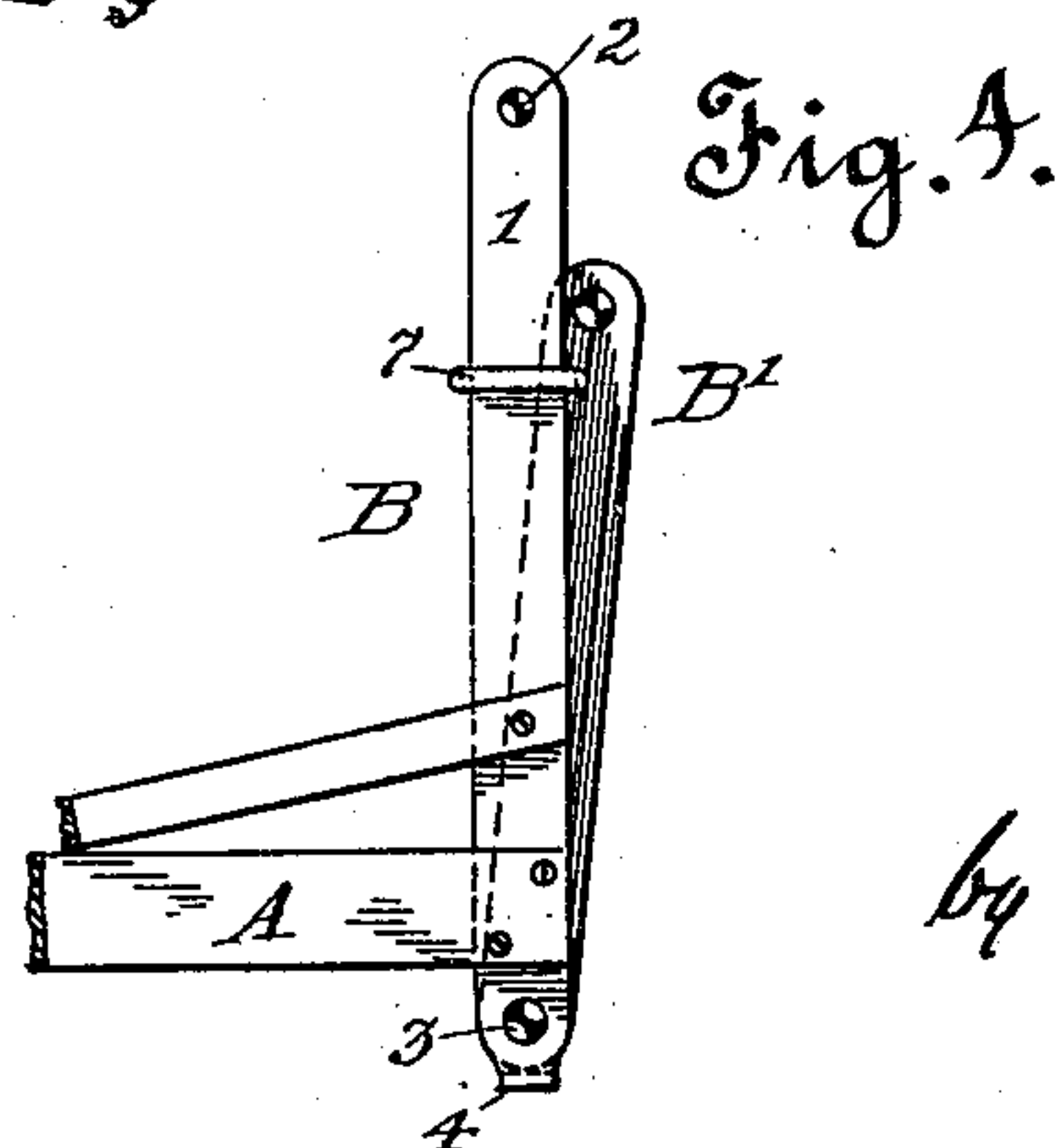
