

(No Model.)

J. D. HODGES.
AUTOMATIC CAR FENDER.

No. 545,290.

Patented Aug. 27, 1895.

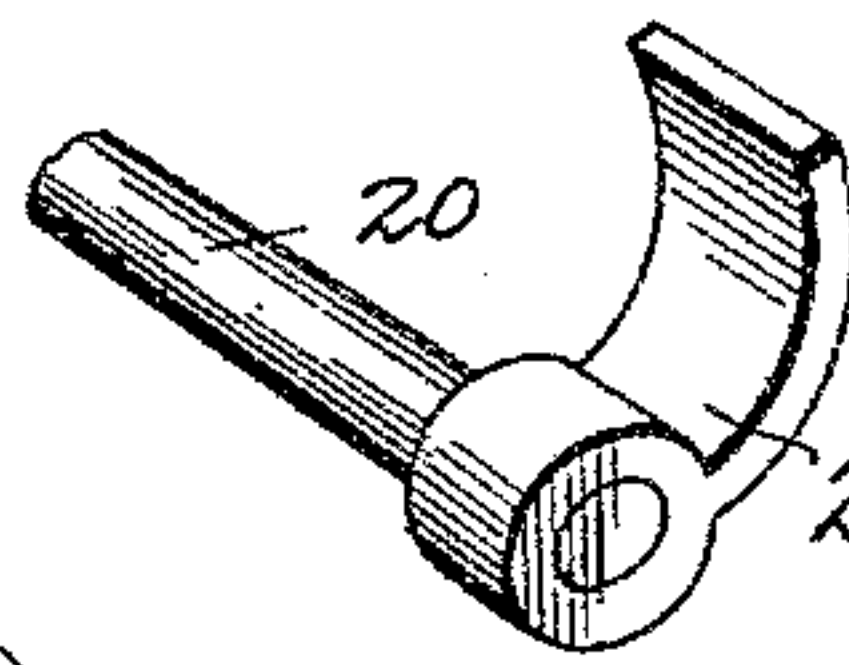
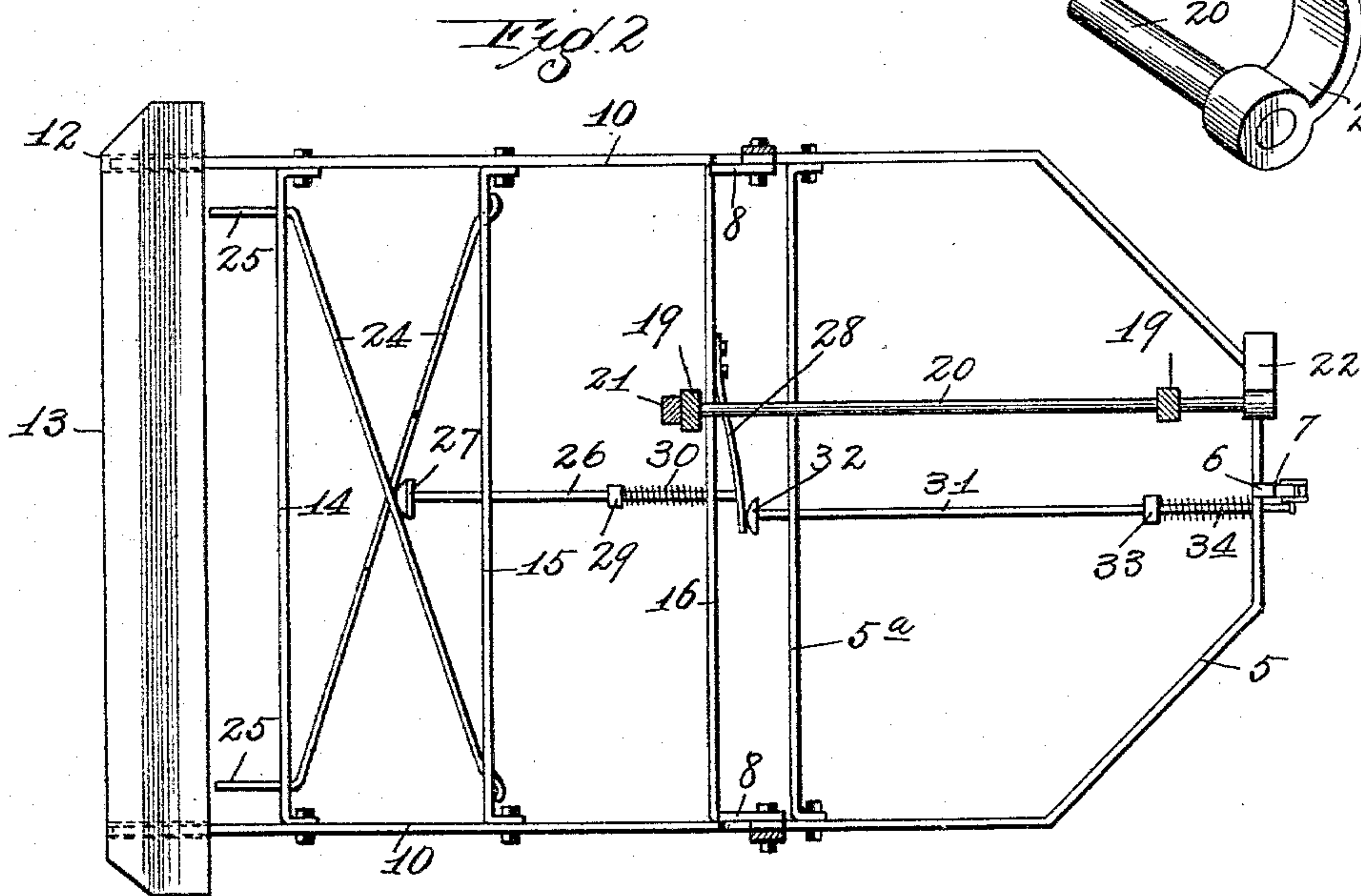
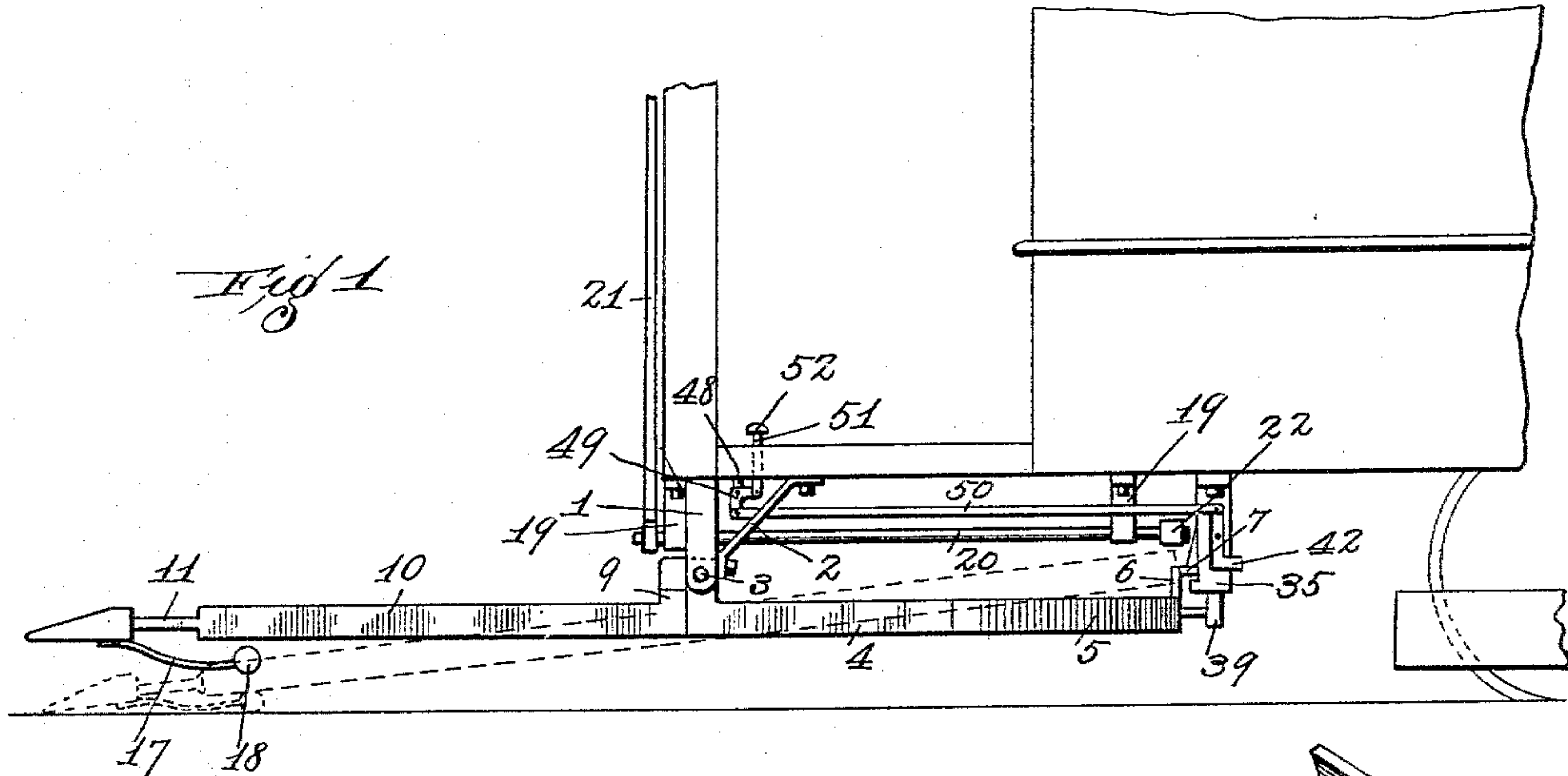


