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L. MARX

TRAFFIC SIMULATING AMUSEMENT DEVICE

Filed April 15, 1927

Fig. 1.

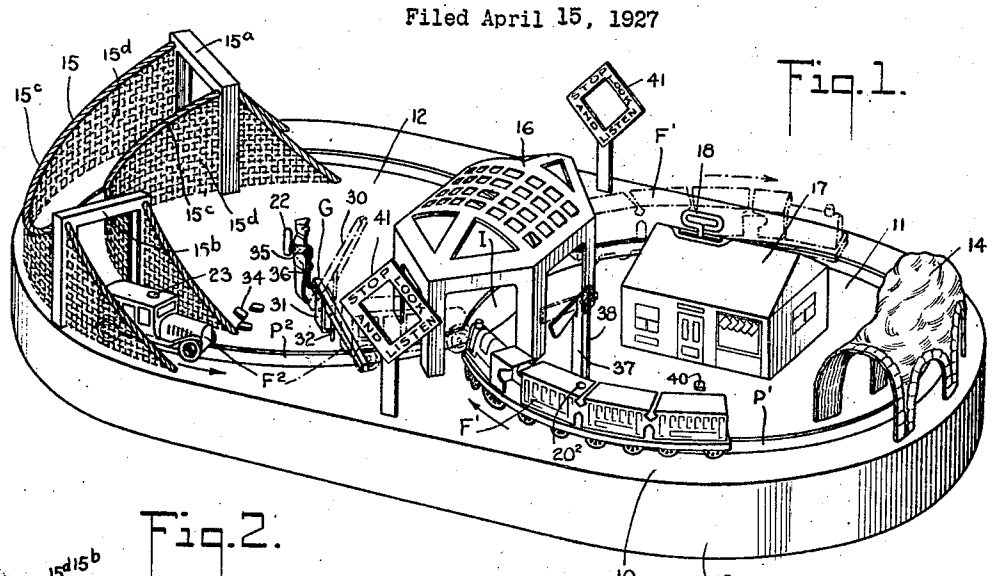


Fig. 2.

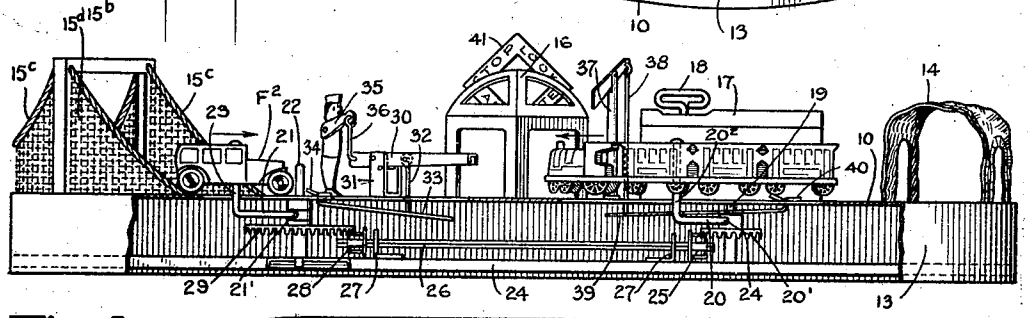
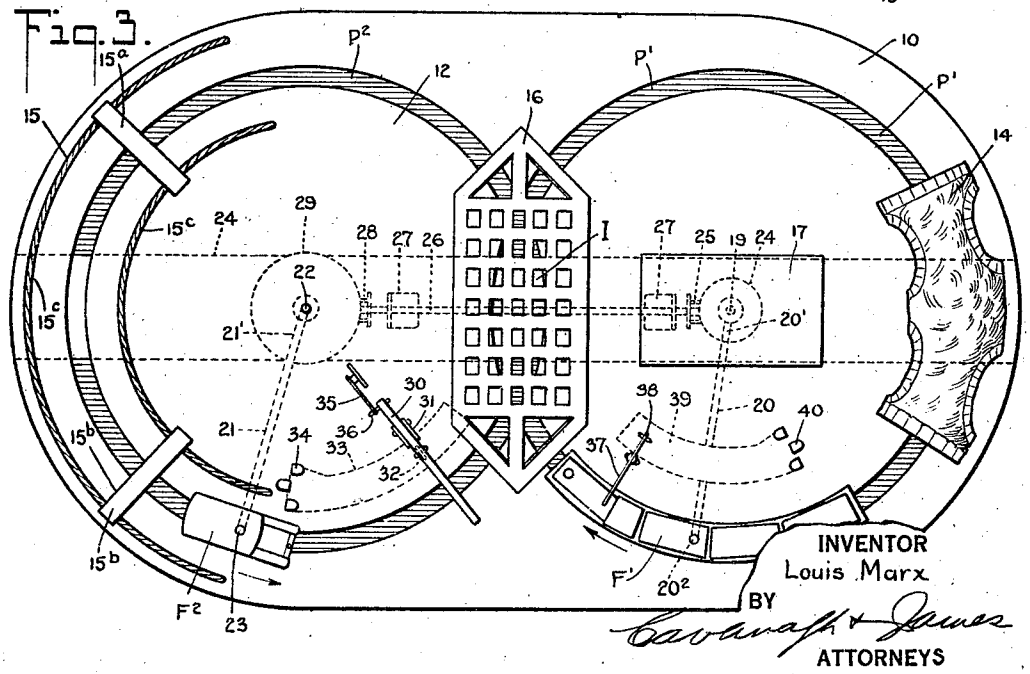


