

(No Model.)

2 Sheets—Sheet 1.

W. G. KERR.
CAR FENDER.

No. 528,298.

Patented Oct. 30, 1894.

Fig. 1.

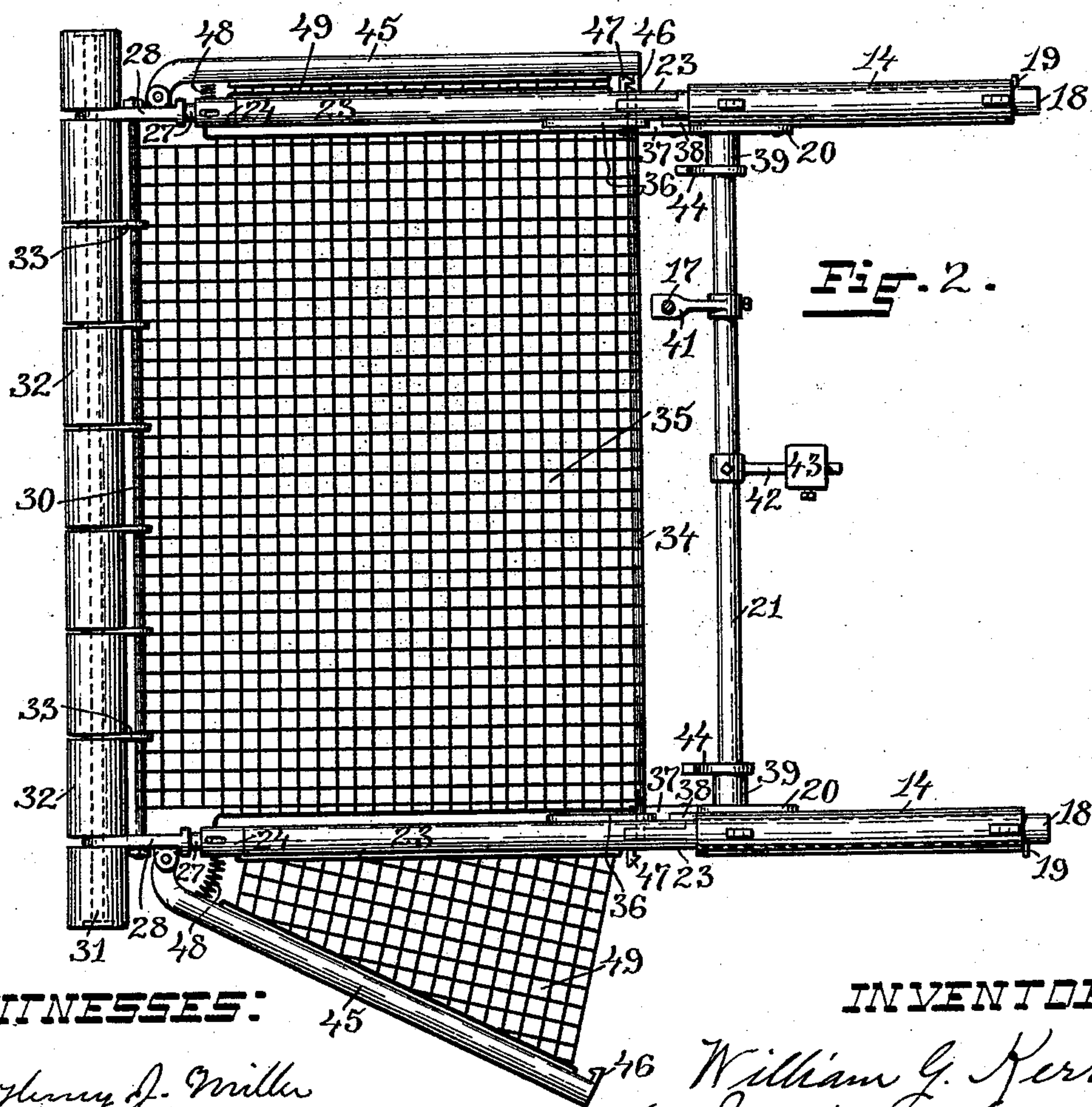
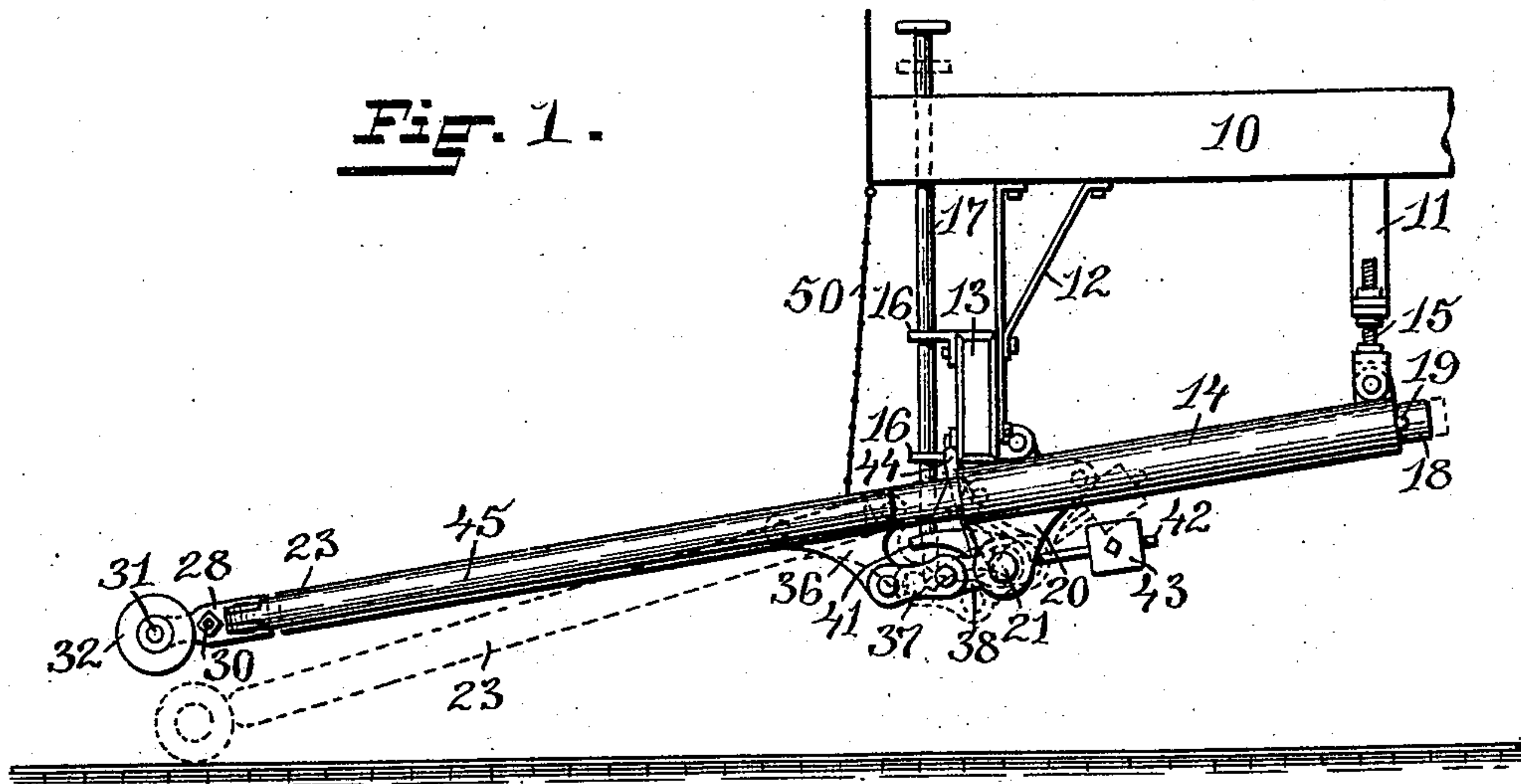


