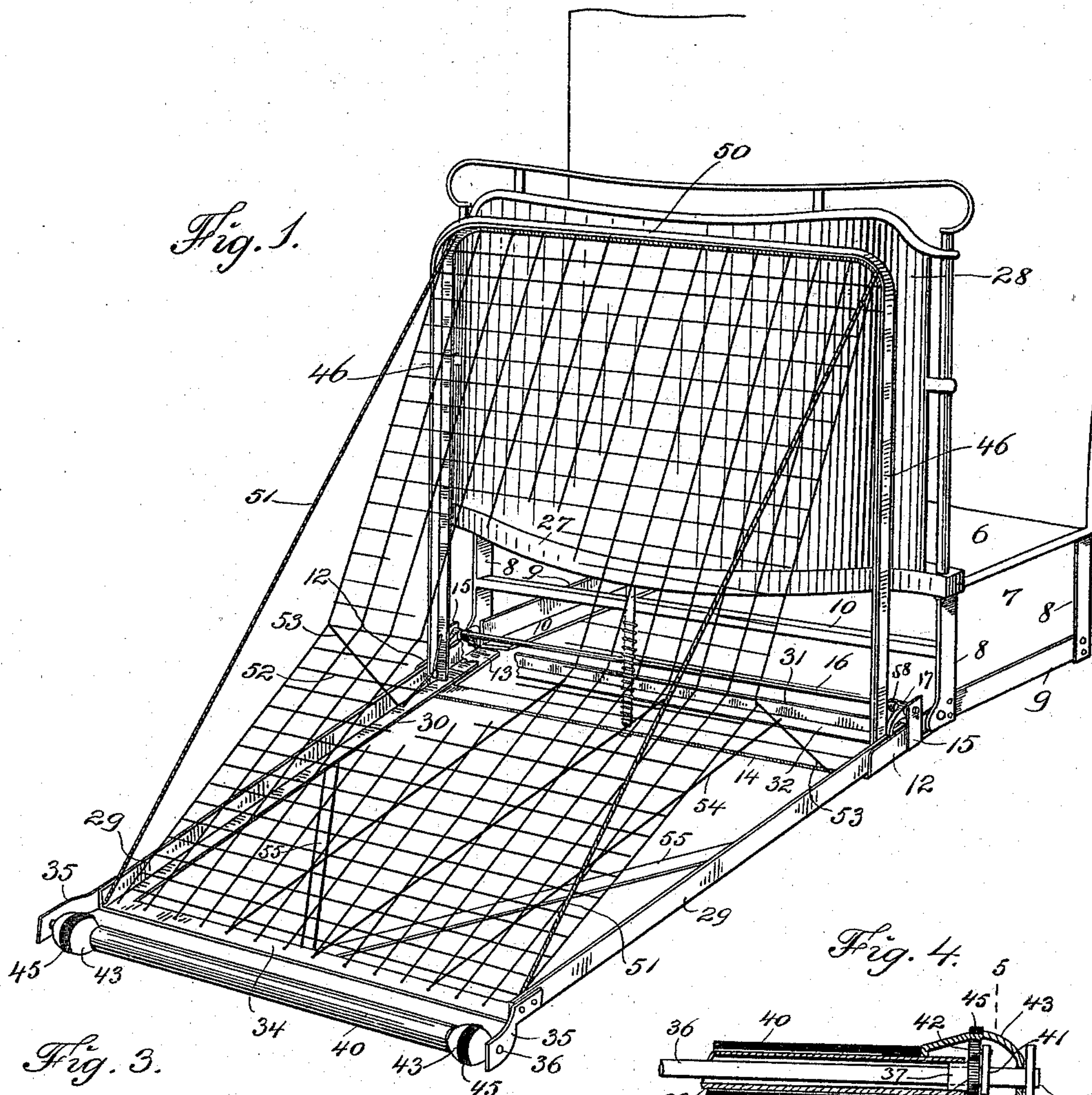


(No Model.)

