

Jan. 1, 1963

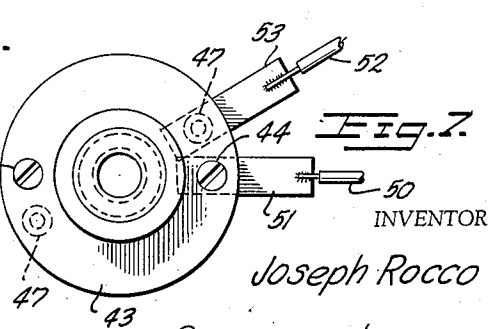
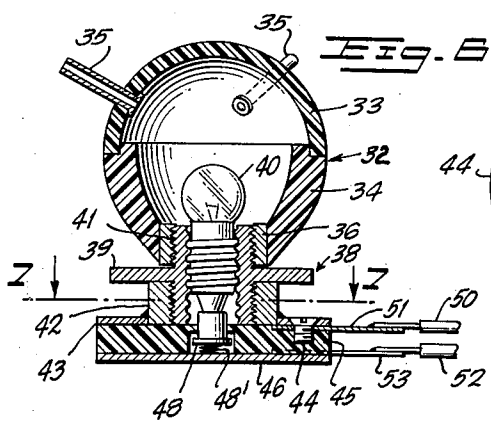
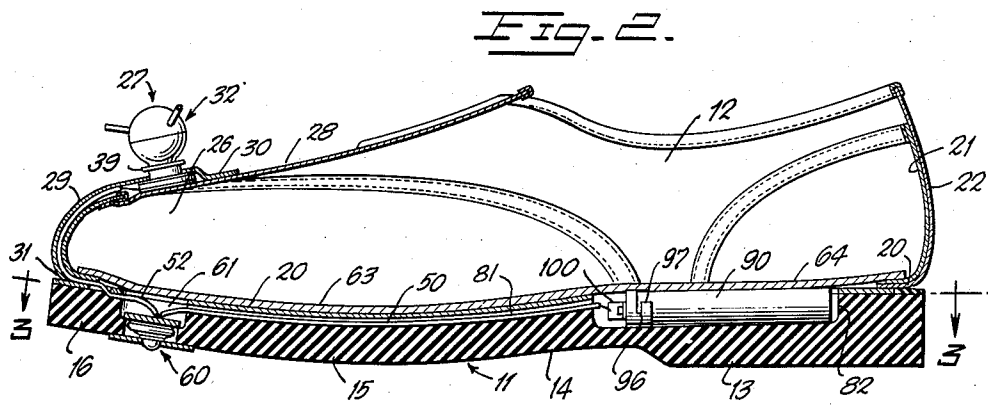
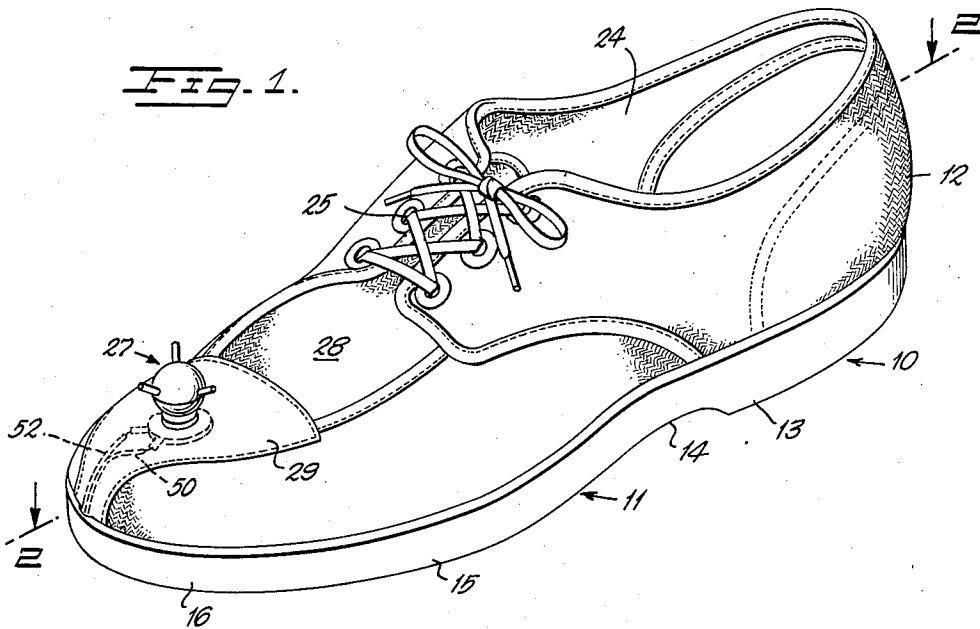
J. ROCCO

