(No Model.) 2 Sheets—Sheet 1.

# E. W. HARDING.

## FENDER FOR RAILWAY CARS.

No. 506,396. Patented Oct. 10, 1893.

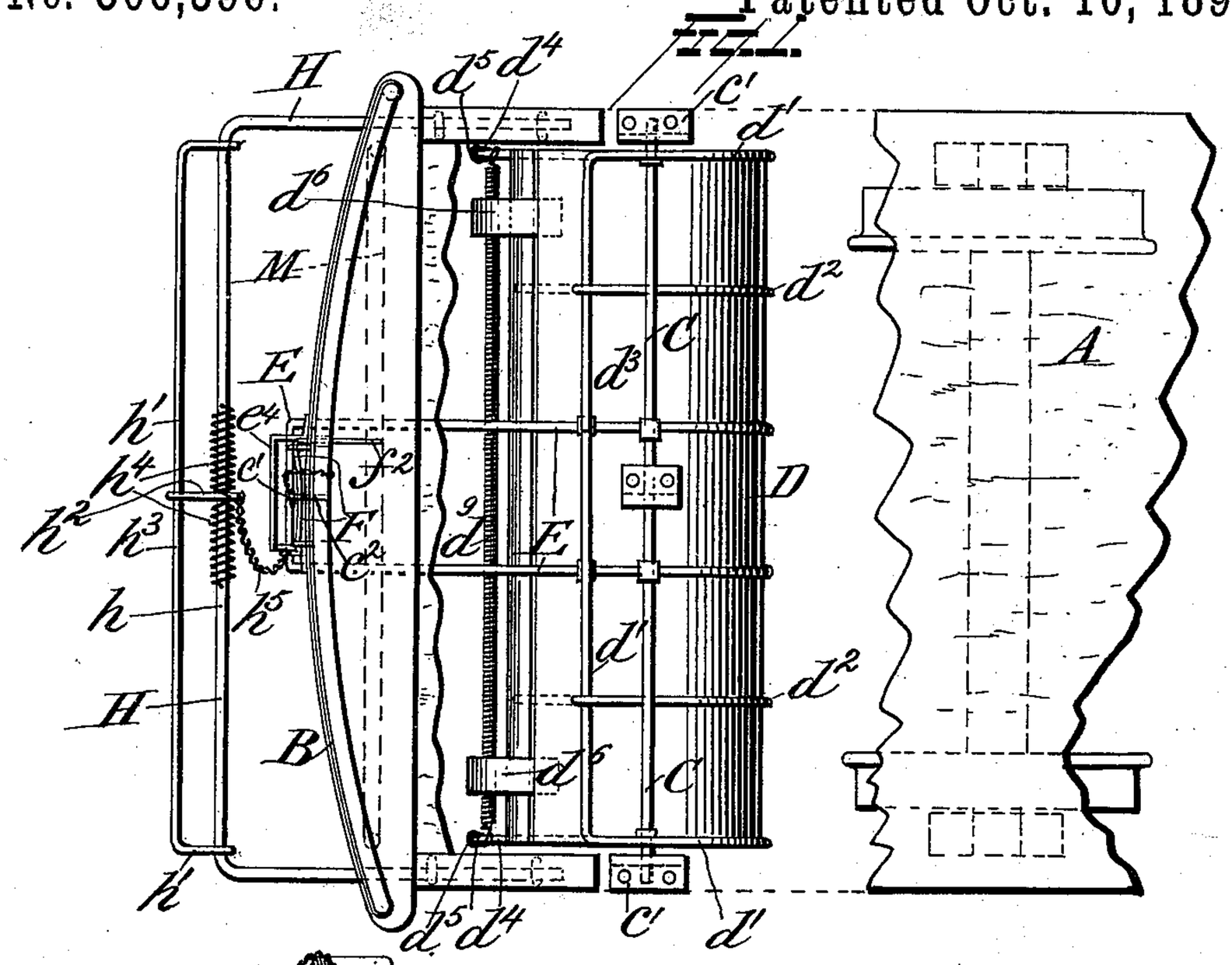



FIG. 2.

