

June 19, 1934.

J. E. PAPAS

1,963,376

MAGNETIC MOTOR TOY

Filed May 2, 1932

2 Sheets-Sheet 1

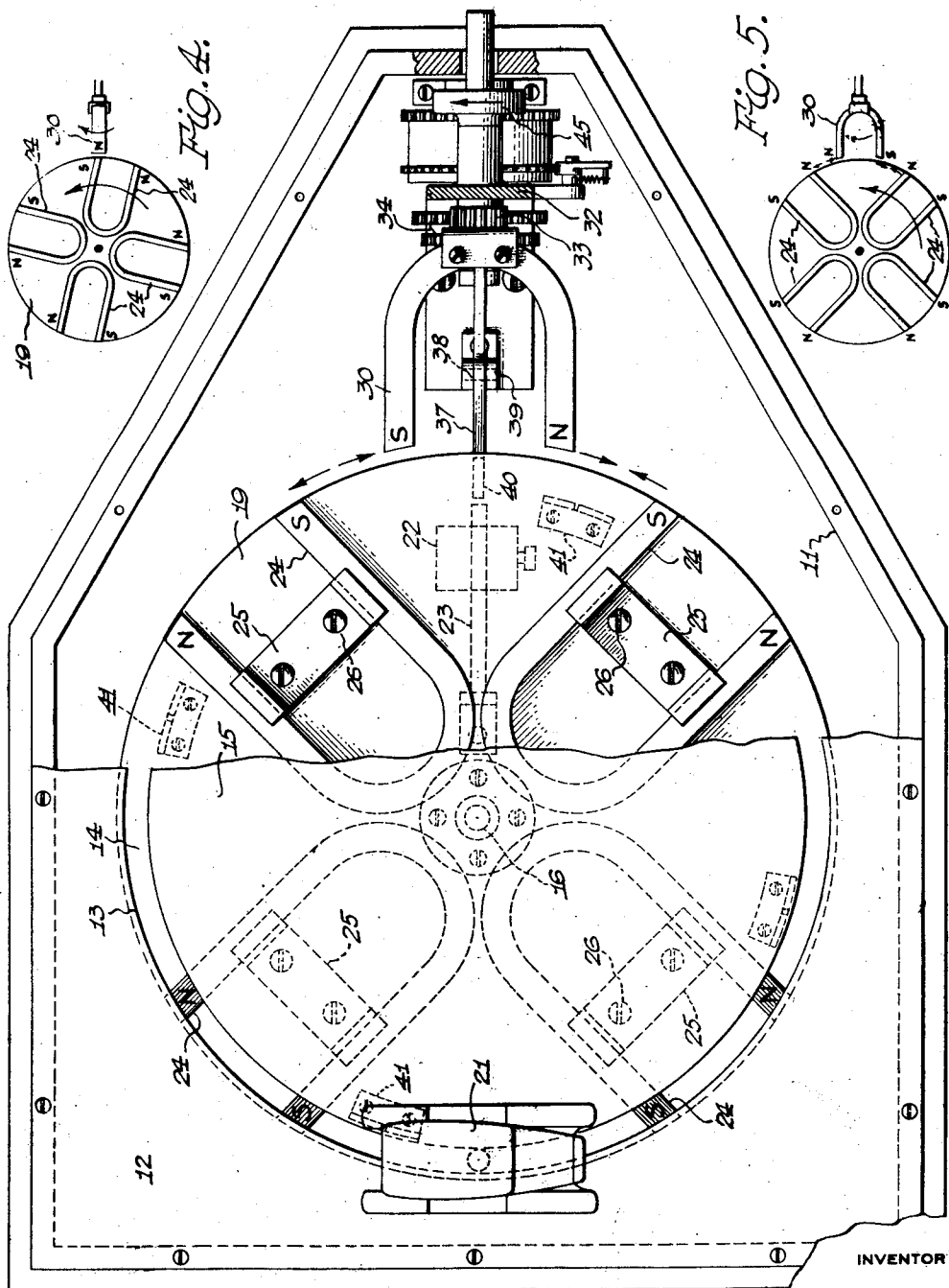


Fig. 1.

