

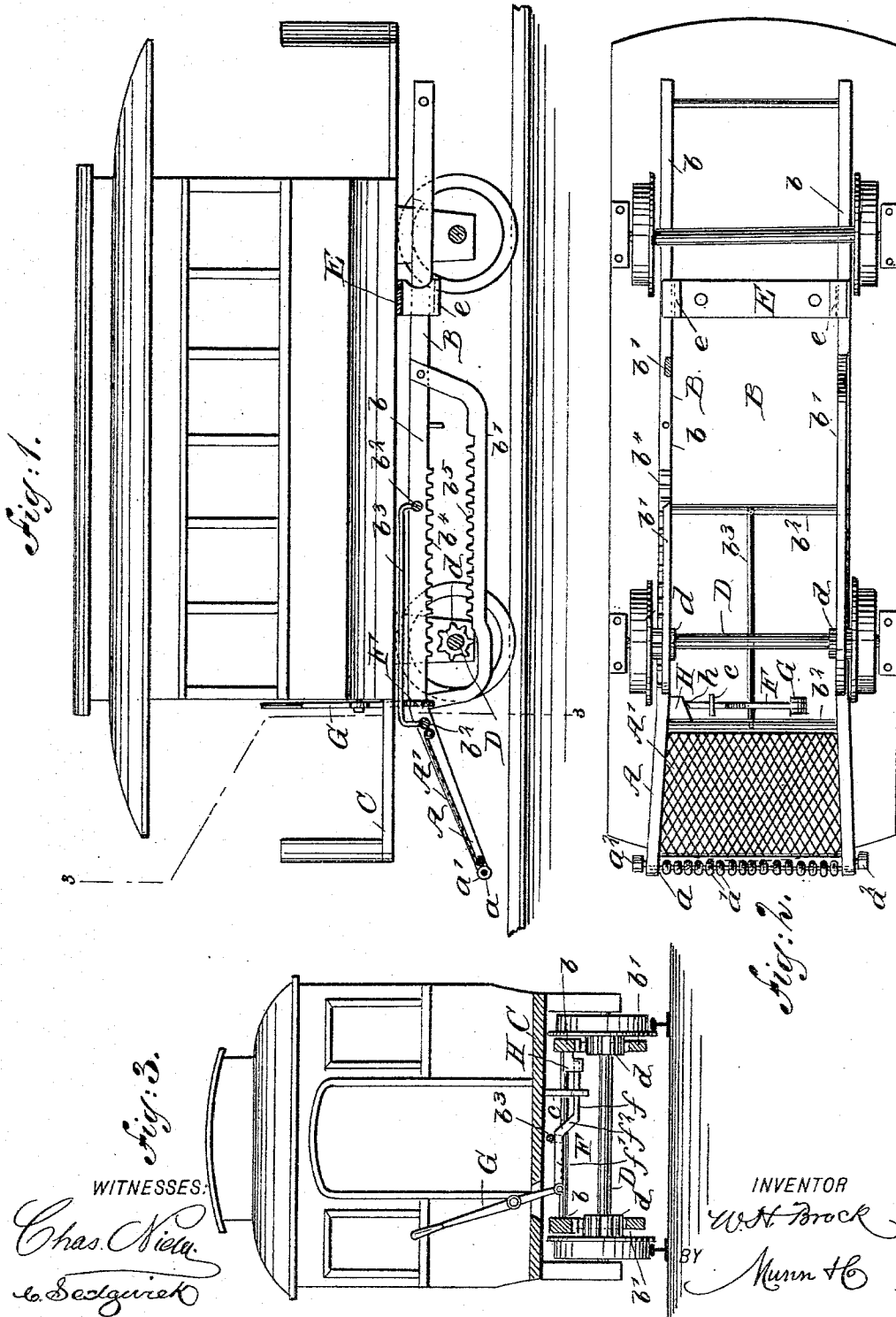
(No Model.)

2 Sheets—Sheet 1.

W. H. BROCK.  
FENDER FOR STREET CARS.

No. 515,728.

