June 11, 1935. A. C. KORTE 2,004,791

HEADLIGHT AND SPOTLIGHT DEVICE FOR TOY VEHICLES

Filed April 22, 1933 2 Sheets-Sheet 1

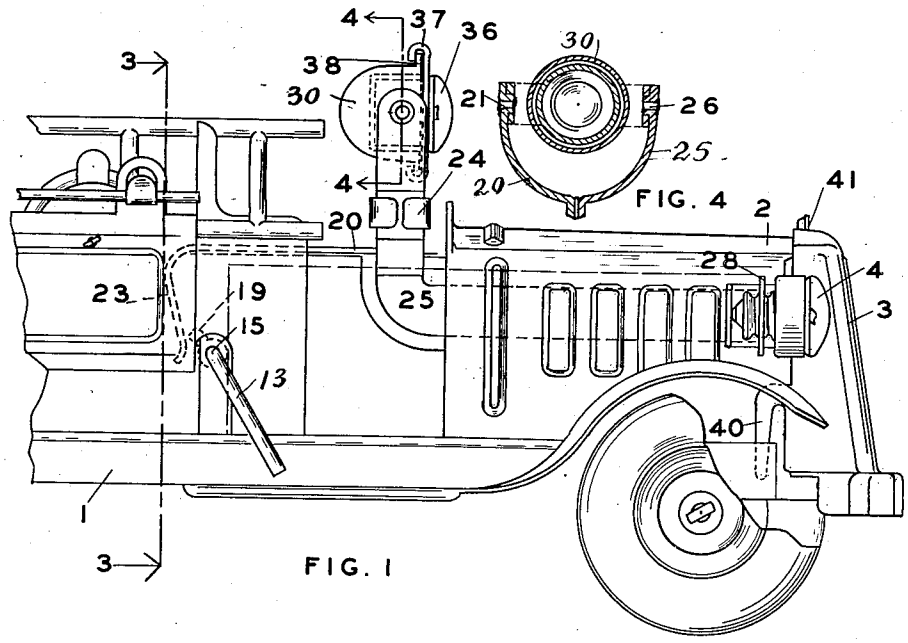


FIG. 1

FIG. 4

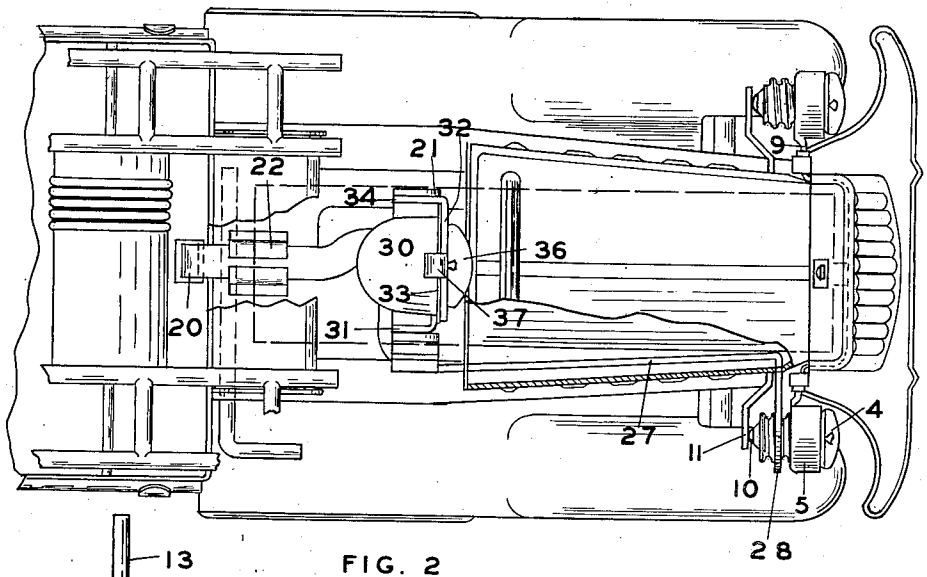


FIG. 2

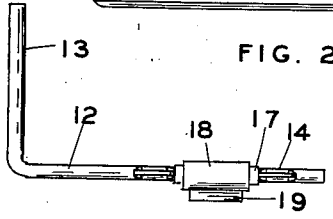


FIG. 6

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HEADLIGHT AND SPOTLIGHT DEVICE FOR TOY VEHICLES

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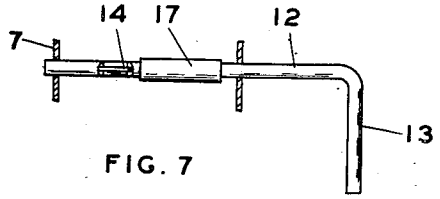


