Jan. 29, 1952 F. R. KILER 2,583,741

MAGNETIC OSCILLATORY DEVICE

Filed April 11, 1949

FIG. 1.

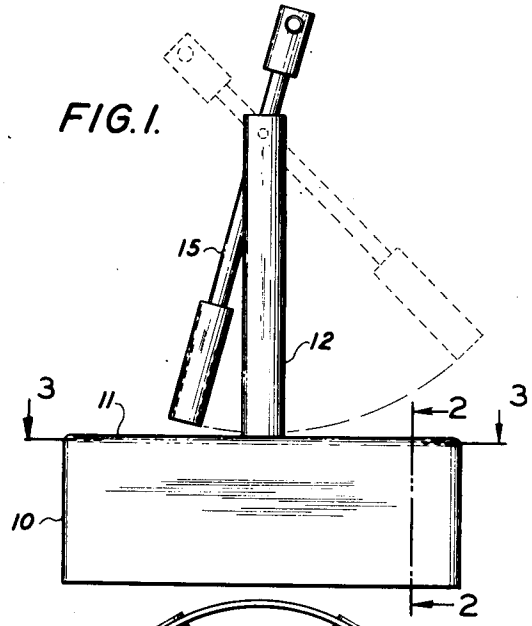


FIG. 2.

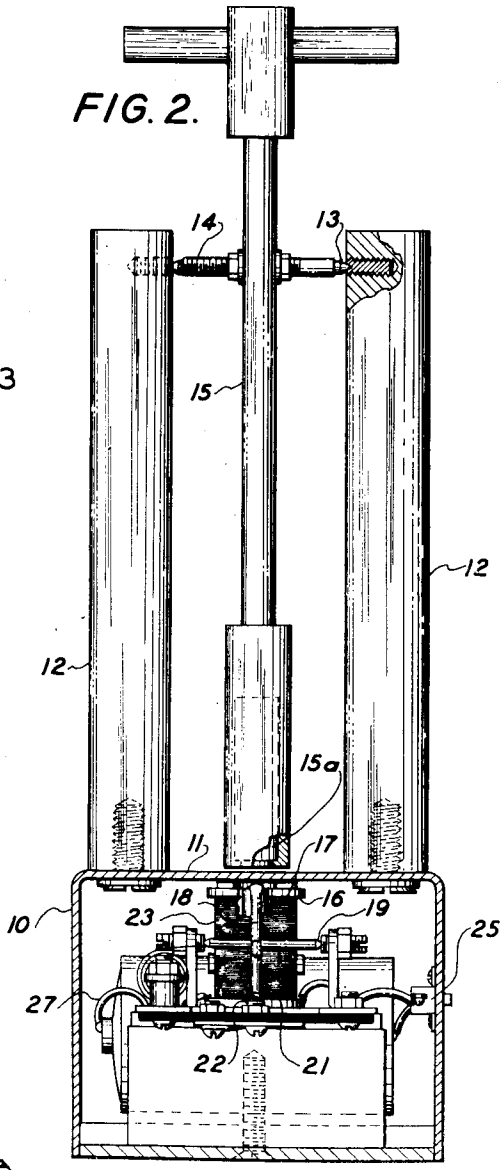


FIG. 4.

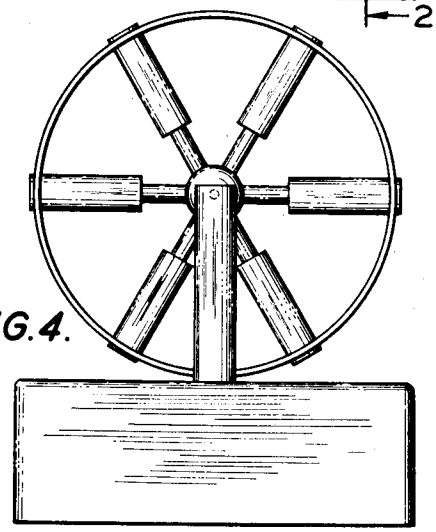
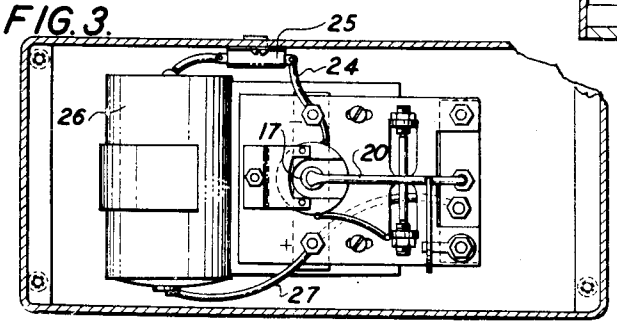


FIG. 3.



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MAGNETIC OSCILLATORY DEVICE

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6 Claims. (Cl. 172—126)

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This invention relates to electrical devices and more especially to an electrical and magnetic oscillatory movement.

An object of my invention is to provide a simple, practical and inexpensive device of the character described.

Another object of the invention is to provide a magnetic oscillatory pendulum which appears to have no apparent actuating means.

Another object of the invention is to provide a novel magnetic pendulum device having no apparent actuating means so as to be an attractive device for amusement or advertising purposes.

