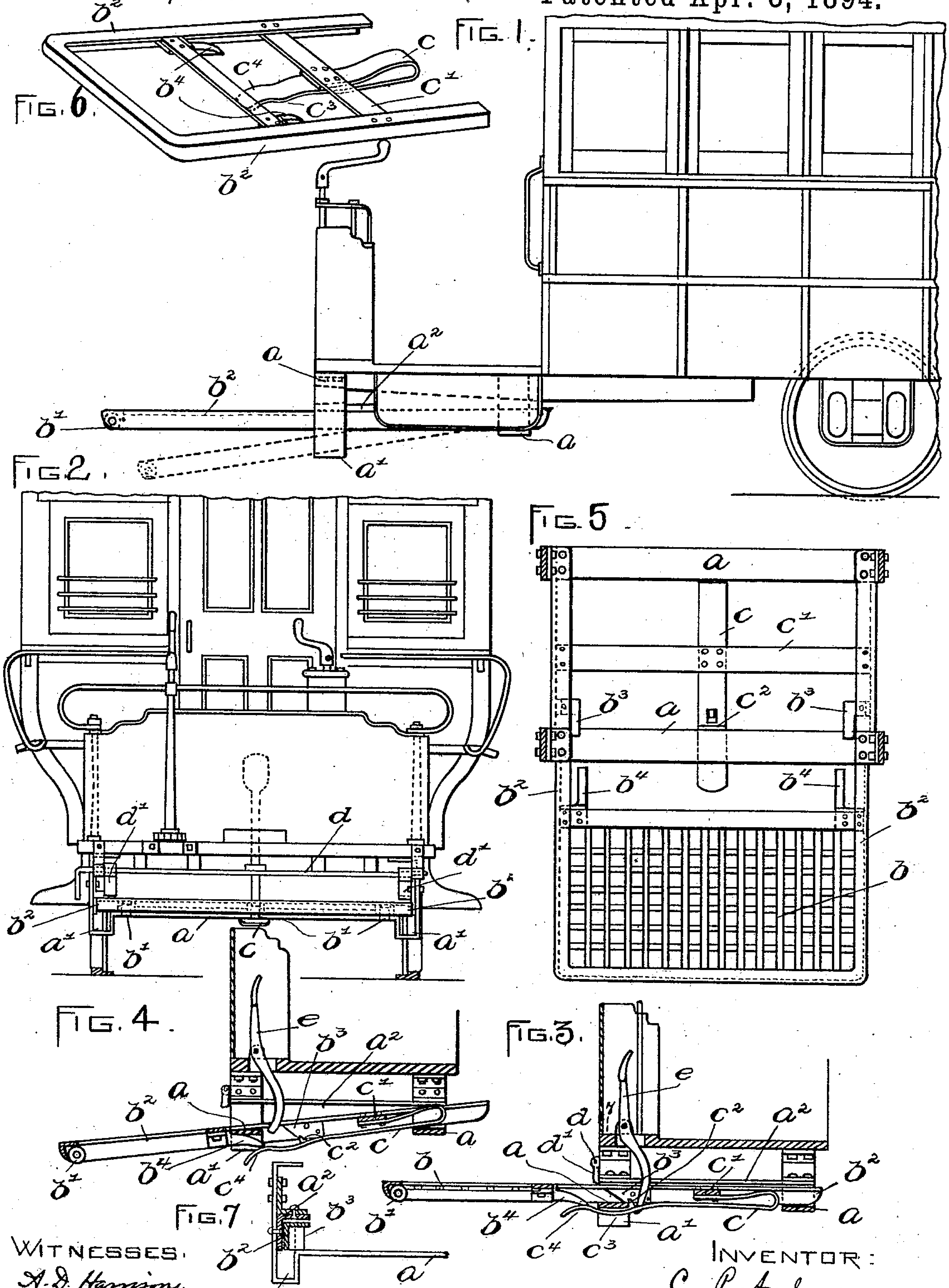
(No Model.)

C. P. ANDERSON.

CAR FENDER.

No. 517,638. Patented Apr. 3, 1894.



