

(No Model.)

2 Sheets—Sheet 1.

D. LEIB.
STREET CAR FENDER.

No. 581,741.

Patented May 4, 1897.

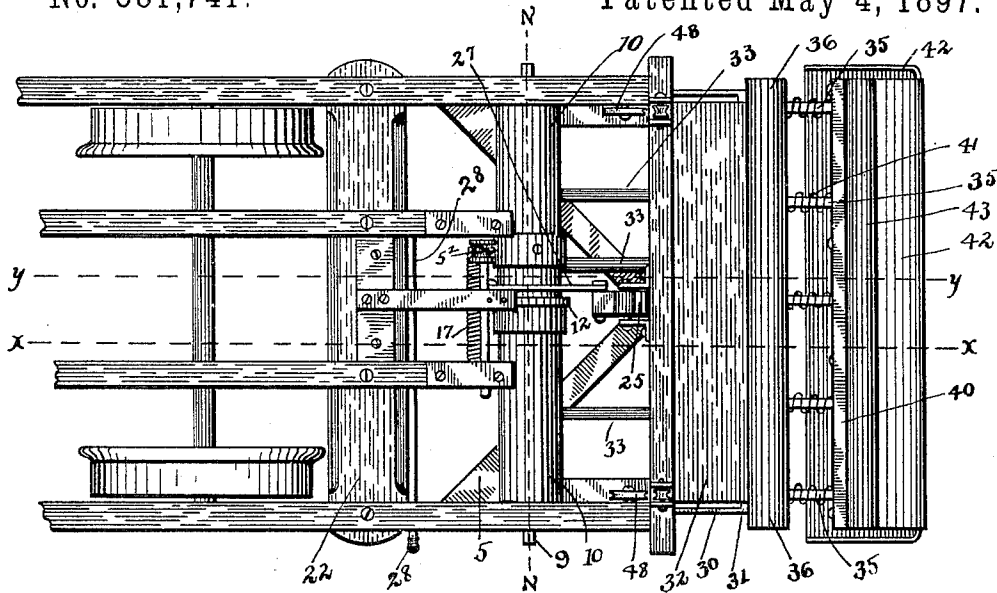


Fig. 1

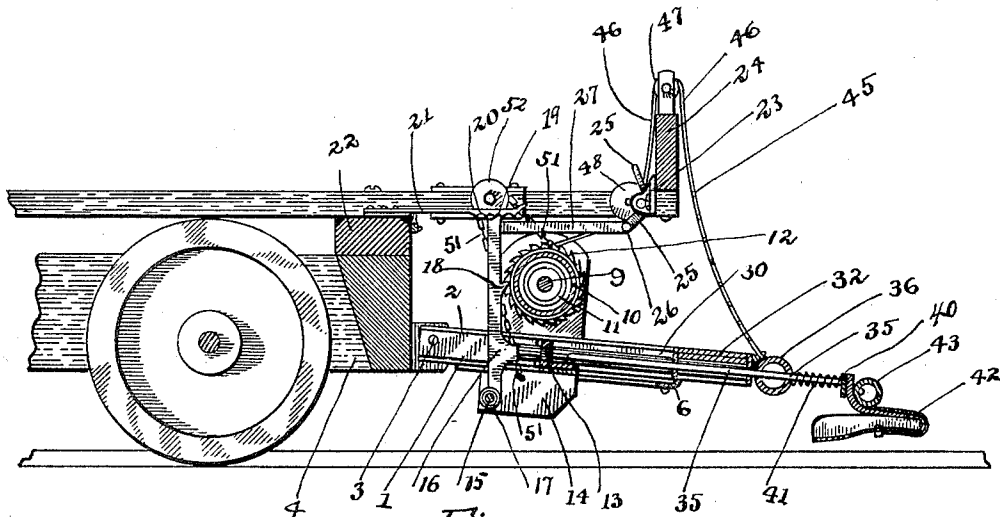


Fig. 2

Witnesses
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Inventor
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By his Attorney
C. C. Shepherd,