Fig. 3

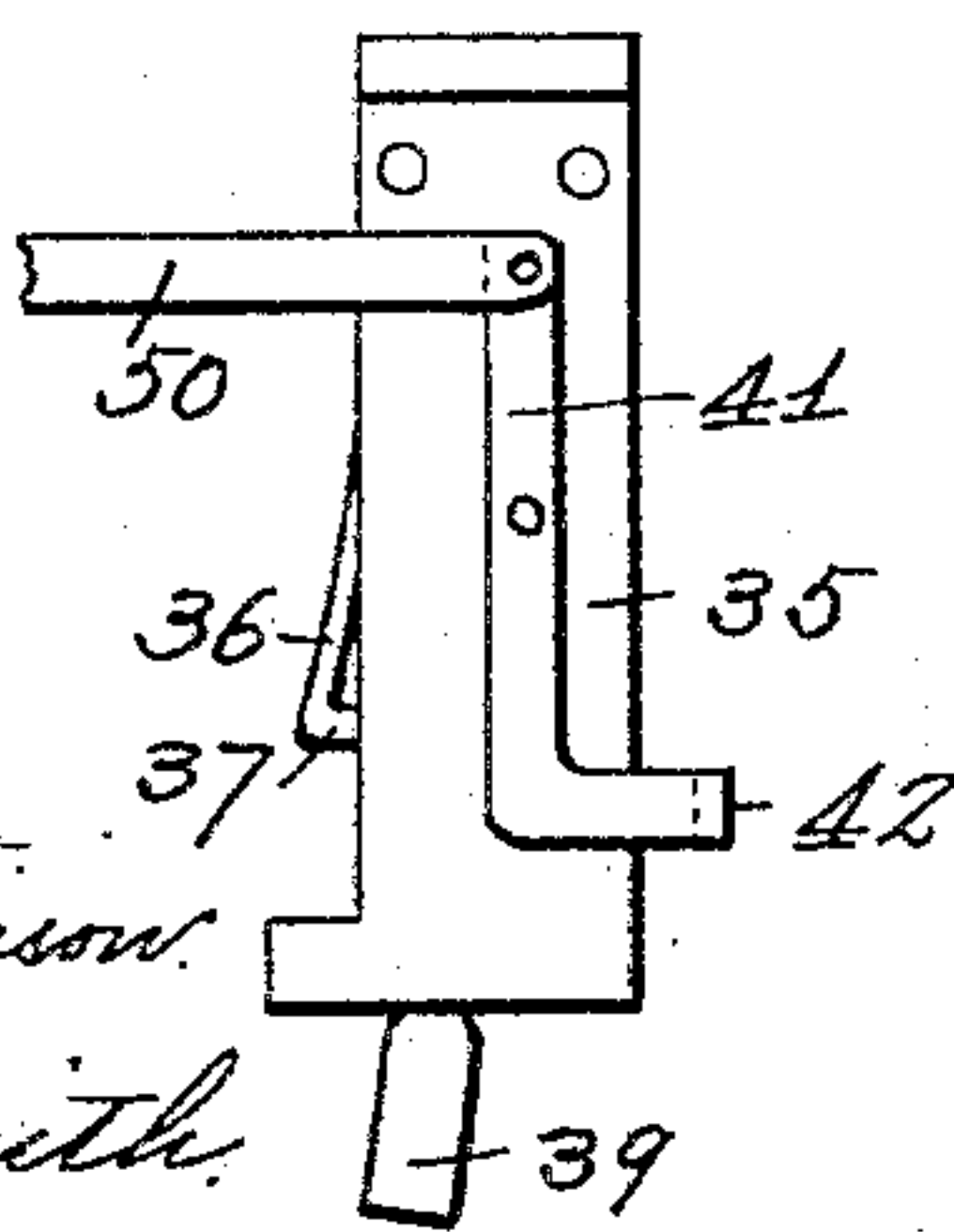


Fig. 4

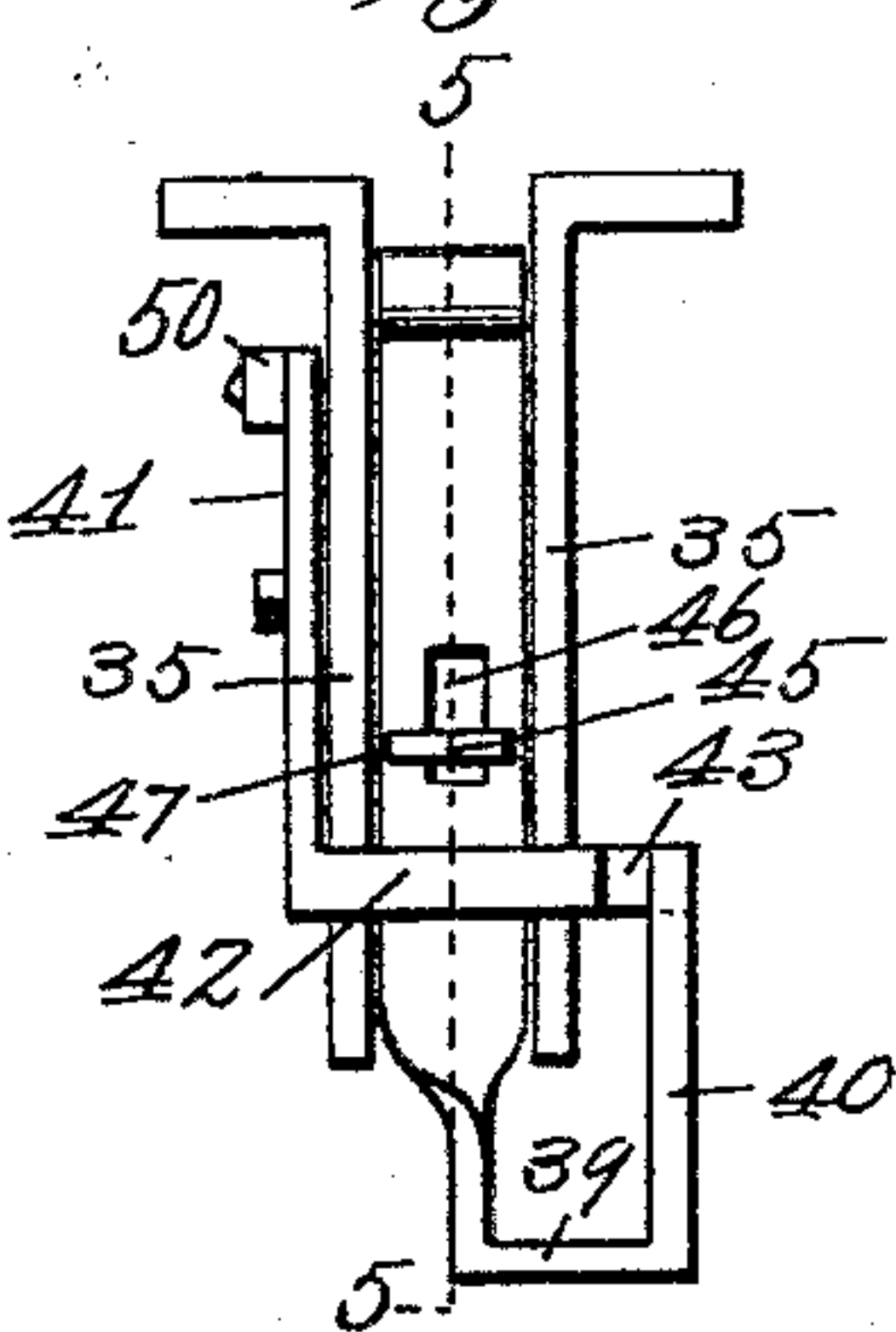


Fig. 5

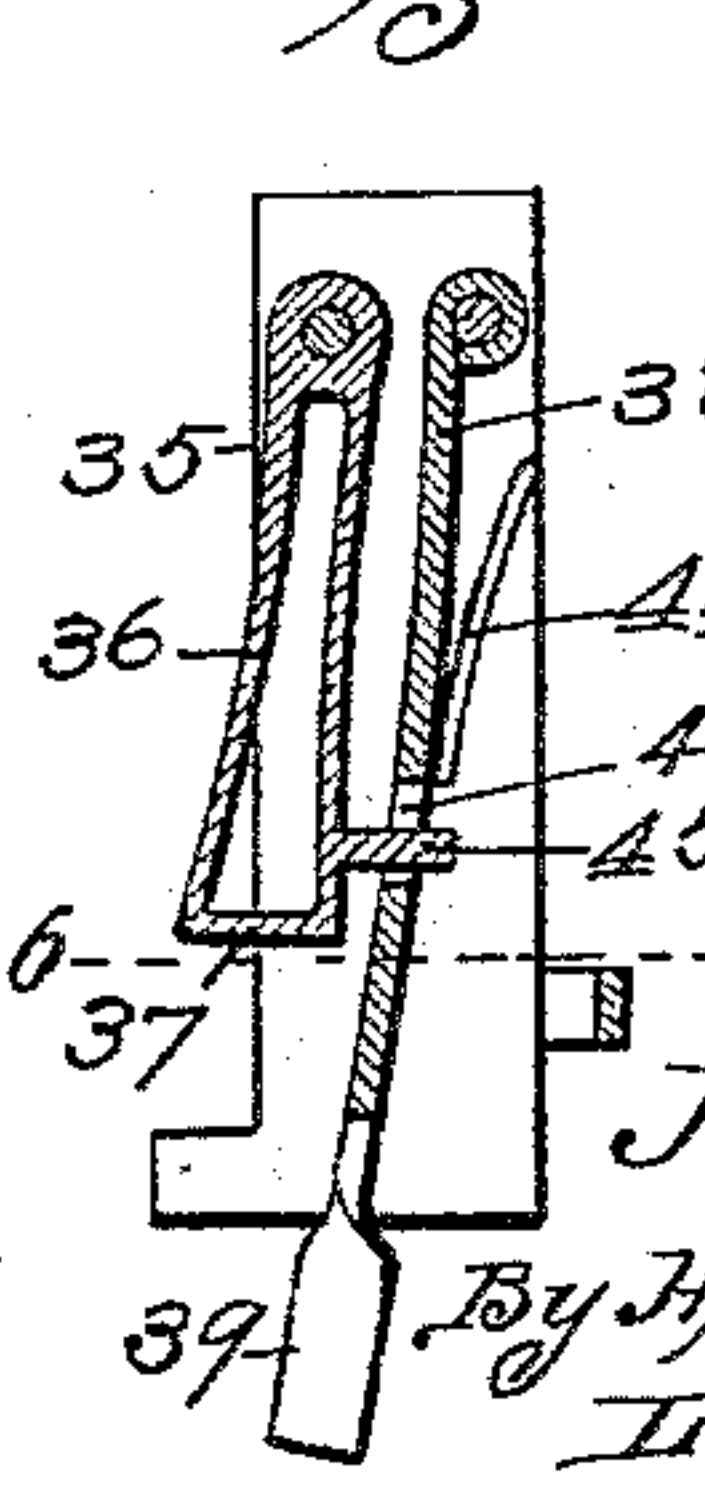
