(No Model.)

W. H. RICE.

SAFETY GUARD FOR STREET CARS.

No. 525,115. Patented Aug. 28, 1894.

Fig. 1.

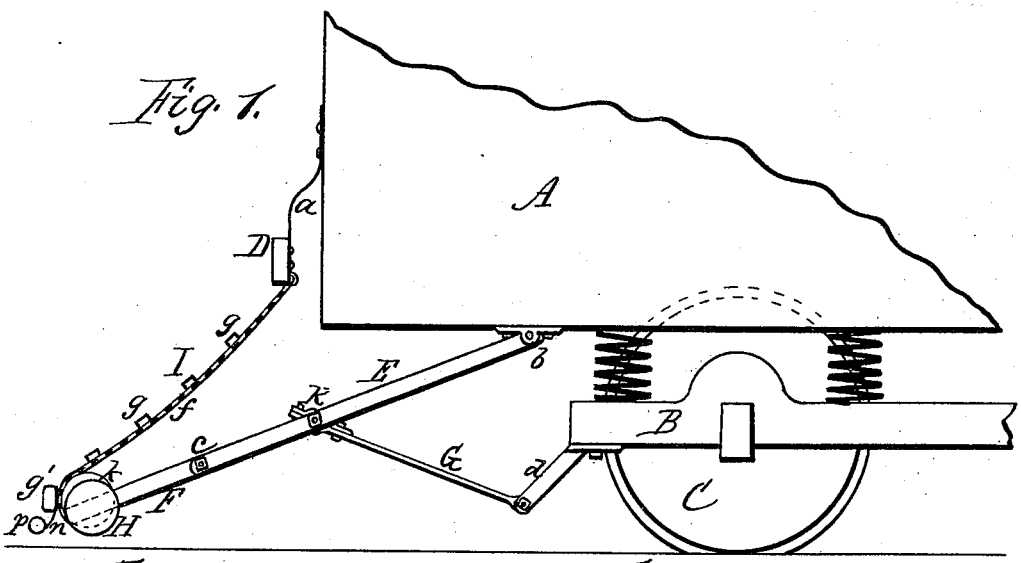


Fig. 2.

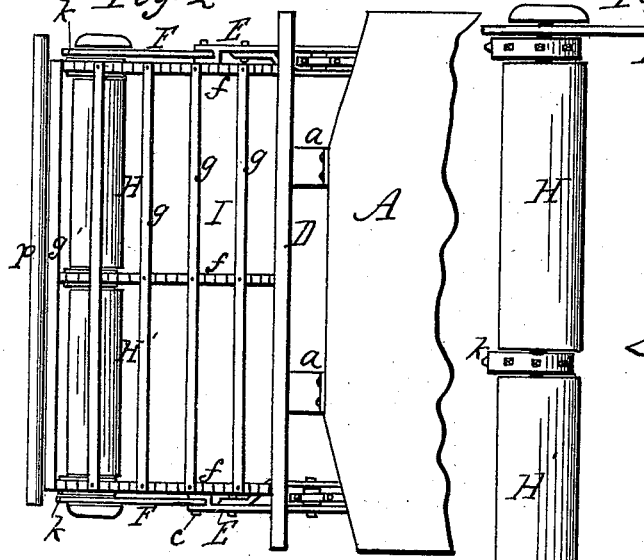


Fig. 3.

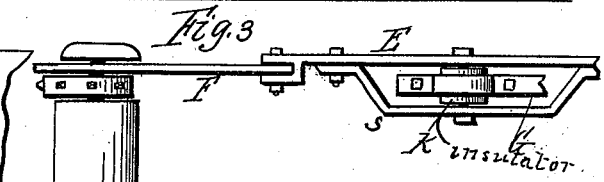


Fig. 4.

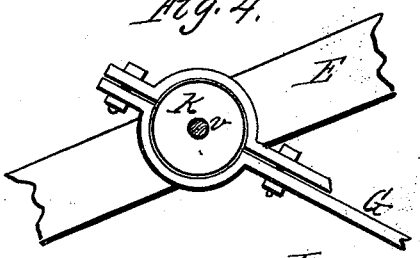
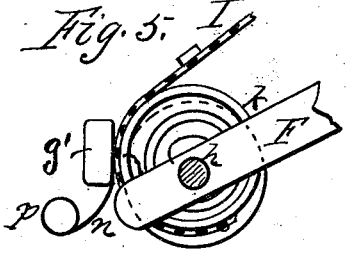
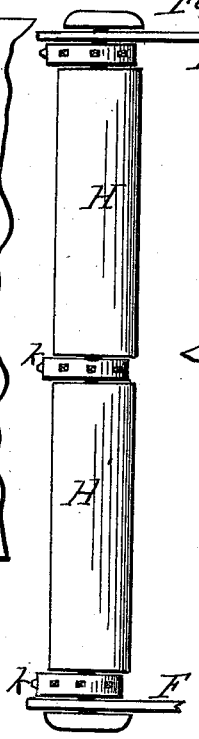


Fig. 5.





Witnesses.
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per R. F. Osgood.
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UNITED STATES PATENT OFFICE.

WILLIAM H. RICE, OF ROCHESTER, NEW YORK.

