

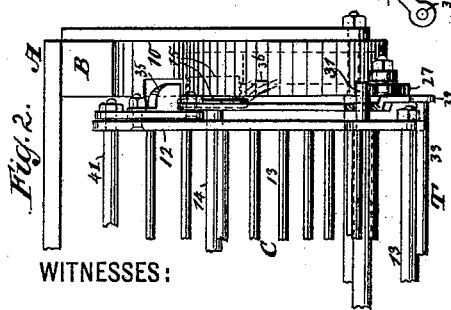
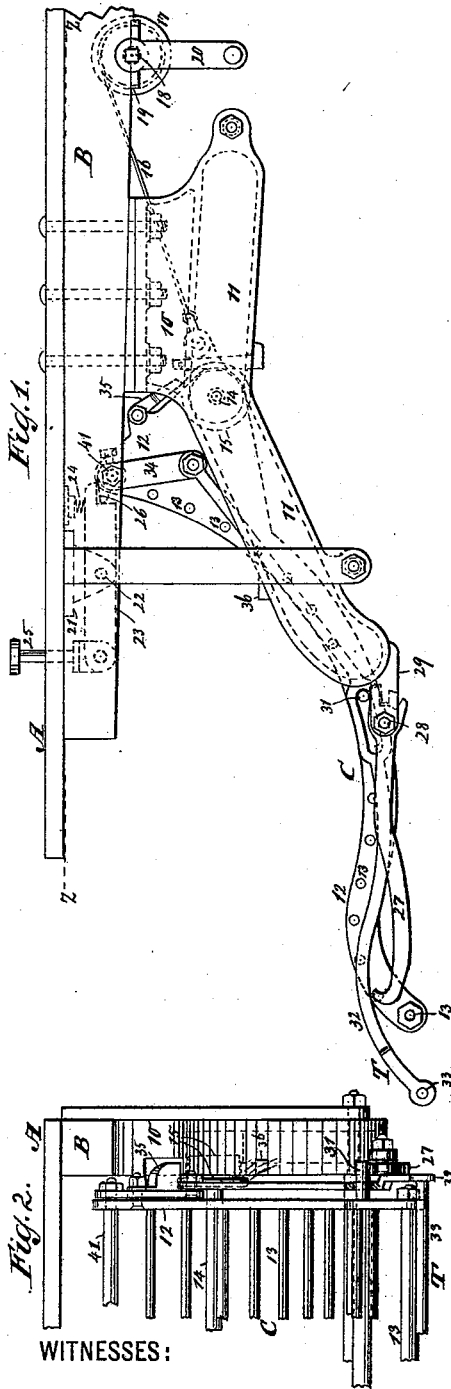
(No Model.)

2 Sheets—Sheet 1.

R. RAPHAEL.
CAR FENDER.

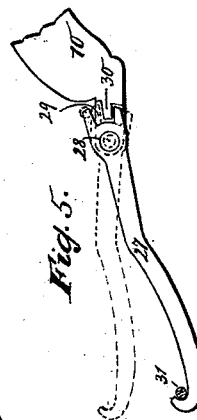
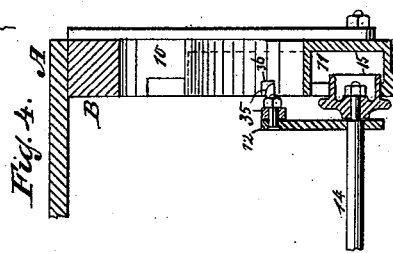
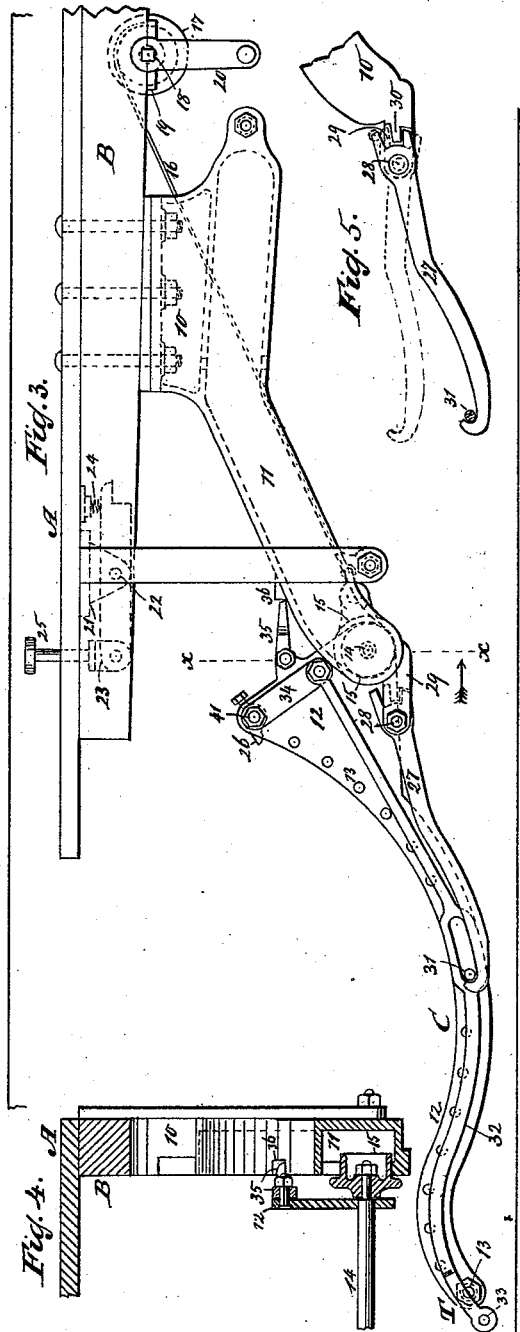
No. 527,004.

