

C. M. CLARK.
DRIVING MECHANISM FOR AUTOMOBILES.
APPLICATION FILED MAY 4, 1912.

1,047,886.

Patented Dec. 17, 1912.

FIG. 1.

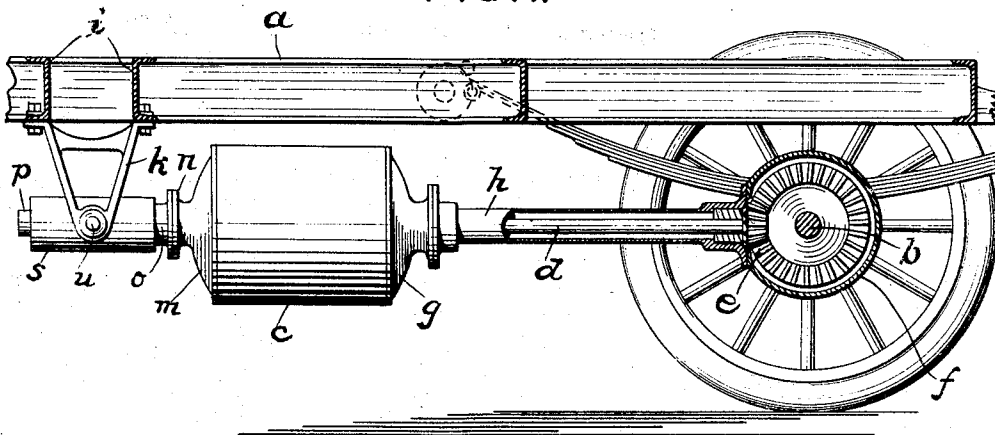


FIG. 2.

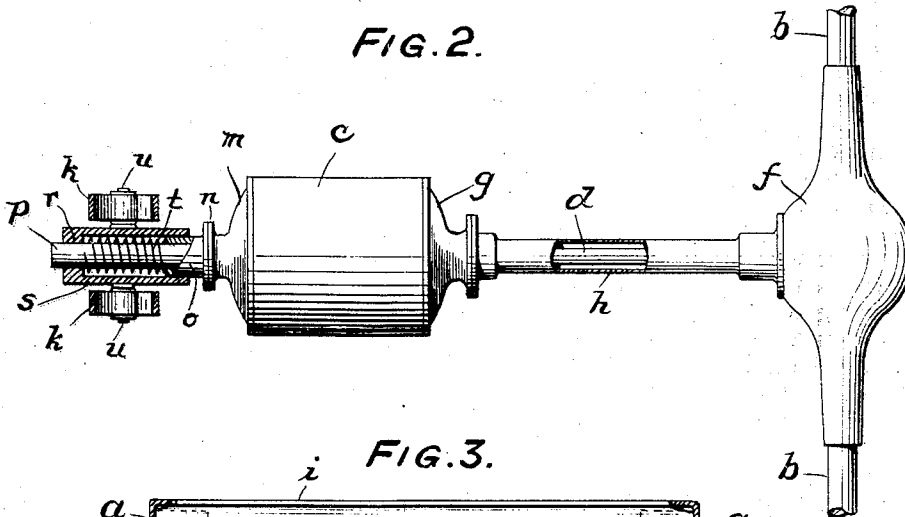
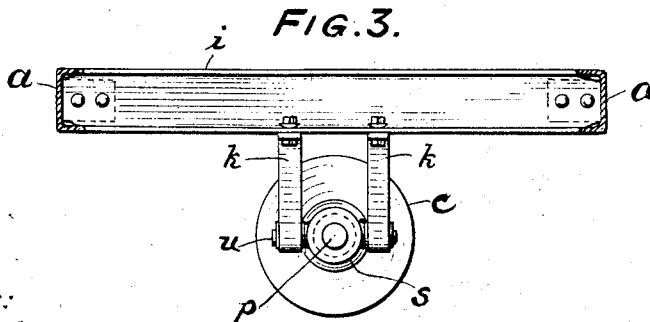


FIG. 3.



WITNESSES:

Robt. H. Kitchel.
E. E. Hall

INVENTOR

Carl M. Clark
BY *Frank A. Buseir*
ATTORNEY.

UNITED STATES PATENT OFFICE.

CARL M. CLARK, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO SIMON FRIEDBERGER, OF PHILADELPHIA, PENNSYLVANIA.

DRIVING MECHANISM FOR AUTOMOBILES.

1,047,886.

Specification of Letters Patent.

Patented Dec. 17, 1912.

Application filed May 4, 1912. Serial No. 695,132.

