July 10, 1934. L. G. HANDY 1,966,031

ORNAMENTAL DEVICE FOR USE IN ASSOCIATION WITH TOY ELECTRIC RAILWAYS

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Fig. 1

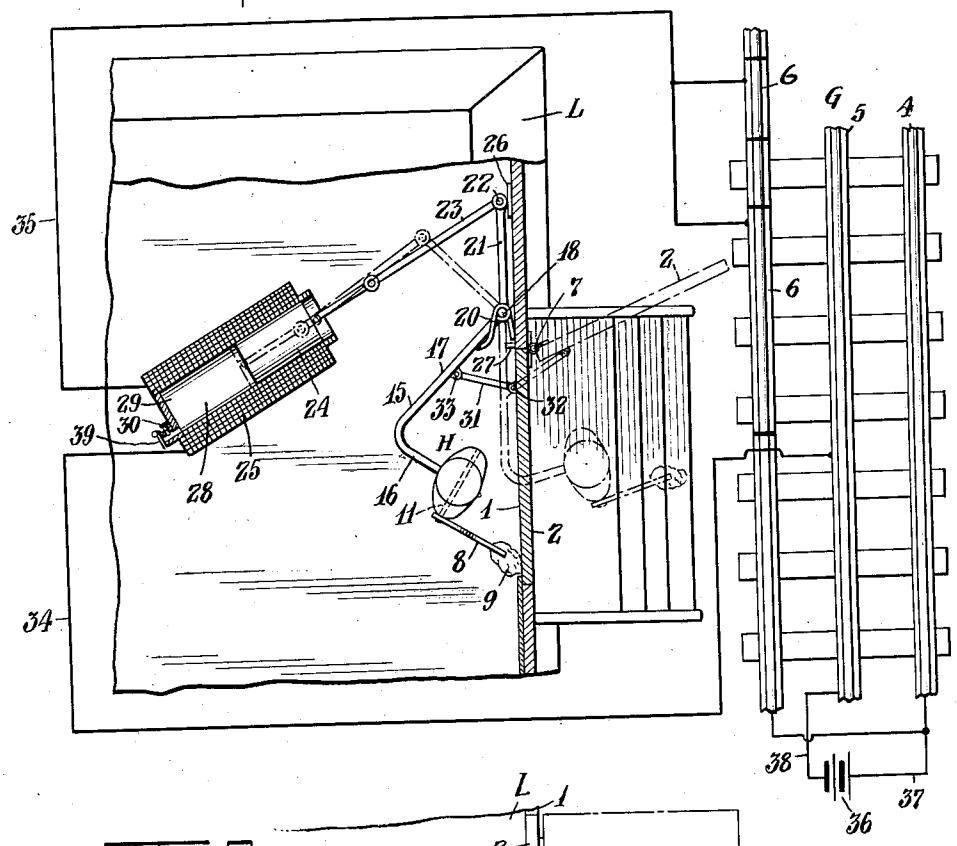


Fig. 2

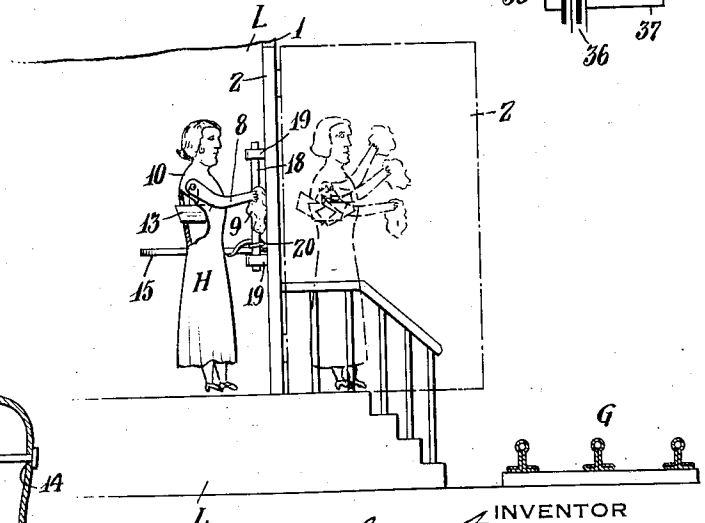
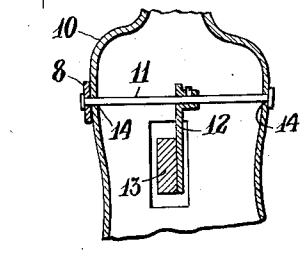


Fig. 3



INVENTOR

Lewis G. Handy

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ORNAMENTAL DEVICE FOR USE IN ASSOCIATION WITH TOY ELECTRIC RAILWAYS

Levin G. Handy, Mountain View, N. J.

