Dec. 31, 1963 R. E. CLARKE 3,115,724

TOY VEHICLE STARTER AND TIMER

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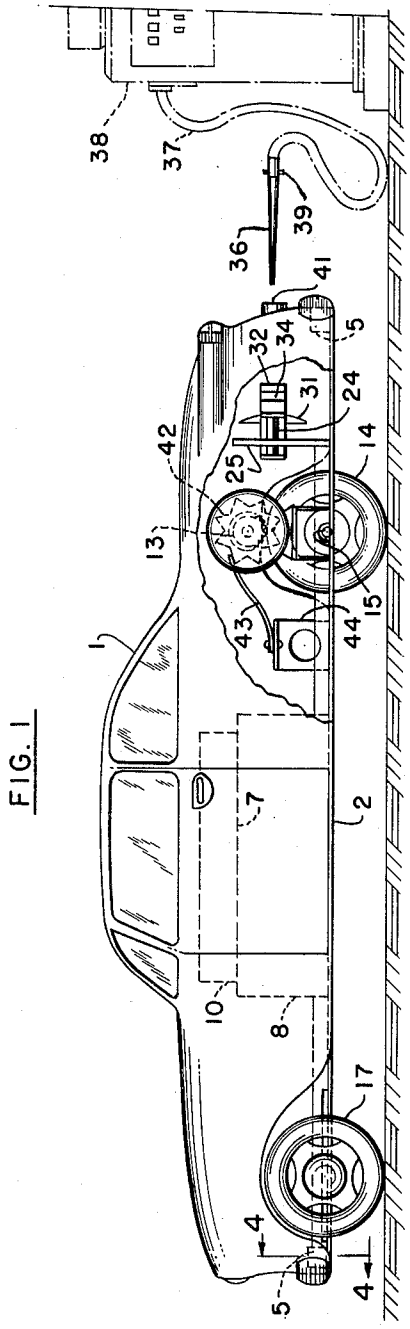