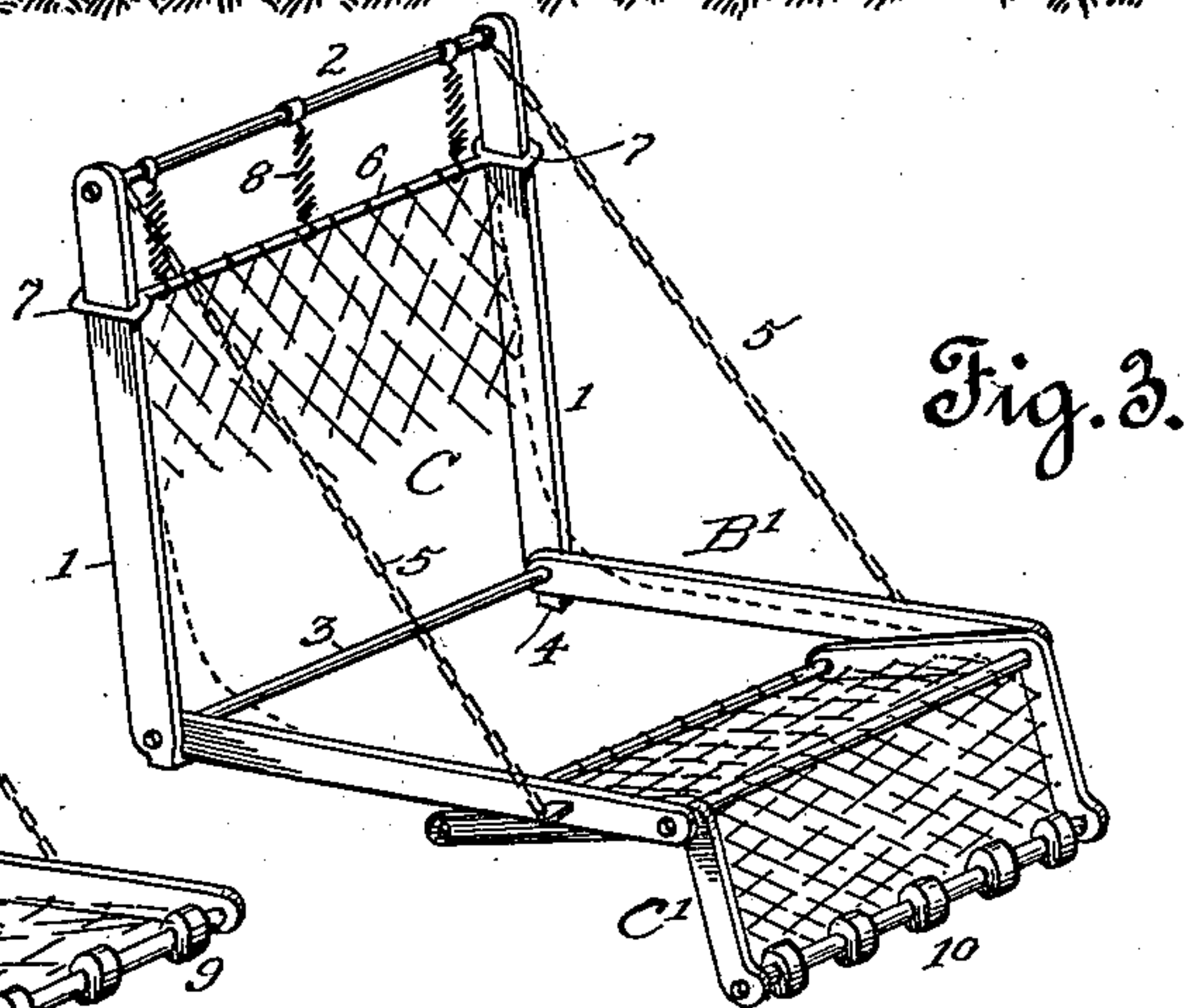
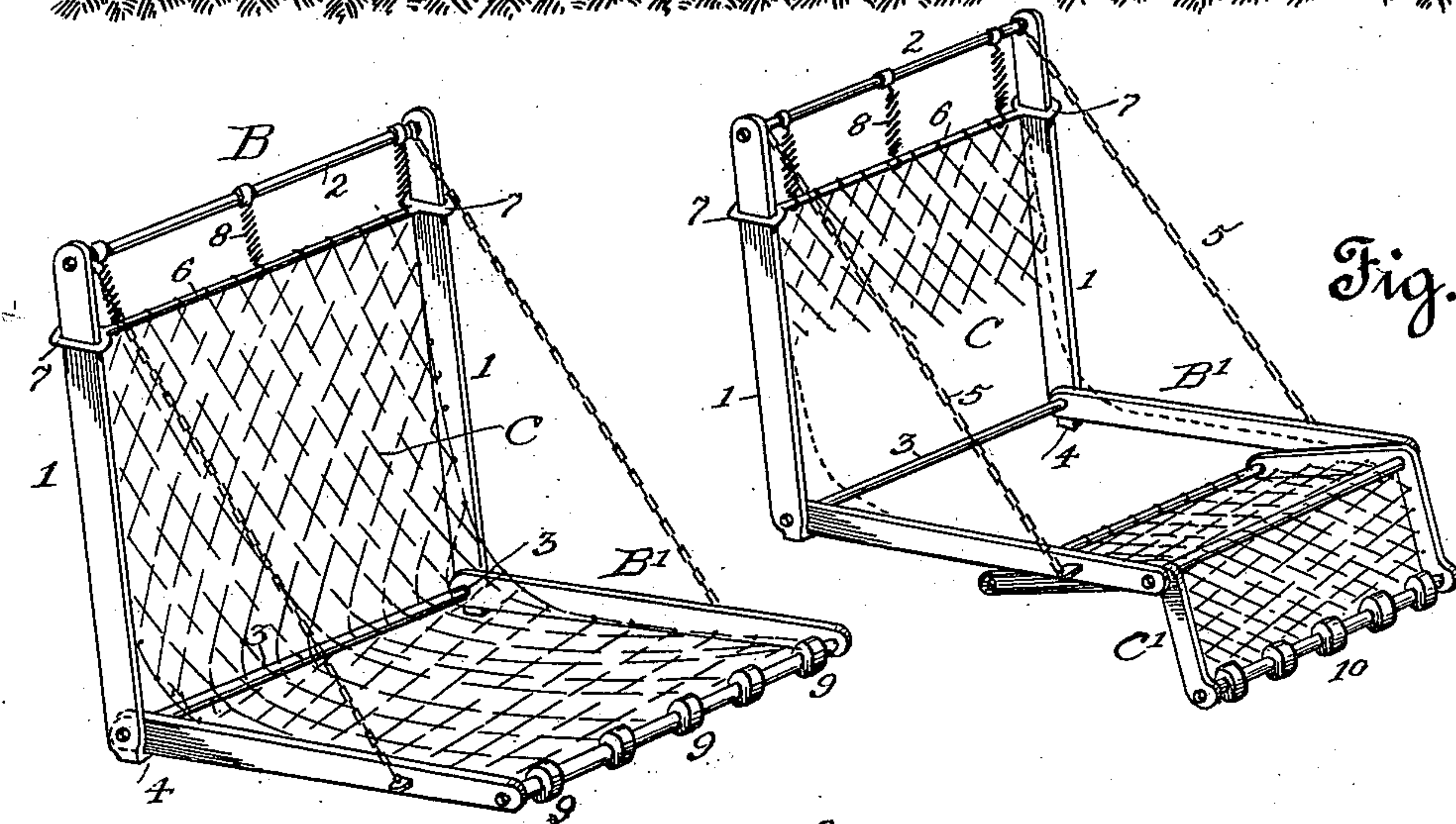