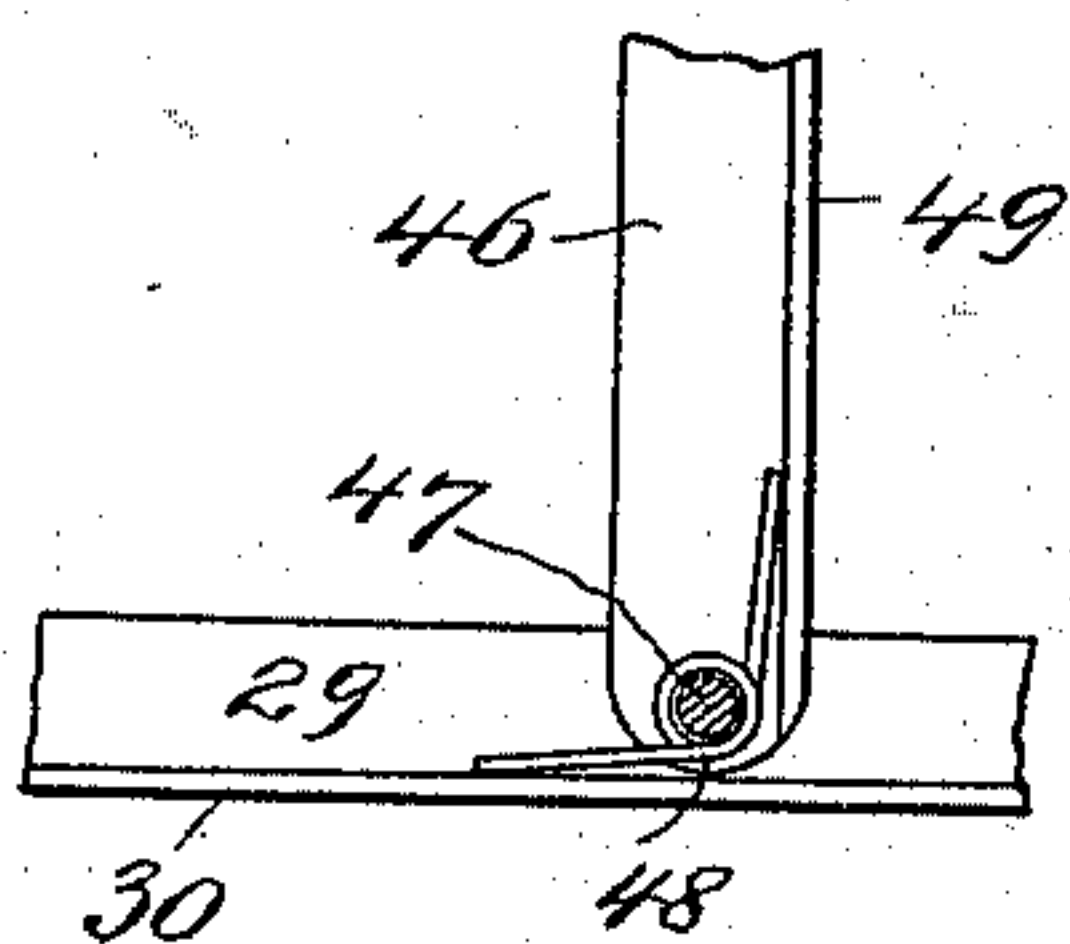
E. E. PHINNEY.  
CAR FENDER.

No. 573,352.