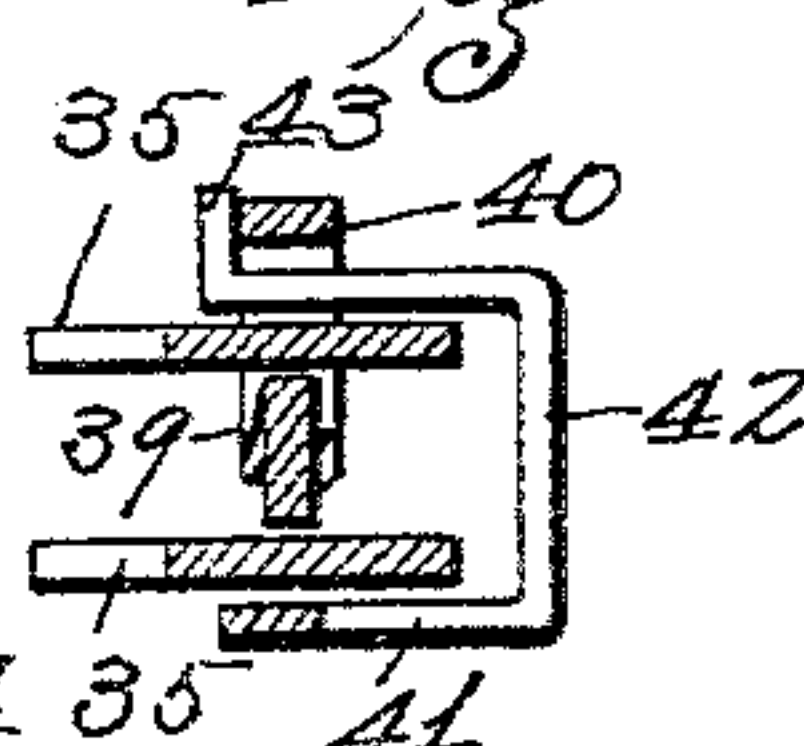


Fig. 6



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UNITED STATES PATENT OFFICE.

JOHN D. HODGES, OF ELLENDALE, ASSIGNOR OF TWO-THIRDS TO WILLIAM BEINKER AND JOHN SHAW, OF ST. LOUIS, MISSOURI.

AUTOMATIC CAR-FENDER.