Fig. 2.

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Fig. 3.

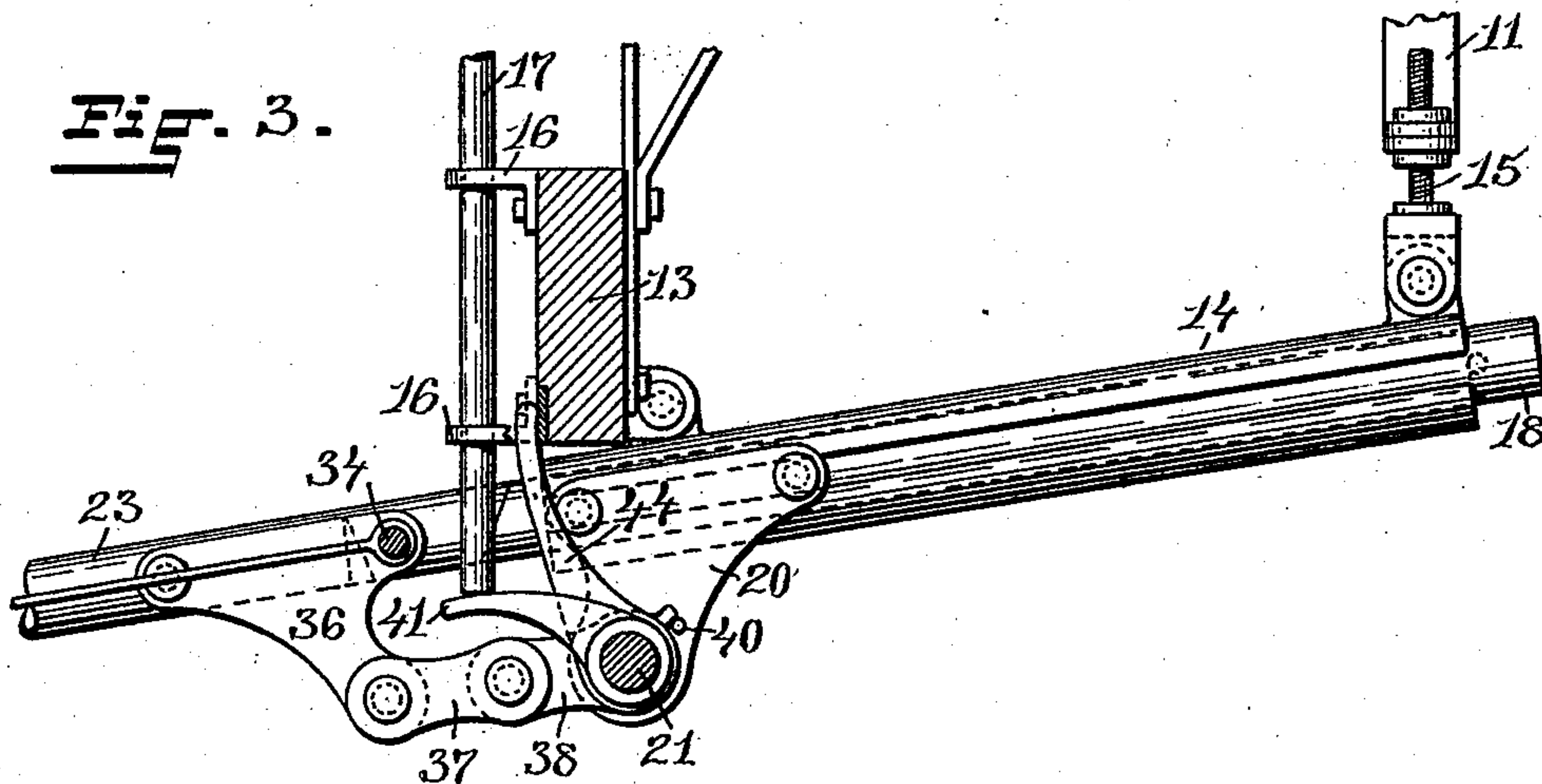


Fig. 4.