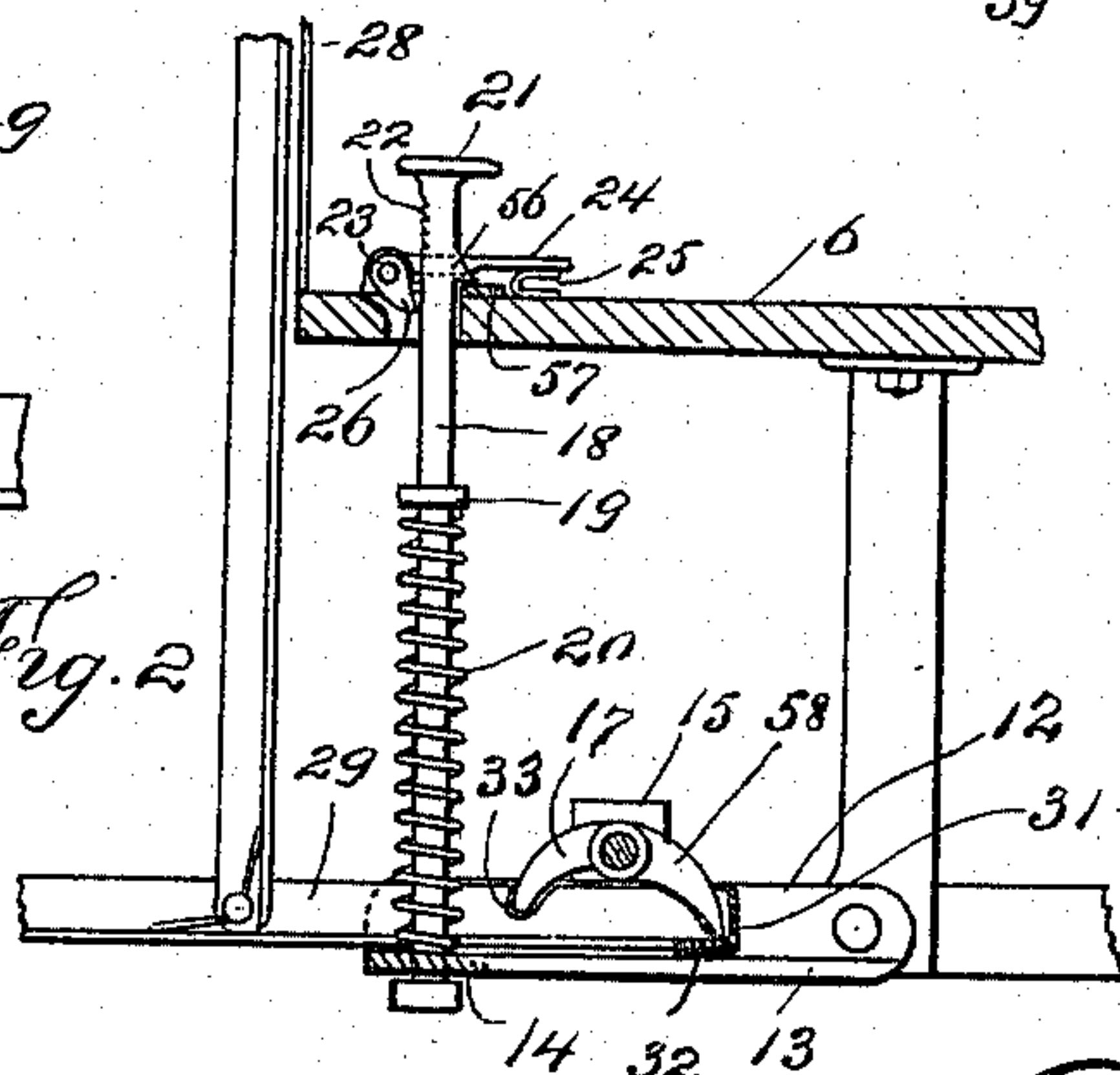
Patented Dec. 15, 1896.



