

No. 658,702.

Patented Sept. 25, 1900.

J. L. CONNER.
CAR FENDER.

(Application filed May 16, 1900.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

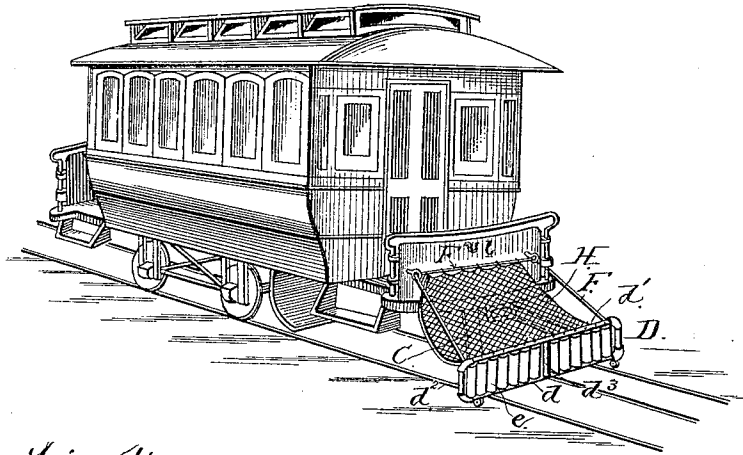
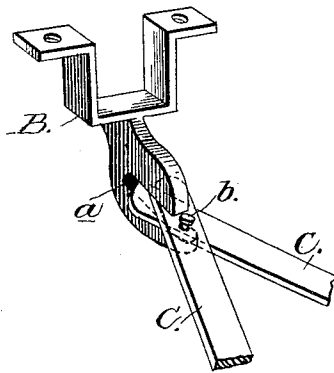


Fig. 4.



WITNESSES

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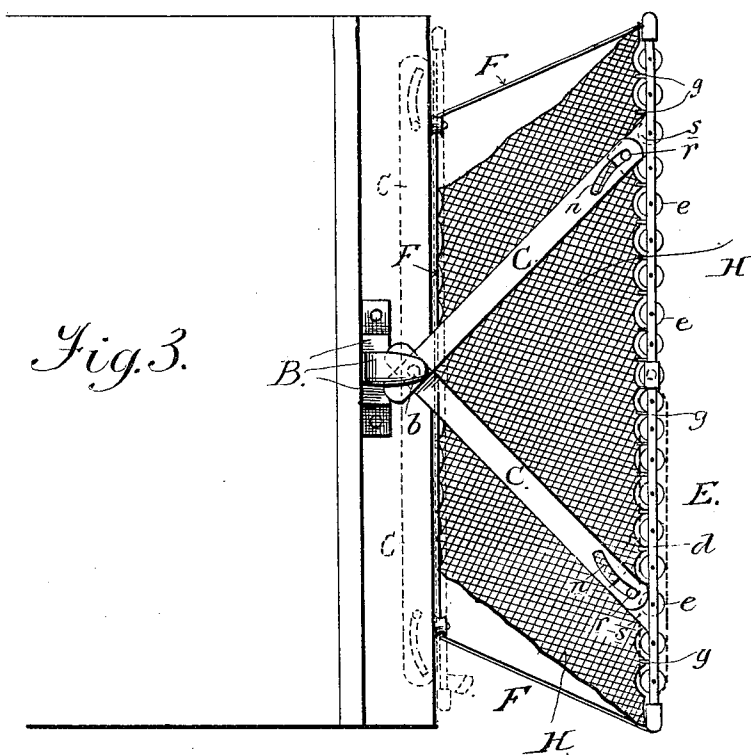
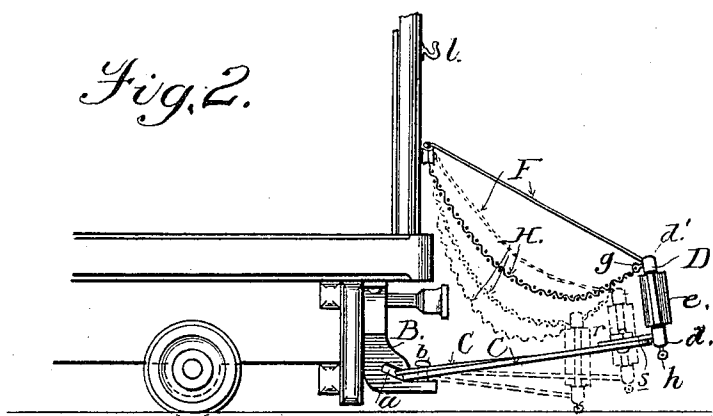
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WITNESSES

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UNITED STATES PATENT OFFICE.

JOHN L. CONNER, OF WASHINGTON, DISTRICT OF COLUMBIA.

CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 658,702, dated September 25, 1900.

Application filed May 16, 1900. Serial No. 16,862. (No model.)