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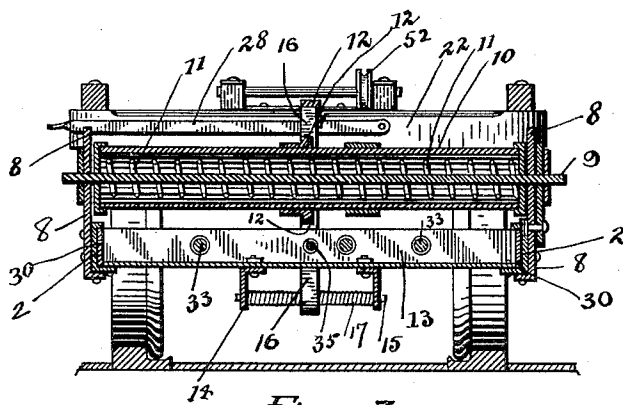


Fig. 3

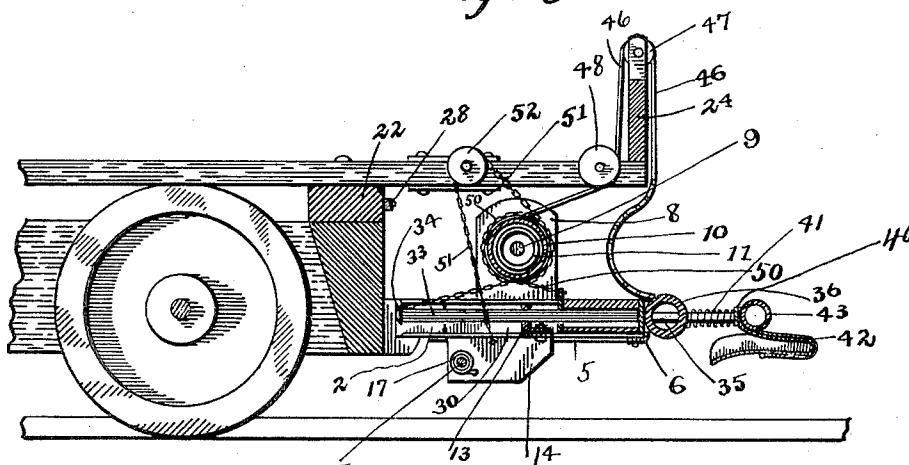


Fig. 4

Witnesses

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UNITED STATES PATENT OFFICE.

DAVID LEIB, OF COLUMBUS, OHIO.

STREET-CAR FENDER.

SPECIFICATION forming part of Letters Patent No. 581,741, dated May 4, 1897.

Application filed April 22, 1896. Serial No. 588,567. (No model.)

To all whom it may concern:

Be it known that I, DAVID LEIB, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a certain new and useful Improvement in Street-Car Fenders, of which the following is a specification.

My invention relates to the improvement of fenders for street-cars of that class which are adapted as life-saving attachments therefor; and the objects of my invention are to provide a fender of this class of superior construction and arrangement of parts; to provide improved means for automatically dropping the fender or life-guard into an operative position by contact with an object on the track, and to otherwise produce an improved fender attachment for cars which will be of great utility in saving the lives of persons run down by street-cars. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 represents a plan view of a portion of a car-truck frame having my improvement thereon and showing the same in position for taking up a person or object in the path of the car. Fig. 2 is a sectional view on line *xx* of Fig. 1. Fig. 3 is a sectional view on line *zz* of Fig. 1; and Fig. 4 is a sectional view on line *yy* of Fig. 1, the latter section being taken with the fender raised to its normal or horizontal position.

Similar numerals refer to similar parts throughout the several views.

