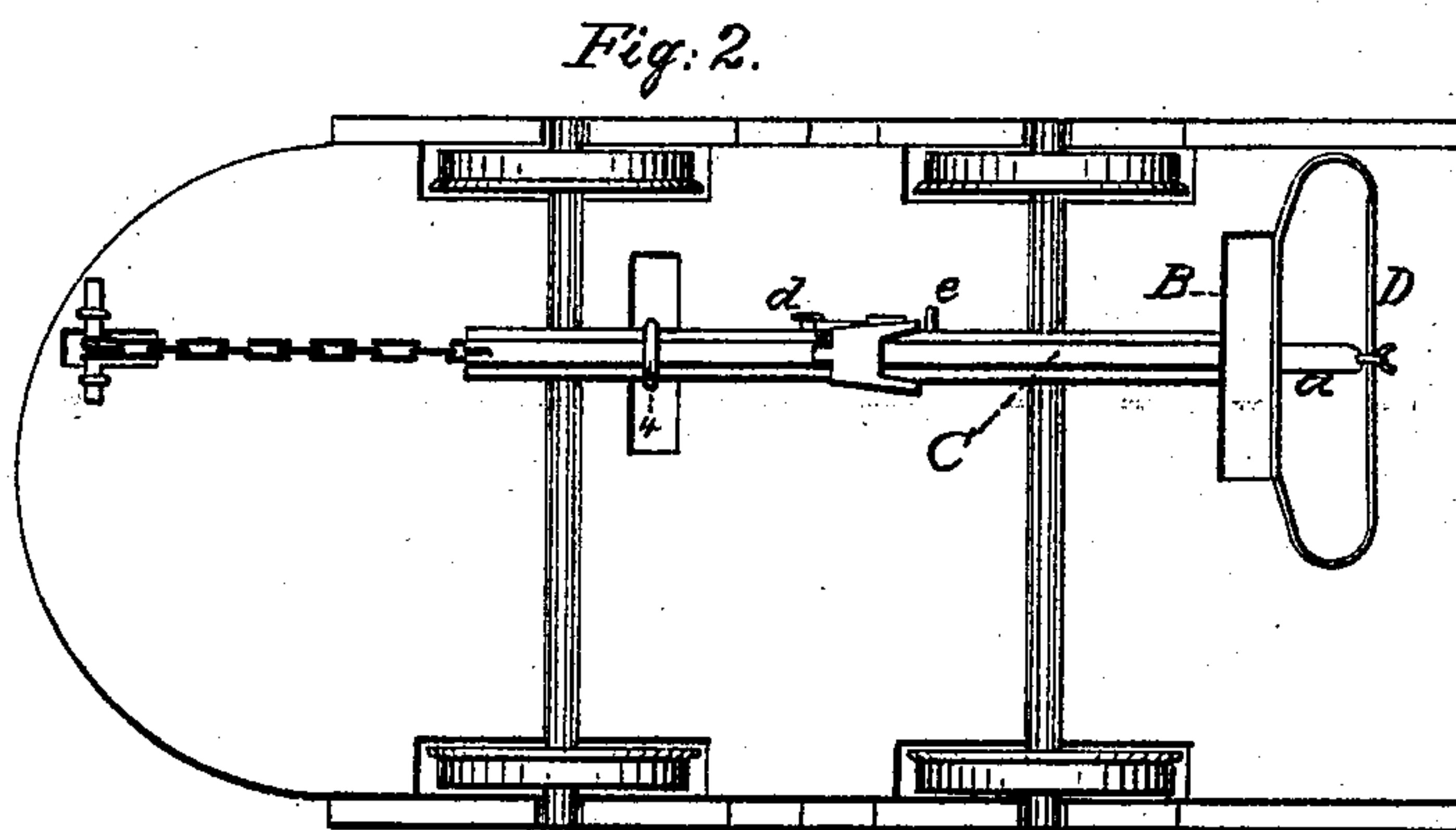