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12 Claims. (Cl. 46—40)

This invention relates to an ornamental device for use in association with toy electric railways.

An object of the invention is to provide a device which will include a toy figure representing a person, and means to cause the arm of the figure to swing in simulation of a person waving a hand as to a passing train.

A further object is to provide means operable, for instance as the result of the approach of a train, to cause the arm of the figure to swing or wave.

A further object is to so construct the device that the figure will move bodily from one position to another before or while the arm waves.

A further object is to so construct the device that it will include a toy building such as a toy railroad station, and to arrange the figure so that it will advance outwardly through a door-way of the building and wave its arm, for instance incident to the arrival or possage of a train.

A further object is to so construct the device that a door of said door-way will be caused to swing open as the figure advances through the door-way.

A further and more detailed object is to mount the toy figure so that it is bodily movable from one position to another, to provide means for so moving the figure, and to construct the figure so that the arm thereof will be caused to swing as the result of the bodily movement of the figure.

A further object is to provide means by which the figure is electrically operable, and also means by which said operation preferably is controlled by current supplied from the rails of the railway system incident to the passage of a train along said rails.

A further object is to so construct the device that the waving of the arm of the toy figure will be accompanied by bodily movement of the toy figure.

A further object is to so construct the device that the advancing movements of the toy figure will be relatively quick and exciting, while the receding movements will be relatively slow and deliberate.

Other objects and aims of the invention, more or less specific than those referred to above, will be in part obvious and in part pointed out in the course of the following description of the elements, combinations, arrangements of parts and applications of principles constituting the invention, and the scope of protection contemplated will be indicated in the appended claims.

In the accompanying drawing which is to be taken as a part of this specification, and in which I have shown merely a preferred form of embodiment of the invention:—

Fig. 1 is a top plan view of a device constructed in accordance with this invention, parts being shown in horizontal section for the better disclosure of details.

Fig. 2 is an elevational view, partly in section, of the structure seen in Fig. 1, and

Fig. 3 is an enlarged fragmentary sectional view through a portion of the toy figure and illustrating the manner of mounting the swinging arm thereof.

Referring to the drawing for describing in detail the exemplary structure illustrated therein, the reference character L indicates a portion of a toy building such as a toy railway station or the like. This building is constructed to include a door-way 1 controlled by a door 2 and said door-way is shown as facing toward the track of a suitable railway system G which passes the building.

The railway system may be of any type but preferably is of the well known toy electric railway type including two wheel bearing rails as 3 and 4 and an intermediate insulated power rail as 5.

In the illustration the wheel bearing rail 3 is shown to include an insulated section as 6, in accordance with the provisions of the invention shown in Patent No. 1,636,416.

The removable toy figure is represented generally by the reference character H. It stands normally within the building L, just behind the door 2, and it is here noted that the door is pivotally mounted as upon a pivot 7 by which it is adapted to swing outwardly in a direction away from the figure H.

The figure H may take any desired form but is here shown as representing a woman with one arm as 8 outstretched and carrying in the hand a handkerchief or the like as 9.

The arm 8 is pivotally mounted at the shoulder portion of the body as 10 of the figure. It is fixed to a small cross shaft 11 which extends between the shoulder portions of the body 10 and carries within the body an extension 12 which is weighted as by a weight 13 so as to hold the arm 8 in a delicate balance extending normally in the position as approximately indicated in Fig. 2, the body being hollow to accommodate free pivotal movement of the weighted extension therein. The shaft 11 is pivoted to swing very easily within bearing as 14—14 provided through the opposite wall parts of the body 10 so that the slightest movement of the body will cause a gen-

tle rocking movement of the weight, and hence of the arm 8 at all times.

