April 11, 1939. L. F. KELCH ET AL 2,153,983

LIGHTED TOY RAILROAD COACH

Filed March 17, 1937

Fig. 1.

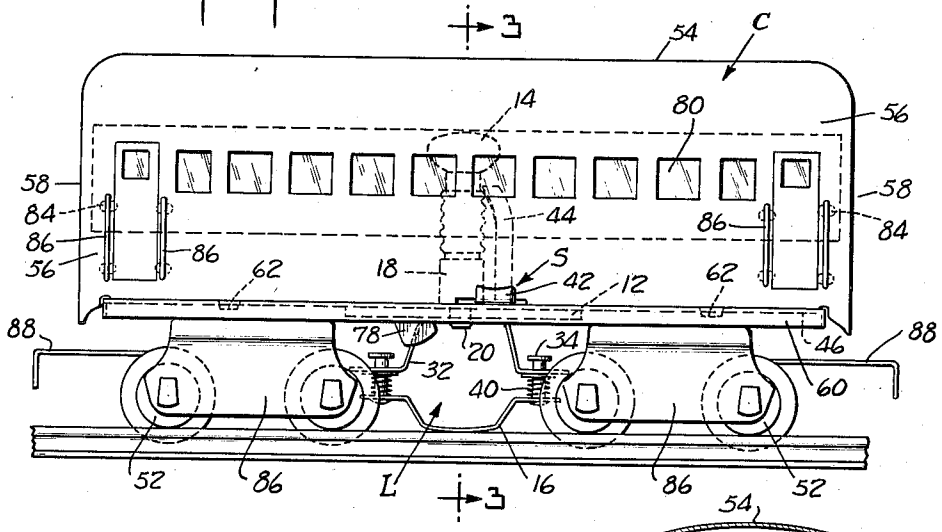


Fig. 2.

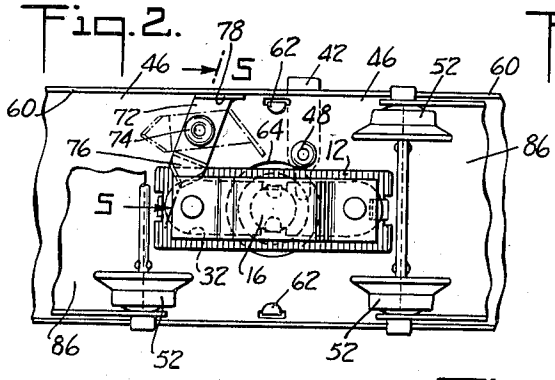


Fig. 3.

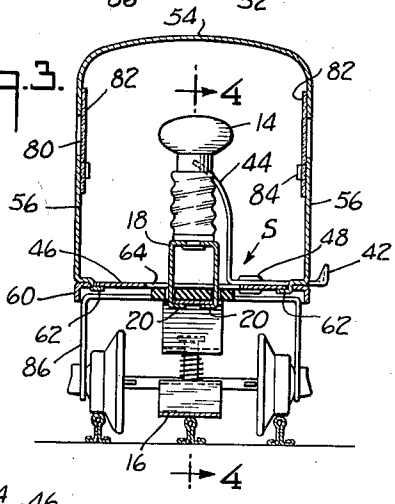


Fig. 4.

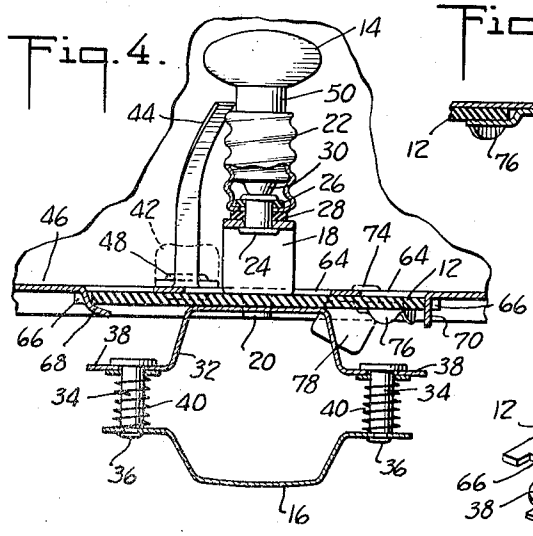


Fig. 5.

