

[54] **PLAY TOY FOR USE WITH
MINIATURIZED VEHICLES**

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[56] **References Cited**

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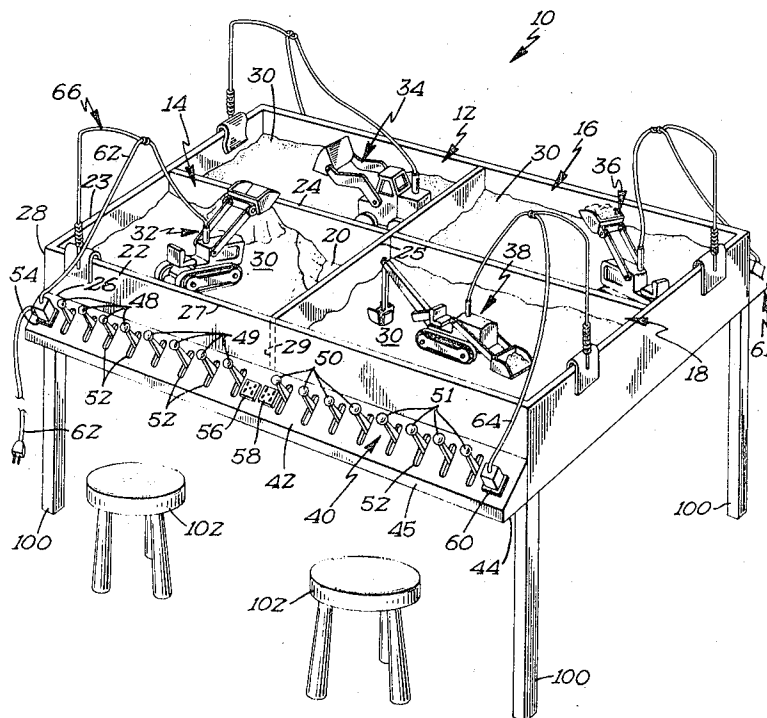
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[57] **ABSTRACT**

A play toy for use with miniaturized, motorized electrically driven vehicles to allow the selective manipulation of such vehicles is disclosed. In the preferred embodiment, an open top, box-like container is arranged upon legs to approximately table top height. Arranged on the sides of the container are electrical power control consoles each including four electrical control levers for controlling the power to an outlet plug mounted on the console. Small unconnected particles of material such as ground rubber or sand, are placed in the container to a depth of several inches; miniaturized vehicles are placed upon such material; and an electrical control cord between such vehicles and the outlet plug on the console is supported on a cord arm attached to the side of the container to allow an operator to selectively manipulate such vehicles through the use of the electrical control levers at the control console.