Patented Oct. 2, 1894.



WITNESSES:

E. Wolff
Chas. E. Prensger.



INVENTOR:

Robert Raphael.

BY

Hauff & Hauff
ATTORNEYS.

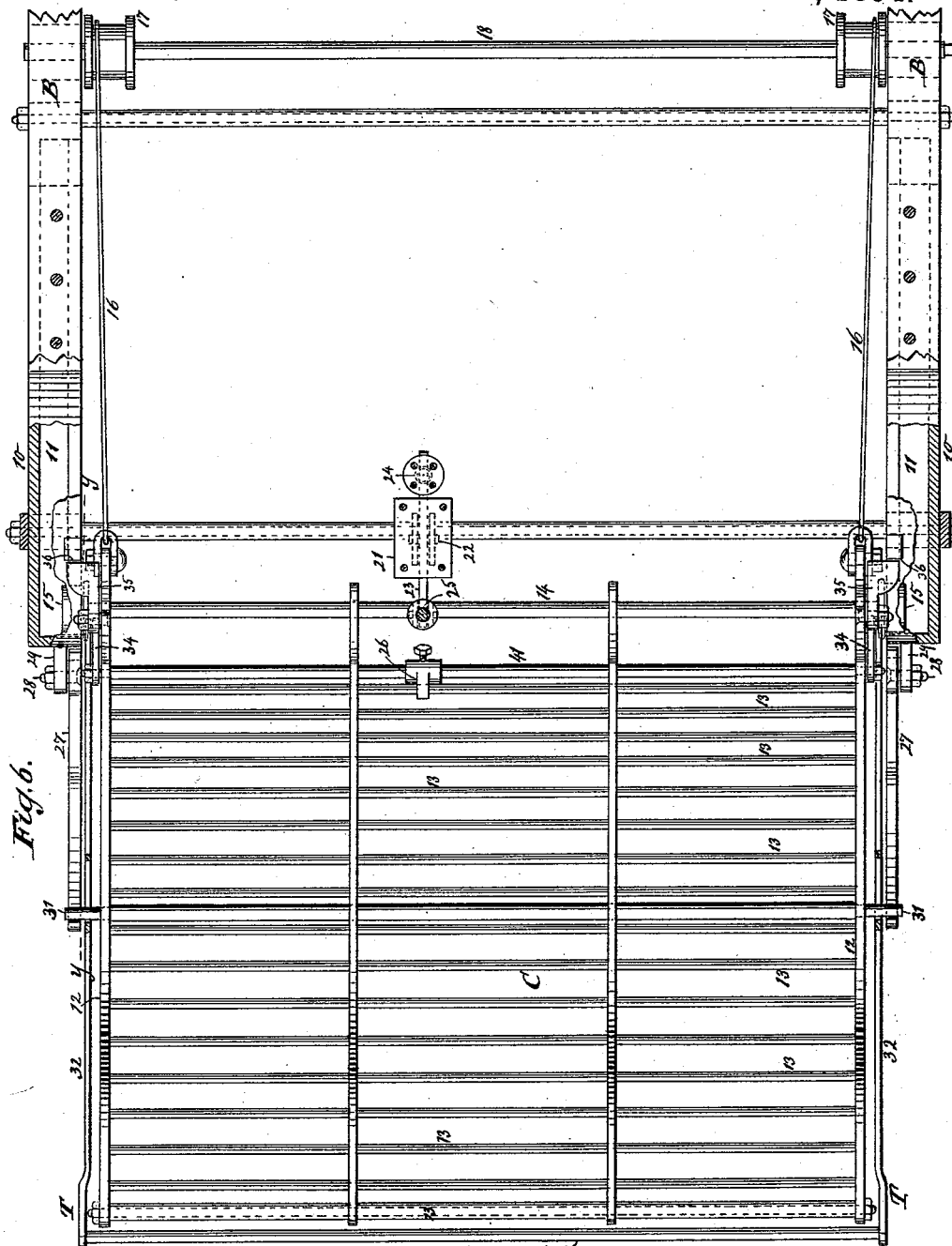
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UNITED STATES PATENT OFFICE.