FIG. 7

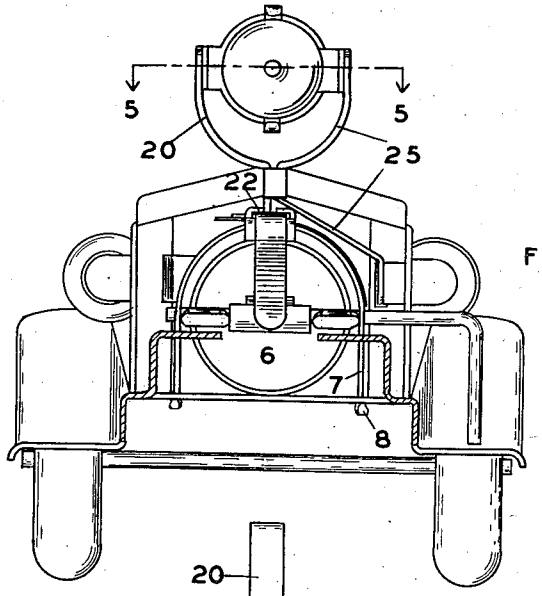


FIG. 3

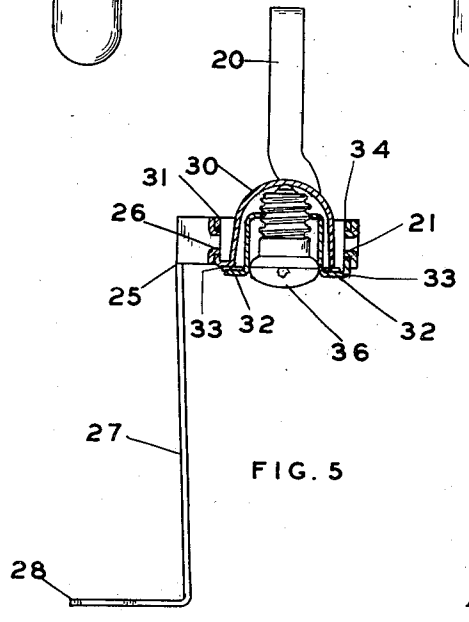


FIG. 5

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UNITED STATES PATENT OFFICE

2,004,791

HEADLIGHT AND SPOTLIGHT DEVICE FOR TOY VEHICLES

Alfred C. Korte, St. Louis, Mo., assignor to Metalcraft Corporation, St. Louis, Mo., a corporation of Missouri

Application April 22, 1933, Serial No. 667,451

7 Claims. (Cl. 240—7.1)

This invention relates to headlight and spotlight devices for toy vehicles. It is the object of the invention to provide a toy vehicle with electric headlights and also with a spotlight which may be adjusted to various positions with respect to the vehicle. On account of the small size of these vehicles problems are presented due to the limited space available for carrying batteries and also due to the small size to which it is necessary to reduce the various lighting devices. It will also be understood that toys of this nature are subject to abuse and must be of very simple and rugged construction and at the same time very inexpensive.

It is an object of this invention to produce a generally improved device of the above described character. The invention will be better understood from the following specification and accompanying drawings, referring to which:

Figure 1 shows a side elevation of the front end of a toy vehicle having my invention applied thereto, parts being broken away for better illustration of others.

Figure 2 is a plan view of the device shown in Figure 1, parts being broken away and others shown in sections.

Figure 3 is a sectional view taken along the lines 3—3 of Figure 1.

Figure 4 is a detail sectional view of the spotlight construction taken along the lines 4—4 of Figure 1, looking in the direction of the arrows.

