

Jan. 6, 1925.

A. F. MASURY ET AL

1,522,192

RAILWAY MOTOR CAR

Filed July 1, 1921

3 Sheets-Sheet 1

Fig. 1.

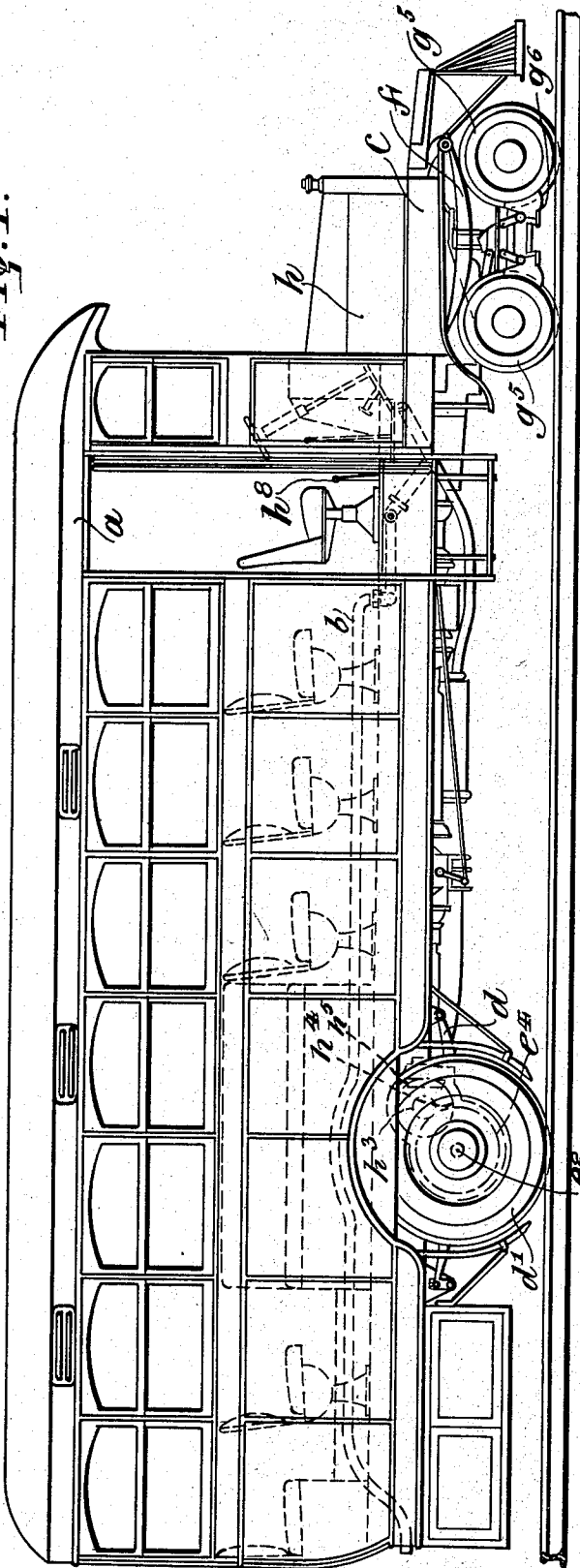
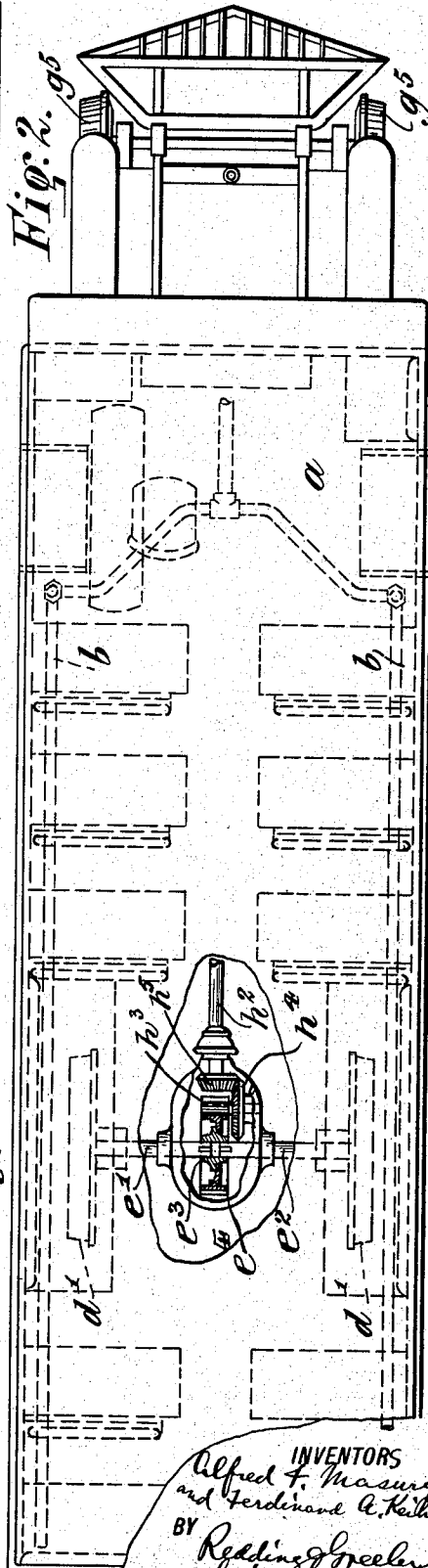