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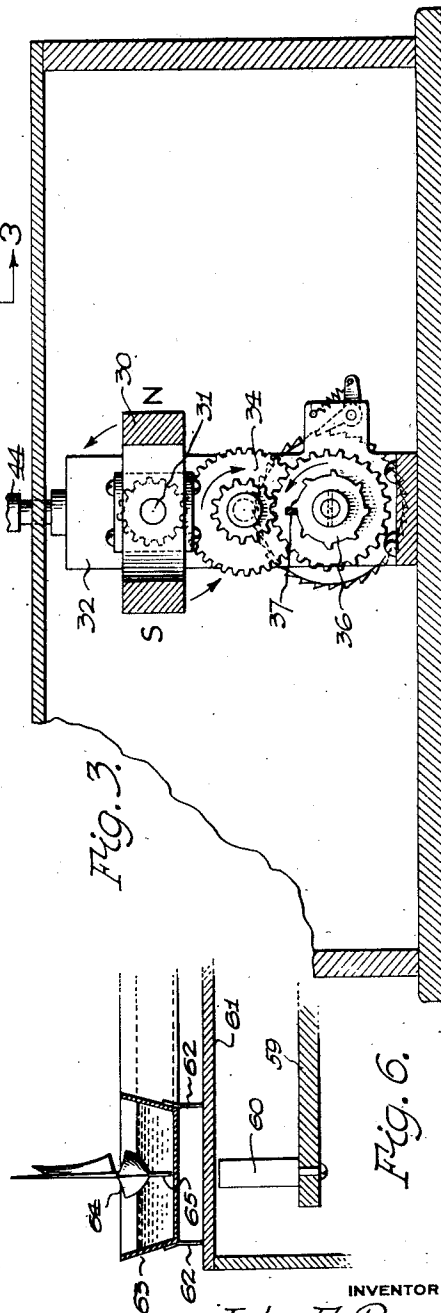
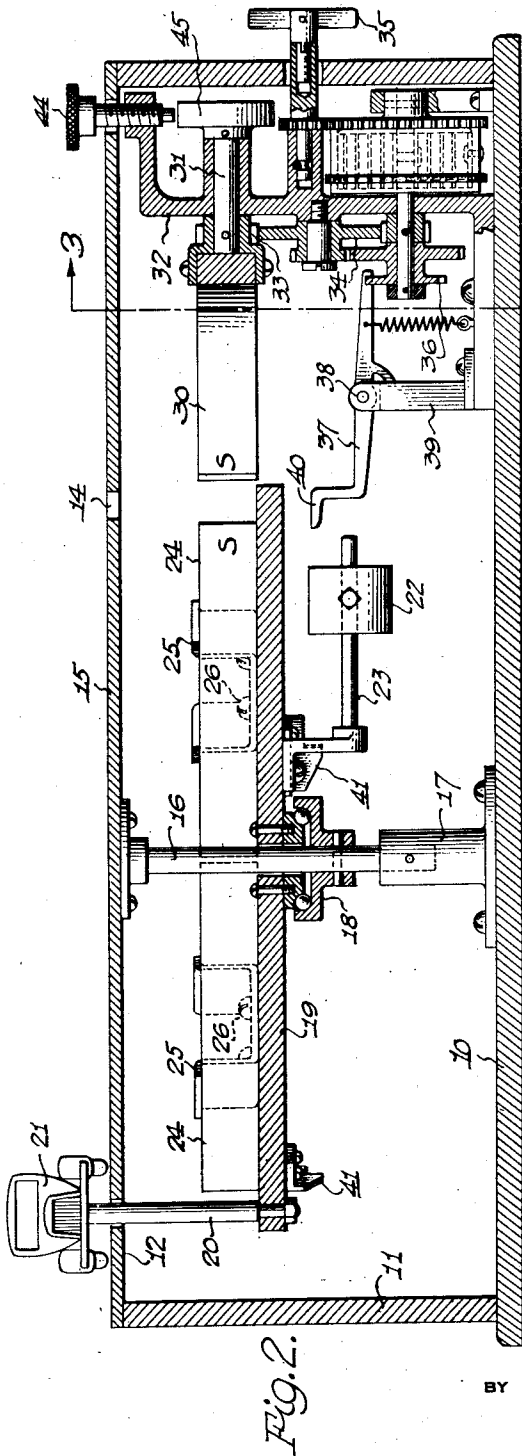


Fig. 3.

Fig. 6.

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UNITED STATES PATENT OFFICE

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MAGNETIC MOTOR TOY

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Application May 2, 1932, Serial No. 608,738

2 Claims. (Cl. 172—36)

This invention relates to magnetic devices more particularly adapted for amusement purposes.

An object of the invention is to provide a magnetically operated amusement device wherein the operating means is completely concealed from and apparently disconnected from the only visible moving part of the device.

Still further objects will be readily apparent from the annexed drawings and the appended detailed description showing preferred embodiments of the invention.

In the drawings,

Figure 1 shows partially cut away and in plan a device of the invention;

Fig. 2 is a transverse longitudinal section of the same;

Fig. 3 is a fragmentary section as if on the line 3—3 of Figure 2;

Figs. 4 and 5 are representations of the operations of the device; and

Fig. 6 is a fragmentary section of a modification.