In carrying out my invention I employ a substantially U-shaped frame 1, the inner ends of the side arms 2 thereof being pivoted at 3 to the forward ends of the side frame-pieces of the car-truck 4. The under sides of these arms are connected by suitable brace and cross-arms, such as indicated at 5 and 6. The side arms 2 are channeled on their inner sides, as indicated at 7. Rising from the outer side of each of the side arms 2 of the frame 1 are standards or brackets 8, the latter having journaled therein the end of a central transverse shaft 9, which carries, as set forth in my former patent, No. 556,061, dated March 10, 1896, a cylinder 10, within which is provided a coiled spring 11, one end of the latter being connected with said shaft and the re-

maining end with said cylinder. The spring-actuated cylinder thus formed carries at the center of its length a peripheral ratchet 12.

13 represents a transverse bar which extends beneath the cylinder 10 and which connects the arms 2 of the frame 1. This bar 13 has extending rearwardly therefrom two separated arms 14, in the rear end portions of which are journaled the ends of a transverse shaft 15. Secured to the center of the length of this shaft 15 is an upwardly-extending pawl-arm 16.

17 represents coiled springs which surround the shaft 15 on each side of the pawl-arm 16, each of said springs having its outer end connected with a bracket 14 and its inner end connected with said pawl-arm, and the tension of said spring being such as to normally force the pawl-arm forward. Said pawl-arm 16 is provided near the center of its length with a forwardly-projecting tooth 18, which, as indicated in the drawings, is adapted by tension of the springs 17 to normally engage with the teeth of the ratchet 12. The upper end of the pawl-arm is also provided with notches, (shown at 19,) these notches being adapted to engage with corresponding notches 20, which are on the under side of a forwardly-extending spring-strip 21, the rear end of which is secured on one of the forward cross-frame pieces 22 of the truck 4.

In a suitable bracket 23, fixed to the inner side of the dashboard 24 of the car-frame, is journaled the central portion of a trip-lever or trigger 25, the latter being angular in form, as shown. The lower arm of this trip-lever is, as indicated at 26, jointedly connected with the forward end of a bar 27, the rear end of which is jointedly connected with the upper end portion of the pawl-arm 16. This bar 27 is of such length as to result, when the tooth 18 of the pawl-arm 16 is in engagement with the ratchet-wheel, as shown in Fig. 2 of the drawings, in the upper arm or portion of the lever 25 being inclined away from the dash 24.

28 represents a lever-arm the inner end of which is fulcrumed to the forward side of the truck-frame piece 22, and the outer end portion of which is adapted to extend slightly beyond the side of said truck-frame. Within

the channeled side arms 2 of the frame 1 are adapted to slide the side arms 30 of a second or outer frame 31, the forward portion of the latter being made to inclose a plate 32. From
 5 the forward edge or side of this plate 32 extend rearwardly guide-rods 33, the latter working loosely through openings in the cross-bar 13. The outer ends of these guide-rods 33 are provided with enlarged heads, as indicated at 34, to prevent their withdrawal
 10 through the openings of the bar 13.

In the construction of a resilient bumper for my improved fender I provide a number of parallel rods 35, which pass loosely through
 15 the forward portion of the frame 31 and which also pass loosely through a transverse tube 36, of rubber or similar material, which adjoins the forward side of the frame 31. The outer ends of these rods 35 are connected with
 20 a transverse metallic bar 40, which is supported in front of the tubing 36, and those portions of said rods 35 which are between the bar 40 and the forward end of the frame 31 are provided with coiled springs 41. The
 25 bar 40 has secured thereto or formed therewith a forwardly, downwardly, and thence rearwardly extending guard-strip 42, which is also surmounted by a transverse pliable tube or other suitable cushion 43.

45 45 represents a suitable netting of yielding material, the lower edge of which is secured to the forward side of the outer frame 31. The upper edge or portion of the netting is supported by means of cords 46, which pass
 35 over pulleys 47, which are journaled in the dash 24, and from these pulleys said cords extend downward about pulleys 48, journaled within the platform-frame. From these pulleys 48 the cords 46 extend to and are connected
 40 with the spring-actuated cylinder 10.

