

Aug. 26, 1930.

M. CARUSO
TOY LOCOMOTIVE

1,774,128

Filed Sept. 1, 1928

2 Sheets-Sheet 1

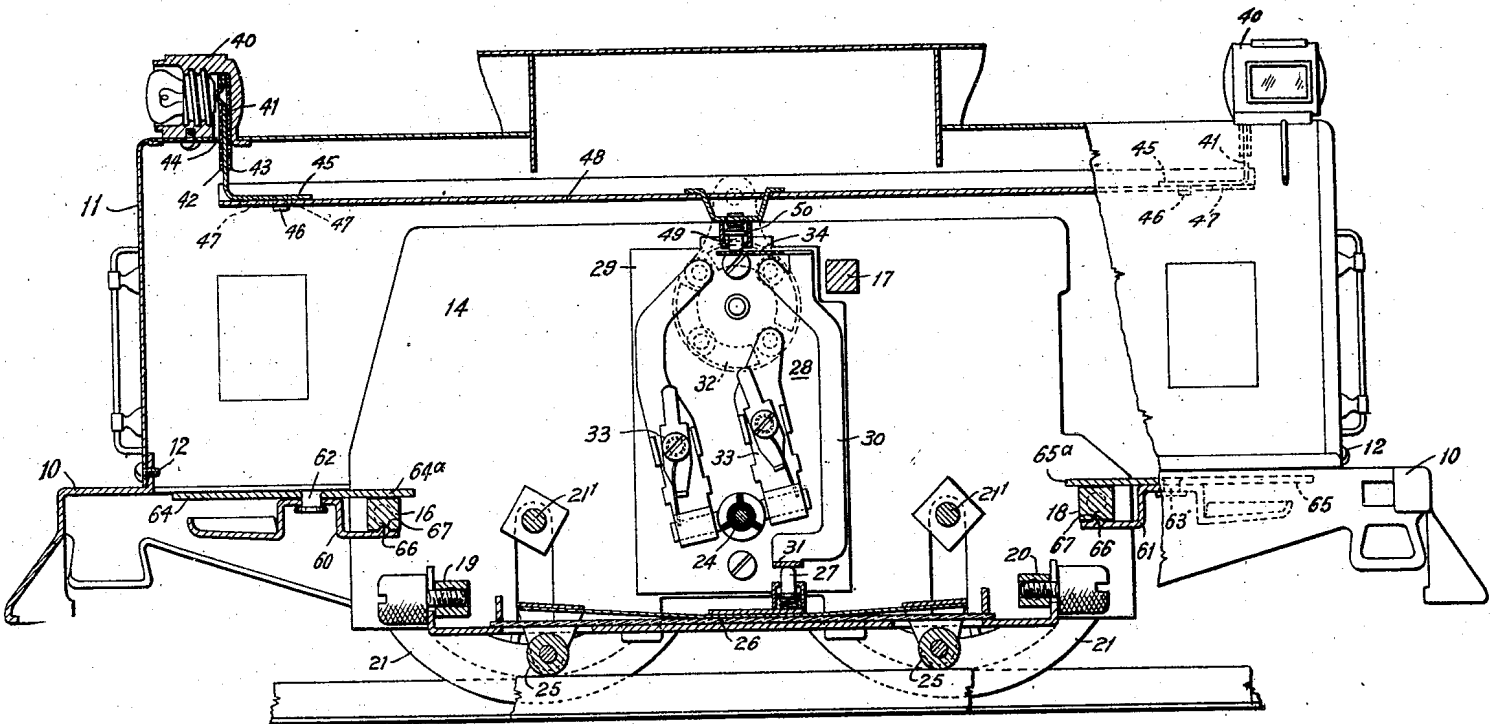


Fig. 1

INVENTOR
Maurice Caruso
BY
Geo. S. Klemm
ATTORNEY

Aug. 26, 1930.