Fig. 3.



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TRAFFIC-SIMULATING AMUSEMENT DEVICE.

Application filed April 15, 1927. Serial No. 183,971.

This invention relates to an amusement device or toy and more particularly to a mechanically operated amusement device or toy; and has special reference to the provision of an amusement device designed and constructed to simulate traffic movements.

The prime object of my present invention centers about the provision of a mechanically operated amusement device in which a plurality of figures such as simulated vehicles or the like are operated in intersecting paths in a predetermined or defined manner in simulation of movement of traffic at intersections.

More specifically the prime objects of the present invention comprehend the provision of a traffic simulating toy wherein a plurality of figures movable in intersecting paths or tracks are operated to produce a non-interfering or non-colliding movement of said figures past the intersecting area of said paths; the further provision of a traffic simulating toy in which one of the figures which is made to simulate a train of cars is movable in its path or track continuously while another of said figures which may be made to simulate a motor vehicle figure is movable in a separate path continuously, and the two figures are caused to move past an intersecting region without collision; the still further provision of a traffic controlled toy of this character in which a common motor means is employed for operating the movable figures through the intersecting paths; and the still further provision of an amusement device of this character in which one of the figures such as a simulated motor vehicle may be caused to move into the intersection safely after the train of cars passes said intersection, or may be caused to move into said intersection in a position immediately preceding the movement of the simulated train of cars into said intersection, to the stimulating amusement of the child.

Correlated and other important objects of the invention reside in the production of a toy or amusement device in which the foregoing operations or actions are accomplished by means of comparatively simple mechanism which may be manufactured and sold at a low figure and in which the parts are interrelated in a manner to permit durable use of the toy by the child.

To the accomplishment of the foregoing and such other objects as will hereinafter appear, my invention consists in the elements and their relation one to the other as hereinafter more particularly described and sought to be defined in the claims; reference being had to the accompanying drawings which show the preferred embodiment of my invention, and in which:

Fig. 1 is a perspective view of the toy embodying the principles of my present invention.

Fig. 2 is a side elevational view thereof with parts broken away, and

Fig. 3 is a top plan view of the toy with a part broken away.

Referring now more in detail to the drawings, I show one of the preferred ways in which the principles of my present invention are carried out in practice by means of comparatively simple and inexpensive mechanism. In this preferred form of the invention I provide a plurality of movable figures generally designated as F′ and F² movable in the directions indicated by the arrows in the figures in defined or predetermined endless paths such as the two annular paths or tracks P′ and P², which paths or tracks cross or intersect in a region generally designated as I. In accordance with the present invention the figures F′ and F² are operated or propelled cyclically in their paths or orbits P′ and P² respectively and through the intersecting region I in a manner to simulate the non-interfering or non-colliding movement between such figures. Thus where it is desired to imitate the movement of traffic at a railway crossing the figure F′ is made to represent a locomotive and a train of cars and the figure F² is made to represent a motor vehicle; and these figures are operated in their paths or tracks so that the figures F′ and F² move through the intersecting region I in succession without interference.