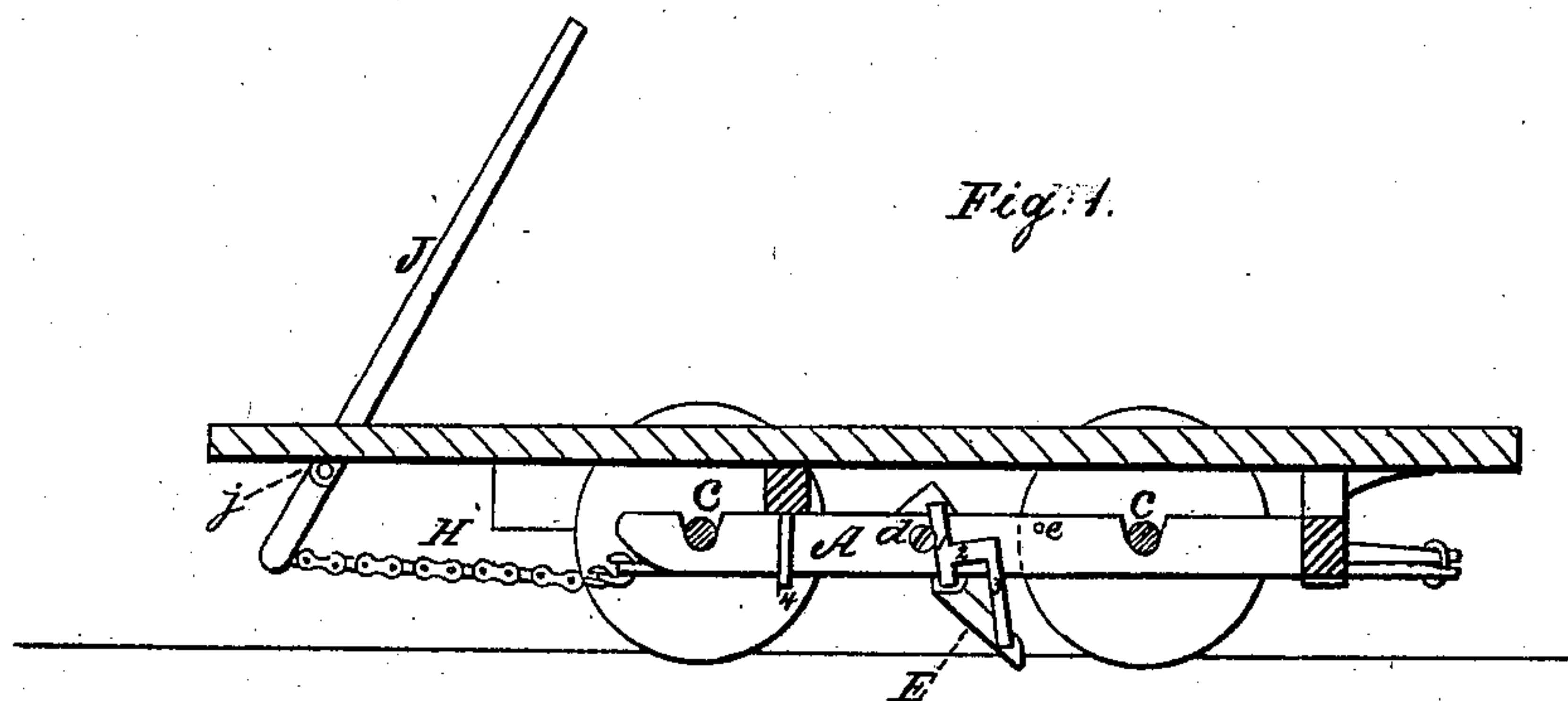


