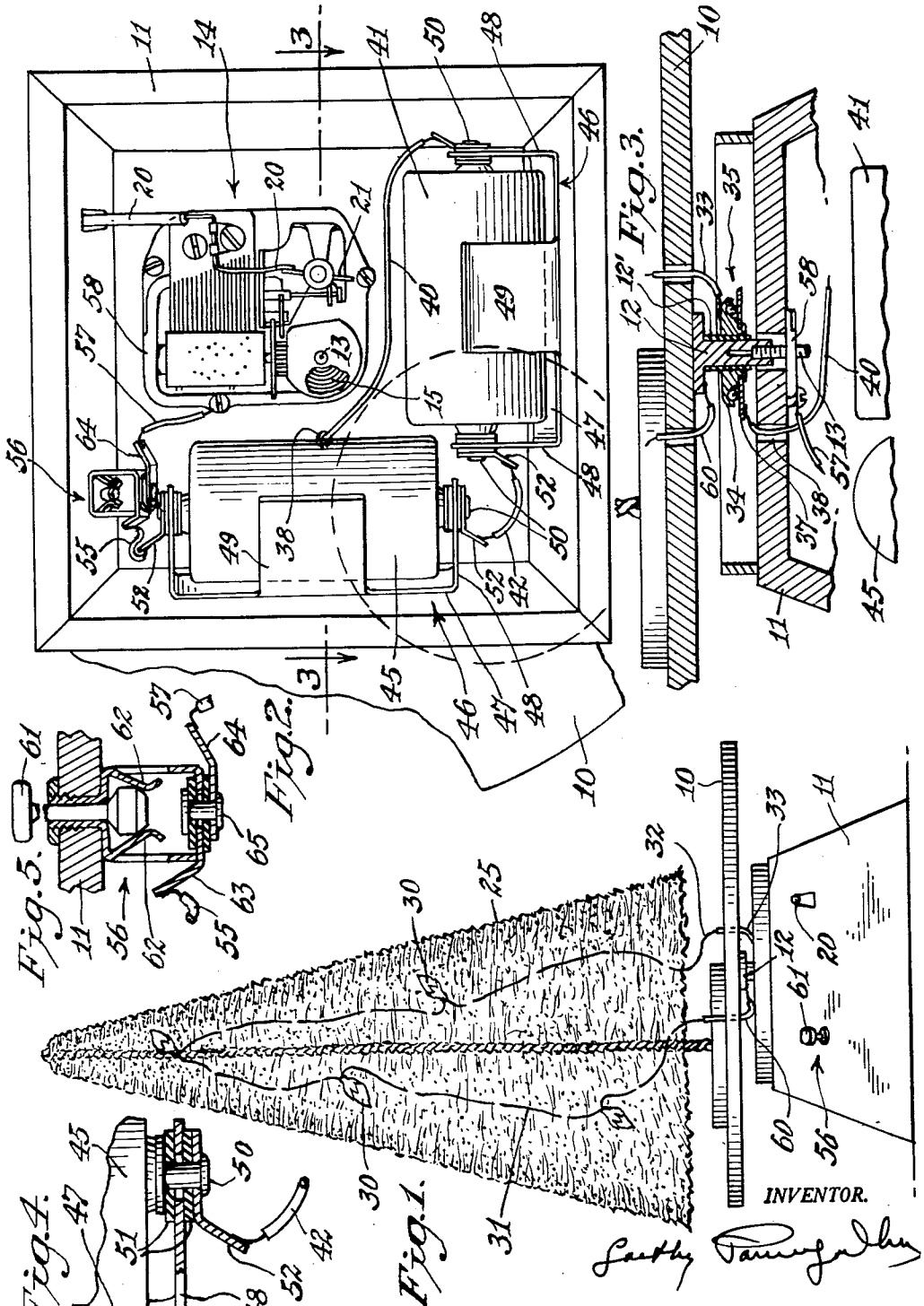
May 15, 1962 G. PAUMGARDHEN 3,035,163

APPARATUS FOR ROTATING AND OPERATING LIGHT BULBS

Filed Feb. 24, 1960



United States Patent Office 3,035,163 Patented May 15, 1962

3,035,163
APPARATUS FOR ROTATING AND OPERATING LIGHT BLUBS

Gaethy Paumgardhen, 463 W. 49th St., New York, N.Y.

