Sept. 18, 1934. W. F. HAFNER 1,973,923

TOY VEHICLE

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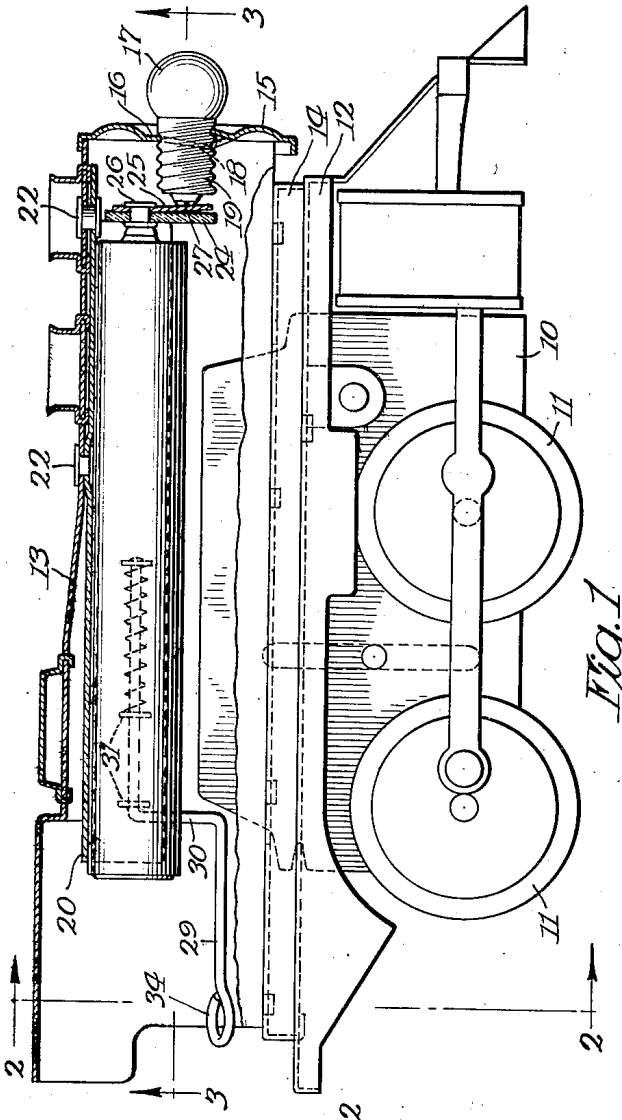

