

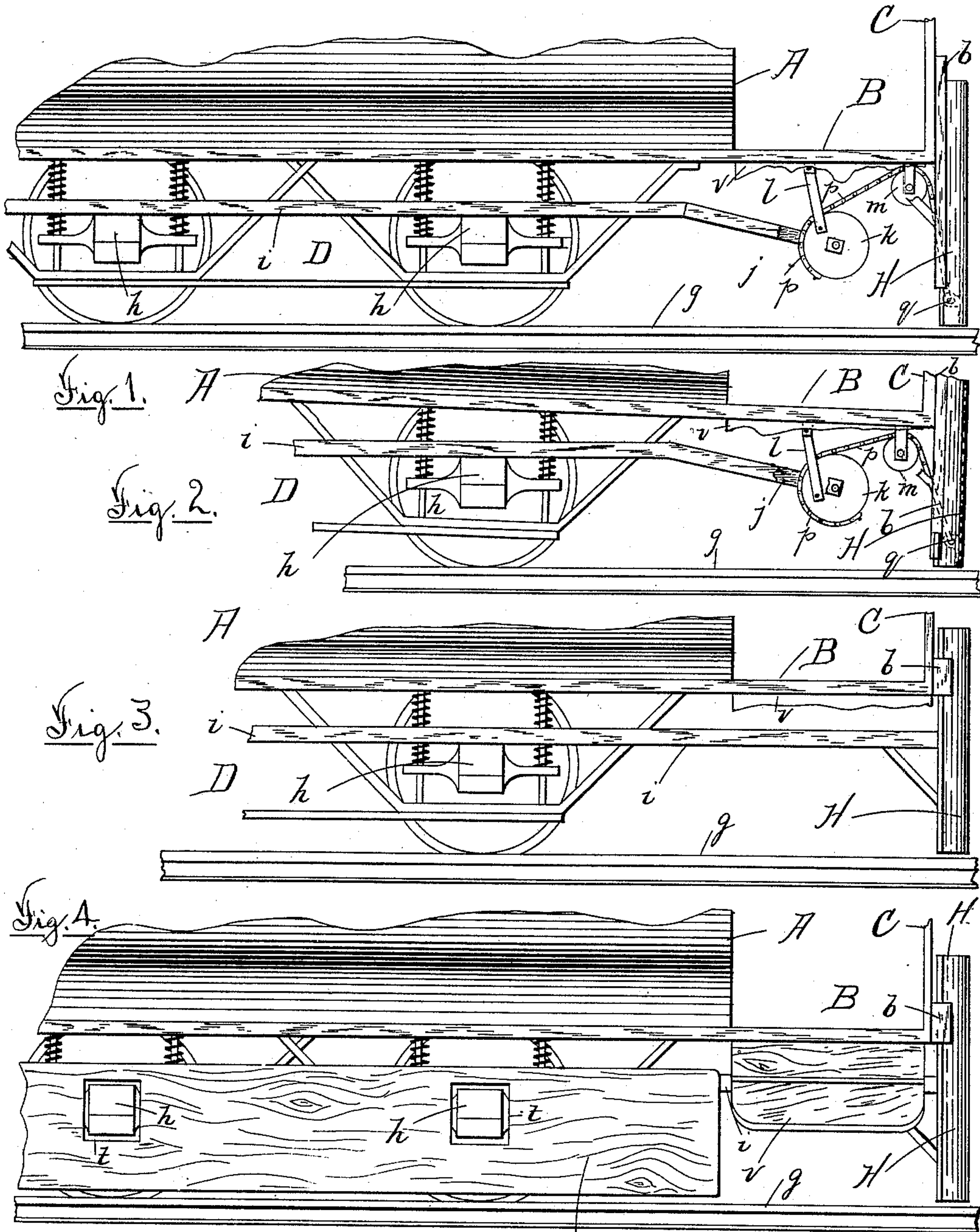
(No Model.)

H. B. LENT.

ADJUSTABLE FENDER OR GUARD FOR STREET CARS.

No. 432,143.

Patented July 15, 1890.



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# UNITED STATES PATENT OFFICE.

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## ADJUSTABLE FENDER OR GUARD FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 432,143, dated July 15, 1890.

Application filed April 15, 1890. Serial No. 347,984. (No model.)

*To all whom it may concern:*

Be it known that I, HOWARD B. LENT, of Boston, in the county of Suffolk, State of Massachusetts, have invented certain new and useful Improvements in Adjustable Fenders or Guards for Street-Cars, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation of a portion of a street-car provided with my improvement, the steps being represented as broken off; Fig. 2, a like view showing the position of the fender when the car tilts, and Figs. 3 and 4 elevations illustrating modifications of the improvement.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