3,070,907

ILLUMINATED DANCING SHOE

Filed April 11, 1962

2 Sheets-Sheet 1



INVENTOR  
*Joseph Rocco*

BY *Shoemaker and Mattare*  
ATTORNEYS



1

3,070,907

**ILLUMINATED DANCING SHOE**

Joseph Rocco, 182 2nd St., Newark, N.J.

Filed Apr. 11, 1962, Ser. No. 186,748

10 Claims. (Cl. 36-8.3)

The present invention relates to a shoe and more particularly to a shoe worn when dancing and the like.

It is an object of the present invention to provide a novel shoe that is worn for dancing and entertainment activities and the like that is provided with novel illuminating means which are lighted at will by the wearer of the shoe.

It is another object of the present invention to provide a novel dancing shoe having illuminating means exposed thereon with switch means for actuating or completing the electrical circuit which are completely hidden from view in order to light the illuminating means so that the shoe looks like a normal shoe and thereby accentuates the novel illuminating means embodied therein.

It is another object of the present invention to provide a novel dancing shoe worn in entertainment activities that has a novel spherical illuminating means, somewhat similar to the well-known satellites orbited at the present time, and which satellite can be illuminated by the wearer of the shoe at predetermined times.

It is another object of the present invention to provide a novel dancing shoe having illuminating means that are connected in a circuit with an actuating switch and battery means which do not in any way interfere with the comfort of the person wearing the shoe.

It is another object of the present invention to provide a novel dancing shoe that can have the illuminating means, the actuating switch to complete the electrical circuit for lighting the illuminating means, and battery means readily incorporated in a conventional shoe so that the shoe may be converted to dancing shoes in an inexpensive and simple manner.

It is still another object of the present invention to provide a novel dancing shoe having illuminating means incorporated therein and switch means, which switch means must be positively actuated by the wearer of the shoe in order to light the illuminating means, so that the illuminating means may be flashed on and off in an instant in order to accentuate its effect by the wearer of the shoe.

It is another object of the present invention to provide a dancing shoe having illuminating means, battery means for powering the illuminating means and switch means for completing the electrical circuit between the illuminating means and the battery means, and in which only the illuminating means are exposed to view so that the illuminating means may be readily removed from the shoe so that the shoe may be worn as a conventional shoe, and used as a dancing shoe when desired at another time.

It is yet another object of the present invention to provide a dancing shoe to be worn by a person in which novel battery means are incorporated for powering illuminating means in which the battery means are held in a firm predetermined position in the battery case to permit a constant flow of electric current under dancing impact and to further prevent short circuits in the assembly.

In accordance with the present invention, illuminating means are provided which project outwardly of the normal contour of a conventional shoe and which illuminating means are disposed in an electrical circuit consisting of battery means and switch means in which the battery means are disposed in recess means in the heel of the shoe, while the switch means are disposed in another

2

recess means adjacent the toe portion of the shoe, and which are further disposed in a position so that the switch means will not be actuated unless a positive movement is made by the wearer of the shoe to contact the toe portion of the shoe with a hard surface, such as a dancing floor and the like.

Various other objects and advantages of the present invention will be readily apparent from the following detailed description, when considered in connection with the accompanying drawings forming a part thereof, and in which:

FIG. 1 is a perspective view of the dancing shoe embodying the present invention;

FIG. 2 is a side elevation in section taken along lines 2-2 of FIG. 1;

FIG. 3 is a plan section taken along lines 3-3 of FIG. 2;

FIG. 4 is an enlarged transverse sectional view taken along lines 4-4 of FIG. 3, illustrating the details of the switch means embodied in the present invention;

FIG. 5 is a detailed view of the novel battery means embodied in the present invention;

FIG. 6 is an enlarged detailed view in section of the illuminating means embodied in the present invention;

FIG. 7 is a transverse section of a portion of the illuminating means taken along lines 7-7 of FIG. 6;

And FIG. 8 is a bottom plan view illustrating the actuating button of the switch means embodied in the present invention.

