A. B. WILDER.

ELECTRICAL TOY.

APPLICATION FILED OCT. 11, 1915.

1,226,835.

Patented May 22, 1917.

2 SHEETS—SHEET 1.

Fig. 1.

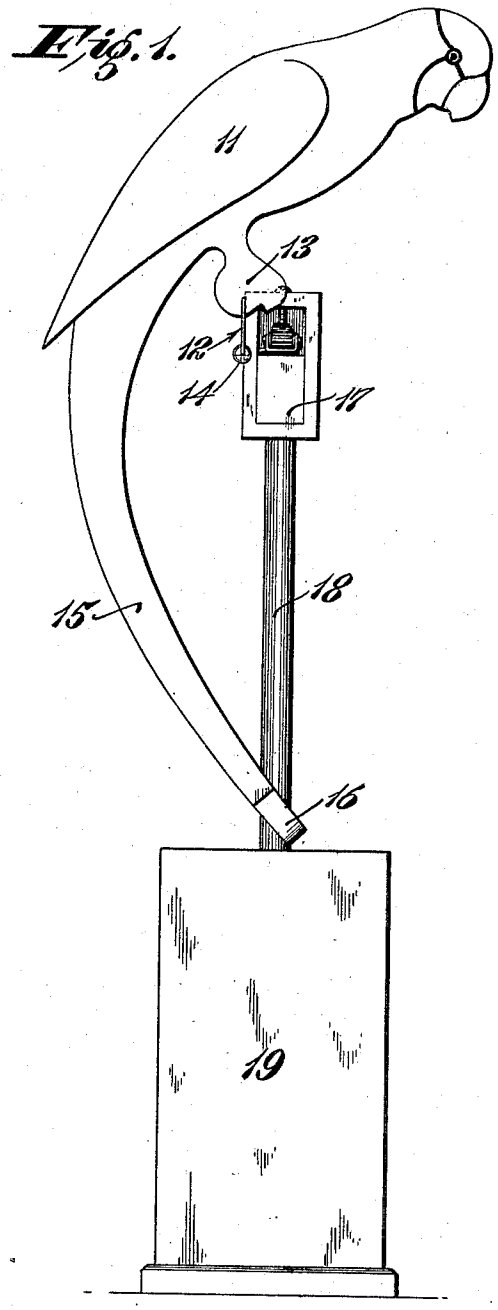
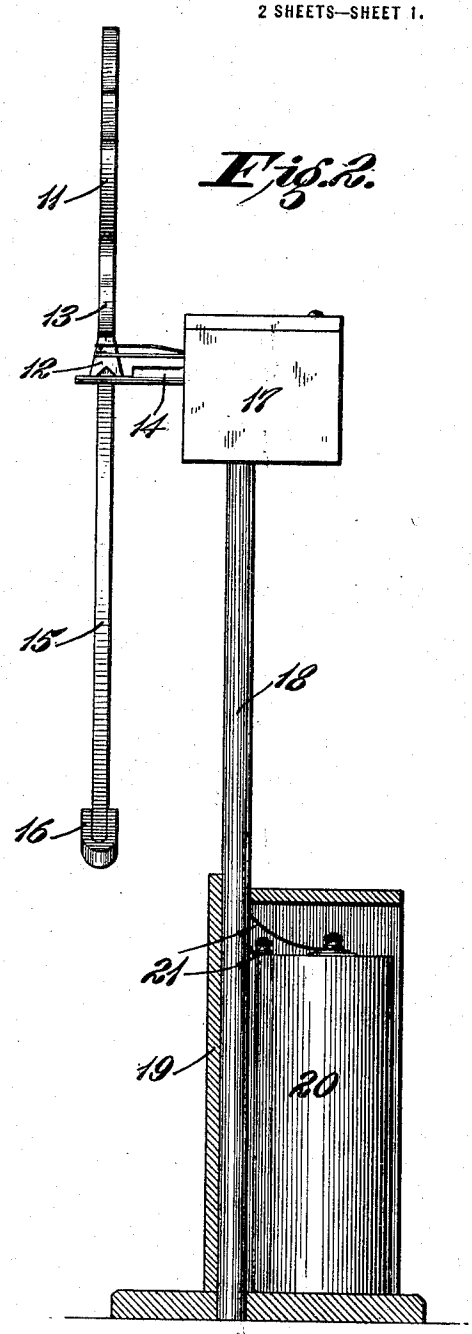


Fig. 2.



Witnesses:

Edgar F. Farmer

A. M. Holcombe.

Inventor:

Allen B. Wilder,

by Church & Church

his Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

A. B. WILDER.

ELECTRICAL TOY.

APPLICATION FILED OCT. 11, 1915.

1,226,835.

Patented May 22, 1917.

2 SHEETS—SHEET 2.

Fig. 3.

