(No Model.)

C. E. R. CHRISTENSEN.

SAFETY ATTACHMENT FOR STREET CARS.

No. 533,528. Patented Feb. 5, 1895.

Fig: 1.

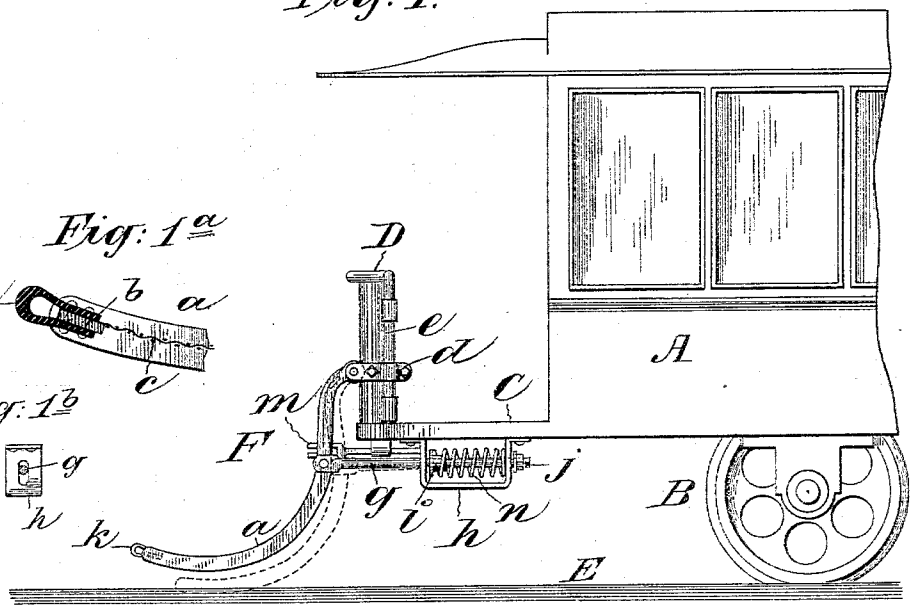
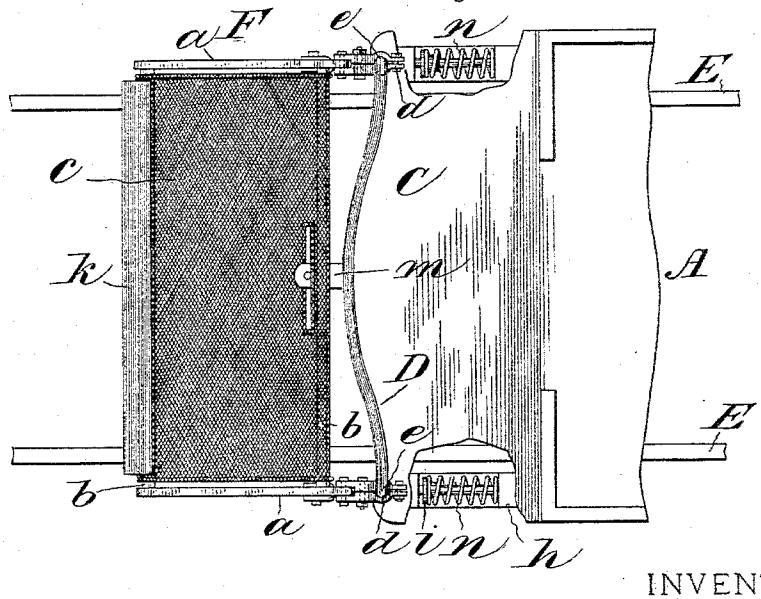


Fig: 1a

Fig: 1b

Fig: 2.



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SAFETY ATTACHMENT FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 533,528, dated February 5, 1895.

Application filed December 23, 1893. Serial No. 494,543. (No model.)

To all whom it may concern:

Be it known that I, CARL E. R. CHRISTENSEN, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Safety Attachments for Street-Cars, of which the following is a specification.