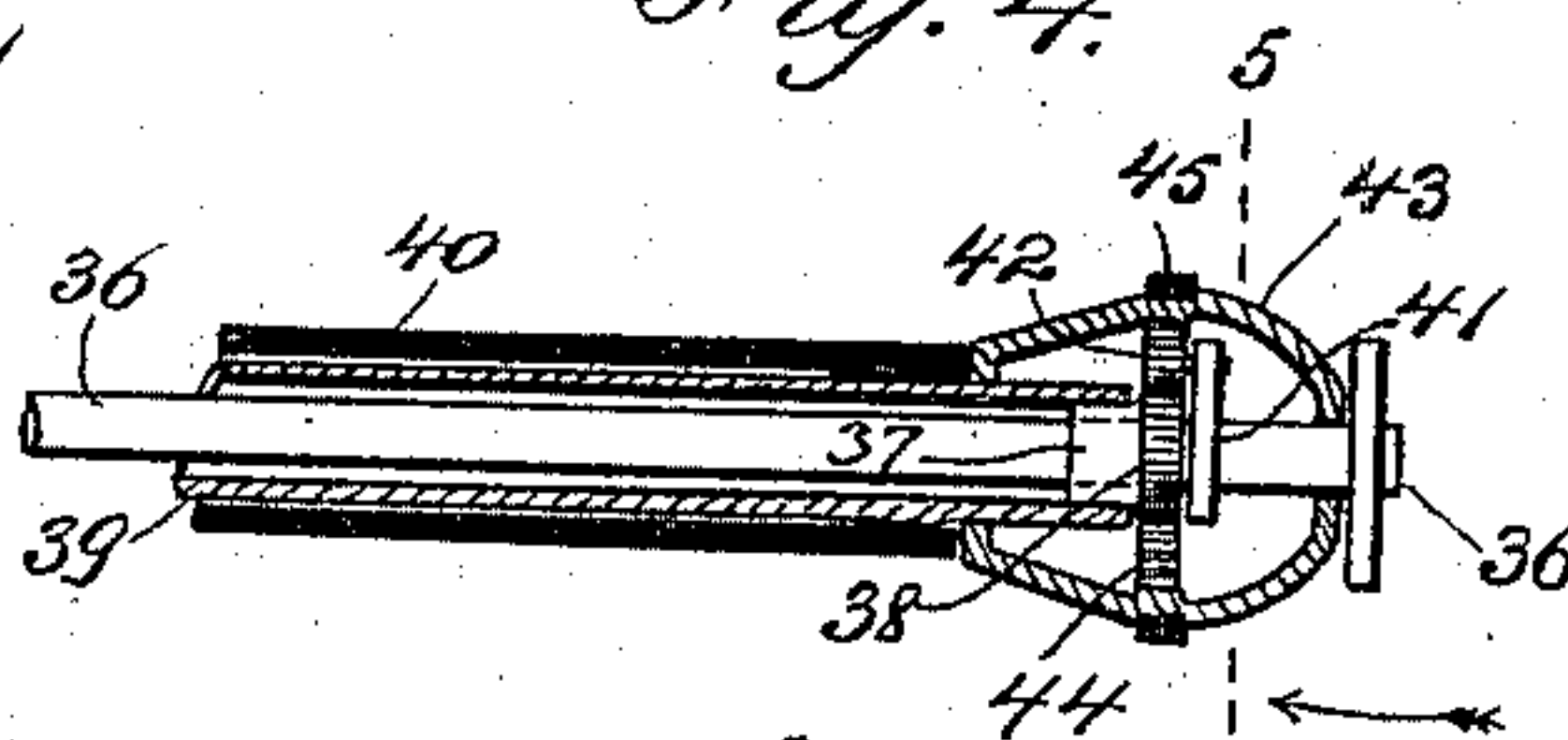
*Fig. 3.*



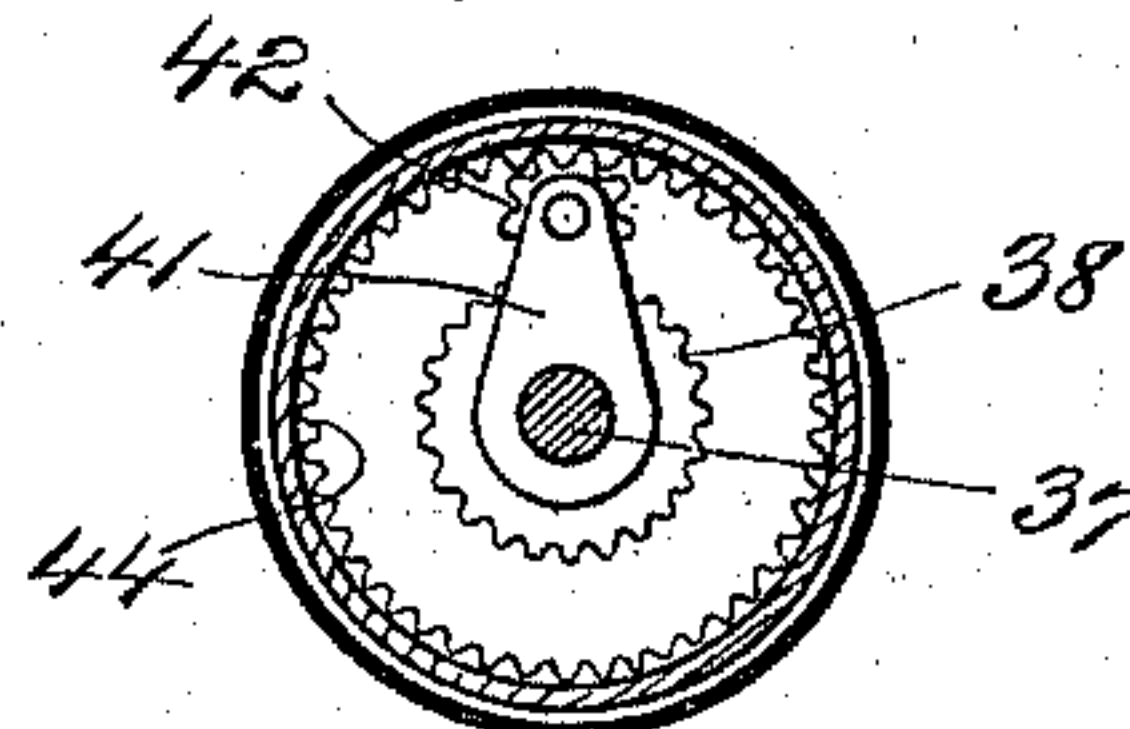
*Fig. 2.*



*Fig. 4.*



*Fig. 5.*



WITNESSES

C. Fordson  
C. Christ

INVENTOR

Edgar E. Phinney

BY

Edgar Tate & Co.  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

EDGAR ELLSWORTH PHINNEY, OF HAVERHILL, MASSACHUSETTS.

## CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 573,352, dated December 15, 1896.

Application filed September 9, 1896. Serial No. 605,309. (No model.)

*To all whom it may concern:*

Be it known that I, EDGAR ELLSWORTH PHINNEY, a citizen of the United States, and a resident of Haverhill, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Fenders or Guards, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar numerals of reference indicate corresponding parts wherever found throughout the several views.

This invention relates to fenders or guards for tramway-cars; and the object thereof is to provide an improved device of this class which is adapted to be connected with the end or ends of a tramway-car as usually constructed, and by means of which the serious and sometimes fatal accidents which frequently result from a person or object being struck by a tramway-car when in motion will be avoided.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a perspective view of my improved guard or fender and showing the same connected with the platform of a car; Fig. 2, a sectional side view showing details of the construction; Fig. 3, a similar view of a part thereof on an enlarged scale; Fig. 4, a sectional side view of the roller of the fender or guard, and Fig. 5 a section on the line 5 5 of Fig. 4.

