

Nov. 8, 1932.

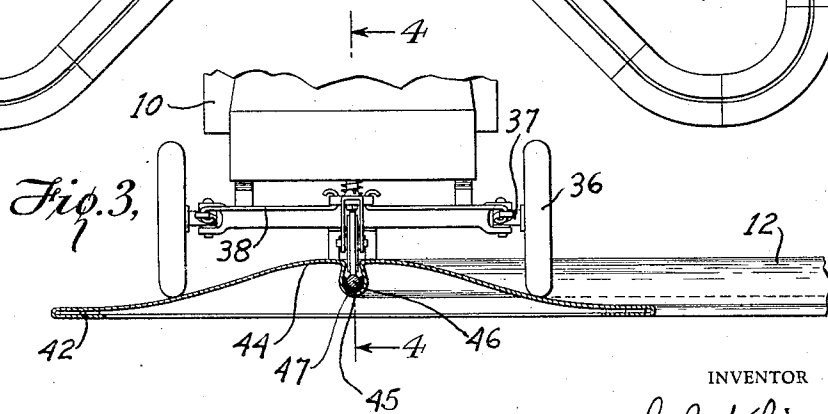
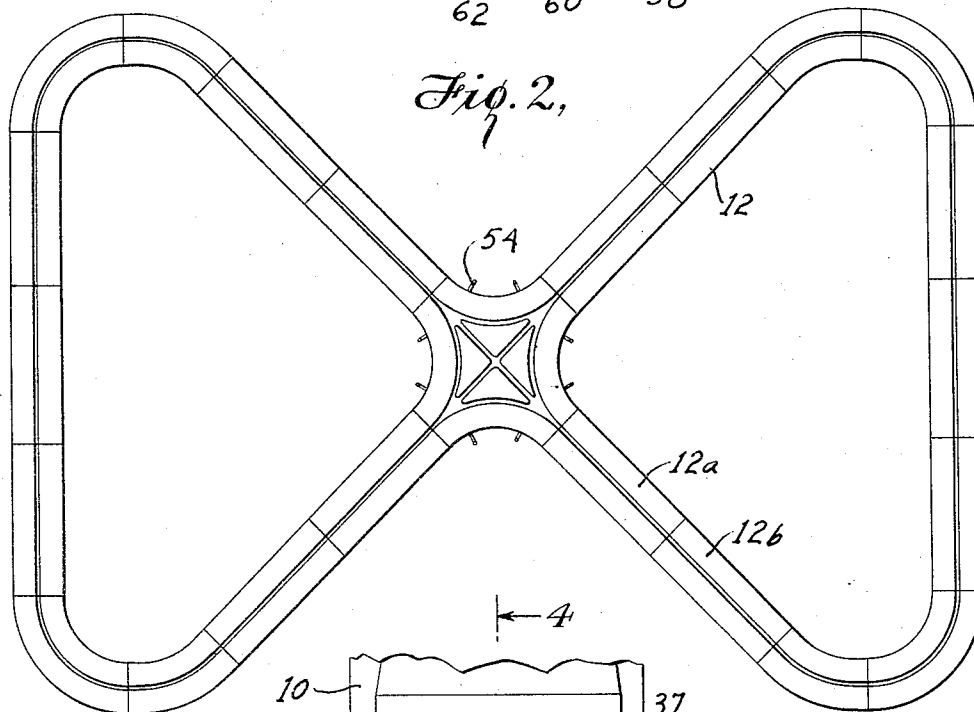
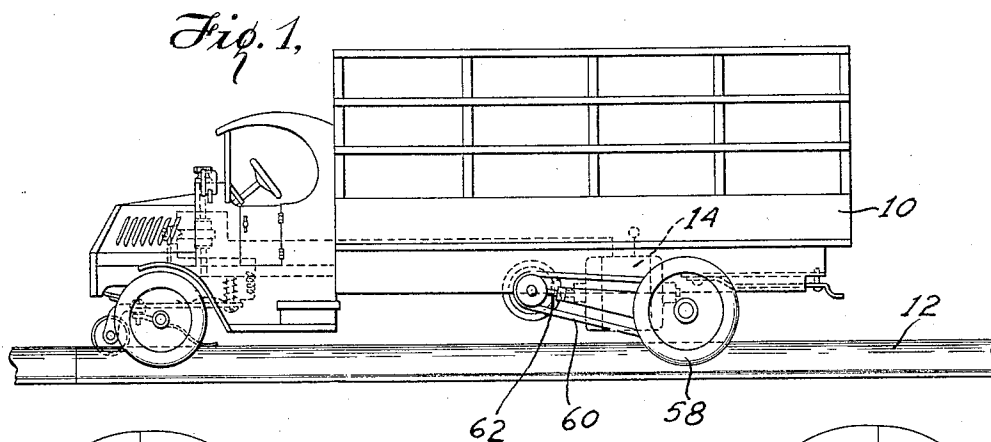
V. C. KLINE

1,886,484

TOY ELECTRICAL ROAD VEHICLE

Filed May 31, 1930

2 Sheets-Sheet 1



INVENTOR

Virgil C. Kline

Nov. 8, 1932.

