

(No Model.)

3 Sheets—Sheet 1.

B. R. MOORE.  
STREET CAR MOTOR.

No. 419,534.

Patented Jan. 14, 1890.

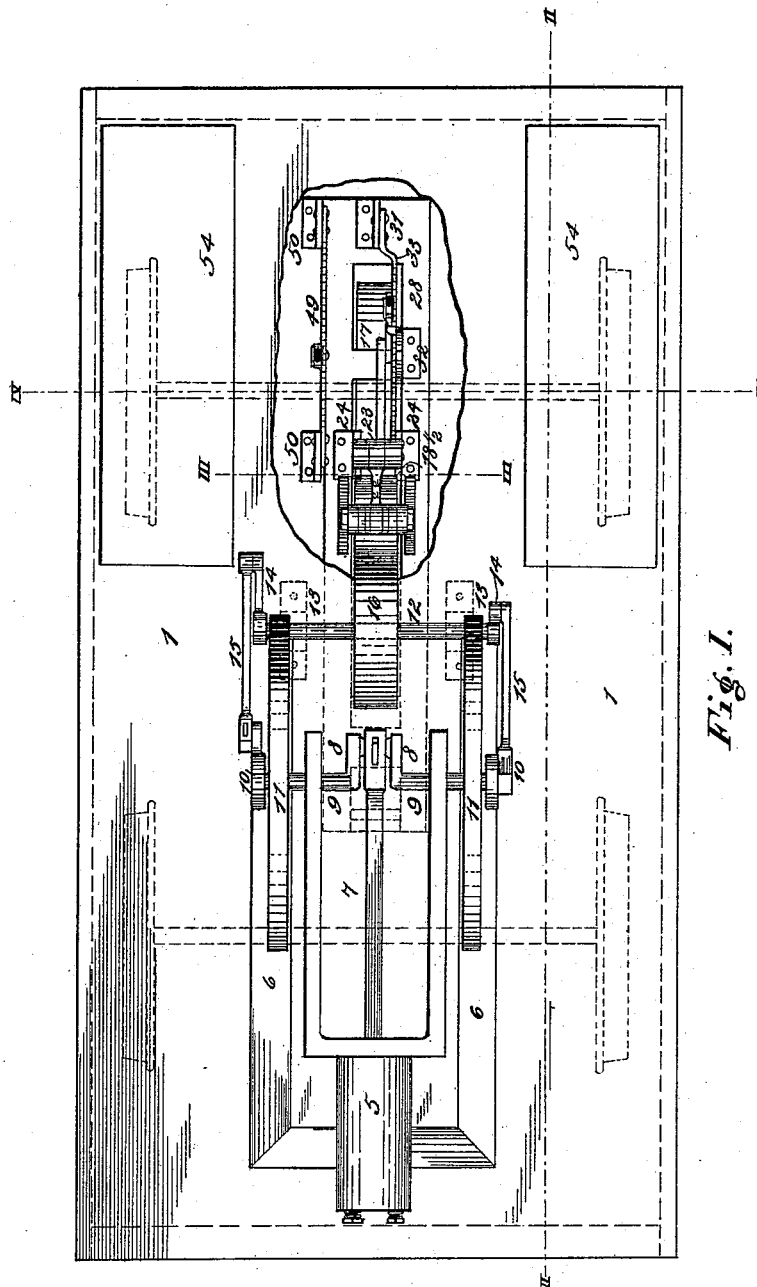


Fig. 1.

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J. H. Knight

*Inventor:*  
*Burchell R. Moore*  
*By* *Knicker Bros.*  
*attys*

(No Model.)