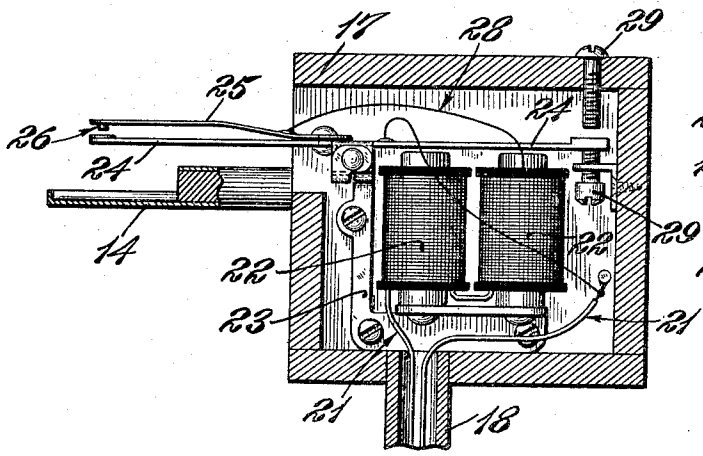


Fig. 4.

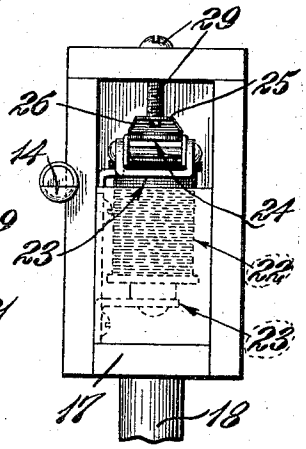


Fig. 5.

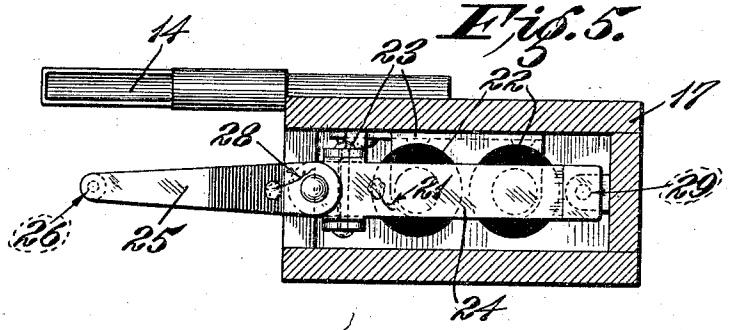
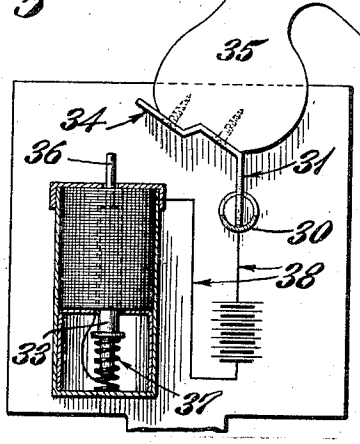


Fig. 6.



Witnesses:

Edgar T. Farmer.

Allis Holcombe.

Inventor:

Allen B. Wilder,

by Cornell Bros.,

his Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ALLEN B. WILDER, OF ST. LOUIS, MISSOURI, ASSIGNOR TO WILDER PATENTS COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

ELECTRICAL TOY.

1,226,835. Specification of Letters Patent. Patented May 22, 1917.

Application filed October 11, 1915. Serial No. 55,274.

To all whom it may concern:

Be it known that I, ALLEN B. WILDER, a citizen of the United States, and a resident of the city of St. Louis and State of Missouri, have invented a new and useful Improvement in Electrical Toys, of which the following is a specification.

This invention relates to self-acting apparatus for continuously operating swinging bodies, such as toy birds and animals, advertising devices for window displays, and the like.

The object of the invention is a simple, inexpensive motor which will operate such devices for a long period of time without attention on a small current of electricity, such as that furnished by a dry cell.

The invention consists in an electro-magnetic device and contact maker arranged in series in an electric circuit and controlled by the oscillations of the swinging body to maintain the swinging movement of the body.

Further objects of the invention appear in connection with the following description of the embodiments thereof shown in the accompanying drawings; and what the invention consists in is more particularly defined in the appended claims.

In the drawings, wherein the same reference characters designate the same parts in the several views,

Figure 1 is a front elevation of a device embodying the invention;

Fig. 2 is a side view of the same, showing the base in vertical section;

Fig. 3 is a side view of the operating mechanism, the case therefor being shown in vertical section;

Fig. 4 is a front view of the operating mechanism and case;

Fig. 5 is a plan of the operating mechanism, showing the case in horizontal section; and

Fig. 6 is a front view of a modified form of operating mechanism.

For the purpose of illustrating the invention, Figs. 1 to 5 of the drawings show a swinging parrot 11 and one form of electrical apparatus for swinging it continuously. The parrot 11, is pivotally supported by means of a thin metal standard 12 which is secured transversely in its claw or foot portion 13, and which rests in a hollow trough or groove in the upper side of a horizontal support 14. The body portion of the parrot stands above the support 14 and is balanced by a long tail 15 which curves around under the support 14 and has a weight 16 on its extremity. The support 14 is secured to the side of the case 17 for the operating mechanism, which is mounted on the top end of the rod 18 of the stand 19. A dry cell 20 is concealed in the base of the stand, and wires 21 are led up through or alongside of the rod 18 to the operating mechanism.