Fig. 1

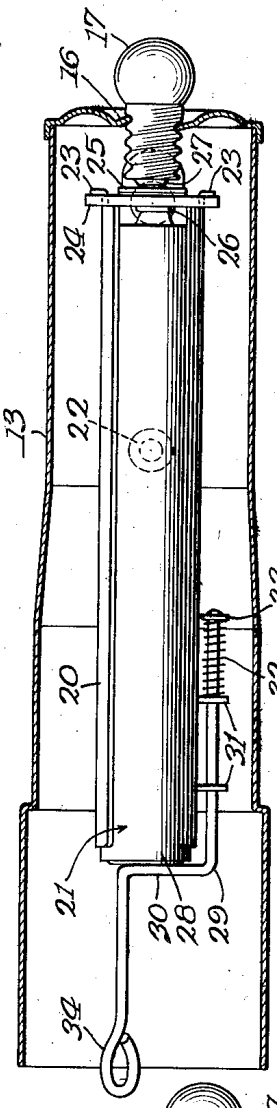

Fig. 3

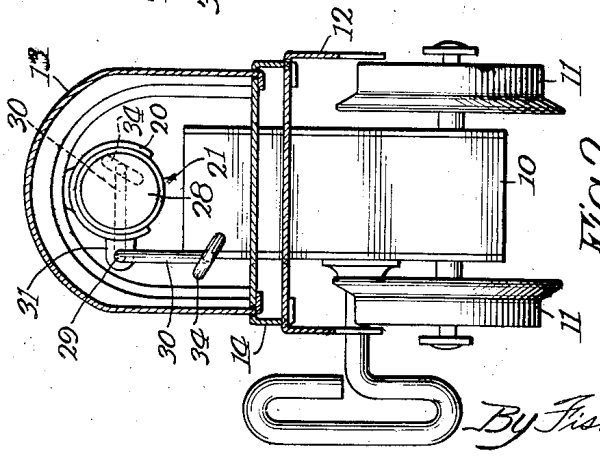

Fig. 2

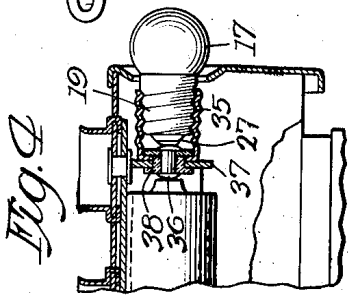

Fig. 4

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TOY VEHICLE

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8 Claims. (Cl. 46—48)

This invention relates to a toy vehicle and has particular reference to an arrangement for supplying electric current to an electric head light lamp carried by the vehicle.

Electric head lights on various forms of toy vehicles are, of course, well-known. However, in toy vehicles such as spring motor driven locomotives, there are certain space limitations which have made it difficult if not impossible to mount a dry battery within the vehicle for supplying current to a head light lamp, and cost considerations, complexity and frailness of arrangements heretofore used have been a serious obstacle to the commercial exploitation of such battery carrying provisions as have been proposed prior to my invention.

The object of the present invention, as indicated above, is mainly to provide a simple but effective and yet inexpensive arrangement for mounting a dry battery within the body of a toy vehicle for supplying electric current to an electric head-light or other electric device on the vehicle.

Another object of the invention is to provide means for mounting a dry battery within the body of a toy vehicle in which provision is made for making or breaking the electric circuit to the head light lamp or other device.

Other objects and advantages of the invention will be understood by reference to the following specification and the accompanying drawing in which a head light lamp battery mounting means embodying a selected form of the invention is illustrated as applied to a spring motor driven toy locomotive.

In the drawing:—

Fig. 1 is a side view, partly in section;

Fig. 2 is a rear end elevation;

Fig. 3 is a section on the line 3—3 of Fig. 1; and

Fig. 4 is a fragmentary side view, partly in section, showing a modified arrangement.

Referring now to the drawing, the toy locomotive illustrated includes a spring motor power plant 10 having suitably mounted thereon wheels 11—11 which may, for example, be adapted to roll on toy tracks.

In the structure shown, a deck member 12, preferably made of sheet metal stamped to the desired shape, is suitably mounted on the frame of the spring motor 10. A hollow sheet metal body member 13 which is shaped to resemble the boiler and cab portion of a locomotive is provided on the deck member 12, and a portion of the spring motor 10 projects upwardly into the space within the boiler portion of the body 13.

A false or second deck 14 is interposed between the main deck 12 and the body 13, and in this instance serves the purpose of raising the body 13 relative to the spring motor so as to effect a withdrawal of the spring motor from the body to thereby provide the desired space within the body for receiving a battery or dry cell as will presently be described. The various parts may be united by tongue and opening connections or otherwise as is well-known to those skilled in the art. The front end of the boiler simulating portion of the body 13 is provided with a closure 15, and this closure is centrally offset inwardly as indicated at 16 to receive the glass bulb portion of a miniature electric lamp 17. Centrally of the inwardly offset portion 16, the closure member 15 is provided with an opening 18 and the edge of the closure around the opening 18 is so distorted that it will constitute a screw thread for receiving the screw-threaded base portion 19 of the electric lamp.

It will be understood, of course, that the body portion 13 and end closure 15 just described are made of sheet metal in accordance with more or less standard practice and that these parts may constitute a conductor for conducting electric current to the metallic shell 19 of the electric lamp. A battery holder or support 20 is suitably mounted within the boiler portion of the body, and in this instance, the support consists of an elongated sheet metal tubular member 20 which may, if desired, be open as indicated at 21 along its bottom side. The member 20 may conveniently be secured to the boiler portion of the body by means of tubular rivets such as indicated at 22. By this arrangement, the battery support 20 is electrically connected to the body.