M. CARUSO
TOY LOCOMOTIVE

Filed Sept. 1, 1928

2 Sheets-Sheet 2

1,774,128

Fig. 3

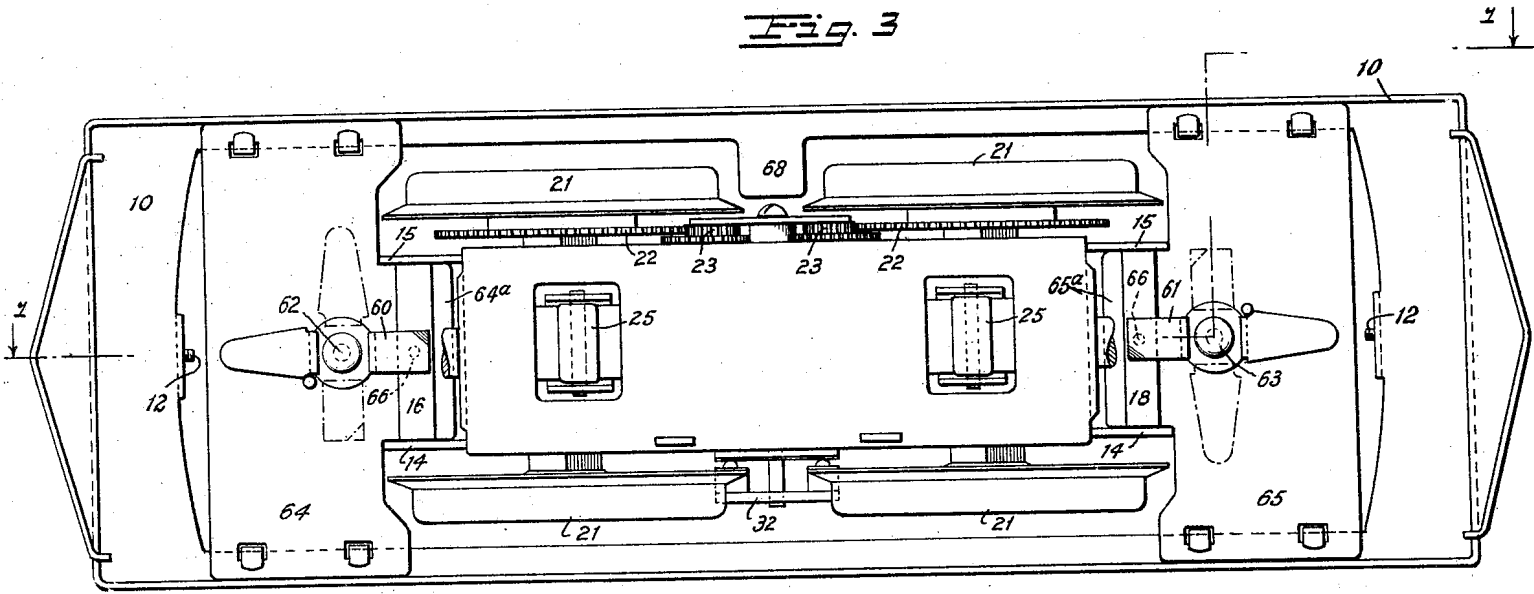
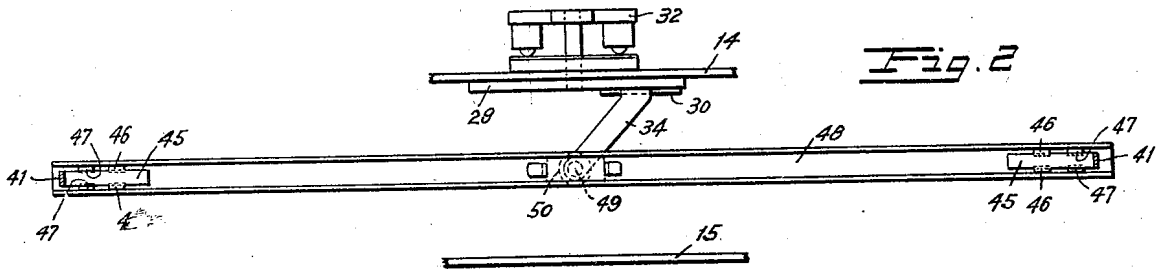


Fig. 2



INVENTOR
Maurice Caruso
BY
James K. Lehman
ATTORNEY

UNITED STATES PATENT OFFICE

MARIO CARUSO, OF IRVINGTON, NEW JERSEY, ASSIGNOR TO THE LIONEL CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK

TOY LOCOMOTIVE

Application filed September 1, 1928. Serial No. 303,425.

The present invention relates to toy locomotives and is more particularly directed toward electric locomotives used for operating toy railroad trains.

In a previously filed application Serial Number 273,075, filed April 26, 1928, there was disclosed in detail two forms of knocked down electrical toys either of which were capable of ready assembly into either a power plant for a toy locomotive, or into a power plant of general utility for driving toy tools and the like.

The present invention contemplates an improved form of construction by means of which such an assembled motor unit may be fastened in the locomotive frame.

According to the present invention, this method of fastening these two parts together contemplates a quick detachable connection characterized by the absence of parts likely to be lost or misplaced and which can not get out of order. In addition, no tools are necessary.

In the form of construction of the knocked down locomotive shown in the application above referred to provisions were made for connecting the electric controller (for starting, stopping and reversing the motor) to the headlights by means of wires. According to the present invention, the locomotive is provided with quick detachable connections by means of which the locomotive headlights will be automatically connected when the motor, locomotive frame, and locomotive cover are assembled. These parts are likewise assembled without the use of tools.