10 Claims, 3 Drawing Figures



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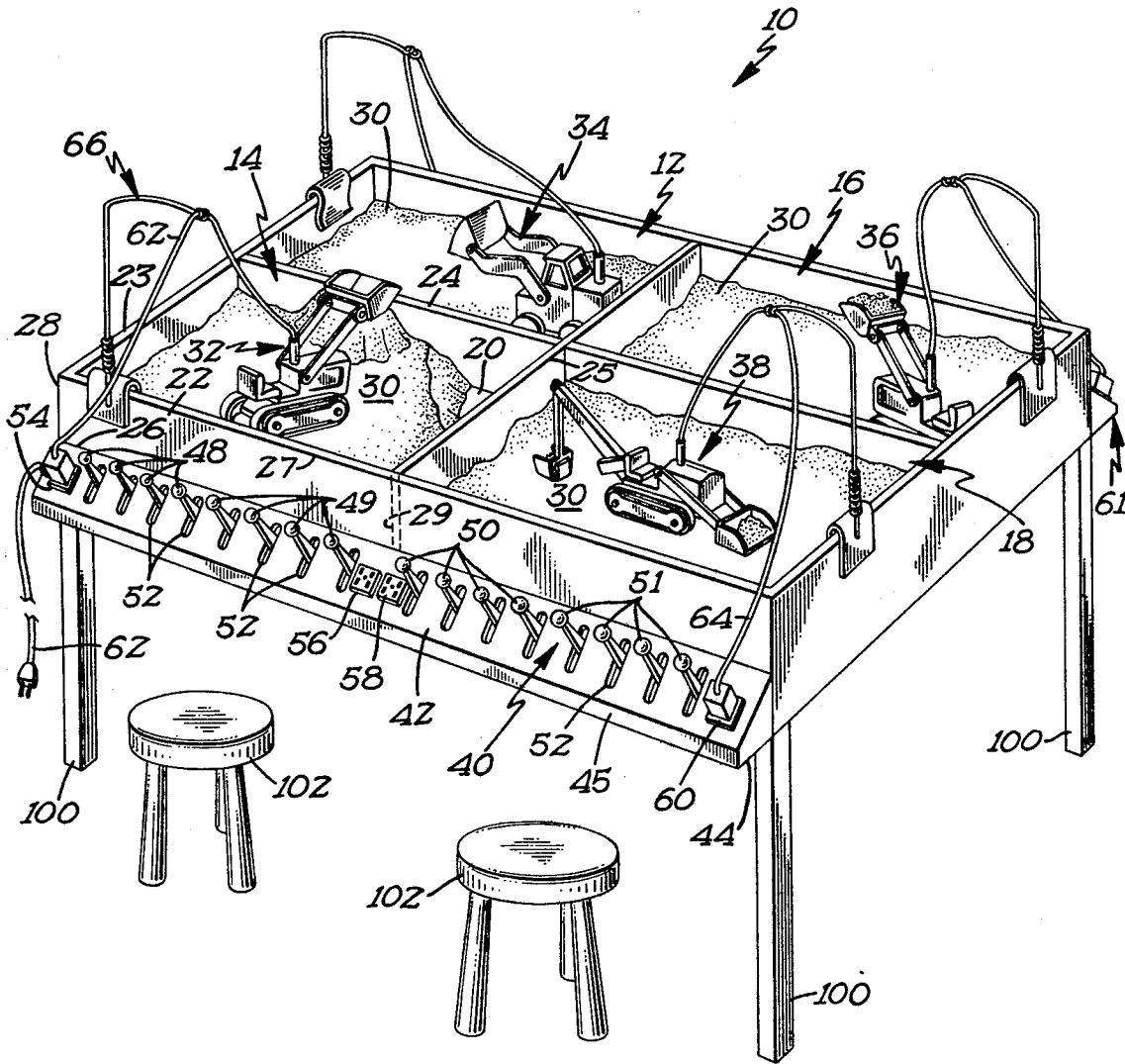


FIG 1

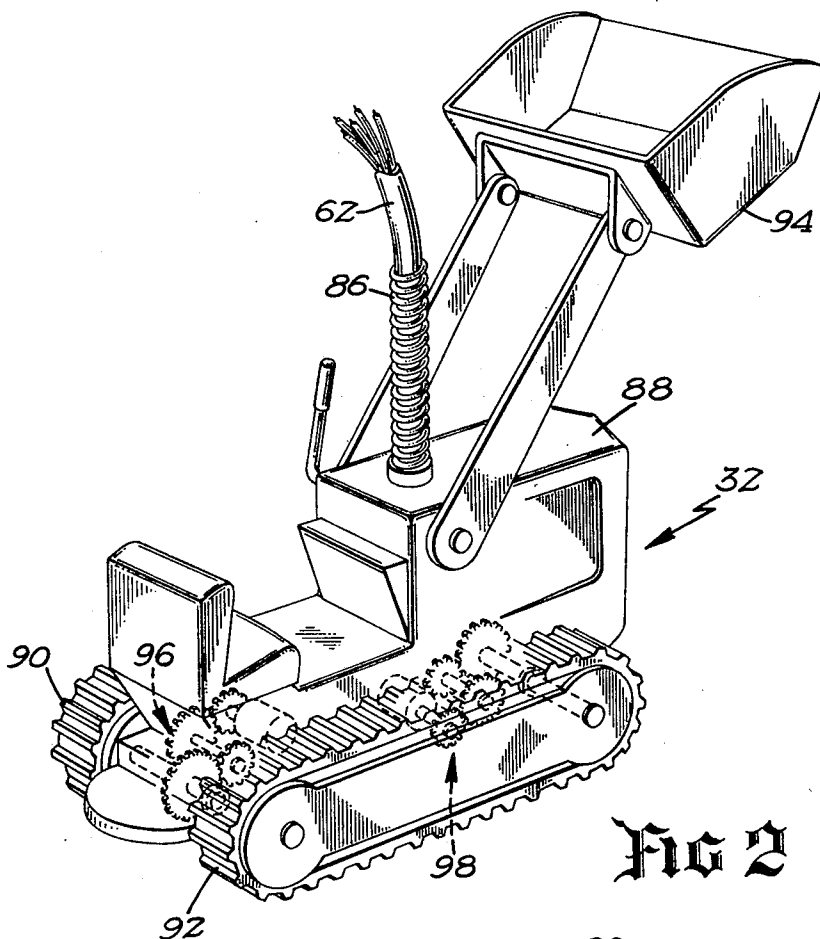
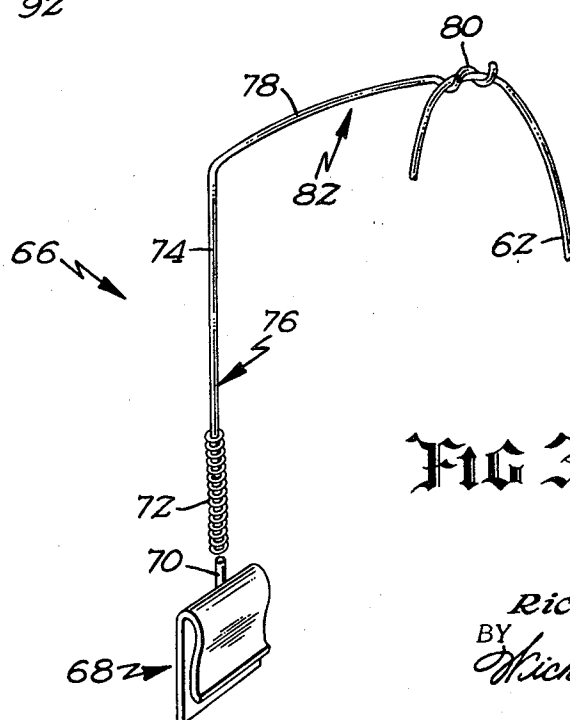
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PLAY TOY FOR USE WITH MINIATURIZED VEHICLES