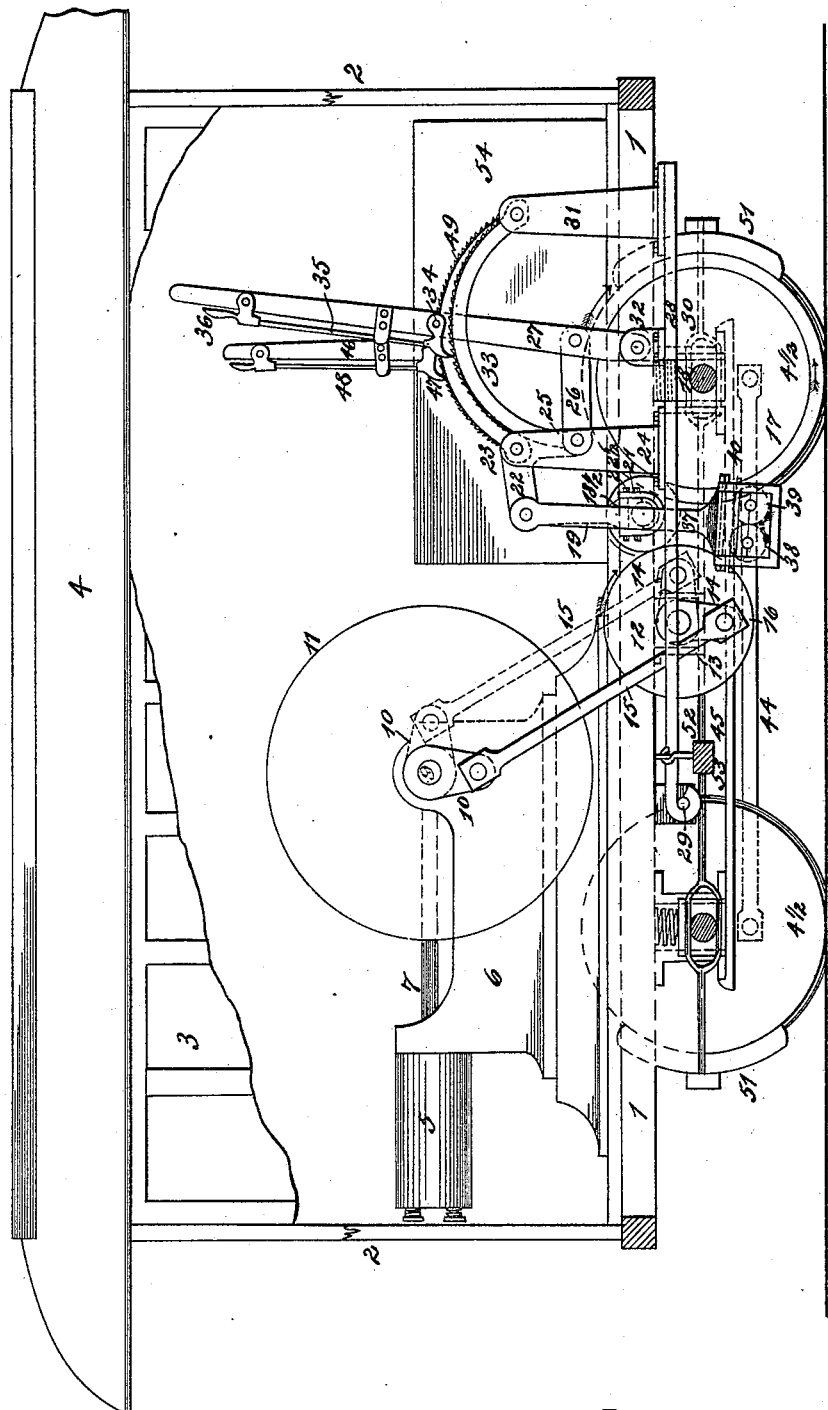
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Fig. II.



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Fig. IV.

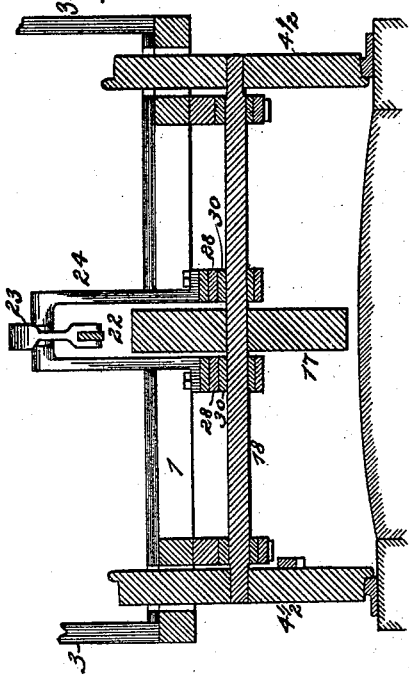


Fig. V.

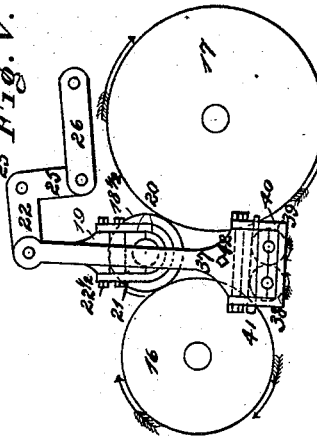


Fig. VI.