Fig. 2.



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Fig. 3.

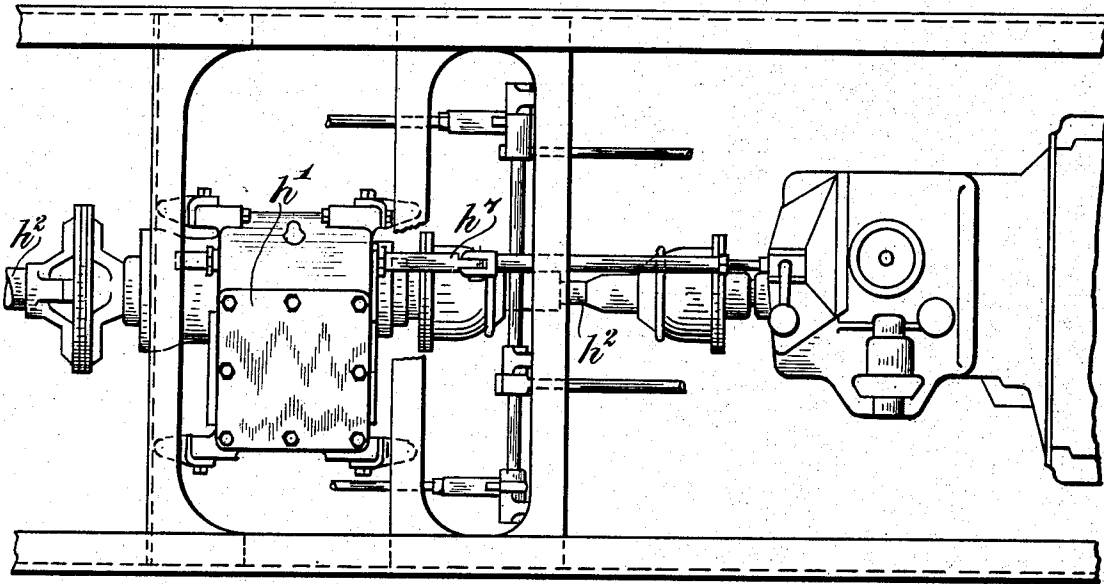


Fig. 5.

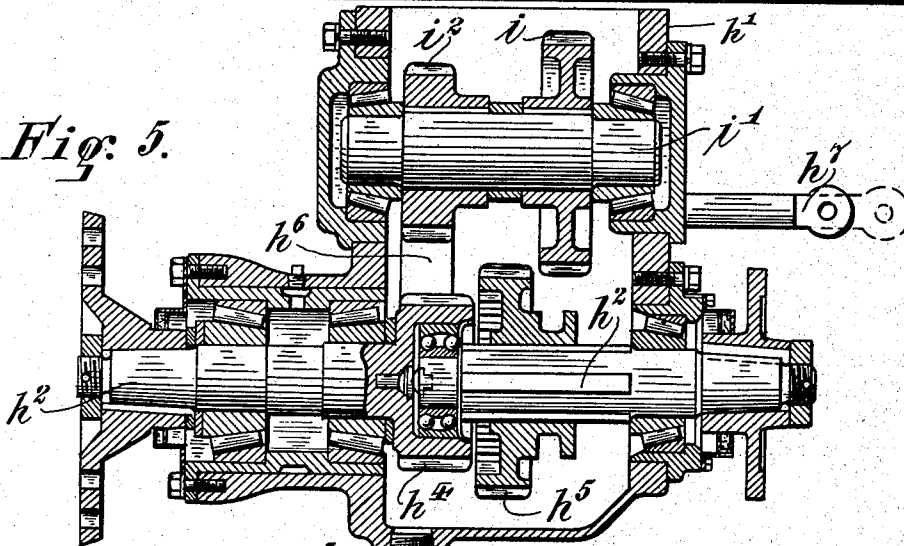
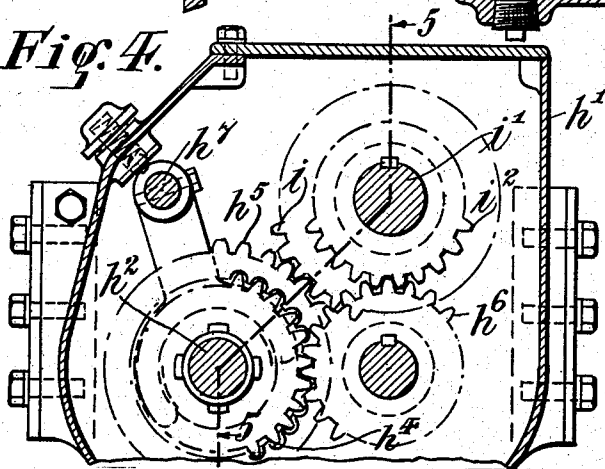