According to the preferred construction, the sockets of the locomotive headlights are fixedly carried by and grounded to the housing of the locomotive. The other contacts of these sockets are semi-permanently connected by a strap insulated from the locomotive housing and carrying a contact so located as to be engageable with a corresponding contact of the electric controller for the motor. These contacts are brought in engagement by the mere act of assembling the housing, frame, and motor unit.

The accompanying drawings show, for

purposes of illustrating the present invention, one of the many possible embodiments in which it may take form, it being understood that the drawings are illustrative of the invention rather than limiting the same.

In these drawings:

Figure 1 is a central sectional view through a toy electric motor, parts of the motor being omitted for clearness, this view being taken in the direction of the arrows 1 of Figure 2, and approximately on the line 1—1 of Figure 2;

Figure 2 is an inverted plan view of a toy locomotive; and

Figure 3 is a fragmentary top plan view illustrating the relation of the headlight connections with the controller.

For purposes of illustrating the present invention, the same is shown as being embodied in the form of a knocked down locomotive shown in the above mentioned application. It will be understood of course that the same is merely a convenient form of construction with which the present invention may be employed. The showing of the present invention as being employed with a knocked down type of locomotive construction is merely for convenience for the invention is capable of general application with motors designed for factory assembly only.

In the form of construction shown in the drawings, the locomotive has a stamped sheet metal frame 10 of more or less conventional shape and a housing or cover 11 so that the completed toy locomotive may resemble standard full sized locomotives used on electric railroads. This cover or housing and frame are secured together in the usual manner by screws indicated at 12.

As here shown, the parts of the propulsion unit are assembled on a subframe. This frame is in the form of two plates 14 and 15 and suitable cross members or spacers 16, 17, 18, 19 and 20. The propulsion unit may include traction wheels 21 carried on axles 21' in the usual manner and driven by gears 22 and 23 which are in mesh with a pinion (not shown) carried on the end of the armature shaft 24 of the motor (not shown).

The power unit also includes current collecting rollers 25 adapted to cooperate with the third rail of the toy railroad track in the usual manner. These rollers may be insulatively carried on the subframe by devices indicated generally at 26 and shown in detail in the application above referred to. The current collecting devices 25 are connected with a spring pressed contact 27 adapted to conduct the current to a motor controller and brush rigging unit indicated at 28.

This controller unit may employ an insulating plate 29 secured to the side plate 14 of the propulsion unit. The controller and brush rigging unit, as here shown, is provided with a strip or connection 30 having an outwardly extending foot 31 engageable with the spring pressed plunger 27. This strip 30 is connected to controller 32 and brush rigging 33 in a suitable manner to permit the controller to start, stop and reverse the propulsion motor. The details of construction of these parts may be varied to suit the conditions.

In the form of construction here shown, the upper end of the strap 30 is provided with a horizontally extending member 34 preferably brought into the center of the locomotive. It will be apparent that the member 34 will be energized whenever the locomotive is on energized track. This projection 34 is provided for the purpose of providing suitable connections for headlights or other accessories carried by or connected to the locomotive.

In the form of construction here shown, the headlights 40 are of the type shown in Patent Number 1,672,871 although any other suitable form of construction may be employed. The form of connector employed by this type of headlight includes a conducting strip 41 and a pair of insulating strips 42 and 43. These strips are fastened together and are insertible through a downwardly opening slot or passageway 44 in the socket 40. When the connector is in place as indicated in the drawings, a contact is provided for the center of the lamp base.

As here shown, the conducting strip 41 is bent to provide a horizontal portion 45 which carries lugs or projections 46. These lugs or projections pass through correspondingly placed holes 47 in a bar or rod 48, and may be slightly bent to prevent removal. This bar or rod is preferably made of metal and may conveniently be in the form of a channel shaped stamping. It is the proper length to support the two connectors for the lamp sockets. It will ordinarily be disposed centrally in the locomotive cover near the roof. This bar is provided with a contact 49 engageable with the fixed contact 34 carried by the controller unit. The contact 49 may, if desired, be in the form of a spring pressed plunger carried in a housing, as indicated.

The bar 48 may have extra sets of holes 47 as indicated in Figure 2 so as to adapt the bar for use in locomotives whose housings are of different length.

The conducting bar 48 and the connector straps are secured together as a unit and in assembling the device, this unit may be passed into the housing and the contacts pressed up into place in the slots. There is sufficient friction between the parts to hold the bar in place and the form of construction illustrated is such that there is sufficient flexibility or play in the parts so that no difficulty arises in assembling the same.