SPECIFICATION forming part of Letters Patent No. 545,290, dated August 27, 1895.

Application filed July 1, 1895. Serial No. 554,522. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. HODGES, of the city of Ellendale, St. Louis county, State of Missouri, have invented certain new and useful Improvements in Automatic Car-Fenders, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to an improved automatic car-fender; and it consists in the novel construction, combination, and arrangement of parts hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of a portion of a car, the same having my improved fender attached thereto, the dotted lines in said view showing the position assumed by said fender when the same is about to engage with a body or obstruction upon the track. Fig. 2 is a top plan view of my improved fender. Fig. 3 is a side elevation of a catch and tripping device used for holding the rear end of the fender. Fig. 4 is a front elevation of this catch and tripping device. Fig. 5 is a vertical sectional view taken approximately on the indicated line 5 5 of Fig. 4. Fig. 6 is a horizontal sectional view taken approximately on the indicated line 6 6 of Fig. 5. Fig. 7 is a view in perspective of a curved arm located upon the end of a rod used for returning the fender to its reset position after the same has been lowered.

Referring by numerals to the accompanying drawings, 1 1 indicate brackets or hangers that are fixed to and depend from the under side of the forward corners of the platform of the car, and braces 2 assist in retaining said hangers in their proper positions. Fixed to the lower ends of these hangers 1 by means of bolts 3 are the upturned forward ends of forwardly-extending portions 4 of a bar 5, said bar extending rearwardly a slight distance beneath the car-body. Formed integral with the center of the transversely-arranged portion of this bar 5 and extending upwardly therefrom is an arm 6, with the upper end of which is formed integral a rearwardly-extending pin 7. Bolted to and extending transversely between the forward ends of the forwardly-bent portions 4 of the bar 5 is a brace-bar 5^a.

Inside the upturned forward ends of the bar 5 and to the bolts 3 are pivoted the rear ends of links 8, to the forward ends of which are fixed or formed integral upwardly-turned ends 9 of bars 10, similar in size to the bar 5. The forward ends 11 of said bars 10 are reduced in size, and the same extend through horizontal apertures 12, formed in a transversely-arranged buffer 13, of rubber or analogous material. Bolted to these bars 10 directly in the rear of the reduced forward ends 11 are the ends of a transversely-arranged bar 14, and a suitable distance from said bar 14 and bolted to the side bars 10 is a bar 15, the same being identical in size and form with said bar 14. A third transverse bar 16, identical in form and size with the bars 14 and 15, is arranged transversely between and bolted to the rear ends of the bars 10. Spring-arms 17 are fixed to and extend rearwardly and downwardly from the rear lower edge of the buffer 13, and located upon the ends of said arms 17 are weights 18. The function of these arms and weights is to always retain the buffer 13 in a horizontal plane and not allow the same to bind upon the reduced forward ends 11 of the bars 10 during the horizontal movement of said buffer.

Hangers 19, constructed with journal-bearings at their lower ends, are bolted to the under side of the car-platform, slightly to one side of the transverse center thereof, and journaled in the bearings formed integral with the lower ends of said hangers 19 is a shaft 20, the forward end of which projects a slight distance in front of the dashboard of the car, and a vertically-arranged lever 21 is fixed to said forward end, the same extending up to the top of said dashboard, where it is within easy reach of the hand of the car-driver. Fixed upon the extreme rear end of this shaft 20 is a curved arm 22, the same being so positioned as to be located directly over the transverse portion of the bar 5. Fixed to the ends of the transversely-arranged bar 15, and extending from thence diagonally and across each other to the ends of the front transverse bar 14, are rods 24, the forward ends 25 of which pass through suitable apertures formed adjacent the ends of the cross-bar 14.

Passing through suitably-formed apertures

in the centers of the transverse bars 15 and 16 is a rod 26, on the forward end of which is fixed a head 27, that bears against the bars 24 at their point of crossing. The rear end of this rod 26 extends through the transversely-arranged bar 16 and bears against a leaf-spring 28, that is fixed to said transverse bar 16. Located upon said rod 26 a slight distance to the rear of the transverse bar 16 is a collar 29, and wound around said rod 26 and interposed between said collar 29 and the transverse bar 16 is an expansive coil-spring 30.

Passing through suitably-formed apertures in the transverse bar 5 and the transverse portion of the bar 5 is a longitudinally-moving rod 31, upon the forward end of which is fixed a head 32, that nominally bears directly against the end of the leaf-spring 28. A collar 33 is fixed upon said rod 31 a slight distance to the rear of the transversely-arranged bar 5, and a coil-spring 34 is wound upon the rod 31 and interposed between said collar 33 and the transverse portion of the bar 5.