In the drawings forming part of this specification, reference being made to Fig. 1, I have shown at 6 the platform of a car, and in the practice of my invention I secure to said platform a hanging frame 7, which consists of depending bars 8, two of which are employed at each side of the platform, and said bars 8 are connected on each side by a horizontal bar 9, and the front bars 8 are connected by a transverse bar 10, and the bottom horizontal bars 9 are provided at their lower edges with inwardly-directed flanges 10.

Pivotally connected with the hanging frame 7 is a supplemental frame consisting of side plates 12, which are provided at their bottoms with inwardly-directed flanges 13 and which are connected at their front ends by a transverse plate 14, and secured to said plates 12 of the supplemental frame are vertical standards 15, the upper ends of which are con-

nected by a transverse rod 16, on each end of which is mounted a dog 17, and passing vertically through the platform of the car is a bolt or rod 18, the lower end of which passes through the transverse bar 14 of the supplemental frame, and said bolt or rod 18 is provided with a shoulder 19, and between said shoulder and the bar 14 of the supplemental frame is a spiral spring 20.

The upper end of the rod or bolt 18, which projects above the car-platform, is provided with a head 21 and on the front side thereof with ratchet-teeth 22, and pivotally supported at the front of said rod or bolt, as shown at 23, is a lever 24, the free end of which is supported by a spring 25, and connected with said lever 24 is a dog 26, which is adapted to operate in connection with the ratchet-teeth 22 in the rod or bolt 18 and to hold said rod or bolt in a depressed position.

The platform of the car is provided with the usual buffer 27 and dashboard 28, and the fender or guard proper consists of a main bottom frame, which is connected with the supplemental frame above described, and an auxiliary frame, which is pivoted thereto, said main bottom frame being adapted to be projected in front of the car, and said auxiliary frame being adapted to be held in front of the dashboard, and said main bottom frame and said auxiliary frame being adapted to be folded together and to be slid backwardly beneath the platform.

The main bottom frame consists of two side bars 29, which are provided at their lower edges with inwardly-directed flanges 30, and which are connected at their rear ends by a transverse bar 31, having at its bottom an outwardly-directed flange 32, and the rear end of said main bottom frame of the fender or guard is supported by the supplemental frame, as hereinbefore described, and rests upon the flanges 13 of the side plates 12 of said supplemental frame, and projects beneath the rod 16, and the rear ends of the side bars 29 are provided with notches or recesses 33, in connection with which the dogs 17, which are pivoted to the standards 15 of the supplemental frame, operate.

The side bars 29 of the main frame of the fender or guard are connected at their front ends by a cross-plate 34, and each of said side bars is provided with an outwardly-directed



arm 35, in which is mounted a shaft 36, and said shaft is provided near each end with a sleeve 37, on which is formed or secured a gear-wheel 38, and mounted on the shaft 36 is a roller 39, the ends of which inclose the ends of the sleeves 37 and are secured thereto, and said roller 39 is provided with a covering or cushion 40, of rubber or similar material.

Secured to the shaft 36, adjacent to the gear-wheel 38, is an arm 41, on which is mounted a pinion 42, and mounted on the ends of said shaft and the end of the roller 39 and inclosing said ends of the roller 39 and the gear-wheel 38 and the arm 41 and the pinion 42 is a hollow head 43, which is oblong in form and circular in cross-section, and formed therein centrally of the largest portion thereof is an interior and annular gear 44, and mounted on the outer side or surface of the head 43 is a rubber bearing 45, and this rubber bearing 45 is adapted to come in contact with the ground or to be brought in contact therewith when the car is in motion, at which times the heads 43 will be revolved forwardly, and the roller 39, provided with the cushion or bearing-tube 40, will be turned backwardly, this operation being accomplished by reason of the gear-wheel 38, which is secured to the shaft 36, the pinion 42, and the annular gear 44 in the head 43, said head being free to revolve on the shaft 36 and the roller 39.