The drawings also show a quick detachable connection for supporting the propulsion unit in the locomotive frame. As here shown this quick detachable means is in the form of two swinging levers 60 and 61 pivoted at 62 and 63 on cross plates 64 and 65 fastened to the frame 10. These plates have extensions 64^a and 65^a against which the spacers or cross members 16 and 18 of the propulsion unit subframe are adapted to be brought, these extensions passing in between plates 14 and 15 of the subframe so as to align the propulsion unit. The swinging levers 60 and 61 are adapted to pass underneath these cross members 16 and 18 and may, if desired, have projections adapted to enter into depressions 67 in the cross members 16 and 18.

In assembling the locomotive, the headlight connections are inserted in place in the housing so as to connect the sockets with the bar 48. The housing or cover 11 will then be secured on the frame 10. The propulsion unit may then be inserted into the locomotive from underneath so as to bring the propulsion unit in the proper place as defined by the shape of the frame carried members and the levers 60 and 61 then swung into position indicated in full lines to secure the unit in place.

In order that it will be impossible to assemble the propulsion unit improperly, a projection 68 extends inwardly from one side of the frame 10 so as to interfere with the insertion of the controller part of the propulsion unit.

While in the drawings two levers 60 and 61 are shown as being fastened on the propulsion unit, it will be apparent that one end of the locomotive may be provided with a fixed member to receive a cross member of the propulsion unit. The other end may be fastened in by a swinging lever or other suitable quick detachable means.

It is obvious that the invention may be embodied in many forms and constructions, and I wish it to be understood that the particular form shown is but one of the many forms. Various modifications and changes being possible, I do not limit myself in any way with respect thereto.

What is claimed is:

1. A toy electric locomotive having a cover, grounded lamp sockets carried thereby, a quick detachable current supply contact for each socket, and a carrier bar to which each contact is attached, the carrier bar being supported by the contacts in a predetermined position inside the cover when the contacts are in attached position. 70
2. A toy electric locomotive having a cover, grounded lamp sockets carried thereby, a quick detachable current supply contact for each socket, a carrier bar to which each contact is attached, the carrier bar being supported by the contacts in a predetermined position inside the cover when the contacts are in attached position, a supporting frame, and an insulated contact carried thereby in a position to be connected with the bar when the cover is placed in position on the frame. 75
3. In a toy locomotive, in combination, a pair of headlight sockets carried by a locomotive cover, a current supply contact for each socket, and a rigid member electrically interconnecting the contacts and having a fixed position when the contacts are in place. 80
4. In a toy locomotive, in combination, a pair of headlight sockets carried by a locomotive cover, a current supply contact for each socket, a rigid member electrically interconnecting the contacts and having a fixed position when the contacts are in place, a propulsion motor mounted in a frame and having a current collecting device and a controller associated therewith, and a fixed contact carried by the controller and engageable with the rigid member when the cover is mounted on the frame. 85
5. A toy electric locomotive having a cover, grounded lamp sockets carried thereby, a quick detachable current supply contact for each socket, a carrier bar to which each contact is attached, the carrier bar being supported by the contacts in a predetermined position inside the cover when the contacts are in attached position, running gear adapted to support the locomotive on tracks, a current collecting device, and a fixed contact connected to the current collecting device and disposed in position to be engageable with the rigid member for supplying current to the lamp sockets when the cover is in place. 90
6. In a toy locomotive, a cover carrying headlight sockets, a frame carrying a propulsion motor, current collecting contacts and an exposed headlight terminal, and a rigid insulatively supported headlight supply lead carried by the cover in position to engage the exposed terminal when the cover is in place on the frame. 95
7. In a toy locomotive, a locomotive frame, a motor assembly including a motor frame, current collecting unit, and a motor controller unit, said units having contacts juxtaposed for establishing connection for the controller upon the assembly of the units on the motor frame, a cover, a pair of head lamp sockets carried by the cover, a quick detachable current supply lead for each head lamp socket, and a device supported by said current supply leads in position to electrically connect the sockets with the controller. 100
8. In a toy locomotive, a cover, a pair of oppositely facing head lamp sockets grounded on the cover and having downwardly opening contact receiving slots, a current supply contact insertible into each slot to provide a central socket terminal, each contact having insulation to separate it from the socket structure, and a bar extending from one contact to the other. 105
9. In a toy locomotive, a cover, a pair of oppositely facing head lamp sockets grounded on the cover and having downwardly opening contact receiving slots, a current supply contact insertible into each slot to provide a central socket terminal, each contact having insulation to separate it from the socket structure, and a bar extending from one contact to the other, the bar being flexibly connected with the contacts. 110
10. In a toy locomotive, an insulating plate, a brush rigging and motor reversing controller mounted on the plate, the current supply terminal for one side of the circuit having exposed portions, one adapted to engage a current supply contact and the other adapted to act as a current supply contact for a head light connector. 115

Signed at New York, in the county of New York and State of New York, this 30th day of August, 1928. 120

MARIO CARUSO. 125