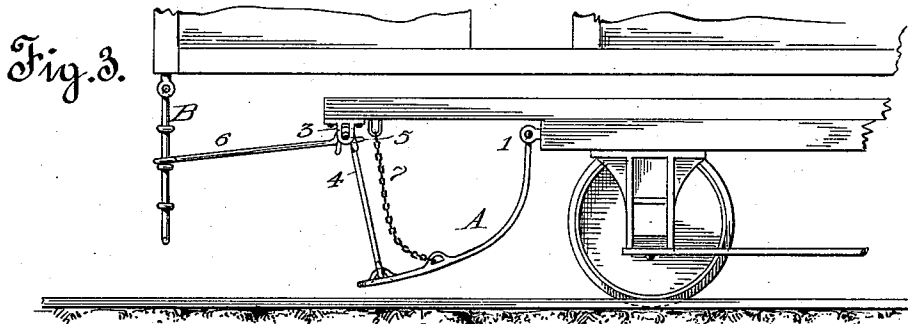
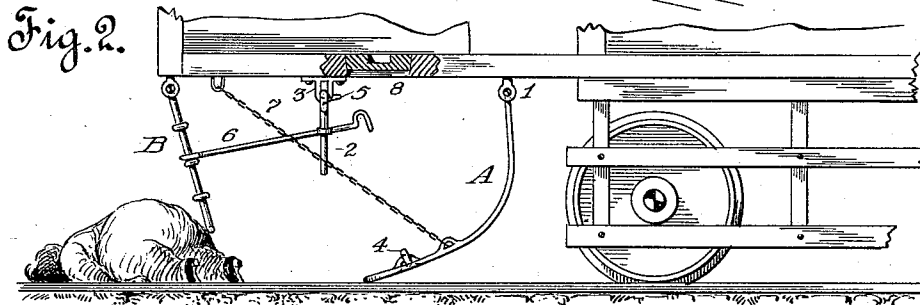
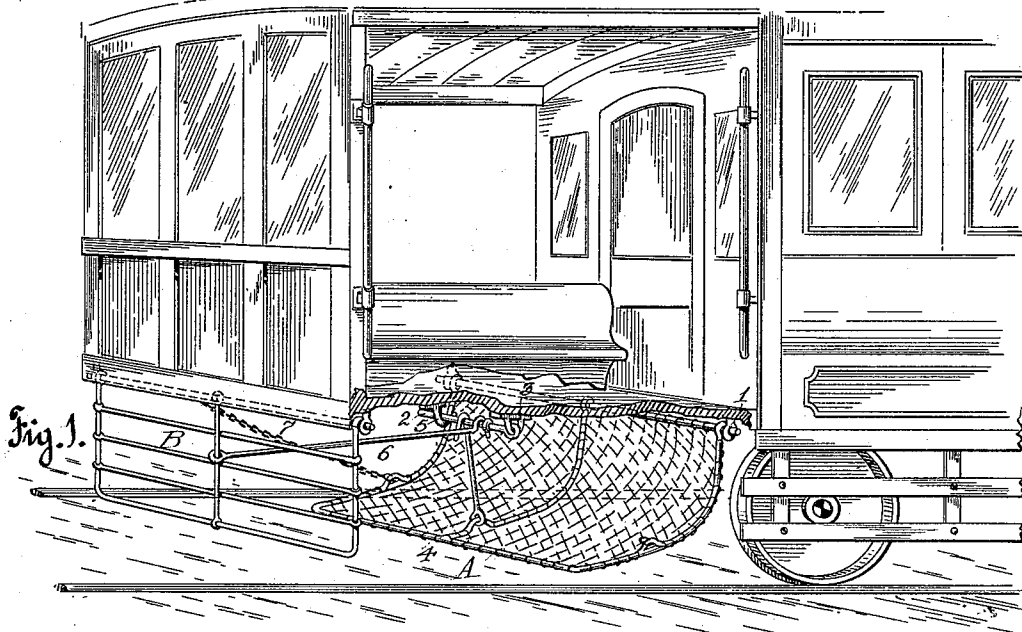


(No Model.)

H. H. LIBBING & C. P. HARRIS.
SAFETY GUARD FOR CAR WHEELS.

No. 547,728.

Patented Oct. 8, 1895.



Witnesses.

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UNITED STATES PATENT OFFICE.

HENRY H. LIBBING AND CHARLES P. HARRIS, OF SAN FRANCISCO,
CALIFORNIA.

SAFETY-GUARD FOR CAR-WHEELS.

SPECIFICATION forming part of Letters Patent No. 547,728, dated October 8, 1895.

Application filed June 17, 1895. Serial No. 553,035. (No model.)

To all whom it may concern:

Be it known that we, HENRY H. LIBBING and CHARLES P. HARRIS, citizens of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Safety-Guards for Car-Wheels; and we do hereby declare that the following is a full, clear, and exact description thereof.

