

(No Model.)

J. C. HENRY.
ELECTRIC LOCOMOTIVE.

No. 500,067.

Patented June 20, 1893.

Fig. 1.

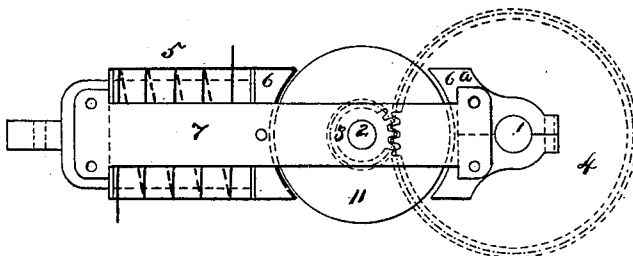


Fig. 2.

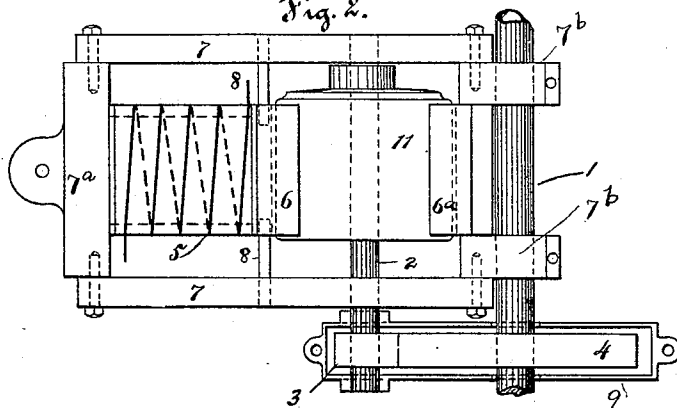
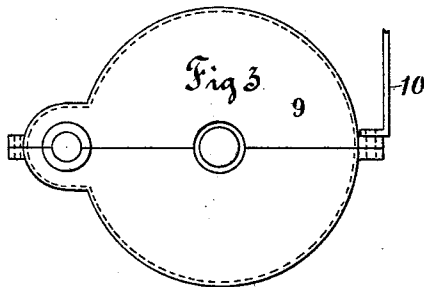


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN C. HENRY, OF NEW YORK, N. Y.

ELECTRIC LOCOMOTIVE.

SPECIFICATION forming part of Letters Patent No. 500,067, dated June 20, 1893.

Application filed December 16, 1891. Serial No. 415,288. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. HENRY, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Electric Cars, of which the following is a specification.

My invention comprises certain improvements in the construction of a motor especially adapted for electric railway cars, in the method of supporting the same and in a case for the gearing thereof—the objects being: simplicity of construction, durability and quiet action of working parts, and convenience of inspection and assembling.

In the accompanying drawings, Figure 1 is a side elevation of my improved motor, indicated as adapted to be supported upon one axle of a street railway car. Fig. 2 is a plan view of the same, showing also the gear case or cover which is omitted in Fig. 1, to render the view clearer. Fig. 3 is a side elevation of the gear cover.

A car-axle is shown at 1, the armature shaft at 2, and the speed reducing gear connecting these two members at 3, 4.

5 is a single field coil, and 6, 6^a are two opposed polar pieces which are connected by side bars 7, 7, cross-bars 7^a and hangers 7^b. The side bars 7 being of magnetic material such as cast iron or cast steel, and the cross-bar 7^a and hangers 7^b of similar material, these parts complete a magnetic circuit between the two polar pieces 6, 6^a and the bars 7, 7 thereof at the same time afford a support for the armature shaft 2. By the hangers 7^b, which may be made separate or in one with the polar piece 6^a, one end of the motor is supported or hinged upon the axle 1. The other end of the motor is hung yieldingly from the car-body or truck-frame or otherwise supported in the customary manner. Pins 8, preferably of non-magnetic material, such as brass, projecting from the side-bars 7 enter the polar piece 6 from each side, and assist in supporting the overhanging weight of the field-magnet and polar piece.

It will be seen that in case of any accident to the armature it can be readily repaired or entirely rewound without removal from its

bearings, and that in case of necessity for removing the armature it is only necessary preliminarily to unbolt and remove one of the side-bars.

The gearing 3, 4, is completely inclosed in a dust-proof housing or compartment as shown in Figs. 2 and 3. To prevent the sonorous effect of the rotating gearing and to avoid making a path for magnetic leakage, I prefer to make this housing 9 of zinc, copper, brass, &c. The housing is preferably made in two parts as shown, the division being on the line of the shaft and axle and the parts being bolted or otherwise fastened together. At one end, the housing 9, has bearing on the armature shaft 2, but to avoid having a bearing on the axle 1, which would require lubrication, I prefer to make apertures in the housing around the axle somewhat larger than the latter and suspend the other end of the housing from the truck-frame by the rod 10 or otherwise. The casing 9 closely surrounds the gearing and is adapted to contain an oil or other lubricant therefor.

I am aware of United States Letters Patent to N. C. Bassett, No. 457,102, August 4, 1891, for an electric railway motor. My present invention so far as it relates to the field magnets is distinguished from the motor therein described, in that the connection between the two pole-pieces is two parallel continuous bars, lying in the plane of the armature and field magnet poles and affording supports for the armature shaft.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. The combination of the axle, the side bars pivoted thereon at one end, an armature mounted on and between said bars, a pole piece carried by the end of said bars distant from said axle and having a magnetizing coil, and a consequent pole piece mounted on the axle, substantially as set forth.

2. The combination of the armature 11, having shaft 2, the pole-pieces on opposite ends having suitable means of support, and only one having a coil or winding and side-bars embracing the pole-pieces between them and removably supported thereby and having bear-

ings for the armature shaft 2, substantially as set forth.

3. In combination with the electric motor of an electric railway car, and the gearing for
5 transmitting power therefrom to the car axle, an anti-magnetic metallic housing or shell closely surrounding and protecting said gear-

ing; and adapted to contain lubricant therefor substantially as set forth.

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Witnesses:

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