This invention relates to that class of safety devices wherein the attachment is mounted on the end of the car and is adapted to prevent the car from running over a person who may be struck and knocked down thereby, and the object of the invention is to provide a simple, substantial device which will catch and protect from injury any person who may be struck by the car.

In the accompanying drawings, which illustrate an embodiment of the invention—Figure 1 is a side view of a part of a street-car provided with my attachment the view showing one end only of the car. Fig. 1ª is a detached sectional, detail view of the safety-buffer, enlarged; and Fig. 1ᵇ is a slotted stirrup, detached. Fig. 2 is a plan of the attachment and a part of the car.

A represents the car-body; B, the wheels; C, the platform, and D the dash-board. This may be a trolley car, for example, such as are used in cities. The wheels rest on track-rails E.

F represents, as a whole, the safety attachment mounted on the end of the car and embodying my invention. This attachment comprises a frame consisting of two S-shaped side rails, *a*, *a*, and two transverse rails, *b*, *b*. On this frame is stretched some light fabric, preferably wire gauze netting, *c*. At their upper ends the side rails *a*, are hinged or pivotally connected to clips, *d*, clamped adjustably on the uprights, *e*, on the car-platform C; and at a point below the clips *d*, and preferably a few inches below the car-bottom, spring-rods, *g*, are pivotally coupled to the respective rails *a*. These rods play through holes in stirrups, *h*, secured to the car-bottom and each rod has a collar, *i*, which impinges on a compression spring, *n*, in the stirrup. On the end of the rod there may be a nut, *j*. On the lower transverse rail *b*, is placed a cushion or buffer, *k*, which will be, by preference, of rubber arranged as indicated in Fig. 1ª, which represents the buffer and rail in cross-section.

If the car is designed to travel to and fro without turning around, each end of it will be fitted with one of the attachments described.

The gauze covering *c*, has an aperture in it to allow access to the coupling link, *m*, in case of need. It is not, however, essential that this covering *c*, shall extend up at the back of the attachment F, above the link *m*. It is only carried up to the point shown in order to attach it to the upper rail *b*. The gauze or netting employed is light and strong and prevents water from collecting in the lower portion or apron of the device.

As a car-body moves up and down through a space of a few inches, in part owing to its springs, when the car is in motion, it is necessary that the lowest portion of the attachment shall be set at the proper distance above the track-level to allow for the usual depression of the car-body. The adjustment of the device up or down for a limited distance is provided for by making the clips *d*, adjustable on the uprights *e*. The aperture for the spring-rod in the front part or bracket of the stirrup *h*, (see Fig. 1ᵇ) is in the form of a vertical slot, which allows of some play up and down of the spring-rod and its sides form a lateral brace for the attachment F.

The operation of the attachment is as follows: Should the buffer *k*, strike a person standing on the track it will not bruise or cut him, and the resistance will press the attachment F, backward and downward (see dotted lines in Fig. 1), the person struck falling on the apron. Should a child, for example, stumble and fall upon the track, the resistance offered will depress the front edge of the attachment and the child will be taken up onto the apron.

The attachment cannot rise at its front edge and permit a body to get under it owing to the nuts *j*, on the spring-rods, which prevent the latter from drawing out of the stirrups or brackets *h*.

The details of the construction may be varied somewhat without departing materially

from my invention. For example any form of brackets may be used to provide bearings for the spring-rods, and any suitable form of clips *d*, may be used.

Having thus described my invention, I claim—

The combination with a street-car having uprights *e* on its platform, one at each end of the dashboard, of the clips *d*, mounted adjustably on said uprights, the attachment F, having its side-rails *a*, which extend above the level of the platform, hinged to the respective clips *d*, whereby the attachment may be conveniently adjusted up or down, as set forth, the slotted brackets *h*, secured to the car, the spring-rods *g*, hinged to the attachment and extending through said brackets, and the springs *n* on said rods, substantially as set forth.

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

CARL E. R. CHRISTENSEN.

Witnesses:

HENRY CONNETT,

JAMES KING DUFFY.