June 20, 1967 M. C. DAVIS 3,325,940

ILLUMINATED WHIRLING TOY

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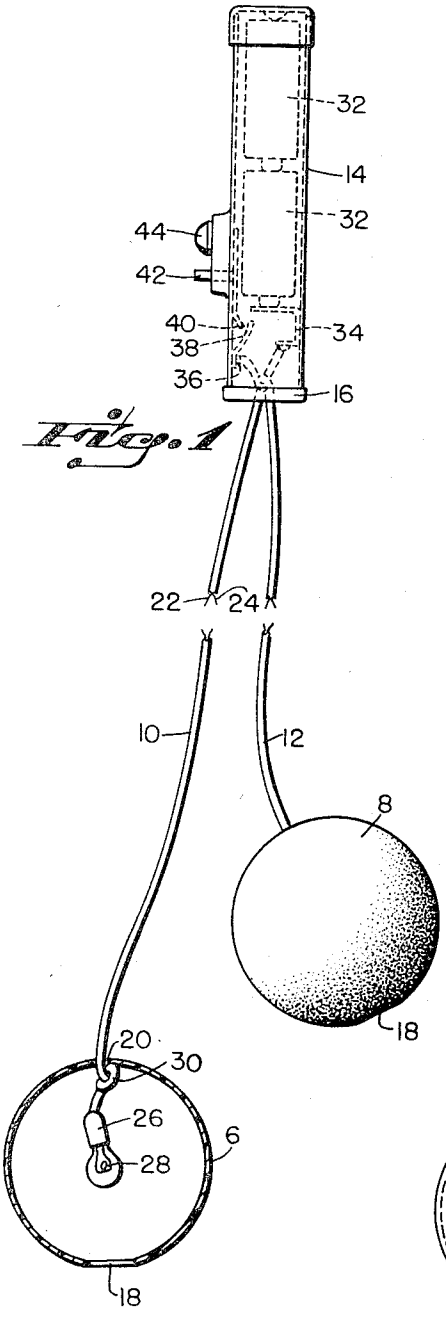

Fig. 1

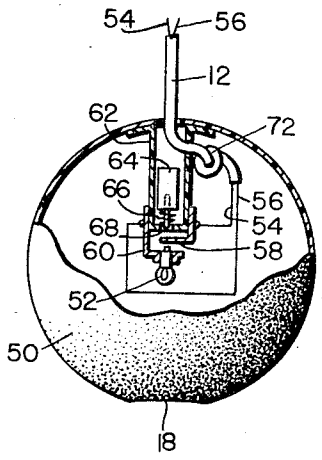

Fig. 2

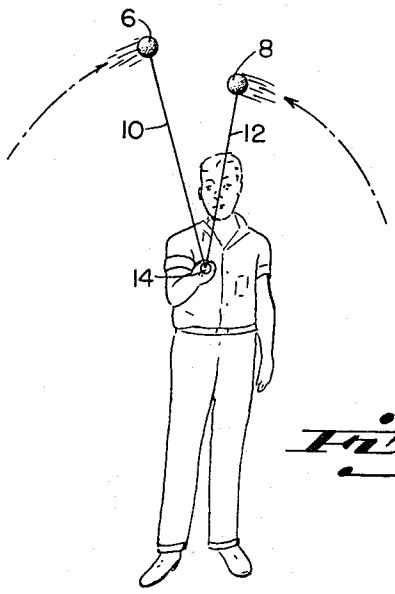

Fig. 3

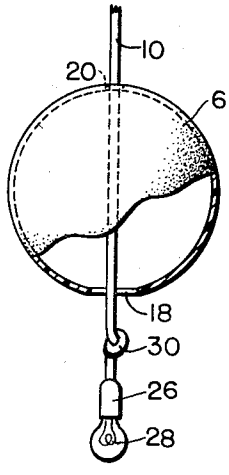

Fig. 4

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ILLUMINATED WHIRLING TOY

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ABSTRACT OF THE DISCLOSURE

A top comprising a flexible tether having a hollow body secured to one end thereof and including means for illuminating said body and/or causing it to generate sound when placed in orbit by centrifugal force.

