

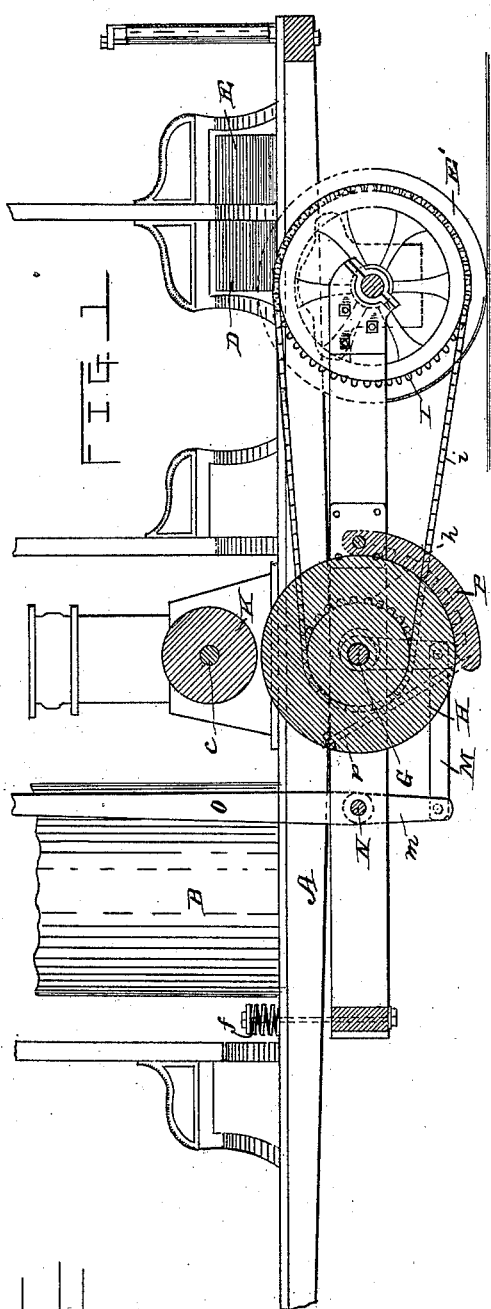
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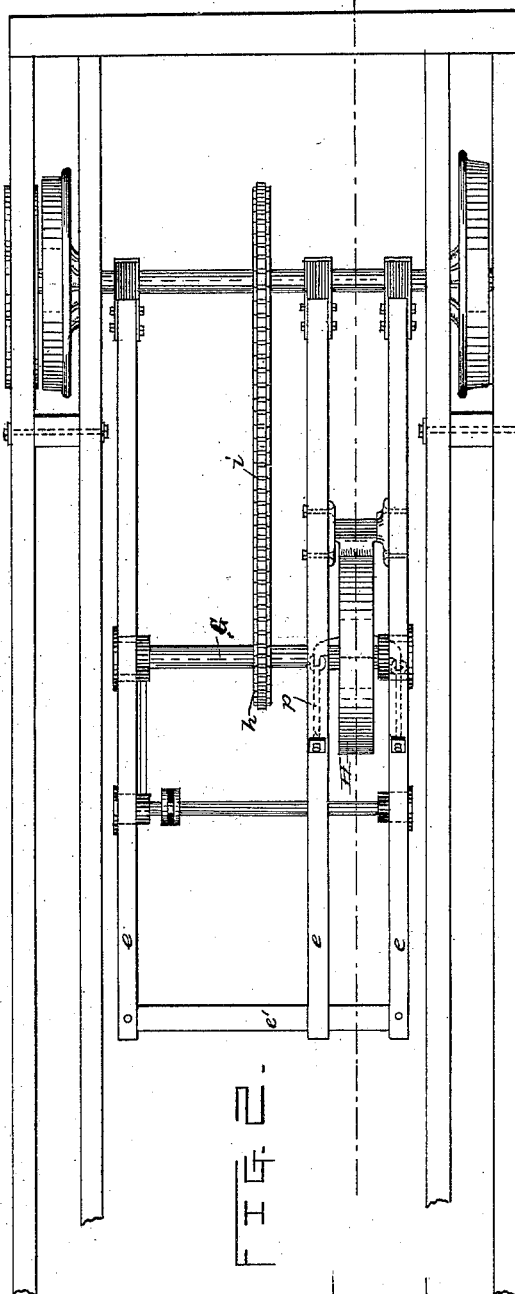
C. L. SNYDER.
STEAM STREET CAR GEARING.