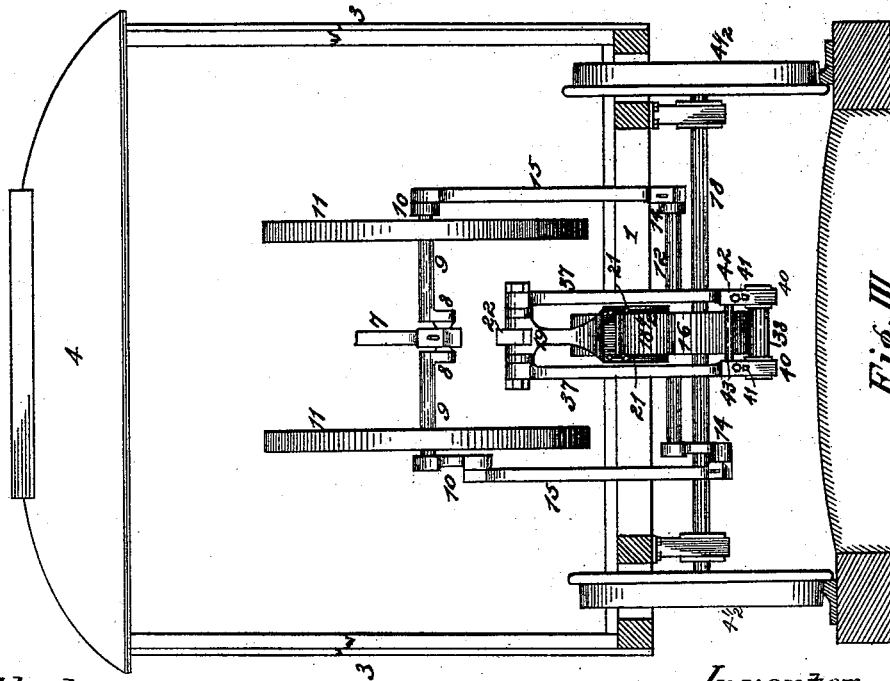


Fig. III.

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# UNITED STATES PATENT OFFICE.

BURCHELL R. MOORE, OF KANSAS CITY, KANSAS.

## STREET-CAR MOTOR.

SPECIFICATION forming part of Letters Patent No. 419,534, dated January 14, 1890.

Application filed April 25, 1889. Serial No. 308,541. (No model.)

*To all whom it may concern:*

Be it known that I, BURCHELL R. MOORE, of Kansas City, in the county of Wyandotte and State of Kansas, have invented certain new and useful Improvements in Street-Car Motors, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figure I is a top or plan view of my improved device. Fig. II is a side view showing a portion of the side of the car broken away and the bottom of the car, being a section taken on line II II, Fig. I, to more clearly show the parts. Fig. III is a transverse section taken on line III III, Fig. I. Fig. IV is a transverse section taken on line IV IV, Fig. I. Fig. V is an enlarged plan view of the supporting-plate. Fig. VI is an enlarged detail view of the friction-rollers.

My invention relates to improvements in street-car motors; and my invention consists in features of novelty hereinafter described, and pointed out in the claims.

The present invention is an improvement on the device patented to myself and Charles D. Montayne February 12, 1889.

Referring to the drawings, 1 represents the bottom frame or floor of a car, 2 the ends, 3 the sides, and 4 the top, of the car, and 4½ represents the wheels on which the car travels.

5 represents a cylinder of gas or other engine supported on a frame 6, said frame resting on the floor of the car.

7 represents the piston, which is journaled at its outer end to a crank 8 on the drive-shaft 9. The drive-shaft 9 is supported by the frame 6 and is provided at its outer ends with cranks 10.

11 represents balance-wheels located on the shaft 9.

12 represents an intermediate shaft located beneath the floor of the car, the same being supported by hangers 13.

14 represents cranks located at the ends of the shaft 12.

15 represents drive-rods which connect the cranks 14 on the shaft 12 with the cranks 10 on the drive-shaft 9, by which means motion is given from the drive-shaft to the intermediate shaft 12.

16 represents a roller secured rigidly to the shaft 12.

17 represents a roller secured rigidly to one of the main axles 18 of the car. As a connecting medium between the roller 16 and the roller 17 when it is desired to drive the car in a forward direction, I provide a friction-roller 18½, said roller being journaled to the lower end of a swinging bar 19, the brasses 20 of this journal being supported by a clevis 21 and bolts 22½. The upper end of the bar 19 is pivoted to an arm 22 of a crank 23. The crank 23 is fulcrumed to the upper end of a standard 24, said crank having an arm 25, to which is pivoted one end of a link 26, the other end of the link being pivoted to a lever 27.