BACKGROUND

With the recent expansion of leisure time in modern society, a need has arisen to provide various devices for general amusement. Much commercial success has been obtained with amusement devices which allow the miniaturization and motive control of various actual functions within society, such as model trains, model cars, etc. The present invention is of this general class which is useful not only in private homes, but may be arranged in commercial places providing, for example, time to operate such devices for a fixed fee.

SUMMARY

The present invention provides such amusement by allowing an operator to selectively manipulate various miniature, motorized, electrically driven vehicles, for example, miniaturized earth moving equipment. A preferred embodiment of the present invention includes open topped box-like containers arranged upon legs to approximately table top height. Several electrical power control consoles are affixed to the sides of the box, one adjacent the other, with an electrical power outlet within each individual control console. Each control console also includes four control levers for selectively applying electrical power to power outlets. An electrical control cord from a miniaturized, motorized, electrically driven vehicle is then inserted into the electrical outlet to allow the operator to selectively manipulate the vehicle through the manipulation of the various levers on the control console to thus control the electrical power to the vehicle. Small unconnected particles of material, such as ground rubber or sand, are placed within the open topped container, and the vehicles are intended to ride upon the material, and in the preferred embodiment where the vehicles are earth moving equipment, manipulate such material.

A cord arm affixed to the side of the container provides guidance and support for the electrical control cord yet allows a free swinging movement of the cord to allow substantially free movement of the vehicle within the container.

It is thus an object of the present invention to provide a novel play toy.

It is a further object of the present invention to provide a novel play toy for use with miniature, motorized, electrically driven vehicles.

It is a further object of the present invention to provide a novel play toy for use with miniature, motorized, electrically driven vehicles in a manner to allow selective manipulation of such vehicles.

It is a further object of the present invention to provide a novel play toy for use with miniature, motorized, electrically driven vehicles in simulated earth moving situations.

These and further objects and advantages of the present invention will become clearer in the light of the following detailed description of an illustrative embodiment of this invention described in connection with the drawings.

DESCRIPTION OF THE DRAWINGS

FIG. 1 shows a perspective view of a play toy according to the present invention showing multiple control consoles and various types of miniaturized vehicles in a controlled relation to the control consoles.

FIG. 2 shows an enlarged view of an example of a miniaturized vehicle, as shown in FIG. 1.

