

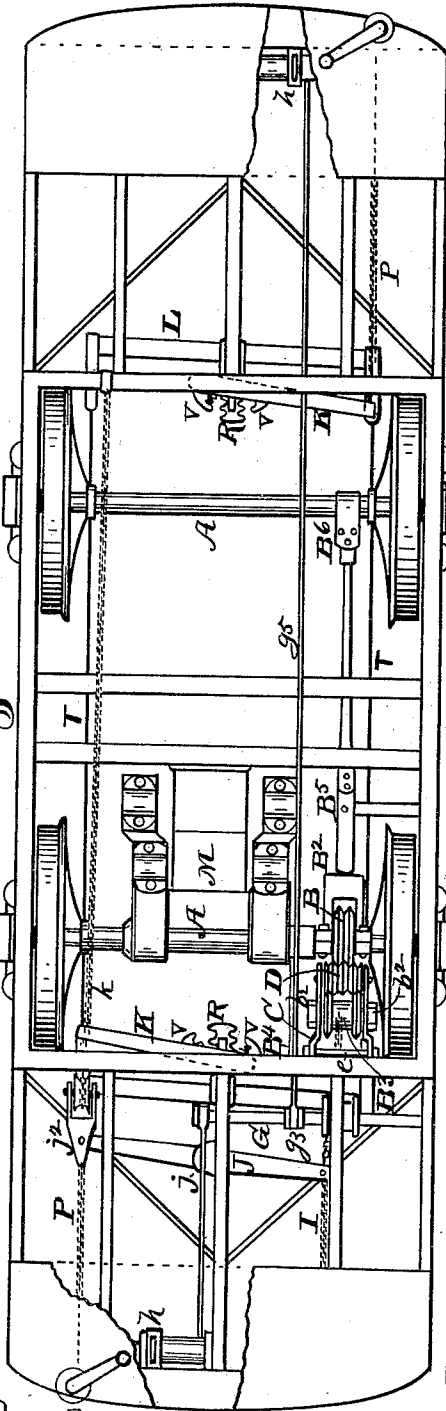
(No Model.)

R. R. GAIRING.
CAR BRAKE.

No. 463,187.

Patented Nov. 17, 1891.

Fig. 1.



Witness,

M. M. Barnes.

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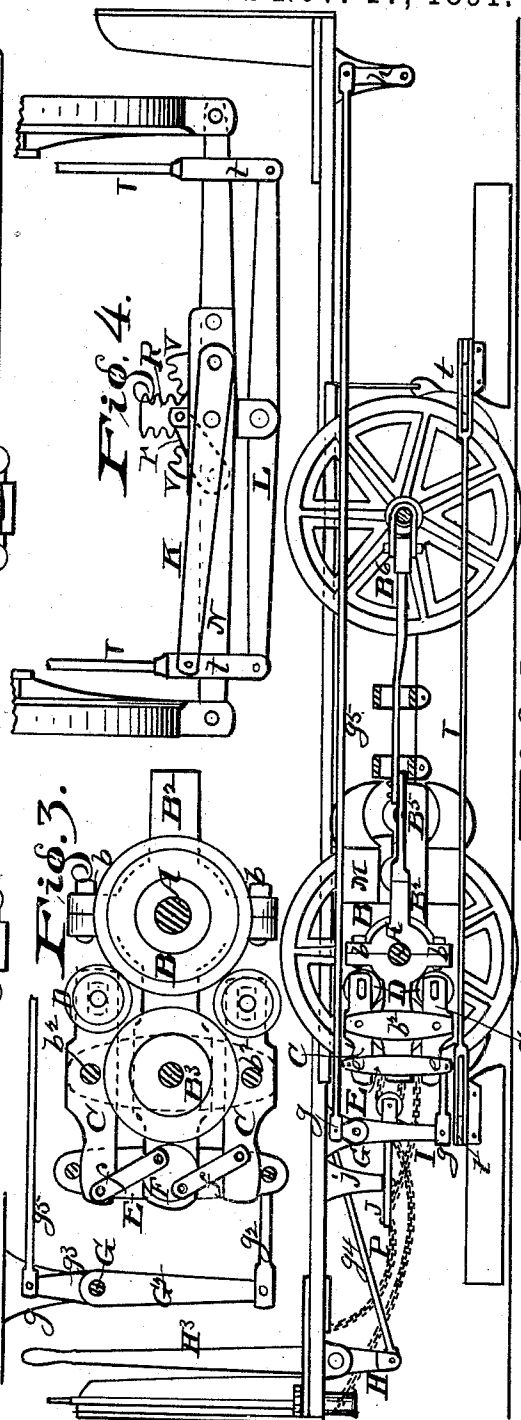


Fig. 4.

Fig. 3.

Fig. 2.

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UNITED STATES PATENT OFFICE.

ROBERT R. GAIRING, OF CLEVELAND, OHIO.

CAR-BRAKE.

SPECIFICATION forming part of Letters Patent No. 463,187, dated November 17, 1891.

Application filed April 27, 1891. Serial No. 390,723. (No model.)

To all whom it may concern:

Be it known that I, ROBERT R. GAIRING, a citizen of the United States, and a resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Car-Brakes, of which the following is a specification.

