

(No Model.)

2 Sheets—Sheet 1.

S. HOWE.
STREET CAR.

No. 264,948.

Patented Sept. 26, 1882.

Fig. 1.

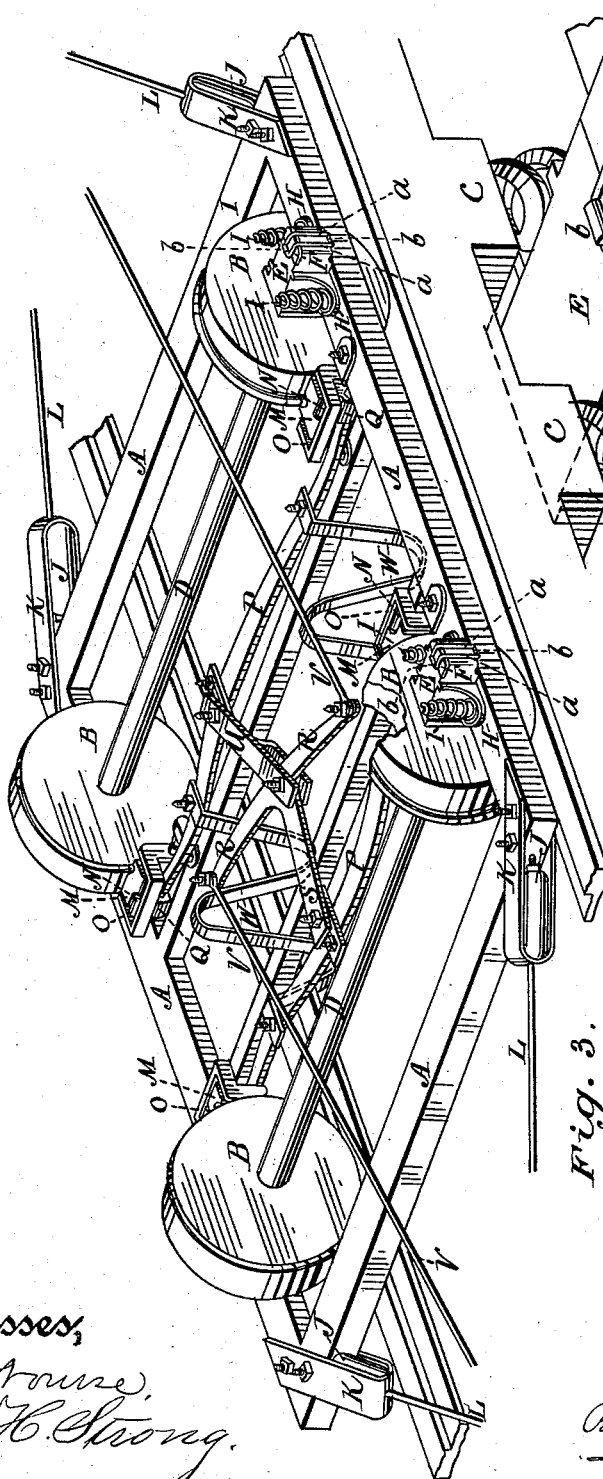


Fig. 2.

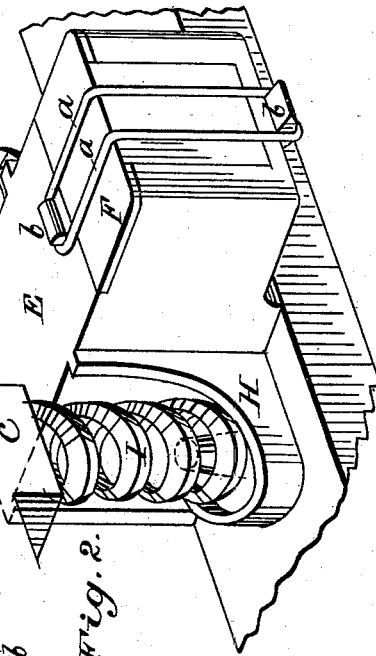


Fig. 4.

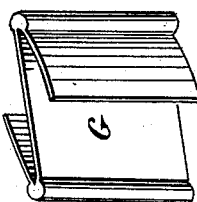
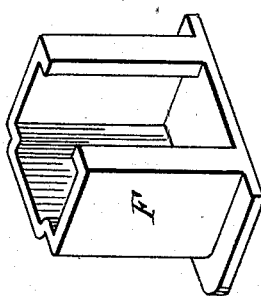


Fig. 3.



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2 Sheets—Sheet 2.

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Fig. 5.