The operating mechanism shown in Figs. 3, 4 and 5 consists of an electro-magnet 22 mounted in a frame 23 which is secured within the case 17. An armature lever 24 for the electro-magnet is pivoted at its middle in the frame, one end swinging up and down above the coils of the magnet, and the other end projecting through the front of the case 17 and terminating below the toe portion of the foot 13 of the parrot in position to be depressed thereby at the end of each forward swing of the parrot. A spring 25 is riveted on top of the projecting end of the armature lever 24, and the extremity of the spring carries a contact point 26 which is normally out of contact with the armature, but which is adapted to contact therewith when the spring is pressed down. The spring 25 is insulated from the armature lever 24, and a wire 28 connects it with one terminal of the coils of the electro-magnet. The other terminal of the magnet coils is connected to the battery by one of the wires 21, and the other battery wire 21 is connected to the armature lever 24. Adjusting screws 29 are provided for limiting the vertical movement of the inner end of the armature.

The device operates as follows: The parrot is set to oscillating by hand, and when its toe strikes the spring 25 the latter depresses the projecting end of the armature lever 24 until the inner end brings up against the upper adjusting screw 29. Further movement of the parrot bends the spring 25 and brings the contact point 26 into contact with the armature lever, thereby completing the electrical circuit and energizing the magnet. The inner end of the armature is attracted by the magnet and pulled down quickly, thereby kicking up the outer end and giving the parrot an impulse on the return swing. The parrot swings freely on

the support 14 until its toe again strikes the spring 25 at the end of a complete oscillation, when the above described operation of the magnet is repeated.

The modified form of the invention shown in Fig. 6 comprises a support 30 for the pivotal lower edge of the standard 31 upon which the parrot swings, and a solenoid 32 having a vertically movable armature core or plunger 33 for furnishing an impulse at the end of each oscillation to keep the parrot swinging. The standard 31 has an extension portion 34 secured under the toe of the foot portion 35 of the parrot, and this extension or toe portion 34 is adapted to contact with the projecting tip 36 of the plunger 33 at the end of the forward swinging movement of the parrot, thereby depressing the plunger against the spring 37 at its lower end. The battery wires 38 are led, one to the support 30 and the other to one terminal of the solenoid coil 32. The other terminal of the solenoid coil is connected to the spring 37, which in turn is soldered to the plunger 33. The metal support 31 for the parrot closes the electrical circuit through the solenoid and battery whenever the toe portion 34 comes in contact with the tip 36 of the plunger, thereby causing the plunger to be drawn up into the solenoid. The parts may be so adjusted that the upward movement of the plunger lifts the parrot off of the support 30 and breaks the circuit, and shifts the point of support to start the parrot swinging back on the next oscillation. When the standard 31 engages the support 30, the circuit will again be completed through the solenoid and the plunger will kick the toe of the parrot up, thereby maintaining the oscillation of the parrot as long as the battery current continues. The current is maintained for but a fraction of a second for each oscillation, and hence the consumption of current is small and the drain on the battery slight.

The invention is not restricted to the particular forms and arrangements of parts shown in the drawings.

I claim the following as my invention:

1. A motor for swinging bodies comprising a pivotal support for the body, a movable armature mounted in the path of movement of said body to be engaged and moved thereby at the end of its swing in one direction, an electric coil for returning said armature to normal position, and means actuated by the engagement of said body and armature to complete an electrical circuit through said coil.

2. In combination, in a motor for an oscillating body, an electrical circuit, a coil in said circuit, an armature for said coil adapted to be moved in one direction when said coil is energized, said oscillating body being adapted to engage said armature and move it in the direction opposite to that in which said coil is adapted to move it, and means for completing an electrical circuit through said armature and coil upon the engagement of said oscillating body with said armature.

3. A toy comprising a swinging figure, a pivot support for said figure, an electrical circuit, a coil in said circuit and a movable armature therefor, said armature being arranged in the path of movement of said figure to be engaged thereby at the end of its swing in one direction, said figure being returned by the working stroke of said armature, and means associated with said armature and forming part of said electrical circuit for completing said circuit, said means being actuated by said figure at the end of its swing in one direction.

4. A toy comprising a swinging figure, a pivot support for said figure, an electrical circuit, a coil in said circuit and a movable armature therefor, said armature being arranged in the path of movement of said figure to be engaged thereby at the end of its swing in one direction, said figure being returned by the working stroke of said armature, means associated with said armature and forming part of said electrical circuit for completing said circuit, said means being actuated by said figure at the end of its swing in one direction, and means for breaking said circuit when said armature has completed its working stroke.

5. A toy comprising a stand, an electric battery in said stand, a support, a swinging figure pivoted on said support, an electrical device for maintaining the swinging movement of said figure, said device being supplied with electricity from said battery, and means operated by said swinging figure for momentarily closing the circuit to actuate said device at the end of each oscillation of said figure, said means comprising a movable armature comprised in said circuit.

Signed at Chicago this 4 day of October, 1915.

ALLEN B. WILDER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."