The present invention relates to a toy, and in particular, one which may be referred to as a whirling toy.

The toy of the invention may comprise in general, one or more spheres or other bodies each suspended at one end of a flexible cord, the opposite end of which cord is anchored to a hand piece that may be manipulated to orbit the sphere or body in a circular path, see FIG. 3.

An object of the invention is to provide a toy of the character stated, which will appeal to children within a broad age span, furnishing considerable amusement and affording much opportunity for the development of skill of manipulation.

Another object of the invention is to provide a whirling toy of the type referred to, possessing lighting and/or sound features to enhance interest in the use and performance of the toy.

A further object is to provide a toy of the type mentioned above, which may be manufactured with ease and sold at a very reasonable price.

Another object of the invention is to provide a whirling toy which is exceedingly durable, and which may be enjoyed with safety in the hands of even very young or immature children.

The foregoing and other objects are attained by the means described herein and as illustrated upon the accompanying drawing, in which:

FIG. 1 is an elevational view of the toy embodying the present invention, parts being broken away to illustrate interior structure.

FIG. 2 is an enlarged side elevation for a centrifugal body, shown by way of example as a sphere or ball having lighting and sound features.

FIG. 3 is an elevational view illustrating a mode of manipulation of the toy.

FIG. 4 is a view, partly in cross-section, of spherical body 6 of FIG. 1 illustrating a detail of the invention.

In its simplest embodiment, the toy of the invention may comprise one or more bodies, 6, 8, having connection with the free outer end of a flexible cord 10, 12, the opposite end of which cord or cords is anchored to a hand piece 14 whereby the body or bodies may be swung in circular orbit as suggested by FIG. 3. The body or bodies will of course be of sufficient weight to ensure outward disposition by centrifugal force upon manipulation of the hand piece to swing the bodies in circular orbit.

In a preferred embodiment, two bodies such as 6 and 8 are employed, each being suspended by its own cord 10 or 12, and both of which cords are anchored upon one

end 16 of the hand piece 14. The cords preferably are unequal in length, so that the swinging bodies 6 and 8 may pass each other when orbited in opposite directions, as indicated upon FIG. 3. The bodies 6 and 8 quite desirably are formed as hollow spherical balls, although other shapes might be resorted to if desired. When the bodies are shaped as hollow balls, each ball may be provided with an aperture 18 located at the end of a diameter opposite the point of suspension 20. The aperture 18 performs as a whistle when the ball travels in orbit with sufficient speed. The pitch of the whistle will depend upon the size of the aperture.

The balls or bodies 6 and 8 may be formed of thin molded plastic, rubber or rubber-like material, papier-mache, or other suitable substance which is inexpensive, unbreakable and safe in the hands of children.

In a more elaborate form of the device, the bodies are formed of translucent material, and may be illuminated interiorly by electrical means, either continuously or intermittently. In accordance with FIG. 1, cord 10 may be constituted of a pair of flexible electric-conductive wires 22 and 24, electrically connected to the terminals of a lamp socket 26 disposed within body 6. A flashlight lamp 28 may be replaceably supported within the socket in customary manner. If desired, socket 26 may simply hang from the conductors of cord 10, the cord being knotted as at 30 within body 6 to assure proper suspension of the body. The point of suspension 20 may be simply a hole formed in the body to receive the cord.

The whistle opening 18 may be dimensioned to permit withdrawal of the lamp and socket, for ease of lamp replacement, note FIG. 4. Cord 10 in such case may be slidable within the suspension hole 20. It should be understood, however, that the construction and assembly of body 6 is exemplary, and subject to modification as may be desired. Thus, lamp socket 26 may be fixedly or detachably mounted inside the body 6, with access to the lamp provided by making the body in two readily separable parts. Body 8 may be constructed and equipped in the manner of body 6, so that both may be illuminated.