For supporting the parts of the toy and for defining the predetermined and preferably annular paths or tracks P′ and P² I preferably provide a support which comprises a platform having an outer section 10 and spaced inner sections 11 and 12 supported on the outer section 10 in a manner to be described presently, the said outer section being elevatingly supported by a surrounding skirt portion 13, said sections defining a casing for the operating parts of the toy. The platform disc sections 11 and 12 are spaced from the outer platform section 10 to provide the annular channels which define the paths or tracks P′ and P² and the

said disc platform sections 11 and 12 are cut or contoured at their tangential meeting areas to provide the intersecting area I of such paths. These platform disc sections 11 and 12 are supported on the outer platform section 10 by means of bridge or arch devices which are provided both for useful and ornamental purposes, such devices comprising a tunnel-shaped structure 14 supporting one side of the disc 11 on one end of the platform section 10, a suspension bridge structure 15 supporting one end of the disc 12 on the other end of the platform section 10 and an intermediate archway structure 16 which is attached to and connects adjacent disc sections 11 and 12 of the platform and which supports the same at a center or intermediate portion of the outer platform section 10, as is clearly shown in Figs. 1 to 3 of the drawings.

All of the parts are preferably made of metal cut or fashioned to the desired configuration and embellished to produce an accurate simulation of the structures imitated; and said structures are connected to the platform sections in any preferred or approved manner such for example as by brazing the parts together at the joints or by interlocking the parts in a manner well known to the art. The tunnel structure 14 is made preferably of sheet metal, the archway structure is also made of sheet metal suitably reticulated as shown, while the extension bridge structure is made by connecting the sheet metal posts 15^a and 15^b by means of braided wire 15^c, 15^c, connected to the platform sections by mesh screen 15^d. The movable figures F′ and F^2 are also preferably fashioned out of sheet metal as is well known to those skilled in the art.

The Figures F′ and F^2 are moved in their paths P′ and P^2 respectively by means of motor mechanism; and in the preferred construction a common motor means is employed for operating both of these figures, such motor means comprising any conventional or well known spring motor housed in a motor casing 17 preferably supported by the disc platform section 11, the said motor means (not shown) being wound by the usual winding key 18 and being connected to a driven shaft 19 which projects through the platform disc section 11 extending below the same for connection to the operated parts of the toy.

For operating the simulated train F′ in the direction indicated by the arrows I provide a means connecting the figure F′ with the driven shaft 19, such means preferably comprising a connecting rod 20, one end 20′ of which is fixedly connected to the driven shaft 19 and the other end of which comprises an upwardly bent portion 20^2 extending upwardly through the annular channel P′ and connected to the figure F′ to support the same in slightly spaced relation to the platform sections as illustrated most clearly in Fig. 2 of the drawings, so that rotation of the motor shaft 19 will rotate the radial connecting rod 20 and will move the train figure F′ cyclically in its path P′.

Similar means is provided for operating the simulated motor vehicle F^2, such means comprising a radial connecting arm or rod 21, one end 21′ of which is fixed to a spindle shaft 22 and the other end of which is provided with an upturned portion 23 extending through the channel P^2 and fixedly attached to the vehicle figure F^2 so as to move the same cyclically in the path P^2 slightly spaced above the platform sections. The spindle shaft 22, and also the motor shaft 19, are supported at spaced points in the platform sections 11 and 12 and in a cross brace 24.

Preferably, as aforestated, both of the movable figures F′ and F^2 are operated by a common motor means, although it will be understood that in the broader aspects of the invention independent motor mechanism for the plurality of figures may be provided.

The common motor mechanism is so constructed and the parts of the device so interrelated that both of the toy figures are operated in their orbits and are moved through the intersecting region I in a manner to interestingly depict either a safe or unsafe method of operating traffic at a railroad crossing without the figures coming into collision. To accomplish this end I provide a gearing mechanism interconnecting the motor shaft 19 with the spindle 22, said gearing mechanism being arranged beneath so as to be concealed by the platform sections of the toy, this gearing mechanism in one of its most simple forms comprising a crown gear 24 fixed to the motor shaft 19 and meshing with a pinion 25 fixed to a transmission shaft 26 supported in angle pieces 27, 27, a second pinion 28 being provided on said transmission shaft meshing with a second crown gear 29 fixed to the spindle 22. By means of this construction it will be seen that energization of the motor will communicate motion to the drive shaft 19 and through the interconnecting gearing to the spindle 22 for operating both of the figures.