No. 423,397.

Patented Mar. 11, 1890.



B. B. Seward.
C. L. Sturtevant,



Chas. L. Snyder
By E. C. Seward
his Attorney.

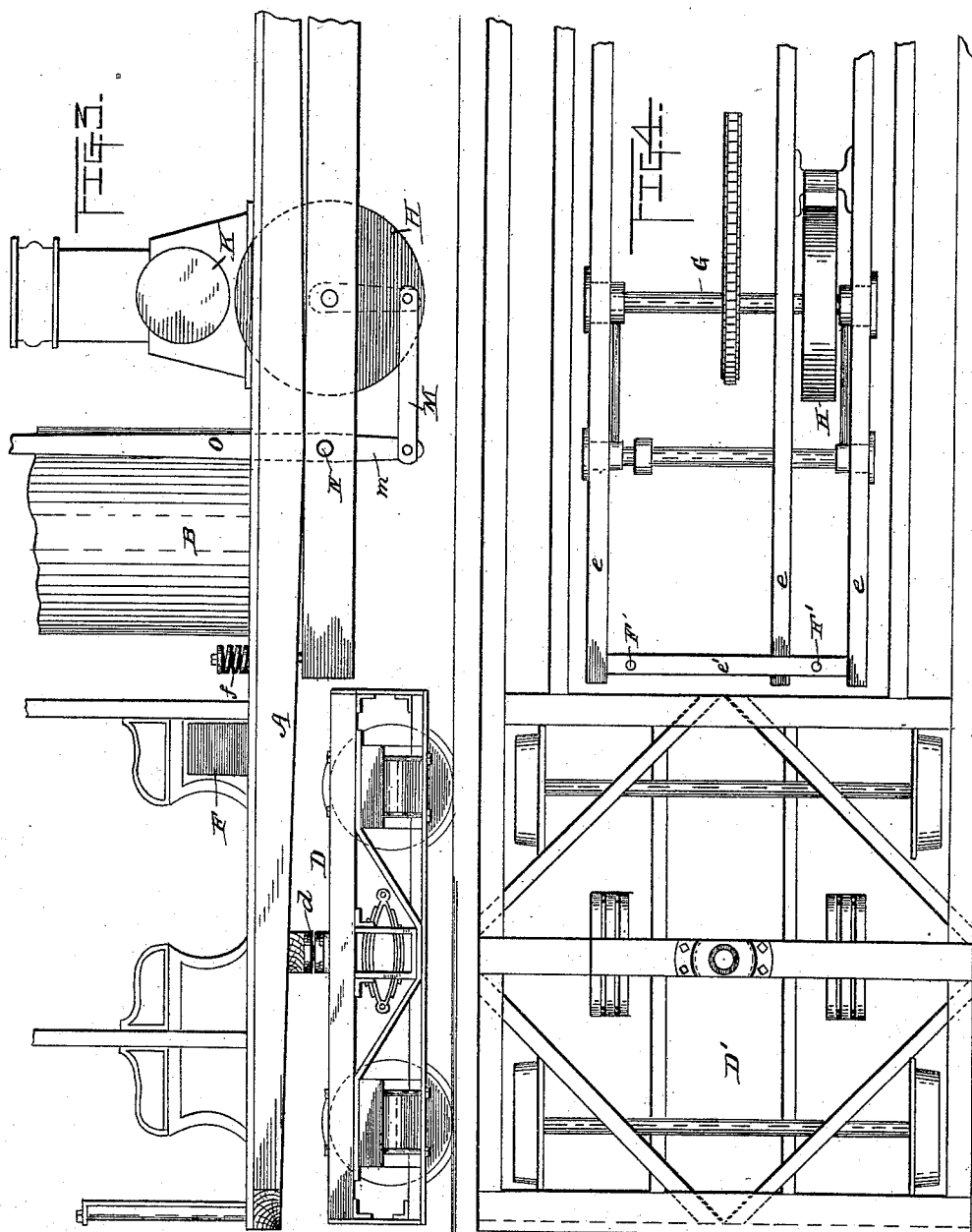
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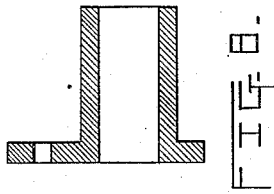


FIG. 8.