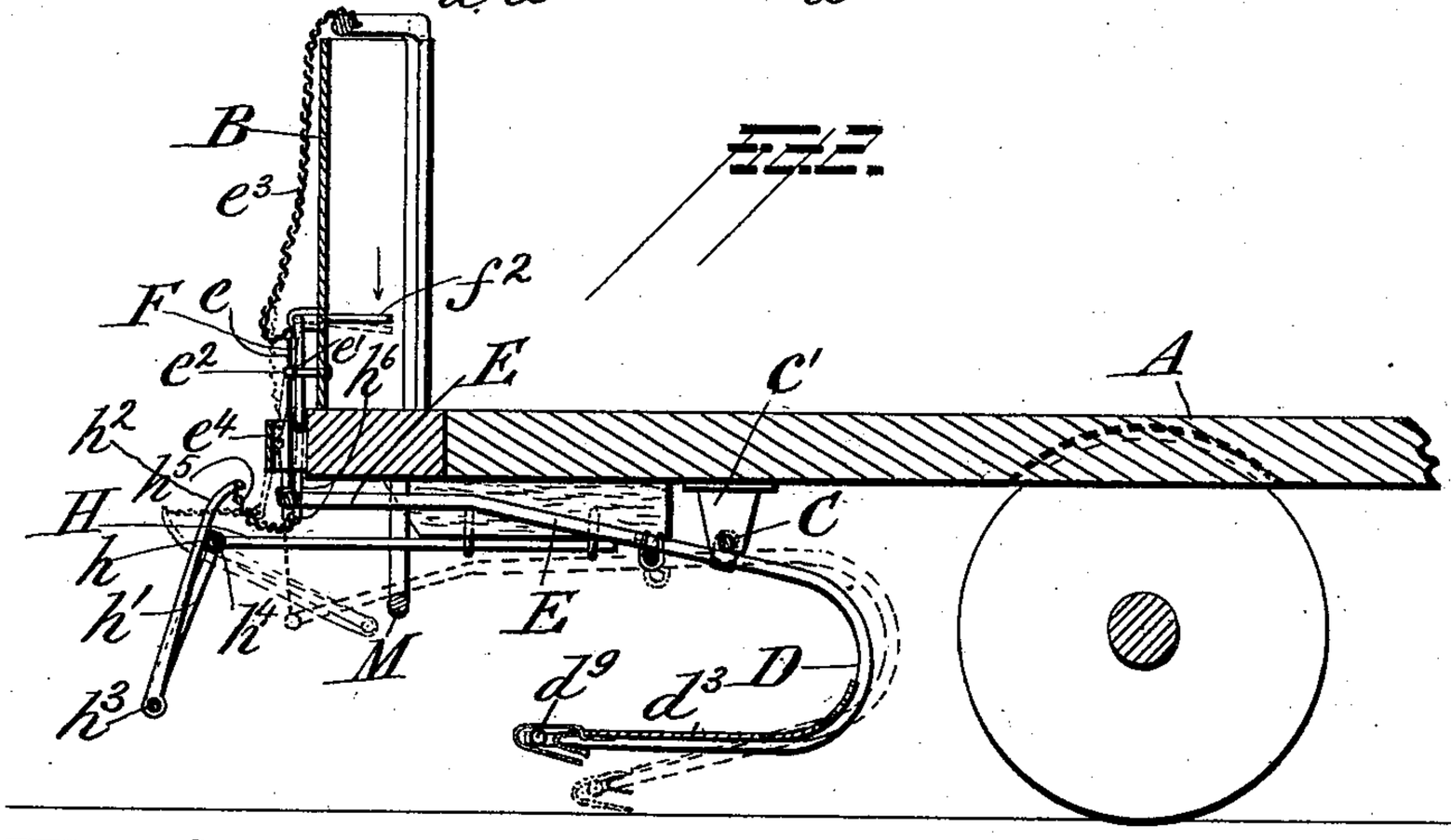
