Nov. 13, 1956 W. J. SULLIVAN 2,770,073

ANIMATED DISPLAY DEVICE

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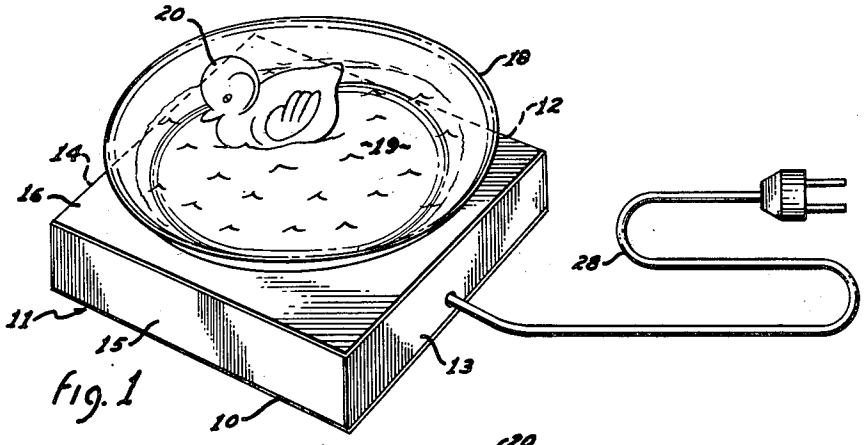


Fig. 1

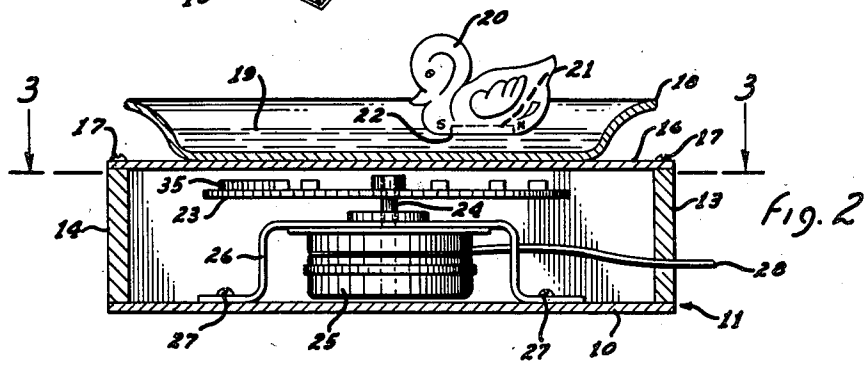


Fig. 2

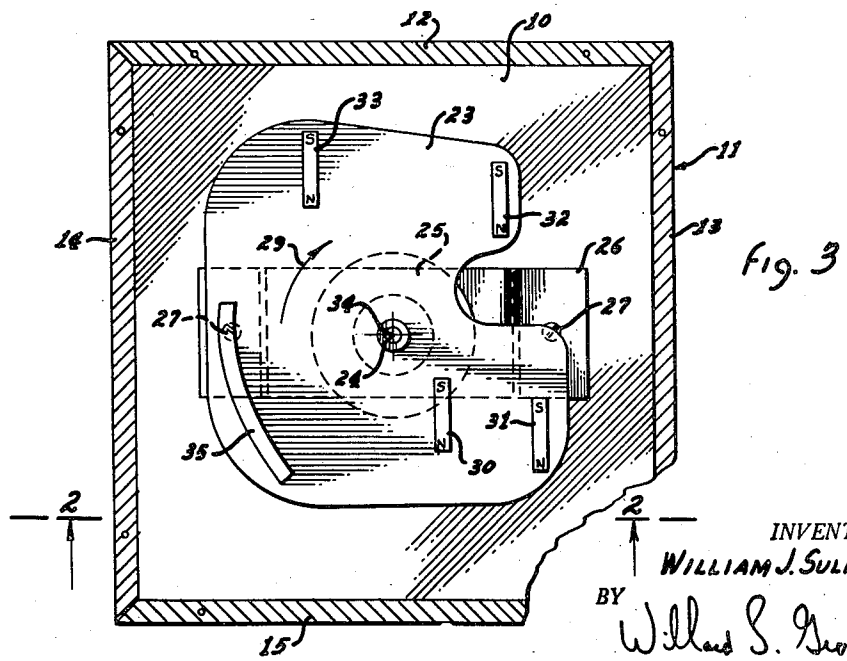


Fig. 3

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ANIMATED DISPLAY DEVICE

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2 Claims. (Cl. 46—239)

This invention pertains to improvements in display devices and is particularly directed to an improved power driven animated display.

One of the objects of this invention is to provide an improved power driven animated display device including an objective freely suspended above a series of motivated magnet devices so as to cause the objective to follow an intricate non-uniform pattern effect.

Another object of this invention is to provide a power driven display device capable of actuating an objective or attention getting member in an intricate path and a number of erratic movements without the device beginning to follow a cyclical or uniform pattern of movement.

Still another object of this invention is to provide a reservoir of water in which an objective is floated, the objective having magnetic means cooperating with power driven magnetic means under the reservoir to cause the objective to move in a highly intricate and non-uniform path of attention attracting characteristics.

Still another object of this improved display device is to provide an improved animated toy consisting of a reservoir of liquid in which the toy is floated together with power driven magnetic means functioning under the reservoir to cause the toy to move in a series of intricate and interesting attention-getting movements.