Bolted to and depending from the under side of the car-body, at a point in the transverse center thereof and directly to the rear of the transverse portion of the bar 5, is a pair of hangers 35, between the upper ends of which is pivoted the upper end of a catch or trigger 36, having a broadened lower end 37. While the fender is in its normal position the pin 7 extends rearwardly over the lug 6 and engages directly beneath this broadened lower end 37 of said trigger 36. Pivoted between the upper ends of the hangers 35 and immediately to the rear of the pivot-point of the trigger 36 is the upper end of an arm 38, that passes downwardly between said hangers 35, is bent laterally to one side thereof below the lower ends of said hangers, as indicated by 39, and then vertically upward, as indicated by 40. Fulcrumed to the outside one of the hangers 35 is an arm 41, the lower end 42 of which is bent around the rear sides of the hangers 35, and the end 43 is bent directly around the upper end of the upwardly-bent portion 40 of the arm 38. A leaf-spring 44, fixed between the hangers 35, engages against the rear face of the arm 38 and holds the same in a forward position. A lug 45, formed integral with the lower end of the trigger 36, passes through the aperture 46, formed in the arm 38, and hooks 47, formed on the end of said lug 45, prevent the arm 38 from disengaging from said lug 45.

Fulcrumed upon a bearing 48, fixed to the under side of the car-platform, is a bell-crank 49, to the lower end of which is pivoted the forward end of a rod 50, that extends rearwardly and has its rear end fixed to the upper end of the arm 41. Pivoted to the opposite arm of this bell-crank 49 is the lower end of a vertically-arranged pin 51, that extends upwardly through the platform of the car and has a head 52 formed integral with its upper end.

The operation is as follows: The normal position of the fender is that as shown in Fig.

1, and in this position, while the car is in motion, the fender is carried in a perfect horizontal plane a slight distance above the track and rails. Should the driver of the car see that there is imminent danger of said car contacting with the body—such as that of a person or animal lying or standing upon the track—said driver treads upon the head 52 of the pin 51 and forces the same downwardly. This moves the bell-crank 49 upon its pivot, and with said movement the rod 50 is drawn a slight distance forward. The arm 41 is rocked upon its pivot-point, and the hook 43 on the end of said arm engages and moves rearwardly the upwardly-turned end 40 of the arm 38. This throws said arm 38 rearwardly, and the trigger 36, being carried by said arm 38, is moved rearwardly, and in so doing the pin 7, protruding laterally from the upwardly-extending lug 6, will disengage from beneath the broadened lower end 37 of the trigger 36, where it has been engaged. This will allow the rear end of the fender to move upwardly and the forward end thereof to move downwardly, and thus said fender assumes the position as shown by dotted lines in Fig. 1, the flexible buffer 13 on the forward portion of said fender being directly upon the track and rails and in position to engage with the body. Should the car-driver fail to see the body upon the track in time to operate the device as just described, the fender will lower to receive the body automatically in the following manner: It will be noted that the flexible buffer 13 is arranged to move longitudinally a slight distance upon the reduced ends 11 of the bars 10. The normal position of the buffer is at the forward portions of said reduced forward ends. Should a body upon the track be struck by said flexible buffer, the same will be moved rearwardly to the shoulders between the reduced portions 11 of the bars 10, and in so doing the forward ends 25 of the cross-bars 24 will be moved rearwardly, and simultaneously with this movement said cross-bars will engage the head 27 of the rod 26 and move said head and rod rearwardly, and in so doing the power in the coil-spring 30 and leaf-spring 28, which have previously been holding this rod 26 at its forward limit of movement, will be overcome. As the spring 28 moves rearwardly it will engage against the head 32 of the rod 31 and move them rearwardly, and in so doing overcome the power stored in the coil-spring 34. The rear end of the rod 31, engaging against the lower portion of the arm 38, will rock said arm on its pivot-point, move the lower end 37 of the trigger 36 rearwardly, thus releasing the pin 7 carried by the rear end of the fender, and allow said rear end of the fender to rise and the forward end of said fender to lower, this being in every way identical with the movement of the fender previously described. Thus when the flexible buffer 13 engages against a body or obstruction upon the track the fender will be in-

stantly and automatically thrown into position to catch or receive said body. After the fender has been once operated and thrown into position to receive a body and it is desired to reset the various parts the operator manually engages the upper end of the lever 21 and moves the same to one side, and in so doing rocks the shaft 20 and causes the curved arm 22 to engage upon the upper edge of the transverse portion of the bar 5. As said curved arm 22 continues in its movement the rear end of the fender will be moved downwardly and the forward end thereof upwardly, and as said rear end moves downwardly the pin 7 will engage against the curved front face of the trigger 36 and move the same and the arm 38 rearwardly, overcoming the resistance offered by the leaf-spring 44. As the pin 7 passes beneath the lower end 37 of the trigger 36 the same will be thrown outwardly over said pin 7 by the action of the spring 44. The fender is now in a horizontal position and the various parts are reset in position. If desired, a suitable net (not shown) may be arranged upon the forwardly-extending bars 10 and transverse bars 14 and 15. As the bars 10 and parts carried thereby are hinged to the remaining portion of the fender, said bars 10 and parts carried thereby may be swung into a vertical plane directly against the dashboard of the fender and secured in such position while the car is located in the barn or when said car is moving in such direction as that the fender is not needed.