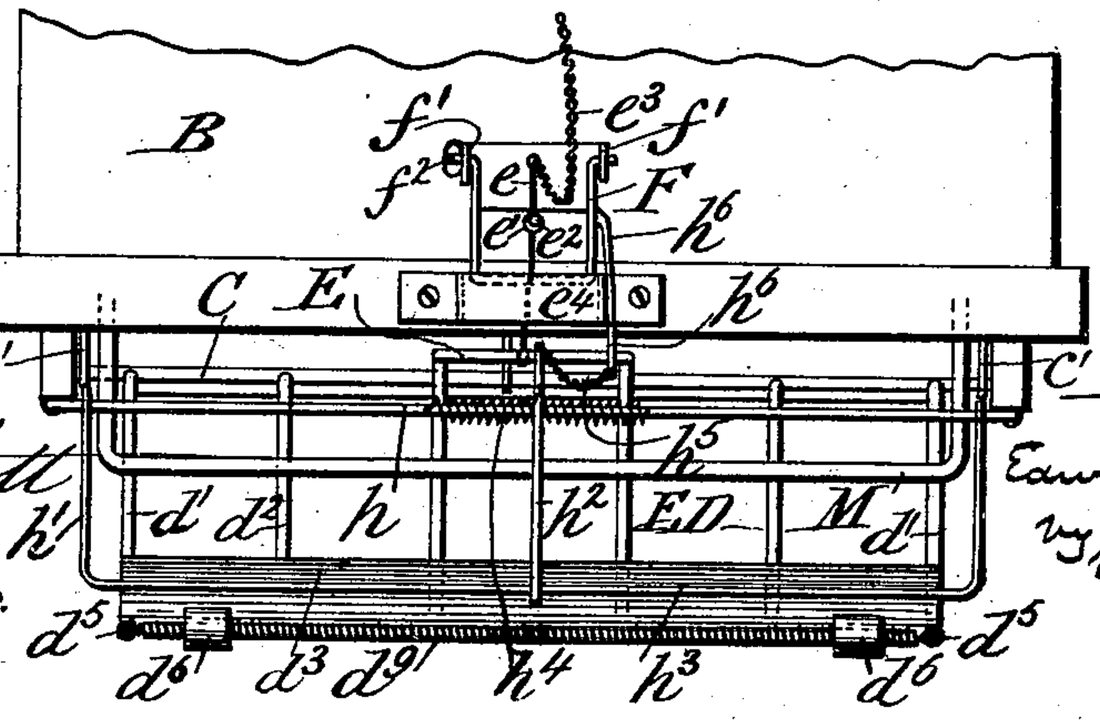