This invention relates to brakes for street-cars; and it consists in the novel constructions and combinations, as hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a top or plan view of a car-frame having my improved brake mechanism attached. Fig. 2 is a longitudinal section of the same. Fig. 3 is an enlarged vertical section of my power-applying mechanism employed for setting the brakes. Fig. 4 is a plan view of the brake beam and levers.

A A represent the axles, which are suitably connected with the car-truck frame in the usual manner.

M represents part of a motor applied to one of the axles.

B is a grooved friction-wheel firmly fixed on the axle to rotate therewith.

B² is a divided yoke mounted on the sleeve-hub of said grooved wheel, in which the wheel revolves. Said yoke is secured together by bolts *b b* through the ears above and below the axle. Between the arms of the yoke forward of said grooved wheel B is loosely journaled a drum B³, having deep beveled flanges. To the outsides of said arms of the yoke are firmly attached cross-arms *b²*, extending above and below the said drum, to which levers C C are fulcrumed. In the ends of said levers toward the wheel B are journaled grooved rollers D, arranged to have forcible contact with both the said wheel B and flanges of the drum B³. To the extreme forward end of said yoke-arms are pivoted two levers E at their middle part and joined at their ends by cross-rods *e e*. F are disks attached to the pivots of said levers E, to which links *f f* are pivoted and connected with the ends of the said levers C C, forming knuckle-joints by which the ends of said levers may be spread for forcibly pressing the rollers D D against the wheel B and drum B³, thus providing a friction-gearing for use in applying the brakes.

G is a rock-shaft journaled in hangers *g g*

under the platform frame-work, to which is attached a depending lever G², the lower and moving end of which is connected by a rod *g²* 55 with the lower cross-rod *e* of the levers E. To the said rock-shaft are also attached two upright levers *g³ g³*, one of which is connected by a rod *g⁴* with hand-lever H at the forward edge of the car-platform and the other by rod 60 *g⁵* with the hand-lever H² at the other end of the car, whereby the said rock-shaft may be operated from either end of the car.

The yoke B² may be supported by means of an arm B⁴, attached to the axle or side of the motor-bearing and extending forward and 65 bolted to the end of the yoke-arms or by other suitable means, and the rear end of the yoke be connected by a bar B⁵, extending to the rear and attached to a loop B⁶ on the rear axle. 70

To the drum is attached a chain I, reaching forward to a lever J, fulcrumed to a suitable hanger *j*. To the opposite end of said lever is attached a sheave-block *j²*, over which a chain *k* runs, attached to the end of lever K, 75 pivoted onto the brake-beam N, the other end of the chain *k* passing to the rear, where it may be fastened or extend to brake mechanism on a trail-car.

L L are equalizing-levers fulcrumed to rack-bars R R, arranged on the middle part of the brake-beams N. The ends of said equalizing-levers are connected by connecting-rods T T, having loops *t t* on their ends embracing the said brake-beams, whereby the said beams are 85 simultaneously and equally operated upon.

The rack-bars R are fixed in boxes Y on the top side of the brake-beams, and in said boxes are provided segmental gears V V, one of which is fixed onto the pivot-pin of the lever 90 K, meshing with one side of the rack-bar, and the other segment-gear is fixed on the pivot-pin of a short companion lever W, set in the box on the opposite side of the rack-bar and connected by a link *v*, connecting it with lever K, whereby both segments play in unison 95 for moving the rack-bars in the work of setting the brakes.

P P are chains connecting the hand-crank devices on the platforms with the brake-levers, by which the brakes may be operated by hand-power, when desired. 100

The hand-lever H³ is removably set in a socket *h* of the levers H H² for the purpose of

having such lever in use only on the end of the car on which the operator may be standing, as my mechanism can be operated from either end of the car, as will be observed.

5 From the foregoing it will be seen that the operation of this mechanism is as follows: The operator, pulling backward on the lever H^2 , turns the rock-shaft G , by which the levers CC are moved, through the medium of the lever G^2 , levers E , disks F , and links ff , thereby
10 causing the rollers $D D$ to press against the wheel B and drum B^3 , and thus by the frictional contact the drum is made to rotate and wind the chain I upon itself and pull upon
15 the lever J . Thence through the chain k and sheave j^2 the brake-lever K is operated and the brakes are set.

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

1. The combination, with axle A of a motor-car, of grooved friction-wheel B , yoke B^2 , drum B^3 , levers CC , grooved rollers $D D$, pivoted levers EE , disks FF , links ff , and means
25 for operating the same from either end of a car, substantially as specified.

2. The combination, in a brake-power-ap-

plying mechanism, of a grooved wheel A , fixed on the car-axle, yoke B^2 , drum B^3 , mounted in said yoke, levers CC , pivotally mounted
30 on said yoke, levers EE , also mounted on said yoke and having the disks FF , connected by links ff with the said levers CC , chain I , connecting drum B^3 with lever J , the rock-shaft G , having pendent lever G^2 , con-
35 nected by rod g^2 with the levers EE , and connecting-rods g^4 and g^5 , connecting said rock-shaft G with hand-levers $H H^2$, substantially as described.

3. The combination, in a brake mechanism, 40 of the equalizing-levers $L L$, pivotally attached to movable rack-bars R on the brake-beams NN , rods TT , connecting the ends of said levers LL , the brake-levers KK , pivoted to the brake-beams, and segment-gears $V V$, 45 one fixed to pivot-pin of lever K and one on short lever W , connected by link with the brake-lever K , constructed to operate substantially as and for the purpose specified.

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Witnesses:

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