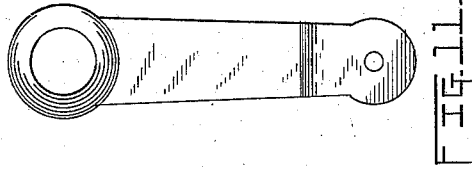


FIG. 11.

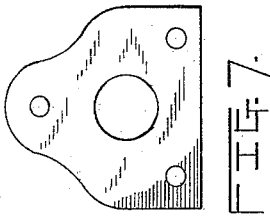


FIG. 7.

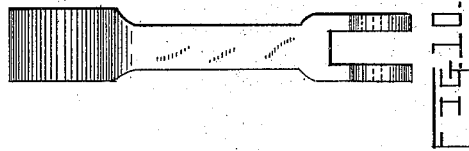


FIG. 10.

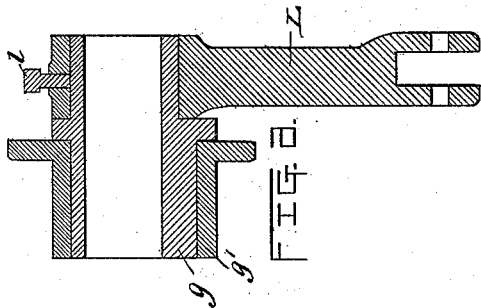


FIG. 6.

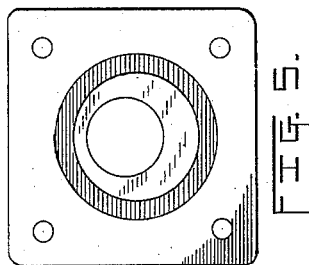


FIG. 5.

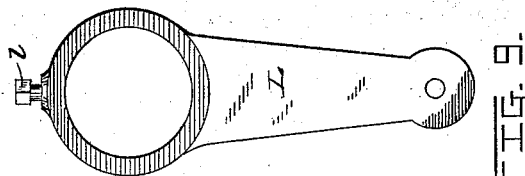


FIG. 9.

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UNITED STATES PATENT OFFICE.

CHARLES L. SNYDER, OF KANSAS CITY, MISSOURI, ASSIGNOR OF ONE-HALF TO ISAAC M. RIDGE, OF SAME PLACE.

STEAM STREET-CAR GEARING.

SPECIFICATION forming part of Letters Patent No. 423,397, dated March 11, 1890.

Application filed April 20, 1889. Serial No. 308,019. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. SNYDER, of Kansas City, in the county of Jackson and State of Missouri, have invented certain new and useful Improvements in Propelling Street-Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in propelling street-cars.

The object is to provide compact, economical, and effective means for propelling one or a train of street-cars, which shall be capable of being promptly and easily controlled and which shall be free from smoke.

With these ends in view, my invention consists in certain features of construction and combinations of parts as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view of a portion of a car in side elevation, partly in section, showing the several parts of the propelling mechanism in position. Fig. 2 is a plan view of a portion of the car, the car-body, and parts supported thereon being removed. Fig. 3 is a side elevation of the forward portion of the car. Fig. 4 is a plan view of the same, the car-body being removed; and Figs. 5, 6, 7, 8, 9, 10, and 11 are enlarged detail views of parts.

A represents the bottom of the body of the car, upon which are supported the water-tanks D and E, and the liquid-fuel-supply tank F beneath the car-seats to economize room. The boiler B may be of any well-known and approved type suitable for the purpose, preferably constructed to use liquid fuel, and the engine will preferably be of that type shown and described in my pending application, filed April 20, 1889, entitled "Multiple-cylinder engine." The car-body is supported at its front end upon a truck, preferably a four-wheel truck D', to which it is pivoted, as shown at d, to enable the car to turn curves with freedom. At its rear end the car is supported upon the axle of the drive-wheels E' in any well-known and improved manner. An auxiliary supporting-frame consisting of the three longitudinal stringers e and the cross-beam e'

