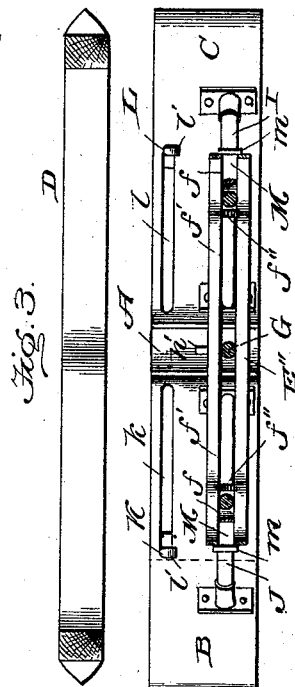
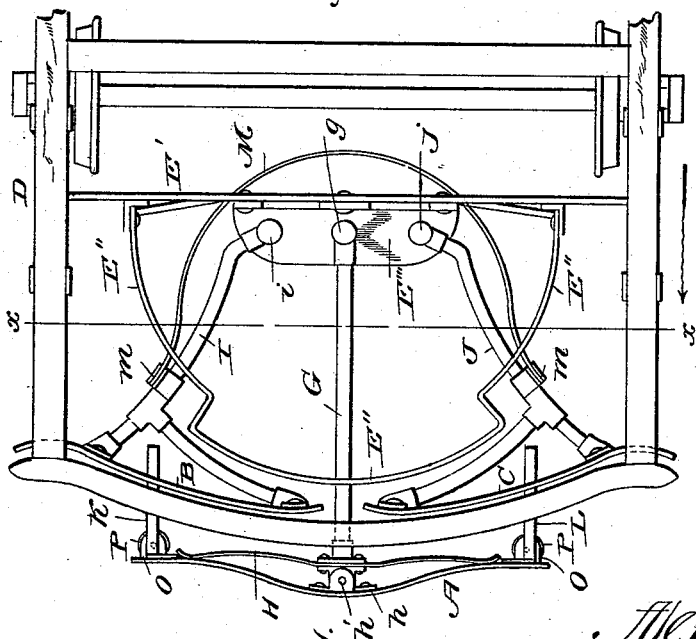
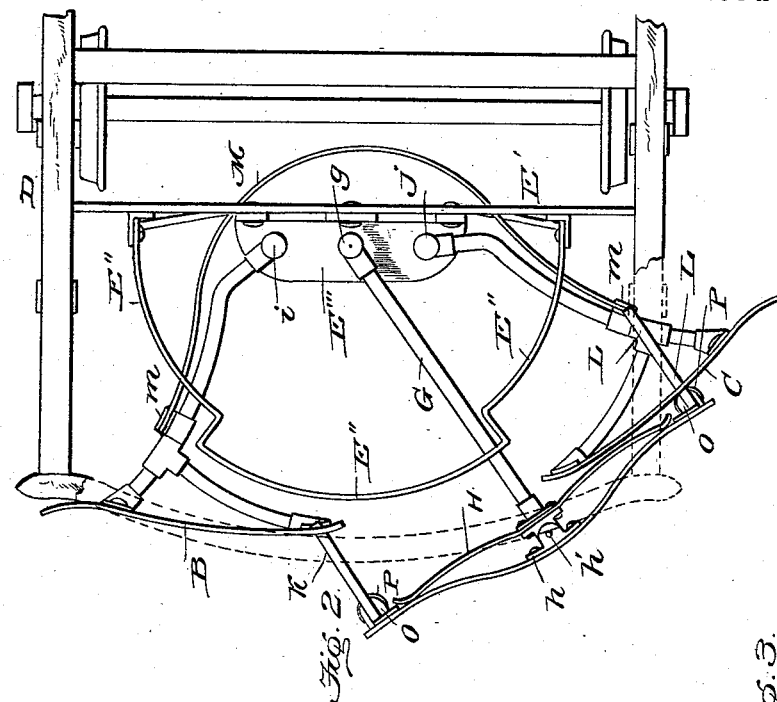


(No Model.)

A. KIDD.
CAR FENDER.

No. 524,175.

Patented Aug. 7, 1894.



Witnesses:
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UNITED STATES PATENT OFFICE.

ALEXANDER KIDD, OF BROOKLYN, ASSIGNOR OF ONE-HALF TO ROBERT WOOD, OF NEW YORK, N. Y.

CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 524,175, dated August 7, 1894.

Application filed May 11, 1894. Serial No. 510,900. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER KIDD, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Fenders for Surface Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a novel fender designed for service on surface cars of any character, and more especially adapted to rapid transit cars propelled by cable and electric power; and the objects that I have in view are, first, to provide a fender which will not only shield a person against being run over by the wheels of the car, but also serve to deflect the person or any obstacle to either side of the track; secondly, to provide means whereby the fender will be automatically returned to and held in its normal proper position without manual adjustment by the driver or conductor; thirdly, to provide for the ready application to ordinary cars or the trucks thereof without any change therein; and finally to simplify the construction with a view to promoting its reliability and efficiency.