FIG. 3.

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(No Model.) 2 Sheets—Sheet 2.

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## FENDER FOR RAILWAY CARS.

No. 506,396. Patented Oct. 10, 1893.

Fig. 4.

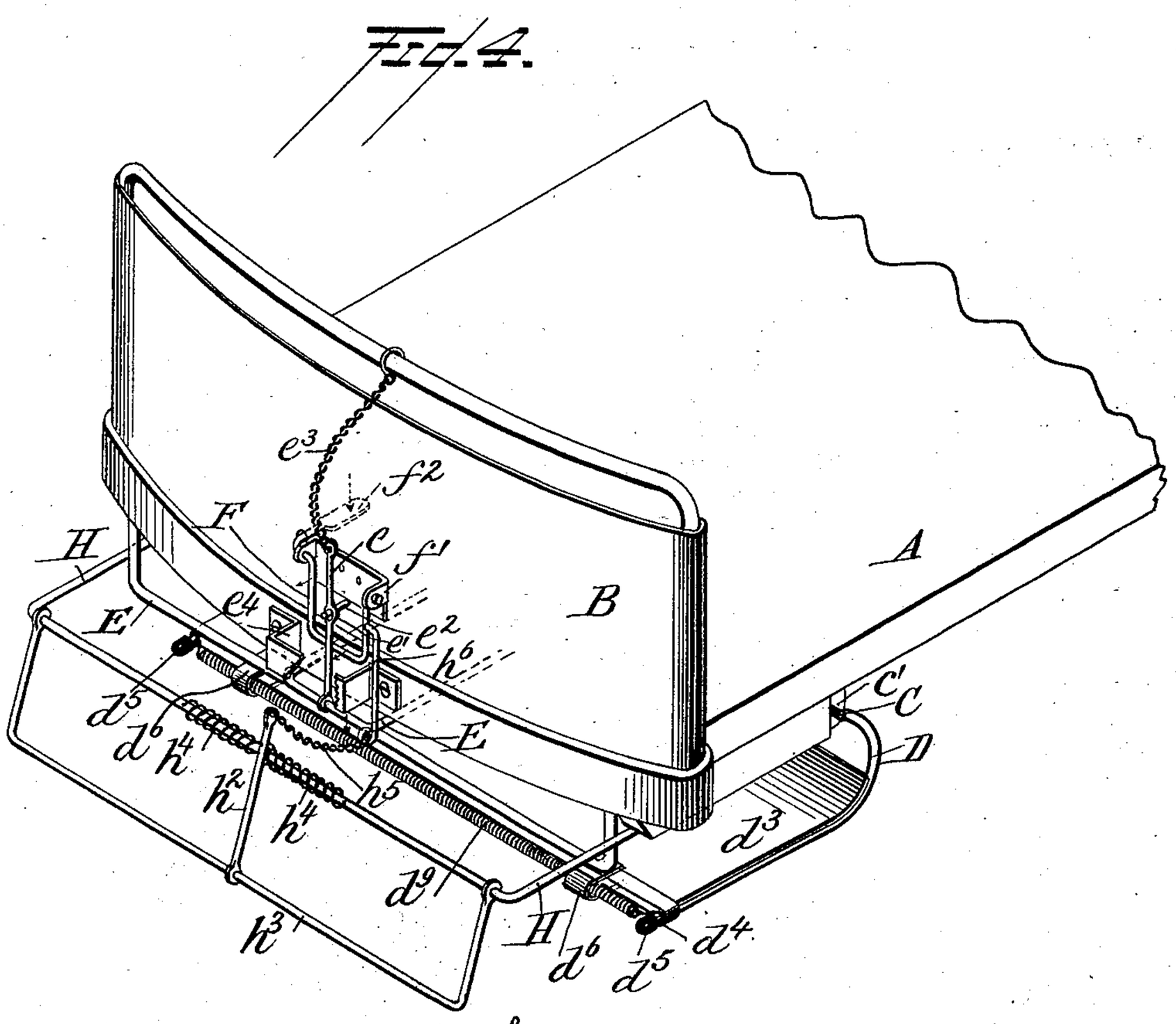
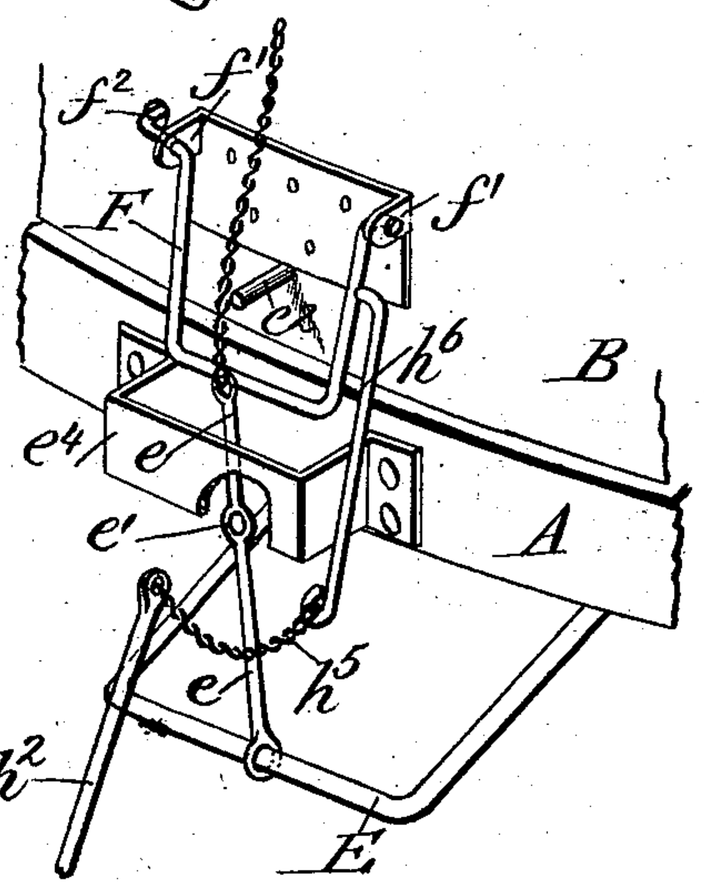



