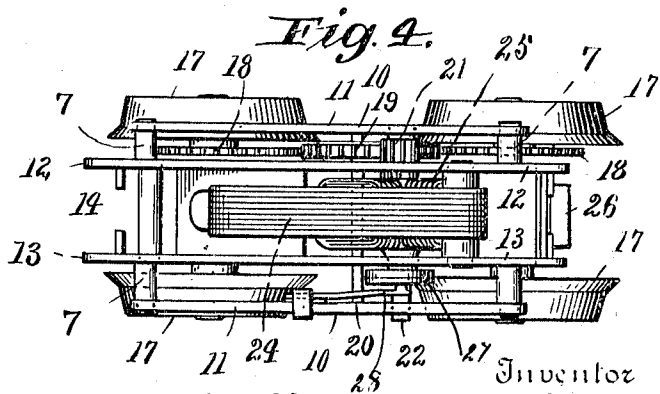
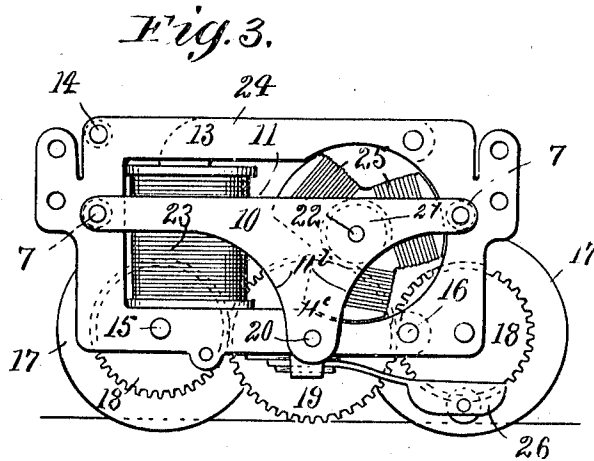
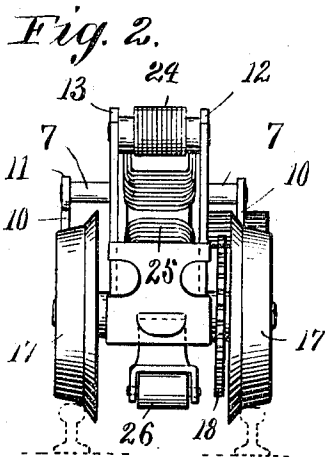
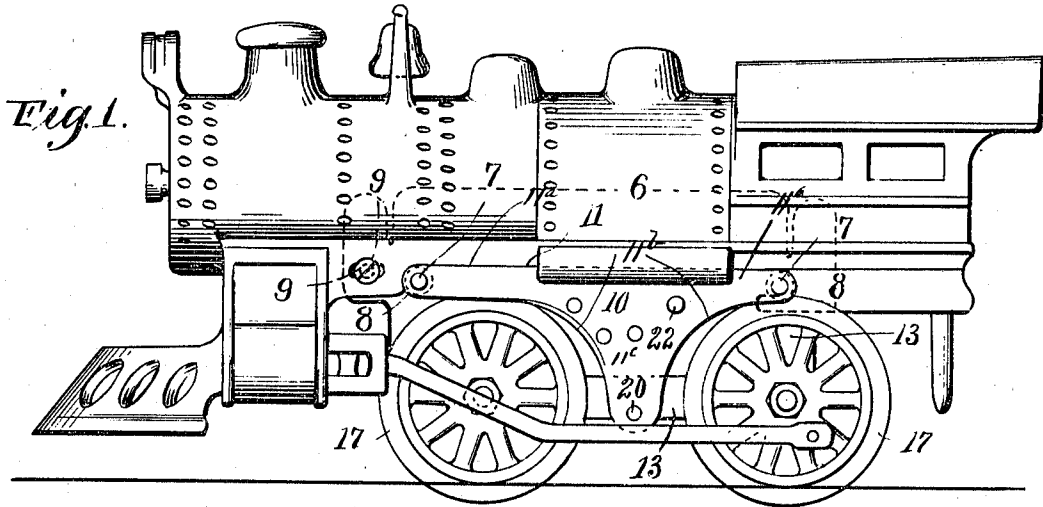


W. G. VIALL.
TOY ELECTRIC MOVEMENT.
APPLICATION FILED JULY 18, 1910.

988,914.

Patented Apr. 4, 1911.



Witnesses
Elmer H. Hull,
Don L. Morehouse

Inventor
William G. Viall
By Chamberlain & Newman
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM G. VIALI, OF BRIDGEPORT, CONNECTICUT.

TOY ELECTRIC MOVEMENT.

988,914.

Specification of Letters Patent.

Patented Apr. 4, 1911.

Application filed July 18, 1910. Serial No. 572,431.

To all whom it may concern:

Be it known that I, WILLIAM G. VIALI, a citizen of the United States, and resident of Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Toy Electric Movements, of which the following is a specification.

This invention relates to new and useful improvements in toy railway electric motors such as are employed in miniature forms of electric locomotives, electric cars, etc., and designed to operate upon a suitable third rail track.

