

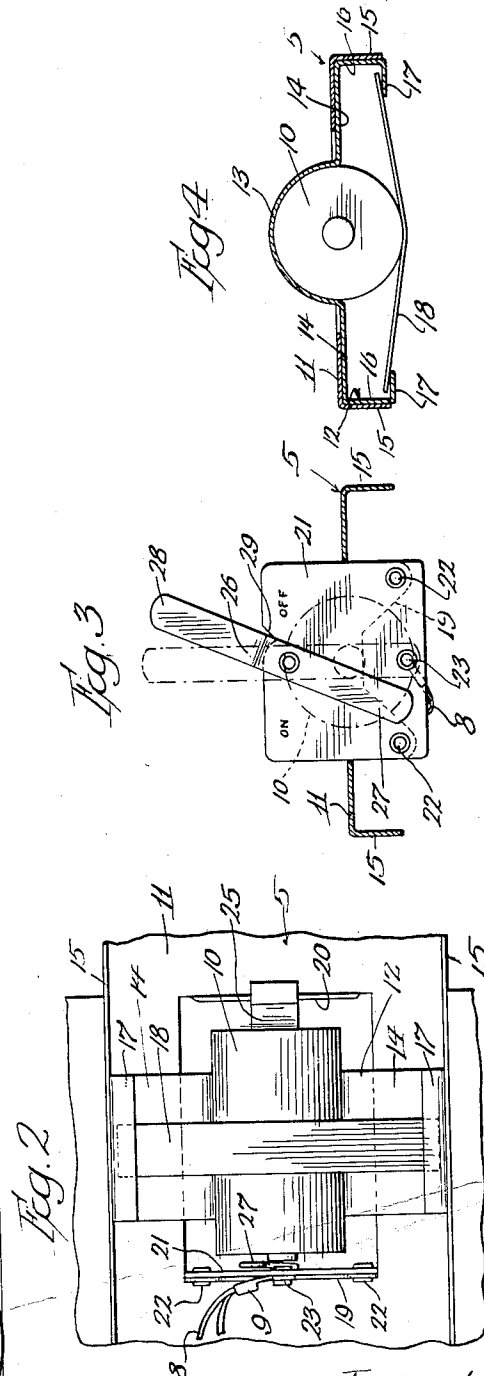
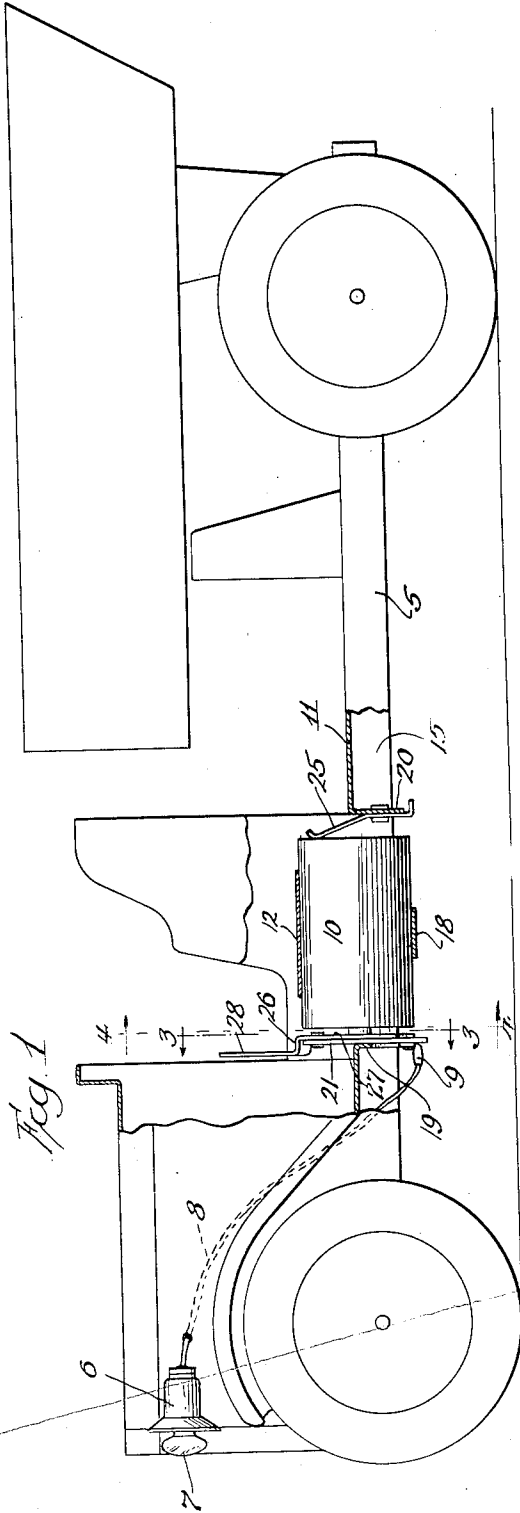
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LIGHTING SYSTEM FOR TOY AUTOMOBILES