Fig. 5.

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# UNITED STATES PATENT OFFICE.

EDWARD W. HARDING, OF BOSTON, MASSACHUSETTS.

## FENDER FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 506,396, dated October 10, 1893.

Application filed October 19, 1892. Serial No. 449,345. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD W. HARDING, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Fenders for Railway-Cars, of which the following is a full, clear, and exact description, such as will enable those skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings.

This invention relates to improvements in fenders for railway cars, and especially to that class of street railway cars which are moved by electricity, cables, &c., at a comparatively high rate of speed. The fenders with which these vehicles are generally provided are of a construction adapted to force or throw any obstruction that may be on the rails to the side, and in consequence many persons who have accidentally fallen in front of a car have been severely injured by such devices by being pushed along the ground before being finally thrown aside. The object of the present invention is to obviate this by providing an automatically operated scoop or cage which will pick up any obstruction, as a person, and carry the same along until the car can be stopped and the person removed.

The invention consists primarily of a scoop or cage of a peculiar construction, pivoted to the under side of a car platform in front of the wheels, the scoop or cage consisting essentially of a frame-work substantially U-shaped, upon which a platform is supported, and which is so pivoted that when it is allowed to hang freely, its front edge will rest upon the rails, the said edge being protected by suitable buffers.

The invention further consists in the novel construction, combination and arrangement of parts, such as will be hereinafter more fully described, pointed out in the appended claims and illustrated in the accompanying drawings.

In the accompanying drawings, in which similar letters of reference designate corresponding parts, Figure 1 is a plan view of the forward end of a car embodying the invention, only showing so much of the car, however, as is necessary to illustrate the invention, a portion of the platform being broken away to better show the same. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a front elevation, showing the scoop in a position to be lowered by either the motor-man or any obstruction that may be in front of it. Fig. 4 is a perspective view showing the platform of a car with the fender and mechanism for operating the same attached and ready for operation. Fig. 5 is a detail perspective view showing the catch mechanism.

Referring to the drawings by letter, A designates the platform of a car of any construction suitable in the premises and B the dash-board thereof.

Transversely of the platform, to its under side and at a considerable distance in advance of the wheels, the shaft C is journaled in the hangers $c'$, $c'$. To this shaft the fender or scoop D is secured. The latter consists of a framework $d'$ substantially U-shape in form, with one of the limbs shorter than the other, and the intermediate ribs $d^2$, $d^2$. Upon this framework is supported a platform $d^3$ of net-work or a light metal plate, the net-work being preferable on account of its lightness. Along the front edge of the scoop, a spiral spring $d^9$ is secured between the projecting ends of the side pieces $d^4$, $d^4$, of the frame-work, the latter being covered by the rubber buffers $d^5$, $d^5$. The object of this spring and buffers is to cushion the edge of the scoop so that the object that it might come in contact with will not be injured. Spring plates $d^6$, $d^6$, are secured to the edge of the fender in such a position as to come immediately above the rails, so that when the scoop is depressed, they will form wear-plates to ride upon the rails. The scoop is attached to the shaft C back of the center of the former so that if allowed to swing freely its lower front edge will be depressed.