Referring to the drawings, the reference numeral 10 generally designates a shoe having an outsole 11 and an upper 12 in which fits the foot of the person wearing it. The outsole 11 has a heel portion 13, a shank portion 14 and the sole portion 15 upon which rests the ball of the foot. The toe portion is generally designated 16.

The outsole 11 of the shoe is preferably made of rubber material or a resilient composition such as Neolite and the like so as to provide comfort for the person wearing the shoe.

The outsole 11 preferably has an irregular or roughened surface on the lower or bottom thereof designated 18 (see FIG. 8) to provide a better grip and prevent slippage when a person is walking. It is made of one piece and has the heel 13 projecting slightly below the shank portion 14 with the sole portion 15 being curved or bowed so that when a person is standing on a surface, the toe portion 16 is not in contact with the floor and the shank portion is also out of contact with the floor, while the heel 13 contacts the floor and the center portion 15 of the outsole 11 upon which rests the ball of the foot of the wearer also is in contact with the floor, as can be readily seen from FIG. 2.

The upper portion 12 is preferably made of canvas, although, of course, it may be made of leather or other material, and the canvas has a turned-in lower edge 20 or free end which overlies or overlaps the sole 11 and is secured to the top of the sole 11 by adhesive cement or other well-known means. The canvas upper portion 12 may consist of a double heel ply 21 and 22 or may be of more than two-plys, if desired. The particular construction of the upper portion 12 is well-known and each portion is generally sewed to another portion and does not per se comprise the invention. The upper 12 is provided with an enlarged opening 24 therein through which the foot is inserted and has conventional lacing means 25 for lacing the shoe.

The toe portion 26 of the upper 12 of the shoe has the novel illuminating means 27 disposed thereon. The illuminating means 27 is secured to the center of the top tongue portion 28 of the upper so as to project above the shoe and to be clearly visible. Another cloth por-

tion 29 has its upper edge 30 stitched to the tongue portion 28 and its lower edge 31 stitched or cemented to portion 20 of the upper 12 so that only the globe 32 of the illuminating means is visible and the other portions of the assembly are completely hidden from the viewer so as not to detract from the appearance of the shoe.

It is also apparent that by only having the globe projecting from the shoe which contains the light bulb as hereinafter described, the shoe may be used as a novel dancing shoe at one time, while at the other time, the globe may be removed therefrom and the shoe used in ordinary wear by a person so that it is interchangeable from a normal conventional shoe which will not attract unwanted attention, while at the same time it can be readily converted to a novel dancing shoe and thereby serve a two-fold purpose.

Referring to FIGS. 2 and 6, the globe 32 comprises a sphere made of plastic material in which the upper half 33 of the globe 32 is preferably white while the lower half 34 is preferably red. The halves 33 and 34 are secured together so as to form one-piece by any well-known means such as cement or glue and the half 33 has three arms or prongs 35 projecting outwardly therefrom so that the globe will look like a satellite. The globe 32 is made of translucent material so that when the light bulb disposed therein is lit, it will glow.

An internally threaded bushing 36 is secured to the bottom open end of the globe 32 so that the globe may be threaded on a light bulb socket 38. The light bulb socket 38 is provided with an outwardly extending circular flange 39 adjacent its mid-portion so that the bushing 36 may be threaded home against the flange 39, while the light bulb 40 may be threaded into the upper sleeve portion 41 of the socket. The socket 38 is in turn threaded home into a bushing 42. The bushing 42 is soldered to an annular metal terminal plate 43, which terminal plate 43 is secured by screws to an insulating disc 45. A circular metal terminal plate 46 is also screwed to the bottom of the insulating member 45 by screws 47 (see FIG. 7).

Illuminating means 27 is so disposed on the toe portion 26 of the body so that it is inclined in a slightly forward direction, as can be clearly seen from FIG. 2.

The light bulb 40 is threaded home in the socket 38 so that it contacts the solid cylindrical prong contact 48 secured within the recess in the terminal plate 46.

The cylindrical prong rides on a pressure spring 48'. Thus, each will have an up and down motion keeping them in close contact with the positive terminal of the bulb at all times. This also creates a bind between the socket and bulb treads. The pressure spring rests on contact plate 46 but is in no way connected to it. This eliminates short circuits and loose connections under pressure caused by dancing.

One electrical lead or wire 50 is connected by a connector member 51 to the terminal contact 43 by screw 44 to complete the electrical circuit through the bulb 40, while another electric wire 52 is connected by a connector member 53 to the other contact terminal 46 by a screw 47. The other end of the wire 50 is connected to the battery means as hereinafter described, while the other electric wire 52 is connected to the switch means as hereinafter described.