FIG. 3 shows an enlarged view of a cord arm used to support the electrical cord between a controlled miniaturized vehicle and the control console.

All figures are drawn for ease of explanation of the basic teachings of the present invention only; the extension of the figures with respect to numbers of parts, position of parts, the relationship of parts, and the exact dimensioning of parts to form a preferred embodiment will be explained.

Where used in the various figures of the drawings, the same numerals designate the same or similar parts. When the terms "right," "left," "front," "back," "vertical," "horizontal," and similar terms are used herein, it should be understood that these terms have reference only to the structure shown in the drawings as it would appear to a person viewing the drawings, and are utilized to facilitate describing the invention.

DESCRIPTION

In FIG. 1, a play toy according to the present invention is generally designated 10. The play toy in the embodiment shown includes four containers generally designated 12, 14, 16 and 18, but can have as few as one container and as many additional containers as are desired or are practical. As can be seen, in a private home, one container may suffice. In a commercial establishment, many further containers may be used or additional embodiments such as that shown in FIG. 1 may be employed.

Each container of the preferred embodiment play toy 10 shown includes the same or similar parts, therefore, only container 14 need be described. It will be realized that the remaining containers are of similar construction. Container 14 includes a container bottom 20 intended for general horizontal arrangement, shown in the rear right corner of container 14 with the covering, which will be described herein, broken away. Container 14 further includes four sides 22, 23, 24, and 25 with each side having a bottom edge and a top edge and at least two ends. For example, side 22 is indicated as having a bottom edge 26, a top edge 27, a left end 28, and a right end 29. As seen from side 22, the bottom edge 26 is connected to the container bottom 20 and the top edge 27 extends substantially vertically upward from the horizontally arranged container bottom 20. The remaining sides 23-25 are similarly arranged. Further, the sides 22-25 are interconnected at their ends to form a closed figure, in the figure a rectangle. The closed figure of the container sides, in this embodiment a rectangle, and the attached container bottom are thus capable of being at least partially filled with various materials and containing and holding such material within the open topped container 14.

In the embodiments shown, numerous small unconnected particles of material, designated 30, are arranged within each container to a depth of several inches. The particles of material may be sand, ground

rubber, or the like, and in fact may be either electrically conductive or electrically nonconductive since no conduction of electricity is necessary through the particles.

The particles of material are thus maintained within the container 14, and an example of a miniature, motorized, electrically driven vehicle 32, in the form of a track driven power shovel, is shown as traversing the top surface of the particles 30. Other examples of miniature earth moving vehicles 34, 36, and 38 are arranged within containers 12, 16, and 18 respectively.

Four electrical power control consoles, generally designated a composite console 40, are shown as attached to the front edge of play box 10. Console 40 includes a generally sloping top front panel 42, a rear panel 43, not shown, attached to the front side of play box 10, a bottom panel 44, and a generally vertically arranged short front panel 45 arranged between bottom panel 44 and sloping front panel 42.

A plurality of sets of four electrical control levers 48-51 are shown projecting from the space within the interconnection of panels 42-45 through slots 52 in front panel 42. All levers are shown in a neutral or central position which, in the preferred embodiment, is a neutral or center off position. As can now be appreciated, each lever of the sets of levers 48-51 can be moved upwards and downwards within their respective slots 50 from the neutral position shown to a position adjacent the top of its slot 50 and to a position adjacent the bottom of its slot 50. The effect of this movement will be further explained hereinafter.

Each set of four electrical control levers, associated with a single console, is connected to one electrical power outlet by internal wiring, not shown. For example, lever set 48 is interconnected with an electrical outlet 54; and lever sets 49, 50, and 51 are interconnected with electrical outlets 56, 58 and 60 respectively.

A similar or identical power composite console 61 is to be found on the back side of play box 10, and it will be realized that power console 61 may be constructed and operated similarly to console 40 on the front side of play box 10.

Electrical power is supplied to consoles 40 and 61 through an electrical power cord or plug 62. Electrical cord 62 is then conventionally interconnected with each of the sets of levers to allow the sets of levers to selectively apply electrical power to the interconnected electrical power outlet. In the preferred embodiment, transformers are positioned within consoles 40 and 61 to allow the lever sets and electrical outlets to conduct and control low voltage D.C. current for safety and operating convenience.