ROBERT RAPHAEL, OF BROOKLYN, NEW YORK, ASSIGNOR TO WILLIAM J. McKELVEY, OF SAME PLACE.

CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 527,004, dated October 2, 1894.

Application filed October 27, 1893. Serial No. 489,300. (No model.)

To all whom it may concern:

Be it known that I, ROBERT RAPHAEL, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Car-Fenders, of which the following is a specification.

The object of this invention is a fender for railroad cars particularly for street-cars which is so constructed that it will scoop up a person struck by the fender.

The peculiar and novel construction of my fender is pointed out in the following specification and claims and illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation of one end of a street-car provided with my fender when the latter is raised so as not to come in contact with paving blocks or other obstructions which rise slightly above the level of the rails. Fig. 2 is an end-view of the same. Fig. 3 is a side-view when the fender is lowered. Fig. 4 is a transverse vertical section in the plane xx Fig. 3. Fig. 5 is a longitudinal vertical section in the plane zz Fig. 1. Fig. 6 is a plan or top view partly in section.

In the drawings the letter A designates the platform of a street-car which is secured to the beams B B. To each of these beams is firmly secured a bracket 10 which is provided on its inner surface with a guide groove 11 as shown in dotted lines in Figs. 1 and 3 and in full lines in Figs. 4 and 6. The rear portions of these guide grooves extend in horizontal directions while their front ends extend in downwardly inclined directions (best seen in Figs. 1 and 3).

C is a cradle composed of the side pieces or cheeks 12 and the crossbars 13 which are firmly secured in said cheeks. (See Fig. 6.) In the rear inner ends of said cheeks near their bottom edges is mounted a shaft 14 which carries two wheels 15, one at each end, and the wheels 15 engage the guide grooves 11 in the brackets 10. (See Figs. 4 and 6.) From the cheeks 12 extend ropes or chains 16 to and around pulleys 17 which are mounted on a shaft 18 (Figs. 1, 3 and 6) that has its bearings in journal boxes 19 secured to the beams B B. One end of this shaft is square, so that

a handle or crank 20 can be applied for the purpose of winding up the ropes 16.

To the under surface of the platform A is firmly secured a bracket 21 which forms the bearings for a pin 22, on which is mounted a lever 23, the inner end of which is exposed to the action of a spring 24 while its outer end is connected to a pedal 25 situated above the platform A, so that it can be conveniently reached by the driver or motorman of the car. When the cradle C is drawn up to the position shown in Fig. 1, the inner end of the lever 23 engages a dog 26 which is firmly secured to a rock-shaft 41 which takes the place of the uppermost crossbar of the cradle C (Figs. 1, 3 and 6).

When the car is in the car-shed, the wheels 15 of the cradle are drawn back to the rear ends of the horizontal portions of the guide grooves 11 in the brackets 10 so that the front end of the cradle does not project beyond the front edge of the platform and the car when placed in the shed, does not occupy any more space than an ordinary car.

When the car is drawn out of the shed, and made ready to start on a trip, the wheels 15 of the cradle are moved to the upper ends of the inclined portions of the guide grooves 11 in the brackets 10 (see Fig. 1) and in this position the cradle C is retained by the action of the lever 23 on the dog 26, but when the front end of said lever is depressed so that its rear end is thrown out of engagement with the dog 26, the wheels 15 roll down in the inclined portions of the guide grooves 11 and the cradle C is caused to occupy the position shown in Fig. 3.