The mounting for the figure H consists of a rod as 15 which is connected with the rear portion of the figure and extends first rearwardly from the figure as at 16, and thence laterally as at 17 to a point at one side of the door opening 1 where it is pivotally supported upon a vertical pivot as 18 within suitable bearings 19—19. A light spring as 20 engages the rod and yieldingly urges the rod in a direction to move the figure H toward its inner or normal position as indicated by full lines in Fig. 1.

The rod 15 thus supports the figure H to swing in a horizontal plane upon the pivot 18 free of engagement with the floor or any other part of the building structure.

Extending beyond the pivot 18 and connected with rod 15 is an operating arm 21 to the end of which is pivotally connected as at 22 a link 23 which in turn extends into connection with a core part as 24 of a solenoid magnet 25.

The opposite limits of movement of the figure H may be determined by any appropriate stop elements, as for instance the inner or normal position may be determined by engagement of the pivot portion 22 of the arm 21 engaging against a stop as 26 provided upon the front wall of the building as indicated, and the outer or operative position may be determined by engagement of the rod portion 17 with a stop as 27 provided also upon the front wall of the building as indicated.

In some instances it may be desirable to control the speed at which the figure may move from one position to another, and to this end the drawing suggests the use of a controllable vent opening as 28 at one end of the core-way 29 of the solenoid magnet. An adjustable screw as 30 is provided for altering the size of the vent opening 28 and for thereby determining the speed at which air will be admitted into or discharged from the core-way as the core 24 is moved in one direction or the other by the force of the magnet winding or of the spring 20. It will be understood that the core 24 has a sufficiently close fit within the core-way 29 so that said parts act as a dashpot in this relation.

Extending between the door 2 and the rod portion 17 is a link 31, being pivotally connected with the door and rod by pivot joints as 32 and 33 respectively, said link being effective to cause the door to swing open and closed as a result of corresponding movements of the toy figure H outwardly and inwardly through the door opening.

Whenever the core 24 is moved to swing the toy figure outwardly, the link 31 pushes the door open ahead of the toy figure so that the door has the appearance of having been swung open by a person emerging through the door opening. Then when the toy figure retreats backwardly into the door opening the link 31 pulls the door closed again so that the door has the appearance of having been closed by a person going into the building.

In the instance illustrated the solenoid is shown as being electrically connected with the rails of the track system G as by wires 34 and 35. The wire 34 extends from one side of the solenoid to the power rail 5 while the wire 35 extends from the opposite side of the solenoid to the insulated track section 6 of the wheel rail 3. A source of power is connected at 36 having one side connected with the two wheel rails 3 and 4 as by wire 37 and having its opposite side connected with the power rail as by a wire 38.

Whenever a train moving along the track system passes onto the insulated section 6 the wheels and axles of the train bridge between the rail 4 and the section 6 so that current from one side of source 36 passes from the rail 4 to section 6 and thence along wire 35 through the solenoid magnet and back along wire 34 to the power rail and the opposite side of the source. The flow of current through the winding of the solenoid magnet will cause the core piece 24 to be drawn toward the inner end of the core-way, against the opposition of spring 20, and will swing open the door 2 and carry the toy figure outwardly through the door opening, that is from the position indicated in full lines to that indicated in dotted lines, in Fig. 1. The speed of movement of the door and toy figure will depend upon the size of opening through the vent 28, but in any case will be such as to cause the weight 13 and arm 8 of the toy figure to oscillate by gravity, it being here pointed out that the pivotal axis of shaft 11 carrying the arm 8 extends approximately radially of the pivot 18 so that the weight 13 is adapted to swing in a path at right angles to the path of movement of the toy figure about said pivot 18.

As the toy figure reaches its outermost position and the rod portion 17 abuts against the stop 27 the continuing effect of momentum upon the weight 13 will cause the arm 8 to be thrown suddenly upwardly at that instant, just as a person might naturally throw up his arm in waving a handkerchief to a passing train. That this movement of the arm 8 occurs at the moment when the toy figure reaches its outermost position beyond the door opening materially enhances the appearance of natural movement and of attractiveness to the toy. The weight 13 and arm 8, being mounted for free oscillatory movement, will continue to swing after the toy figure has reached its outer position, and hence up and down waving of the arm 8 will be suitably prolonged to give the desired effect.