Electrical control cords are then connected between the outlets and the vehicle to be controlled by means of conventional five prong electrical plugs mating with the five electrical contacts within each electrical power outlet. For example, control cord 62 conventionally plugs into outlet 54 to thus control vehicle 32 in a manner hereinafter explained. Similarly, the remaining control cords plug into their respective electrical outlets for similar control of the miniaturized vehicles to which they are connected.

The control cord then extends from the vehicle to be controlled, for example vehicle 32 within container 14,

through a cord arm generally designated 66 attached to side 22 of container 14, and to electrical power outlet 54. Cord arm 66 provides guidance and support to the electrical control cord 62 between outlet 54 and the miniaturized vehicle 32. Similar cord arms are attached to various other sides of play box 10 in a manner to support and guide electrical control cords to the other vehicles. Because of the similarity in construction, only cord arm 66 will be discussed in detail.

As best seen in FIG. 3, cord arm 66 includes an attachment 68 comprising a generally U-shaped clip of metal for extending over the side 22 of container 14 and adhering thereto by pressure between its legs. Attached to the side and top, right portion of the attachment clip 68 is a metal rod 70 which terminates in a spring 72, which in turn terminates in another metal rod 74. Rods 70 and 74 and spring 72 form a spring portion 76 of cord arm 66 for the purpose hereinafter explained. Metal rod 74 also terminates in a rod 78, generally at right angles to rod 74, which rod 78 terminates in a helical wire portion 80. Rod 78 and helical portion 80 form a cord retaining arm 82 for the purpose of retaining control cord 62 as follows. Control cord 62 originates within the vehicle 32, as will be explained hereinafter, and is inserted through the helical portion 80 of cord retaining arm 82, which arm extends over the container bottom 20 and within the rectangular figure of the container sides to extend towards vehicle 32 arranged upon particles 30 within the container 14. Cord 62 then descends to electrical outlet 54. The spring portion 76 of cord arm 66 between the attachment portion 68 and the cord retaining portion 82 then allows a free swinging motion of the cord retaining portion 82 with respect to the attachment portion 68 to allow free movement of the cord 62, and thus vehicle 32, and yet provide guidance and support for the electrical control cord 62 between the outlet 54 on the electrically driven vehicle 32.

As best seen in FIG. 2, electrical control cord 62 includes 5 wires, one wire attached to each of control levers 48 and one ground or return wire. A spring portion 86 receives control cord 62 and guides and supports it within the body 88 of the vehicle 32. Vehicle 32 further includes a left tread 90, a right tread 92, and a shovel generally designated 94. Motor and drive mechanisms 96 and 98 are shown for driving left tread 90 and right tread 92, respectively.

The entire combination of containers 12, 14, 16 and 18 shown as an integral connection of containers, which is not necessary for the utilization of the present invention, is mounted on four legs 100 to approximately table top height to allow an operator to sit, for example on stools 102, before the control console 41 with his legs beneath bottom 20 and operate the various vehicles in a manner hereinafter explained.

OPERATION

Generally, it can now be seen that an operator, not shown, can selectively operate the various miniature electrically driven vehicles, in the preferred embodiment shown earth moving equipment, through the use of differing sets of electrical control levers which control and power such vehicles.

In particular, with respect to vehicle 32, four levers are shown, from left to right: a forward/reverse lever; a

specific control lever for engaging only the left tread; a specific control lever for engaging only the right tread; and a control lever for the shovel. In operating the control levers, an operator would move them from the neutral center position shown either upwards or downwards. With the forward/reverse lever, an upwards movement is intended to move the vehicle forward, while a downwards movement is intended to move the vehicle rearward. Similarly, the next two levers for the left and right tread simply cause the particular tread controlled to either move forward or rearward. Lastly, the shovel control lever can be used to raise and lower the shovel. In manipulating vehicle 32, an operator may then produce a series of operations as follows:

The shovel control is moved downward thus lowering the shovel; the shovel control lever is then returned to its neutral position; the forward/reverse lever is moved upward moving the vehicle forward to cause the shovel to fill with material 30; the forward/reverse is returned to a neutral position to stop the vehicle; the left tread control lever is moved forward to move the left tread forward while maintaining the right tread stopped, thus turning the vehicle to the right; at the appropriate degree of turn, the left tread control lever is returned to a neutral position; the forward/reverse control lever is moved downward to move the vehicle to the rear; at the desired point, the forward/reverse control lever is returned to a neutral position to stop the vehicle; and soon. It is to be noticed that two sets of levers, 48 and 49, for individual power consoles are generally positioned adjacent one another. This is to allow one operator to manipulate two vehicles within a single container, or two closely positioned operators to manipulate their independent vehicles within the same or adjacent containers.