28 represents a plate, (see Figs. II and V,) which is hooked at one of its ends over a rod 29, secured beneath the floor of the car. As an additional support the plate rests on a boxing 30 on one of the axles 18. The standard 24 and a standard 31 are secured to the plate 28.

32 represents a bracket attached to the plate 28, to which the lower end of the lever 27 is pivoted.

33 represents a rack secured to the standards 24 31.

34 represents a pawl pivoted to the lever 27, said pawl being connected to the usual rod 35 and handle 36 for operating the same.

37 represents a swinging bar composed of two sections, which are pivoted at their upper ends to the arm 22 of the crank 23. These bars extend down below the friction-roller 18½ and pass to each side of the same. At the lower end of the bars 37 are located friction-rollers 38 39, the brasses of this journal being supported by a clevis 40, and are held to their proper position by wedges 41.

42 represents a bolt by which the lower ends of the bars are connected, and 43 represents a sleeve on said bolt, which keeps the bars at the proper position from each other.

44 represents connecting-rods between the rear and front wheels.

45 represents braces extending from the rear to the front axles.

46 represents the brake-lever, which has the usual pawl 47 and rod 48 attached thereto.

49 represents the rack on which the brake-lever works, the rack being supported by suitable standards 50.

51 represents the brake-shoes, to which are connected the usual rod 52 and lever 53.

54 represents tanks, which may be used for holding gas and water.

The operation is as follows: As the roller 16 revolves in the direction shown by arrows in Figs. II and VI, it will be seen that when (by the use of the lever 27) the friction-roller 18½ is pressed into contact with said roller it will cause the friction-roller to revolve in the direction shown by the arrows, and as the friction-roller also comes in contact with the roller 17 on the axle of the car it will cause the roller 17 to turn in the direction shown by the arrows at the top of said wheel, and thus drive the car in a forward direction. When it is desired to travel in the opposite direction or reverse the motion of the car, all that is necessary to do is to so manipulate the lever that the friction-roller 18½ will be raised out of contact with the roller 16 17 and the friction-rollers 38 39 raised into contact with said rollers. It will be seen that the roller 16 would cause the friction-rollers 38 39 to turn in the direction shown by the arrows, which would cause the roller 17 to turn in the direction shown by arrows on the lower side of the same, which would cause the car to travel in the opposite or backward direction. There is sufficient space between the friction-roller 18½ and the friction-rollers 38 39 so that by the proper working of the lever they may at the same time be all held out of contact with the rollers 16 17 when it is desired to stop the car.

I claim as my invention—

1. In a street-car motor, the combination of the roller 16 and suitable means for turning the same, a roller 17, secured to one of the main axles of the car, a friction-roller 18½ as a connecting medium between the rollers

16 17, and crank 23 and lever 27 for holding said friction-roller in or out of contact with said rollers 16 17, substantially as described, and for the purpose set forth.

2. In a street-car motor, the combination of the rollers 16 17, means for rotating the roller 16, friction-rollers 38 39, means for holding said friction-rollers in contact with each other, and a crank 23 and lever 27 for holding said rollers in or out of contact with the rollers 16 17, substantially as described, and for the purpose set forth.

3. In a street-car motor, the combination of the friction-roller 18½, secured to a swinging bar as a connecting medium between two rollers for the purpose of driving a car in a certain direction, and friction-rollers 38 39, attached to a swinging bar as a connecting medium between two rollers for the purpose of driving the car in the opposite direction, substantially as described, and for the purpose set forth.

4. In a street-car motor, the combination of the drive-shaft 9, intermediate shaft 12, means for rotating the shafts, roller 16, secured to the shaft 12, a roller 17, secured to one of the axles 18, friction-roller 18½, journaled to a swinging bar 19, friction-rollers 38 39, journaled to a swinging bar 37, said bars 19 and 37 being pivoted to a crank 23, and means for connecting said crank with an operating-lever, substantially as described, and for the purpose set forth.

5. In a street-car motor, the combination of the plate 28, being supported by a rod 29 and one of the axles 18, and suitable standards secured to said plate for the purpose of supporting the friction-rollers, and lever for operating the same, substantially as described, and for the purpose set forth.

BURCHELL R. MOORE.

In presence of—

JAS. E. KNIGHT,  
J. E. TURNER.