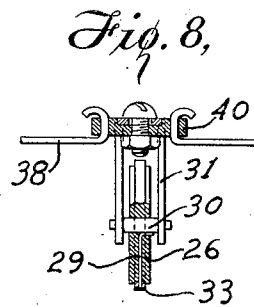
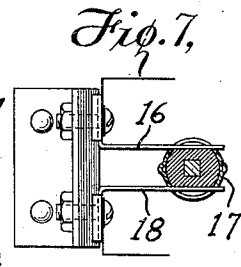
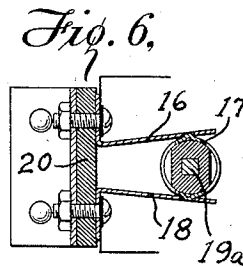
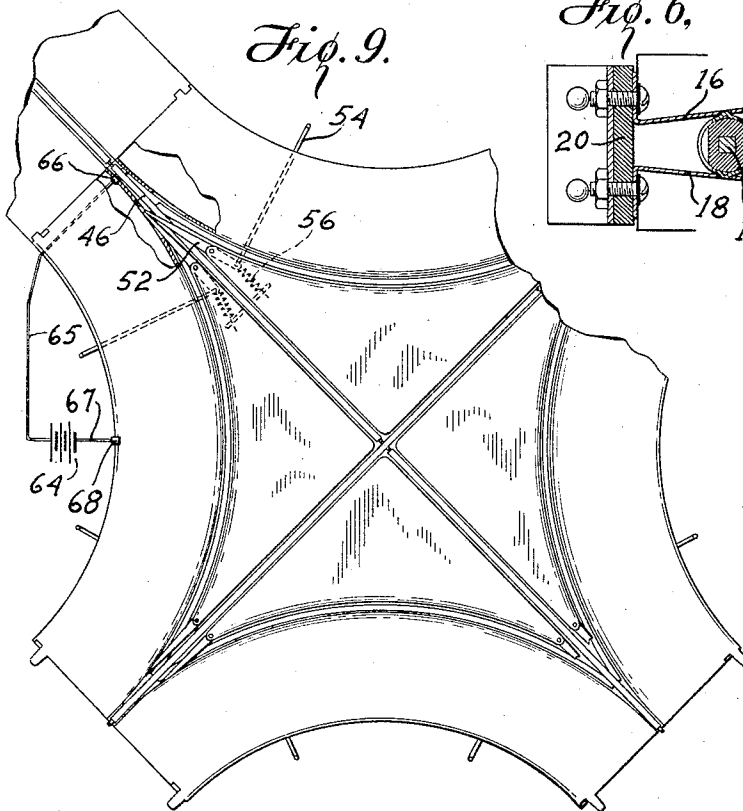
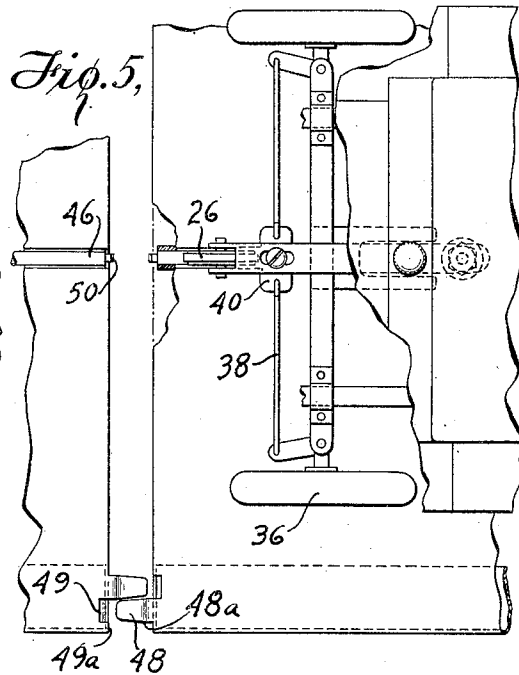
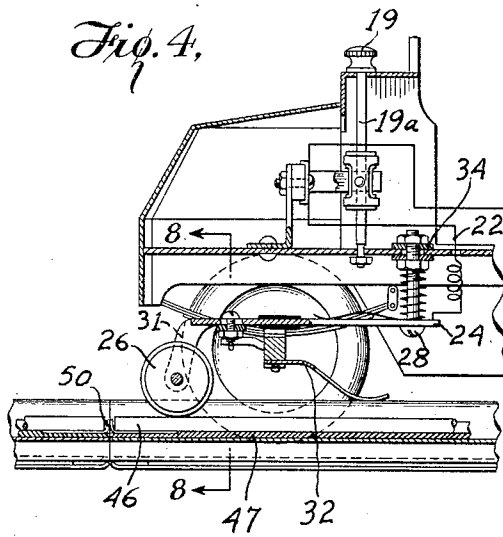
V. C. KLINE