SAFETY-GUARD FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 525,115, dated August 28, 1894.

Application filed November 21, 1893. Serial No. 491,585. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. RICE, of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Safety-Guards for Street-Cars; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying this application.

My improvement relates to safety guards for street cars, and is similar in general features to those shown in the application of Stephen Norton, filed August 7, 1893, Serial No. 482,625.

The invention consists in the construction and arrangement of parts hereinafter described and claimed.

In the drawings—Figure 1 is a side elevation of one end of a street car with my improvement attached. Fig. 2 is a plan view of the same. Fig. 3 is an enlarged plan view of the front roller and its connections. Fig. 4 is an enlarged side elevation of the insulated joint. Fig. 5 is an enlarged end elevation of the front roller and its attachments.

A indicates the car, B the truck, and C one of the car wheels.

D is a cross bar attached to springs *a a* on the end of the car, said cross bar being padded and serving as a guard to prevent injury in case a person is thrown upon the guard.

E E are two side bars pivoted at *b* to the car and extending downward and outward.

F F are two supplementary bars pivoted at *c*, whereby they can be turned up out of the way when desired. These two sets of bars form the frame of the attachment.

G G are two brace bars on opposite sides, pivoted at the rear end to bearings *d* attached to the truck, and at the front end to the side bars E. These brace bars form a fulcrum to the side bars, whereby as the car vibrates up and down the outer end of the frame of the attachment is made to ride at a uniform elevation above the track, notwithstanding the vibrations of the car.

H is a roller at the outer end of the attachment riding near the track.

I is a flexible guard attached to and partially wound on the sprockets at one end, the opposite or upper end being attached either to the spring cross bar D, or to the end of the car. Preferably the guard is composed of chains *f f f* and cross slats *g g g* attached thereto, as shown.

The roller H is made in two sections H and H′ turning on a shaft *h*, which has its bearings in the supplementary bars F F, and between these sections and at the ends of the roller are sprockets *k k k* fast to the shaft, on which the chains run. These sprockets are circular but are set eccentrically to the roller so that their tops are elevated above the top of the roller and their bottoms above the bottom of the roller as shown in Fig. 5. By this means the chains are elevated above the roller at the points of junction, allowing the roller to run free and the wrapping of the ends of the chains around the sprockets also comes above the bottom of the roller, so that no contact shall come on them at any down vibration. The outer faces of the two end sprockets are hollow, and in them are located springs *m*, connected at one end to the sprocket and at the other to the frame. The tendency of these springs is to force the sprockets forward and hold the flexible guard under tension, but in case a person is thrown upon the guard the springs allow the sprockets to yield and the guard to depress in concave form to hold the occupant.

g′ is a cross slat attached to the chains and resting in front of the roller, the same being padded or covered with soft material to break shock. To this cross slat are attached springs *n*, carrying at their outer ends a supplementary roller *p*, which stands in advance of the other and at such position that, when struck, it turns downward and fits closely over the track. By this means the passage under the attachment is closed so that a person cannot go under the car.

K is an electric insulator interposed between the truck and the frame of the attachment. It may be placed at any point, but, as shown in the drawings, is located at the joint between the brace bar G and side bar E. It may be of any desired construction, but, as shown, consists of a block of lignum vitæ, rubber, or other insulating material, placed between the bar E and a stay piece *s*, and holding the brace bar G, which is clamped thereto by bolts, without coming in contact with the bar E. The insulator is held in place by a bolt

v, which passes through the same, forming also the pivot on which the parts turn. By this means the charge of electricity in the car truck is prevented from passing to the attachment.

Having described my invention I do not claim an attachment consisting of a supporting frame, a spring roller, and a flexible guard connecting the spring roller with the end of the car.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a safety guard for street cars, the combination, with the car, of a supporting frame a roller at the outer end of the frame provided with spring sprockets which stand eccentrically to the roller, and a flexible guard attached at one end to the sprockets and partially wound thereon, and at the other to the car, as and for the purpose specified.

2. In a safety guard for street cars, the combination, with the car, of a supporting frame, a roller at the outer end provided with sprockets which stand eccentrically to the roller, the end sprockets being hollow forming cavities therein, springs located in the cavities connected at one end to the sprockets and at the other to the frame, and a flexible guard attached at one end to the sprockets and partially wound thereon, and at the other end to the car, as and for the purpose specified.

3. In a safety guard for street cars, the combination, with the car, of a supporting frame, a roller at the outer end of the frame, a flexible guard attached at one end to the sprockets and at the other to the car, a cross bar forming a guard attached to the flexible guard in front of the roller, and a supplementary roller attached to the guard and projecting in front of the main roller, as and for the purpose specified.

4. In a safety guard for street cars, the combination with the car, of a frame located in front of the car and connected with the truck, an electric insulator interposed in the connection between the frame and the truck to prevent the passage of electricity from the truck to the frame, and a guard attached to the frame, as and for the purpose specified.

5. In a safety guard for street cars, the combination, with the car, of a frame located in front of the car, an insulator consisting of a block attached to the frame, a connection attached at one end to the insulator without contact with the frame, and at the other to the truck, and a safety guard attached to the frame, as shown and described and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WM. H. RICE.

Witnesses:
R. F. OSGOOD,
C. L. JONES.