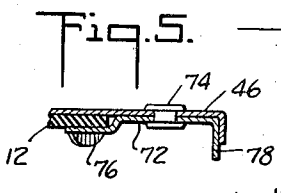


Fig. 7.

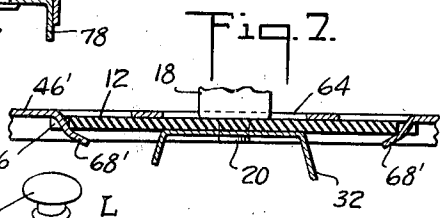
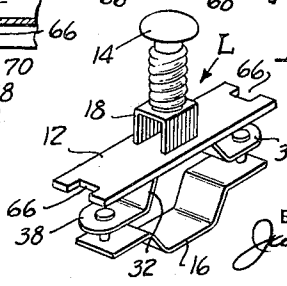


Fig. 6.



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LIGHTED TOY RAILROAD COACH

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7 Claims. (Cl. 240—2)

This invention relates to toys and more particularly to a lighted coach for use with toy railroads.

The primary object of our invention is to generally improve lighted coaches for toy railroads. Heretofore, toy lighted coaches have been costly and have been used on only the more expensive types of toy railroad. A further object of our invention is to produce a toy lighted coach which is economical to manufacture and which may be sold at a low price for use with inexpensive toy railroads.

One problem which arises in connection with a lighted toy coach, is the replacement of lamps when burned out or broken. In the usual construction it is necessary to remove the entire roof of the car in order to obtain access to the lamp. This in turn complicates the manufacture of the coach body, for it must be strongly reinforced in order to hold its shape independently of the roof. In accordance with further objects and features of our invention, the coach body is made with top, bottom, and side walls which are permanently connected together. The bottom wall is provided with an opening, and a special lighting unit is detachably inserted in the coach body. This lighting unit includes the lamp, lamp socket, and third rail contact shoe, and is preferably so constructed as to dispense with the necessity for electric wiring. To replace a burned-out lamp, it is merely necessary to temporarily remove the detachable lighting unit from the coach body.

The usual lighted coach even when of the more expensive type, is not provided with a switch for the lighting circuit, and the lamp consequently burns whenever the coach is used. Another object of our invention is to provide the coach with a switch for controlling the lighting of the lamp, the said switch being so constructed as to not only dispense with the necessity for wiring between the lamp and the switch, but also to actually replace some wiring which might otherwise be necessary.

Another object and another advantage of the invention centers about the fact that the manufacturer may use the same dies for making coach bodies with or without the lighting equipment. Inasmuch as the lighting is provided by a unit detachably inserted through the bottom of the coach, a coach devoid of lighting may be made by simply omitting the detachable lighting unit.

To the accomplishment of the foregoing and such other objects as will hereinafter appear, our invention consists in the toy lighted coach elements and their relation one to the other as hereinafter are more particularly described in the specification and sought to be defined in the claims. The specification is accompanied by a drawing in which:

Fig. 1 is a side elevation of a toy coach embodying features of our invention;

Fig. 2 is an inverted plan view showing a part of the bottom of the coach;

Fig. 3 is a transverse section taken in the plane of the line 3—3 of Fig. 1;

Fig. 4 is an enlarged section taken in the plane of the line 4—4 of Fig. 3;

Fig. 5 is a detail of the lock for holding the lighting unit in place, and is taken in section at the line 5—5 of Fig. 2;

Fig. 6 shows the detachable lighting unit in perspective; and

Fig. 7 is a fragmentary section similar to Fig. 4 but showing a modification.