FIG. 1

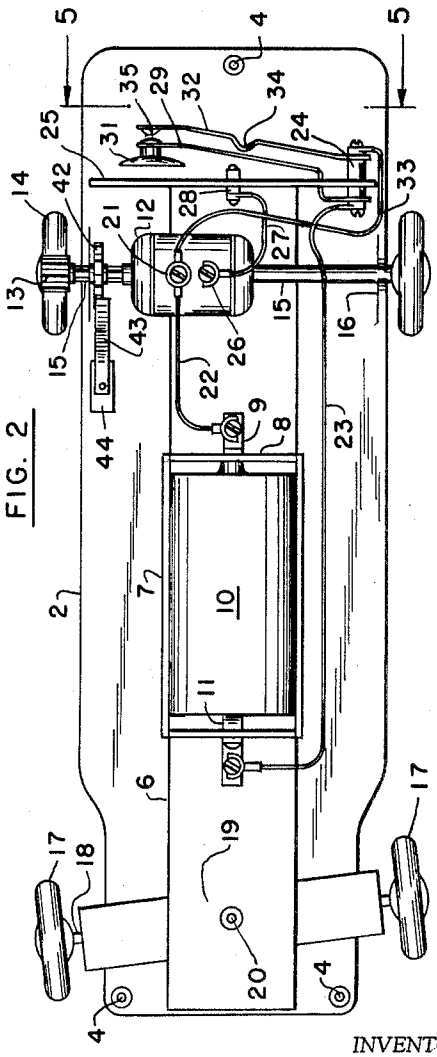


FIG. 2

INVENTOR

ROBERT E. CLARKE

BY Thomas W. J. Clark

ATTORNEY

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FIG. 3

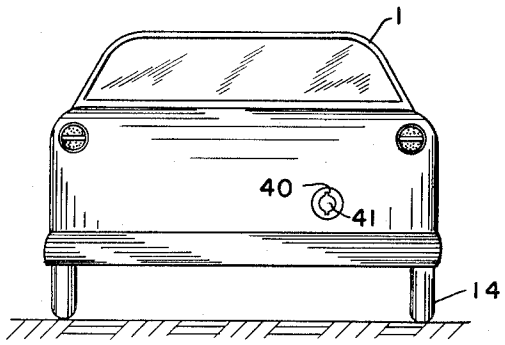


FIG. 4

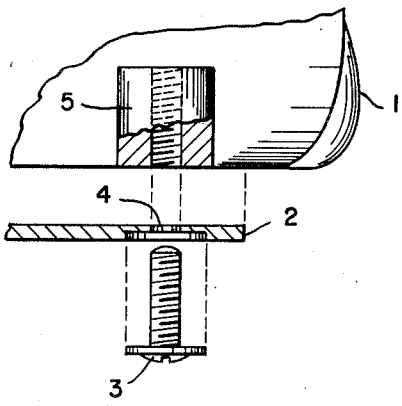


FIG. 5

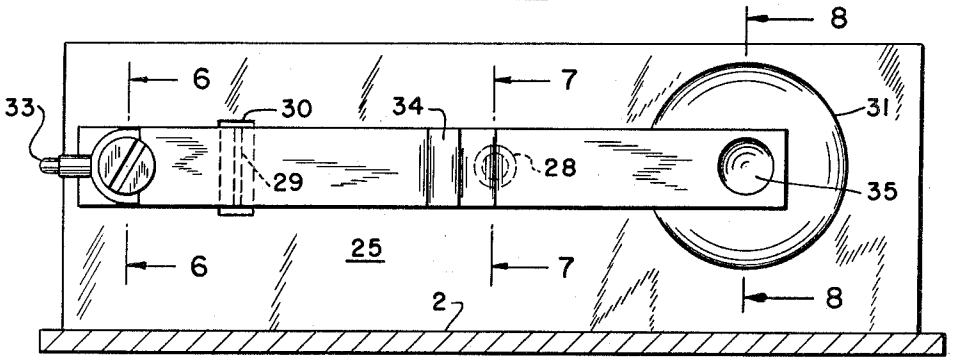


FIG. 6

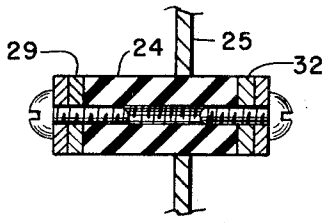


FIG. 7

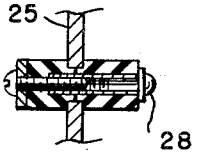
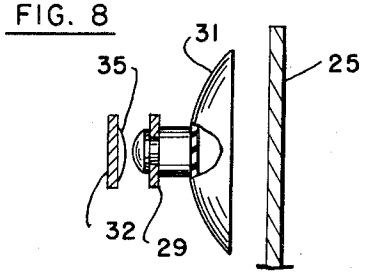


FIG. 8



INVENTOR

ROBERT E. CLARKE

BY Thomas V. J. Clark

ATTORNEY

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TOY VEHICLE STARTER AND TIMER

Robert E. Clarke, 450 Trappe Road, Baltimore 22, Md.

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6 Claims. (Cl. 46—243)

This invention relates to a toy self-propelled vehicle such as an automobile operated by an electric motor from a battery in the vehicle.

Heretofore in the making of such toy automobiles they were equipped with switches or other battery-motor connecting means which operate until they are disconnected or until the battery is exhausted. In the present invention it is an object to initiate the connection between the battery and motor and have it continue for an indeterminate period and to effect the connection preferably by means of a nozzle and hose from a toy gasoline tank.

Another object of the invention is to introduce a circuit shorting means which is operative while the hose nozzle is in filling position in the automobile and upon the withdrawal of the nozzle, the contact having been made is allowed to be effective.

Another object of the invention is to combine a noise maker with the motor so that the automobile will sound as if it is driven by a gasline motor with a repetitive noise instead of with the quietness of an electric motor.

Although the invention is illustrated as applied to a toy automobile, it is apparent that it may be readily applied to a toy truck, engine, boat or airplane, or to any self-propelled toy carrier.

The above and other objects and advantages of the invention will be apparent from the following description and the accompanying drawings forming a part hereof and in which:

FIGURE 1 is a side elevational view of the automobile, parts being broken away to illustrate the operating mechanism.

FIGURE 2 is a top plan view of the chassis of the automobile, after the removal of the body therefrom.

FIGURE 3 is a rear elevational view of the automobile showing the simulated gasoline inlet.

FIGURE 4 is a fragmentary view of line 4—4 of FIGURE 1 showing the connection between the body and chassis.

FIGURE 5 is an end elevational view of the chassis on line 5—5 of FIGURE 2.

FIGURE 6 is a fragmentary sectional view on line 6—6 of FIGURE 5.

FIGURE 7 is a fragmentary sectional view on line 7—7 of FIGURE 5.

FIGURE 8 is a fragmentary sectional view on line 8—8 of FIGURE 5.

In the drawings similar numerals refer to similar parts throughout the several views. The automobile body 1 is connected to the chassis 2 by means of screws 3 passing through openings 4 of the chassis to sockets 5 molded in the front corners of the body and the rear center.

The chassis 2 has raised center channel 6 to which the sides of the battery carrier are attached. The battery carrier has ends 8 through one of which contact 9 connects with the center pole of the battery 10 and a spring contact 11 for the battery body pole passes through the other end 8 and the spring contact also serves to retain the battery within the walls 7 and 8 of the battery carrier. The motor 12 is mounted on the channel 6 and on its rotor shaft is a gear 13 bearing against one of the road wheels 14 which are fastened on the axle 15 held by molded projections 16 on the chassis 2. The front wheels 17 are mounted on the axle 18 on bolster 19 pivoted at 20 forward on the channel 6.