The auxiliary frame of the fender or guard consists of the side bars 46, which are pivotally connected with the rear ends of the side bars 29 of the main frame of the fender, as shown at 47 in Fig. 3, and wound on the pivot-pin at 47 is a strong spring 48, one end of which bears upon the flange 30 of the side bars 29 of the main frame and the other upon an inwardly-directed flange 49, formed on the side bars 46 of the auxiliary frame, and the side bars 46 of the auxiliary frame are also connected at their upper or outer ends by a cross-bar 50, which is preferably formed integrally therewith, and which is also provided with the flange 49.

The springs 48 are designed to hold the auxiliary frame in the upright position, as shown in Fig. 1, and I also provide guy-ropes, chains, or similar devices 51, which connect the upper portion of the auxiliary frame and the forward portion of the main frame, and a strong network 52, composed of wire, cords, ropes, or similar devices, which is connected with the upper part of the auxiliary frame and with the forward part of the main frame, and the central portion thereof is connected with the rear portion of the main frame by stay ropes or cords 53. The main frame is also provided with longitudinal wires 54, which extend from the front transverse bar 34 thereof to the rear transverse bar 31 and are secured to the flange 32 thereof, and these wires are adapted to support the netting when the auxiliary and main frames of the fender or guard are folded together, and said main

frame is also provided with braces 55, as shown in Fig. 1, which are connected with the sides thereof and the forward transverse bar 34. The pawls or dogs 17 are adapted to hold the main fender-frame in the projected position shown in Fig. 1, and whenever it is desired to fold the auxiliary and the main frames and to pass them backwardly beneath the car these dogs are raised, the auxiliary frame is pulled down forwardly on the main frame, and the fender or guard is shoved backwardly beneath the platform of the car, the inwardly-directed flanges 10 of the bottom horizontal bars of the hanging frame acting as guides or ways on which the fender or guard rests.

The normal position of the fender or guard when in use is that shown in Fig. 1, and the roller 39, with its cover 40, is held about six inches from the ground, and in case of an accident, or an anticipated accident, the head 21 of the bolt or rod 18 is pressed backwardly and downwardly, and this operation lowers the front end of the main fender or guard frame until the heads 43 strike the ground, and said frame will be held depressed in this position by the dog 26, acting in connection with the ratchet-teeth 22, and when the heads 43 are brought in contact with the ground the roller 39 is turned backwardly, as hereinbefore described, and assists in throwing the person or object struck onto the main frame of the fender or guard.

When it is desired to again raise the forward end of the main frame into its normal position, say six inches from the ground, the lever 24 is depressed, the dog 26 is released from the ratchet-teeth 22, and the rod or bolt 18 is forced upwardly by the spring 20.

It will be seen that the rod or bolt 18 is provided with a shoulder or projection 56, by which it is held in its highest position, said shoulder or projection acting upon a plate 57, secured to the platform of the car, and this shoulder or projection is intended to hold the forward part of the main frame of the fender or guard at a predetermined distance above the ground under ordinary conditions.

The heads 43 may be held in contact with the ground by simply pressing on the rod or bolt 18 as long as necessary, and the forward end of the main fender or guard frame may be raised from the ground at any time by pulling backwardly on the upper end of the auxiliary frame, but in doing this the rod or bolt 18 should first be released from the dog 26 by depressing the lever 24. I also mount on the rod 16 at each end thereof a pawl 58, one of which is shown in Figs. 1 and 2, and the object of these pawls 58 is to prevent the fender or guard from being disconnected from the supplemental frame, the free ends thereof being adapted to catch within the rear cross-bar 36 of the main frame of said fender or guard.

My improved fender or guard is simple in construction and operation and is well adapted to accomplish the result for which it is in-



tended, and by means thereof a person or object if struck thereby when the car is in motion will be received thereon and the passage of such person or object beneath the car will thus be avoided.