Figure 5 is a detail sectional view of the spotlight and supports therefor, taken along the lines 5—5 of Figure 3 looking in the direction of the arrows.

Figure 6 is a detail view of the control switch.

Figure 7 is a detail view of a simplified form of control switch.

The reference numeral 1 indicates the chassis of a toy vehicle, a fire truck in this instance, having a hood 2, a radiator 3, and headlights 4 which are mounted and installed in the manner shown in Patent #1,905,931 issued April 25, 1933, to George R. Ericson. For the purpose of understanding my invention, it will be sufficient to say that the headlight reflectors 5 are formed integral with a cross bar 9, which is rigidly attached to the radiator, but electrically insulated therefrom. The source of current is a battery 6, carried under the hood in an inverted U-shaped housing 7, which is attached to the floor of the chassis by means of the lugs 8. The battery is a dry cell of the usual flash light type and its central terminal contacts with the cross bar 9 through which the current flows to the filaments of the headlight bulbs through the central terminals 10 of the headlight bulbs, and the bracket members 11 into the chassis. The current is turned on or off by grounding the zinc base of the batteries to the chassis by means of a switch 12. The switch is provided with a handle 13 and eccentric lugs or cam surfaces 14 to contact the base of the battery. The switch is mounted in opposite openings in the side members of the truck, as indicated at 15, or alternatively in the opposite sides of the U-shaped housing member 7, as indicated in Figure 7.

I have shown two forms of switch. In the simpler form shown in Figure 7 the switch is surrounded by an insulating member 17, such as a piece of rubber tubing, to prevent accidental contact of the base of the battery with the switch when the cam 14 is not in contact with the battery.

In order to prevent simultaneous operation of the headlight and spotlight, which would unduly shorten the life of the batteries, I preferably surround the insulating member 17 with a cylindrical sheet metal member 18 having a cam surface 19 thereon, and construct the spotlight in the following manner:

A combination switch and supporting bracket 20 is made of a strip of sheet metal in the form best shown in Figures 3 and 5. This member is provided with a protruding eyelet or trunnion portion as indicated at 21, for a purpose hereinafter to be described, and the member 20 is firmly attached to the battery housing 7 by means of the lugs 22. Insulating paper is used to prevent contact of the lugs 22 and the battery housing with the member 20. It will be noted that the rear end of the member 20 is bent downwardly as indicated at 23 to form a contact for the cam member 19. The member 20 is also provided with a pair of lugs 24 for the attachment of the bracket member 25, which is used not only as a supporting bracket for one side of the spotlight, but also as a conductor member for supplying current to the spotlight. The member 25 is insulated from the chassis and also from the member 20 and is provided with a protruding eyelet or trunnion 26, as indicated in Figure 4. The member 25 is carried forward inside the hood, as indicated at 27, and is bent outwardly through an opening in the hood just in front of the bracket 11, terminating in a perforated contact member 28, which surrounds the screw threaded base of one of the headlight bulbs and makes electrical contact therewith.

The construction of the spotlight is as follows:

A cup-shaped sheet metal body member 30 provided with an integral perforated lug 31, is mounted on one of the trunnions 21 and 26. A smaller cup-shaped body member 32 is pressed into the cup 30, but insulated therefrom by insulating paper 33, or any other suitable means. The member 32 is provided with a perforated lug 34 to fit on the other trunnion, so that the

members 30 and 32 form a rotatable spotlight assembly without the necessity of any electric connections except the two supporting brackets 20 and 25. The center of the member 32 is perforated with a non-circular opening suitable for receiving the screw threaded base of the spotlight bulb 36, so that when the bulb is screwed into place its base is in contact with the member 32, while the central terminal of its base is in contact with the member 30. It may be noted that the member 32 is preferably provided with lugs 37 which are bent back over the outwardly extending flange 38 of the member 30. Insulating paper is used between these members to prevent electrical contact.

The batteries may be inserted or removed by first loosening the headlight bulbs 4 and then lifting off the radiator which is held on by hooks 40 and projection 41. The hooks 40 are formed integral with the radiator to hook over a part of the chassis, and the member 41 is formed integral with the hood to pass through a corresponding opening in the top of the radiator.

