(No Model.) 2 Sheets—Sheet 1.

D. LEIB.

STREET CAR FENDER.

No. 556,061. Patented Mar. 10, 1896.

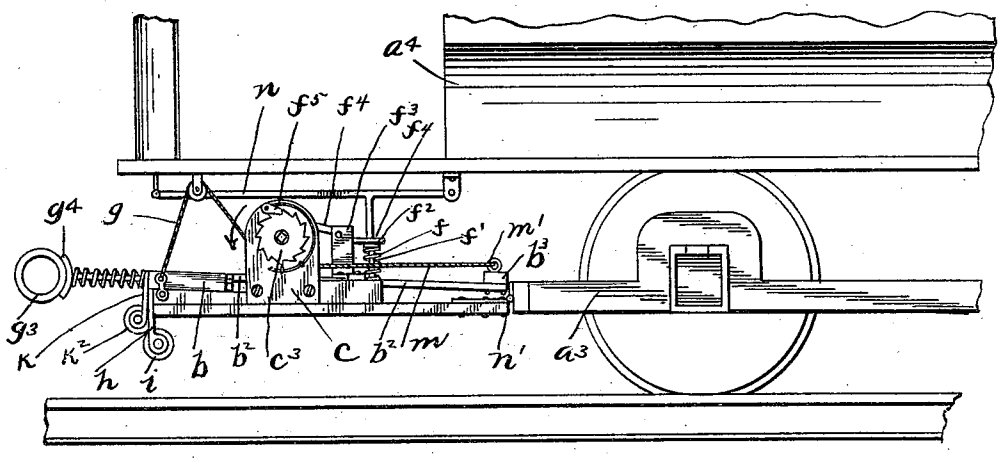

Fig. 1

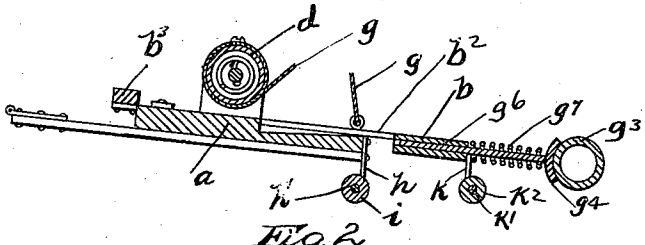

Fig. 2

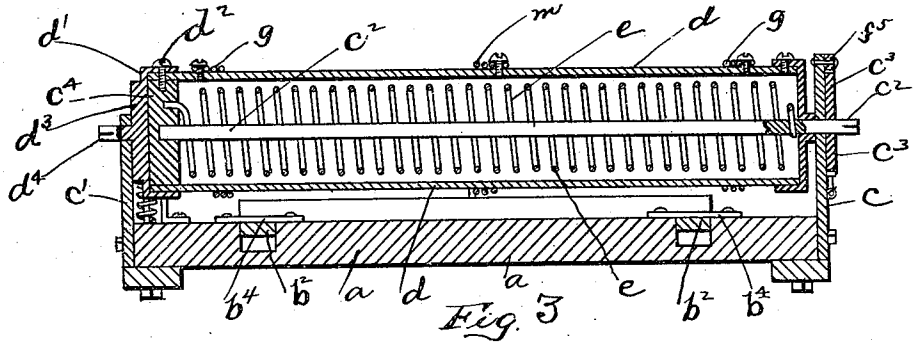

Fig. 3

WITNESSES:

H. B. Bradshaw

A. L. Phelps

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ATTORNEY

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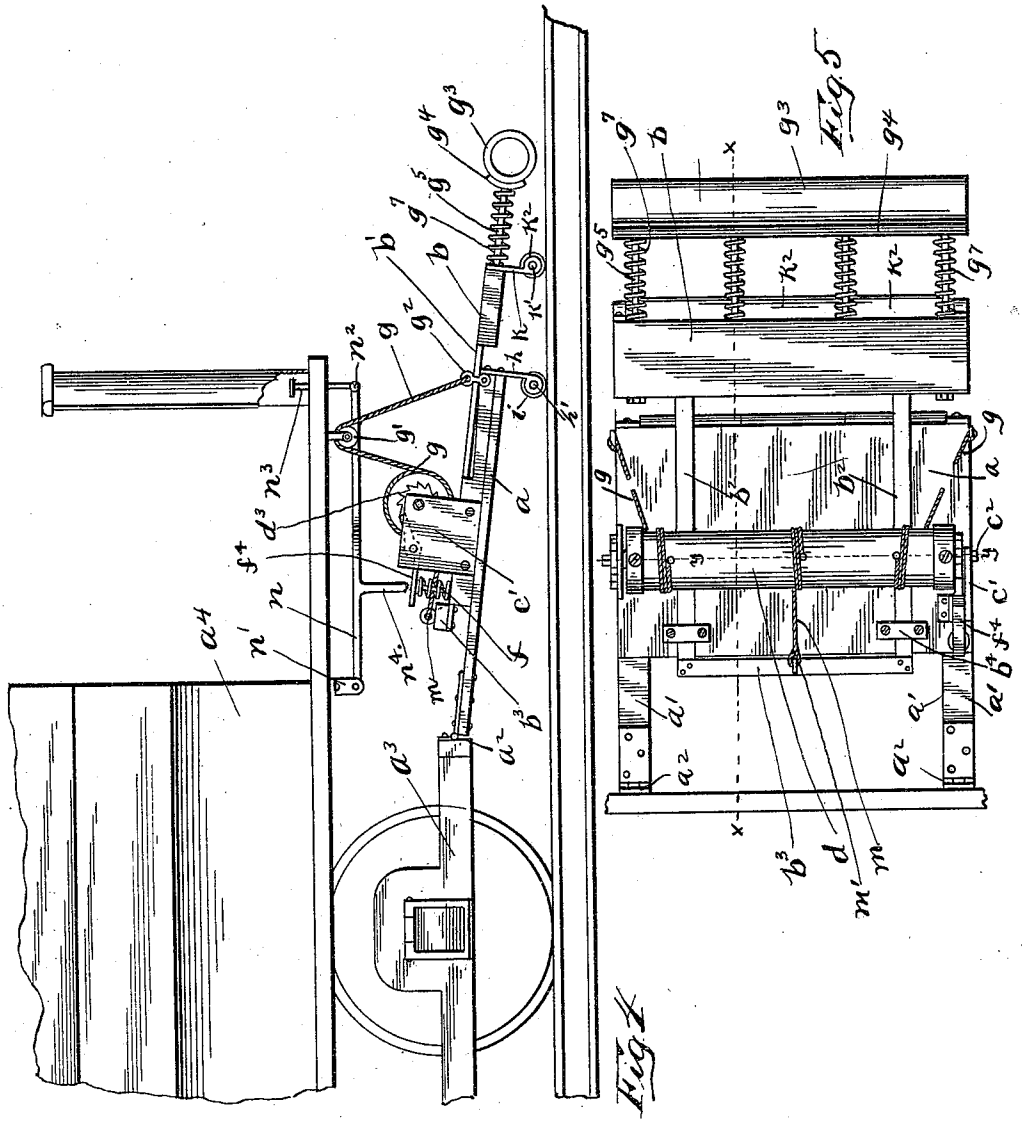

Fig. 4

Fig. 5

WITNESSES:
H. B. Bradshaw
A. L. Phelps

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UNITED STATES PATENT OFFICE.

DAVID LEIB, OF COLUMBUS, OHIO.

STREET-CAR FENDER.

SPECIFICATION forming part of Letters Patent No. 556,061, dated March 10, 1896.

Application filed July 19, 1895. Serial No. 556,464. (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 life guards or fenders for street-railways; and the objects of my invention are to provide an improved fender of this class of such construction and arrangement of parts by means of which a body of a person run down by a car may be picked up without serious injury, to provide improved means for extending the fender when needed for actual use, and to produce other improvements in details of construction, which will be more fully pointed out hereinafter. These objects I accomplish in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a portion of a car, showing my improvement thereon with the parts elevated. Fig. 2 is a longitudinal section on line $x\ x$ of Fig. 5. Fig. 3 is an enlarged section on line $y\ y$ of Fig. 5. Fig. 4 is a side elevation of a portion of a car having my improvement thereon and showing the forward section of the fender projected in front of the car in position for use, and Fig. 5 is a plan view of my improved fender.

