April 7, 1936. J. R. FUREY 2,036,328

TOY

Filed Jan. 14, 1936 2 Sheets-Sheet 1

Fig. 1

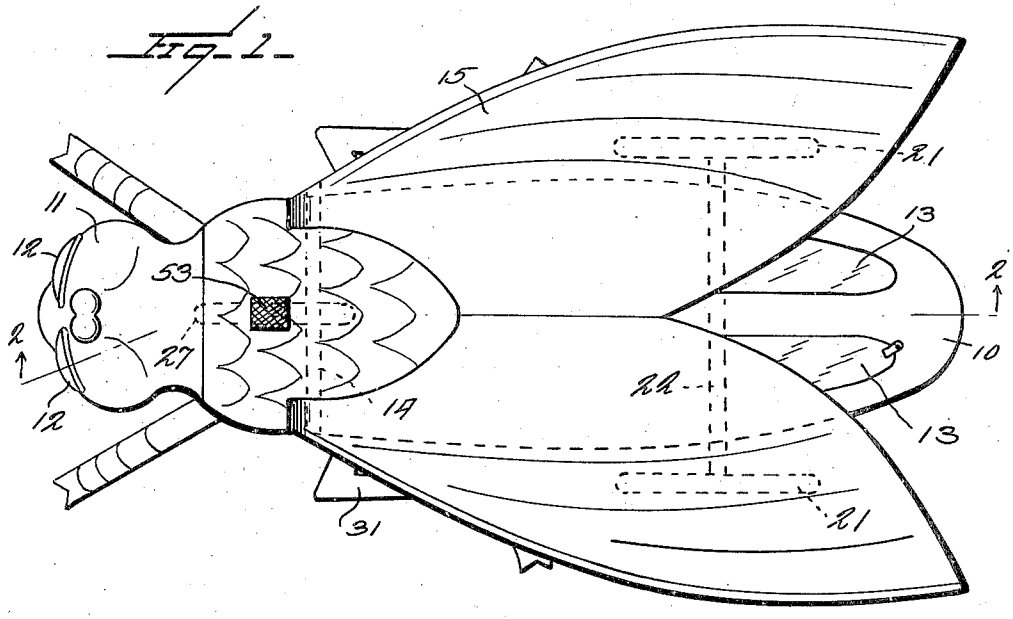
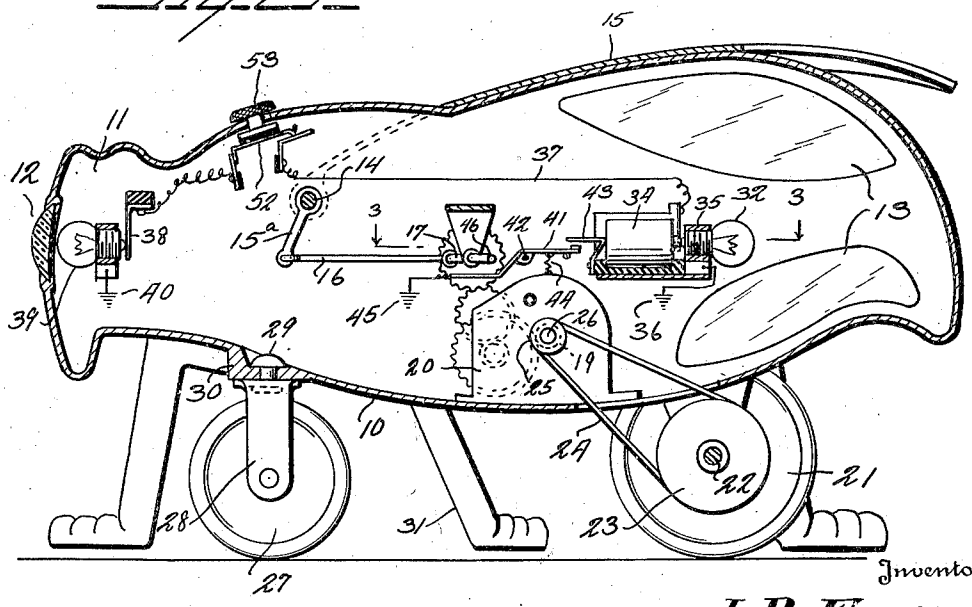


Fig. 2



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April 7, 1936. J. R. FUREY 2,036,328

TOY

Filed Jan. 14, 1936 2 Sheets-Sheet 2

Fig. 3.