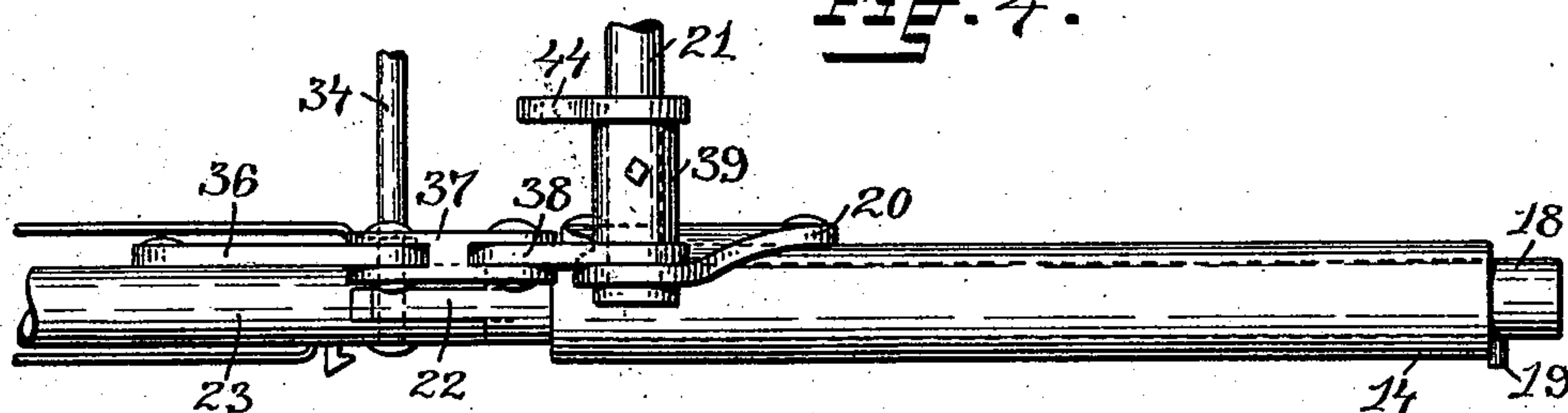
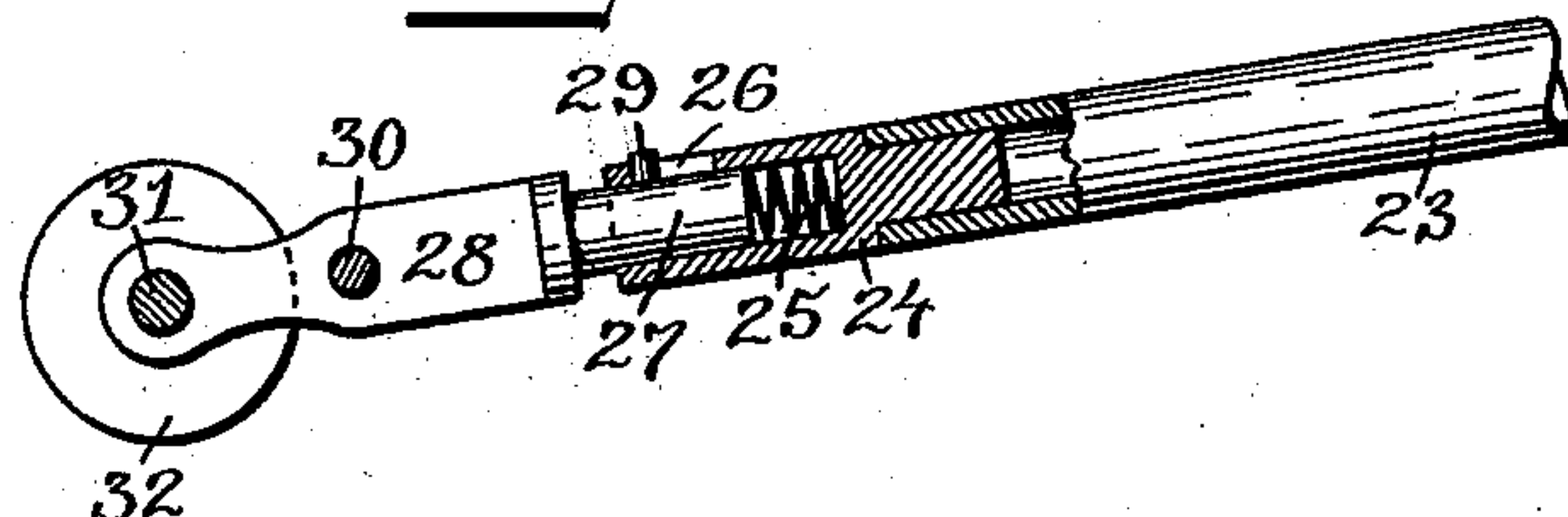


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM GEORGE KERR, OF PROVIDENCE, RHODE ISLAND.

CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 528,298, dated October 30, 1894.

Application filed January 22, 1894. Serial No. 497,634. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GEORGE KERR, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Car-Fenders; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to improvements in car-fenders which are particularly adapted for use on street cars.

The object of the invention is to so construct a car-fender that it may be automatically operated when struck by an obstruction on the track.