Other objects and advantages will appear and be brought out more fully in the following specification, reference being had to the accompanying drawing wherein:

Fig. 1 is a side elevation view of an embodiment of my invention.

Fig. 2 is an enlarged view of the same, partly in section, the section being taken along the line 2—2 of Fig. 1.

Fig. 3 is a sectional view taken along the line 3—3 of Fig. 1.

Fig. 4 is a side elevation view of a modified form of my invention.

Referring more particularly to the drawing I show an embodiment of my invention comprising a cabinet or similar structure 10 having a cover plate 11 on which are suitably supported a pair of spaced posts or columns 12. Posts 12 have suitable bearings 13 for a rock shaft 14 which carries a pendulum 15. Pendulum 15 may itself be a permanent bar magnet or the pendulum may be of non-magnetic material and have a permanent bar magnet 15a extending from the lower end thereof.

A solenoid 16 is suitably mounted within the cabinet 10 and has a plunger 17 positioned so as to be directly under magnet 15 when suspended motionless. A switch arm 18 is pivotally mounted at 19 and has a portion 20 engageable with or actuated by plunger 17, and has a contact 21 adapted to make contact with a fixed contact 22 suitably mounted within the cabinet 10. Solenoid 16 has a winding 23, one end of which is electrically connected to contact 21, and the other end is connected as by a wire 24 to one contact of a switch 25, the other contact of which is connected to a battery 26. The wire 27 connects fixed contact 22 with the opposite side of battery 26. The battery 26 is so connected that the winding 23 when energized will cause plunger 17 to be magnetized with a polarity at its upper end which will be opposite to that of the lower end of magnet 15, that is, either an N—N or an S—S relation.

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The operation of the invention is as follows: Assume switch 25 to be open and the pendulum 15 being stationary above plunger 17. Magnet 15 will magnetize plunger 17 with an N—S relation and hold it in raised position such that contacts 21 and 22 will be closed. Switch 25 may now be closed and the polarity of plunger 17 will now be reversed, and the magnetic field at the upper end of the plunger will be opposite to that of the field of the lower end of the pendulum 15. These similar fields being mutually repellent will cause pendulum 15 to swing away from its neutral position, and plunger 17 will drop, causing a separation of switch contacts 21 and 22, and pendulum 15 will swing back over plunger 17 with a movement which will carry it beyond the center line of the plunger. As it passes over plunger 17 it will again magnetize the plunger as before, causing a plunger and switch movement which will accelerate the pendulum on the opposite side of the center line, and this action will be repeated indefinitely and an oscillatory movement of the pendulum will result.

It will be understood that the foregoing description is illustrative rather than restrictive of my invention and that changes and modifications may be made without departing from the spirit and scope of the sub-joined claims. For instance, switch 21—22 may be a mercury switch or any other type of switch which is actuated magnetically, electronically, or otherwise, by the movement of the pendulum 15.

Having described my invention what I claim is:

1. A magnetic movement as described, comprising in combination a base, a magnet suspended over said base, a solenoid within said base having a plunger, a plunger actuated switch, and a power source, said plunger being actuatable by said magnet when over said solenoid to close said switch and be magnetized by said solenoid with a polarity opposite to that of said magnet whereby said magnet is displaced from its position over said solenoid and said switch thereupon is opened to de-magnetize said solenoid.

2. A magnetic movement as described, comprising in combination a base, a magnet pivotally mounted over said base, a solenoid within said base having a plunger, a plunger actuated switch, and a power source, said plunger being actuatable by said magnet when over said solenoid to close said switch and be magnetized by said solenoid with a polarity opposite to that of said magnet

whereby said magnet is displaced by repulsion from its position over said solenoid and said switch thereupon is opened to de-magnetize said solenoid.

3. A magnetic movement as described, comprising in combination a base, a pendulum magnet pivotally mounted over said base, a solenoid within said base having a plunger, a plunger actuated switch, and a power source, said plunger being actuatable by said magnet to close said switch and be magnetized by said solenoid with a polarity opposite to that of said magnet whereby said magnet is displaced by repulsion from its position over said solenoid and said switch thereupon is opened to de-magnetize said solenoid.

4. A magnetic movement as described, comprising in combination a base, a plurality of magnets pivotally mounted over said base, a solenoid within said base having a plunger, a plunger actuated switch, and a power source, said plunger being actuatable successively by said magnets to close said switch and be magnetized by said solenoid with a polarity opposite to that of said magnets whereby said magnets are successively displaced by repulsion from their position over said solenoid.

5. A magnetic movement as described, comprising in combination a base, a plurality of magnets rotatably mounted over said base, a solenoid within said base having a plunger, a plunger actuated switch, and a power source, said plunger being actuatable successively by said magnets to close said switch and be magnetized by said solenoid with a polarity opposite to that of said magnets whereby said magnets are displaced by repulsion from their position over said solenoid.

6. A magnetic movement as described, comprising in combination a base, a magnet suspended over said base, a solenoid within said base having a plunger actuatable by said magnet when said magnet is over the solenoid, a plunger actuated switch, and a power source, said plunger being actuatable by said magnet to close said switch and be magnetized by said solenoid with a polarity opposite to that of said magnet whereby said magnet is displaced from its position over said solenoid.

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