In some cases, if desired, the track system G may be provided with two or more of the insulated sections 6 arranged in suitably close insulated relation to each other and all connected electrically with the wire 35, so that a train in passing will send a series of impulses through the solenoid magnet such as will cause the toy figure to move slightly about its pivotal mounting 18 and thus agitate the weight 13 and cause a prolonged swinging of the arm 8 while the figure remains at or near its outer position. This prolonged swinging, being accompanied by a certain erratic movement of the toy figure about the pivot 18, will produce a desirably attractive appearance of uneasy excitement and pleasure on the part of the person represented by said toy figure.

When the train has moved off of the insulated section or sections 6 the spring 20 will operate to return the figure H into the building with the door closing behind it as above described.

In some instances, it may be desirable that the movement of the toy figure outwardly through the door opening should be a relatively fast movement, in order to produce a more pronounced and natural swinging movement of the arm 8 at this time, and that the inward movement of the toy figure should be a relatively slower movement, in order to more closely simulate the natu-

ral retreat of the person and the closing of the door after the train has passed.

To this end the drawing suggests the use of a flap valve 39 arranged over the vent opening 28 in such wise that movement of the core 24 inwardly of the core-way to swing the toy figure outwardly through the door opening will merely push the flap valve open so that the exhaust of air from within the core-way will be not opposed except to the extent as hereinabove described, whereas movement of the core piece outwardly of the core-way to permit the retreat of the toy figure under the impulse of the spring 20 will suck the valve 39 across the end of the vent opening and thereby close the vent opening and thus retard the movement of the core, it being understood that sufficient leakage will be present, either around or through the valve 39, or around the core 34, or otherwise, to enable the toy figure to retreat at a desired speed of movement.

A device constructed in accordance with this invention may be made up as an article of manufacture including a toy building L of appropriate shape and size and adapted to be placed for instance as a railway station adjacent to a railway track, the toy figure H and its operating mechanism, being arranged within the building and protected thereby. By extending wires from the solenoid magnet to suitable points on the rails of the railway system as described the installation will be completed and each time a train passes the station the station door will open and a figure will advance and wave enthusiastically as the train passes. When the train has passed the figure will return into the building and the door will close behind it. The device is simple and practical and may be produced at small cost.

As many changes could be made in this construction without departing from the scope of the invention, as defined in the following claims, it is intended that all matter contained in the above description or shown in the accompanying drawing, shall be interpreted as illustrative only and not in a limiting sense.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A toy amusement device for use in association with a toy electric railway system and made up to include a toy figure movable from one position to another and return to cause a free gravity controlled oscillation of a member pivotally mounted upon said figure, a member loosely pivotally mounted upon said figure to be thus oscillated, and means operable by the passage of a train along said railway system to move the figure from its first to its second position, also to agitate the figure and thereby cause continued oscillation of said member while the figure is adjacent its second position, and also to cause return of the figure to its first position.

2. A toy including a toy figure representing a person, means by which said figure is pivotally mounted to swing from one position to another and return, an arm included in said figure pivotally mounted and adapted to swing by gravity as the result of the movement of said figure and in simulation of a person waving a hand, and means to move said figure said means being operable to cause movement of the figure in one direction at a different speed as compared with the movement of the figure in the opposite direction.

3. A toy amusement device for use in association with a toy electric railway system and made up to include a toy figure representing a person having one of its arms swingable for simulating waving a hand to a passing train, said figure having its said arm pivotally mounted and weighted to oscillate freely by gravity in shoulder bearings of the figure, said arm being held by the weight so as to extend normally forwardly of the figure but adapted to oscillate freely above and below said normal position, and connecting means whereby the movement of a train past the figure along the rails of the toy system will cause said arm to oscillate.

4. A toy amusement device for use in association with a toy electric railway system and made up to include a toy figure representing a person stepping forward toward a passing train and waving a hand to said train, means by which said figure is mounted to move from a first to a second position, said figure having one of its arms pivotally mounted and weighted to oscillate freely by gravity in shoulder bearings of the figure, said arm being held by the weight so as to extend normally forwardly of the figure but adapted to oscillate freely above and below said normal position, means whereby to suddenly arrest movement of the figure in its second position thereby to induce oscillation of said arm, and connecting means whereby movement of a train past said figure along the rails of the toy system will cause said figure to move from its first to its second position.