50 represents a chain, one end of which is connected with the rear portion of the forward frame 31. From this point of connection said chain passes around the cylinder 10 and has
 45 its remaining end secured to the inner end of one of the guide-rods 33.

51 also represents a chain, one end of which is secured to the periphery of the cylinder 10, from which said chain extends upward over
 50 a pulley 52, journaled in the upper framework of the truck. From this pulley 52 the chain 51 extends downward and is secured to the frame 1.

In order to secure my improved fender in
 55 position for operation, the spring within the cylinder is placed under tension by engaging a key with one of the outwardly-projecting square ends of the cylinder-shaft 9 and rotating the latter. This rotary movement of
 60 said cylinder will not only operate, as will readily be seen, in placing the internal spring under tension, but will result in such winding action of the chain 50 on the cylinder as to cause the side arms 30 of the frame 31 to
 65 close or travel inward within the channeled side of the side arms 2 of the frame 1. In

addition to this telescoping action of said frame, it is obvious that the chain 51 will, by being partially wound upon said cylinder, operate to lift the fender to the horizontal position indicated in Fig. 4 of the drawings. 70

It will thus be seen that the fender and its forward guard or cushion will not only be elevated from the track, but will be drawn inward and thereby caused to occupy a comparatively small space. The inward movement of the outer frame will also have resulted, as will readily be seen, in the inner end of the middle bumper guide-pin 35 being brought into close proximity to the forward
 80 face of the pawl-arm 16.

The parts being in the above-described position and the motorman wishing to extend the fender and drop it to the position indicated in Figs. 1 and 2 of the drawings for the
 85 purpose of taking up an object on the track, the said motorman may by pressing forward on the upper portion of the trip-lever 25 cause a sufficient rear movement of the bar 27 to result in a disengagement of the pawl-arm with
 90 the teeth of the ratchet. This disengagement of said pawl-arm and ratchet operates to release the spring-actuated cylinder, with the result that the rotation of the latter and the unwinding action of the chain 50 produced
 95 thereby will operate to force the outer frame 31 and its bumper outward. This reversal of the cylinder will also result, as will readily be seen, in a sufficient unwinding action of the chain 51 to lower the fender to the positions indicated in Figs. 1 and 2. 100

Owing to the normal engagement of the notched spring strip or dog 20 with the top of the pawl-arm it will be seen that the tooth of said pawl-arm may be held out of engagement
 105 with the ratchet during the operation of throwing outward the forward frame. This notched strip may, however, be disengaged from said pawl-arm by raising the outer end of the lever 28 and allowing the tooth of the
 110 pawl-arm to again engage with the ratchet when desired.

In case the bumper of the fender should strike an object on the track it is obvious that the inward movement of the bumper resulting therefrom must cause such contact of the
 115 central pin 35 with the forward side of the pawl-arm as to result in forcing the latter out of engagement with the ratchet, thus admitting of the fender being dropped automatically to the operative position shown in Figs. 1 and 2. 120

From the construction and operation which I have described it will not only be seen that improved means are provided for dropping
 125 and extending the fender to a position adapted to pick up a body with which the same may come into contact, but that superior means are provided for automatically accomplishing this object. 130

The construction of my improved fender is such as to admit of its being readily connected

with any of the ordinary forms of car-truck frames and such as to insure a positive and safe operation of the fender whether the object in the path of the car is observed by the
5 motorman or not.

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

10 In a street-car fender the combination with a frame 1 having a hinge connection with the car-truck frame, a spring-actuated cylinder mounted on said frame 1, a ratchet on said cylinder and a spring-actuated pawl-arm pivotally connected with said frame 1 and adapt-

ed to engage with said ratchet, of a frame 31 15 having a sliding connection with said frame 1, guide-rods projecting from said frame 31 and working loosely in a cross-bar 13 attached to said frame 1, one of said guide-rods adapted by the inward movement of the outer frame 20 to force said pawl-arm out of connection with said ratchet, substantially as and for the purpose specified.

DAVID LEIB.

In presence of—

C. T. CLARK,
A. L. PHELPS.