

(No Model.)

F. O. BLACKWELL.
ELECTRIC RAILWAY CAR TRUCK.

No. 522,189.

Patented July 3, 1894.

FIG. 1.

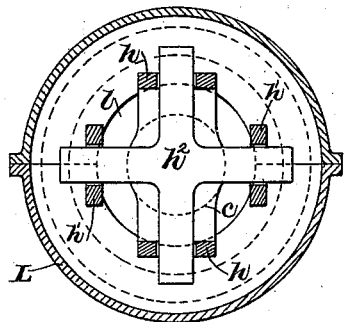
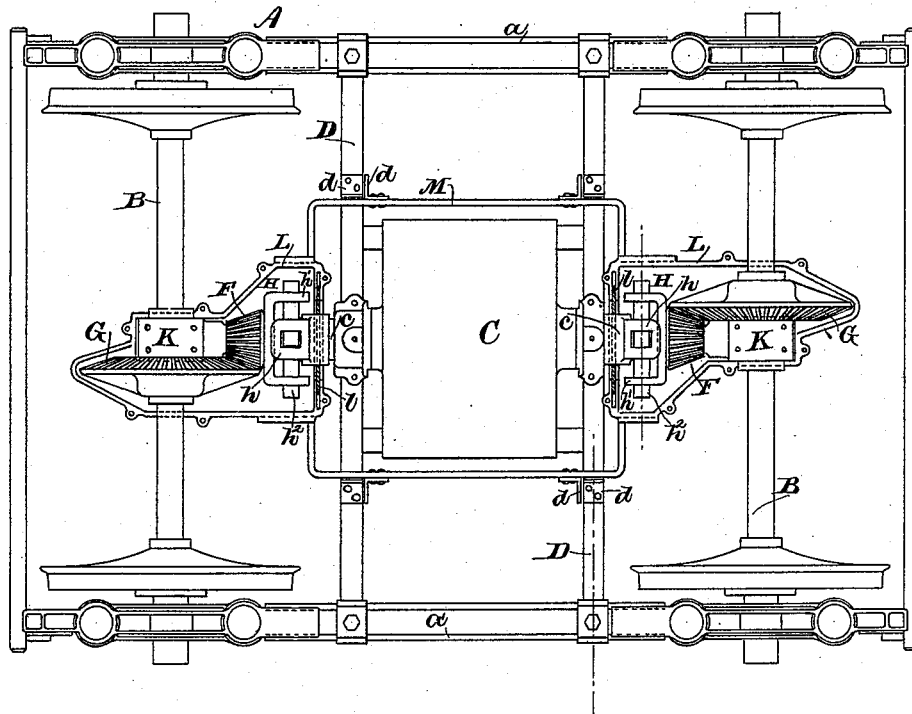


FIG. 2.

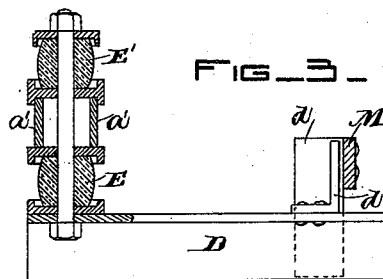


FIG. 3.

WITNESSES:

C. L. Hayes
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INVENTOR:

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by Wm. H. Knight
ATTYS.

UNITED STATES PATENT OFFICE.

FRANCIS O. BLACKWELL, OF LYNN, MASSACHUSETTS, ASSIGNOR TO THE
THOMSON-HOUSTON ELECTRIC COMPANY, OF CONNECTICUT.

ELECTRIC-RAILWAY-CAR TRUCK.

SPECIFICATION forming part of Letters Patent No. 522,189, dated July 3, 1894.

Application filed May 1, 1891. Serial No. 391,211. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS O. BLACKWELL, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented a certain new and useful Improvement in Railway-Car Trucks, of which the following is a specification.

The object of my present invention is to provide a truck with driving connections from a single motor to both axles of the truck, while allowing the motor to have some freedom of vertical movement independent of the axles, that is, to be spring supported or cushioned thereon, so that any vertical jar or blow is not transmitted from one to the other, and hammering on the motor and pounding on the track are both avoided. For this purpose I place the motor preferably between the car axles, and connect it to both axles by a flexible coupling.

The manner in which I prefer to carry out my invention is represented in the accompanying drawings.

Figure 1 is a plan of the truck, and Figs. 2 and 3 details.

In order to facilitate the driving of both axles from one motor, the truck frame A is preferably substantially rigid on the axles B so as to hold the same in approximate alignment.

The motor C is carried by bolsters or cross-bars D, D, which are yieldingly supported on the side bars *a, a'* of the truck frame, preferably by springs or cushions E, E' supporting the motor against both upward and downward displacement. The motor shaft *c*, is placed longitudinally of the car and is connected at each end to bevel pinions F gearing with bevel gears G on the axles. In order that the motor may move freely up and down on the springs E, E' without interference with or by the connection to the axle, I interpose a flexible coupling H between the motor shaft *c*, and the axle, which while transmitting the torque of the motor shaft to the axle, allows each to yield or shift to some extent independently of the other. The flexible coupling I have shown is interposed between the motor shaft *c*, and bevel pinion F and consists of jaws or

arms *h* and *h'* respectively on the motor shaft and the bevel pinion, and connected by the cross or four armed frame *h²*, the said cross sliding loosely in holes in said jaws. The bevel pinion is preferably mounted to rotate on a stud carried by a sleeve K journaled on the axle.

The above form of flexible coupling, while well adapted to the purpose, may be variously modified or replaced by well-known equivalents.

Casings L may be made to envelop the gearing including the flexible coupling, and the two casings may be conveniently connected together by a frame M and have their other ends journaled on the respective axles. The connecting frame M should not be rigidly connected to the motor supporting bolsters D, D, but may engage therewith by limiting guides or stops *d*, which prevent objectionable drifting of the motor and frame. The apertures of the casings which receive the motor shaft are made large enough to enable the latter to play freely therein, when it moves in relation to the truck frame, and a flexible or shifting washer or cap, here shown as a sliding gasket *l*, closes the clearance space so as to keep out dust, &c.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a railway truck, of an electric motor flexibly supported thereon and a flexible coupling connecting said shaft with the gearing on the axle, said coupling consisting of two perforated forks arranged at right angles, and a rigid cross-bar having its arms loosely received in the apertures in said forks, substantially as described.

2. The combination with the driving axle of a railway truck and the motor shaft connected thereto through a flexible coupling and gearing, of the gear-casing having a portion flexibly mounted to follow the movement of the motor shaft.

In witness whereof I have hereunto set my hand this 27th day of April, 1891.

FRANCIS O. BLACKWELL.

Witnesses:

JOHN W. GIBBONEY,
AXEL EKSTRÖM.