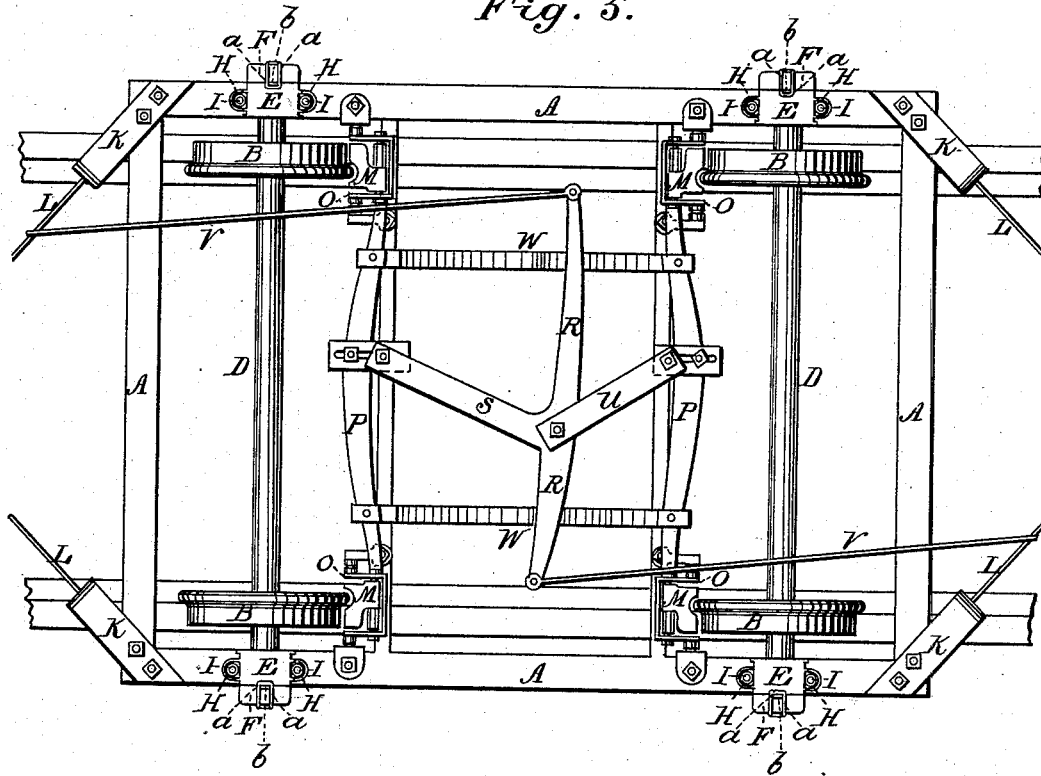
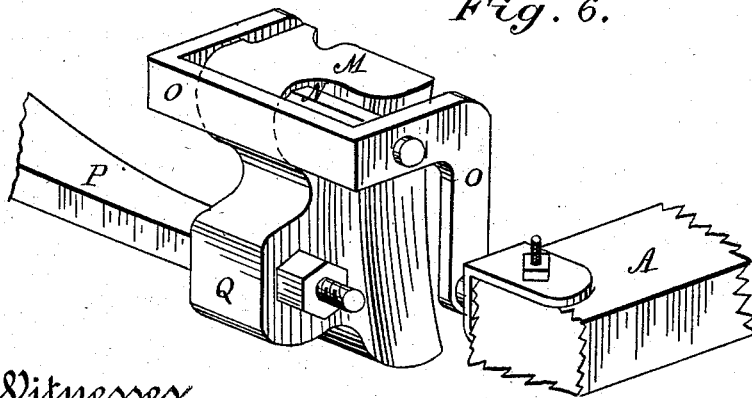


Fig. 6.



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UNITED STATES PATENT OFFICE.

SAMUEL HOWE, OF OAKLAND, CALIFORNIA.

STREET-CAR.

SPECIFICATION forming part of Letters Patent No. 264,948, dated September 26, 1882.

Application filed July 25, 1882. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL HOWE, of Oakland, county of Alameda, State of California, have invented an Improved Street-Car; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in cars, and it is more especially applicable to street-cars.

It consists in sundry details of construction, as hereinafter fully set forth, and specifically pointed out in the claims.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a view of the truck with the car-body removed. Fig. 2 is a perspective of the journal-box. Fig. 3 is a perspective of the slide. Fig. 4 is a perspective of a spring. Fig. 5 is a plan of my car. Fig. 6 is a perspective view of a brake-shoe.

A is a truck-frame, which is supported upon the wheels B, and in turn supports the car-body C.