To all whom it may concern:

Be it known that I, CARL M. CLARK, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Driving Mechanism for Automobiles, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

The object of my invention is to support the driving mechanism for electrically-propelled automobiles in such manner as to simplify the connection between the motor and the driving axle and particularly to enable the universal joints in the propeller shaft between the motor and the driving axle and the auxiliary torsion tube construction to be dispensed with.

A further object of the invention is to so support the driving mechanism that it will take up or absorb the thrust of the driving axle.

My invention consists of straight line driving mechanism between the motor and the driving axle in which a rigid casing connects the motor and the differential gear casing on the axle and in which the motor is supported from the car body in such a way that it can yield longitudinally relatively to the car body and turn axially and thereby adapt itself to all ordinary strains to which it is subjected without interrupting or impairing its driving connection with the axle.

In the preferred embodiment of my invention shown in the accompanying drawings, Figure 1 is a sectional view of a portion of an automobile showing an embodiment of my invention. Fig. 2 is a plan view of same partly broken away and Fig. 3 is an end view looking from the left hand side of Fig. 1.

a is the frame of the automobile or other power propelled vehicle.

b is the rear axle.

c is the motor.

d is the longitudinally extending propeller shaft connected with the rotating element of the motor and extending therefrom to the bevel gearing *e* by which the differential gearing on the axle *b* is directly driven.

f is the casing for the differential gearing

and *g* a bell secured to the end of motor nearest the axle *b*.

h is a casing for the propeller shaft, rigidly secured at opposite ends to the bell *c* and casing *f*.

On the car frame in front of the motor *c*, are cross pieces *i*, and depending from the cross-pieces *i* are hangers *k*, *k*, on opposite sides of the axis of the motor.

Secured to the front of the motor is a bell *m*, and secured to this bell is a disk *n* having a ring *o* to which is brazed a shaft *p*. The end of this shaft slides in an internal annular shoulder *r* on the front end of a tube *s* which concentrically surrounds the shaft *p* and is spaced therefrom to receive a coil spring *t* which is confined between the shoulder *r* and the ring *o*. The tube *s*, on opposite sides of the axial line of the motor, is provided with pins *u* which swivel in bearings in the hangers *k*.

By the foregoing construction, the driving mechanism is capable of rocking more or less on its axis by reason of the capacity of the shaft *p* to turn in the tube *s* and at the same time the front end of the driving mechanism is capable of a swiveling movement on a transverse axis. The end thrust of the driving mechanism is absorbed by the spring *t*, which in conjunction with the shoulder *r* on the tube *s* acts as a buffer to yieldingly resist any longitudinal movement of the driving mechanism.

Having now fully described my invention, what I claim and desire to protect by Letters Patent is:

1. The combination with the vehicle frame and the driving axle, of a motor, gearing engaging the axle, a shaft connecting the motor and gearing, the gear casing, a casing connecting the motor and gear casing, means supporting the motor and permitting it to slide longitudinally relatively to its supporting means, and means connected with the vehicle frame and supporting, and having a swiveling connection with, the motor supporting means.

2. The combination with the vehicle frame and the driving axle, of a motor, gearing engaging the axle, a shaft connecting the motor and gearing, the gear casing, a casing connecting the motor and gear casing, means supporting the motor and relatively to which the motor is longitudinally slidable, and

means connected with the vehicle frame and supporting and having a swiveling connection with, the motor supporting means, and a spring between the first named means and the motor adapted to yieldingly resist the end thrust of the motor.

3. The combination with the vehicle frame and the driving axle, of a motor, gearing engaging the axle, a shaft connecting the motor and gearing, the gear casing, a casing connecting the motor and gear casing, a shaft on the axial line of the motor, a tube surrounding the shaft and on which the shaft is slidable in the direction of its axis; a spring between the shaft and tube and compressible by the driving mechanism in its longitudinal movement, and supports from the car frame extending on opposite sides of the tube and having a swiveling connection therewith.

4. The combination with the vehicle frame

and the driving axle, of a motor, a propeller shaft connected to and in line with the motor shaft and geared directly to the axle, a gear casing embracing the axle and the gearing between the propeller shaft and axle, a casing embracing the propeller shaft and connecting the motor and gear casing, means supporting the motor and permitting it to slide longitudinally relatively to the car frame, and a hanger on the car frame, said motor supporting means being swiveled on the hanger on an axis parallel to the driving axle.

In testimony of which invention, I have hereunto set my hand, at Philadelphia, on this 13th day of April, A. D. 1912.

CARL M. CLARK.

Witnesses:

M. M. HAMILTON,
E. E. WALL.