

(No Model.)

C. F. WINKLER.
ELECTRIC CAR TRUCK.

No. 510,661.

Patented Dec. 12, 1893.

Fig. 1.

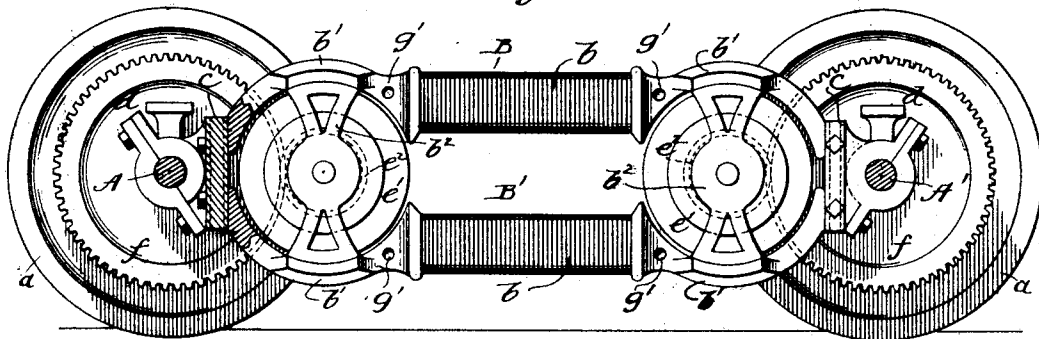
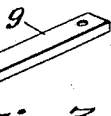
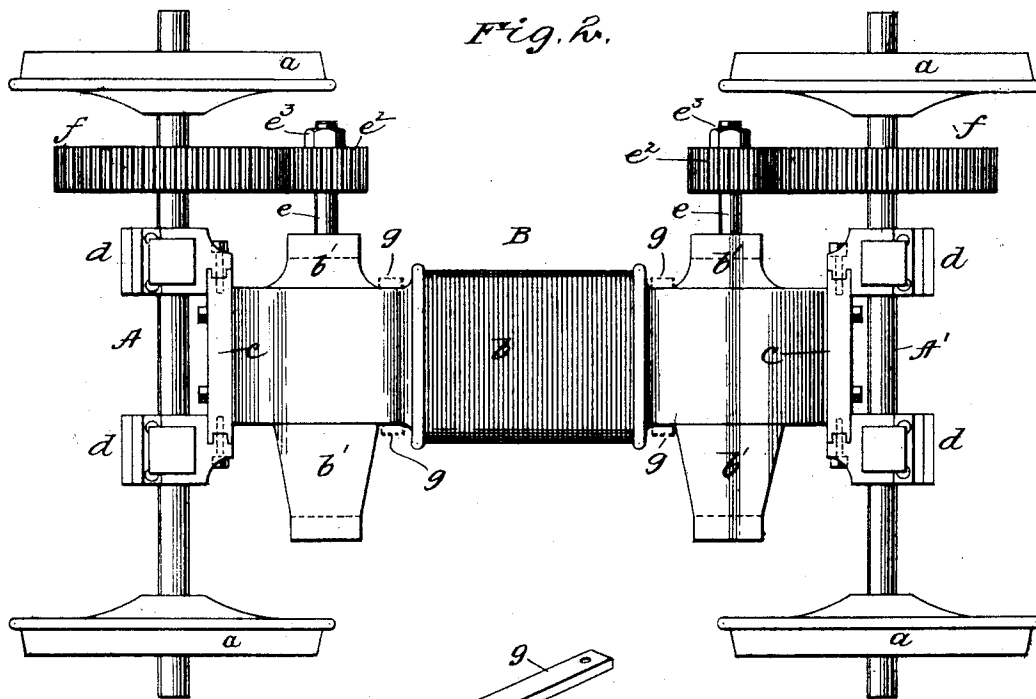


Fig. 2.



WITNESSES:

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Fig. 3.

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ELECTRIC-CAR TRUCK.

SPECIFICATION forming part of Letters Patent No. 510,661, dated December 12, 1893.

Application filed November 26, 1892. Serial No. 453,273. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. WINKLER, a citizen of the United States, residing at Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Electric-Car Trucks, of which the following is a full, clear, and exact description.

My invention relates to electrically propelled vehicles and has special reference to the construction of the electric motor with its mounting and connection with the car axles.

The invention consists of an electric motive apparatus having two rotary armatures located in a single magnetic circuit, in combination with two car axles with which the armatures are respectively connected by gearing.

The details of the invention will be described with reference to the accompanying drawings, in which—

Figure 1 represents a vertical section taken at right-angles to a pair of car axles showing my motor in elevation mounted upon the axles and connected thereto through gearing. Fig. 2 is a plan of the same, and Fig. 3 is a detail.

A, A' respectively represent two axles of a car the wheels of which are represented by a.

B, B' represent two parts of a field magnet structure; these are formed with pole pieces at their extremities and the two parts stand parallel to each other so that an armature space or field is formed at each end. The coils are represented by *b* and are wound upon the middle portions of the parts B, B' and the current is to be passed through them in such a direction that a single magnetic circuit will be established which will include the two fields, in series, as it were. The extremities of the field magnet structures are connected together by brass or other non-magnetic plates *c, c*, and the whole structure is mounted upon and supported by the axles by means of boxes or bearings *d* which are bolted to the opposite edges of the brass plates *c, c*, as shown in Fig. 2. These boxes are made separate from the plates, so that their cost of construction may be cheapened by making them of iron or steel. The ends of the brass plates to which the boxes are connected are

extended past the pole pieces as shown in Fig. 2, a sufficient distance to prevent short circuiting of the lines of force through the boxes. The pole pieces have brackets *b'* cast upon them, between the extremities of each pair of which a cross piece *b²* of non-magnetic material is secured. In this cross piece a bearing is formed in which the armature axles *e* are mounted. The pole pieces are also provided with bolt holes *g'* or other means for attaching a short circuiting bar of iron *g* which is placed across from pole to pole in case either of the armatures becomes disabled as will hereinafter be described. The armatures *e'* are carried on these axles and a commutator for each of them is also mounted upon the axle and housed between the brackets *b'*. The armature axles are extended beyond their bearings on one side and carry pinions *e²* which engage with gear wheels *f, f*, on the respective axles. These pinions are preferably mounted upon their shafts in such a manner as to be removable therefrom at will; that is, they may be confined in place by a nut *e³*, so that, when desired, the pinion may be removed and the armature thereby disconnected from the axle which it drives. The gearing for both axles is shown located on the same side of the truck but it will be understood that it may be placed on opposite sides, if desired.

In a structure of this character, both armatures are in the same magnetic circuit and are therefore similarly affected by changes therein, and as the armatures act uniformly upon the axles, regulation may be easily affected. In case one of the armatures should become disabled the pinion on its shaft may be removed and the car driven by the other armature, the magnetic circuit being perfected by adjusting the iron bar *g* across the field of force, thus completely bridging the armature space.

Having described my invention, I claim—

1. In an electric car truck, the combination with two axles, of two magnetically separated field magnet structures B, B', non-magnetic plates *c, c*, mechanically connecting them together, separate axle boxes secured to said

plates and surrounding the car axles two armatures acted upon by said field magnet structures and gearing connecting the armature respectively with the axles, substantially
5 as described.

2. An electric motive device, consisting of a field magnet structure constituting a single magnetic circuit two armatures located in

said magnetic circuit and a detachable short circuiting bar *g* for the purpose set forth. 10

In testimony whereof I subscribe my signature in presence of two witnesses.

CHARLES F. WINKLER.

Witnesses:

WM. A. ROSENBAUM,
JOS. J. UHL.