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LIGHTING SYSTEM FOR TOY AUTOMOBILES

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5 Claims. (Cl. 46—48)

This invention relates to lighting systems for toy automobiles and its principal object is to provide simple, rugged and substantial means for mounting an electric battery in the toy, together with a switch for controlling the circuit for the lamps of the toy automobile, and having a switch lever located in a convenient position for manipulation. In these toys space is restricted and considerable difficulty has been encountered in placing the switch lever in convenient position for manipulation, with the result that only makeshift and impractical switches have heretofore been used. In accordance with the present invention the parts have been designed to enable substantial rugged, and yet simple means to be employed for holding the battery and controlling the circuit for the lamps.

The invention consists in the several novel features hereinafter fully set forth and claimed.

The invention is clearly illustrated in the accompanying drawing in which:

Fig. 1 is a side elevation of a toy automobile, partly broken out and equipped with a lighting system embodying a simple form of the present invention;

Fig. 2 is a fragmental under plan showing the battery holder and electric connections;

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

Fig. 4 is a detail cross section taken on the line 4—4 of Fig. 1.

Referring to said drawing, which illustrates a simple embodiment of the invention, the reference character 5 designates the chassis or body of a toy automobile having the usual wheels, engine hood, seat, box and other equipment simulating corresponding parts of a standard vehicle. The toy shown simulates a standard dump wagon, but may of course resemble any standard vehicle.

At the front of the toy are mounted headlights 6 in which are contained small electric lamps 7 having the usual screw shell connection with the lamp housing for grounding one terminal on the body of the toy and having a center contact piece for making an electrical connection with a conductor wire 8 that runs to a terminal clip 9 through which an electrical connection is made with a small electric battery 10.

In the form of the invention shown, the battery is placed in a cut out part of the bottom 11 of the toy underneath the seat. A battery holder 12 in the form of a strip of metal, is provided, which is struck up with a centrally disposed concave portion 13 in which the battery is placed. Extending from the concave part are flat hori-

zontal parts 14 that underlie the bottom 11 of the toy and extend to the down turned side edges 15 thereof, where said horizontal parts are bent down as at 16, with their lower extremities bent inwardly towards each other at 17 to form ledges for a spring battery retaining bar or strip 18 to rest upon. The parts are so proportioned that the spring bar or strip is held up tightly against the underside of the battery by the inturned extremities 17 of the battery holder, thus firmly holding the battery in place against the concave part 13.

Projecting down from the front and rear edges of the opening in the bottom 11, are flanges 19, 20 between which the battery extends. A switchboard 21 of insulating material is secured to the downturned flange 19, as by eyelets or rivets 22 and projects above and below the bottom 11. Below the bottom a terminal contact piece 23, preferably in the form of an eyelet is secured in the switchboard and extends from side to side thereof, the head of the eyelet on one side being located in position, whereby electrical contact can be made with the positive or center pole of the battery. The other side of the eyelet is fastened to the metal clip 9 to which the conductor wires 8 from the lamps 7 are secured.

To the other flange 20 is riveted or otherwise rigidly secured a spring metal contact piece 25 which extends upwards and makes electrical contact with the other pole of the battery thereby grounding said pole on the body of the toy. The spring metal contact piece 25 urges the battery toward the flange 19.