Projecting from the upper front edge of the frame of the scoop a lever E projects to a short distance beyond the front edge of the platform, the bracket M forming a support for the same. This lever has attached to its outer end a link $e$, which has formed in it, near its upper end, the eyelet $e'$ adapted to register with a pin or catch $e^2$ projecting from

the platform or dashboard, so that when the two, the link and the pin, are in engagement the front edge of the scoop will be held in an elevated position.

To the upper end of the link a chain $e^3$ is attached whereby the motor-man can raise the scoop and connect the link with the pin. A guide $e^4$ is provided to sustain the link in an upright position.

The mechanism for releasing the link from the pin, and consequently the scoop to a position to act, will now be described.

F designates a trip formed of a U-shaped lever or bail pivoted at its ends in the brackets $f'$, $f'$, with its looped end interposed between the link $e$ and the platform. One of the limbs of the lever is extended beyond its bearing through an opening in the dash-board and forms a foot-lever $f^2$ whereby the motor-man can, by pressing upon the same, through the trip F, disengage the link $e$ from the pin $e^2$ and consequently lower the front edge of the scoop to a position to act. The scoop is also provided with a mechanism whereby it can be automatically lowered by any obstruction which might be in the path of the car.

H designates a bracket projecting from the front of the platform to a considerable distance. On the transverse piece $h$ of this bracket the framework $h'$ is hinged and which is so suspended that it will be struck by any obstruction the size of a human body. Intermediately of this frame the lower end of the lever $h^2$ is secured to the transverse piece $h^3$ and is connected near its upper end with the transverse piece $h$ of the bracket H by the spiral spring $h^4$ which normally holds the framework $h'$ in a substantially vertical position. The upper end of the lever is connected by the chain $h^5$ with the end of the arm $h^6$ projecting from the trip F, through which connections the latter is operated by the movement of the framework $h'$.

The operation of the device is as follows: If a person should fall in front of the moving car, the motor-man, by means of the foot-lever $f^2$ and the intermediate mechanism, can free the scoop and allow it to rest upon the tracks in a position to pick up the prostrate form and carry it until the car is stopped. If the motor-man should not see the fallen person or should be too slow in freeing the scoop, the latter would be automatically released by the framework $h'$ coming in contact with the fallen person and through the connecting lever and chain, and moving the trip F to disengage the link $e$ from the pin $e^2$.

The mechanism hereinbefore described is the form which I prefer to use, but it is obvious that changes in the construction may be made without departing from the spirit of the invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a car-fender, the combination of the platform of a car, the scoop hinged to the under side of the same, the pin projecting from the platform, the link attached to the scoop and adapted to engage with the said pin, and the trip, substantially as described.

2. In a car-fender, the combination of the platform of a car, the scoop hinged to the under side of the same, the pin projecting from the platform, the link attached to the scoop and adapted to engage with the said pin, and the trip consisting of a U-shaped lever or bail pivoted between the link and the platform, substantially as described.

3. In a car-fender, the combination of the platform of a car, the scoop hinged to the under side of the same, the catch adapted to connect the scoop with the platform to hold it in an elevated position, the trip, and the framework hinged in advance of the platform and connected with the said trip, substantially as described.

4. In a car-fender, the combination of the platform of a car, the scoop hinged to the under side of the same, the pin projecting from the platform, the link attached to the scoop and adapted to engage with the said pin, and the automatically operated trip, substantially as described.

5. In a car-fender, the combination of the platform of a car, the automatically operated scoop hinged to the under side of the said platform consisting of the framework and intermediate ribs substantially U-shaped, the platform secured to the lower limbs of the framework and ribs, and the spiral spring supported along the front edge of the scoop between the projecting ends of the side-pieces of the framework, substantially as described.

6. In a car-fender, the combination of the platform of a car, the automatically operated scoop hinged to the under side of the same, and the wear plates secured to the front edge of the said scoop in such a position as to be immediately above the rails, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD W. HARDING.

Witnesses:
CHAS. W. KIMBALL,
WM. C. BRACKETT.