

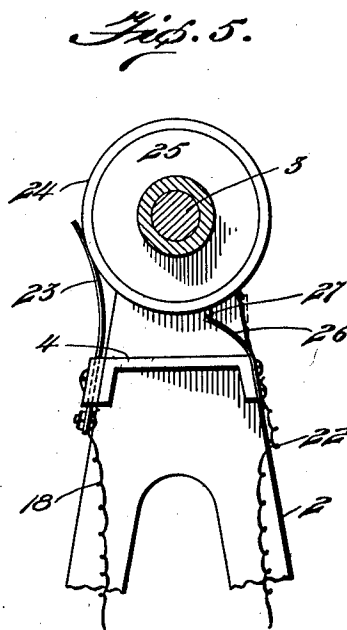
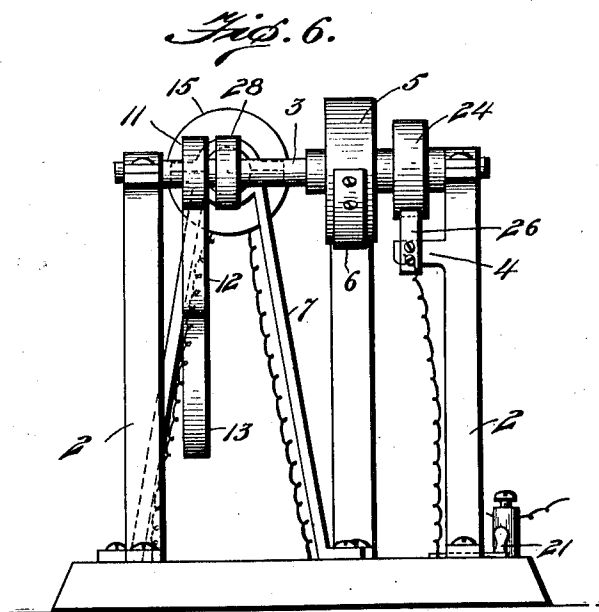
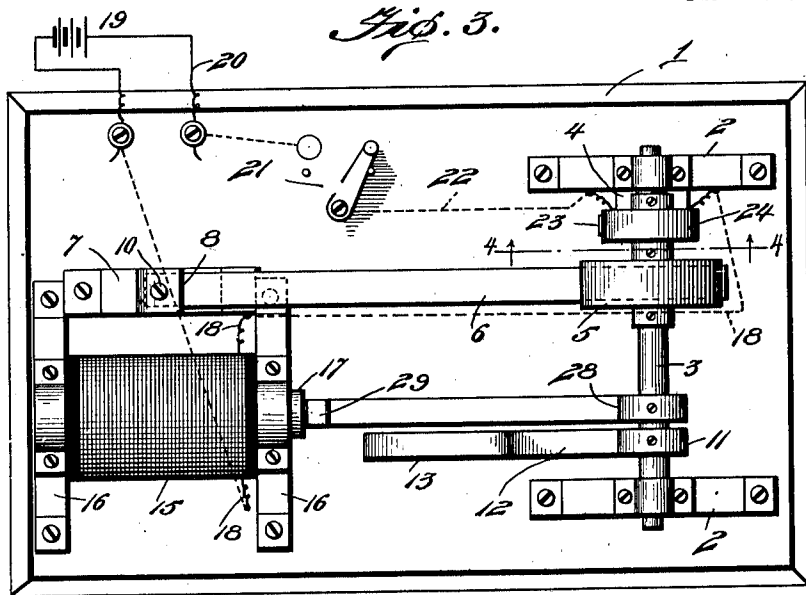
G. S. ELLIOTT.
TOY.

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1,020,030.

Patented Mar. 12, 1912.

2 SHEETS—SHEET 2.



Witnesses
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TOY.

1,020,030.

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To all whom it may concern:

Be it known that I, GALE S. ELLIOTT, a citizen of the United States, residing at San Marcial, in the county of Socorro and State of New Mexico, have invented certain new and useful Improvements in Toys, of which the following is a specification.

My invention relates to improvements in toys, and has for its leading object the provision of an improved electrically operated toy.

The further object of my invention is the provision of a simple, inexpensive and durable electrically controlled toy which will prove both entertaining to small children and instructive to those of more advanced years.

Other objects and advantages of my improved toy will be apparent from the following description taken in connection with the drawings, and it will be understood that I may make any changes or modifications in the specific structure shown and described within the scope of the claims without departing from or exceeding the spirit of the invention.

Figure 1 represents a side elevation of my complete toy illustrating the position occupied by the various parts as the circuit of the magnet is broken. Fig. 2 represents a side elevation of the invention illustrating the depressed position of the parts. Fig. 3 represents a top plan view of Fig. 1. Fig. 4 represents a longitudinal sectional view on the line 4—4 of Fig. 3. Fig. 5 represents a similar sectional view showing the parts in depressed position, and Fig. 6 represents an end view of the toy.

In the drawings, the numeral 1 designates the supporting wooden base of my toy, while rising from the base near one end thereof are the pair of supporting posts or brackets 2 having journaled in their upper ends the transverse shaft 3 of my device, the said posts or brackets 2 being connected by the cross bar 4. Secured on said shaft 3 near one end thereof is the large drum 5 to which is secured one end of the resilient or rubber band 6. Rising from the base near the opposite end thereof is a post 7 bearing on its upper end the block 8 having a slot 9 formed therein to receive the free end of the rubber band while engaged in the block 8 is the set screw 10 adapted to be forced downward into clamping engagement with the free end

of the rubber band, this method of engaging the end of the rubber band permitting of the adjusting of the tension thereof or of the ready replacing of said band.

