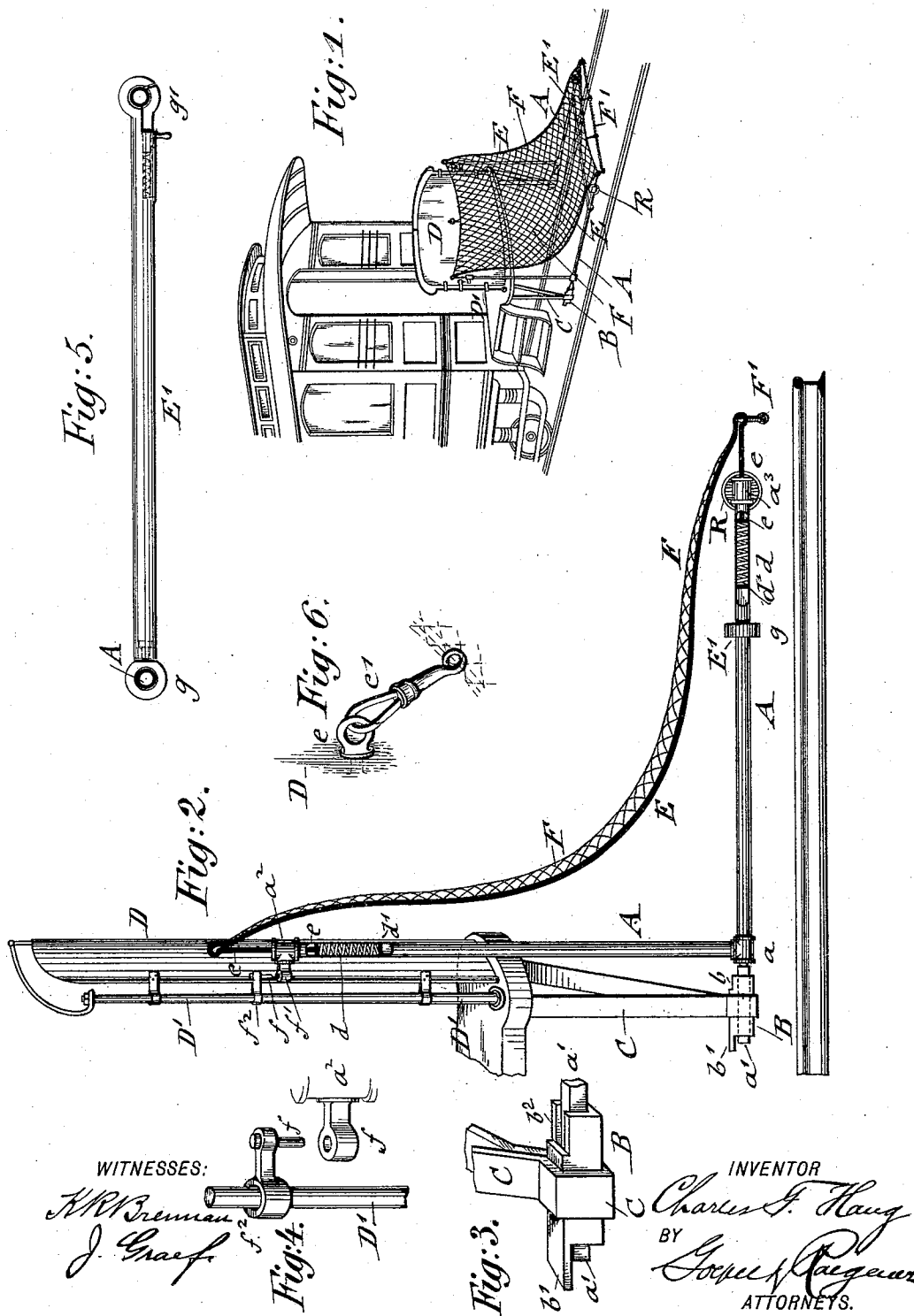


(No Model.)

C. F. HAUG.
FENDER FOR TROLLEY CARS.

No. 530,223.

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UNITED STATES PATENT OFFICE.