At one end, the battery support 20 is provided with a pair of endwise projecting ears 23 which project through suitable openings in an insulating material member 24, such ears being bent over the outside of the member 24 to securely anchor the insulator to the end of the support 20. As shown in the drawing, the insulator 24 projects downwardly below the bottom side of the holder and a contact strip 25 is secured by means of a rivet 26 to the insulator 24. The rivet 26 constitutes a terminal or contact member which is adapted to engage one of the terminals, in this instance the central terminal, of the dry battery mounted in the support 20, and the strip 25 serves to conduct current from the battery to the center contact 27 in the base of the electric lamp.

The other terminal, in this instance the zinc casing of the dry battery 28, is adapted to be connected or grounded to the body of the vehicle and thereby connected to the threaded shell portion 19 of the lamp base. The means herein disclosed for so grounding the battery 10 consists of a wire member 29 which is bent intermediate its ends to provide a laterally disposed portion 30. The inner end portion of the member 29 is longitudinally and rotatably slidably mounted in a pair

of ears 31—31 which are struck out from the wall of the battery holder 20, and a suitable coil spring 32 disposed around the inner end portion of the member 29, between one of the lugs 31 and a collar 33 carried by the member 29, serves to yieldingly urge the member 29 to move longitudinally inwardly of the holder 20. The outer end portion of the member 29 is provided with a loop or eye 34 which constitutes a handle for facilitating manipulation of the member.

It will be seen that the member 29 may be drawn outwardly against the force of the spring 32 and then turned inwardly to overlie the end portion of the battery 28. When the member 29 is in this position, the spring 32 moves the member inwardly until the laterally disposed portion 30 engages the end of the battery to thereby establish a connection between the battery and the metallic body of the vehicle. When it is desired to turn out the lamp 17, the member 29 is turned to such a position that the lateral portion 30 will be disposed at one side of the holder so that the spring 32 may move the member 29 inwardly to a position in which the member 30 can not swing into engagement with the end of the dry cell. Hence, the member 29 may be properly referred to as a circuit breaker or switch.

It will, of course, be understood that the dry battery 28 is a standard type of battery, herein illustrated as a cylindrical, fountain pen flashlight battery, and that it is surrounded by a paper covering which constitutes an insulation to prevent direct electric connections between the battery casing and the support or sleeve 20. The end of the battery is, of course, uncovered so that the portion 30 of the circuit breaker may make electric connection therewith. In the appended claims, the words "cell" and "battery" are used without distinction to refer to one or more units forming the source of electric current.

In the structure illustrated in Fig. 4, the lamp 17 is supported by a socket 35 which is carried by the front end of the battery holder 20, the end closure 15 being suitably apertured to permit passage therethrough of the base of the lamp.

The socket 35 is secured to the holder 20 by means of a rivet 36 which is insulated from the socket and from the end member 37, by means of insulating material washers and sleeves substantially as illustrated and indicated in their entirety by the reference numeral 38. In this structure, the end member 37 is of metal and it is electrically connected to the holder 20 by means of ears such as 23 (shown in Fig. 3).

The rivet 36 is adapted to contact with the center terminal of the battery 28 and thus constitutes a conductor beween the battery and the center terminal 27 in the base of the lamp 17. The holder 20 is electrically connected to the base 19 of the lamp by reason of the metallic contact between the socket 35 and the holder with the metal end piece 37. Any suitable switch arrangement, for example one such as described in connection with Figs. 1, 2 and 3, may be provided for controlling the circuit between the battery and the battery holder.

It will be observed that in the described structures, the battery holder 20, the lamp contacting and supporting front end structures, and the circuit breaker are all associated as a unit so that such unit may be assembled independently of the vehicle body structure and subsequently assembled as a unit with the vehicle body.

The described structure is very easy to make, involves no costly parts of manufacturing operations, and hence is adapted to be utilized in connection with toy locomotives and other vehicles which do not command a high retail selling price.

Despite its simplicity, the structure is highly effective and it is, of course, so easy to operate that any child old enough to play with this type of toy can readily operate the same.

Changes may be made in the described structure without departing from the spirit of the invention, the scope of which should be determined by reference to the following claims, the same being construed as broadly as possible consistent with the state of the art.