The hand piece 14 may be constructed like an ordinary flashlight, having one or more dry cells 32 to furnish the necessary power for the lamps contained within bodies 6 and 8. A stationary contact 34 within the hand piece may conduct current from the cells to one wire of cord 10 and to one wire of cord 12. The remaining wires of the cords may be connected at 36 to one contact 38 of a normally open-circuited switch comprising a movable spring contactor 40. Contactor 40 may be placed in contact with part 38 by pressing a button 42, or by moving a slider 44 to which contactor 40 is fixed. Thus, by means of button 42 the circuit of the lamps in bodies 6 and 8 may readily be closed and opened with rapidity, the button being used as a momentary contact switch operator; or in the alternative, slider 44 may be moved to place contactor 40 in abutment upon contact 38, where it will remain until the slider is manually retracted to open the circuit at 40–38.

Contactor 40 may have electrical connection with the case of a cell 32 in any suitable manner, as by way of hand piece 14 if the hand piece is of conductive material. In that event, parts 34 and 38 are to be electrically insulated from the hand piece. It should be understood that the construction of hand piece 14 is subject to considerable modification as to its structural details. The provision

of a momentary circuit-closer such as button **42**, along with a closer that will remain at a manual setting as does slider **44**, is considered advantageous to the most interesting and sensational control of performance.

FIG. 2 presents a modification, wherein a body or ball **50** includes an electric lamp **52**, and centrifugal switch means for energizing the lamp upon attainment of a predetermined rate of orbital speed. This disclosure here is exemplary, and subject to structural refinement. As shown, the ball-suspending cord **12** includes the flexible conductors **54** and **56**, which have electrical connection with contactors **58** and **60**, respectively. The contactors may be supported at one end of a non-conductive cylinder or case **62**, in which is slidably supported a weight **64** yieldingly biased against movement toward contactors **58–60** by a spring **66** or equivalent means.

The weight **64** may carry an outwardly projecting pin or plunger **68**, which upon movement of the weight in the direction of resilient contactor **58**, will abut and flex said contactor against contactor **60** to close the electric circuit through lamp **52**. Pin or plunger **68** may be fixed to weight **64**, and the value of weight **64** and spring **66** should be such that closing of contacts **58–60** will depend upon the centrifugal force of weight **64** generated as body **50** reaches a predetermined orbiting speed.

Contactor **60** may be rigidly supported by case **62**, and may have electrical connection with the base of lamp **52** either directly or by way of a standard lamp socket attached to said contactor **60**. The cord comprising flexible conductors **54** and **56** may enter the body **50** through an opening **70**, and may be knotted at **72** or otherwise be retained against separation from the body.

The centrifugal electric switch within body **50** may be constructed otherwise than as disclosed herein; for example, such switches operative by centrifugal action may be of the mercury contact type, or of the type utilizing a shiftable ball weight for opening and closing the lamp circuit.

In the operation of the device, manipulation of hand piece **14** with a slight oscillatory motion, may produce and maintain a circular orbiting travel of the bodies attached to the flexible cords **10** and **12**. With practice and skill, the bodies may be caused to travel in opposite directions while orbiting, as suggested by the arrows in FIG. 3. Moreover, they will produce a weird whistling sound due to air vibrations generated at the apertures **18**.

If the device is constructed to include the electrical illuminating means, very interesting night-time displays may be produced as the operator changes the plane of orbiting, or produces blinking light effects by skillful manipulation of the momentary contact switch button **42**. The translucent bodies may be suitably colored or decorated in an interesting fashion, and if desired, colored lamps may be employed to produce unusual lighting effects.

It is to be understood that various modifications and changes may be made in the structural details of the device, within the scope of the appended claims, without departing from the spirit of the invention.