To all whom it may concern:

Be it known that I, JOHN L. CONNER, a citizen of the United States, residing at Washington, in the District of Columbia, have invented new and useful Improvements in Car-Fenders, of which the following is a specification.

This invention relates to the class of appliances attachable to street-cars or other wheeled vehicles as a means for protecting pedestrians from death or injury and commonly designated "car-fenders;" and it includes, essentially, a fender including a framework having vertical rollers and crossed arms pivotally mounted substantially in the longitudinal central line of the car and adapted to be held in an outward or open position and to automatically yield upon contact with a body or other obstruction and fold inward against the car or under the front platform thereof and simultaneously turn laterally about its point of pivotal suspension, whereby said frame assumes an angle to the direction of the travel of the car, and thereby directs the body or obstruction laterally and beyond the line of the car-wheels.

The invention also includes, in connection with the aforesaid frame, a flexible connection, as a rope or chain, guided on pulleys on the car—say on the front of the dashboard—and having its ends connected with the framework of the fender, whereby the depression of one end of the frame slackens up on the rope or chain at that side and while the opposite end of the frame swinging in a reverse direction draws upon the rope or chain at that end, and thereby takes up the slack at the opposite end and insures the rope or chain being always under proper tension and satisfactorily supporting the weighted front end of the fender.

The invention further includes a net of appropriate character connected with the front frame and lying between the same and the front of the car and into which a body will be received if it should fall over the said frame.

The invention also includes the parts and the constructions and combinations of parts, which I will hereinafter describe and claim.

In the accompanying drawings, in which similar letters of reference indicate corresponding parts, Figure 1 is a perspective view

showing the front portion of a car with my improved fender attached and in an operative position. Fig. 2 is a side view, partially in section, of Fig. 1. Fig. 3 is a bottom view of Fig. 2 and showing the fender closed in dotted lines. Fig. 4 is a detail.

In carrying out my invention I secure to the under side of the platform or other convenient point, just in front of the said sill and in the longitudinal central line of the car, an arm or bracket B, the lower portion of which is widened and formed with an inclined or cam slot *a*, in front of which is a stud or pin *b*, which furnishes the axis about which the fender swings in its opening and closing movements. Upon this pin or stud *b* the overlapping ends of the horizontal arms C of the fender are pivotally secured at points inside of their inner ends, thus permitting said ends to extend backward into and to engage the walls of the inclined slot *a* for a purpose I will hereinafter indicate.

At the front ends the arms C connect with the lower horizontal rod *d* of a vertical frame D, which extends transversely across the front of the car and is adapted to receive the impact of the body or obstruction which may be struck by the car. This vertical frame may be of any suitable size and design. It is herein shown as of substantially-rectangular form and made of gas-pipe or other tubular material, and it includes the said lower rod *d*, a corresponding upper rod *d'*, and connecting end rods *d''*, while an additional connecting-rod *d'''* may be employed at the center to give additional strength and rigidity to the frame, if desired. Within this frame, between the upper and lower horizontal rods thereof, a series of rollers *e*, which may be either plain rollers or sleeves or brushes, are mounted and are designed to sweep or direct a fallen body or obstruction outwardly toward and beyond the sides of the car if such body failed to fall into the receiving-net.

If desired, endless bands or aprons may be substituted for the rollers, as indicated by dotted lines at E in Fig. 3, the operation of said bands or aprons being the same as that described for the rollers.

Between the front frame and a guided rope or chain F is located the net H, which may be of any appropriate type, as of rope or loose

links, said net having its front edge laced or otherwise connected with eyes *g* or equivalent devices secured to the upper rod of the front frame, the rear edge of the net being
 5 also laced or secured to the rope or chain, whereby it is suspended in operative position and adapted to fold and be extended simultaneously with the closing and opening movements of the frame.

10 If desired, caster-rollers *h* may be secured to the lower horizontal rod of the frame and adapted to run on the ground when the fender is closed, and on the dashboard or front of the car is placed a hook or stud *l* or other
 15 means, which is engaged by the rope or chain *F* when the fender is folded; thereby taking up all slack in the rope or chain when the fender is inoperative and assisting to hold the folding parts of the fender in a secure
 20 and substantially-rigid manner.

The arms *C* have their outer ends provided with curved or cam slots *n* and bolts *r* engaging these slots and lugs *s* on the framework, said bolts moving in the slots and engaging the end walls of the latter to limit the
 25 movements of the fender.