Fig. 4.



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Fig. 6.

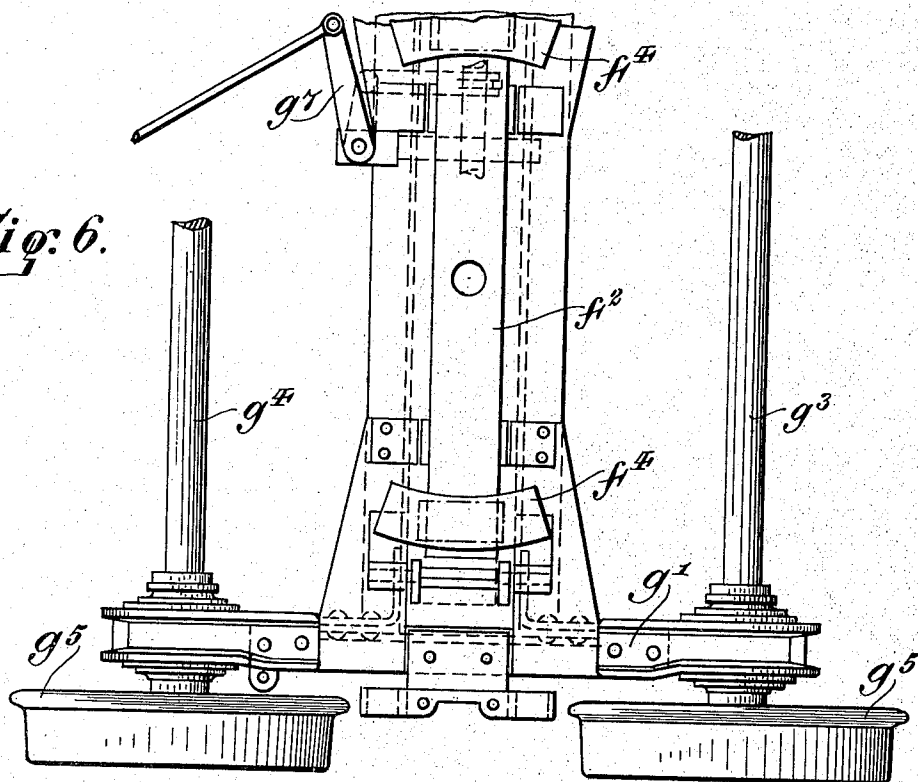


Fig. 7.