is mounted at its rear end upon the axle of the drivers E', and is secured at its front end to the body of the car in yielding adjustment by vertical bolts F', one at each corner, which rest upon spring-cushions f. The auxiliary supporting-frame carries the boiler B, the engine C, and the mechanism which transmits the motion of the engine-shaft to the drivers. A cross-shaft G is journaled in the stringers e below the engine-shaft c, and has secured thereon a friction-wheel H and a sprocket-wheel h. The latter is connected with a sprocket-wheel I, secured on the driver-shaft by a sprocket-chain i. The shaft G is journaled at its ends in eccentric sleeves g, which latter have a free rocking movement in boxes g', secured to the stringers. By this construction the shaft G, with the friction-wheel H fixed thereon, may be elevated and depressed bodily by the rocking of the eccentric sleeves in their bearings, thereby throwing the periphery of the friction-wheel H into and out of engagement with a friction-wheel K, preferably of paper, secured on the engine-shaft. The eccentric sleeves g are rocked by means of arms L, secured thereon at their ends, preferably by means of set-screws l, so that they may be secured in different rotary adjustments on the sleeves to take up wear on the friction-wheels. To the opposite ends of the arms L the ends of connecting bars or links M are loosely secured, the opposite ends of said bars or links being loosely secured to the free ends of arms m, fixed upon a second transverse shaft N, journaled in the stringers e. The shaft N is rocked by means of a hand-lever O, which projects upwardly through the car-floor within convenient reach of the operator, and by its throw forward and backward the wheel H is thrown into and out of frictional contact with the wheel K on the engine-shaft, and through the sprocket-connection between the shaft G and the driver-shaft the car is propelled or stopped.

In order to overcome the momentum of the car after the wheel H has been disengaged from the wheel K, and to control its movement on downgrades, a brake P is provided, which is supported at its upper end in the auxiliary frame and its lower end hung by a loop p from said frame. The brake P is

curved to conform to the wheel H, and is provided on its face with a series of renewable wood blocks to take the frictional wear and afford an effective grip. The brake is so located with respect to the wheel H and the wheel K that when the lever O is swung in one direction past an upright position the wheel H will engage the wheel K, and when swung in the opposite direction past upright the said wheel will engage the brake, while at an intermediate position the wheel H will be out of engagement with both the wheel K and the brake.

The engine is intended to run constantly while the car is on the road, the fuel and water being supplied to the boiler automatically in any well-known and approved manner; but of course it may be stopped by cutting off the steam therefrom whenever circumstances require it.

The propelling mechanism, as above described, may be compactly located within and underneath a car, consists of few parts, and may be controlled with the greatest facility.

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

1. In combination, a car-body, a constantly-running motor carried by the body, body-supporting wheels, a friction-wheel on the motor-shaft, a friction-wheel on a counter-shaft, a sprocket-connection between the counter-shaft and the supporting-wheel shaft, a brake for the friction-wheel on the counter-shaft, and means for swinging the friction-wheel on the counter-shaft into and out of engagement with the friction-wheel on the motor-shaft and the said brake, substantially as set forth.

2. In combination, a car, a constantly-running motor carried by the car, car-supporting wheels, a friction-wheel on the motor-shaft, a counter-shaft, a friction-wheel secured on the counter-shaft, eccentric rocking bearings for the ends of the counter-shaft, arms secured to the bearings in rotary adjustment thereon for rocking the eccentric bearings, and intermediate gear connecting the counter-shaft with the supporting-wheel shaft, substantially as set forth.

3. In combination, a motor provided with a friction-wheel, an auxiliary frame supported at one end upon the shaft of the car-supporting wheels and at its opposite end having a yielding connection with the car-body, a friction-wheel carried by said auxiliary frame, a connection between said last-named friction-wheel and the supporting-wheels, and means for rocking the last-named friction-wheel into and out of engagement with the friction-wheel on the motor, substantially as set forth.

4. In combination, the motor, the friction-wheel on the motor-shaft, a counter-shaft, a friction-wheel on the counter-shaft, eccentric bearings for the counter-shaft, arms adjustably secured to the bearings, a second counter-shaft, arms secured to the same, connections between the two sets of arms, and an operating-lever secured to the second counter-shaft, substantially as set forth.

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

CHARLES L. SNYDER.

Witnesses:

M. H. BROWN,
A. H. NIESS.