With these ends in view my invention consists, broadly, of a sectional fender, the members of which are hung or pivoted to swing laterally with respect to the line of travel of the car, whereby the fender is adapted to shift any obstacle in its path to one side of the track, and to clear the latter from obstructions and avoid danger to life or limb of any person who may be struck by the car. In the preferred embodiment of my invention, I employ two side members adapted to swing toward opposite sides of the track and in advance of the wheels thereof, and a central member in advance of the two side members so as to be continuous therewith, said central member being connected with the side members and movable in either direction with one or the other of the side members for a limited distance. The central member is carried by a swinging arm which is pivoted at one end to the fender frame and at its other end to the central member of the fender, and each

side member is carried by a crane or spider pivoted at its heel to the fender-frame; and these side members are normally pressed toward each other and partially within the limits of the central member by a spring or springs, so that the side members are overlapped by the central member and all coact to present a continuous barrier to any obstacle passing to the wheels.

The invention further consists in the construction and combination of devices which will be hereinafter fully described and claimed.

To enable others to understand my invention I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a plan view of my fender for surface cars, showing it in its normal position and applied to a truck frame, and Fig. 2 is a similar view showing the central and one of the side members swung to one side in position to deflect to one side of the track any obstacle in the path of the car. Fig. 3 is a transverse vertical sectional view on the plane indicated by the dotted line $x-x$ of Fig. 1, looking toward the fender in the direction indicated by the arrow.

Like letters of reference denote corresponding parts in all the figures of the drawings.

My fender consists of three members or sections A, B, C, of which the members B, C, constitute the side members and A the front central member, arranged normally in relation to each other as shown by Fig. 1, that is to say, the side members are situated somewhat in rear of the front member A and the inner parts of the side members B, C, being overlapped by the front central member but not in contact therewith, all the members forming a continuous barrier transversely across the track, and close down to the track rails in front of the wheels, to prevent an obstacle in the path of the car from being run over by the wheels.

The truck frame D is of any ordinary or preferred construction, and one of the objects of the invention is to provide a fender which can be applied to any surface or tram car as now built. To this end I provide a

fender frame E which consists of the horizontal beam E', the arched guide E'', and the bedplate E'''. The horizontal beam E' of the fender frame is arranged transversely across the truck frame D, and at its ends it is rigidly bolted to the sides of the truck frame in any suitable way, as at e. The arched guide E'' extends in front of the horizontal beam E', and its front portion is close to the side members B, C, of the fender, said guide being rigidly fastened at its rear end to the beam E', and the guide is further provided with the slots f, f, at the side portions thereof and with the slot f' at its front portion, the slots f, f, being separated from the slot f' by the vertical bridges f'' which serve as abutments or stops for the crane-shaped supports to limit the swing of the side members B, C.

The central member A of the fender is carried by an arm or bar G which passes through and plays in the slot f' of the arched guide E'', and the rear end of this arm G is pivoted to the bed plate E''', as at g, the front end of the swinging arm G being provided with a cross head h to which is centrally pivoted, as at h', the front member A of the fender. This central fender member A is thus capable of a limited swinging movement on the pivot h' toward or from the members B, C, and said member is held in its normal position across the car truck by means of a spring H. This spring is preferably of that kind known as a "leaf spring," being secured at its middle to the crosshead h and having its free ends bearing against the rear side of the member A on opposite sides of the pivot h'; but I do not strictly confine myself to this exact construction.

The side members B, C, of the fender are carried by the crane shaped supports or arms I, J, one of which passes through the slot f on the right hand side of the guide E'' and the other through the slot f on the left hand side of the guide E''. The rear ends of the crane supports or arms I, J, are pivoted to the bed plate E''' on opposite sides of the pivot g of the arm G carrying the central member A, the pivots of the supports or arms I, J, being indicated at i, j, and the front branched ends of these arms or supports I, J, are rigidly fastened to the rear sides of the members B, C, of the fender, as shown.

The members A, B, C, of the fender may be made of sheet metal, and bent to the form shown; and the side members are provided with slots k, l, near their upper edges and at the inner sides thereof. In these slots are fitted the guide pins or stems K, L, which are attached to the central member A and project rearwardly therefrom through the slots, the rear extremities of the stems K, L, being enlarged or provided with shoulders l' to prevent the stems from working out of the slots; these stems serving in conjunction with the bridges f'' to limit the inward movement of the side feeder members B, C, under the pres-

sure of the spring M. This spring is of the bowed form shown by Figs. 1 and 2, and it passes through slots in the beam E', around the rear side of the beam E' and bed plate E''', the ends of the bowed spring being connected to the outside of the arms or supports I, J, by the collars, m, m, which are slitted to receive the free ends of said spring.