In order to retain the front end of the cradle at the required distance above the ground, I have provided two dogs 27 (Figs. 1, 3 and 6) which swing on pivots 28 secured in arms 29 which project from the front ends of the brackets 10. The inner ends of said dogs are bifurcated (Fig. 5) and engage a projection 30 formed on each of the arms 29 so that each dog can move from the position shown in full lines in Fig. 5, to that shown in dotted lines in said figure and no farther. The front ends of the dogs 27 are hook-shaped and from the outer surfaces of the cheeks 12 of the

cradle extend pins 31 which engage the hook-shaped ends of the dogs 27 when the cradle reaches the position shown in Fig. 3 said dogs being retained in the proper position to engage the pins 31 by the projections 30 formed in the arms 29 (Fig. 5).

When the cradle is drawn up to the position shown in Fig. 1, the pins 31 strike the inner ends of the dogs 27 so as to raise their outer ends and to retain the same at the proper distance above the ground and in this position the cradle is also supported by said pins.

In order to release the cradle C automatically and to cause the same to move from the position shown in Fig. 1 to the position shown in Fig. 3 without the assistance of the driver or motorman, I have provided the tripping frame T which consists of two side-bars 32 and a cross-bar 33. The inner ends of the side-bars are pivoted to levers 34 mounted on the outer ends of the rock-shaft 41 and when the cradle is in the position shown in Fig. 1 the cross-bar 33 of the tripping frame is situated some distance in advance of the front end of the cradle. If the car is in motion and the cross-bar 33 comes in contact with a person walking or standing in the path of the car, the tripping frame is pushed back from the position shown in Fig. 1 to that shown in Fig. 3, the levers 34 are pushed backward, the dog 26 is thrown out of engagement with the lever 23 and the cradle C rushes forward to the position shown in Fig. 3 so that the person struck by the tripping frame will be scooped up by the cradle and all danger that such person may be run over by the car is avoided.

In order to retain the cradle C firmly in position and to prevent it from being pushed back, dogs 35 are provided which when the cradle is down in the position shown in Fig. 3 engage lugs 36 projecting from the brackets 10. When the cradle is to be pushed back, these dogs must be thrown out of engagement with the lugs 36.

The side-bars 32 of the tripping frame T rest upon the pins 31 which project from the outer surfaces of the cheeks 12 of the cradle so that the front end of said tripping frame is prevented from dropping down upon the ground when the same is in the position shown in Fig. 1 as well as when it is in the position shown in Fig. 3.

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

1. A car fender composed of brackets adapted to be secured to the bottom of a car, downwardly inclined guides formed on these brackets, a cradle constructed to engage the guides and means for causing the cradle to move on the guides substantially as described.

2. A car fender composed of brackets adapted to be secured to the bottom of a car, guides formed on these brackets and provided

with horizontal sections and with downwardly inclined sections, a cradle constructed to engage these guides and means for causing the cradle to move on the guides substantially as described.

3. A car fender composed of brackets adapted to be secured to the bottom of a car, downwardly inclined guides formed on the brackets, a cradle constructed to engage the guides, a dog 26 secured to the cradle, a lever 23 pivoted to the car and adapted to engage the dog 26 and means for throwing said lever out of engagement with the dog 26 substantially as described.

4. A car fender composed of brackets adapted to be secured to the bottom of a car, downwardly inclined guides formed on these brackets, a cradle constructed to engage these guides and to move thereon and dogs 27 and pins 31 for supporting the cradle when the same has moved down on its guides substantially as described.

5. A car fender composed of brackets adapted to be secured to the bottom of a car, downwardly inclined guides formed on these brackets a cradle constructed to engage these guides and to move thereon, a stop for retaining the cradle at the upper ends of said guides and the tripping frame for automatically releasing the cradle whenever said tripping frame comes in contact with an obstruction substantially as described.

6. A car fender composed of brackets adapted to be secured to the bottom of a car, downwardly inclined guides formed on these brackets, a cradle constructed to engage these guides and to move thereon, a tripping frame connected to the cradle and dogs 27 and pins 31 for supporting the cradle and the tripping frame substantially as described.

7. A car fender composed of brackets adapted to be secured to the bottom of a car, downwardly inclined guides formed on these brackets, a cradle constructed to engage these guides and to move thereon, a rock-shaft 41 mounted in the cheeks of the cradle, a dog 26 mounted on this rock-shaft, a suitable abutment to engage said dog when the cradle is situated on the upper ends of the inclined guides, levers 34 mounted on the rock-shaft 41 and the tripping frame T connected to said levers substantially as described.

8. In a car fender brackets secured to the bottom of the car and provided with horizontal ways, said ways being downwardly inclined at their outer ends and a cradle constructed to engage such ways substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ROBERT RAPHAEL.

Witnesses:

WM. C. HAUFF,
E. F. KASTENHUBER.