

No. 810,762.

PATENTED JAN. 23, 1906.

G. HIPWOOD.  
FENDER FOR CARS AND OTHER VEHICLES.

APPLICATION FILED JUNE 24, 1905.

2 SHEETS—SHEET 1.

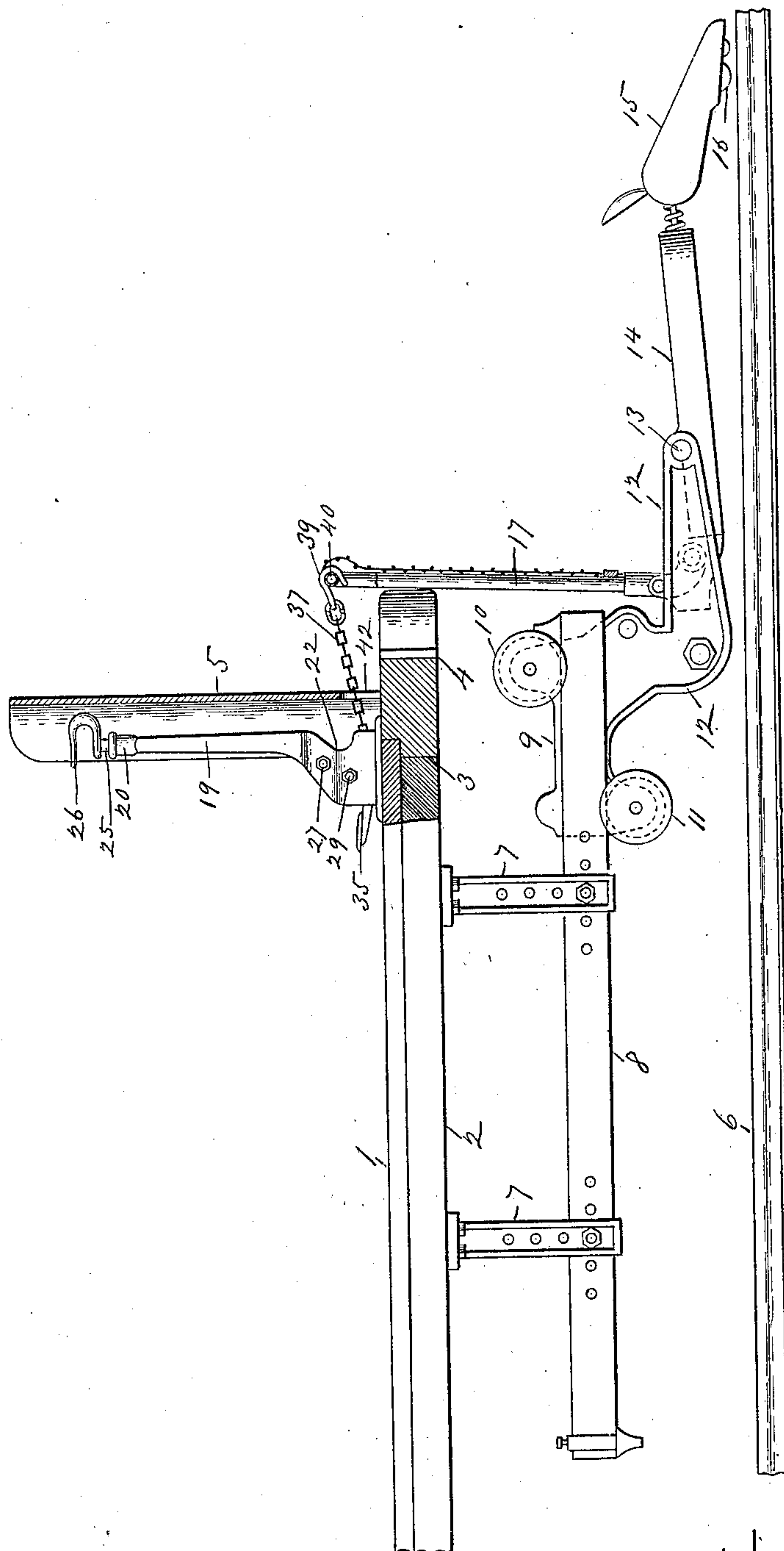


FIG. 1.

