J. NOBLE.

Steam Street-Car.

No. 197,881. Patented Dec. 4, 1877.

FIG. 1.

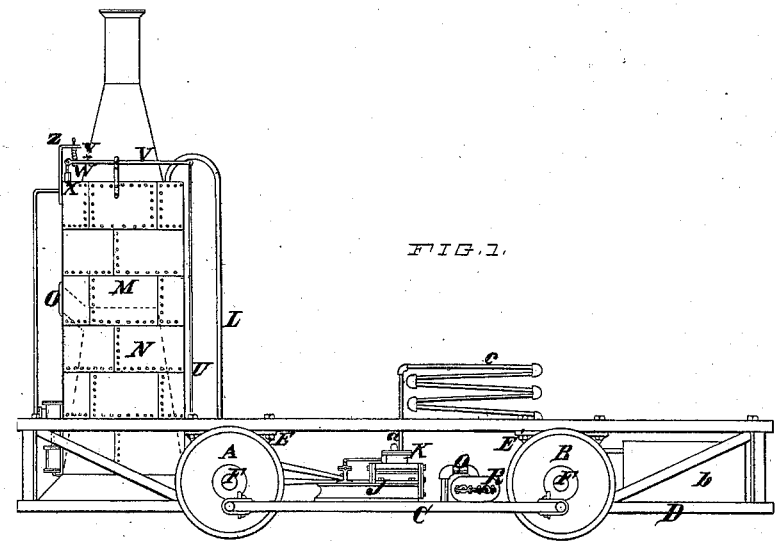


FIG. 2.

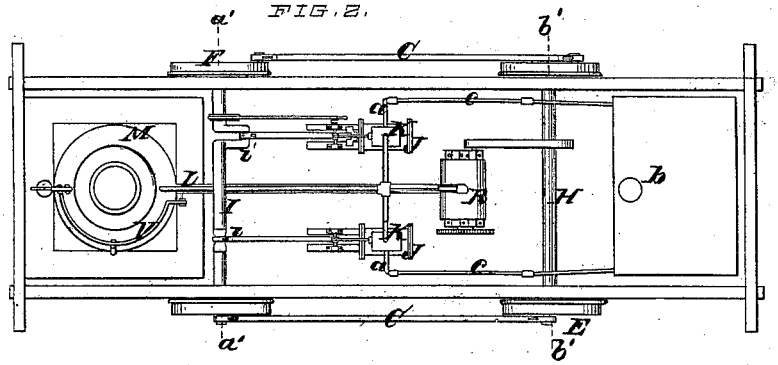


FIG. 3.

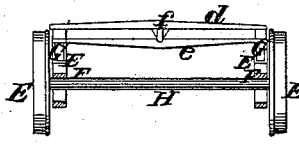
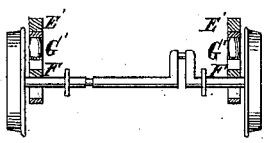


FIG. 4.



ATTEST.

Robert Burns.

Charles Pickles

INVENTOR

Jay Noble

By Knight Bros.

Attys

UNITED STATES PATENT OFFICE.

JAY NOBLE, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF HIS RIGHT TO WILLIAM R. ALLEN, IRA C. TERRY, AND ALBERT O. TERRY.

IMPROVEMENT IN STEAM STREET-CARS.

Specification forming part of Letters Patent No. **197,881**, dated December 4, 1877; application filed May 26, 1877.

To all whom it may concern:

Be it known that I, JAY NOBLE, of St. Louis, St. Louis county, State of Missouri, have invented a certain new and useful Improvement in Steam Street-Cars, of which the following is a specification:

The subject-matter of the present application relates to the construction of the car portion of a steam street-car; and consists in supporting the fore end of the car-body in the ordinary manner, and supporting the rear end on a transverse equalizer-bar, to give the rear axle freedom of oscillation in a vertical plane.

In the drawings, Figure 1 is a side elevation of the improvement. (The car-body not shown.) Fig. 2 is a top view of same. Fig. 3 is a transverse section at *a' a'*; and Fig. 4 is a transverse section at *b' b'*.

A B are the fore and rear wheels, respectively, these wheels being preferably connected by a side rod, C, so that the fore wheels act as drivers to the others. D is the base-frame of the car, which may be of any suitable material and construction. As a material, wood is suitable; but I prefer channel and angle iron for the main parts of the frame. E E' are pedestals, like those upon an ordinary car or car-truck, and in the pedestals the axle-boxes slide vertically in the usual manner. The axle-boxes have bearing at top beneath rubber or other springs G G'. H is the rear axle, and I the fore axle.

The car-body is built on the base-frame D, and the pedestals are attached firmly to said frame. The springs G over the journal-boxes of the fore axle I have bearing against the upper part of the pedestal; but the springs G of the rear axle have bearing beneath the ends of an equalizer-bar, *e*, on which the cross-bar *d* of the frame has central bearing at *f*, so that either of the rear wheels may be thrown up by an obstruction, without causing much movement to the car-body, the upward movement of such wheel being transmitted through its own spring to that end of the equalizer-bar *e* on which the cross-bar *d* of the frame has central bearing at *f*, so that either of the rear wheels will readily pass over a stone or other obstruction.

The upper bar of the frame D may form the sill of the car-body. The fore end of the body has capacity for a limited rocking motion on the springs G', and the fore wheels may rise by compression of the springs, as in an ordinary street-car.

The equalizer arrangement at the rear end of the car admits of considerable variation in the planes of the rear axle from the rest of the car, so that the car may be run easily and steadily over uneven tracks without straining the frame.

I intend to make the improved motor herein illustrated the subject-matter of another application for Letters Patent.

I claim herein as my invention—

1. The combination of the axle H, springs G, equalizer-bar *e*, and central body-bearing *f*, substantially as and for the purpose set forth.

2. The base-frame D, supporting the boiler M and operating parts of the street-car, and supported vertically on three bearings, G' G' *f*, substantially as and for the purpose set forth.

JAY NOBLE.

Witnesses:
SAML. KNIGHT,
ROBERT BURNS.