1,886,484

TOY ELECTRICAL ROAD VEHICLE

Filed May 31, 1930

2 Sheets-Sheet 2



INVENTOR

Virgil C. Kline

UNITED STATES PATENT OFFICE

VIRGIL C. KLINE, OF FLORAL PARK, NEW YORK

TOY ELECTRICAL ROAD VEHICLE

Application filed May 31, 1930. Serial No. 458,821.

This invention relates to a new toy electrical road vehicle and roadway.

It is a primary object of the invention to provide a device of this character for entertaining children and so constructed that it may be operated with a minimum of noise and confusion and without liability of danger to the child.

The above and other objects will appear more fully from the following description when considered in connection with the drawings, in which:

Fig. 1 is a side elevational view of the road vehicle and track.

Fig. 2 is a plan view of one form which the track may assume.

Fig. 3 is a transverse sectional view of the roadway illustrating the position of the vehicle thereon.

Fig. 4 is a sectional view taken at right-angles to Fig. 3 and illustrating the controlling switch of the vehicle.

Fig. 5 is a plan view of the vehicle supported upon the track and illustrating the manner of connecting the sections of the track.

Figs. 6 and 7 are detail views of the switch.

Fig. 8 is a fragmentary view of the steering and power supplying trolley.

Fig. 9 is an enlarged fragmentary plan view, parts being in section, illustrating the switching devices which may be employed.

Referring to the drawings, the rubber-tired vehicle 10 is arranged to be supported upon an imitation roadway 12 on which it is guided and from which it receives electrical current for propelling the vehicle.

The vehicle is provided with an electric motor 14 having one terminal thereof grounded on the frame and the other terminal extended to the switch member 16. A conducting member 17 preferably operated by the knurled nut 19 and its supporting rod 19a, engages with the spring switch members 16 and 18 so as to make or break the circuit across the same, the members 16 and 18 being supported upon an insulating block 20 carried by the frame. The member 19 is preferably formed to simulate a radiator cap. The switch blade 18 is connected by means of a suitable conductor 22 to the ve-

hicle steering lever 24 which carries the conducting and steering trolley 26 at its forward end. Lever 24 is supported by means of the pin or bolt 28 suitably insulated from the frame of the vehicle. The steering wheel 26 is formed of fabric or other non-conducting material and includes a conducting ring 33, the outer surface thereof being connected by a conducting member 29 to the axle 30 of the wheel, this axle being supported upon a yoke 31 formed at the forward end of the steering bar 24. The frame of the vehicle 10 is grounded to the track 12 by means of the conducting spring 32 which may be supported upon any metallic part of the vehicle frame, as for example, the front axle.

The bar 24 is insulated from the vehicle frame by means of insulation washers 34. A suitable insulation band of rubber or similar material is attached on the bar 24 in order to prevent electrical contact between bar 24 and the forward vehicle axle.

The front wheels 36 of the vehicle are arranged to turn for steering the vehicle. They are preferably mounted upon stub axles 37 connected by links 38 to an insulating plate 40 carried by the bar 24.

The track 12 may obviously be of any desired shape, preferably to provide different paths of movement for the vehicle, one form of track which may be employed being illustrated in Figure 2.

The track 12 is formed in sections 12a, 12b, etc. which include outer edges 42 adapted to be supported upon the floor of a room, the central portion of the track being arched as at 44 and provided with a central depression 45 which receives the conductor 46 placed therein and insulated from the track 12 as by means of the insulation strip 47. As shown the conductor 46 is mounted at the bottom of the depressed portion 45, the upper edges of the portion 45 being only slightly wider than the wheel 26 to form a guide for the latter.

The sections of track 12 may be attached in any suitable manner. As shown each section is formed with a spring tongue 48 which passes through a slot 49 of the adjacent section so that the shoulder 48a bearing against

the projection 49a of the adjacent track section tends to hold the track in position.

Current is carried from one conducting member 46 to another by means of spring fingers 50 mounted between the insulating strip 47 and conductor 46.