Contact 9 is permanently connected with the motor 12 as at 21 by line 22. Contact 11 is connected by line 23

to the insulated mounting 24 in plastic panel 25 affixed to the end of the channel 6. Contact 26 of the motor is connected by line 27 to insulated contact 28 mounted centrally in the panel 25. Spring contact member 29 passes through an opening 30 in the panel 25 to connect with line 23 on insulated mounting 24, the free end of the spring contact member 29 has passing through an opening therein the head of a suction cup 31, as shown in FIGURE 8 to hold it firmly thereon. This suction cup is so positioned facing the center of the end of the smooth panel 25 as to adhere to the panel when compressed thereagainst. At the time of this gripping the spring contact member 29 strikes contact 28 to close the circuit between the battery and motor for the actuation of the motor as long as the suction cup retains its suction against panel 25. Contact member 32 is connected to the other end of the insulated mounting 24 which mounting is also connected through line 33 with the contact 21 on the motor 12. Spring cntact member 32 has an intermediate indentation 34 which, upon the compression of the spring contact member 32, contacts contact member 29 to short the circuit through the motor and thereby delay its operation. The free end of the contact member 32 has therein an indentation 35 to receive the end of nozzle 36 on the end hose of 37 of the gasoline pump 38. The nozzle 36 has thereon pins 39 passing through slots 40 of the orifice 41 which simulates the opening for a gas tank in the automobile. After the insertion of the nozzle and turning it, it will remain in place until adequate gas flow through the hose to the automobile for using it for a period. While it is in place the current between the battery and the motor 12 will be shorted and the motor will not operate, but when the nozzle is turned and withdrawn the shorting contact member 32 is released and the motor operates so long as the suction cup holds. For this period the vehicle will go over any desired course until the gasoline is exhausted, that is, the suction cup releases, then at that time the automobile is brought back to the supply gasoline pump for a further refilling with fuel.

The motor rotor also has thereon ratchet wheel 42, the teeth of which engage spring 43 attached by mounting 44 to the chassis 2. With the running of the motor the spring 43 snaps down upon the teeth of the wheel 42 to make a repetitive noise simulating the explosions of a gasoline motor.

It will be apparent from the above description that a noise maker and propelling device have been provided which may be used on a wheeled vehicle such as an automobile as has been illustrated or on an engine, truck, boat or airplane as may be desired and it provides not only great amusement for a child but an intriguing device for an adult until the secret of its operation is discovered. It will therefore be apparent that many modifications may be made within the scope of the following claims without departing from the invention.

What is claimed as new and is desired to be secured by Letters Patent is:

1. In a vehicular toy including a vehicle having an electric battery and motor and a road wheel driven by the motor, elements constituting an electric circuit normally open between the battery and motor, normally open means responsive to a temporary application of pressure to close said circuit for an indeterminate period and additional means responsive to the same application of pressure to short said closing means during the maintenance of the temporary application of pressure and in which the release of the pressure leaves the circuit closed.

2. In a vehicular toy including a vehicle having an electric battery and motor and a road wheel driven by the motor, elements constituting an electric circuit normally open between the battery and motor, self-disconnecting means responsive to a temporary application of pressure

to close said circuit for an indeterminate period and additional means responsive to the same application of pressure to short said closing means during the maintenance of the temporary application of pressure.

3. In a vehicular toy including a vehicle having an electric battery and motor and a road wheel driven by the motor, a cup holding surface and elements constituting an electric circuit normally open between the battery and motor on the vehicle, means responsive to a temporary application of pressure to close said circuit and a suction cup connected to said means engaging said surface to maintain the circuit closed during the suction holding of said cup.

4. In a vehicular toy including a vehicle having an electric battery and motor and a road wheel driven by the motor, a cup holding surface and elements constituting an electric circuit normally open between the battery and motor on the vehicle, means responsive to a temporary application of pressure to close said circuit, a suction cup connected to said means engaging said surface to maintain the circuit closed during the suction holding of said cup and pressure responsive means responsive to the same application of pressure to short said closing means during the maintenance of the temporary application of pressure.

5. In a travelling toy including a self-propelled carrier having an electric battery and motor and carrier propelling means driven by the motor, elements constituting an electric circuit normally open between the battery and motor, means responsive to a temporary application of pressure to close said circuit and additional means responsive to the same application of pressure to short said closing means during the maintenance of the temporary application of pressure.

6. In a travelling toy including a self-propelled carrier having an electric battery and motor and carrier propelling means driven by the motor, elements constituting an electric circuit normally open between the battery and motor, self-disconnecting means responsive to a temporary application of pressure to close said circuit for an indeterminate period and additional means responsive to the same application of pressure to short said closing means during the maintenance of the temporary application of pressure.

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