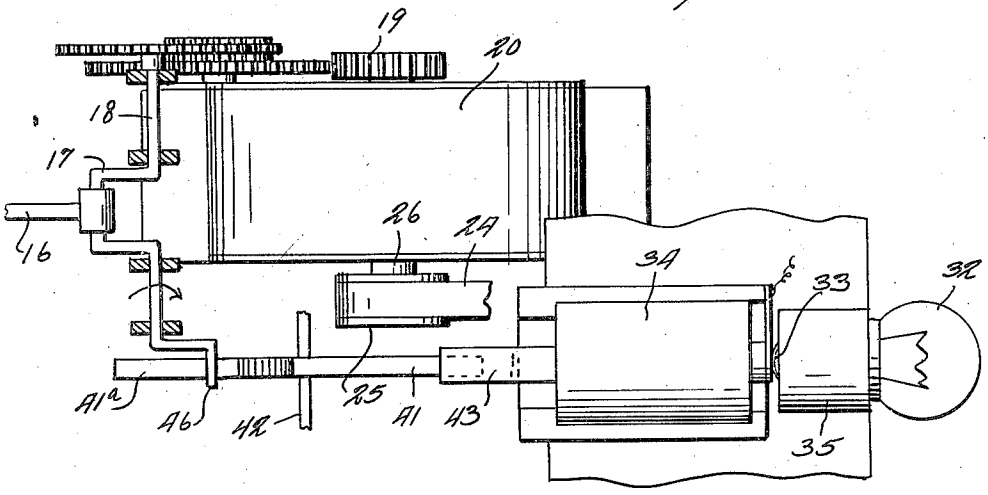
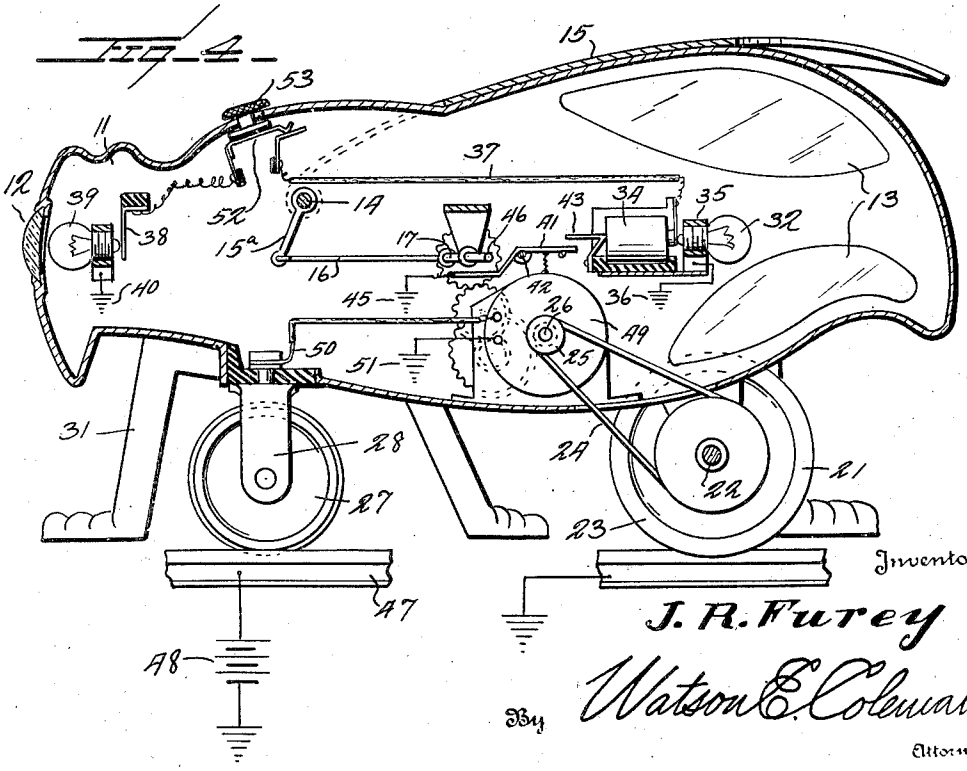


Fig. 4.



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TOY

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Application January 14, 1936, Serial No. 59,124

8 Claims. (Cl. 46—124)

This invention relates to toys and particularly to a toy in the form of a winged insect.

The object of the invention is to provide a toy of this character with means whereby it may be caused to travel forward, and while traveling to provide means whereby the wings may be lifted and whereby the abdomen and eyes of the insect may be illuminated.

Another object is to provide a toy of this character in which the front wheel, if the toy is not designed to operate upon a track, may be turned at an angle to the line of travel so that the toy will travel in a circle, and another object is to provide a toy of this character which may be mounted upon a circular electrified track and may take its motive power from said track.

Other objects will appear in the course of the following description.

My invention is illustrated in the accompanying drawings wherein:—

Figure 1 is a top plan view of a toy constructed in accordance with my invention;

Figure 2 is a vertical section on the line 2—2 of Figure 1;

Figure 3 is an enlarged section on the line 3—3 of Figure 2;

Figure 4 is a vertical sectional view similar to Figure 2 but showing an electrically driven toy.