Referring to the drawing, the toy comprises a coach body C, and a detachable lighting unit generally designated L. The nature of the lighting unit is best seen from inspection of Fig. 6. It is manifest that the lighting unit may be inserted through a comparatively small opening in the bottom of the coach, and that no substantial modification of the coach structure itself is required.

The lighting unit L comprises an insulation plate 12. The lamp 14 is mounted above the plate 12, and a third rail contact shoe 16 is mounted below plate 12. Specifically, an inverted U-shaped metallic support 18 is secured to insulation plate 12 by tongues 20 which pass through slots in the insulation plate and are bent over therebeneath. The lamp socket comprises a threaded shell 22 the base of which is insulatedly mounted on support 18 by means of an eyelet 24. The socket 22 is provided with insulation washers 26 and 28 (Fig. 4) which surround eyelet 24. The hole in the base of the socket 22 is, of course, larger than eyelet 24, and with this construction the eyelet is insulated from the shell of the socket and its upper end may be used as a center terminal for contact with the center terminal 30 of lamp 14.

The third rail contact shoe assembly comprises an upper or stationary member 32 and a lower or movable member 16. The upper member 32 is secured to insulation plate 12 by the bent tongues 20 previously referred to. The support 18 thus serves not only to structurally mount the lamp socket at the desired elevation, but also forms an electrical connection between the center terminal of the lamp socket and the contact shoe.

The movable member 16 is connected to the stationary member 32 by means of guide pins 34 the lower ends of which are shouldered and riveted to the shoe 16 at 36, and the upper ends of which are slidable through the arms 38 of stationary member 32. Light readily yieldable springs 40 are disposed around the pins 34 and function to normally urge the shoe 16 downwardly into good electrical contact with the third rail of the track. The relation of the parts when the coach is removed from the track is illustrated by Fig. 4, while the relation of the parts when the coach is rested on the track is shown in Fig. 1.

The lighting of the coach is controlled by a switch S. This switch is formed of a single piece of sheet metal the outer end 42 of which is shaped to form a control lever which projects slightly from the side of the coach body. The inner end is bent upwardly and sidewardly to form a yieldable contact 44. The switch lever is pivotally mounted on the bottom 46 of the coach body by means of an eyelet 48. Contact 44 is so located that it may be moved into or out of engagement with the exterior of either the lamp socket 22 or the base 50 of the lamp bulb, as is shown in Fig. 4. This completes the lighting circuit, for it grounds the base of the lamp to the coach body which in turn is connected to the outside rails of the track by means of the coach wheels 52. By moving the switch handle 44 in the opposite direction, the contact 44 may be moved away from the lamp socket, thus opening the lighting circuit.

The coach body C comprises a top wall 54, side walls 56, end walls 58, and the bottom wall 46 previously referred to. These walls may be and preferably are permanently secured together. In the specific construction here illustrated, the top wall 54, the side walls 56, and the end walls 58 are all made of a single piece of sheet metal, the said metal being formed by appropriate dies into the enclosed shape shown in the drawing. The bottom of the coach is closed by a special bottom plate 46 the periphery of which is preferably downwardly flanged, as indicated at 60, in order to stiffen and rigidify the same. The side walls 56 and the bottom 46 are secured together by conventional bent tongue and slot connections 62.