5. A toy amusement device for use in association with a toy electric railway system and made up to include a toy railroad station and a toy figure representing a person stepping outwardly through a door of the station and waving a hand to a passing train, means by which said figure is mounted to move from a position within the station to a position outwardly through the door-way of the station, said figure having one of its arms pivotally mounted and weighted to oscillate freely by gravity in shoulder bearings of the figure, said arm being held by the weight so as to extend normally forwardly of the figure but adapted to oscillate freely above and below said normal position, bumper means by which to suddenly arrest the outward movement of the figure thereby to induce oscillation of said arm, and connecting means whereby movement of a train past said station along the rails of the toy system will move said figure outwardly through said door-way and render the bumper means effective.

6. A toy amusement device for use in association with a toy electric railway system and made up to include a toy figure representing a person stepping forward toward a passing train and waving a hand to said train, means by which said figure is mounted to move from a first to a second position, said figure having one of its arms pivotally mounted and weighted to oscillate freely by gravity in shoulder bearings of the figure, said arm being held by the weight so as to extend normally forwardly of the figure but adapted to oscillate freely above and below said normal position, means whereby to suddenly arrest movement of the figure in its second position thereby to induce oscillation of said arm, and connecting means whereby movement of a train past said figure along the rails of the toy system will cause said figure to move from its first to its second position, said connecting means including parts effective to agitate the figure while the figure is adjacent its second position thereby to additionally oscillate said arm.

7. A toy amusement device for use in association with a toy electric railway system and in-

tended for operation by electric current controlled by a train moving along the rails of the toy system, said device being made up to include a toy figure representing a person having one of its arms swingable for simulating waving a hand to a passing train, said figure having its said arm pivotally mounted and weighted to oscillate freely by gravity in shoulder bearings of the figure, said arm being held by the weight so as to extend normally forwardly of the figure but adapted to oscillate freely above and below said normal position, said device including also electro-magnetic operating means to produce oscillation of said arm.

8. A toy amusement device for use in association with a toy electric railway system and made up to include a toy figure having an arm pivotally mounted and weighted to oscillate freely by gravity in bearings of the figure, said arm being held by the weight so as to extend normally in one position but adapted to oscillate in opposite directions from said normal position, and connecting means whereby the movement of a train along the rails of the toy system will cause said arm to oscillate.

9. A toy amusement device for use in association with a toy electric railway system and intended for operation by electric current controlled by a train moving along the rails of the toy system, said device being made up to include a toy figure having an arm pivotally mounted and weighted to oscillate freely by gravity in bearings of the figure, said arm being held by the weight so as to extend normally in one position but adapted to oscillate in opposite directions from said normal position, and said device including also electro-magnetic operating means to produce oscillation of said arm.

10. A toy amusement device for use in association with a toy electric railway system, said device comprising a support, an arm pivotally mounted upon said support for uninfluenced gravity oscillation and constituting a gravity actuated member visually oscillatable through a succession of free gravity oscillations as visible signalling means, and means to control said signalling comprising parts operable to bring about a beginning of said visible oscillations, said arm being thereafter controlled only by gravity and being free for to and fro gravity oscillation, and said control means being operable finally to cause said oscillatable arm to become obscured.

11. A toy amusement device for use in association with a toy electric railway system, said device comprising a support, an arm pivotally mounted upon said support for uninfluenced gravity oscillation and constituting a gravity actuated member visually oscillatable through a succession of free gravity oscillations as visible signalling means, and means to control said signalling comprising parts whereby the travel of a train along the rails of the toy system will bring about a beginning of said visible oscillations, said control means being operable to insure a continuation of the free and visible to and fro gravity oscillations of said arm as the train continues to travel, and said control means being operable finally to cause said oscillatable arm to become obscured as the train reaches a predetermined point.

12. A toy amusement device for use in association with a toy electric railway system, said device comprising a support, an arm pivotally mounted upon said support for uninfluenced gravity oscillation and constituting a gravity actuated member visually oscillatable through a succession of free gravity oscillations as visible signalling means, and means to control said signalling comprising parts whereby the travel of a train along the rails of the toy system will bring about a beginning of the signalling, the signalling thereafter continuing through a succession of oscillations of the signalling arm, said arm being oscillated only by gravity so that it swings freely to and fro without other influence as the train continues to travel, and said control means being operable finally to cause a termination of the signalling as the train reaches a predetermined point.

LEVIN G. HANDY.