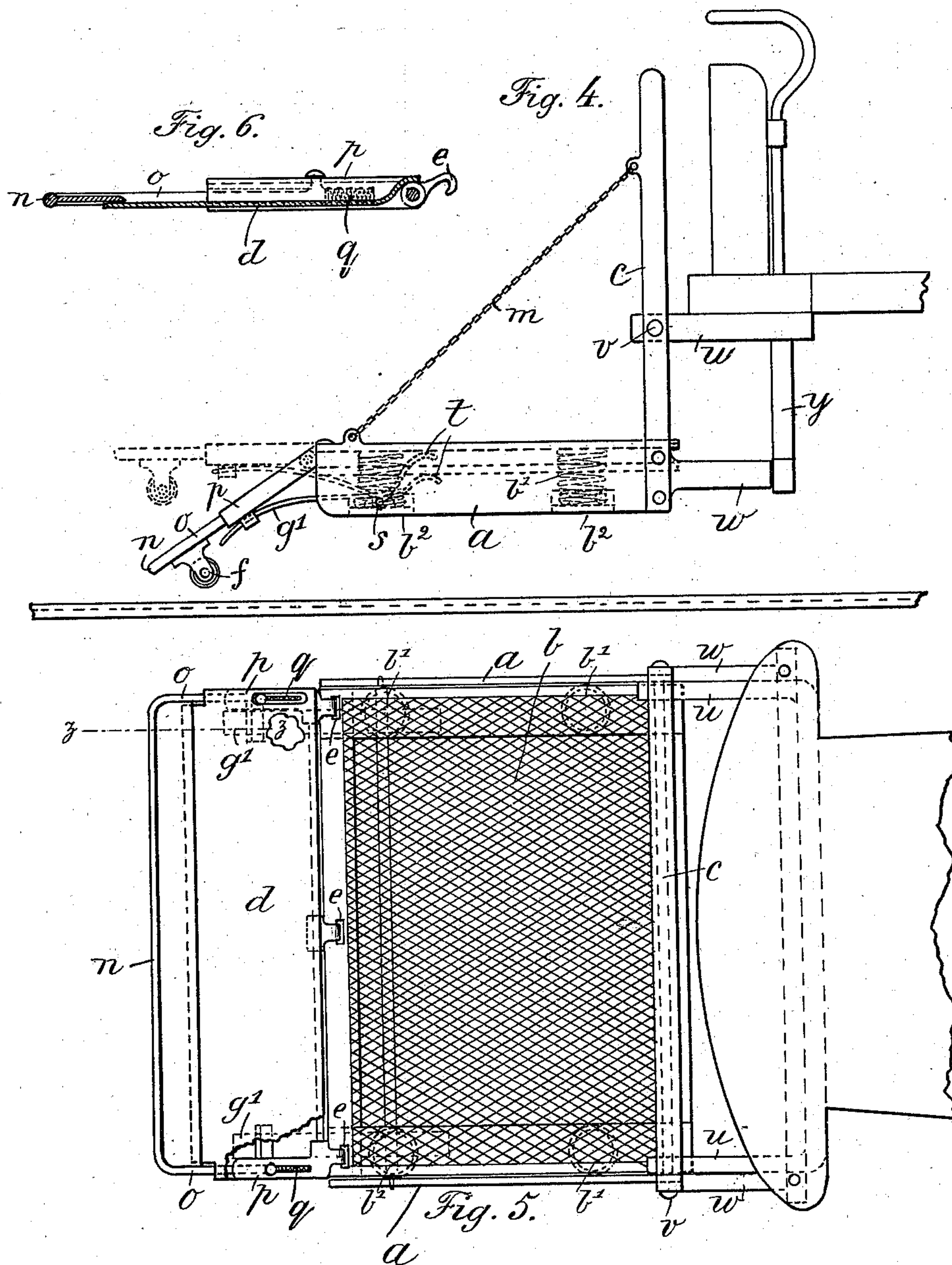
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# UNITED STATES PATENT OFFICE.

CARL A. HALLQVIST, OF BROOKLYN, NEW YORK.

## FENDER FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 559,029, dated April 28, 1896.

Application filed June 3, 1895. Serial No. 551,495. (No model.)

*To all whom it may concern:*

Be it known that I, CARL A. HALLQVIST, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Fenders for Street-Cars, of which the following is a specification.

My invention relates to fenders for street-cars designed for the protection of people accidentally struck by rapidly-running cars; and it consists, essentially, of improved contrivances for the application of a spring-bed carried on a support projecting forward of the end of the car with a forwardly and downwardly projecting apron jointed to the front edge of the spring-bed, as hereinafter described, reference being made to the accompanying drawings, in which—

Figure 1 is a side elevation of my improved fender applied to the end of a car, only part of which is shown. Fig. 2 is a plan view of the same. Fig. 3 is a sectional elevation on line *xx*, Fig. 1. Fig. 4 is a side elevation with some of the parts in modified form. Fig. 5 is a plan view of the fender as represented in Fig. 4. Fig. 6 is a detail of the extension-apron in section.