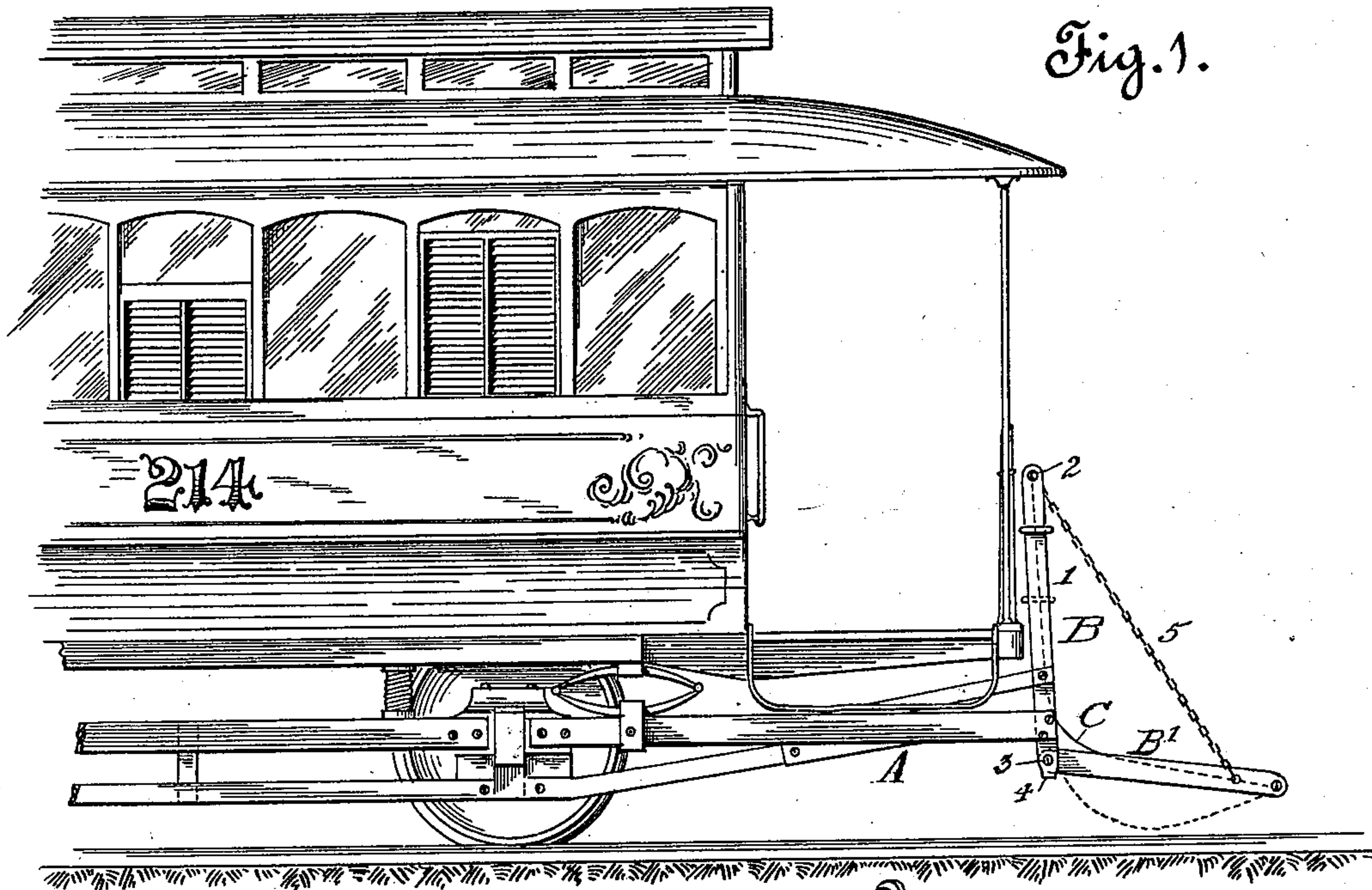