Similar letters refer to similar parts throughout the several views.

In constructing my device I employ two sections, indicated, respectively, at a and b. The section a is in the nature of a platform, the rear portion of which is provided at each end with rearwardly-extending arms a', the latter being hinged or otherwise jointedly connected, as indicated at a^2, with the usual truck side frame-bars a^3 of the car a^4.

c and c' represent vertical standards, which rise from opposite sides of the platform a. In the standard c is journaled one end of a transverse shaft c^2, the outwardly-projecting end portion of which carries a ratchet-wheel c^3. The opposite end of the shaft c^2 is journaled in a disk or circular block c^4.

d represents a transverse cylinder, which surrounds the shaft c^2 at a distance therefrom, and which has that end portion of the shaft which is journaled in the standard c passing through one of its ends. The opposite end of the cylinder d embraces the disk or block c^4, this last-named cylinder end being provided with a cap d', which, by means of screws d^2, is connected rigidly with the disk c^4 through the wall of the cylinder d. The cap d' has formed on its outer side a ratchet-wheel d^3, and the latter is provided with a central outwardly-projecting trunnion d^4, which is journaled in the standard c'. About the shaft and within the cylinder is coiled a spring e, one end of said coiled spring being rigidly connected, as shown, with the disk c^4 and the remaining end thereof being connected with the shaft c^2. From the upper side of the platform a, adjacent to the rear side and one end thereof, rises a vertical coiled spring f, the latter inclosing a pin f' having an enlarged head f^2. To the inner side of a standard f^3, which rises from said platform a, is fulcrumed the central portion of a pawl f^4, one end of which bears upon the spring pin-head f^2 and the remaining end of which is, by means of said spring f, held in engagement with the teeth of the ratchet d^3.

On the outer side of the standard c I provide a spring-actuated pawl f^5, which is adapted, as shown, to remain in engagement with the teeth of the ratchet c^3.

The platform a formed as described is adapted to be supported by means of suitable ropes or chains g, one of which is secured to and adapted to wind about each end of the cylinder d. From said cylinder ends the supporting-ropes g extend upward over pulleys g', which depend from the under side of the car-platform, and from said pulleys said ropes lead downward to and are engaged with suitable eyes g^2, secured to the sides of the platform a near its outer ends. The second or guard section b of my improved device is in the form of a somewhat narrower platform, and is adapted to normally rest, as indicated in Fig. 1 of the drawings, upon the forward portion of the platform a. This section b is provided at desirable intervals upon its upper and rear side with rearwardly-extending guide-arms b', the latter being adapted to fit and slide in parallel grooves b^2, formed longitudinally in the upper surface of the platform a. These guide-arms b^2 are connected

at their rear ends by a cross-arm b^3, thus forming in conjunction with the latter a sliding frame extension of the section b. Over the grooves b^2, near their rear ends, I provide keeper-plates b^4, beneath which the arms b^2 are adapted to slide.

g^3 represents a tubular bumper, which is preferably formed of rubber and which is provided with a rigid backing-piece g^4. The bumper thus formed is adapted to be supported in front of the forward guard-section b by means of parallel rearwardly-extending rods g^5, the latter extending loosely into sockets or openings g^6, formed at proper intervals through the section b. The rods g^5 are surrounded by coil-springs g^7, which bear between the bumper g^3 and section b.

From the under side of the forward portion of the platform a depend brackets h, which support transversely of said platform a shaft h', the latter having mounted loosely thereon ground-rollers i. The forward side of the section b also has depending therefrom brackets or hangers k corresponding with the brackets h, said hangers k supporting a transverse shaft k' on which are mounted rollers k^2.

To the center of the length of the cylinder d I secure one end of a rope or cord m, the remaining end of the latter being secured, as indicated at m', to the central portion of the frame-arm b^3.

