(No Model.) 2 Sheets—Sheet 1.

F. MEYER.

CAR BRAKE.

No. 456,674. Patented July 28, 1891.

Fig 1.

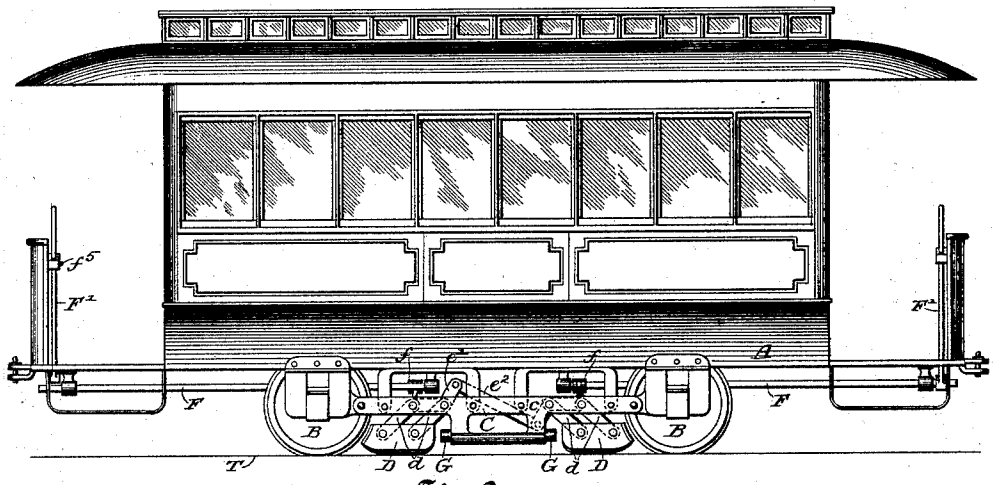


Fig 2.

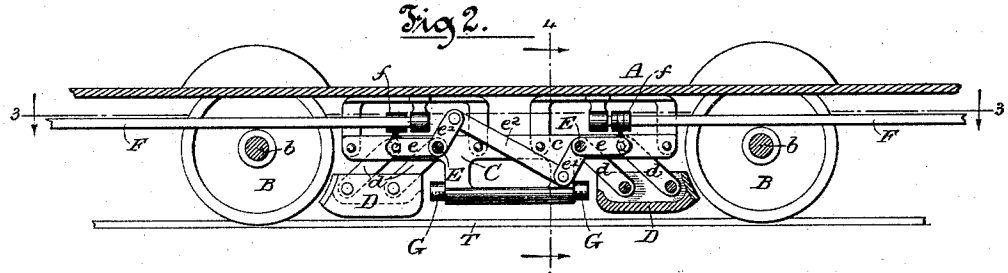


Fig 3.

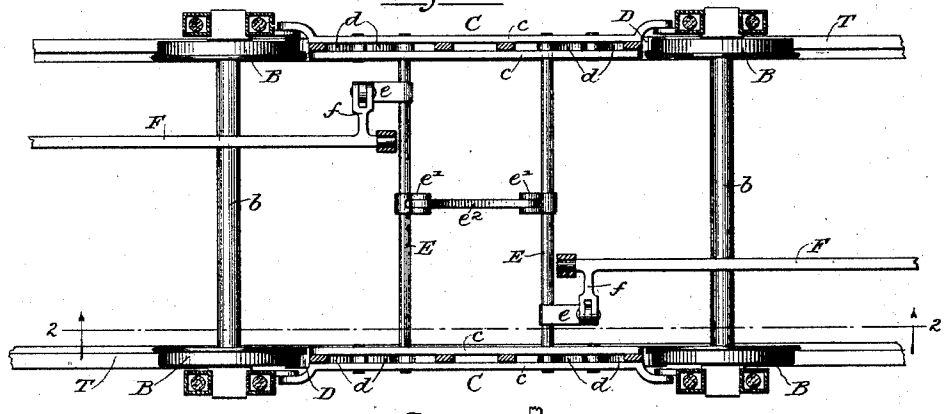
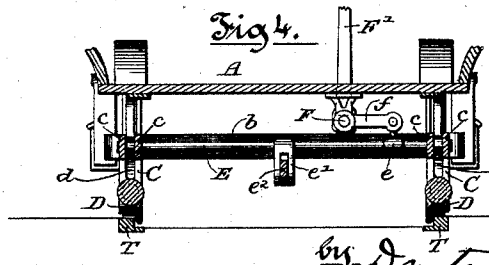


Fig 4.



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(No Model.) 2 Sheets—Sheet 2.