Patented Feb. 27, 1894.



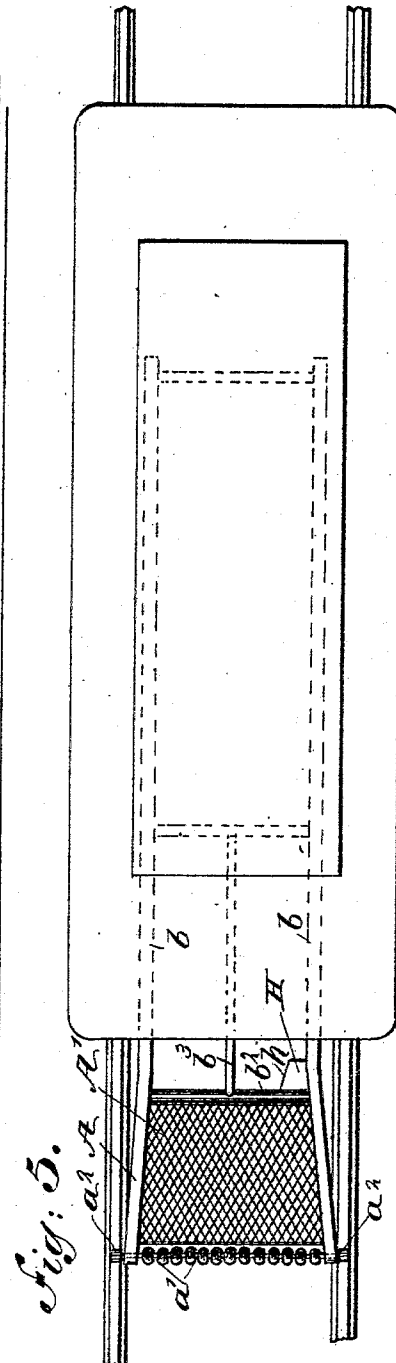
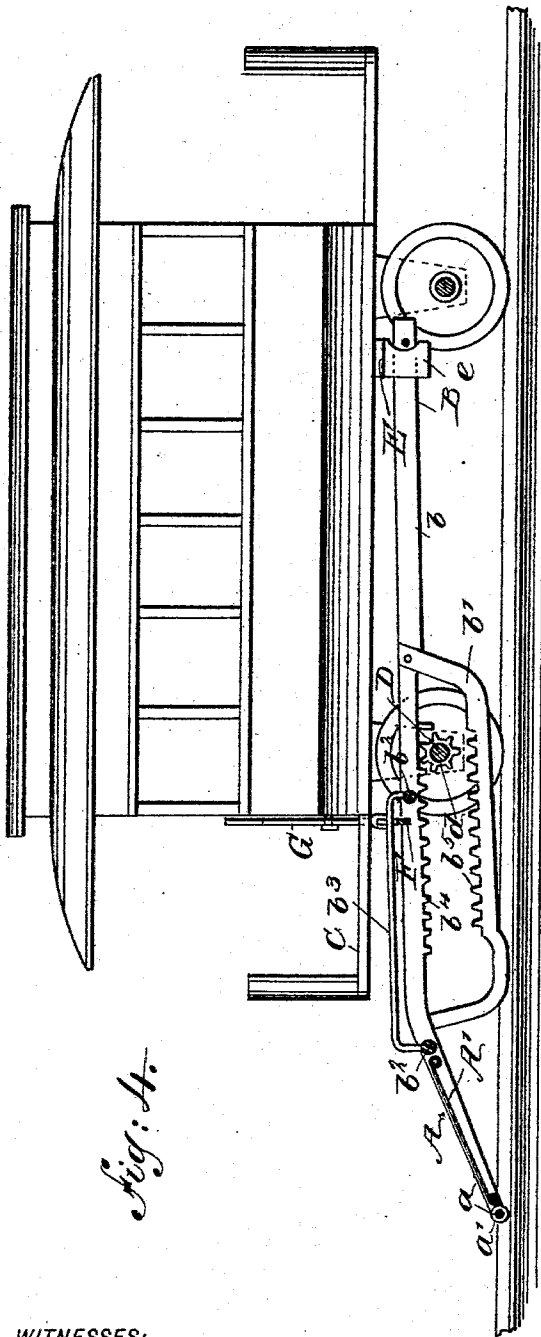
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**WITNESSES:**