It will be observed from FIG. 2 that the flap member 29 has an opening therein and is stitched to the body 12 of the shoe so that only the collar 39 is visible above the shoe and so that the globe 32 may be readily secured to 38 and removed therefrom as desired for access to the bulb.

The switch means generally designated 60 of the invention is housed in a recess 61 (see FIG. 4) cut out of the outsole 11. The recess 61 extends transversely of the longitudinal axis of the sole member 11 and is substantially rectangular in shape with a lower recess portion 62 extending through the bottom of the toe portion 16 and being substantially cylindrical in shape. The recess

61 extends completely through the top of the portion 16 and is closed off or covered by a cushion or pad member 63 disposed on top of the outsole 11. The cushion or pad member 63 has the same shape as a conventional insert member or pad disposed within a conventional shoe and may be secured to the outsole 11 by adhesive cement or the like, with the rear portion 64 of the pad adjacent the heel of the wearer unsecured, so that the portion 64 may be lifted upwardly or bent upwardly for access to the battery means hereinafter described. The pad member may be of a resilient material such as leather or foam rubber, and if desired, the heel cushion portion may have a leather covering bonded to its upper surface.

The switch means comprises a rectangular metal plate 65 with a groove or slot 66 disposed in the underside thereof adjacent one side thereof. The electrical wire 52 connected to the light bulb and illuminating means has its opposite end secured to the top of plate 65 opposite the end in which the groove 66 is disposed. The plate 65 is secured in the recess 61 by screws 68 threaded into the plate and a circular member 69 having a diameter slightly larger than the diameter of the recess 62 so as to grip the adjacent edge of the sole portion 16, as clearly shown in FIG. 4. The switch has an insulated contact member 70 disposed in groove 66 and secured to the top wall of this groove so as to complete the circuit through the plate 65 to the electric wire 52. The other contact of the switch means comprises a leaf spring having a horizontal portion 72, an upwardly offset portion 73 and an upper horizontal portion 74 affixed to the plate 65 by an insulated rivet 76 disposed in the groove 66. Another insulated rivet 77 in contact with the portion 74 of the leaf spring secures one end of an electric wire 78 thereto so the wire or conduit 78 is in contact and completes an electric circuit with the leaf spring contact. The opposite end of the wire 78 extends toward the rear of the shoe and is attached to the battery means as hereinafter described. The leaf spring contact is insulated by an insulating member 80 from coming in contact with the plate member 65.

A longitudinal groove 81 extends between the recess 61 and an elongated and enlarged recess 82 disposed in the upper heel portion 13 of the sole. A spring member 83 is mounted over the contact 70 and has its other end mounted about a bead 84 adapted to contact the first mentioned contact 70 to complete the circuit through the leaf spring to plate 65. A button member 86 is secured by a pin 87 to portion 72 of the leaf spring so as to normally urge or bias the contact members 70 and 84 apart from one another to keep the circuit broken. The bell-shaped button 86 extends through an opening in the center of plate 69. It will be noted that since the portion 16 of the shoe is normally out of contact with the floor when a person is merely wearing the shoe but not dancing, the circuit will be in a broken or de-energized condition so that the light bulb and illuminating means will not glow and light. The provision of the button 86 in the portion 16 of the toe adjacent the portion 26 of the body means that a person wearing the shoe must make a positive act of pressing down on the toe so as to force the leaf spring 72 and its contact 84 into engagement with the contact 70 to overcome the force in the spring 70 normally holding them apart to thereby complete the circuit and light the globe. A collar member 54 soldered to the bottom of plate 65 and a resilient diaphragm member 56 secured to the collar holds the button 86 in a correct position and guides it with respect to the opening in 69.

The battery means comprises a small cylindrical casing 90 having one end open and a closed rear end 91 having an inwardly projecting detent 92 disposed centrally thereof and adapted to receive two batteries 93 and 94 therein.

A cap 95 of the battery casing 90 is provided with L-shaped slots on opposite sides thereof designated 96, so

that the cap may be disposed on the battery casing 90 by inserting the portion 97 of the slots (FIG. 4) in alignment with the locking pins 98 extending from the battery casing and thereafter pushing the cover 95 toward the rear wall 91 of the casing and thereafter rotating the cover 95 so that the pins 98 lock in the portion 96 of the slots.