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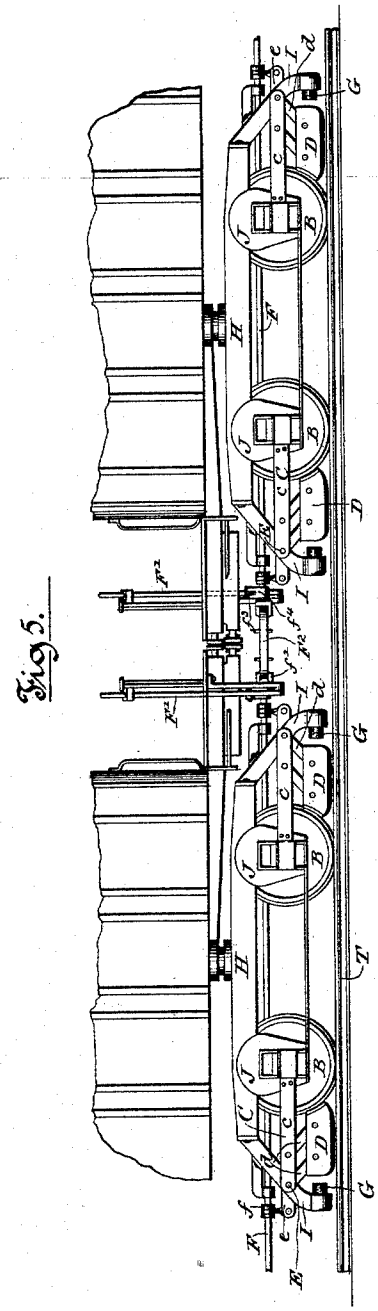


Fig. 5.

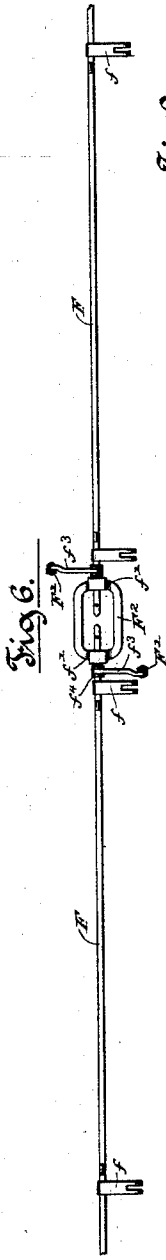


Fig. 6.

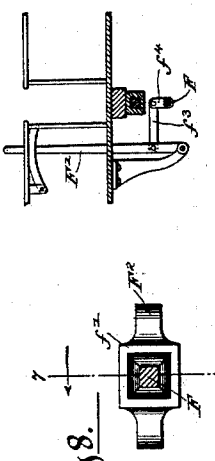


Fig. 9.

Fig. 8.

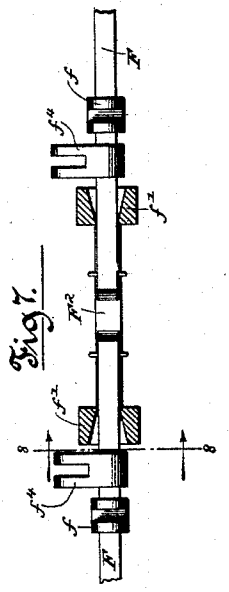


Fig. 7.

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UNITED STATES PATENT OFFICE.

FREDERICK MEYER, OF CHICAGO, ILLINOIS.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 456,674, dated July 28, 1891.

Application filed April 14, 1890. Serial No. 347,828. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK MEYER, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Brakes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention has for its object to provide a construction in brakes for cars adapted to act either upon the wheels or upon the track-rails so that the braking of a car or train may be effected by engagement of the brakes with the wheels or with the tracks, as occasion may require.

In the accompanying drawings, illustrating my invention, Figure 1 is a side elevation of a street-car having my improved brake mechanism applied thereto. Fig. 2 is a central vertical longitudinal section of the street-car bed and of the brake mechanism on the line 2 2 of Fig. 3. Fig. 3 is a top view of the brake mechanism as obtained by horizontal section in the plane of line 3 3 of Fig. 2. Fig. 4 is a transverse vertical section in the line 4 4 of Fig. 2. Fig. 5 is a side elevation of two trucks of adjacent cars showing the invention as applied to railway-trains. Figs. 6, 7, 8, and 9 are details.

First describing the construction illustrated in Figs. 1 to 4, inclusive, A represents the bed or body of a street-car, and B B its wheels mounted on opposite ends of parallel axles *b b* in the usual way.

C is a suitable frame suspended from the car body or bottom A, or otherwise secured to the car, and consisting, as here illustrated, of two parallel iron plates or beams *c c* arranged between the front and rear wheels on each side of the car.

