

(No Model.)

O. F. JARVIS & H. C. JONES.  
CAR FENDER.

No. 595,105.

Patented Dec. 7, 1897.

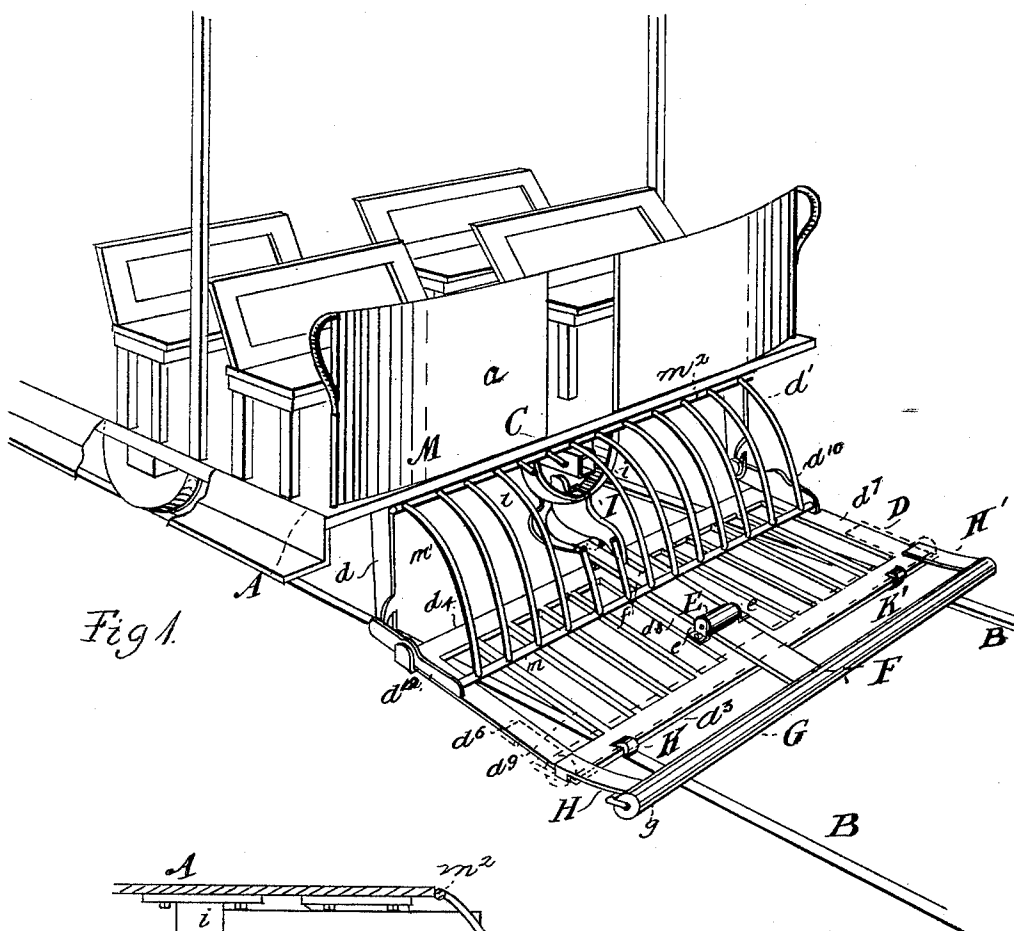


Fig. 1.

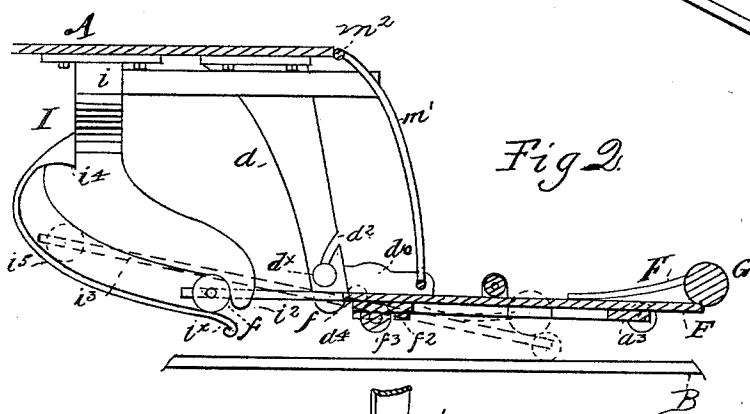


Fig. 2.