CHARLES F. HAUG, OF BROOKLYN, NEW YORK.

FENDER FOR TROLLEY-CARS.

SPECIFICATION forming part of Letters Patent No. 530,223, dated December 4, 1894.

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To all whom it may concern:

Be it known that I, CHARLES F. HAUG, a citizen of the United States, residing in Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Fenders for Trolley-Cars, of which the following is a specification.

This invention relates to an improved fender attachment for the cars of electric, cable and other cars, said fender being applied only to one end of the car and readily detachable therefrom, so as to be applied to the opposite end of the car when the car is running in opposite direction over the line.

The invention consists of a fender for street and other cars which is composed of two rectangular bracket-arms which are detachably connected by extension-rods with sockets supported by hangers below the car-platform and with locking-devices on the posts of the dash-board, the ends of the rectangular bracket-arms being provided with helical cushioning springs for supporting the inwardly-bent ends of curved arms, by which a transverse fender-net is supported, said inwardly-bent arms "giving" sufficiently when strain is exerted on the fender-supporting arms. At the lower ends of the fender-supporting arms and of the lower edge of the fender-net is arranged a transverse yielding cord, that is suspended below the level of the front-edge of the fender-net, so as to cushion to some extent the contact of a body with the net and prevent injury to the same. A transverse brace connects the lower ends of the bracket-arms, so as to stiffen the same, while rollers at the ends of said arms protect the fender-structure against damage when striking the pavement.

In the accompanying drawings,—Figure 1 represents a perspective view of one end of a street-car with my improved fender-attachment. Fig. 2 is a vertical longitudinal section of the fender-attachment, showing its connection with the car, said figure being drawn on a larger scale. Figs. 3 and 4 are perspective views on a larger scale, respectively of the socket for supporting the bracket arm below the platform and of the locking-pin for retaining the upper end of the bracket-arm on the post of the dash-board. Fig. 5 is a detail side-view of the transverse brace and

its connection with the supporting bracket-arms, and Fig. 6 is a detail view of the hook and eye-connection of the upper edge of the fender with the dash-board.

Similar letters of reference indicate corresponding parts.

Referring to the drawings, A, A represent two rectangular bracket-arms which are preferably formed of gas-pipe or other tubing and connected at their apices by T-pieces *a*. An extension-rod *a'*, preferably of square cross-section is screwed into the T-piece *a* of each bracket-arm and serves to form the connection of the bracket-arm A with a horizontal socket B, which is supported by a rigid hanger C from the platform of the car. The upper part of the front or ingoing-end of each socket B is recessed as at *b*², so as to permit the ready dropping in of the rod *a'*, when the bracket-arm A is to be inserted into the socket B.

The upper rear-end of the socket B is correspondingly extended as at *b'*, so as to give a better support for the rod *a'* and resist thereby more fully the weight of the fender. The upper and lower ends of the bracket-arms A, A, are open, so as to permit the insertion of helical cushioning springs *d*, which rest at their inner ends on fixed studs or pins *d'* and which bear by their opposite ends engaged on the inwardly-bent arms *e* of the curved fender-supporting arms E, which are preferably bent of wrought-iron of suitable thickness, the shape being clearly shown in Figs. 1 and 2.

The upper ends of the bracket-arms A are provided with sleeves *a*² having fixed sockets *f'* extending at right angles thereto and serving to receive the locking pins *f* which slide by their sleeve-shaped ends *f*² on the upright posts D' of the dash-board D.

The hanger C, and the locking pins *f*² are arranged at each end of the car so that the fender can be readily detached from one end and applied to the other end of the car.

A fender-net F is stretched transversely from one fender-arm E to the other, said net being preferably connected at its upper edge midway between the posts of the dash-board by a spring-hook *e'* with an eye *e* fixed on the dash-board of the car, as shown in Fig. 1 and in detail in Fig. 6.

For the purpose of taking up the strain of

the fender-net F on the supporting-arms E and preventing the latter from being drawn inwardly toward each other, a transverse brace-rod E' is applied to the lower front-ends of the bracket-arms A, said brace being applied by means of a fixed or swiveled ring g to one bracket-arm and by a spring or snap-hook g' to the other bracket-arm, as shown in Fig. 5.