Filed Feb. 24, 1960, Ser. No. 10,669
3 Claims. (Cl. 240—10.1)

This invention relates to apparatus for rotating and operating light bulbs, and more particularly to a construction in which there is a turntable supporting a Christmas tree carrying said bulbs.

A primary object of the invention is to provide means effective to cause the bulbs to operate intermittently in a star-like manner while the turntable is being rotated, and especially without the presence of objectionable static interference with adjacent radio or television sets that may be operating at the same time.

Another object of the invention is to accomplish the above purpose with the use of simple, low-cost means associated with a self-contained source of electricity.

Other objects and advantages of the invention will be apparent from the following specification and accompanying drawings, in which drawings—

FIG. 1 is a side elevation of apparatus of the above character showing a preferred form of the invention.

FIG. 2 is an enlarged bottom plan view of the same, partly broken away.

FIG. 3 is a fragmentary sectional view on the line 3—3 of FIG. 2.

FIG. 4 is an enlarged fragmentary view, partly in section, showing the lower terminal of one of the batteries of FIG. 2, and

FIG. 5 is an enlarged sectional view of an electric switch indicated in FIG. 2.

In my co-pending application, Ser. No. 821,008, filed June 17, 1959, now abandoned I disclosed effective means for causing electric light bulbs to scintillate on a revolving Christmas tree, such as by the use of metallic bead chains carried by a turntable, and riding over stationary contacts on a pedestal, the same forming a part of an electric circuit with its terminals plugged into a household service line. While this construction operated satisfactorily, it developed objectionable static.

The improvements set forth herein overcome such objections since all static has been eliminated.

Referring to the drawings, FIG. 1 shows a rotatable member 10 in the form of a turntable which is mounted on a stationary member or pedestal 11 by a pivotal connection having a post part 12 secured to the bottom of turntable 10, and internally threaded to engage the upper end of an externally threaded shaft 13 constituting the other member of the aforesaid pivotal connection, and also the drive shaft of a well-known form of music movement 14 mounted within pedestal 11. Shaft 13 is actuated by a helical spring 15, and the arrangement is such that by rotating the turntable clockwise the spring may be wound.

Means are provided for arresting the operation of the music movement, and the turntable, such as a lever 20 one end of which is adapted to be rocked into the path of air governor blades 21, and the other end of which extends outwardly from pedestal 11 to provide a handle for manually operating the lever.

An artificial Christmas tree 25 of a type having a twisted wire stem with fibres extending laterally therefrom, has its stem anchored in a wooden disc secured to turntable 10, preferably, but not necessarily, in an offset position with respect to the pivotal center of the turntable. Suitably positioned on the tree for distribution among its branches is a string of electric light bulbs 30, shown connected in series along a conductor wire 31, one end of which is secured to a conductor 33 which passes downwardly through the turntable and is soldered to the top of the upper raceway 34 of a ball bearing 35 utilized as a current conducting assemblage. In addition to raceway 34 the ball bearing unit is constructed with another raceway consisting of a flat plate 37 loosely swiveled to the raceway 34 on a cylindrical part projecting therefrom and through plate 37, and which part is then upset to hold the two raceways in assembled relation with freedom to rotate relatively, and with the ball members interposed. Raceway 34, carrying raceway 37, is mounted on post 12 with a non-conducting sleeve 12' interposed to insulate the entire bearing from said post.

Ball bearing 35 is a cheap type available on the market, and having unground raceway paths along which the balls roll over minute irregularities naturally present on the surface of the metal.

Leading from raceway 37 through an opening 38 in the top of pedestal 11, is a conductor 40 electrically connected to one end of a dry cell battery 41 having an output of one and a half volts. Cell 41 is connected in series through conductor 42, to another similar cell 45. Each cell is secured to adjacent walls of pedestal 11 (FIG. 2) by means of brackets 46 from which their terminals are insulated, as shown in detail in FIG. 4. Brackets 46 have flat bases 47 formed with right-angle ends 48, and a pair of intermediate, integral, spring clips 49 extending on opposite sides and beyond the center axis of each cell so as to hold the cells firmly in position, the right-angle ends being slightly sprung outwardly when the cell is inserted to ensure a firm contact with a central rivet 50 passing through but spaced from ends 48, and otherwise insulated therefrom by suitable washers 51. End terminal clips 52 in contact with rivets 50, provide means for attaching the various conductors which may be secured thereto as by soldering. It will thus be seen that the cells may be readily removed from the brackets and new ones substituted without disturbing their electric conducting properties.

