(No Model.)

# J. STEPHENSON.

## COMBINED WHEEL AND RAIL BRAKE MECHANISM.

No. 450,849. Patented Apr. 21, 1891.

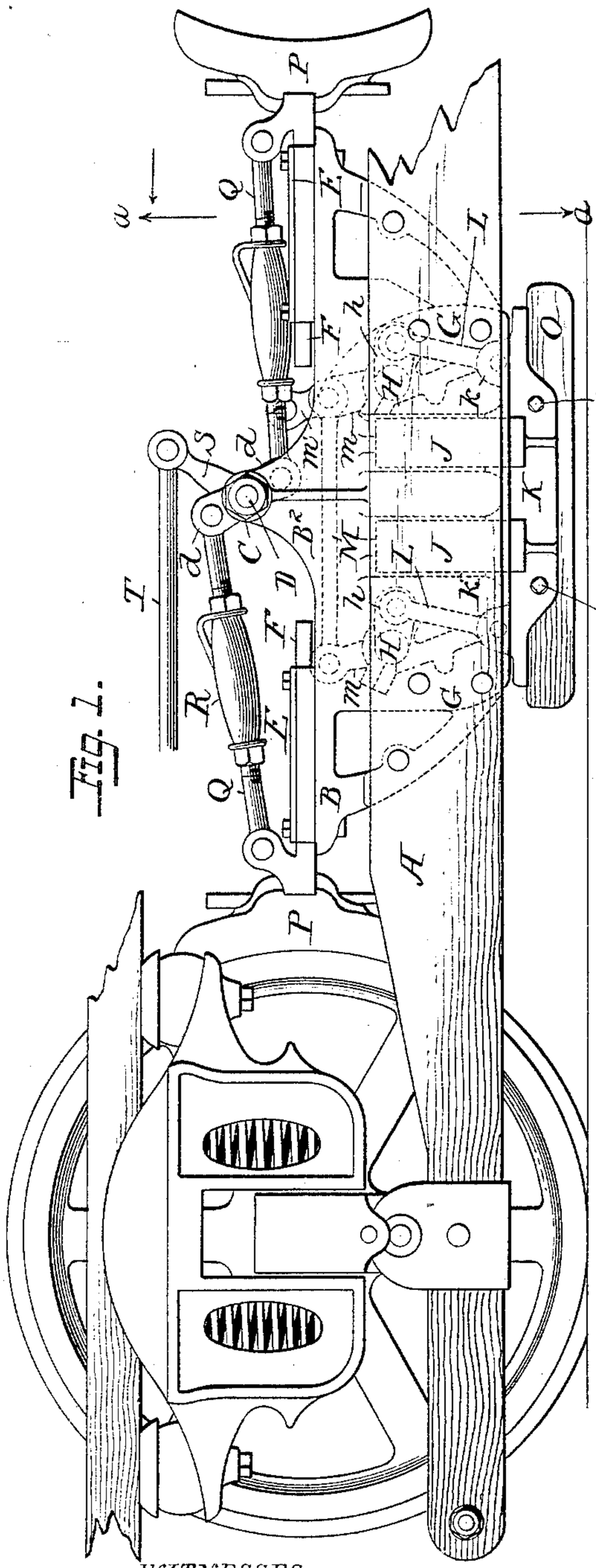

Fig. 1.