The cushioning springs, arranged in the ends of the rectangular arms A serve for taking up the strain of a body dropping on the fender. They permit the net to sag sufficiently so as to support the body of a person scooped up by the same. The yielding of the front-ends of the fender-arms E also prevents contusions and injury when the body is taken up by the lower part of the fender. An elastic cord F' is attached to the eyes formed by the inwardly-bent ends of the lower fender-arms and strung to the lower edge of the fender-net, said elastic cord being preferably made of a rubber-covered rope, which serves also for preventing injury to a person falling in front of the track and while in the act of being scooped up by the fender.

To the front-ends of the bracket-arms A are applied the T-pieces a³, which carry rollers R, preferably at the inside, which rollers form contact with the pavement between the track-rails, so that when the car is rocking on its springs, the fender-structure cannot be damaged as the contact of the rollers with the pavement protects the front-ends of the fender-supporting arms against striking the ground and being bent or broken thereby.

My improved fender is used at the front-end of the car only, and applied to the front dash-board and to the hangers below the car-platform. When the car arrives at the end of its trip, the entire fender-attachment is removed by first lifting the locking pins from the connecting sockets at the upper T-shaped ends of the brackets A. The transverse brace E' is then unhooked on one side from the bracket-arm and pushed back, and one bracket after the other is then removed from the sockets supported on the hangers, so that the net can be folded and carried with the brackets to the other end of the car, to which the fender is then applied in the same but reverse order, by first inserting the rods of the bracket-arms into the sockets of the hangers, connecting the socket-pins on the dash-board posts with the sockets at the upper ends of the bracket-arms and then replacing the brace-rods so as to stiffen the front-ends of the bracket-arms and keep thereby the fender-net in taut position.

Owing to the arrangement of the rollers at the front-end of the brackets, by which the fender-structure is protected against damage, the entire fender-attachment can be arranged much lower below the platform of the car, so as to be only about two or three inches from the pavement, whereby the fender acts in a

more effective manner in the prevention of accidents.

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

1. In a fender for railway-cars, the combination of rectangular bracket-arms, T-pieces forming the apices of the rectangular bracket-arms, means for attaching the bracket-arms to the car, fender-supporting arms connecting the upper and lower ends of the bracket-arms, a transverse brace directly connecting the forward lower ends of the bracket-arms and removably applied thereto at the rear of their extreme forward ends and a fender-net attached to the fender-supporting arms, said arms and fender-net extending over the transverse brace, substantially as set forth.

2. In a fender for railway-cars, the combination of hangers below the car platform, sockets supported by said hangers and opening toward the ends of the car, rectangular bracket-arms rigidly connected at their apices, rods projecting from the apices and adapted to be inserted into said sockets, means for connecting the upper ends of the bracket-arms to the dash-board fender-supporting arms connecting the upper and lower ends of the bracket-arms, a transverse brace connecting the lower ends of the bracket-arms, and a fender-net stretched between the supporting-arms, substantially as set forth.

3. In a fender for railway-cars, the combination with the car platform and the dash-board posts thereof provided with vertically movable locking-pins guided on the same, of rectangular bracket-arms rigidly connected at their apices and secured on the under side of the car platform, sockets at the upper ends of the bracket-arms adapted to receive said movable locking-pins, fender-supporting arms connecting the upper and lower bracket-arms and a fender-net stretched between the supporting-arms, substantially as set forth.

4. In a fender for railway-cars, the combination of rectangular bracket-arms, means for supporting the same at one end of the car, curved fender supporting-arms having inwardly-bent arms extending in the direction of the apices of the bracket-arms, said inwardly-bent arms being received in the open ends of the bracket-arms, cushioning-springs in the open ends of the bracket-arms for said fender supporting arms, a fender-net stretched transversely between the curved arms and a transverse brace applied to the lower ends of the bracket-arms, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

CHAS. F. HAUG.

Witnesses:

PAUL GOEPEL,
K. R. BRENNAN.