As indicated in the drawings, the device includes a casing having a bottom 10, side walls 11 from which projects inwardly a cover flange 12 cut away on the circular line 13 to provide a slot 14 between the flange and a circular cover 15, the latter being supported on a post 16 fixed to the step bearing 17. Journaled on the post 16 by means of a frictionless bearing 18 is a turntable 19 having an upwardly projecting post 20 passing through the slot 14 and having on its upper end an amusement article, shown as an automobile 21. On the under surface of the table there is provided an adjustable counterpoise 22 mounted on a bracket 23, and serving to counterbalance the weight of the post 20 and automobile 21.

Radially disposed on the turn table are horseshoe magnets 24 held in place by straps 25 secured by screws 26. The magnets are so disposed that like poles of adjacent magnets are in juxtaposition, as indicated.

For rotating the table around post 16 as an axis, there is provided a horseshoe magnet 30 from whose bight portion projects a shaft 31 journaled in a pedestal 32 secured to and projecting upwardly from the bottom 10. The shaft 31 is provided with a pinion gear 33 meshing with the gearing 34 of a spring wound escapement device of conventional form, which is not specifically described since it forms no part of the present invention, and which is provided with a winding key 35. The ratchet 36 of the escapement is restrained by a spring tensioned pawl 37, pivotally mounted at 38 on a stationary pedestal 39, and

having a finger 40 adapted to be depressed at properly timed intervals by the peripherally spaced cams 41 secured to the under surface of the table 19.

The operation of the device will be readily observed from the foregoing. When the spring is wound and the automobile 21 is given a slight push in a counterclockwise direction, (Fig. 1) the momentum of the turn table will carry cam 41 past finger 40 of pawl 37, depressing the latter, and releasing ratchet 36 to permit the spring motor to rotate operating magnet 30 on its shaft 31, from the position of Fig. 4 to that of Fig. 1. Because of the engagement of the pawl 37 with the ratchet 36 after the cam 41 has passed, the magnet 30 will come to rest. The operating magnet 30 will thus be turned to have its north pole slightly in advance of the south pole of a table magnet there adjacent and will tend to attract the latter and rotate the turn table counterclockwise. At the same time the south pole of the operating magnet will be slightly behind the south pole of another adjacent turn table magnet and will tend to repel the latter, also tending to rotate the turn table counterclockwise.

When the table turns a desirable amount, that is, one-quarter turn, one of its cams will strike the pawl 37, permitting the spring motor to turn the operating magnet 180° again, presenting its south pole slightly ahead of a table magnet north pole and its north pole slightly behind a table magnet north pole to continue the tendency to rotate the turn table, (Fig. 5).

The momentum of the turn table will carry it from one-quarter turn to another and the operating magnet will continue to rotate and thereby rotate the turn table. As the turn table rotates, the automobile carried thereby will move around, above the cover and since all the operating mechanism is concealed it will appear that the automobile is running around without assistance.

A brake post 44, when threaded down against the wheel 45 on shaft 31 will prevent rotation of the operating magnet despite the spring wound motor and will stop rotation of the turn table.

In Figure 6 there is shown a modification where the turn table 59 has a magnetic post 60 projecting upwardly therefrom but not through the cover 61. Supported on the latter and spaced therefrom on stilts 62 is an annular trough 63 containing water upon which floats a boat 64, the latter having a magnetic keel 65 by means of which the magnet post 60 of the turn table will cause rotation of the boat as the turn table rotates.

Now having described the invention and a preferred embodiment of the same, it will be understood that the scope thereof is to be limited not to the embodiment which happens to be shown, but only by the claims which follow.

What I claim is:

1. A device of the class described, including a turn table mounted to revolve on an axis perpendicular to the plane thereof, and having radially disposed permanent magnets thereon, a permanent horseshoe magnet adjacent said table and mounted to rotate on an axis perpendicular to the axis of rotation of the table and parallel to the legs of the horseshoe so that its poles will be alternately presented to the table magnets, a spring motor for rotating said horseshoe magnet, stop means for said motor, and means on said

table adjacent each radially disposed magnet thereon for operating said stop means to release said motor for operation.

2. A device of the class described, including a turn table mounted to revolve on an axis perpendicular to the plane thereof, and having radially disposed permanent magnets thereon, a permanent horseshoe magnet adjacent said table and mounted to rotate on an axis perpendicular to the axis of rotation of the table and parallel to the legs of the horseshoe so that its poles will be alternately presented to the table magnets, means for rotating said horseshoe magnet, and means actuated by said rotary table for controlling the operation of said means for rotating said horseshoe magnet.

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20	95
25	100
30	105
35	110
40	115
45	120
50	125
55	130
60	135
65	140
70	145
75	150