WITNESSES:  
Chas. Nida.  
C. Sedgwick

INVENTOR

W. N. Brock  
BY Munn & Co

**ATTORNEYS.**

# UNITED STATES PATENT OFFICE.

WILLIAM H. BROCK, OF BROOKLYN, NEW YORK.

## FENDER FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 515,728, dated February 27, 1894.

Application filed September 26, 1893. Serial No. 486,506. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. BROCK, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Fender for Street-Cars, of which the following is a full, clear, and exact description.

The object of the invention is to provide a fender for street cars, such as electric and cable cars, which may be projected a certain distance beyond the car platform when desired, and withdrawn beneath the latter when not required for use, the movement being a forward and backward sliding one instead of a vertical movement as in the case of hinged and similar fenders, and a further object is to utilize the motion of the car to move the fender.

The invention consists in the novel features hereinafter particularly described and defined in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of a car embodying my invention, parts being in section, the fender being shown in the inner position. Fig. 2 is a bottom plan, with parts broken out. Fig. 3 is a sectional end elevation, the section being indicated by the line 3—3 Fig. 1. Fig. 4 is a side elevation with parts in section, the fender being shown projected to the forward position; and Fig. 5 is a plan view, the fender being shown projected.

The fender A of the car is arranged adjacent to the car platform and downwardly inclined as usual, and it is formed integral with a sliding frame B, of which the longitudinal side bars *b*, *b*, are continued to form the side members of the fender. Near the front of the frame B, its side bars *b*, *b*, are provided with teeth on their undersides to form racks *b*<sup>4</sup> and there is secured to each bar, at the toothed portions thereof, the bars *b*<sup>1</sup>, *b*<sup>1</sup>, the ends of which depend from the bars *b*, *b*, the bars *b*<sup>1</sup>, *b*<sup>1</sup>, for the major portion of their length being parallel with bars *b*, *b*, and toothed to form racks *b*<sup>5</sup>, *b*<sup>5</sup>, on their upper edges or surfaces, so that the sets of bars *b*, *b*, *b*<sup>1</sup>, *b*<sup>1</sup>, form opposite racks, and these racks are adapted

to be thrown into mesh with pinions *d*, *d*, on the axle D of the car, as hereinafter explained, for causing the motion of the car axle to project the fender or withdraw it as desired. Thus, the rear end of the frame B, is supported and guided in brackets or hangers *e*, *e*, formed on the ends of a transverse plate E secured to the bottom of the car, and at the front end the sliding frame is supported, and thrown into mesh with the axle pinion as desired, in the following manner. Cross bars *b*<sup>2</sup>, *b*<sup>2</sup>, unite the side bars *b*, *b*, near the front, and from the former there is supported a longitudinal bar *b*<sup>3</sup>, which is raised above said bars *b*<sup>2</sup>, *b*<sup>2</sup>, and the bar *b*<sup>3</sup>, rests on a slide bar F of novel form, which is guided at its free end in a hanger *c*, and connected at its opposite end with the lower end of a lever G which is fulcrumed intermediate its ends and extends vertically above the platform C of the car, in position to be grasped and thrown by the car attendant.