Preferably the simulated train of cars F′ is given a speed of operation substantially greater than that of the simulated motor vehicle 23, the ratio of gearing therebetween being about 2 to 1, as clearly shown in Figs. 2 and 3 of the drawings. The parts are so related that although the cyclical speed of movement of one of the figures is different than the other, the two are caused to move through the intersecting region I without collision. This is disclosed particularly in Fig. 1 of the drawings where the relation of movement between the figures is depicted.

In this Fig. 1 the train of cars F′ is shown in full lines entering the intersection I and in dotted lines as leaving the same, and the motor vehicle figure F^2 is shown in full lines at a safe distance from the intersection as the train of cars is moving thereinto and is shown in dotted lines as moving into the intersection to the rear of the train figure F′. This represents a safe method of relatively moving the toy figures. In some instances I prefer to illustrate an unsafe but amusing method of passing the intersection and wherein the simulated motor vehicle moves into the intersecting region in advance of the train and just barely escapes collision with the train at the exit end of the intersecting region. It will be understood that since the speed of movement of the train is faster than that of the motor vehicle, the train will be seen to gain on the motor vehicle as the latter races through the intersection and the parts are so arranged as to permit the vehicle to just barely escape collision, thus providing amusing entertainment. The different relative arrangements may be provided by simply changing the position of the crown gear 29 with respect to the pinion 28, which may be done by springing these elements apart and shifting one with respect to the other.

It will be also understood that in accordance with the operation shown in the drawings, both figures are moved continuously in their annular paths and thus may be operated by means of simple mechanism. In this respect the present invention constitutes an improvement over that shown in my copending application for toy, Serial No. 151,927, filed December 1, 1926.

In the preferred construction I also provide a gateway device generally designated as G associated with the figure F^2 so as to be normally in a lowered position and operated to an elevated position by the movement of the figure F^2. This gateway device comprises a lever 30 fulcrumed on a support 31, the said lever being provided with an operating element 32 extending downwardly through the platform disc 12 and engaged by an arcuate shaped arm 33 pivoted as at 34 on the platform disc 12. The arm 33 is arranged to be engaged by the radial operating arm 21, as clearly shown in Figs. 2 and 3 of the drawings, the engagement being such that when the figure F^2 moves toward the intersecting region I, the pivoted arm 33 is elevated and the gate 30 moved to an ascended position. After the figure F^2 passes the open gate it will be understood that the gate lever returns to its closed or descended position by the gravity of the parts. To simulate a manual operation of the gate lever the same is connected to a figure or manikin 35 stationarily mounted on the platform disc 12 and provided with a movable arm connected by a crank 36 to the gate lever 30. Manifestly, as the gate lever is elevated the arm of the manikin will be moved by the crank 36 to simulate a manual operation of the traffic gate.

If desired, other operated elements may be provided for enhancing the appearance of the toy such as the operating semaphore signal device 37 which is operated by means of a connecting element 38 projecting through the disc 11 and engaged by an arm 39 pivoted as at 40 to the platform disc 11 and which arm is operated by the movement of the figure F′ in a manner similar to the operation of the pivoted arm 33 by the movement of the figure F^2. Preferably also the platform support is provided with "Stop, look and listen" signs 41, 41 stationed at the intersecting region I.

The manner of making or using the toy or amusement device of my present invention and the many advantages thereof for the purpose of affording interesting and attractive amusement for the child will in the main be fully apparent from the above detailed descripton thereof. It will be further apparent that a single motor mechanism is employed for operating the plurality of figures F′ and F^2, both being moved continuously in annular and preferably circular orbits, the said figures being so operated or controlled as to prevent colliding action by the two figures at the intersection I of the annular tracks or paths P′ and P^2. This operation takes place cyclically and in the construction exemplified the train figure makes two revolutions for each revolution of the vehicle figure and the movements are so timed as to permit the non-interrupting or non-colliding operation of the toy in any desired manner. The gate G is operated by the movement of the vehicle figure and normally is in lowered condition so as to simulate the production of a "stop" signal, and the said gate is moved to the elevated position when the traffic conditions are apparently "clear", this gate device being operated to the elevated position by movement of the figure F^2 itself.

It will be further apparent that while I have shown my invention in the preferred form many changes and modifications may be made in the structure disclosed without departing from the spirit of the invention defined in the following claims.

I claim:

1. In an amusement device, a platform support provided with a plurality of separate endless paths or tracks having a given intersecting region, a plurality of figures one movable in each of said circular paths, and mechanism for propelling or operating said figures cyclically in said paths and through said intersecting region, said mechanism connecting said figures and operative to

cause the figures to move through said intersecting region in succession and without colliding movement.