A car-fender of my improved construction possesses superior advantages in point of simplicity, durability, and general efficiency, occupies a comparatively small space upon a car, is easily applied to and removed from a car, and can be instantly thrown into position to receive a body, or will automatically drop into a position to receive a body as its forward end contacts with said body.

I claim—

1. An improved car-fender, comprising a pair of hangers depending from the car platform, a frame fixed to said hangers, a second frame hinged to the first mentioned frame and extending forward in the same plane therewith, a flexible buffer arranged on the forward end of said last mentioned frame and arranged to move longitudinally upon the forward end of said last mentioned frame, suitable hangers fixed to the under side of the car-body and depending therefrom, a spring-actuated trigger located in said hangers beneath which a pin on the rear end of the first mentioned frame normally engages, tripping devices for said trigger, a bell-crank arranged beneath the car-platform, a rod extending from one arm thereof to the tripping device of the trigger, a pin extending upwardly through the car-platform to operate the bell-crank, a shaft journaled for rotation immediately above the first mentioned frame, a curved arm on the rear end thereof to en-

gage against the rear end of the first mentioned frame, a lever fixed to the forward end of said shaft to operate the same, a spring-actuated rod extending through the first mentioned frame, and bearing against the tripping device of the trigger, a spring-actuated rod extending longitudinally through the second mentioned frame, and crossed-bars arranged in the forward end of said frame against which the forward end of the spring-actuated rod engages and against the forward end of which a flexible buffer engages.

2. In a car-fender, a frame fixed beneath the car-platform, a second frame hinged to the forward end of said first mentioned frame, a flexible buffer arranged to move longitudinally upon the forward end of the second mentioned frame, a trigger arranged adjacent the rear end of the first mentioned frame, a tripping device for said trigger, means for operating said tripping device from the top of the car-platform, suitable means for automatically releasing the trigger as the buffer engages with an obstruction, and means for resetting the fender from the car-platform.

3. In combination with an improved car-fender, a shaft journaled longitudinally beneath the car-platform, a curved arm fixed to the rear end thereof, the same lying immediately above the rear end of the fender and adapted to engage therewith, and a lever fixed to and extending upwardly from the forward end of said shaft in front of the dashboard of the car to operate said shaft.

4. In an improved car-fender of the class described, a tripping device comprising a pair of hangers depending from the car-body, a trigger pivoted between the upper ends thereof, said trigger having a widened lower end, a spring-actuated bar pivoted in the same plane with the trigger and depending between the hangers, said trigger being connected to said bar, the lower end of said bar being turned upwardly and outwardly, an arm fulcrumed upon the side of one of the hangers, its lower end being turned laterally to engage with the upturned end of the bar, an arm pivoted to and extending forward from the upper end of the fulcrumed arm, a bell-crank arranged beneath the car-platform, to one arm of which the forward end of a rod connects, and a pin fixed to the opposite arm of said bell-crank, the same extending upwardly through the car-platform.

5. In a car-fender, a pair of hangers fixed to and depending from the under side of the car-platform, a frame fixed to said hangers, a second frame hinged to said first mentioned frame, a flexible buffer arranged upon the front of the second mentioned frame and moving longitudinally thereon, transversely arranged strengthening bars in said second mentioned frame, crossed-bars having their front ends extending forward in the same plane with the flexible buffer, a spring-actuated rod moving longitudinally within said second frame and arranged to be engaged by

the crossed-bars as the same are engaged by the flexible buffer, a trigger, a tripping device arranged beneath the car-body to normally engage the rear end of the fender, and
5 a rod extending through the first mentioned frame from the first mentioned rod to the tripping device.

6. In an improved car-fender, a frame arranged beneath the car-platform, a frame
10 hinged to said first mentioned frame in the same plane therewith, the forward ends of the side-pieces of said second frame being

reduced in size, a flexible buffer arranged to move longitudinally upon said reduced forward ends, spring-arms fixed to and extending rearwardly from the under side of said flexible buffer, and weights arranged upon
15 the ends of said spring-arms.

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

JOHN D. HODGES.

Witnesses:

EDWARD EVERETT LONGAN,
JOHN C. HIGDON.