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CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 517,638, dated April 3, 1894.

Application filed November 25, 1893. Serial No. 491,988. (No model.)

To all whom it may concern:

Be it known that I, CARL P. ANDERSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Car-Fenders, of which the following is a specification.

This invention relates to an improvement in car fenders, and the object is to provide a construction whereby the fender will be tilted to an upwardly inclined position upon encountering an obstruction.

To this end the invention consists in the novel constructions and combinations of parts hereinafter described and claimed.

Of the accompanying drawings forming a part of this specification, Figure 1 shows a side elevation of the front portion of a street car provided with my improved fender, broken lines indicating its inclined adjustment. Fig. 2 shows a front elevation of the car. Fig. 3 shows a longitudinal section with the parts in normal adjustment. Fig. 4 shows a similar view with the fender in its tilted adjustment. Fig. 5 shows a plan view of the fender with the supporting hangers in section. Fig. 6 shows a perspective view of the fender detached. Fig. 7 shows a section on line 7, 7 of Fig. 3.

The same letters of reference indicate the same parts in all of the figures.

In the drawings *a* designates elongated hangers which are affixed transversely to the bottom of the car, the front hanger being formed at each side with pendent loops *a'*. Angle rails a^2 are secured to the vertically extending portions of the hangers, said rails comprising horizontally and vertically extending members. The fender is composed of a frame supporting suitable intersticing *b* at the front, and also supporting trundle rollers *b'* adapted for contact with the road bed. The side arms b^2 of the fender frame are composed of angle metal and engage the angle rails a^2 and are confined laterally and vertically thereby, while supported from downward movement by the hangers *a*. The fender is designed to normally occupy a substantially horizontal position, both when projected in front of the car and when retracted beneath the same, and in the construction here shown is supported in such horizontal position by means of lugs b^3 on the inner sides of the angle-arms b^2, which lugs rest upon the forward hanger when the fender is projected. At suitable points in front of the said lugs b^3 inclined guide pieces or lugs b^4 are fastened on the inner sides of the angle arms and are designed to engage the under side of the front hanger under a rearward movement of the fender, such as might be imparted thereto upon encountering an obstruction, and by such engagement cause the front end of the fender to be tilted downward. When the front end of the fender is thus tilted downward the vertical portions of the angle arms b^2 are received in the pendent loops *a'* of the front hanger, and the horizontal portions of said angle sides rest upon the front hanger. With the fender projected as shown in Fig. 3, upon encountering an obstacle, as a person's body, said fender will be moved rearwardly and the lugs b^3 will be carried from over the front hanger, so that the front of the fender may drop.

In order to insure the downward movement of the fender immediately upon the lugs b^3, leaving the front hanger, and also to provide against accidental displacement of the fender from its different positions, I arrange a novel form of spring, *c*, which consists of a piece of flat resilient metal rigidly secured at one end to a cross-bar *c'* of the fender and doubled back so as to extend over the rear hanger and under the front hanger. When the hanger is in the forward projected position shown in Fig. 3, a curve c^4 in the spring *c* is directly in front of the front hanger, and immediately upon a rearward movement of the fender the engagement of the said curve of the spring with the under side of the front hanger causes the spring to exert a downward influence on the fender. The spring is preferably formed with a lip c^2 which, by engaging the front hanger, limits the forward movement of the fender. It will be observed that the curve at the front end of the spring not only serves the purpose already mentioned, but also presents a yielding obstruction to rearward movement of the fender, which prevents accidental displacement of the same. A second curve c^3 in the spring, by engagement with the rear hanger when the fender is retracted,

presents a yielding obstruction to a forward movement of the fender. It will thus be seen that the spring guards against undue looseness of the parts.