What is claimed is:

1. A toy of the type requiring manipulation by orbital twirling, comprising in combination: a hollow translucent ball having two openings therein each opening being located at one of the opposite ends of a diameter of the ball, one of said openings being larger than the other, a flexible cord containing a pair of insulated flexible electric conductors having ends exposed at opposite ends of the cord, an electric lamp located inside the ball and having electrical connection with the conductor ends at one end of the cord, said one end of the cord entering the ball through the smaller of the openings aforesaid, and the lamp being accessible through the larger of said openings, means precluding withdrawal of the lamp-bearing end of the cord outwardly through the smaller opening, a hollow elongate hand piece having

an end and means at said end for anchoring the remaining end of the cord, a source of electric current associated with the hand piece, a manually actuatable electric switch on the hand piece, including electrical connections with the current source and the cord-supported conductors at the point of anchorage aforesaid, whereby the switch may be actuated manually for selectively energizing and deenergizing the lamp within the ball, the cord and conductors being of sufficient length to suspend the ball at a distance from the hand piece, such that the ball may be maintained in orbital travel by manipulation of the hand piece.

2. The toy as set forth in claim **1** wherein the larger of the two ball openings is dimensioned to generate audible air vibrations during orbiting of the ball, and to pass the lamp in displacement from the ball to a location exteriorly of said ball.

3. A toy of the type requiring manipulation by orbital twirling, comprising in combination: a hollow translucent ball having two openings therein each opening being located at one of the opposite ends of a diameter of the ball, one of said openings being larger than the other, a flexible cord containing a pair of insulated flexible electric conductors having ends exposed at opposite ends of the cord, an electric lamp socket including a lamp, said socket being located inside the ball and having electrical connection with the conductor ends at one end of the cord, said one end of the cord entering the ball through the smaller of the openings aforesaid, and the lamp and socket being accessible through the larger of said openings, means precluding withdrawal of the socket-bearing end of the cord outwardly through the smaller opening, a hollow elongate hand piece containing an electric cell, and a pair of contacts to which are electrically connected the cell and the conductors at the remaining end of the cord, one of said contacts being movable into and from conductive abutment with the other of said contacts for closing and opening the electric circuit of the lamp, a momentary actuator for momentarily closing the circuit through the contacts, and a second actuator settable selectively to alternative positions at which the contacts are maintained in circuit-closing or circuit-opening relationship selectively, said actuators being accessible upon the hand piece exteriorly thereof, the cord and conductors being of sufficient length to suspend the ball at a distance from the hand piece, such that the ball may be maintained in orbital travel by manipulating the hand piece.

4. The toy as set forth in claim **3**, wherein the larger of the two ball openings is dimensioned to pass the lamp and socket bodily from the ball to a location exteriorly of said ball, said larger opening being restricted to a size for generating audible air vibrations during orbital movement of the ball.

5. A toy of the type requiring manipulation by orbital twirling, comprising in combination: a hollow translucent ball having two openings therein each opening being located at one of the opposite ends of a diameter of the ball, one of said openings being larger than the other, a flexible cord containing a pair of insulated flexible electric conductors having ends exposed at opposite ends of the cord, an electric lamp located inside the ball and having electrical connection with the conductor ends at one end of the cord, said one end of the cord entering the ball through the smaller of the openings aforesaid, and the larger of said openings being dimensioned to generate audible air vibrations during orbital travel of the ball, a hollow elongate hand piece containing an electric cell and a pair of contacts, said contacts having electrical connection to the cell and to the conductors at the remaining end of the cord, one of said contacts being movable into and from conductive abutment with the other of said contacts for closing and opening the electric circuit of the lamp, a manual momentary actuator for momentarily closing the circuit through the contacts,

and a second manual actuator settable selectively to alternative positions at which the contacts are maintained in circuit-closing or circuit-opening relationship selectively, said actuators being mounted upon the hand piece for manual operation, the cord and conductors being of sufficient length to suspend the ball at a distance from the hand piece, such that the ball may be maintained in orbital movement by manipulation of the hand piece, a normally open-circuited electric switch supported within the ball, and connected in circuit with the lamp, said ball-supported switch being responsive to centrifugal force generated during orbiting of the ball, for closing the electric circuit at the lamp and thereby conditioning the lamp

for energization incident to manual closing of the contacts within the hand piece.

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