Further features and advantages of this invention will appear from a detailed description of the drawings in which:

Fig. 1 is a general perspective view showing the display device incorporating the features of this invention.

Fig. 2 is a section on the line 2—2 of Fig. 3.

Fig. 3 is a section on the line 3—3 of Fig. 2.

As illustrative of one embodiment of this invention there is shown a display device comprising a support which is shown as including the base 10 upon which is mounted the box 11 composed of the sides 12, 13, 14 and 15. On top of the box is mounted the cover 16 secured in place by suitable screws 17 to provide a complete enclosure for the box 11. Placed on top of the cover 16, with the central vertical axis of the support passing through it, is first means, being means providing a horizontal surface, which may include a suitable reservoir or receptacle of non-magnetic material such as the glass dish 18 in which is provided a suitable supply of water, or other suitable liquid 19, in which is floatingly mounted the objective or toy 20 which may take the form of a duck or similar animal or device to be animated.

The toy 20 is provided with a bar magnet 21 having the north and south poles shown and suitably secured in the bottom 22 of the toy 20 so that the toy floats properly in the liquid 19 in the reservoir dish 18.

Directly below the cover 16 is provided second means, being means rotatably supporting bar magnets 30, 31, 32 and 33, to be subsequently described, and including a rotatable disc or turntable 23 which is fixed on the shaft 24 of a suitable drive motor 25 fixed to the bracket

26 which bracket in turn is fixed by suitable screws 27 to the bottom 10 of the box 11. A suitable source of electric supply coming in through the power cord 28 serves to energize the motor 25 to cause rotation of the disc 23 such as in the direction indicated by the arrow 29 in Fig. 3.

The disc 23 is preferably formed of non-magnetic material and has fixed on it a series of bar magnets 30, 31, 32 and 33 at varying radial distances from the axis of rotation 34 of the disc 23, each of the magnets 30, 31, 32 and 33 having north and south poles oriented substantially as indicated in Fig. 3, where like poles (north poles) of the pair of magnets 30 and 31 and like poles (south poles) of the pair of magnets 32 and 33 are remote from the vertical axis of the support and like poles (south poles) of the pair of magnets 30 and 31 and like poles (north poles) of the pair of magnets 32 and 33 are nearer this axis. The magnets are also spaced in different angular positions relative to the axis of rotation 34 of the disc and a suitable counterweight of non-magnetic material is positioned on the disc at 35.

Thus, with the objective or toy 20 coating in the liquid 19 in the dish 18 and the motor 25 energized to rotate the disc 23, the interaction of the various magnets 30, 31, 32 and 33 with the magnet 21 in the toy 20 causes the toy to behave in a spectacular, irregular, and non-uniform attention-provoking manner in the liquid 19. By properly selecting the correct depth of liquid 19 a most irregular and extremely interesting pattern of irregular or wandering movement is thus provided for the toy 20.

While the apparatus herein disclosed and described constitutes a preferred form of the invention, it is also to be understood that the apparatus is capable of mechanical alteration without departing from the spirit of the invention and that such mechanical arrangement and commercial adaptation as fall within the scope of the appendent claims are intended to be included herein.

Having thus fully set forth and described this invention what is claimed and desired to be obtained by United States Letters Patent is:

1. An animated display device including a support having a central vertical axis; a horizontally elongated objective; a substantially straight bar magnet carried by said objective and extending lengthwise thereof; first means, carried by said support, providing a substantially horizontal surface through which said axis passes, sustaining said objective for gliding movement in a substantially horizontal path with respect to said surface; a plurality of substantially straight bar magnets for attracting and repelling said bar magnet; and second means rotatably supporting said plurality of bar magnets spaced below said horizontal surface in spaced-apart relationship and arranged in a plurality of spaced-apart pairs, the bar magnets of one pair having their south poles remote from said axis and their north poles nearer said axis, and the bar magnets of another pair having their north poles remote from said axis and their south poles nearer said axis, whereby due to magnetic attraction of said bar magnets and to the friction between said objective and said first means when said objective is sustained upon said surface, said objective is caused to move, when said second means is rotated, in wandering paths around said axis without the objective tending to follow a cyclical or uniform pattern of movement.

2. An animated display device including a support having a central vertical axis; a horizontally elongated objective; a substantially straight bar magnet carried by said objective and extending lengthwise thereof; first means, carried by said support, providing a substantially horizontal surface through which said axis passes, sustaining said objective for gliding movement in a substantially horizontal path with respect to said surface; a

plurality of substantially straight bar magnets for attracting and repelling said bar magnet; and second means rotatably supporting said plurality of bar magnets spaced below said horizontal surface in spaced-apart relationship and arranged in a plurality of spaced-apart pairs, the bar magnets of one pair having their south poles remote from said axis and their north poles nearer said axis, and the bar magnets of another pair having their north poles remote from said axis and their south poles nearer said axis, all of said bar magnets of said pairs being disposed with their longitudinal axes in parallelism; whereby, due to magnetic attraction of said bar magnets and to the friction between said objective and said first means when said objective is sustained upon said surface, said objective is caused to move, when said second means is rotated, in wandering paths around said axis without the objective tending to follow a cyclical or uniform pattern of movement.

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