On the rear side of the central member A of the fender, and at the ends thereof, are fastened the brackets O, O, in which are journaled the friction rolls P, P, and when either end of the central member is forced back, by the resistance of an obstacle in the path of the fender, the member A is turned on its pivot h' until the roller P at that end bears against the side member B or C in rear of the member A.

This being the construction of my improved fender for surface or tram cars, the operation may be described as follows: The bowed spring M normally presses the side members B, C, inward toward each other until they are arrested by the stems K, L, coming in contact with the outer ends of the slots k, l, and thus the central front member is held in place by the stems K, L, being in contact with the ends of the slots. Should a person or obstacle be struck by the fender at one side of the pivot h' of the middle front member A, that end of the member A will be forced back toward the side member in rear thereof until the friction roll P strikes the side member, and as the car continues to advance and the obstacle offers some resistance to the fender, the central member A and the side member against which it bears will be swung outward or moved in the direction indicated by the arrow Q in Fig. 2, whereby the fender not only prevents the objects from being run over by the wheels, but also shoves or moves the object off to one side of the track and out of the path of the wheels. During this lateral swinging movement of the central member and the side member as it moves therewith, the pin or stem on the other end of the central member rides freely in the slot of the other side member which remains stationary, and after the obstacle has been moved clear of the track and of the fender, the spring M returns the side and central members, to their normal positions. This action of the central member will take place in conjunction with either side member according as the obstacle strikes one end or the other of the central member, and as the central member is carried quite close down to the rails, it is evident that the object cannot pass under the fender to be run over by the wheels.

Should the obstacle strike either side member B or C at a point outside of the limit of the central member, that side member will be deflected or swung to one side without affecting the central member until the inner end of the slot k, l, comes against the pin or stem on the central member, whereupon the central member will be moved along with the

side member, and as the side members are capable of swinging to a position beyond the line of the track rails, it is evident that the obstacle cannot pass the side members and be reached by the wheels.

It is evident that changes in the form and proportion of parts and in the details of construction of the devices herein shown and described as an embodiment of my invention can be made by a skilled mechanic without departing from the spirit or sacrificing the advantages of my invention, and I therefore reserve the right to make such modifications as fairly fall within the scope of my invention.

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

1. A car fender, substantially as described, comprising a series of members which are coupled together and held by yielding tension devices to present a continuous barrier in advance of the car wheels both when in their normal positions and when moved laterally with respect to the track by contact with an obstacle in the path of the fender, as and for the purposes described.

2. In a car fender, a series of horizontally swinging members pivotally supported by suitable devices and coupled together to permit each member to have a limited lateral movement and to insure simultaneous play of two or more of the members as each member reaches the limit of its individual movement, in combination with a tension device common to all the members to normally hold them in position to present a continuous barrier in advance of the car wheels, substantially as described.

3. In a car fender, a series of sections or members which are normally held to present a continuous barrier to the wheels and arranged to yield or swing at an angle to the line of the movement of the car, substantially as and for the purposes described.

4. In a car fender, a series of swinging sections or members arranged to move at an angle to the line of movement of the car and means for normally holding the sections in such relation to each other as to present a continuous barrier in advance of the car wheels, substantially as described.

5. In a car fender, the combination with a fender-frame, of side members carried by supports which are pivoted to the frame, and a central member in advance of the side members and supported by an arm which is piv-

oted to said frame, substantially as and for the purposes described.

6. The combination with a fender frame, of side fenders carried by pivoted supports, and a central fender in advance of the side fenders and also carried by a pivoted support, said side and central fenders being connected to permit each side member to have a limited movement independently of the other side member and of the central member, substantially as described.

7. In combination with a fender frame, the side supports carrying the side members B, C, a central member having its supporting arm pivoted to the fender frame, and a spring to normally force the side members inward toward each other, substantially as and for the purposes described.

8. The combination with a fender frame, of the side supports pivoted thereto, the slotted fender frames rigidly fastened to said supports, a central arm pivoted to the fender frame, a central fender member pivoted to said arm and provided with guide stems, and a spring bearing against the side supports to force them toward each other, substantially as described.

9. A car fender consisting of a central member carried by a pivoted swinging support, and side members each carried by a swinging support which is pivoted independently of the central member, said members being so arranged as to move together under certain conditions and present at all times a continuous barrier in advance of the car wheels, substantially as and for the purposes described.

10. A car fender comprising a central member which is carried by a pivoted horizontally swinging support, and two other members situated at the respective ends of the central member and each carried by a swinging support which is pivoted independently of the central member and the other side member, said members being coupled together by slide joints which insure a limited individual play of each member and a combined movement of two or all of the members as each member reaches the limit of its individual movement, substantially as and for the purposes described.

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

ALEXANDER KIDD.

Witnesses:

ROBERT WOOD,
DAVID BLACK.