The bottom 46 is provided with a suitable opening 64 for receiving the lighting unit L. This opening is larger than the inverted U-shaped support 18 in order to avoid grounding the support against the car body. The lighting unit is held in place by means best shown in Figs. 4, 5, and 6. The ends of insulation plate 12 are preferably notched or recessed, as shown at 66 in Fig. 6. At one end of insulation plate 12 the bottom 46 has struck downwardly therefrom a support lug 68 which fits through recess 66. At the other end of plate 12 the bottom has struck downwardly therefrom a locating lug 70 which is much like support lug 68 but is bent downwardly at right angles to the body. Lug 70, of course, fits into the notch or recess 6. The coach bottom 46 is additionally provided with a pivoted latch 72, said latch being eyeletted to the bottom at 74, as is best shown in Figs. 2 and 5. The inner end of latch 72 is stepped downwardly at 76 to fit snugly against the bottom of insulation plate 12. The outer end may be turned downwardly at 78 to form a stop which bears against the flange 60 of bottom 46 when the latch is in closed or locking position. The downturned end 78 also acts as a handle to facilitate swinging the latch from the solid-line position shown in Fig. 2 to the broken-line position. This, of course, releases that end of insulation plate 12 which is adjacent the vertical lug 70. The insulation plate is therefore readily tipped downwardly from lug 70 and may thereupon be slid longitudinally, free of the holding lug 68. The entire lighting unit is readily withdrawn from the coach, and the lamp 14 is thereby made accessible for replacement.

The side walls 56 of the coach body are cut away to form a series of simulated windows 80 behind which are secured transparent sheets 82 made of isinglass, Celluloid, or the like. These sheets are held in place by bent tongue connections 84 which are used to hold external handrails 86 on the outside of the coach body.

The coach is completed by the wheels 52 previously referred to, which in the present case are mounted on trucks 86 which in turn are pivotally mounted on the car bottom in conventional fashion. The coupling bars 88 are preferably pivoted on the same center-line as the trucks, and a single eyelet or other pivot may be used for both purposes. It will be understood that in an even less expensive model, four rather than eight wheels may be used, one pair of wheels being disposed near each end of the coach, and the axles thereof being journaled directly in brackets depending from the coach bottom. In other words, the pivoted trucks as well as other details of the coach construction are not essential to the practice of the present invention.

A slightly modified construction of even greater simplicity is shown in Fig. 7, referring to which it will be seen that the insulation plate 12 is supported on the coach bottom 46' by means of two support lugs 68' each like the support lug 68 previously referred to. In other words, in this construction the locating lug 70 is bent slightly beneath the insulation plate in order to hold the same in place, thereby completely dispensing with the manually operable latch 72. To replace the lamp bulb, it is simply necessary to bend one of the lugs 68' downwardly slightly, thus freeing one end of plate 12 which may then be tilted and removed from the coach, just as previously described. The lugs 68' will withstand a number of such bendings because the metal is not sharply bent. Inasmuch as the necessity for changing a lamp bulb arises only infrequently, the construction of Fig. 7, while not as convenient as the construction of Fig. 2, is nevertheless a perfectly usable and practical construction.

With either construction, the coach is complete and operable even if the lighting unit is removed and left out of the coach. In fact, the present construction is of advantage from the viewpoint of the manufacturer, in that a single set of dies for the coach body may be used in the manufacture of either lighted or unlighted coaches. The same bottom may be used, and the presence of several holes therein is of no consequence because they are located out of sight on the bottom of the coach. However, if the manufacturer wishes to avoid the presence of these unnecessary openings in the unlighted coaches, it is simply necessary to use a separate die for the supplementary operation of striking the holes and lugs in the bottom, and only those bottoms intended for use in a lighted coach need be subjected to this supplementary operation.

It is believed that the construction and operation of our improved lighted toy coach, as well as the many advantages thereof will be apparent from the foregoing detailed description. It will also be apparent that while we have shown and described our invention in preferred forms, many

changes and modifications may be made in the structures disclosed, without departing from the spirit of the invention defined in the following claims.

We claim:

1. A toy lighting unit for a toy railroad car, said lighting unit including an insulated support plate, a lamp socket and lamp mounted on the upper side thereof, a third rail contact shoe mounted on the lower side of said support plate and supported solely by said support plate, the unit being adapted to be inserted in a hole cut in the bottom of a toy railroad car and to be secured to said toy railroad car bottom.