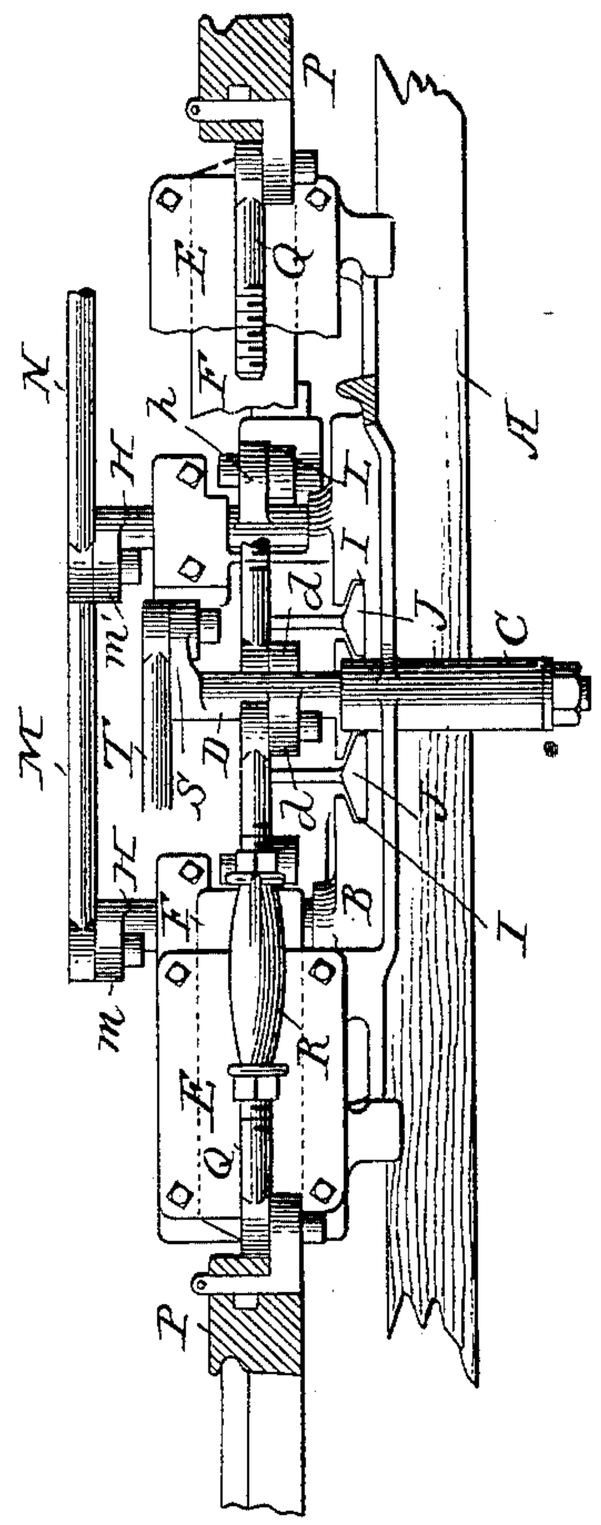

Fig. 2.

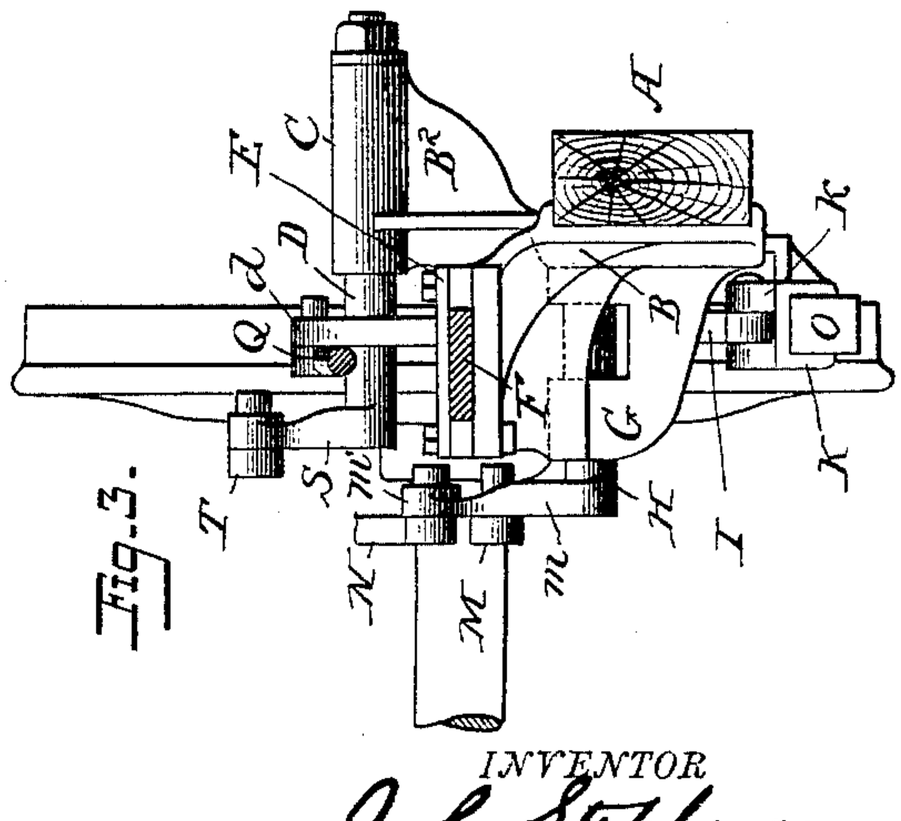

Fig. 3.