WITNESSES  
A. F. Hood  
M. A. Atwood

INVENTOR  
George Hipwood,  
By his Atty.  
Sherrill Williams

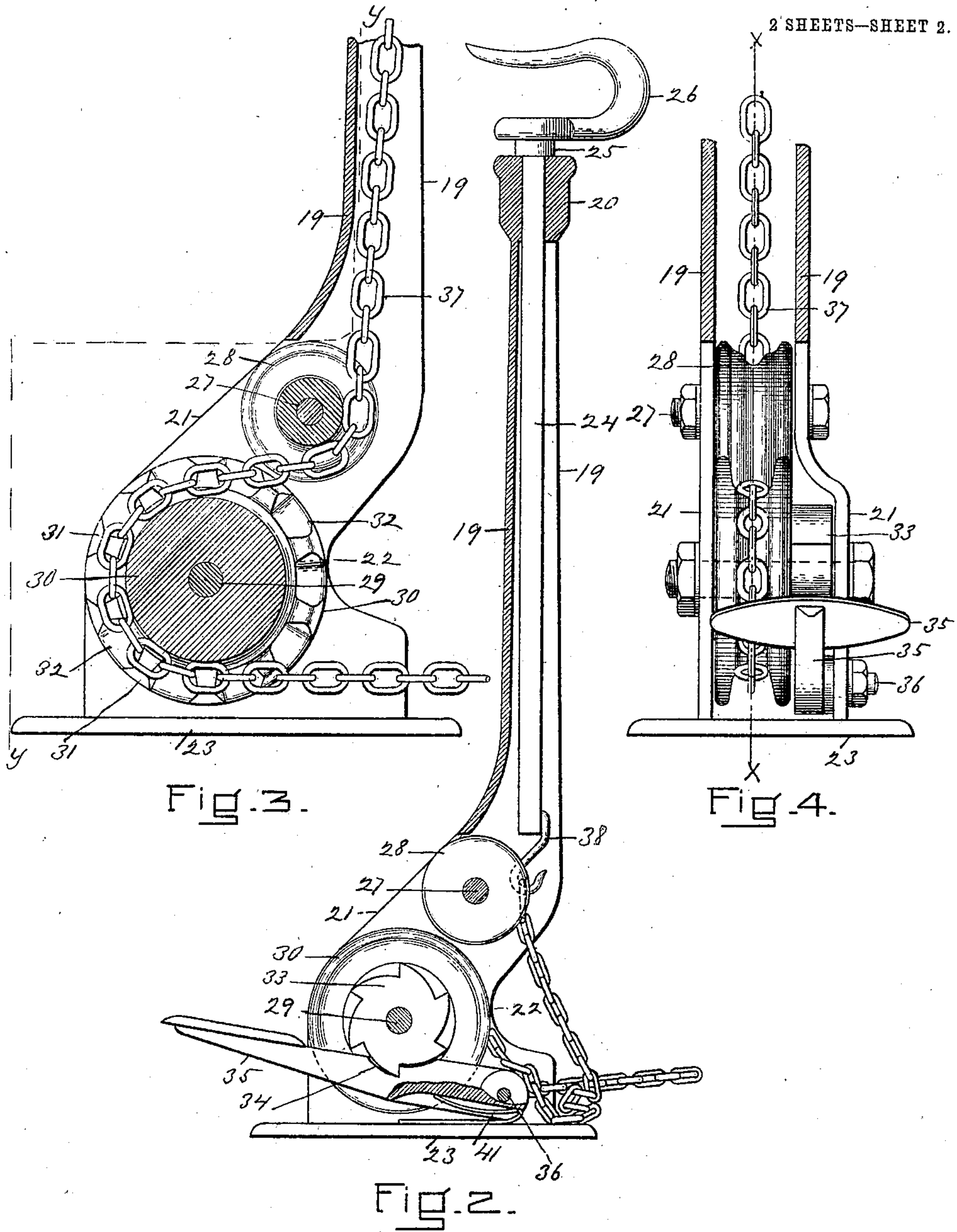
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WITNESSES  
A. L. Hood  
M. A. Atwood.

INVENTOR  
George Hipwood,  
By his Attorney  
Henry C. Williams



# UNITED STATES PATENT OFFICE.

GEORGE HIPWOOD, OF LACONIA, NEW HAMPSHIRE.

## FENDER FOR CARS AND OTHER VEHICLES.

No. 810,762.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed June 24, 1905. Serial No. 266,820.

*To all whom it may concern:*

Be it known that I, GEORGE HIPWOOD, a citizen of the United States, residing in Laconia, in the county of Belknap and State of New Hampshire, have invented certain new and useful Improvements in Fenders for Cars or other Vehicles, of which the following is a specification.

This invention relates to fenders adapted particularly for use on street-cars and other vehicles propelled by electricity, cable, or other power aside from horse-power, and it relates more especially to the general style or class of fender illustrated, and described in Letters Patent of the United States granted October 31, 1893, numbered 507,655; granted April 13, 1897, numbered 580,549; granted January 4, 1898, numbered 596,592; granted September 19, 1899, numbered 633,631; granted January 1, 1901, numbered 664,863, and granted June 16, 1903, numbered 730,913, to which reference is made.