I claim as my invention:—

1. An electrical unit for a toy vehicle comprising a holder for receiving and supporting a dry cell, an insulating material element mounted on said holder at one end, a contact element carried by said insulating material element for contacting one of the terminals of a dry cell in said holder and transmitting current therefrom to an element included in an electric circuit, and a circuit breaker mounted on said holder comprising an element longitudinally and rotatably adjustably mounted on said holder and provided with an offset portion adapted to engage the other terminal of said dry cell, and means for yieldingly holding said element in contact with said other terminal.

2. In a toy vehicle, a hollow body, a wall portion of said body being provided with an opening for receiving the base portion of a miniature electric lamp, a metal holder electrically connected to said body and mounted within the same for receiving and supporting a dry cell adapted to supply electric current for operating said miniature lamp, an insulating member adjacent one end of said holder, a contact element carried by said insulating member and adapted to transmit electric current from one terminal of a dry cell in said holder to a terminal of said lamp, a circuit breaker mounted on said support so as to be adjustable longitudinally and transversely thereof, spring means normally urging said circuit breaker to move longitudinally inwardly relative to said holder, said circuit breaker being adjustable from normal, inoperative position at one side of said holder to a position overlying and in engagement with an end portion of a dry cell in said holder to thereby ground the current from said battery to complete a circuit to said lamp.

3. In a toy vehicle of the class described, an electric device, an elongated, open-ended tubular member constituting a dry cell holder, a dry cell being insertible into said holder through its open end, the opposite end of the holder being arranged to position the corresponding end of the dry cell in contact with a terminal connected to said electric device, and means associated with the open end of the holder for yieldingly urging said cell forwardly in said holder into electrical engagement with said terminal.

4. In a toy locomotive, the combination of a body including a tubular boiler portion having an end closure on its front end and a cab portion at its rear end, means within said boiler portion and opening to the rear end of said cab portion for receiving and supporting a dry cell, said end closure having an opening for permitting insertion of the base portion of an electric lamp into said boiler for electrical connection with a dry cell in said supporting means, and a circuit breaker having a portion located in said cab por-

tion for facilitating manipulation of the circuit breaker.

5. In a toy vehicle, a hollow body having an opening affording access to the interior of the body, a metallic dry cell holder within said body and accessible for the insertion and removal of a dry cell through said body opening, an insulating material member mounted on one end of said holder, a contact element carried by said insulating material member for engaging one terminal of a dry cell in said holder, means for grounding the other terminal of said dry cell, and means for holding an electric lamp with one terminal in engagement with said contact element and its other terminal electrically connected to said other dry cell terminal.

6. An electrical unit for a toy vehicle comprising an elongated, tubular metallic sleeve for receiving and supporting a dry battery, a socket mounted on one end of said sleeve for receiving the base portion of an electric lamp, said socket including a shell electrically connected to said sleeve and a central contact in the bottom end of and relatively insulated from said shell, said central contact being arranged to engage one terminal of a dry battery in said sleeve, and means associated with the other end of said sleeve for electrically connecting the other terminal of said battery to said sleeve and shell.

7. In a toy vehicle having a body portion constituting an inclosure, an electric unit comprising an elongated, open-ended, metallic receptacle for receiving and holding a dry cell, the latter being insertible into the receptacle through its open end, disengageable contact means carried by said receptacle adjacent one end for electrically connecting the receptacle with one terminal of a dry cell positioned in the receptacle, said receptacle and disengageable contact means constituting a unitary structure adapted to be positioned as a unit within said inclosure-forming body part, and means for holding a miniature electric lamp and establishing electrical connection between the lamp terminals respectively with said receptacle and a terminal of the dry cell.

8. In a toy locomotive, the combination of a body including a tubular boiler portion having an end closure on its front end and a cab portion at its rear end, means within said boiler portion and opening to the rear end of said cab portion for receiving and supporting a dry cell, said end closure having an opening for permitting insertion of the base portion of an electric lamp into said boiler for electrical connection with a dry cell in said supporting means, and means adjacent the open end of said dry cell receiving means for holding the dry cell against displacement through said open end.

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