Referring to Figures 1, 2 and 3, 10 designates the body of the toy which may be made of any suitable material and which may have the form of any insect or other animal. The body is shown as being formed to provide a head 11 having lenses 12 in the similitude of eyes. The rear end or abdomen of the body is provided above and below on each side of the body with the transparent panes 13. The whole of the abdomen might be of transparent material or only a portion of the abdomen be of transparent material. The body of the insect is preferably made of metal, though I do not wish to be limited to this.

Pivoted upon a transverse shaft 14 are the wings 15 which extend rearward and outward in the usual manner, leaving the rear upper surface of the abdomen bare, and this shaft 14 is actuated by an arm 16a or crank, a connecting rod 16 leading from this arm to a crank 17 mounted upon a crank shaft 18. This crank shaft is operatively geared by any suitable train of gearing to a gear 19 on a clock-work motor, the casing of which is designated 20. This is an ordinary spring motor such as is used in toys of this general character, the spring of which is adapted to be wound up by a key.

For the purpose of driving the toy over the ground, I provide a pair of wheels 21 which contact with the ground and which are disposed beneath the abdomen of the insect, the axle 22 of these wheels being operatively connected to the motor 20. As illustrated, though I do not wish to be limited to this, the axle 22 carries upon it the band wheel 23 and a rubber band 24 connects the wheel 23 to a relatively small band wheel 25 mounted upon the shaft 26 which is driven by the motor 20, this shaft being the same shaft which carries the gear wheel 19. At the forward end of the body, there is provided a supporting and steering wheel 27 shown as mounted in a clevis 28, which is pivoted upon the body as by the pivot pin or rivet 29. The upper face of the yoke or clevis 28 has frictional engagement with a relatively wide portion of the body 30 so that this wheel may be turned by hand into an angular position relative to the body, and thus the toy may be made to run either in a straight line or in a circle and in either direction as desired. Legs 31 are attached to the body of the insect, if desired, in order to give verisimilitude to the toy.

Disposed within the abdomen of the insect is an electric bulb 32 having as usual a central electrode 33 which bears against the central electrode of a dry battery 34. The exterior screw threaded shell 35 of the base of this incandescent bulb 32 is electrically connected to a ground 36 as shown in Figure 2. A wire 37 leads from the battery to a contact 38 which engages the central electrode of an incandescent lamp 39 located in the head of the insect, the exterior shell of the base being connected to a ground 40. The battery on the side opposite the lamp 34 is connected by a switch to a ground as shown in Figure 2, and this switch is operated intermittently. The switch is designated 41 and is pivoted at 42. The forward end of the switch when the rear end is depressed, engages with a contact 43 connected to the negative pole of the battery, and a spring 44 urges the rear end of the switch downward away from the contact 43. The forward end of the switch extends forward and is operatively connected to a ground 45. Disposed immediately above the switch is a crank 46 carried by the shaft 18. This crank 46 wipes against the rearwardly extending end 41a of the switch 41, so that as the shaft 18 rotates, the switch will be intermittently closed and opened. As soon as the switch is closed, the lamps 32 and 39 will be energized. This will occur as the crank arm 15 moves rearward under the clockwise rotation of the shaft 18. In other words, as the crank 46

moves downward against the tail of the switch 41, the crank 17 will move upward and rearward, drawing upon the arm 15 and elevating the wings. Thus when the wings are elevated, the bug will be illuminated and as the wings are lowered, the lamps will be de-energized. Obviously the length of time during which the lamps are energized depends upon the length of the tail portion 41a of the switch. The side wall of the body may be provided with a door (not shown) whereby access may be had to the interior of the body so that the battery may be changed, new bulbs inserted, etc.

Though in Figures 1, 2 and 3, I have illustrated a toy of this character in which the motive power is secured from a spring motor 20, I do not wish to be limited to this, and in Figure 4 I have illustrated a structure in which the motive power is secured from rails 47 connected to a source of current 48. Disposed within the body is an electric motor 49 and current is carried to this motor by the wheel 27 from one of the rails 47. A conductor 50 leads from this wheel to one side of the motor, the other side being grounded at 51. Of course, the pivot of the yoke 28 is in this case insulated from the metallic body of the toy, as shown in Figure 4. Obviously any suitable electrical connections may be made whereby the motor may receive current from the rails.

While the lamps 32 and 39 may also receive their current from the rails 47, the circuit to the lamps being intermittently broken by such a switch as 41, I have illustrated in Figure 4 the bulbs 32 and 39 as receiving current from the battery 34 as previously described, the circuit through the lamps and battery being intermittently completed by means of the switch 41 actuated by the crank 46 on a shaft 18. It will be understood, however, that I do not wish to be limited to this. In either form of my invention, a cut-out switch 52 may be provided in the wire 37 so that at the will of the operator, the bulb 39 may be switched off, if desired. This switch 52 may be operated by means of a button 53 disposed upon the outer face of the body in any convenient location and operatively connected to the switch.