Pivotaly mounted upon that part of the switchboard which projects above the bottom 11 is a switch lever 26 which has a switch arm 27 arranged to be moved between the terminal contact point 23 and the center or positive pole of the electric battery, and thereby close the electric light circuit. The switch lever has a finger piece 28 that extends up from the fulcrum and is bent over the top of the switchboard to provide an offset which is arranged to engage with a stop shoulder 29 formed on the switchboard at a position adapted to limit the stroke of the switch lever in its "off" position. At its "on" position the offset part of the switch lever encounters the top edge of the switch lever at the "on" position. The "off" and "on" positions of the switch lever are thus controlled by the upper edge of the switchboard with which the offset part of the switch lever is adapted to engage. Contact of the switch lever with the pole of the battery only, does not close the circuit, but

the lever must be moved into contact with the contact point 23 also to close the circuit.

It will be observed that the switchboard is placed at right angles to the length of the battery with the switch lever mounted thereon in convenient position for manipulation. The battery is firmly supported in position whereby contact may be made between the terminal for the lamp wires and a pole of the battery by interposing the switch lever therebetween. While only one battery is shown several, arranged in series, may be employed to obtain greater voltage if desired.

I claim as new and desire to secure by Letters Patent:

1. In lighting systems for toy automobiles, the combination of a metal toy automobile chassis, a battery holder mounted thereon, an electric battery supported by said battery holder, a switchboard formed of non-conducting material, mounted on the chassis and extending at right angles to the length of said battery and having an electric light circuit terminal contact member located adjacent a pole of the battery, a switch lever pivotally mounted on said switchboard and having an arm always contacting with a pole of the battery and arranged to make and break contact between said terminal contact member and the pole of the battery, and a contact piece contacting with the other pole of the battery and forming another terminal of said electric light circuit.

2. In lighting systems for toy automobiles, the combination of a metal toy automobile chassis, a battery holder mounted thereon, an electric battery supported by said battery holder, an upright switchboard formed of non-conducting material, mounted on the chassis and extending at right angles to the length of the battery and having an electric light circuit terminal contact member, located adjacent one pole of the battery, a switch lever pivotally mounted on the switchboard and having an arm always contacting with a pole of the battery and movable between said pole and contact member, whereby to make and break contact therebetween, co-acting stop members on the switchboard and switch lever for stopping said switch lever at its "off" and "on" positions, and a contact piece contacting with the other pole of the battery and forming another terminal of said electric light circuit.

3. In lighting systems for toy automobiles, the

combination of a metal toy automobile chassis provided with a bottom member having an opening therein, a battery holding strip extending across said opening, said strip being formed with a centrally located upwardly concave part extending through said opening and downturned end parts terminating inwardly extending ledges, an electric battery engaging in said concave part of the battery holding strip, and a spring metal strip engaging said ledges with its middle part held in pressing engagement with said battery, whereby to hold the same in said concave part of the battery holding strip.

4. In lighting systems for toy automobiles, the combination of a metal toy automobile chassis provided with a bottom member having an opening therein and formed with downturned flanges at the front and rear edges of said opening, an electric battery, supported to extend lengthwise between said flanges, a switchboard formed of non-conducting material, secured to one of said flanges and extending across one end of said battery, an electric light circuit terminal contact member secured in said switchboard adjacent one pole of the battery, a switch lever pivotally mounted on said switchboard in position to contact with one pole of the battery and adapted to be swung into contact with said terminal contact member, and a contact piece mounted on said other flange and contacting with the other pole of the battery, said contact piece forming another terminal of said electric light circuit.

5. In electric lighting systems for toy automobiles, the combination of a metal toy automobile chassis, a switchboard formed of non-conducting material, mounted on said chassis and having an electric light circuit terminal contact member secured thereon, a switch lever pivotally mounted on said switchboard and arranged to be swung into and out of contact with said terminal contact member, said switch lever having an off-set part extending over the upper edge of said switchboard and arranged to encounter the same at its "on" and "off" positions, and an electric battery extending at right angles to the switchboard with one of its poles contacting with said switch lever and located adjacent said terminal contact member, whereby an electric light circuit may be closed through said battery by interposing the switch lever between the terminal contact member and said pole of the battery.

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