A conductor 55 leads from cell 45 to a switch 56, and a conductor 57 leading from the switch is grounded through the frame 58 of the music movement 14, and thence through shaft 13 and post 12 to a conductor 60 leading from post 12 to the opposite end of wire 31. Switch 56 is formed as a square from a single strip of metal as shown in FIG. 5, and is attached to one of the side walls of pedestal 11. It is provided with a push-and-pull plunger 61 extending outwardly from pedestal 11 and engageable with spring clips 62, and has a projecting tab 63 to which conductor 55 is attached. A clip 64 insulated from the frame of the switch, and attached thereto by a central rivet 65, provides means for attaching conductor 57, and so that when plunger 61 is pushed into contact with rivet 65, current will flow from conductor 55 through switch 56 to conductor 57, and when plunger 61 is pulled outwardly the circuit outlined will be opened.

Since bearing 35 is unloaded only extremely light pressure will be applied to the balls by the raceways, and because the same possesses the said irregular surfaces, a twinkling illumination of the bulbs 30 occurs when current passes through the bearing during rotation of the turntable.

The absence of the objectionable static is believed to be partly due to the particular type of bearing used and its loadless operation, and partly to the very low voltage current flowing from the dry cell batteries 41 and 45.

The apparatus shown in the drawings is skeletonized, but in actual practice the turntable is attractively ornamented with miniature fir tree cones, together with appropriate figures of elves and small animals suggestive of the Christmas season of the year. The whole effect is enhanced by the twinkling of the light bulbs in the manner set forth.

While I have shown and described but one embodiment of my invention, it will be understood that other applications of the principles disclosed are possible, and therefore are to be considered within the scope of the appended claims.

I claim:

1. A rotary display device of the character described comprising a stationary supporting base, turntable means mounted upon said base for rotation relative thereto, a display structure carried by a turntable means and including a wire having a plurality of light bulbs connected therein with the filaments of the light bulbs connected in series, a rotary shaft carrying the turntable means and fixedly secured thereto, power-operated shaft means secured to and carrying the rotary shaft and driving the latter with said turntable means, a single ball bearing structure mounted upon the rotary shaft and including axially spaced opposed raceways having inherent surface irregularities, said raceways electrically insulated from said rotary shaft, said raceways being loosely connected and adapted to rotate relative to each other, one raceway connected with said turntable means to rotate therewith and the other raceway adapted to remain relatively stationary with said supporting base, current conducting balls interposed loosely between said raceways and being substantially free of loading and adapted to roll between said raceways during rotation of the turntable means and to roll over said surface irregularities to continuously interrupt and establish the circuit through said wire and light bulb filaments to cause the light bulbs to flicker, one terminal end of said wire electrically connected with said raceway rotating with said turntable means and the other end of said wire connected with said rotary shaft, and a source of current associated with said supporting base including a wire connected with the relatively stationary raceway and a grounded wire.

2. A rotary display device of the character described comprising a stationary supporting base, turntable display means mounted upon said base for rotation relative thereto and including a wire having a plurality of light bulbs electrically connected therein, power-operated drive shaft means secured to said turntable display means and supporting the weight of the latter and driving the same, a single ball bearing structure surrounding the drive shaft means and electrically insulated therefrom and including a pair of loosely connected axially spaced opposed raceways adapted to rotate relative to each other and having surface irregularities in their opposed faces, current conducting balls disposed loosely between said raceways and being substantially under no load and adapted to roll around said raceways and over said surface irregularities continuously during rotation of the turntable display means to thereby interrupt and establish an electrical circuit through said raceways continuously, one end of said wire of the turntable display means electrically connected with one of said raceways and causing the same to turn with the turntable display means, the other end of said wire electrically connected with said drive shaft means, storage battery means associated with said supporting base, wiring electrically interconnecting the storage battery means with the other of said raceways, and grounded wiring connected with the storage battery means, whereby said light bulbs flicker continuously and in a random pattern during rotation of the turntable display means.

3. A rotary display device of the character described according to claim 2, and wherein the means for electrically insulating said ball bearing structure from said drive shaft means is an insulating sleeve on said drive shaft means between the same and the ball bearing structure.

References Cited in the file of this patent

UNITED STATES PATENTS

1,552,075	Moore	Sept. 1, 1925
2,527,969	Siebenkittel	Oct. 31, 1950
2,587,788	Tacy	Mar. 4, 1952