Another object of the invention is to so construct a depressible car-fender that it may be carried under the car when not in use.

Another object is to provide a car-fender with wings which may be automatically released and allowed to operate when the forward movement of the fender is obstructed.

Still another object is to provide a counterbalancing device for the fender.

The invention consists in the peculiar construction of the side arms, the supporting-shanks therefor, the manner of pivoting the arms to the shanks, and the toggles for supporting and operating the arms.

The invention also consists in the side arms pivotally supported, the rotatable-shaft, the toggle, mechanism connecting the arms with the shaft, and means for rotating the shaft.

The invention also consists of the fender-frame and the buffers carried on the forward portion thereof.

The invention also consists in the construction of the side wings and their application to a car-fender.

The invention also consists in the combination of the side arms and their shanks with the guides in which the shanks and arms are movable.

The invention also consists in the combination with a fender pivotally supported, a shaft journaled in movable bearings, and toggles connecting the arms with the shaft, of mechanism for automatically rotating the shaft.

The invention also consists in the combination with a pivotally-supported fender of a counterbalance therefor.

The invention also consists in such other novel features of construction and combination of parts as may hereinafter be more fully described and pointed out in the claims.

Figure 1 represents a side view of a portion of a car platform and the improved fender carried thereby. Fig. 2 represents a plan view of the fender and its guides removed from the car. Fig. 3 represents an enlarged detail view of the connections between one side arm, its shank and the operating-mechanism with the supporting-guide. Fig. 4 represents a bottom plan view of the same. Fig. 5 represents a detail view, partially in section, showing the connections between the cross-bars and the side arms.

Similar numbers of reference designate corresponding parts throughout.

In the drawings 10 indicates a portion of the car platform. To the underneath side of the platform at each side of the car, and at both ends of the same, if desired, are secured brackets 11 and 12. To two of the brackets 12 is secured the transverse-brace 13 and to the lower ends of these brackets 12 are pivotally secured the forward ends of the guides 14 longitudinally slotted at their inner sides and pivotally secured at their rear ends to bolts 15 which are adjustable vertically in the brackets 11. To the brace 13 are secured the guides 16—16 having perforations through which the plunger-rod 17 is free to move. This extends through a perforation in the platform and is furnished with a cap or step at its upper end.

The shanks 18 are movable in the guides 14, having stops 19 at their rear ends to limit their forward movement. To the forward inner sides of these shanks are secured the bearing-plates 20 in which the shaft 21 is journaled. The forward ends of these shanks are cut away at the sides to form the members 22 which are pivoted in slots centrally located in the ends of the side arms 23 in such a manner that when the forward ends of the side arms are depressed out of the plane of the shanks the rear ends of the side arms will be slightly lifted above the line of the shanks

to form stops to bear against the forward ends of the guides 14 when the fender is moved backward sufficiently.

The side arms are generally tubular and the forward ends are furnished with sockets 24 made in part with the arms or secured thereto. In the bores of these sockets are contained springs 25, and through the walls are formed slots 26. In the sockets and bearing on the springs are the members 27 of the plates 28 which are movable in the sockets for the length of the slots 26 being limited by the pins 29 secured in the members 27 and extending through the slots 26. The two plates 28 are connected by the rod 30 and by the shaft 31 carrying one or more buffers 32 and extending beyond the rails at the sides of the fenders. These buffers may be rotatable on their shaft and when several are used the shaft 31 and the netting rod 30 are connected between the buffers by the links 33. The upper or rear ends of the side arms 23 are also connected by a netting rod 34 and secured to the two netting rods and to the side arms, in any suitable manner, is a netting 35 more or less flexible to allow for the inward movement of the buffer shaft.

To the inner side or surface of the side arms 23 are secured the depending plates 36 to the lower portions of which are pivoted the toggle-links 37. These links are also pivoted to the ends of the lever-arms 38 which extend from the sleeves 39 clamped to the rotatable shaft 21. As the shaft is rotated in the forward direction, or toward the left, the lever-arms 38 are turned downward and the rear ends of the toggle-links 37 are thrown in the same direction, thus drawing down the forward end of the fender. As the shaft 21 is rotated toward the right, the lever-arms are swung upward and the toggle-links force the fender upward until the toggle-links and the lever-arms are in line when a substantial support is given the fender at this point. To limit the upward swing of the lever arms 38 I provide the plates 20 with stop-pins 40 adapted to arrest the upward movement of the lever-arms 38 when these arms and the toggle-links are in line, as in Fig. 3.