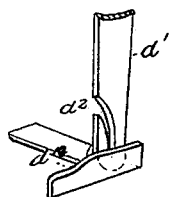


Fig. 3.

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# UNITED STATES PATENT OFFICE.

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## CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 595,105, dated December 7, 1897.

Application filed August 3, 1897. Serial No. 647,000. (No model.)

*To all whom it may concern:*

Be it known that we, OSCAR F. JARVIS and HARRY C. JONES, citizens of the United States, residing in the city of St. Louis, State of Missouri, have invented certain new and useful Improvements in Car-Fenders; and we do hereby declare that the following is a full, clear, and exact description of the invention, such as will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

Our invention has for its objects, first, to graduate the resistance of a car-fender in meeting an obstruction in the path of the car, and thus prevent sudden shock; second, to prevent the obstruction in the path of the car from passing beneath the fender; third, to prevent the body falling upon the fender from striking the draw-bar.

Our invention consists in the novel construction and combination of parts, such as will be first fully described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a view in perspective of a street-railway car and track-rails, showing our improved automatic car-fender applied thereto and in a raised position, portions of the hinged back of the fender being broken away to show the forked connection of the upper end of the keeper for the releasing-bar to the fender. Fig. 2 is an enlarged view in detail of the bottom and forward end portion of the car, showing one of the depending fender-supports on the farther side of the car, the automatic drop-fender, and slotted fender-releasing bar in longitudinal section, and the keeper and spring plate or trigger for the rear end of the releasing-bar. Fig. 3 is a detail view in perspective of one of the fender-supporting bars and a broken portion of the rear end of the fender-frame pivoted thereto.

Similar letters of reference indicate corresponding parts in all the figures.

Referring to the drawings, A represents the platform or bed of a car.

a is the dashboard.

B B are the track-rails.

C is the draw-bar.

Upon each side of the platform of the car and secured at the forward end and under

side portion of said platform are the fender-supporting bars or hangers  $d$   $d'$ , said bars extending downwardly to a point a considerable distance above the plane of the track-rails and the lower end of each bar inclined forwardly at an angle to the platform A in a slight degree. In the lower end of each bar  $d$  is a rearwardly and downwardly inclined curved slot  $d^2$ , extending from the forward edge of the said bar.

The fender D consists of a rectangular frame, which extends in width from the inner side portion of one bar  $d$  to the inner side of the other bar  $d'$ , and in a forward direction the required distance to retain the body which may fall upon the fender. Said fender consists of the front plate or bar  $d^3$  and the rear bar  $d^4$  and side bars  $d^6$   $d^7$ . Extending from the front plate  $d^3$  to the rear plate  $d^4$ , at a point equidistant from the respective side bars  $d^6$   $d^7$ , is a plate  $d^8$ . With the front plate  $d^3$ , near the bar  $d^6$ , is connected one end of a narrow strip  $d^9$ , the other end of which strip is connected with the plate  $d^4$ , and a number of said strips are connected with the said plates  $d^3$   $d^4$  in the direction of the bar  $d^7$ , which are arranged at short distances apart one from another. With the side bar  $d^7$  of the fender D and in the same plane as the outer edge of said bar is an upwardly-extended plate  $d^{10}$ , which extends rearwardly a short distance from the line of the outer edge of the rear fender-plate  $d^4$ , and upon the inner side portion of said plate is a pivot  $d^{12}$ , which is flattened at  $d^x$  at its outer end to prevent lateral movement of the fender. Upon the bar  $d^7$  of the fender is an upwardly-extended plate  $d^{14}$ , which is arranged in position precisely the same as the plate  $d^{10}$ , and provided with a pivot  $d^{15}$ , which is the same as the pivot  $d^{12}$ , the plates  $d^{10}$   $d^{14}$  extending upon the outer sides of the respective fender-supporting hangers  $d$   $d'$ , the pivots  $d^{12}$   $d^{15}$  entering the slots  $d^2$  heretofore described.

Upon the upper surface of the plate  $d^8$  of the fender and upon each side of said plate are the brackets  $e$   $e$ , which brackets are arranged at a short distance from the front bar  $d^3$  of the fender in the direction of the rear bar  $d^4$ .