D D are brake-shoes adapted in form to bear at their ends against the adjacent wheels B B and at their bottoms upon the track-rails T. These shoes D are movably sustained from the frames C by suitable devices permitting them to be severally brought into contact either with the adjacent wheels of the car or with the track. As here illustrated, such sustaining devices consist of parallel links *d d*, one pair for each shoe, which are pivoted at their upper ends to the frame C and at their lower ends to the shoe, and have an inclination downwardly and toward the adjacent car-wheel, as clearly illustrated in Figs. 1 and 2. These links are of such length that by swinging them toward the perpendicular they will cause the shoes D to bear upon the subjacent track-rail T and take the weight or a portion of the weight of the car. On the other hand, by swinging them toward a horizontal position the brake-shoes are brought into contact with the wheels B.

As a desirable means for swinging the links *d d*, the innermost one of each pair connected with a shoe is rigidly secured to a transverse rock-shaft E, having an arm *e*, to which power may be applied by any suitable device—as, for example, a lengthwise rod F, having an arm *f* linked or pivoted to the arm *e* and provided for its rotation with a lever F′, located within convenient reach of the driver.

In order to operate two shafts E applied to one car and to thereby actuate all four of the brake-shoes on the car through either rod F, said shafts E are further provided with oppositely-directed arms *e′* connected by a link e^2. In this case the hand-levers F′ may desirably be detachably connected with the rods F, in order that the lever at one end of the car may not interfere with the operation of the lever at the other end. Such detachable connection may consist in making the rods F square and giving the lower ends of the levers F′ the form of an open wrench the open slot of which fits the square of the rod. This permits the lever F′ to be lifted clear of the rod, in which lifted position it may be upheld by any suitable means—as, for example, by a pin thrust through it, as indicated at f^5 in Fig. 1.

G G are stops arranged to limit the backward movement of the brake-shoes D when brought to bear upon the rail-track T. Said stops are arranged to arrest the shoes D before the links *d d* shall reach a vertical position; but they are desirably so placed as to allow the shoes D to take the whole or some considerable portion of the weight of the car before stopping the shoes in order that in an emergency the car may be arrested quickly by throwing its weight upon the shoes.

In Fig. 5 illlustrating the invention applied

to railway-trains, the frame-structure C is of different form and the brake-shoes D are placed outside the wheels of each truck instead of between them. H represents the longitudinal beams of a truck, and I I inclined iron bars secured to the ends of the truck-beams H and bearing the stops G G at their lower ends. The frame-bars *c c* are in this case shown attached to the journal-box guides J and to the inclined stop-bars I. The rods F are in this case shown continuous from one end of the car to the other, and as a special improvement intended for use in connection with trains of connected cars the rod F of one car is coupled with a similar rod of an adjacent car by means of a coupling-link F^2, the cross-bars *f'* of which are provided with square, flaring holes, (illustrated in Figs. 7 and 8,) adapted to receive the squared ends of the rods F, so as to communicate rotary motion from one to the other while allowing a lateral swinging movement of the rods within the coupling when the train is flexed.

A hand brake-lever F' is shown in Fig. 9, connected with each end of the rod F of each car through the medium of a link f^3, connected with the rod by means of an arm f^4 thereon.

Any other suitable form of coupling device may be employed in place of that illustrated, and manifestly other forms of frame for supporting the shoes may be used in connection either with steam railway-cars or horse-cars. Modifications may also be made in other particulars without departure from my invention.

I claim as my invention—

1. The combination, with a car, its wheels and track-rails, of brake-shoes movably supported by inclined links in position to bear either upon the track-rail or the wheels by a swinging movement of the links, substantially as described.

2. In combination with the car, its wheel and the track-rail, a brake-shoe movably supported and adapted to be brought into contact either with the wheel or the track-rail, and a stop arranged to arrest the relative back motion of the shoe when bearing upon the rail.

3. The combination, with a car and its wheels, of parallel rock-shafts E E, having oppositely-arranged arms *e'*, connected by a link e^2, oppositely-inclined links *d d*, rigidly secured at their upper ends to the shafts E, shoes D D, connected to the lower ends of said links and adapted to bear either upon the wheels or upon the track-rails, substantially as described.

4. In combination with the transverse rock-shaft E, carrying the movable shoe D, a longitudinal rock-shaft F, connected with the shaft E, said shaft F being provided with an arm *f*, connected with an arm *e* on the rock-shaft E.

5. In a car-brake mechanism, the combination, with the longitudinal oscillating and squared power-rods F, of adjacent cars, a coupling F^2, having squared and flaring holes for the reception of the squared ends of the rods F, substantially as and for the purpose set forth.

6. The combination, with the squared longitudinally-arranged rods F, having a rocking movement for the application of power to the brakes from either end of the car, of the operative levers F', located one at each end of the car and each provided with an open slotted end by which it may be engaged with or detached from the corresponding rod, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

FREDERICK MEYER.

Witnesses
M. E. DAYTON,
C. CLARENCE POOLE.