On the shaft 21 is secured the arm 41 which is located directly beneath the plunger 17 and supports the same. When, therefore, this plunger is depressed the shaft 21 is rotated by the arm 41 toward the left and the forward end of the fender is depressed, the reverse rotation of the shaft 21 being accomplished by means of the arm 42 secured to the shaft and the counterweight 43 adjustably mounted on said arm, this reverse rotation being limited by the stops 40. At this point it is evident that the side arms 23 are free to slide backward into the guides 14, the plunger 17 being first secured in an elevated position, and, if the incline of the guides be adjusted correctly, practically the whole of the fender may be pushed back under the car.

To render the fender automatic in its action by reason of its striking an obstruction on the track I secure to the shaft 21 the arms 44 which extend upward and bear against the brace, or beam, 13. Thus when the fender strikes an obstruction the whole mechanism is moved backward and the arms 44 bearing on the brace 13 serve to rotate the shaft 21 and, through the connecting mechanism, to lower the forward end of the fender.

Where it is not necessary to carry the fender under the car when not in use I sometimes provide side wings to guard the sides of the fender and to prevent a person rolling from the fender being caught under the car-body or the wheels. For this purpose I provide wing-bars 45 which are pivotally connected with the plates 28 and have at their rear ends the hook catches 46, these engaging with oppositely set catches 47 secured to the side arms 23. Between the forward ends of the wing-bars and the side arms are located springs 48 and secured to the wing-bars and side arms are flexible nettings 49. To the rear ends of the wing-bars may also be secured the lower ends of the nettings 50, the upper portions of which are secured to the car platform.

As the buffers at the forward portion of the fender strike an object the buffers and plates 28 will first move backward against the pressure of the springs 25. The wing-bars will also be moved backward sufficiently to release the catches 46 from those marked 47, the springs 48 then acting to throw the wing-bars outward and spread the nettings 49 and 50.

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

1. In a fender, the combination with guides adjustably secured to a car-body, shanks movable in said guides, and a fender, having side arms, pivoted to said shanks to move vertically, of means for supporting the fender in the plane of said shanks, and a device for depressing the forward end of the fender.

2. In a fender, the combination with the car-body, brackets depending therefrom, slotted guides secured to the brackets, shanks movable in the guides, a fender, having arms, pivoted to the shanks, depending plates secured to the fender arms, toggle-links pivoted to said plates, and lever-arms, to which the links are pivoted, having sleeves secured to a rotatable movable support, of means for rotating said support.

3. In a fender, the combination with slotted guides, shanks movable in said guides, depending bearing-plates secured to the shanks, a shaft journaled in the bearing-plates, and means for rotating the shaft in either direction, of a fender, having arms, pivoted to the shanks, depending plates secured to the arms, toggle-links pivoted to these plates, and lever-arms, having sleeves clamped to the shaft, pivoted to the opposite ends of the links.

4. In a fender, the combination with side

bars having sockets at their forward ends and furnished with catches, plates having members movable in the sockets, springs for moving the members forward, and stops for limiting their movement, of wings pivotally secured to said plates, springs for opening the wings, and catches adapted to engage the catches on the side bars.

5. The combination with a car-body, brackets depending therefrom, slotted-guides secured to the brackets, shanks or arms movable in the guides, the bearing-plates 20 secured to the shanks, the shaft 21 journaled in the bearing-plates, the arm 41 secured to the shaft, a vertically movable plunger adapted to operate said arm, the arm 42 extending rearwardly from said shaft, and the counter-

weight 43 adjustable on said arm, of a fender having the side arms 23 pivoted to the forward ends of the shanks, the plates 36 depending from the side arms, the toggle-links 37 pivoted to said plates, the lever-arms 38, secured to the sleeves 39, to which the opposite ends of the links 37 are pivoted, the sleeves 39 secured on the shaft 21, the arms 44 extending from the sleeves, and means for interrupting the backward movement of these arms.

In witness whereof I have hereunto set my hand.

WILLIAM GEORGE KERR.

Witnesses:

HENRY J. MILLER,
M. F. BLIGH.