Mounted on and secured to the shaft near the opposite end from that on which the drum 5 is secured is the enlarged collar 11 having the arm 12 formed integral therewith, while secured to the outer end of said arm 12 is the weight 13 which may either be made in the form of or may be decorated with an ornamental figure 14 which will present an attractive appearance when pendulating. It will be apparent that upon the elevation of the weight and releasing thereof the weight will first swing downward and rotate the shaft 3 in one direction, said rotation of the shaft causing the drum 5 to rotate and wind the band 6 thereon, the rotation of the drum thus stretching or tensing the band. When the weight has ceased its movement or swing in one direction it will naturally make a swing in the reverse direction, and this movement will be accelerated by the unwinding of the band from the drum caused by the contraction of said band.

Inasmuch as the reverse swing of the weight will be less than its original swing the movement will ordinarily continue but a short time when the weight will come to a rest. To prevent the weight from thus coming to a rest, I have provided an improved intermittently energized electromagnetic device for lifting the weight upon its reverse swing to its former position, whereby the movement of the weight will be continuous and of approximately an equal swing as long as the magnet operates. Said magnet 15 is supported by the members which rise from the base and has the soft metallic core 17 projecting from its forward end, while the positive and negative wires 18 of the magnet extend downward along the supports 16 to the base and are preferably contained in grooves formed in said base in the usual manner. One of the wires 18 projects from the base and is secured to the battery 19, a second wire 20 leading from the battery to the controlling switch 21 for throwing the current on and off.

Leading from the switch 21 is a wire 22 which extends with the wire 18 upward along one of the supports 2, the wire 18 having its end secured to the contact brush

23 which projects upward from the cross bar 4 and engages the conducting rim 24 of the insulated contact disk 25 which is secured on the end of the shaft 3 adjacent the drum 5. The other wire, 22, extends across the cross bar 4 and has its end secured to the insulated contact brush 26 which projects upward above the cross bar 4 almost into engagement with the commutator disk. Said conducting rim 24 of the commutator disk 24 has a depending lug 27 adapted to engage the contact brush 26 to close the circuit through said spring, lug and disk and contact brushes to allow the current to flow through the magnet and energize the same. Engaged on the shaft 3 is the end 28 of the armature 29 adapted to be attracted by the magnet 15 when the circuit is closed.

In the operation of my toy, when the switch is closed the weight is lifted to bring the lug 27 into engagement with the brush 26, when the magnet will be energized to draw toward it the armature 29, thus rocking the shaft and lifting the weight. As the shaft is rocked the lug 27 will move around therewith and bend inward the resilient brush, and as the armature is lifted to project radially from the shaft toward the magnet the lug will ride over the end of the brush which will fly up and break the circuit. As the circuit is broken the weight will pendulate on the shaft as its pivot and rock the shaft in a reverse direction, when the lug 27 will ride under to lie on the opposite side of the brush, the return movement of the weight caused by the band as heretofore described bringing the lug 27 into engagement with the brush 26 to again close the circuit.

From the foregoing description taken in connection with the drawings, the construction and operation of my improved toy will be readily understood, and it will be seen that I have provided a simple, and attractive toy in which the pendulating movement of the weighted arm with its ornamentation of Fig. 14 will prove attractive to younger children, while the operation of the various parts of my device and the difference in its operation when the magnet is used and when the magnet is not in use will serve to demonstrate certain principles of physics and my toy will therefore prove instructive to those of a more advanced age.

I claim:

1. A toy, comprising a base, supports rising therefrom, an electromagnet supported by certain of the supports, a shaft rotatably secured to the other support, a plurality of arms projecting from one side of the shaft,

a contact disk secured on the shaft, a contact brush carried by the supports for co-action with the disk to close an electrical circuit, means for completing and breaking the circuit as the shaft rocks, a battery in said circuit, said circuit passing around the magnet, and resilient means for partially controlling the rotation of the shaft, one of the arms of the shaft forming an armature for the magnet to supplementally control the movement of the shaft.

2. A toy, comprising a pivotally supported weight, a resilient device for partially controlling the oscillation of the weight on its pivot, an electric circuit including an electromagnet for supplementing the controlling action of the resilient member, and means for intermittently making and breaking the circuit to control the energizing of the magnet as the weight oscillates.

3. A toy, comprising a pivotally supported pendulum, a resilient member for partially controlling the movement of the pendulum, an electric circuit including an electromagnet and a source of current supply, an armature adapted to swing with the pendulum and be controlled by the magnet, and means for automatically controlling the energizing of the magnet and the breaking of the electric circuit.

4. The combination with a pivotally supported pendulum, of an armature adapted to swing with the pendulum, a resilient member for controlling the movement of the pendulum, and an electrical controlling member for acting in conjunction with the pendulating armature to control the movement of the pendulum supplemental to the action of the resilient member.

5. A toy, comprising supporting members, a shaft journaled therein, a pendulum and an armature secured to and projecting from said shaft, a drum secured on the shaft, a resilient connection having one end secured to the drum, a support engaging the other end of the resilient member, an electrical circuit including an electromagnet for attracting the armature supplemental to the contraction of the resilient member, a contact disk secured on the shaft and forming a part of the electrical circuit, and a contact brush included in the circuit and a lug projecting from the disk to serve in conjunction with the brush to complete and break the circuit upon movement of the pendulum in different directions.

In testimony whereof I affix my signature, in the presence of two witnesses.

GALE S. ELLIOTT.

Witnesses:

FRANK M. ELLIOTT,
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