While I have illustrated the insect as having the general form of a fly, obviously the insect may have the form of a grasshopper, firefly, June bug or any other insect, or the body may have any fanciful or grotesque form desired, and may be made of any suitable material. The wings may be made of metal or of wire to imitate the veining of a fly's wing, the spaces between the veins being filled with cellophane or celluloid. The wings may be separate or made in one piece, as desired.

It is to be understood, of course, that provision may be made for changing the lamps 32 and 39 or for changing the battery 34. Thus, for instance, as regards the lamp 39, one of the lenses 12 may be removable whereby access to this lamp may be had and, as before stated, a door may be provided in the side wall of the body 10 by which access may be had to the battery 34 and lamp 32. The bulb 39 may be differently colored from the bulb 32 or the lenses 12 may be differently colored from the transparent panels 13.

Various modifications may be made in the details of construction and arrangements of parts without departing from the spirit of the invention as defined in the appended claims.

What is claimed is:—

1. A toy of the character described, having a hollow body, certain portions of the body being transparent, wheels supporting the body, a motor operatively connected to the wheels to drive the toy, an electric lamp disposed within the body, means operated by the motor for intermittently closing the circuit through the lamp and a source of potential, and a forward wheel rotatably adjustable in a horizontal plane to cause the body to travel in a circle or in a straight line.

2. A toy of the character described, comprising a hollow body, wings pivotally mounted upon the body, wheels supporting the body, the body beneath the wings having transparent portions, electrically energized illuminating means within the body, a source of energy therefor, a motor for driving said wheels and having operative connection therewith, means operated by the motor for alternately lifting and lowering the wings and means operated by the motor for intermittently closing a circuit through said illuminating means and a source of current as the wings are lifted and breaking said circuit as the wings are closed.

3. A toy of the character described, comprising a hollow body, wings pivotally mounted upon the body, wheels supporting the body, a motor for driving said wheels and having operative connection therewith, means operated by the motor for alternately lifting and lowering the wings, the rear end of the body having transparent portions, an electric lamp disposed within the rear end of the body, and means operated by the motor for intermittently closing the circuit through the lamp and a source of potential.

4. A toy of the character described, comprising a hollow body, wings pivotally mounted upon the body, wheels supporting the body, a motor disposed within the body and operatively connected to certain of the wheels to drive the body, the rear end and the forward end of the body having transparent portions, electric lamps disposed adjacent said transparent portions within the body, and motor operated means for simultaneously lifting the wings and connecting said lamps in circuit with a source of current.

5. A toy of the character described, comprising a hollow body having transparent portions in its forward and rear ends, wheels supporting the body, a motor disposed within the body and operatively connected to certain of the wheels to drive the body, a transversely extending shaft mounted in the body, wings mounted in the body and extending outward beyond the same wings carried upon the outwardly projecting portions of the shaft, motor operated means for oscillating said shaft to raise or lower the wings, electric lamps disposed within the body adjacent the transparent portions thereof, and motor operated means for intermittently connecting said lamps in circuit with a source of current.

6. A toy of the character described, comprising a hollow body formed to provide a head and an abdomen, the head having lenses simulating eyes and the rear portion of the abdomen having transparent portions, a motor disposed within the body, rear wheels supporting the body, an operative connection between the rear wheels and the motor, a front wheel supporting the body and rotatably adjustable in a horizontal plane to cause the body to travel in a straight line or on a curve, forward and rear electric lamps disposed within the body, a source of current for said lamps, a switch closing the circuit through the source of current and said lamps, motor operated means for alternately closing said switch and opening it, wings pivotally mounted upon the body and motor operated means for alternately raising and lowering said wings including a crank

shaft, and an operative connection between said crank shaft and said wings.

7. A toy of the character described, comprising a hollow body formed to provide a head and an abdomen, the head and abdomen having transparent portions, an electric motor disposed within the body, rear wheels disposed beneath the abdomen and operatively connected to the electric motor, a front wheel supporting the body, electrified rails with which the wheels engage, means taking current from said rails to the motor, wings pivotally mounted upon the body, means operatively connected to and driven by the motor for intermittently raising or lowering the wings, electric lamps disposed adjacent the transparent portions of the body, and means operated by the motor for intermittently connecting said lamps with a source of current or disconnecting them therefrom.

8. A toy of the character described, comprising a hollow body, wings pivotally mounted upon the body, the body beneath the wings having transparent portions, an electric lamp disposed within the body, a source of current for said lamp, wheels supporting the body, and means acting automatically as the toy is moved along, alternately lifting and lowering the wings, and closing the circuit through the illuminating means when the wings are raised and breaking said circuit when the wings are lowered.

JOSEPH R. FUREY.