(No Model.)

W. WATKINS.  
SAFETY GUARD FOR RAILWAY CARS:

No. 548,102.

Patented Oct. 15, 1895.



Witnesses.

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# UNITED STATES PATENT OFFICE.

WILLIAM WATKINS, OF SAN FRANCISCO, CALIFORNIA.

## SAFETY-GUARD FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 548,102, dated October 15, 1895.

Application filed July 5, 1895. Serial No. 554,998. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM WATKINS, a citizen 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 Railway-Cars; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to guards or fenders for use on railway-cars to save life and to prevent injury to the public. Many inventions have been made and patents granted for devices having these general objects in view, but in the greater number the special object seems to have been to prevent a person knocked down by a car from getting under the wheels and being crushed and mangled. As a matter of fact, the blow from the dasher or bumper of a rapidly-moving car is in itself often sufficient to cause very serious injury, as well as the fall resulting from it, and guards of the class referred to simply prevent further and different kinds of injuries by the car-wheels. In the great majority of accidents from street-railway cars the injured person is first struck and knocked down, after which the guard becomes more or less effective. The idea of my invention is to reduce the possibility of injury from the collision to a minimum and at the same time provide a perfectly-effective safeguard from injury by the fall and by the car-wheels.

The apparatus by which I accomplish my object is fully described hereinafter, and is shown in the accompanying drawings, in which—

Figure 1 represents a car of a common type with my guard in position for use. Fig. 2 is a perspective view of my guard in its simplest form. Fig. 3 represents a modification of or addition to the guard. Fig. 4 represents my guard as folded into small compass and supposed to be applied to the rear end of a double-ended car.