It is the purpose of the invention to provide a special form of frame, that will be adapted to accommodate the magnet, armature, gears, etc., and whereby the same may be contained within a comparatively small space and thus placed within the regulation size toy locomotive or car body; to provide a movement frame that includes the usual side plate members for the support of the magnets, gears, shafts, etc., and additional side plates secured to but spaced from the before mentioned plates, to form a support for the armature shaft and an intermediate gear shaft, and further to form these outer plates in such shape as to best accommodate the driving wheels of the movement and engage and support the body of the locomotive.

Upon the accompanying sheet of drawings forming a part of this specification, similar characters of reference denote like or corresponding parts throughout the several figures and of which,

Figure 1, shows a side elevation of a toy railway locomotive designed to be electrically operated upon a third rail track and driven through an electric motor supported in the improved form of movement frame. Fig. 2, is a detached rear end elevation of the movement and frame shown in Fig. 1. Fig. 3, is a side view of the movement and frame shown in Figs. 1 and 2, and Fig. 4, is a plan view of Fig. 3.

Referring in detail to the characters of reference marked upon the drawings, 6 indicates the body of the locomotive which obviously may be formed of cast iron, sheet metal or otherwise. The movement proper is secured to the locomotive body by first placing the stud ends 7 of the movement into the notches 8 of the body and then showing the forward end of the movement up in position to be secured by screws 9,

one on each side. This placement of the movement insures its upper portion being housed within the hollow body while the top horizontal edge 11 of the outer side plates 10 rest against the longitudinal shoulder 11^a of the body. The cut away portion or curved under edge 11^b of the side plates form a downward extended portion 11^c of the frame, which is arranged intermediate of and above the tread of the driving wheels and on the outside of the flange of such wheels so as to permit the plates and frame to be seated inside of the outer face of the driving wheels.

Of the movement frame 12 and 13 indicate the inner side plates and 14 the cross studs, for securing the plates in position. The two axles 15 and 16 are journaled in these plates and thus serve to support the movement upon the driving wheels 17. Gears 18 are also secured to these axles for the purpose of operating the same through the medium of an idler gear 19 loose upon the stud 20. This idler gear meshes with and is driven by a smaller gear 21 attached to the motor shaft 22.

23 represents the magnet which is securely fastened in the frame and 24 the field magnets intermediate of which the rotary armature 25 is operated.

26 represents a flexible shoe that projects down from the movement for the purpose of engaging a third rail or track, not shown, for making electrical contact.

The outer side plates 10 are secured to but spaced from the inner plates by short studs 7 as shown and further serve to engage the body of the locomotive. This additional space formed inside of the outer plates form needed room for the commutator 27 and brush 28 upon the one side and the before mentioned gears 18 and pinion 21 upon the other.

An electrical movement of this kind having capacity sufficient to draw a train of toy cars and built in the ordinary way, with two side plates only, could not be put into the limited space of a regular size locomotive body, since in order to accommodate the gear mechanism, armature, commutator; brush, etc., the said plates would have to be placed too far apart. With the additional plates situated below the top portion of the inner plates and set off therefrom as indicated all the parts are amply provided for and a very satisfactory and useful move-

ment of the kind can be constructed, and can be used to advantage not only in locomotive bodies as indicated but can also be used in toy sheet metal cars as for individual operation and in connection with a third rail track.

Having thus described my invention what I claim and desire to secure by Letters Patent is:—

10 1. In an electric movement of the class described the combination of a frame, comprising side plates and cross studs for supporting the magnets, gears and shafts, and additional side plates secured to but spaced from the before mentioned side plates for supporting the armature shaft.

20 2. In an electric movement of the class described the combination of a frame, comprising side plates and cross studs for supporting the magnets, gears and shafts, and additional side plates secured to but spaced from the before mentioned side plates having a straight top edge and two concaved under edges to conform to the shape of the driving wheels.

25 3. An electric movement of the class described the same comprising a frame including side plates and cross studs for supporting the magnets, gears and shafts, additional side plates secured to but spaced from the before mentioned side plates, an armature shaft journaled in said last mentioned

plates, a commutator mounted upon the armature shaft and intermediate the plates in one side and a brush also situated intermediate the said plates on one side. 35

4. An electric movement of the class described the same comprising a frame including side plates and cross studs for supporting the magnets, gears and shafts, additional side plates secured to but spaced from the before mentioned side plates, an armature shaft journaled in said last mentioned plates, a commutator and brush intermediate the two plates on one side, and train of gears intermediate of the two plates on the opposite side for connecting the armature shaft and driving wheel shafts. 40 45

5. In an electric movement of the class described, the combination of a frame, comprising side plates and cross studs for supporting the magnets, gears and shafts, and additional side plates secured to but spaced from the before mentioned side plates having a portion extended downwardly and intermediate of the driving wheels. 50 55

Signed at Bridgeport, in the county of Fairfield, and State of Connecticut this 30th day of June A. D., 1910.

WILLIAM G. VIALL.

Witnesses:

C. M. NEWMAN,
H. C. IVER.