My invention relates especially to guards or fenders for street-railway cars which automatically compensate for the longitudinal tilting of the car; and it consists in certain novel features hereinafter fully set forth and claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the body of the car, B the platform, C the dasher, and D the trucks, these parts being all of the ordinary form and construction. At each side of the dasher a vertically-arranged track or way *b* is secured. A fender H, which consists of a metallic sheet bent to conform to the curve of said dasher, is fitted to slide vertically in said ways, and is so disposed that its lower edge is within a short distance of the track-rails *g*, as shown in the figures. On the upper side of the journal-boxes *h* on the car-truck D a horizontally-arranged bar *i* is secured, the outer ends of said bars being brought together at *j* under the platform B, and a large pulley *k* journaled therein. A crank-rod *l* is pivoted by one end to the under

side of the platform, (see Figs. 1 and 2,) and has its lower end pivoted eccentrically to the pulley or wheel *k*. A small pulley *m* is mounted in a hanger on the under side of the platform near the dasher C. A jack-chain *p* has one end secured to the periphery of the large pulley *k*, said chain passing partially around said pulley over the small pulley *m*, and having its opposite end secured centrally at *q* to the edge of the fender H.

It is well known that street-cars, particularly cars driven by electricity wherein the weight of the motor is added to the truck, tilt longitudinally, the movements of the body of the car being to this extent independent of the movement of the truck. From this cause fenders fixed to the ends of the car are brought violently into contact with the rails as the car-wheels strike the joint thereof. My invention overcomes this objection. As the car-body A is tilted longitudinally, as shown in Fig. 2, the crank-rod *l*, fixed to said body, causes the pulley *k* to partially rotate and wind the jack-chain *p* thereon. This elevates the fender secured to the opposite end of said chain a corresponding distance in the ways *b*, as shown in Fig. 2, said fender maintaining the same relative position in relation to the rails *g*, while being by this movement prevented from coming into contact with said rail. As the end of the car tilts upward again, the pulley *k* is moved by the crank-rod *l* in the opposite direction and said fender permitted to slide downward by its own weight in the ways *b*. The pulley *k*, being mounted by means of the side bars *i* on the car-truck, its position in relation to the rails *g* is maintained thereby when the car-body tilts, in a manner which will be readily understood by all conversant with such matters without a more explicit description.

In the modification shown in Fig. 3 the side bars *i* on the truck are extended, and the fender H is mounted on the outer end of said bars and supported directly thereby. The ways *b* are in this case constructed shorter, to prevent the fender from binding therein. As the car tilts, this obviates the necessity of employing the pulleys and crank-rod. The fender, by maintaining the same position, slides readily in its ways as the car tilts.



In Fig. 4 side guards or fenders R are secured to the side bars *i*, an opening *t* being made therein to enable the journal-boxes *h* to be readily reached. Said guards are extended  
5 on the side bars to the steps *v* of the car, and serve to guard against persons falling from said steps under the wheels of the car.

The fender H is curved laterally to conform to the shape of the dasher C, as described,  
10 and fills or closes the space between the platform and rails, so that obstructions on the track are prevented from passing under said car.

Having thus explained my invention, what  
15 I claim is—

1. In a street-car, a fender connected with the truck and arranged to slide vertically on the car-body as said body tilts longitudinally, substantially as described.

20 2. In a street-car, a frame secured on the car-truck and projecting under the platform, combined with a fender mounted on said bars and fitted to slide vertically on the car-dasher as the car-body tilts, substantially as described.  
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3. In a street-car, a fender fitted to slide vertically on the car platform or dasher, combined with a main pulley mounted on the car-truck, a cord or chain secured to said pulley  
30 and fender and passing over an intermediate pulley on the car-body, and a crank-rod pivoted to said body and eccentrically to said main pulley, substantially as and for the purpose specified.

35 4. In a railway-car, a fender fitted to slide vertically on the end of the car-body, in combination with a crank-actuated mechanism connecting the car-truck, fender, and car-body, whereby said fender may be elevated  
40 and maintain the same relative position to the

track-rails as the corresponding end of the car tilts downward, substantially as described.

5. In a railway-car, a frame secured to the car-truck, in combination with a fender mounted on said frame and fitted to slide vertically on the car as the car tilts longitudinally and side fenders mounted on said frame, substantially as described. 45

6. In a railway-car, a body and truck, combined with a frame on said truck bearing a main pulley, a fender fitted to slide vertically on the car-dasher, a crank-rod pivoted to said body and pulley, an intermediate pulley on said body, and a cord or chain passing over said intermediate pulley, its ends being respectively secured to the main pulley and fender, substantially as described. 55

7. The body A and truck D, in combination with the bars *i* and pulley *k*, the crank-rod *l*, pivoted to said body and pulley, the fender H, fitted to slide on the car-dasher C, the pulley *m* on said body, and the chain *p*, connecting the pulley *k* with said fender, substantially as described. 60

8. The body A and truck D, combined with the bars *i*, mounted on said truck, and a fender H, mounted on side bars and fitted to slide vertically on the car-dasher as said body tilts longitudinally, substantially as set forth. 65

9. In a railway-car, a fender fitted to slide vertically on the car-body and having its lower edge nearly in contact with the rail-tracks, in combination with mechanism connecting said fender with the car-truck and actuated by said body as it tilts vertically on said truck, substantially as described. 75

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