When a car is moved rapidly over an uneven road-bed it is subjected to vertical and side shocks, which are partially relieved by systems of springs. My invention is designed to more perfectly effect this result.

D are the axles to which the wheels B are fixed. The ends of these axles, which form the journals, turn in boxes E, which are fixed to the top of the truck-frame by bolts or other means. The outer ends of the journal-boxes are grooved or otherwise fitted to receive slides F, and within these slides (which are deep enough for the purpose) are placed elastic buffers G, against which the end-thrust of the axles may be received. These buffers or springs may be of rubber or of metal in any suitable form. I have here shown a spring formed of three broad flat leaves, two of which are united to opposite edges of the central one by a curved or semi-cylindrical connection, the whole forming a single plate, as shown. The free edge of one outside plate rests against the end of the box or slide F, and the edge of the opposite plate against the end of the axle, so that any end movement of the axle within the box will compress the spring, thus relieving the box and the frame to which it is attached from any unpleasant jar. The slides F are held in

place by links *a*, the ends of which are slipped over lugs *b b* upon the boxes E. The boxes E have seats H formed on each side, in which the springs I are fixed, and the car-body C is supported upon these springs.

At each corner of the truck-frame is a spring, J, suitably held by a strap, K, which is bolted diagonally across the corner of the truck-frame. A rod, L, passes through the spring and has a compression-plate fixed to its inner end. The opposite end of the rod is connected with the body of the car beneath the floor, and thus allows the car-body considerable freedom of motion in every direction while holding it securely in place upon the vertical springs I.

In order to properly apply the brakes to the wheels from this truck-frame, they are constructed and mounted as follows: The brake-shoe M has an extension or lug, N, from the rear near the top, and a bolt passing through it secures it to the standard O, which is bolted to the top of the truck-frame A, the brake-shoe being thus allowed to swing between the sides of the standard, so as to be forced against the periphery of the car-wheel or swing away from it. A brake-bar, P, extends across the truck-frame from one brake-shoe to the other of each pair of wheels, and its ends pass through holes in lugs Q below the pivotal lugs N, and are secured by nuts or otherwise. The two brake-bars P thus extend across the frame A between the two pairs of wheels. In order to operate them, I employ a lever, R, which has an arm, S, projecting from the center of one side, so as to form, with the two main arms of the lever, a T. The end of the arm S is bolted to the center of one of the brake-bars P. A connecting rod or link, U, has one end bolted to the center of the other brake-bar, and its opposite end to the center of the lever R, as shown. This rod is of such a length that when connected the lever-arm R will stand at an angle with the transverse brake-bars and frame-timbers, and the arm S and rod U will meet at an obtuse angle.

The rods V, by which the brake-lever is operated, extend from its ends to the ends of the car, where they are connected with the usual brake-shaft, with crank-arm or handle within reach of the driver, so that when either end of the brake-lever is drawn upon it will, by

bringing the arms S and U into a more nearly straight line, force the brake-bars P outward, and through them the brake-blocks against the wheels.

- 5 W are springs which return the brake-bars and connections to their usual positions when the brake-rod and lever are released, and thus withdraw the brake-shoes from the wheels.

Having thus described my invention, what I
10 claim as new, and desire to secure by Letters Patent, is—

1. The truck-frame A, wheels B, and axles D, in combination with the boxes E, having the slides F, and the springs G, acting against
15 the ends of the axles, substantially as herein described.

2. The axle-box E, with the end caps, F, and elastic end springs, G, in combination with the vertical springs I, car-truck A, and body C,
20 substantially as herein described.

3. The axle-box E, with its end caps, F, and elastic springs G, in combination with the links *a* and the retaining-lugs *b*, substantially as and for the purpose herein described.

4. In combination with the car-truck A, hav- 25
ing the wheels B and the axles D, turning in boxes E, the brake-shoes M, swinging in the standards O, which are supported from the frame A, as shown, the bars P, the T-shaped lever R S, and the link or rod U, substantially 30
as herein described.

5. The car-truck A, mounted upon the wheels B, with their axles turning in the boxes E, as shown, in combination with the brakes M, standards O, brake-bars P, lever R, arms S and 35
U, and the springs W, substantially as herein described.

6. The car-truck A, with the wheels B and the axles D, turning in boxes E, and the springs I, in combination with the springs J, attached 40
to the truck-frame, and the rods L, which unite these springs with the car-body diagonally, substantially as herein described.

In witness whereof I hereunto set my hand.

SAMUEL HOWE.

Witnesses:

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J. H. BLOOD.