

(No Model.)

2 Sheets—Sheet 2.

P. S. TOWNSEND.
SAFETY ATTACHMENT FOR STREET CARS.

No. 472,184.

Patented Apr. 5, 1892.

Fig. 3.

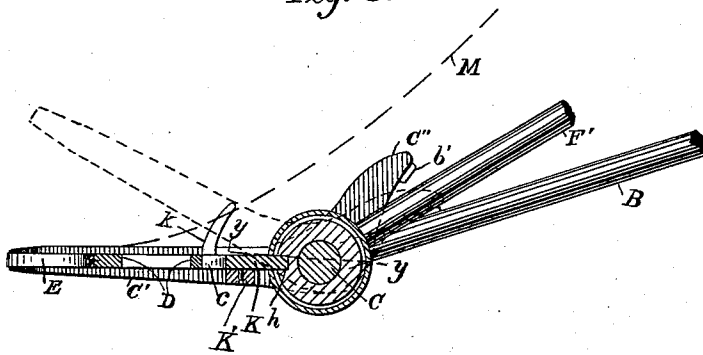
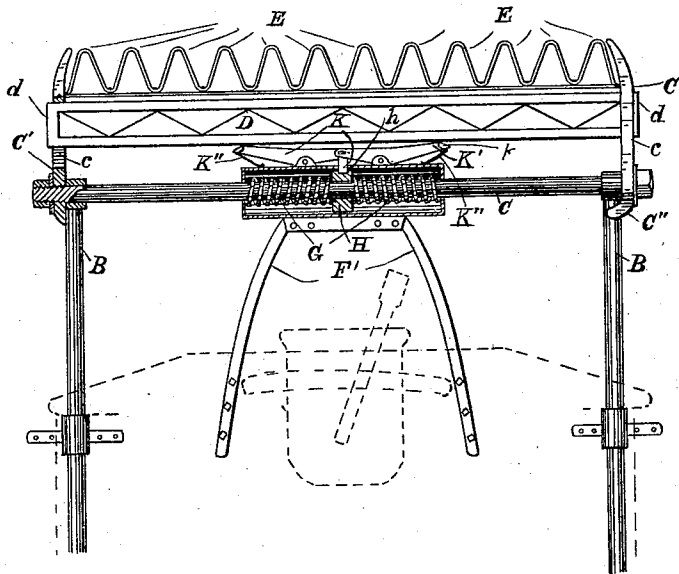


Fig. 4.



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SAFETY ATTACHMENT FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 472,184, dated April 5, 1892.

Application filed September 30, 1891. Serial No. 407,324. (No model.)

To all whom it may concern:

Be it known that I, PHILIP S. TOWNSEND, of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Safety Attachments for Street-Cars; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My present invention has for its objects to provide a safety attachment or life-guard adapted to be applied to street-cars operated by any motor other than horses, as electricity, cable, or steam power, whereby there will be no liability of a person being injured, even if struck by the car while moving at a high rate of speed; but such person will be received upon and carried by the car; and to these and other ends the said invention consists in certain novelties of construction and combinations of parts, all as will be hereinafter fully described, and the novel features pointed out particularly in the claims at the end of this specification.

In the drawings, Figure 1 is a side elevation of the front portion of a car provided with my attachment; Fig. 2, a plan view of the same; Fig. 3, a cross-section on the line $x x$ of Fig. 2; Fig. 4, a horizontal sectional view on the line $y y$ of Fig. 3.

Similar letters of reference indicate similar parts.

The letter A indicates one end of a car-body of the ordinary or any preferred construction, to which are secured rods or bars B B, preferably of metal pipe, secured in brackets B' B', fastened to the under side of the frame and extending downward and forward in proximity to the ground. The ends of the bars are provided with bearings or eyes in which is journaled a transversely-extending shaft C, which is free to turn therein when desired. Rigidly secured to the ends of said shaft outside of the bearings are arms of plates C' C', provided with forwardly-extending portions slotted at c , and also upwardly-extending rear ends C² bent around and over the bars B, said ends being preferably provided with cushions b' adapted to engage and rest upon said bars when plates C' are raised to the position indicated in dotted lines, Fig. 3, thereby limiting the movement in this direction.

D indicates a cross-bar forming with the

plates C' a frame composed of suitable longitudinal and cross-pieces provided with the extensions d at the ends entering the slots c in plates C', which slots are sufficiently long to permit a slight backward and forward movement of the frame, though the latter will be moved upward when the shaft C is turned.

Upon the outer side of the cross-bar D is arranged a series of projections or fingers E, sufficiently elastic so that their sides will yield slightly laterally and grasp an object thrust between them, as the ankle of a person in front of the car, said fingers being in the present instance formed of a continuous piece of elastic material, as band iron or steel, preferably faced with rubber or leather bent as shown and fastened at the ends and at suitable intervals between the fingers to the front of the frame D.