My invention can be applied to cars having single or double trucks, as well as to single-ended cars using a turn-table or to double-ended cars. In two-truck cars it is practicable to attach the guard to the car-body, since fore-and-aft oscillation is very slight. In single-truck cars, such as shown

in the drawings, it is preferred to support the guard on the truck, where the rocking of the car-body will not affect it. As my guard is intended to project forward of the car, I prefer to provide the car-truck with an extension A inside the foot-board, which reaches just beyond the end of the car, and which supports the guard.

The guard is composed of a frame B, formed of side pieces 1 1, and cross-bars 2 3, and which is secured rigidly to the extension of the truck. This frame projects up in front of the dasher and a few inches away from it. To the lower cross-bar 3 is attached the frame B', which can be dropped down to the position shown in Fig. 1, a stop 4 holding it from reaching the road-bed, in addition to flexible suspension connections, such as the chain 5. A loose receptacle C, of canvas, heavy cloth, wire-netting, or other suitable flexible material, connects the ends of the two frames and forms a yielding holder. This holder can be firmly secured to the frame B', but has a yielding connection with the frame B. The fabric is secured to a bar 6, having slides 7, which are guided on the side pieces of the frame B. This bar 6 is supported by springs 8 from the upper cross-bar 2 of the rigid frame B, as shown, or such springs can be placed, if preferred, on the side pieces 1, below the slides 7.

Assuming that a person on the track will be struck and tripped up by the lower frame, he will fall into the flexible holder, and will be preserved from injury not only by the nature of the flexible holder itself but by its additional giving through its spring suspension. At the same time the holder extends up in front of the dasher and at some distance from it, and the upper part of such holder prevents the falling man from being thrown against the dasher. Of course he is never brought near the car-wheels.

It will be observed that since the front part of the guard is only a few inches above the track any person, whether an adult or a child, will be struck below the knee and be compelled to fall backward into the holder. A person struck by a car in the ordinary way, at the middle of the body, is knocked down forward, and has a double chance of severe injury. To prevent as much as possible any



injury by striking with the guard, the forward cross-bar of the lower frame is supplied with one or more washers or buffers 9, of soft rubber or other suitable material.

5 In double-ended cars both ends would be provided with such guards, and in this case the lower frame B' at the rear of the car is pivoted to the frame B, so that it can be folded up against the upper frame, where it will be  
10 out of the way until that end of the car becomes the front. (See Fig. 4).

The modification shown in Fig. 3 is in addition to the structure thus far described, and its object is to still further guard against in-  
15 jury by the act of colliding with the pedestrian. In this construction a supplemental angular frame C' is shown, pivoted to the front end of frame B', extending down to the road-bed or track and having rollers 10, which  
20 adjust themselves and the frame to inequalities. A collision with the frame causes a yielding blow, and its upper angular part becomes practically a part of the main holder. Otherwise the operation of the device is the  
25 same as before described.

The advantages of my advice have been referred to before to some extent. It is intended not only to save life but to avoid serious injury. A person struck by a car may,  
30 by various devices, be saved from the wheels, but is liable to be seriously injured, first, by the blow; second by the fall, and, third, in being picked up by the guard. With my device the liability of serious injury by the

blow is very small, while that of injury from 35 the fall and from being picked up is entirely done away with.

What I claim is—

1. In a car fender and in combination, a rigid frame secured to the car and projecting 40 vertically in front of it, a horizontal frame pivoted thereto, a spring-supported cross bar sliding on the rigid frame, and a flexible holder or receptacle secured to said cross bar and to said horizontal frame, substantially as 45 described.

2. In a fender or guard for cars, and in combination, a rigid frame secured to the car and projecting vertically in front of it, a horizontal frame pivoted thereto, a cross bar sliding 50 on the rigid frame, and connected to the latter by suspension springs, and a flexible holder or receptacle secured to said cross bar and to said horizontal frame, substantially as described. 55

3. In a guard for cars, the combination with the frames B and B' having a flexible holder connected to them, of the supplemental frame C' having rollers and pivoted to said frame B', substantially as and for the purposes set 60 forth.

In testimony whereof I have affixed my signature, in presence of two witnesses, this 26th day of June, 1895.

WILLIAM WATKINS.

Witnesses:

L. W. SEELY,

B. W. SCOTT.