My present invention is intended to be an improvement over and upon the inventions described in the said Letters Patent. In fenders constructed under those patents after the front edge of the horizontal portion of the fender has been dropped to the pavement by the motorman, as in case of an impending accident, it must be raised again by the motorman or conductor, the car being stopped for the purpose and the conductor or motorman leaving the car in order to raise the fender to its normal position. This of course involves a loss of time. Inasmuch as street-cars are run on schedule time, there is a strong temptation to the motorman or conductor to avoid leaving the car until it is absolutely necessary or to wait too long before dropping the fender, thus increasing the probabilities of an accident occurring, as the conductor and motorman are usually anxious, especially in large cities, to avoid losing time. Moreover, it is often necessary to raise the fender to the extent of a foot or two in passing over a repaired place in the road-bed, and after the inequality in the road has been passed over it is necessary that the fender should be lowered to its normal position at a point a short distance above the pavement. This of course also requires that the car should be stopped in order that the motorman or conductor may lower the fender to the proper point.

My present invention has for its object to

provide mechanism applicable to fenders of the type referred to in the Letters Patent above mentioned, whereby the fender can be raised and lowered by the motorman from his position on the platform without stopping the car, thus not only preventing the loss of time, but removing the temptation to remain on the car or to remain too long, and thereby render an accident more likely than would otherwise be the case.

The nature of this invention is fully described below, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved fender applied to a car and in its normal position, a sufficient portion of the car being shown to illustrate the application of the invention. In this figure the dashboard and portions of the platform and bumper are illustrated in section. Fig. 2 is an enlarged view, partly in vertical section and partly in elevation, showing my improved mechanism for raising, lowering, and retaining in position the fender from the platform of the car. In this figure a small portion of the pedal is represented as broken out, and the fender is supposed to be raised to a higher point than the normal position indicated in Fig. 1. Fig. 3 is a section taken on line *xx*, Fig. 4, the pedal being removed. Fig. 4 is a section taken on line *yy*, Fig. 3, with the pedal in position.

Similar characters of reference indicate corresponding parts.

1 represents a portion of the floor of the car; 2, the sills; 3, the platform; 4, the bumper; 5, the dashboard, and 6 a portion of the track. Supporting-hangers 7 extend down vertically from the sills and support on opposite sides of the car horizontal rails 8. Each said rail supports a frame or plate 9 by means of rolls or wheels 10 and 11 on the upper and lower edges of the plate, each said plate being provided with a downwardly and outwardly extending plate or frame 12, which supports at 13 the horizontal portion 14 of the fender, provided at its front edge with a series of shoes 15, provided on their under sides with rollers 16. Pivotaly connected with the rear edge of the main portion 14 is the vertically-swinging portion or bumper-guard 17. None of the above named parts are new in this application, but have been fully described in some of the Letters Patent above referred to, and particularly in Letters Patent No. 730,913, to which refer-



ence is made. Their operation is fully described in the last-named patent and needs no detailed description here.

Mounted on the platform near the dashboard and at a point which is convenient to the motorman is a standard, preferably of metal, and comprising the vertical portion 19 U-shaped in cross-section and with its open edge or channel facing the dashboard, the tubular top or head 20, the broad lower portion 21, consisting of two parallel plates extending rearward toward the body of the car and with their forward edges preferably hollowed or curved inwardly at 22, and the base 23, all said portions 19, 20, 21, and 23 being integral or rigid. The base 23 is secured to the platform in any suitable manner. Within the channel formed by the U-shaped portion 19 and extending through the tubular head 20 is a vertically-disposed lifting-rod 24, which is provided at its upper end with a flange 25, adapted to rest on the head 20, and with a hook-shaped handle 26. This handle may be of any suitable shape to be grasped by the motorman, the shape illustrated, however, being satisfactory.

Mounted on a shaft 27, whose opposite ends are supported by the opposite sides of the plates 21, near their upper portions and just below the lower end of the lifting-rod 24, is a wheel or pulley 28, provided with a deep groove of suitable shape to accommodate a chain of ordinary construction. Mounted on a shaft 29, whose opposite ends are supported by the plates 21 at a point below and diagonally rearward from the point at which the shaft 27 is sustained, is a larger pulley 30, provided with a deep groove and with the opposite faces of said groove shaped up into inwardly-projecting sprockets 31, which extend from the depressed annular portions 32, next the outer edges of the inner faces of said pulley.