To the brackets  $e$   $e$  is pivoted a horizontal roller E. Upon the upper surface of the fen-

der D and between said brackets *ee* and beneath the roller E is a sliding fender-releasing bar F. Upon the upper side and forward end of the bar F is rigidly connected an auxiliary fender-bar G, which is parallel with bar  $d^3$  and preferably cylindrical in form, and upon the outer surface is covered with a yielding covering or jacket *g*. Said bar G extends from the plate F the same distance in each direction as described by the fender-bar  $d^3$ . With the upper side of the bar G and at one end of said bar is attached one end of a flat spring-plate H, the other end of which plate rests upon the upper surface of the bar  $d^6$  of the fender. With the other end of the bar G is connected one end of a spring-plate H', the other end of which plate rests upon the upper surface of the bar  $d^7$ . In the rear end portion of the releasing-bar F, which extends a considerable distance beyond the line of the outer edge of the bar  $d^4$  of the fender, is a longitudinal slot *f*. At the extreme rear end of the bar F, in the slot *f*, is a roller *f'*. In the bar  $d^4$  of the fender, beneath the releasing-bar F, is an opening  $f^2$ . To the under side portion of the said bar  $d^4$ , in the opening  $f^2$ , is pivoted a roller  $f^3$ , the periphery of which roller extends a slight distance above the upper surface of bar  $d^4$ .

To the under side portion of the platform A of the car, at a point equidistant from the fender-supporting hangers  $dd$  and a short distance rearwardly from a line drawn through the upper portion of the said fender-supporting hangers  $d d'$ , is rigidly attached the forked portions *ii* of the keeper *l*. Said keeper *l* consists of a forwardly and downwardly extended flat plate or shoe, extending from the lateral forked extensions *ii*, between which extensions the draw-bar C is secured to the platform of the car.

The forward edge portion of the keeper *l*, which extends within the slot *f* of the plate  $d^3$  of the fender, extends downwardly from the forked portions *ii* in a single outwardly-curved line and to a position a short distance in advance of roller *f'* in the slot *f* and to a position a short distance below the under surface of the releasing-bar F. Upon the rear edge of the portion of the keeper-plate within the slot is a depression  $i^2$ , which receives the roller *f'* when the bar F is drawn outwardly in position. From the recess  $i^2$  the rear edge of the keeper is inclined rearwardly and upwardly in a slightly outwardly-curved line at an obtuse angle to the platform of the car, as at  $i^3$ . To the rear edge of the keeper *l*, near the forked portions *ii*, is a downwardly-inclined notch  $i^4$ , in which is secured one end of a spring plate or trigger  $i^5$ , the other end of which plate is bent downwardly and extended forwardly to a position beneath the recess  $i^2$  in the keeper *l* and in contact with the under side portion of the antifriction-roller *f'* in the releasing-bar F, at which point the end of the spring-plate is bent back upon itself, as at  $i^x$ , so as to pre-

sent a smooth surface to the roller. Said spring-plate  $i^5$  is tempered, so as to sustain the position of the roller in the receiver  $i^x$ . 70

In the outer edge portion of front bar  $d^3$  of the fender directly above the track-rail B is a notch *k*, in which is a roller K, which is pivoted to the under side of the said bar. A roller K' is also pivotally connected with the forward edge of the front bar  $d^3$  directly above the other track-rail B, as described of the roller K. To the plate  $d^{10}$  on the side of fender D, a short distance from the bar  $d^4$  in the direction of the bar  $d^3$ , is pivotally connected one end of a rod *m* of a wire frame M, the other end of which rod is pivotally connected with the plate  $d^{12}$  on the other side of the fender. With the rod M is connected, near said plate  $d^{10}$ , one end of a fender wire 85 or rod, the other end of which rod *m'* is curved outwardly and extended upwardly and in the direction of the dashboard *a* of the car. Other rods *m* are connected with the rod M in the direction of the other end of said rod, 90 as described of rod *m*, and in series are arranged at equal distances apart one rod *m* from another. With the upper ends of each one of the said rods *m'* is connected a bar  $m^2$ , which is parallel with the rod M and bears 95 against the dashboard *a* of the car.