From this description it will be apparent that the fender is set in an operative position by the motorman or conductor pulling the
 30 frame outward in a horizontal plane until the slack in the rope or chain *F* is taken up and said rope or chain is substantially tight. In this outwardly-opening movement the crossed bars *C* swing about the headed pin or stud *b*,
 35 and the short inner ends of these arms ride into the inclined groove or slot in the arm or bracket. Near the completion of the outward movement of the frame and as the slack of the chain or rope is about fully taken up
 40 the said frame will begin to move upward by reason of the short arm of one or both of the crossed arms *C* engaging the inclined wall of the slot *a*, which tends to throw said ends downward, but which movement is resisted by the
 45 rope or chain *F*, which suspends the frame. Therefore the said arms fulcrum about the headed pin or stud *b* and the frame moves upward about this pin or stud as a center. As the inner ends of the crossed arms thus
 50 engage the inclined walls of the slot *a* the final outer movement of the frame results in said arms being cramped in the slot and forced so tightly together that sufficient friction is produced to hold the fender open and
 55 operative against accidental collapse, such as might occur because of the jarring of the car and the force of wind; but this frictional contact readily yields to a shock or strain brought upon the front of the fender.
 60 In the beginning of the outward movement of the frame the bolts *r*, which in the closed position of the fender lie in the inner ends of the curved slots *n* in the arms *C*, commence to move outwardly in said slots, and thereby
 65 commence the opening movement of the arms about the pin or stud *a*, this movement continuing until the bolts entirely traverse said

slots and contact with the end walls thereof, when the fender will be fully open, as shown in Figs. 1 and 3. The bolts are also designed
 70 to be sufficiently tight in the slots to prevent the accidental rearward or closing movement of the frame, but the joints will yield upon an obstruction being struck.

When a person or obstruction is struck by
 75 the fender, the blow is first imparted to the front frame and the shock overcomes the frictional contact of the movable parts and the crossed arms fold rearwardly and separate, the front frame moving rearward and
 80 dropping close to the ground and the lower rod of the frame coming up against and lying substantially parallel with said arms, as indicated by dotted lines in Fig. 3. The fender is now free to swing about the stud or pin.
 85 Therefore if the greater pressure or weight is upon one side or the other of this pin or center the fender will swing toward that side and will be inclined rearwardly to deliver the
 90 body laterally beyond the plane of the car-wheels. If the person falls over the front frame, the net will receive the body and prevent serious harm.

In the event of the fender striking a body or obstruction a glancing blow, the joint *n* at
 95 that side will first yield and the said fender will at once swing toward the side nearest the object and assume an inclined position and tend to discharge the object toward that
 100 side, and will collapse and move inward in that position without being subject to the strain and damage which occur under like circumstances and when the fender is held
 105 by supports which are substantially rigid in horizontal planes.

This fender is simple and effective and substantially automatic in its action and will prove effective as a means for saving life
 110 and preventing serious injury. The specific arrangement of parts may be modified within certain limits without altering the scope of the invention. Therefore I do not expressly
 115 limit myself to the precise details shown.

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

1. A fender including a frame extending transversely across the front of the vehicle, arms connecting the frame with a support
 125 from the vehicle and a pivotal center about which the arms move, a net back of the frame and means whereby the frame is held outward against accidental closing but permitted to automatically recede upon striking a body or
 130 obstruction.

2. A fender and means whereby it may swing laterally about a pivotal center, in combination with a flexible connection suspending the front of the fender and freely slidable through guides whereby the fender may swing
 135 in lateral planes to direct the body struck toward and beyond the plane of the sides of the vehicle.

3. A fender including a frame having up-

per and lower horizontal rods and vertical connecting-rods, and vertically-disposed rotatable rollers, means flexibly suspending the frame from the vehicle, horizontal arms connected with said frame, means pivotally securing the inner ends of said arms and about which the latter move in opening and closing, and jointed connections for holding the frame in its advanced position and allowing it to automatically recede upon striking an obstruction.

4. In a fender, the combination of a framework adapted to be advanced and to recede in horizontal planes, means flexibly suspending the framework when it is advanced, arms connected with said framework and overlapping each other at their inner ends, means pivotally connecting the arms at a point inside of their inner ends, a net, and means acting on the inner ends of the arms to elevate the forward ends of the arms and the framework when the latter is advanced.

5. In a fender, the combination of a framework and rollers mounted therein, means flexibly suspending the framework, arms connected with the framework and overlapping each other at their inner ends, a pivotal connection for the arms at a point inside of their inner ends and about which the fender may swing in lateral planes, and means including inclined or cam surfaces engaged by the inner ends of the arms to elevate the framework as it is advanced.

6. In a fender, the combination of a frame-

work, rollers mounted therein, a guided chain or rope flexibly suspending the framework when the latter is advanced, a flexible net, arms connecting the framework with the vehicle and means about which said arms turn, and about which the fender may swing in lateral planes, and means for holding the parts in an advanced position and allowing them to automatically collapse on striking an obstruction.

7. In a fender, the combination of a framework movable in horizontal planes, rollers mounted therein, a guided chain or rope flexibly suspending the framework when the latter is advanced, a net suspended between the framework and guided connection, pivotal arms having their inner ends overlapping and their outer portions provided with curved or cam slots, means connecting the framework with said slots whereby the arms open and close with the movements of the framework and the latter assumes a position parallel with the arms when the fender is closed, and means for holding the parts in an advanced position and allowing them to automatically collapse and recede upon striking an obstruction.

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

JOHN L. CONNER.

Witnesses:

T. W. FOWLER,
CHAPMAN W. FOWLER.