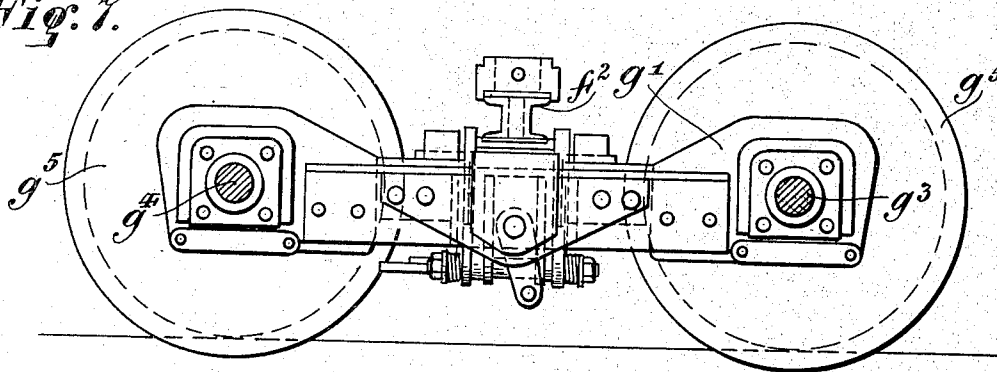
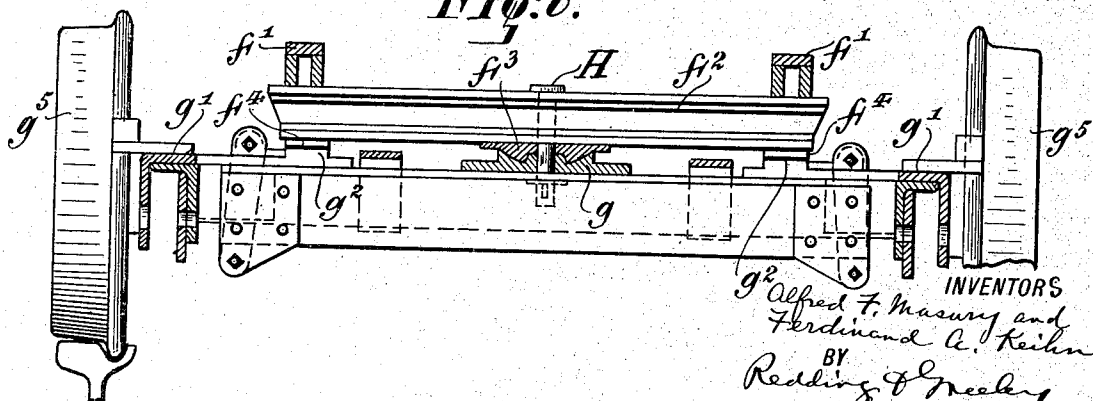


Fig. 8.



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UNITED STATES PATENT OFFICE.

ALFRED F. MASURY, OF NEW YORK, AND FERDINAND A. KEIHN, OF BROOKLYN, NEW YORK, ASSIGNORS TO INTERNATIONAL MOTOR COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

RAILWAY MOTOR CAR.

Application filed July 1, 1921. Serial No. 481,911.

To all whom it may concern:

Be it known that we, ALFRED F. MASURY and FERDINAND A. KEIHN, citizens of the United States, residing, respectively, in the borough of Manhattan and in the borough of Brooklyn of the city of New York, in the State of New York, have jointly invented certain new and useful Improvements in Railway Motor Cars, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

The improved construction relates to railway motor cars and has for its general object to build from a gasoline motor vehicle chassis a railway car of practical and efficient design.

In accordance with the invention a motor truck is mounted on flanged wheels adapted to run on tracks of predetermined gage. The front end of the chassis is swiveled on a four-wheeled leading truck. The drive wheels are positively connected to the propeller shaft for greater tractive effort under all conditions. In order that the car may be propelled at high speeds in both directions, suitable means, in the form of a high speed reverse transmission, are interposed between the motor and drive axle.

One suitable embodiment is illustrated in the accompanying drawings, wherein—

Figure 1 is a view in side elevation of the improved car.

Figure 2 is a plan view thereof with parts broken away to show the final drive.

Figure 3 is a detail view in plan showing the high speed reverse transmission.

Figure 4 is a view in transverse section of such transmission.

Figure 5 is a view in longitudinal section taken on the plane indicated by the broken lines 5—5 of Figure 4 and looking in the direction of the arrows.

Figures 6, 7 and 8 are detail views of the leading truck on which the front end of the chassis is swiveled.

This application is not concerned with the type of the body *a* nor the exhaust heating system *b* provided therefor. The chassis *c* of the motor vehicle may be of any approved type. At its rear end it is mounted by springs *d* on an axle *e* carrying flanged

wheels *d'* to run on rails. At the front end the chassis is supported through springs *f* which rest on spring seats *f'* supported on a bolster *f²*. The bolster has a plate *f³* adjacent its mid-section which rests in a swiveled connection on a complementary plate *g* carried on a leading truck, generally indicated at *g'*. The bolster *f²* is connected to the truck *g'* through a king pin *H*. Co-operating guide plates *f⁴*, *g²* on the bolster and truck, respectively, are spaced apart and arranged to permit limited swivel action. The leading truck *g'* has two axles *g³*, *g⁴* on the opposite ends of which are flanged wheels *g⁵* to run on tracks. The brake shoes *g⁶* may co-operate with the respective wheels *g⁵*, operating mechanism therefor being indicated generally at *g⁷*.