In the operation of our improved car-fender the fender D, during the time the fender is connected with the car and until an obstruction is met with, is in a horizontally-extended position, as seen in Fig. 1, in which position the cushioned fender-bar G is in a position a short distance in advance of the front plate  $d^3$  of the fender D and the roller *f'* in the rear end of the bar F is in the recess  $i^2$  of the keeper *l*, the spring-plate or trigger  $i^5$  exerting sufficient power on the roller to keep it in said recess. When an obstruction is met with, the cushioned releasing-bar first receives the shock and is forced backward to a position upon the upper side of the plate  $d^3$  of the fender, and the rear end of the releasing-bar F is forced backward and out of the recess  $i^2$ , the trigger  $i^5$  yielding to permit the movement, and the forward end of the fender D immediately drops into the position as seen in dotted lines in Fig. 2, and the rollers K K' in plate  $d^3$  rest upon the upper surface of the track-rails, the roller *f'* traveling the rearwardly-inclined edge  $i^3$  of the keeper *l* and between the keeper and trigger or spring-plate, the said spring-plate  $i^5$  acting to hold the roller and releasing-bar in position, thus preventing the falling body from getting beneath the fender and so tripping persons struck by the fender that they will fall upon it, the bars  $d^9$  yielding sufficiently to the shock. In falling upon the fender D the curved rods *m'* on the pivoted rod *m* prevent the body from striking the draw-bar C, or in falling from the fender D beneath the car the elasticity of the wires *m'* prevents undue injury. 130

As soon as the obstruction is removed from the fender D the bar G is drawn outwardly

by the hand and the forward part of the fender D is raised in a horizontal position, the roller *f'* enters the recess *i*<sup>2</sup> in the keeper *l*, and the fender is supported in raised position until some other obstruction is met with. The obvious advantage of the fender is at once seen when the car is descending steep grades and rapidly changing the angle of its position, which instead of striking the track and breaking away from the car is held above the angularities of the track-rails and at the same time in readiness to drop automatically when a body or other obstruction is met with.

The other end of the car is equipped with the fender-supporting hangers *d d* and a keeper *l*, so that the only requirement when changing the direction of travel of a car is to turn back wire frame M and raise the forward end of the fender, then remove the pivoted ends from the slots *d*<sup>2</sup> in the brackets *d d* and disengage the slotted bar F from the keeper *l* and connect with the other end of the car, thus providing an effective car-fender applicable to all kinds of horseless vehicles, it being observed that the fender when dropped at its forward end in a definite position above the surface of the ground will be held at the desired angle of inclination to the platform by the keeper *l*.

Having fully described our invention, what we now claim as new, and desire to secure by Letters Patent, is—

1. The combination with the platform of a car of hangers secured to the said platform, and on both sides, a fender-frame pivotally connected at its rear end with said hangers, and having a vertically-movable forward end, a sliding bar in suitable guides on said fender-frame, and a keeper for the rear end of said bar, and a yielding plate retaining said end of said bar in said keeper, as and for the purpose described.

2. The combination with the platform of a car of hangers secured to said platform upon both sides, a fender-frame pivotally connected at its rear end with said hangers, a movable releasing-bar upon said frame within suitable antifriction-guides, and having a longitudinally-slotted rear end, a keeper-plate connected with the platform of said car extending downwardly within the slot in said bar, and having a recess for the rear end of said bar and a spring-plate connected at one end with said keeper-plate, and the other end bearing upon the rear end of said sliding bar, as and for the purpose described.

3. The combination with the platform of a

car, of hangers secured to said platform and upon both sides a fender-frame pivotally connected at its rear end with said hangers, a sliding fender-releasing bar upon said frame within suitable antifriction-guides, and having a longitudinally-slotted rear end and a keeper-plate connected with the platform of said car, and extending downwardly within the slot in said bar, having a recess for the rear end of said sliding bar and separate upwardly and rearwardly inclined guides for the rear end of said sliding bar, one of said guides having a yielding surface, as and for the purpose described.

4. The combination with the platform of a car, of hangers secured at both sides and to the bottom of said platform, a fender-frame pivotally connected at its rear end with said hangers, a sliding fender-releasing bar in suitable guides upon said frame, having a longitudinally-slotted rear end portion and a roller in said end, and an auxiliary fender-bar upon its forward end, a keeper for said sliding bar in rear of the pivoted supports for the fender-frame, connected with the platform and extending within the slot in said sliding bar, and having a recess for the roller, the end of said sliding bar and a rearwardly, and upwardly inclined guiding-surface extending from said recess, and a spring having one end bearing upon said roller, and the other end curved outwardly and connected with the rear edge portion of said keeper-plate, as and for the purpose described.

5. The combination with a car-platform of hangers on both sides, a horizontally-extended car-fender frame pivotally connected at its rear end to said hangers, a sliding bar in suitable guides upon said frame, and an auxiliary fender-bar connected with the forward end of said sliding bar, and a keeper upon said car in the path of the rear end of said sliding bar, and a frame composed of upwardly-extended outwardly-curved wires having a supporting-rod pivotally connected with the rear end of said car-fender frame, for the purpose described.

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