2. In an amusement device, a platform support provided with a plurality of separate endless paths or tracks having a given intersecting region, a plurality of figures one movable in each of said endless paths, and a common motor mechanism connected to said figures for propelling or operating the same cyclically in said paths and through said intersecting region without colliding movement.

3. In an amusement device, a platform support provided with a plurality of separate endless channels defining paths or tracks having a given intersecting region, a plurality of toy figures one movable in each of said endless paths, and motor mechanism for propelling or operating said toy figures cyclically in said paths and through said intersecting region without colliding movement, said motor mechanism including elements arranged beneath said platform connected to said movable figures through said channels and movable in and about said channels.

4. In an amusement device, a plurality of figures movable in predetermined separate endless paths having a given intersection, and a common motor mechanism for propelling the plurality of said figures cyclically in said paths and through said intersection without colliding movement.

5. In an amusement device, a support including a platform having an outer section and two inner disc sections all spaced to define two annular channels having a given intersecting region, a figure movable in each of said channels and mechanism for propelling or operating said figures cyclically in said channels and through said intersecting region with passing and non-colliding movement.

6. In an amusement device, a support including a platform having an outer section and two inner disc sections all spaced to define two annular channels having a given intersecting region, a toy figure movable in each of said channels, one of said figures representing a train of cars and the other of said figures representing a motor vehicle, both simulating the movement of train and vehicle at an intersecting crossing, and a common motor mechanism for propelling or operating said figures cyclically in said channels and through said intersecting region with passing and non-colliding movement.

7. In an amusement device, a plurality of figures movable in predetermined separate circular paths having a given intersection, one of said figures representing a train of cars and the other of said figures representing a motor vehicle, both simulating the movement of train and vehicle at an intersecting crossing, and a common motor mechanism for propelling said figures cyclically in said paths and through said intersection without colliding movement.

8. In an amusement device, a support including a platform having an outer section and two inner disc sections all spaced to define two annular channels having a given intersecting region, a figure movable cyclically in each of said channels, and motor mechanism for propelling or operating said figures cyclically in said channels and through said intersecting region with passing and non-colliding movement, said motor mechanism including a motor supported on one of said disc sections, gear mechanism arranged within said platform and connected to said motor and elements connecting said figures with said gear mechanism.

9. In an amusement device, a platform support provided with a plurality of separate endless paths or tracks having a given intersecting region, a plurality of figures one movable in each of said endless paths, and mechanism for propelling or operating said figures cyclically at different rates of speed in said paths and through said intersecting region, said mechanism connecting said figures and operative to cause the figures to move through said intersecting region in succession and without colliding movement.

10. In an amusement device, a support including a platform having an outer section and two inner disc sections all spaced to define two annular channels having a given intersecting region, a toy figure movable in each of said channels, one of said figures representing a train of cars and the other of said figures representing a motor vehicle, both simulating the movement of train and vehicle at an intersecting crossing, and a common motor mechanism for propelling or operating said figures cyclically in said channels and through said intersecting region with passing and non-colliding movement, said mechanism being operative to propel said train of cars at a higher rate of speed than said motor vehicle.

11. In an amusement device, a support including a platform having an outer section and two inner disc sections all spaced to define two annular channels having a given intersecting region, a figure movable cyclically in each of said channels, one of said figures representing a train of cars and the other of said figures representing a motor vehicle, both simulating the movement of train and vehicle at an intersecting crossing, and motor mechanism for propelling or operating said figures cyclically in said channels and through said intersecting region with passing and non-colliding movement, said motor mechanism including a mo-

tor supported on one of said disc sections, gear mechanism arranged within said platform and connected to said motor and elements connecting said figures with said gear mechanism, said gear mechanism being such that the train of cars is propelled at a rate of speed higher than that of the vehicle.

12. In an amusement device, a support including a platform having an outer section and two inner disc sections all spaced to define two annular channels having a given intersecting region, a simulated suspension bridge structure supporting one disc section on the outer section at one end of the support, a simulated tunnel supporting the other disc section on the outer section at the other end of the support, a figure movable cyclically in each of said channels and motor mechanism for operating said figures.

Signed at New York, in the county of New York and State of New York, this 13th day of April, A. D. 1927.

LOUIS MARX.