The slide bar F, as seen best in Fig. 3, is offset at its outer end, the latter lying in a plane below the inner end of the bar, the two being joined by an inclined central portion *f*<sup>2</sup>. With this arrangement, the rod or bar *b*<sup>3</sup>, normally is supported on the higher part *f*<sup>1</sup> of the slide bar F, and thus maintains the upper racks of the bars *b*, out of mesh with the axle pinions *d*, *d*. When the lever G is thrown to the left, however, the slide bar F will be shifted to the right, so that the part *f*<sup>1</sup> will be withdrawn from beneath the central longitudinal bar *b*<sup>3</sup> of the frame, and permit the latter to drop to the lower portion *f*, thus permitting the racks *b*<sup>4</sup> to mesh with the pinions *d*, *d*, at the top of the latter, whereby the rotation of such pinions will project the slide B and fender A to the forward position as shown in Figs. 4 and 5, the forward movement being limited by the length of the racks *b*<sup>4</sup>. The upper racks *b*<sup>4</sup>, it will be seen, extend at the front end beyond the lower racks *b*<sup>5</sup>, and the latter at the rear ends extend beyond the racks *b*<sup>4</sup>. Thus when the fender A is in the outer position, and the top racks *b*<sup>4</sup>, moved beyond the pinions *d*, *d*, the lower racks *b*<sup>5</sup>, will at their rear ends lie directly below the pinions. With this arrangement, in order to cause the fender to be withdrawn to the in-

ner position, it is only necessary to reverse the movement of the lever G, which will press the inclined portion  $f^2$  of slide F, against the bar  $b^3$  of frame B, thus raising said bar  $b^3$  and the frame B, the bar  $b^3$  finally resting on the higher portion  $f'$  of slide F, and the raising of frame B will have brought the lower racks  $b^5$  into mesh with the pinions  $d$  at the bottom of the latter, so that the motion of such pinions will move the frame inward and withdraw the fender A to the position shown in Figs. 1 and 2, the extent of rearward motion being determined by the length of the racks  $b^5$ .

The racks  $b^5$ , it will be seen, terminate short of the front ends of the bars  $b'$ ,  $b'$ , on which they are formed, as best seen in Fig. 1. In the event therefore that any person or object be struck by the fender when in its normal inner position, the impact will force the fender and slide inward to a limited extent, and during this movement the cam surface  $h$  on a block H, which is formed on or secured to one of the bars  $b$ , will contact with the free end of the slide bar F, and shift the latter sufficiently to permit the frame B to drop and cause the upper rack to mesh with the axle pinions and thus cause the fender to be moved outwardly, the outward movement serving to push the person or object away from the wheels.

The side arms of the fender A preferably diverge slightly and between the arms a suitable net work  $A'$  is provided. At the front, the arms are united by a cross bar  $a$ , on which are placed rollers or disks  $a'$ , of raw-hide or other suitable material, the said rollers in practice being close together. The ends of the bar  $a$ , extend beyond the side bars of the fender and are provided with rollers  $a^2$ , that rest on the track rails when the fender is in the forward position.

It will be understood that the special construction shown is given only to illustrate one practical embodiment of the invention, and I do not wish to be understood as limiting my-

self to the details shown, as the same may be varied in practice.

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

1. The combination, with a car, of a fender carried thereby and movable longitudinally of the car, and means substantially as shown and described, for actuating the fender by the rotation of the car axles.

2. The combination, with a car, of a fender carried thereby and movable longitudinally of the car, a gear on one of the car axles, and means whereby the fender may be operatively connected with the said gear for longitudinal movement in either direction, substantially as described.

3. The combination with a car, of a sliding frame having a fender, and provided with two racks, and a pinion on the car axle, the frame being movable to cause either rack to engage said pinion, substantially as described.

4. The combination with a car, of a fender mounted for movement longitudinally of the car, and having racks thereon, pinions on the car axle, a slide bar supporting the frame out of engagement with the pinions, and means for shifting the slide bar to raise and lower the frame relatively to the pinions, substantially as described.

5. The combination of a car, a fender movable longitudinally of the car, actuating devices for such fender, operative by the car axle, the fender in its normal inner position being out of engagement with the actuating devices and being movable inward beyond such normal position, and trip devices serving automatically to shift the fender into engagement with its actuating devices, when the fender is moved inward beyond the said normal position, substantially as described.

WILLIAM H. BROCK.

Witnesses:

J. L. MCAULIFFE,  
C. SEDGWICK.