To the end of the car I apply in any approved way a supporting-frame *a* for a spring-bed or spring-mattress *b* and a chair or other seat back *c*, with an apron *d*, jointed to the front edge of the spring-bed, as at *e*, or in any approved way, said apron extending forward and downward at its front edge to close proximity to the roadway and provided with wheels or rolls *f* to carry it free when depressed and with springs *g* or *g'* to normally support the front edge and its wheels a little above the roadway.

*b'* represents the springs of the bed resting on bars *b<sup>2</sup>* of the carrying-frame and supporting the bed.

The supporting-frame is preferably connected by bars *h* to the extremities of a bolster *i* under the front beam *k* of the car-platform, to which it is coupled by a king-bolt *j* for lateral play and has wheels *k'* to roll on the track. The bars *h* are adapted to slide forward and backward in the ends of the bolster, and a buffer-spring *l* of one or more parts is interposed between the rear end of the supporting-frame and the bolster for yielding and

relieving the shocks when contact with a body occurs.

The front end of the apron is suitably cushioned with rubber or other elastic material for relieving the shocks of contact, and the face of the apron and the top of the spring-bed are composed of suitable elastic webbing for relief to the persons. The front portion of the supporting-frame and the top of the back are coupled by chains *m* for supporting the back against the shocks to which it is subject.

For further relief of contact of the apron upon the body the front edge *n* of the apron is made yielding also, which may be accomplished in any approved way; but as here shown it has telescopic connection of its arms *o* with the tubular arms *p* of the permanent part, in which are buffer-springs *q*, which normally project the edge forward, but yield when the shocks of contact occur. The webs of the two parts of the apron may overlap each other, as shown in Fig. 6, or in any other approved way, for enabling the yielding of the front.

In Figs. 4 and 5 I represent the springs *g'* for holding the edge of the apron above the roadway, so as to elevate the apron also, as indicated in dotted lines in Fig. 4, when a body falls on the fender, to facilitate safe lodgment on the bed-spring, said springs *g'* being pivoted at *s* and having a lever-arm *t* extending backward and upward to contact with the bars of the bed-spring, so that when it is pressed down by the weight falling on it the forwardly-projecting arms of the spring will raise the apron.

The supporting-frame may be connected to the end of the car in an unyielding manner and be supported entirely by such connection, so as to dispense with the wheels *k'*. Such connection may be made by pinning or bolting the frame-bars of the back *c* to arms *u* of the car, as at *v*, with bearers *w* resting against the hangers *y*, pendent from the car, so that the fender may be readily connected and disconnected.

I claim—

1. The improved car-fender consisting of the flat horizontal spring-mattress-supporting frame attached to the end of the car, the spring-mattress carried on said frame, the for-



wardly and downwardly projecting apron jointed to the front edge of the spring-mattress and provided with carrying-rolls under its front portion, and the springs normally supporting the apron above the roadway but adapted to yield for contact of the rolls on the rails when contact with a body occurs substantially as described.

2. The improved car-fender consisting of the flat horizontal spring-mattress-supporting frame attached to the front end of the car, said frame having a seat-back at the rear and in front of the dashboard; the spring-mattress carried on said frame, the forwardly and downwardly projecting apron jointed to the front edge of the spring-mattress and provided with carrying-rolls under its front portion, and the springs normally supporting the apron above the roadway substantially as described.

3. The improved car-fender consisting of the supporting-frame yieldingly attached to the end of the car with an intermediate buffer-spring, the spring-mattress carried on said frame, the forwardly and downwardly projecting apron jointed to the front edge of the spring-mattress and provided with carrying-rolls under its front edge, and the springs normally supporting the apron above the roadway but adapted to yield for contact of the rolls on the rails when contact with a body occurs substantially as described.

4. The improved car-fender consisting of the flat horizontal spring-mattress-supporting frame attached to the end of the car, the spring-mattress carried on said frame, the forwardly and downwardly projecting apron

jointed to the front edge of the spring-mattress, and provided with carrying-rolls under its front edge, and the springs normally supporting the apron above the roadway and adapted to raise the apron by the depression of the spring-mattress substantially as described.

5. The improved car-fender consisting of the flat horizontal spring-mattress-supporting frame attached to the end of the car, the spring-mattress carried on said frame, the forwardly and downwardly projecting extension-apron jointed to the front edge of the spring-mattress and provided with carrying-rolls under its front edge, said apron having the extensible front portion and the springs normally supporting the apron above the roadway substantially as described.

6. The improved car-fender consisting of the flat horizontal spring-mattress-supporting frame attached to the end of the car by extensible or slidable connections with an intermediate buffer-spring, the spring-mattress carried on said frame, the forwardly and downwardly projecting extension-apron jointed to the spring-mattress, and provided with carrying-rolls under its front edge, and the springs normally supporting the apron above the roadway substantially as described.

Signed at New York city, in the county and State of New York, this 23d day of May, A. D. 1895.

CARL A. HALLQVIST.

Witnesses:

W. J. MORGAN,  
S. H. MORGAN.