WITNESSES

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

JOHN STEPHENSON, OF NEW YORK, N. Y.

## COMBINED WHEEL AND RAIL BRAKE MECHANISM.

SPECIFICATION forming part of Letters Patent No. 450,849, dated April 21, 1891.

Application filed January 6, 1891. Serial No. 376,873. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN STEPHENSON, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in a Combined Wheel and Rail Brake Mechanism, of which the following is a specification.

All tram-cars have brakes applied to the wheels for ordinary service, and cars on unusually steep grades require also rail (or track) brakes, for which space cannot always be had. This recently brought into use a girder attached to the axle-boxes, and hitherto used only for carrying the rail (or track) brake; but necessities arise for combination of both brakes in one housing to be carried without assistance by a lone girder borne by the axle-boxes. Such is the purpose of this invention, and I will now describe the construction illustrated in the drawings, showing the manner in which I preferably embody the invention.

In the drawings, Figure 1 is a side view of so much of a running-gear of a tram-car as is necessary to illustrate my invention. Fig. 2 is a plan view of a portion thereof, and Fig. 3 is a vertical transverse section of Fig. 1 on the line *a a*.

The girder A is shown supported from the axle-boxes and supports a housing B, having a vertical base-piece B′, shown secured to the inner side of the girder A. At the apex $B^2$ of the housing are formed journal-bearings C, suitable for the wheel-brake rock-shaft D, and below these bearings the bed-plate of the housing has a conduit E for two sections of the wheel-brake sliding bar F, and below this conduit (toward each end of the bed-plate) are two brackets G, holding the bearings for two rail-brake rock-shafts H, and adjoining these rock-shafts the vertical bed-plate has two channels I, suited to receive two vertical guides J of the rail-brake shoe K, which shoe has on its upper surface two pairs of lugs *k*, prepared for two vertical coupling-bars L, uniting the two ends of the track-shoe with arms *h* of the two rail-brake rock-shafts H, which shafts are united by a coupling-bar M, connected to the arms *m* on the rock-shafts H, and one of these arms is elongated, as at *m′*, and prepared to receive the connecting-rod N, conducting the actuating-power.

The track-shoe K is provided with a wood block or sole O, fitting the shoe and extending below the edge of the shoe as much as the vertical motion of the shoe will permit, and the shoe is held in place by two transverse bolts *o* passing through both the walls of the shoe.

The wheel-brake shoes are mounted on the ends of the sliding bars F, and these bars are connected by plunger-bars Q, having turnbuckles R, to the arms *d* on the rock-shaft D, and an arm S, also connected to the rock-shaft, carries an energy-rod T, by which the operator transmits power to the brake mechanism.

What I claim is—

1. A car-brake housing adapted to be solely carried by a lone girder attached to the axle-boxes at one side of the car, the said housing supporting a moiety of both the car-wheel and the rail-brake mechanisms, substantially as described.

2. A car-brake-housing bed-plate with rock-shaft bearings at its apex prepared for a wheel-brake rock-shaft, and below the rock-shaft a conduit prepared for two sections of the wheel-brake-shoe sliding bar, and beneath the conduit two brackets or other provisions for journal-bearings for two rail-brake rock-shafts, substantially as described.

3. A car-brake-housing bed-plate having beneath the wheel-brake-shoe sliding-bar conduit one or more vertical channels adapted to one or more rail-brake shoe-guides, substantially as described.

4. A car-brake housing with bed-plate having one or more vertical channels in which are one or more guides of the rail-brake shoe, which shoe has two pairs of lugs holding the lower ends of two vertical coupling-bars with their upper ends in union with arms of two coupled rock-shafts housed below the wheel-brake-shoe slide-bar conduit, substantially as described.

5. A car-brake housing combining within itself a moiety of the mechanism of a car-wheel brake, having in its composition a rock-shaft with its bearings and connections, and

the wheel-brake-shoe sliding bars lodged in channels, beneath which are other rock-shaft or shafts connected with the track-brake shoe, the housing alone holding these mechanisms and qualified to maintain them when it is secured to a single girder borne by the axle-boxes at one side of the car, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN STEPHENSON.

Witnesses:
S. A. STEPHENSON,
WM. J. WALKER.