Power from the gasoline motor, which is mounted as usual under the bonnet *h*, is led through the usual change speed transmission *h'* and through a propeller shaft *h²* to the rear axle. The two live axle sections *e'*, *e²* have splined thereon a hub *e³* to which is bolted a spur gear *e⁴* driven through a spur pinion, indicated generally at *h³*, and a bevel pinion *h⁴* rotatable with the spur pinion *h³*, which bevel pinion is driven by a bevel pinion *h⁵* on the propeller shaft *h²*. This gives a double reduction at the final drive. No differential is provided for driving the rear wheels.

Under some circumstances it is desirable to run a car at high speed in the reverse direction. To accomplish this the propeller shaft *h²* has interposed therein between the vehicle transmission *h'* and the final drive *h³*, a high speed reverse transmission shown in Figures 4 and 5. In this transmission direct drive is gotten through a spur gear *h⁴* with which may be engaged a slidable internal gear *h⁵* splined on the other section of the propeller shaft *h²*. The direction of rotation of the rear section of the propeller shaft *h²* may be reversed by sliding the gear *h⁵* into mesh with a gear *i* on a counter shaft *i'*. The power is then led from the gear *h⁴* through an idler *h⁶* to a spur gear *i²* keyed to the counter shaft *i'*, from whence power passes from the spur gear *i* to the gear *h⁵* and other section of the propeller shaft *h²*. Operating mechanism for sliding

the gear h^5 is indicated as a pull rod h^7 connected operatively to a control lever h^8 .

We claim as our invention:

1. A railway motor car including a gasoline propelling motor and change speed transmission, adapted for mounting on a railway track, and having flanged car wheels at the rear and a positive non-differential driving connection from said transmission to said wheels and a swiveled truck having flanged wheels at the front of the car.

2. A railway motor car including a gasoline propelling motor and change speed transmission, adapted for mounting on a railway track, and having at its rear flanged car wheels, a positive non-differential driving connection from said transmission to said wheels, and a reverse speed transmission element interposed between said motor and said wheels and cooperating with said first named transmission to effect the same change of speeds in reverse as is afforded in forward.

3. A railway motor car having at the front a leading truck having car wheels to run on a track and including a gasoline propelling motor, and having at its rear flanged car wheels, and a positive non-differential driving connection from said motor to said last named wheels.

4. A railway motor car adapted for mounting on a railway track, including a gasoline propelling motor and a rear axle and having flanged car wheels supported on the axle, and a positive non-differential live-axle drive within said rear axle and operatively connected to said wheels.

5. In a railway motor car, a gasoline propelled motor, a change speed transmission connected therewith, live axle sections having splined thereon a hub, a propeller shaft driven from the transmission and in driving engagement with said gear and a high speed reverse transmission connected

operatively to said propeller shaft between said transmission and said gear.

6. In a railway motor car, a rear axle, wheels supported thereon, live axle sections therein, a hub splined on the inner ends of the live axles, a gear bolted to the hub and a driving pinion for said gear.

7. A motor rail car including a conventional motor truck chassis carrying a variable speed internal combustion engine at its front end and driving means including a drive shaft and transmission, a conventional rear end equipped with flanged wheels, a reversing gear included in the driving shaft, and a pivoted truck supporting the front of the chassis and provided with flanged wheels.

8. A railway motor car having at its front a leading truck having car wheels to run on a track and including a gasoline propelling motor, and having at its rear flanged car wheels, and brake mechanism co-operating with the wheels of said leading truck.

9. A motor rail car including a conventional motor truck chassis carrying a variable speed internal combustion engine at its front end and driving means including a driving shaft and transmission, a conventional rear end equipped with flanged wheels, a reversing gear located between the engine and the rear end, and a pivoted truck supporting the front end of the chassis and provided with flanged wheels.

10. A railway motor car including a gasoline propelling motor and a propeller shaft adapted for mounting on a railway track and having at its rear flanged car wheels, a live axle drive for said wheels including a ring gear, and a double reduction pinion engaged with said ring gear and driven by said propeller shaft.

This specification signed this 29th day of June, A. D. 1921.

FERDINAND A. KEIHN.
ALFRED F. MASURY.