Rigid on the shaft 29 is a ratchet-wheel 33, whose teeth extend into a correspondingly-shaped recess 34 in a pedal 35, which is pivotally connected at 36 with one of the plates 21, which is formed outward somewhat to accommodate the ratchet, as illustrated in Fig. 4. A chain 37 extends from a hook 38, which is secured to the lower end of the lifting-rod 24, under the pulley 28 and rearward over the pulley 30 and under it forward to the upper edge of the bumper-guard 17, to which it is secured by means of a hook 39, which catches over the top rail 40 of the bumper-guard or vertical portion of the fender.

When the fender is in its normal position—that is, that illustrated in Fig. 1, with the front edge of the fender a trifle above the road-bed—the chain is taut and supports the fender in said raised position by means of the internal sprockets 31, which extend into the links of the chain from the pulley 30, said pulley being held stationary by the engage-

ment of the ratchet-wheel 33 with the pedal 34, the pedal being held in said engagement by a spring 41, disposed between said pedal and the plate 23. In case of an impending accident the motorman presses down the pedal with his foot, thus releasing the ratchet and also the pulley 30, and the front edge of the fender drops to the ground. Now instead of stopping the car for the purpose of restoring the fender to its original position and leaving the car for that purpose the motorman simply lifts the hook 26, and thereby swings up the fender to the desired height.

Should the motorman desire to lift the fender to a considerable height for the purpose of passing over a bad spot in the road-bed or a place where repairs are being made, he can lift the bar 24, and hence the chain and fender, as high as he desires, and on dropping the bar the chain will find plenty of room to fall in a heap between the pulley 30 and the dashboard without becoming entangled or knotted, as said pulley and the plates 21 are located so as to provide ample space for the chain. The recesses 22 also afford room for the chain to fall without crowding. Inasmuch as the chain is not cramped or jammed, when the motorman releases the pedal the chain passes out quickly and freely through the hole 42 in the dashboard without crowding and the fender is dropped to the desired distance from the ground. The fender is thus controlled entirely from the car, the motorman not being obliged to leave his position to raise the fender and the fender being held by the ratchet at whatever height the pedal is released.

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

1. In a fender of the character described, pulleys supported on the platform of the car; a chain extending over said pulleys to the bumper-guard and connected thereto; a pedal within reach of the foot of the motorman; means intermediate of the pedal and chain whereby the chain is held at any desired point by releasing the pedal; and a lifting-rod connected with the chain and within reach of the motorman, whereby the chain may be lifted, released, held at any point or dropped entirely, for the purpose set forth.

2. In a fender of the character described, a standard supported on the platform of the car; a lifting-rod slidably supported in the standard and provided with a handle adapted to rest on the upper end of said standard; a pair of grooved pulleys disposed one above the other in the standard, one of said pulleys being provided with sprockets on the inner faces of its flanges; a chain extending from the lifting-rod over the pulleys and into engagement with said sprockets and with its opposite end secured to the bumper-guard, and means for retaining the sprocketed pul-



ley at any point and releasing the same, for the purpose set forth.

3. In a fender of the character described, a standard supported on the platform of the car; a lifting-rod slidingly supported in the standard and provided with a handle adapted to rest on the upper end of said standard; a pair of grooved pulleys disposed one above the other in the standard, the lower pulley being provided with sprockets on its inner faces; a ratchet-wheel rigid with the lower pulley; a notched pedal held normally with its notch in engagement with the ratchet; and a chain extending from the lifting-rod over the pulleys and into engagement with the sprockets, and thence to the bumper-guard to which it is connected, for the purpose set forth.

4. In a fender of the character described, a standard supported on the platform of the car; a lifting-rod slidingly supported in the standard and provided with a handle adapted to rest on the upper end of said standard; a pair of grooved pulleys disposed one above the other in the standard, the lower pulley being provided with sprockets on its inner faces; a ratchet-wheel rigid with the lower pulley; a notched pedal held normally with its notch in engagement with the ratchet; and a chain extending from the lifting-rod over the pulleys and into engagement with the sprockets, and thence to the bumper-

guard to which it is connected, the lower pulley being set farther from the dashboard than the upper pulley, and the side of the standard next the dashboard being recessed near the lower pulley, for the purpose set forth.

5. In a fender of the character described, a standard supported on the platform of the car; a lifting-rod slidingly supported in the standard and provided with a handle adapted to rest on the upper end of said standard, a pair of grooved pulleys disposed one above the other in the standard, one of said pulleys being provided with sprockets on the inner faces of its flanges; a chain extending from the lifting-rod over the pulleys and into engagement with said sprockets and with its opposite end secured to the bumper-guard; and means for retaining the sprocketed pulley at any point and releasing the same, said standard being vertically channeled on the side facing the dashboard, and the lifting-rod and chain being adapted to slide in the channel, for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE HIPWOOD.

Witnesses:

HENRY W. WILLIAMS,  
A. K. HOOD.