In operation, the forward and central terminal of the batteries contacts with the cross bar 9, and the rear or zinc terminal of the battery contacts with the member 18. By operating the handle 13 the cam 19 contacts the member 23, closing the circuit through the spotlight bulb 36, and members 25, 27, 28, 5 and 9 to the central terminal of the battery. By operating the handle 13 in another direction the cam 19 is first moved out of contact with the member 23 and the cam 14 is then moved into contact with the zinc base of the battery, it being understood that the radius of the cam 14 is slightly greater than the radius of the cylindrical portion of the member 18. When the cam 14 touches the zinc base of the battery, thereby grounding it to the chassis, the circuit is closed through the members 11, 10, the filament of the bulb, the screw threaded base, and the members 5 and 9 to the central terminal of the battery, and lighting the headlights.

If it is desired to operate the headlights and spotlight simultaneously, or if it is desired to omit the spotlight altogether, as in the Ericson patent above referred to, the switch construction shown in Figure 7 may be used. That is to say, the members 18 and 19 may be omitted and the member 20 may be grounded to the chassis simply by omitting the insulating paper at the point where it is held by the lugs 22.

I claim:

1. A spotlight comprising a pair of supporting brackets, said brackets being firmly joined together but electrically insulated from each other, corresponding ends of said bracket members being spread apart and provided with trunnions to receive a spotlight assembly therebetween, a spotlight assembly mounted on said trunnions, said assembly comprising an outer body member pivotally mounted on one of said trunnions, an inner body member pivotally mounted on the other of said trunnions, said outer and inner body members being electrically insulated from each other.

2. A spotlight comprising a pair of supporting brackets, said brackets being firmly joined together but electrically insulated from each other, corresponding ends of said bracket members being spread apart and provided with trunnions to receive a spotlight assembly therebetween, a spotlight assembly mounted on said trunnions, said assembly comprising an outer body member pivotally mounted on one of said trunnions, an inner body member pivotally mounted on the other of said trunnions, said outer and inner body members being electrically insulated from each other, said inner body member having an opening adapted to receive the screw threaded base of an electric light bulb, an electric light bulb having a screw threaded base threaded into said inner body member, the central terminal of said screw threaded base contacting with the outer body member.

3. In a device of the class described a cup-shaped outer member, having a projecting flange, an inner body member having a screw threaded central opening, lugs formed on said inner body member and curled over said flange to hold the two members in assembled relation, and means for electrically insulating said outer and inner members.

4. In a device of the class described inner and outer body members, axially aligned but oppositely located lugs on said body members, means for insulating said body members from each other, and a pair of supporting bracket members pivotally connected to said lugs and insulated from each other.

5. In a headlight device for toy vehicles, a chassis, an inverted U-shaped member mounted on said chassis and adapted to hold a battery in position with respect thereto, a switch member comprising a rod passing thru said inverted U-shaped member and having an eccentric portion thereon, an insulating sleeve carried by said rod, the radius of the insulating sleeve being less than the radius of the eccentric portion with respect to the center of the rod.

6. In a headlight device for toy vehicles, a chassis, an inverted U-shaped member mounted on said chassis and adapted to hold a battery in position with respect thereto, a switch member comprising a rod passing thru said inverted U-shaped member and having an eccentric portion thereon, an insulating sleeve carried by said rod, the radius of the insulating sleeve being less than the radius of the eccentric portion with respect to the center of the rod, and a contact member surrounding said insulating sleeve, said contact member being insulated from the rod and having an eccentric portion thereon.

7. In a headlight device for toy vehicles, a chassis, an inverted U-shaped member mounted on said chassis and adapted to hold a battery in position with respect thereto, a switch member comprising a rod passing thru said inverted U-shaped member and having an eccentric portion thereon, an insulating sleeve carried by said rod, the radius of the insulating sleeve being less than the radius of the eccentric portion with respect to the center of the rod, and a contact member surrounding said insulating sleeve, said contact member being insulated from the rod and having an eccentric portion thereon, the eccentric portion of said contact member being angularly spaced from the eccentric portion of said rod.

ALFRED C. KORTE.