A. B. DAVIS.  
Street-Car Starter.

No. 93,282.

Patented Aug. 3, 1869.



Witnesses:

Rufus R. Rhodes  
Arthur Garbarino

Inventor.

Andrew B. Davis

# United States Patent Office.

ANDREW B. DAVIS. OF CATAHOULA PARISH, LOUISIANA.

Letters Patent No. 93,282, dated August 3, 1869.

## IMPROVED STREET-CAR STARTER.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, ANDREW B. DAVIS, of Catahoula parish, State of Louisiana, have invented a certain new, useful, and improved Apparatus for Starting Railroad-Cars; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawing, making a part of this specification, in which—

Figure 1 is a side view of the bottom of a car, to which my improvement has been applied, the two rear wheels being removed, the more clearly to show the same; and

Figure 2, a view of the bottom of a car with my improvement attached thereto.

The object of my invention is to relieve the animals of the strain to which they are subjected in starting city railroad cars, which is sometimes so great, especially when the track is made of square blocks of granite or stone, or when, being of earth, the same is frozen or covered by sleet or ice, as to cause them to fall and permanently injure themselves, and which always tells, to a greater or less extent, upon their vital and muscular powers, and hence causes their premature exhaustion and death.

My invention consists of a removable mechanical organism, that can be attached to any existing car, which enables the driver, by means of a lever, passing through the platform of the car, on which he stands, to apply the tensile force of a strong spring to the accomplishment of my object, through the medium of one or more propelling-feet, that, at the proper moment, take or impinge, at their lower points, against the tracks between the rails, whatsoever may be the nature of the same, and as soon as they have fulfilled their function, rise up again off the same, and in position for a new operation.

But my invention will be better understood by referring to the drawing.

A is a metallic guide-bar, sufficiently long to extend some inches in front of the fore axle of the car, and back of the hind axle, as shown at both figures, to the rear extremity of which a cross-bar or head, B, is permanently and strongly fastened.

An aperture is made through the cross-head B, in line with a central longitudinal groove or recess in the bottom side of the guide-bar A, so that a bar, C, which fits into said groove, may pass through and project several inches to the rear of the same, as shown at *a*, where it is secured to one or more springs, *l*, that are fixed behind the cross-head B, in such manner that the whole power of the same will be exerted to draw the bar C back into the position opposite to that shown at fig. 1, whenever it is forced or carried forward, as shown at said figure.

To render the reciprocating movement of the bar

C as easy as possible, a series of friction-rollers may be interposed above it in the recess, and under all circumstances, at least one such roller should be placed over the bar at the point at which the propelling-foot E is connected to the said bar, to facilitate the action or movement of the same in the operation of starting the car.

The foot E is pivoted to the bar C by means of pendent brackets, and at its lower extremity it is divided in such manner as to present two sharp points, as shown.

The propelling-foot E is provided with an arm, *1*, through which it is operated by means of projecting pins *d e*.

This arm is pivoted on the same axis on which the foot E articulates, and is held in a given relation to said foot by a branch arm, consisting of a section, 2, projecting at right angles, and a section, 3, that is parallel to it, as shown, the lower end of section 3 being pivoted to the said foot at the lower extremity of the same.

The parts just described are secured underneath the bottom of the car, by a stirrup-bolt, 4, near its front end, and by straight bolts through the cross-head B, in such manner as to be below the axles, as shown at both figures.

Transverse grooves *c* may be cut in the guide-bar A, in order to bring it as close up to the bottom of the car, when the latter is empty, as possible.

When the car contains passengers, and is depressed by the yielding of its supporting-springs by the weight of passengers, the apparatus will, of course, be correspondingly lowered.

To operate my invention, a chain, H, connects with the front end of the reciprocating bar C, and with a lever, J, which has a fixed pivot-fulcrum, at *j*, near the end of the front platform of the car.

The length of the chain H should be such that it will hold the lever J in the opposite position to that shown at fig. 1, or so that its long arm will lean from the car instead of toward it, and thus enable the driver, by pulling it into the position shown, to develop the full tensile power of the spring.

To start the car, the driver pulls on the lever J until he brings it into the position shown at fig. 1, and thus moves the bar C toward the front of the car, sufficiently to develop the whole power of the spring D, but just before the bar C has attained the limit of its forward movement, the arm *1* impinges against the pin *d*, and thus forces the foot E into the position shown at fig. 1, so that when the driver releases the lever, and thus permits the spring D to reach on the bar C to force it back, the said foot E takes into the ground, and consequently causes the force of the spring to be exerted in starting the car.



As the car moves ahead, the bar goes backward, until the arm 1 is brought in contact with pin *e*, and being depressed, thereby raises the foot off the ground, and permits the said bar to fly back to its normal position, as shown at fig. 2, and ready for another operation, as soon as the car has stopped.

By making the foot E considerably heavier than the parts 1, 2, 3, its own weight will cause it to fall into proper position to start the car as soon as the bar has moved forward sufficiently to carry the arm 1 away from pin *e*, and hence the pin *d*, in that case, is unnecessary.

My invention is very simple, is easily and cheaply made, and may be applied to any car, whatever its form of construction.

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

The guiding-bar A, when the same is provided with a reciprocating bar, C, a cross-head, B, and a spring, D, in combination with a lever, J, and a chain, H, the whole being attached to a city-railroad car, and operating substantially as herein described, for the purpose set forth.

A. B. DAVIS.

Witnesses:

RUFUS R. RHODES,  
GEO. B. HOLZACH.