It is evident that changes in and modifications of the construction herein described may be made without departing from the spirit of my invention or sacrificing its advantages, and I reserve the right to make all such alterations therein as fairly come within the scope of the invention.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with the platform of a car, of a hanging frame connected therewith, a supplemental frame pivotally connected with said hanging frame at the front thereof, and a fender or guard consisting of a main and a supplemental frame, said main frame of the fender or guard being mounted on and adapted to slide in said supplemental frame, and said auxiliary frame being pivotally connected with the rear end of the main frame, and being adapted to be held in an upright position adjacent to the dashboard by springs, said auxiliary frame being also adapted to be folded upon the main frame, in which position the fender or guard may be shoved backwardly beneath the platform, substantially as shown and described.

2. The combination with the platform of a car, of a hanging frame connected therewith, a supplemental frame pivotally connected with said hanging frame at the front thereof, and a fender or guard consisting of a main and supplemental frame, said main frame of the fender or guard being mounted on and adapted to slide in said supplemental frame, and said auxiliary frame being pivotally connected with the rear end of the main frame, and being adapted to be held in an upright position adjacent to the dashboard by springs, said auxiliary frame being also adapted to be folded upon the main frame, and said main and said auxiliary frames being provided with a network which is connected with the upper portion of the auxiliary frame, and the outer portion of the main frame, and with guy-ropes or similar devices, which are also connected with the upper portion of the auxiliary and the outer portion of the main frame, substantially as shown and described.

3. The combination with a fender or guard for tramway-cars, which is adapted to be projected in front thereof, and to be held adjacent to the ground, and the forward end of which is depressible, of a shaft mounted between the sides thereof at the forward end, a roller mounted on said shaft, and gear-wheels mounted on each end of said shaft, adjacent to said roller, an arm mounted on said shaft adjacent to each of said gear-wheels, each of which is provided with a pinion which is adapted to operate in connection with the corresponding gear-wheel, a hollow head

mounted on said shaft, and inclosing said pinion, said gear-wheel and said arm, and provided with an internal gear by which said pinion is operated, said heads being adapted to come in contact with the ground, and to revolve on said shaft, whereby when the shaft is revolved in the forward direction, the roller mounted thereon, will be revolved in the backward direction, substantially as shown and described.

4. The combination with a car, of a hanging frame secured to the platform thereof, a supplemental frame pivotally connected with said hanging frame, and projecting in front thereof, and a fender or guard consisting of a main frame, and an auxiliary frame pivotally connected with the rear end thereof, said main and auxiliary frames being adapted to be folded together, and the auxiliary frame being held normally in an upright position, a vertically-movable rod or bolt which passes through the platform of the car, and is connected with the supplemental frame, by which the fender or guard is supported, a spiral spring mounted on said rod or bolt, and adapted to force it upwardly, and a lever pivotally supported on the platform, and provided with a dog which is adapted to operate in connection with notches or recesses formed in said rod or bolt, so as to hold it in a depressed position, substantially as shown and described.

5. The combination with a car, of a hanging frame secured to the platform thereof, a supplemental frame pivotally connected with said hanging frame, and projecting in front thereof, and a fender or guard consisting of a main frame, and an auxiliary frame pivotally connected with the rear end thereof, said main and auxiliary frames being adapted to be folded together, and the auxiliary frame being held normally in an upright position, a vertically-movable rod or bolt which passes through the platform of the car, and is connected with the supplemental frame, by which the fender or guard is supported, a spiral spring mounted on said rod or bolt, and adapted to force it upwardly, and a lever pivotally supported on the platform, and provided with a dog which is adapted to operate in connection with notches or recesses formed in said rod or bolt, so as to hold it in a depressed position, and said supplemental frame being provided with pivoted dogs which are adapted to hold the fender or guard in a projected position, said fender or guard being adapted to be folded, and to be passed backwardly beneath the platform of the car, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 1st day of September, 1896.

EDGAR ELLSWORTH PHINNEY.

Witnesses:

ANNIE M. PERKINS,  
JOHN A. McMILLAN.