Secured to the front of the car-body by suitable braces F' is a frame, preferably in the form of a tubular casing, having apertures at the ends through which the shaft C passes, and to the ends of this frame are fastened the ends of strong spiral springs G, as in Fig. 4, the other ends being secured to the shaft C or to a collar H, rigidly secured thereon. The tendency of these springs is to rotate the frame and lift the frame to the position in dotted lines, Fig. 3; but said frame is held down by the end of a lever or catch K, pivoted on the front of the frame F, passing through said frame and entering an aperture h in the collar H, as in Figs. 3 and 4, being pressed in this direction by a spring K², secured to the frame and operating on its free end. Connected with this lever by a slot-and-pin connection, as shown, is another lever K', provided with a similar spring, the parts being so arranged that upon pressing on the end of either lever the catch will be withdrawn and the shaft released. The outer ends of each of these levers K K' are turned up, as at k , and they are held against the frame D, which is thus kept normally pressed outward by means of the springs K², arranged between the free ends of the levers and the frame F. Secured to the outer side of the frame D and the body of the car is a netting M, preferably of twine or rope; or, if desired, an apron of canvas could be employed, the function of which is to receive and retain a person struck by the car when in motion, said netting or apron

being preferably higher at the sides than the center, so as to prevent rolling out.

From the above description the operation of the device will be understood.

5 In normal positions when the car is running the side plates C' C' and frame D, which constitute together a lifting-frame, is in the position shown in full lines in the drawings near the tracks, the springs G are under tension, 10 and the shaft and frame held in position by the catch K. If now a person standing on the track should be struck by the car, his ankles, passing between the fingers E, would be grasped by them, and the force of impact 15 would move the frame D backward, pressing one or both of the levers K or K' back against the tension of the springs and releasing the disk or collar H, when the springs G would turn the shaft and raise the forward frame, 20 throwing the person into the net, where he would be retained or carried on the car. Even if the person's ankles were not grasped by the fingers, he would be thrown into the net, and the lower frame being released, he 25 would be held and carried without liability of being injured or falling out.

Where it is desired to restore the device to normal position after being operated the frame may be moved down to lowermost position, when the catch K will automatically 30 engage with the recess h in the collar, the upwardly-projecting ends of the levers remaining in engagement with the cross-bar D, so that they cannot slip under, as would otherwise be the case; or, instead of this arrangement, the lower part of the frame D engaging the levers could be extended, accomplishing the same result. 35

While I have shown the spring for rotating the shaft C as located within the cylindrical casing, and prefer this construction for obvious reasons, I do not wish to be confined to this arrangement, as any other form of spring located anywhere on the car-body could be 45 employed with equally good results to raise the front frame when released by the tripping of the catch.

Numerous other modifications in construction could be made without departing from the spirit of my invention, and I therefore do not desire to be confined to precisely the devices shown. 50

The net or apron described is simply one form of receptacle into which the person 55 could be thrown by the movement of the car or when grasped by the elastic fingers, and when the fingers are not employed the pivoted frame serves merely as a retaining device for preventing the person falling out.

60 I claim as my invention—

1. In a safety attachment for cars, the combination, with a receptacle carried on the car, of a pivoted frame at the front thereof, a spring for raising it, and a catch for retaining the frame depressed against the tension of the spring, substantially as described. 65

2. The combination, with the receptacle carried on the car, of a pivoted frame at the front thereof, having a series of elastic fingers or projections, a spring for raising said frame, 70 and a catch for retaining the frame depressed against the tension of the spring, substantially as described.

3. The combination, with the receptacle carried on the car, of a pivoted frame at the 75 front thereof having a movable portion, a spring for raising the frame, and a catch for retaining the frame in a depressed position against the tension of the spring, arranged to be released by the movable part of the frame, 80 substantially as described.

4. The combination, with the frame-work on the car, the shaft journaled therein, the frame connected thereto, having the movable portion of the spring supported on the 85 car, connected to the shaft for rotating it in a direction to raise the frame from the ground, the catch on the car engaging the shaft and released by the movable portion of the frame when actuated, substantially as described. 90

5. The combination, with the frame-work on the car, the shaft journaled therein, the slotted plates secured to the shaft, and the cross-bar movable therein, of the casing secured to the car, the spring therein secured 95 to the shaft, the catch on the casing engaging the shaft adapted to be operated by the movement of the cross-bar, substantially as described. 100

6. The combination, with the frame-work on the car, the shaft journaled therein, having the notched collar and the frame secured to the shaft having the movable portion, of the rigid casing, the springs secured thereto, 105 and the collar on the shaft, the spring-catch on the casing co-operating with the collar and arranged to be actuated by the movable portion of the frame on the shaft, substantially as described. 110

7. The combination, with the lifting-frame pivoted in advance of the car-body, the spring for raising it, and the catch for retaining it in depressed position, of the net secured to the frame and car, substantially as 115 described.

8. In a safety attachment for cars, a projecting and normally-stationary frame having a series of separate elastic grasping-fingers or projections arranged thereon a short 120 distance apart, substantially as described.

9. In a safety attachment for cars, a vertically-movable pivoted frame, having secured to its front side a strip of spring metal bent into fingers or projections, substantially as 125 described.

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Witnesses:

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