In order to guard against the fender being pushed straight back upon encountering an obstacle, instead of assuming the desirable inclined adjustment, the following provision is made: A rock-shaft d is journaled on the front of the forward hanger and has projections d' which, when the handle of the rock-shaft is turned downward, come against the side arms of the fender frame with the latter in its normal projected adjustment and hold the fender down where its inclined lugs b^4 extend in a plane below the upper side of the forward hanger, and hence are bound to come in contact with said hanger under rearward movement of the fender and could not pass over the same, as they would have to do in a movement of the fender to its retracted inoperative position. The lugs b^3 on the fender are preferably constructed so as to assist the fender in re-assuming its normal position upon the latter being moved forward. When the fender is to be retracted to its inoperative position underneath the car, the handle of the rock-shaft d is turned upward and the projections d' thus thrown out of operative position so that the fender may be raised sufficiently to carry the lugs b^4 over the forward hanger.

It will be seen that my invention provides a simple and efficient car fender, which, upon encountering an obstacle, will assume a position which avoids the possibility of the car running over said obstacle, thus danger to life and limb incident to rapid transit in street railway traffic is in a large measure nullified. A lever e, on the car and under control of the driver, may be employed to throw the fender down upon the track, said lever engaging an opening in the spring c, so that upon its upper end being moved forward its lower end will push the fender back.

It is evident that the construction here shown may be variously modified without departing from the spirit and scope of this invention.

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

1. The combination of a substantially horizontal slide-way on the car and a fender engaging said slide-way and capable of limited vertical play and having guides which tilt its forward end downward under a rearward movement of the fender in the slide-way.

2. The combination of a substantially horizontal slide-way on the car, and a fender engaging said slide-way and capable of limited vertical play, and having parts whose engagement with the slide-way maintains the fender substantially horizontal in its projected and retracted adjustment, and guides which tilt the forward end of the fender downward under a rearward movement of the latter.

3. The combination of a substantially horizontal slide-way on the car, a fender engaging said slide-way and capable of limited vertical play, and having parts whose engagement with the slide-way maintains the fender substantially horizontal in its projected and retracted adjustment, and guides which tilt the forward end of the fender downward under a rearward movement of the latter, and a spring exerting a downward pressure on the fender.

4. The combination of a substantially horizontal slide-way on the car, and a fender engaging said slide-way and capable of limited vertical play and having parts whose engagement with the slide-way maintains the fender substantially horizontal in its projected and retracted adjustment, and inclined guides adapted to engage the under side of the slide-way under a rearward movement of the fender and tilt the front end of the latter downward.

5. The combination of fender-supporting hangers on the car, and a fender adapted to slide longitudinally in said hangers and capable of limited vertical play, and having lugs whose engagement with the latter maintains the fender substantially horizontal at certain points in its longitudinal adjustment, and also provided with inclined lugs for engagement with the under side of the front hanger and which tilt the front end of the fender downward under rearward movement of the fender.

6. The combination of fender-supporting hangers on the car, a fender adapted to slide longitudinally in said hangers and capable of limited vertical play, and having lugs whose engagement with the latter maintains the fender substantially horizontal at certain points in its longitudinal adjustment, and also provided with inclined lugs for engagement with the under side of the front hanger and which tilt the front end of the fender downward under rearward movement of the fender, and a spring carried by the fender and by engagement with the front hanger exerting a downward influence on the fender.

7. The combination of fender-supporting hangers on the car, angle rails connecting said hangers, a fender longitudinally movable in said hangers and having angle side bars engaging the said angle rails, and lugs whose engagement with the hangers maintains the fender substantially horizontal at certain points in its longitudinal adjustment, said fender also having inclined lugs adapted to engage the under side of the front hanger under rearward movement of the fender and thereby tilt the front end of the fender downward, horizontally extending portions of sides of the fender resting on the front hanger in the tilted adjustment of the fender.

8. The combination of fender-supporting

hangers on the car, a fender adapted to slide longitudinally in said hangers and capable of limited vertical play and having lugs whose engagement with the latter maintains the fender substantially horizontal at certain points in its longitudinal adjustment, and also provided with inclined lugs for engagement with the under side of the front hanger and which tilt the front end of the fender downward under rearward movement of the fender, and a movable key which holds the fender in position for engagement of its inclined lugs with the under side of the forward hanger.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 20th day of November, A. D. 1893.

CARL P. ANDERSON.

Witnesses:
A. D. HARRISON,
F. PARKER DAVIS.