The switching devices disclosed comprise fingers 52 pivotally mounted on the track and carrying operating rods 54 for moving the guiding fingers 52 to their different operative positions. Spring members 56 may be employed to hold the fingers 52 in their set positions as shown. Current may be supplied from a suitable source of current supply shown as the battery 64 and a conductor 65 having a terminal clamp 66 attached to the conductor 46 and a second conductor 67 attached to the roadway 12 as shown at 68.

The connection from the motor 14 to the rear driving wheels 58 is shown as comprising a driving belt 60 and fabric or other gears 62 which further serve to decrease the noise of the vehicle in operation.

The electric road vehicle constructed as shown and described herein may be operated by a child without danger and with a minimum of noise and confusion.

Having now described my invention I claim:

1. A toy electric vehicle and track comprising an arched roadway having relatively thin side edges and formed with a depression in its central portion, an electric conducting member supported within said depression, an electrically propelled vehicle, steering devices therefor including a vehicle guiding trolley normally situated in said depression and in contact with said conducting member, said trolley being removable from said depression at any point along the same.

2. A toy electric vehicle and track comprising an arched metallic roadway formed with a central depressed portion, an electric conducting member supported within said depression and insulated from said metallic roadway, an electrically propelled vehicle, steering devices therefor including a vehicle guiding trolley normally situated in said depression and in contact with said conducting member, a source of current supply connected at its opposite poles with said conducting member and with said roadway, a contact plate of greater width than said depression carried by said vehicle and normally engaged with said roadway for conducting electric current from said vehicle to said roadway, an electric motor for propelling said vehicle, and means for conducting electric current from said trolley and contact member to said motor.

3. In a toy electric vehicle, a metallic roadway formed with a depressed portion, an electric conducting wire positioned in said depressed portion beneath the adjacent surface of said roadway and clamped in position

by the material of said roadway, an electrically propelled vehicle provided with steering devices including a guiding trolley traveling in said depressed portion of said roadway and in contact with said conducting member, an electric motor for said vehicle and means for connecting said trolley electrically with said motor.

4. In a toy electric vehicle, a metallic roadway formed with a depressed portion, an electric conducting member positioned in said depressed portion beneath the adjacent surface of said roadway, an electrically propelled vehicle provided with steering devices including a guiding trolley traveling in said depressed portion of said roadway and in contact with said conducting member, said trolley being formed with side surfaces of insulating material and an edge engagement portion of conducting material, an electric motor for said vehicle and means for connecting said trolley electrically with said motor.

5. In an electric toy, a road vehicle, steering devices for said vehicle, a roadway for said vehicle formed of a sheet metal stamping and having relatively thin edges and a raised central portion, said raised central portion containing a longitudinal depression, a current conducting wire mounted in said depression and clamped in position therein but insulated from the material of said roadway, said depression constituting vehicle guiding means, said steering devices including a guiding lever on said vehicle coacting with said roadway guiding means and separable therefrom for causing said vehicle to follow said roadway, and means for conducting electric current from said wire to said vehicle.

6. In an electric toy, a road vehicle, steering devices for said vehicle, a roadway for said vehicle formed with vehicle guiding means having divergent paths of travel for said vehicle and switching devices carried by said roadway comprising a switching lever and means for causing the same to obstruct or open different paths along said vehicle guiding means, said steering devices including a guiding lever on said vehicle coacting with said roadway guiding means and separable therefrom for causing said vehicle to follow said roadway, and means for conducting electric current to said vehicle.

7. A roadway for a toy electric vehicle comprising an arched metallic body portion, a depression formed therein and wider at the lower portion thereof than where the same is open adjacent the exposed surface of said roadway, an electric conducting member supported by the material of said roadway against removal, within the wider portion of said depression, and means for insulating said conducting member from said body portion.

8. In a toy electric road vehicle, an electric

motor for propelling said vehicle, a switch for controlling said motor and means simulating a radiator cap for said vehicle and connected with said switch for actuating the same.

5 9. In combination, a toy electric road vehicle, a motor for propelling the same, a roadway formed with an arched central portion constituting a guiding means for said vehicle and means supported within said
10 arched roadway for supplying electric current to said motor.

10. In an electric toy, a road vehicle, steering devices for said vehicle, a roadway for
15 said vehicle formed with vehicle guiding means having divergent paths of travel for said vehicle and switching devices carried by said roadway comprising a switching lever and means for causing the same to obstruct
20 or open different paths along said vehicle guiding means, said steering devices including a guiding lever on said vehicle coacting with said roadway guiding means and separable therefrom for causing said vehicle to
25 follow said roadway, means for conducting electric current to said vehicle and means for yieldingly retaining said switching lever in the different operative positions to which it is moved.

30 Signed at New York, in the county of New York and State of New York, this 29th day of May, A. D. 1930.

VIRGIL C. KLINE.

35

40

45

50

55

60

65