Thus, a novel play toy for use with miniature, motorized, electrically driven vehicles has been provided such that an operator can selectively manipulate such vehicles to simulate such actual operations as earth moving.

Now that the basic teachings of the present invention have been explained, many extensions and variations will be obvious to one having ordinary skill in the art. For example, the number of control levers is not intended to be fixed at four. While four is considered a preferred embodiment to allow for full manipulation of the vehicle, more or fewer can be used.

Additionally, various numbers of consoles can be used.

Further, various types of miniaturized vehicles can be used, not necessarily replicas of each moving equipment.

Thus, since the invention disclosed herein may be embodied in other specific forms without departing from the spirit or general characteristics thereof, some of which forms have been indicated, the embodiments described herein are to be considered in all respects illustrative and not restrictive. The scope of the invention is indicated by the appended claims, rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are intended to be embraced therein.

What is claimed is:

1. A plat toy for use with miniature motorized electrically driven vehicles to allow selective manipulation of such vehicles, comprising in combination:

an open topped container including a container bottom intended for horizontal arrangement and at least three container sides each including at least a bottom edge and a top edge and at least two ends, the bottom edge of each side being connected to the container bottom and the top edge of each side intended for extension substantially vertically upward from the horizontally arranged container bottom with the ends of the container sides interconnected to form a closed figure, the closed figure of the container sides and the container bottom being capable of being at least partially filled with material and with the material contained and held within the open topped container; numerous small, unconnected particles of material arranged within the container to a depth of several inches, the particles of material being maintained within the container; electrical power control console means on the container including: at least one electrical power outlet; at least three electrical controls for receiving electrical power and for selectively applying the electrical power to the electrical outlet; a power cord for providing power to the electrical controls; at least one cord arm attached to a side of the container for supporting an electrical control cord between the electrical outlet and a miniature motorized electrically driven vehicle arranged within the container to allow the selective manipulation of such vehicle by an operator of the electrical controls of the control console, cord arm including: an attachment portion for affixing the cord arm to the side of the container; a cord retaining arm extending over the container bottom and within the figure of the container sides to extend towards a vehicle arranged upon the particles of material within the container; and a spring portion between the attachment portion of the cord arm and the cord retaining portion of the cord arm to allow free swinging movement of the cord retaining portion of the cord arm with respect to the attachment portion of the cord arm and yet provide guidance and support to an electrical control cord between the outlet and the electrically driven vehicle.

2. The play toy of claim 1, wherein at least three legs extend from the container bottom to position the container bottom above the level of a floor or other support and allow an operator to sit before the electrical power control console with the legs of the operator beneath the bottom of the container of the play box.

3. The play box of claim 2, wherein the electrical power control console includes at least four electrical controls for each electrical outlet, and wherein each electrical outlet includes five individual and independent contacts to which an electrical plug may connect.

4. The play box of claim 3, including at least two electrical power control consoles to allow simultaneous manipulation of at least two electrically driven vehicles.

5. The play box of claim 4, including several electrical power control consoles, wherein electrical power control consoles are positioned along at least two sides

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of the container to allow simultaneous manipulation of several electrically driven vehicles, at least one vehicle being manipulatable from each side.

6. The play box of claim 5, wherein the electrical controls of the electrical power control console comprise levers having a neutral center position and allowing a forward and reverse manipulation by upward and downward changes of position from the neutral center position.

7. The play box of claim 1, wherein the electrical power control console includes at least four electrical controls for each electrical outlet, and wherein each electrical outlet includes five individual and independent contacts to which an electrical plug may connect.

8. The play box of claim 1, wherein at least two electrical power control consoles allow simultaneous

manipulation of at least two electrically driven vehicles.

9. The play box of claim 1, including several electrical power control consoles, wherein electrical power control consoles are positioned along at least two sides of the container to allow simultaneous manipulation of several electrically driven vehicles, at least one vehicle being manipulatable from each side.

10. The play box of claim 1, wherein the electrical controls of the electrical power control console comprise levers having a neutral center position and allowing a forward and reverse manipulation by upward and downward changes of position from the neutral center position.

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