2. The combination with the bottom of a toy railroad car, of a toy lighting unit including an insulated support plate, a lamp socket and lamp mounted on the upper side thereof, a third rail contact shoe mounted on the lower side of said support plate and supported solely by said support plate, said car bottom having an oversize hole cut therethrough adapted to receive the lamp and lamp socket, mating means on said car bottom and on said support plate for detachably securing the support plate to the car bottom, means electrically connecting said contact shoe to the center terminal of the lamp socket, and means for grounding the side of said lamp socket to the car bottom.

3. The combination with the bottom of a toy railroad car, of a toy lighting unit including an insulated support plate, a lamp socket and lamp mounted on the upper side thereof, a third rail contact shoe mounted on the lower side of said support plate and supported solely by said support plate, said car bottom having an oversize hole cut therethrough adapted to receive the lamp and lamp socket, mating means on said car bottom and on said support plate for detachably securing the support plate to the car bottom, means electrically connecting said contact shoe to the center terminal of the lamp socket, and means for grounding the side of said lamp socket to the car bottom, said means being movably mounted to bring the same into or out of contact with the socket and to thereby function as a switch controlling the energization of the lamp.

4. A toy lighting unit for a toy railway car, said lighting unit including an insulation support plate, an inverted U-shaped metallic support above said plate secured thereto by bent tongue and slot connections, a lamp socket mounted on said support with one terminal riveted to and electrically connected with the support, a third rail contact shoe mounted on the lower side of said support plate and comprising stationary and movable parts, the stationary part being secured to the plate and electrically connected to the support by the aforesaid bent tongue connections, and the movable part being disposed beneath the stationary part and connected thereto by light spring connections which afford ready yieldability.

5. The combination with a toy railroad car bottom, of a toy lighting unit including an insulation support plate, an inverted U-shaped metallic support above said plate secured thereto by bent tongue and slot connections, a lamp socket mounted on said support with one terminal riveted to and electrically connected with the support, a third rail contact shoe mounted on the lower side of said support plate and comprising stationary and movable parts, the stationary part being secured to the plate and electrically connected to the support by the aforesaid bent tongue connections, the movable part being disposed beneath the stationary part and connected thereto by light spring connections which afford ready yieldability, means to detachably secure the insulation plate to the car bottom, and means to complete the lamp circuit by grounding the other lamp socket terminal to the car bottom.

6. The combination with a toy railroad car bottom, of a toy lighting unit including an insulation support plate, a lamp socket mounted on said support plate, a third rail contact shoe mounted on the lower side of said support plate and connected to the center terminal of the lamp socket, means to detachably secure the insulation plate to the car bottom, and means to complete the lamp circuit by grounding the lamp socket to the car bottom, said means including a sheet metal member pivotally mounted on and electrically connected to the car bottom, one part of said member projecting beyond the bottom and being shaped to form a handle, and the other part of said member being bent to form a contact so located that movement of the handle moves the contact into engagement with the exterior of the lamp socket.

7. The combination with a toy railroad car bottom, of a toy lighting unit including an insulation support plate, an inverted U-shaped metallic support above said plate secured thereto by bent tongue and slot connections, a lamp socket mounted on said support with one terminal riveted to and electrically connected with the support, a third rail contact shoe mounted on the lower side of said support plate and comprising stationary and movable parts, the stationary part being secured to the plate and electrically connected to the support by the aforesaid bent tongue connections, the movable part being disposed beneath the stationary part and connected thereto by light spring connections which afford ready yieldability, means to detachably secure the insulation plate to the car bottom, and means to complete the lamp circuit by grounding the other lamp socket terminal to the car bottom, said means including a sheet metal member pivotally mounted on and electrically connected to the car bottom, one part of said member projecting beyond the bottom and being shaped to form a handle, and the other part of said member being bent to form a contact so located that movement of the handle moves the contact into engagement with the exterior of the lamp socket.

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