Extending beneath the platform of the car in the direction of the length of the latter is a lever n, the rear end of which is fulcrumed to a bracket n', which depends from the car-body and the forward end of which is jointedly connected at n^2 with a vertical foot-pin n^3, which extends upward through the forward portion of the car-platform, as shown. The lever-bar n is provided with a pin n^4 on its under side which when depressed is adapted to come into contact with the rear end of the pawl f^4 and thereby so depress the latter as to cause its disengagement from the ratchet d^3.

In order to more intelligently explain the operation of my invention I will assume that the parts are in the position illustrated in Fig. 1 of the drawings—that is, the forward section b supported upon the forward portion of the section a, the latter being retained in a substantially-horizontal position by means of the ropes g, the cylinder-spring being under tension and the central rope, m, being unwound or partially unwound therefrom. The parts being in this position and the motorman desiring to place the same in position for taking up a body in front of the track, a depression of the foot-pin n^3 will result in a release of the engagement of the pawl f^4 with the ratchet d^3 and in a consequent rotation of the cylinder or reel d. The rotation of this reel or cylinder results, as will readily be seen, in a taking up or winding thereon of the rope m and in a consequent outward sliding movement of the forward section b to the position indicated in Figs. 4 and 5 of the drawings. The rotation of the cylinder d, as above described, also results in unwinding the ropes g and thereby lowering the forward end portion of the platform-section a. In this manner not only will the section b be projected forward, but the rollers k^2 and i will be made to bear upon the ground. When in this lowered position, the contact of the bumper g with a person on the track will result in the body of such person being thrown or lifted upon the forward platform-section b.

It being desired to replace the guard-sections in their former positions, the forward section b may be lifted slightly and forced inward to its normal position on the platform-section a, and this inward movement of the rearwardly-extending frame of said forward section must result in an unwinding of the cord m from the cylinder and a winding of the cords or ropes g thereon, and the rotary movement thus imparted to said cylinder will result in again placing the spring e therein under tension and in lifting the platform a to its normal position.

In case it is desired to increase the tension of said cylinder-spring a key may be fitted over the projecting end of the shaft c^2 and by rotating the latter produce a winding action of the spring. It is obvious that the sudden shock or jar which may be occasioned by the contact of the body of a person with the bumper will be relieved by the springs which intervene between said bumper and forward section.

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

1. In a life-guard or fender for street-railways, the combination of the platform-sections a and b having a sliding connection with each other, a hinge connection between the section a and the car-truck frame, means for adjustably supporting said section a and means for projecting said section b in front of said section a, substantially as and for the purpose specified.

2. In a street-car life-guard or fender the combination with a guard-section a having a hinge connection with the car-truck frame and a spring-actuated reel mounted on said section a, of a sliding guard-section b adapted to be supported on said section a, a cord m connected with the rearwardly-extending portion of said sliding section at one end and having its remaining end connected with and adapted to wind on the reel d, ropes g connecting the forward end portion of the section a with the reel d and means for releasing the spring of said reel from tension, substantially as and for the purpose specified.

3. In a life-guard or fender for cars, the combination with a guard-section a having a hinge connection with the car-truck frame, a spring-actuated cylinder journaled upon said section a, a ratchet-wheel on one end of said cylinder, a pivoted spring-actuated pawl adapted to normally engage with said ratchet

and cords *g* and *m* adapted to wind in opposite directions on said reel, of a sliding section *b* adapted to rest on said movable section, a spring-actuated bumper supported from said sliding section, a connection of the rope *m* with a rearward extension of the sliding section, a connection of the ropes *g* with the section *a* and means for releasing said pawl from engagement with said ratchet from the car-platform, substantially as and for the purpose specified.

4. In a fender for street-cars a platform-section *a* having a jointed connection with the truck-frame and ground-rollers journaled beneath said platform-section, of a sliding section *b* adapted to be projected in front of said section *a* and ground-rollers journaled from and beneath said sliding section, said ground-rollers extending throughout the width of the platforms and across the tracks, substantially as and for the purpose specified.

DAVID LEIB.

In presence of—
A. L. PHELPS,
C. C. SHEPHERD.