Our invention relates to safety guards or fenders designed to protect the public from injury by the wheels of electric and other railway-cars.

Our object is to provide a simple and certain device for accomplishing this purpose, and one which will supply the following requisites: first, that of absolute protection from the wheels; second, automatic action, leaving the motorman free to attend to his brakes and reversing devices; third, a device which in normal position shall have such a clearance of the track and road-bed that it can never impede the motion of the car by striking the ground either on the level or at the commencement of a grade except when in use; fourth, a device that shall be instant and positive in its action no matter at what speed the car is moving; fifth, a device that will be simple in construction, easy of attachment, and not liable to get out of order. Any construction that answers all these conditions will be an effective guard, and, so far as we are aware, no such device has ever been produced.

We have illustrated our invention in the accompanying drawings, in which—

Figure 1 is a perspective view of a car, partly broken away, showing our device in normal position when not in use. Fig. 2 is a side elevation with the fender or guard dropped. Fig. 3 is a side elevation to show the guard hinged to the car-truck instead of to the car-body.

Our safety-guard can be attached to a railway-car in either of two ways—to the bottom of the car-body or to the wheel-truck. In cars with two trucks, in which there is very little longitudinal rocking, it can be attached to the car-body. In single-truck cars, in which the car-body develops a considerable rocking mo-

tion at even moderate speed, we prefer to attach it to the truck; but it must not be understood that either method of attachment is essential with either kind of car, and the drawings show attachment both to the car-body and the truck.

The guard A is preferably made in curved form, so that it can act as a scoop to pick up a body or other obstruction from the track. It is composed of light metal rods or of strong wire, and one edge is hinged, as shown at 1, either to the bottom of the car, Figs. 1 and 2, or to the truck, Fig. 3. The opposite edge projects downwardly and forwardly above the track, and when in normal position, out of use, is elevated a few inches above the road-bed. This elevation must be sufficient to afford ample clearance in case of any rocking of the car-body or when meeting an abrupt change of grade. The devices for suspending this guard which we prefer to use are best shown in Fig. 1. A loose bar 2 is held in an eye 3, with which bar engages a hooked rod 4, connected to the guard A. The free end of the bar 2 is supported by a hook 5, which will ordinarily retain it in place in spite of the jarring, jolting, or swing of the car, but will release such bar when any direct pressure is brought to bear upon it from the front. This pressure is afforded and the bar tripped by a suspended gate or fender B, which hangs from the front of the car-body above the track and extends entirely across the same. Connected to this fender is a rod 6, the hooked end of which engages with the bar 2. The gate or fender is at a sufficient height from the ground to be in no danger of striking the road-bed at any time, but is not high enough to avoid such an obstruction as a human body on the track. Its operation in connection with the guard and its suspension devices is well illustrated in Fig. 2. When the obstruction is met, the forward fender yields, as shown, and the hooked rod connected to it positively disengages the cross-bar 2, which drops down into the position shown in Fig. 2. This releases the support for the guard and permits the latter to drop into the position shown in Fig. 2, where it acts as a scoop to pick up the obstruction. The tripping is practically simultaneous with

the first yielding of the front fender, and hence no matter how fast the car may be running the guard will be in position to act as a practical safety device before it reaches the
5 obstruction.

We prefer to suspend the guard in addition by two chains 7, which ordinarily hang slack, but which will become taut or nearly so at the instant the edge of the guard reaches
10 the track. The suspension devices can be replaced in position ready for tripping through a hole 8 made in the flooring of the car and conveniently accessible to the motorman.

We have already referred to the modification shown in Fig. 3, which consists only in attaching the guard to the car-truck instead of to its body. So far as the tripping is concerned the operation is the same in both cases; but as there is comparatively little longitudinal
20 swing to the truck it is possible to hang the guard a little nearer the road-bed. In this case it will only be necessary to give sufficient elevation to the guard to avoid striking the road-bed at the commencement of an abrupt
25 change of grade.

As thus constructed our device will be found to supply all the requirements before alluded to and to form a simple, cheaply manufac-

tured and absolutely effective safety-guard for cars.

What we claim is—

1. In a guard for car wheels and in combination, a hinged scoop, a bar pivoted to the car and having its free end detachably secured to the car, a hinged gate or fender suspended
35 from the car, and rods extending respectively from said scoop and from said fender and both loosely connected to the said pivoted bar, substantially as described.

2. In a safety guard for car wheels, and in combination, a scoop suspended from the car in front of the wheels, a yielding gate or fender suspended from the car in front of the scoop, a detachable bar on the car between the scoop and fender, and hooked rods extending
45 respectively from said scoop and fender, to said detachable bar, substantially as and for the purposes set forth.

In testimony whereof we have affixed our signatures, in presence of two witnesses, this
50 8th day of June, 1895.

HENRY H. LIBBING.
CHARLES P. HARRIS.

Witnesses:

S. W. SEELY,
GEO. T. KNOX.