It will also be noted that the cover 95 has an insulated rivet 99 secured thereto to which a connector member 100 is secured and the wire 50 in turn is soldered to the connector member 100. The wire 78 that is connected to the switch is soldered to the outside of the cover as shown best in FIG. 5. The circuit through wire 78 is completed through the cover 95 to the battery casing 90 and the rear wall 91 and detent 92 through the batteries 93 and 94. The button contact 101 of the battery 93 in turn is in contact with the eyelet or sleeve 102 mounted within the rivet 99. A biasing spring 103 is mounted on the eyelet 102 and has one end bearing against the collar 104 of the eyelet and the other end bearing against the cup portion 105 of the rivet 99. In this manner, the spring 103 normally urges the slidable eyelet 102 against its contact 101 so that there will be no inadvertent breaking of the surface caused by any jarring or impact of the shoe when a person is using it for dancing or other energetic activities. Thus, the structure of the battery means in the present invention provides means for predetermining the position of the batteries within their casing and prevents movement of the batteries within their casing and prevents movement of the batteries due to vibrations, impact and the like and thereby permits a constant flow of electric flow through the circuit under dancing impact.

In operation, once the batteries are disposed within the casing and the battery casing inserted into the recess 82 of the heel and the light bulb 40 inserted in its socket, the shoe is ready for use in entertainment activities and the like. Thereafter, when a person is dancing and it is desired to cause the illuminating means 27 to light, it is only necessary for the person to move his foot so that the toe comes in contact with a surface or floor so that the button 86 overcomes the force in spring 83 maintaining its contact 84 out of contact with its complementary contact 70 to complete the circuit and light up the bulb 40 to cause a glow in the translucent globe 32. When contact of the toe portion 16 of the shoe from the hard surface, or disengagement of the button with a hard surface, the leaf spring 72 and its contact member 70 will immediately be disconnected or disengaged from the member 70 so as to break the electrical circuit connecting the bulb to the battery means through wire 50 and the light bulb will be extinguished.

Thus, the present invention provides a novel dancing shoe in which visible illuminating means are provided and can be actuated to light by a switch means disposed in a toe of the shoe by a person wearing the shoe upon positive movement of the toe portion against a hard surface so as to close a switch to complete the electrical circuit in the shoe.

The device further has novel battery means for the source of power of the illuminating means which are disclosed in the last of a heel in an inconspicuous place therein and which battery means further has a novel cover member with biasing means disposed therein so that the batteries are always firmly in contact in the battery case to permit a constant flow of electric current under dancing impact, vibrations and the like so as to prevent short circuit in the electrical circuit and to maintain the assembly in such a position so that the light bulb will be lighted when desired by the person wearing the shoes.

The invention further provides a novel illuminating means for dancing shoes in which easy access to replace the batteries is provided, and in which the light bulb can be readily replaced when required, and further in which the illuminating means can be readily removed from a

shoe when the shoe is to be used for other purposes, so that the shoe will not look inconspicuous and the device can be used on conventional shoes.

The invention further provides novel means in which the illuminating means, its switch means and its battery means are easily utilized to convert a conventional shoe to dancing shoes.

Inasmuch as various changes may be made in the form, location and relative arrangement of the several parts without departing from the essential characteristics of the invention, it will be understood that the invention is not to be limited except by the scope of the appended claims.

I claim:

1. A shoe comprising an upper and sole means having a convex bottom surface and a recess in the toe and heel thereof, battery means in said heel recess and switch means in said toe recess, bulb means on said upper, a first electric conduit connected between said battery and bulb means, a second electric conduit connected between said bulb and switch means, and a third electric conduit connected between said battery and switch means, a vertically movable switch actuator movably mounted in the toe of said sole and projecting slightly below said bottom surface, the lowermost portion of said actuator being spaced above a plane extending from the bottom of said heel and tangent to said convex bottom surface.

2. The shoe of claim 1 wherein said battery means comprises a casing and detachable cover, a rivet insulated from said cover secured to said cover and first conduit, a slidable eyelet provided in said cover for contacting a battery in said casing to prevent movement thereof.

3. The shoe of claim 2 wherein detent means are provided in said casing for engaging a battery to hold it firmly in place.

4. The shoe of claim 3, wherein said cover is cup shaped and provided with a pair of L-shaped recesses in the side walls thereof, a pair of radially projecting lugs on the open end of said casing extending into said recesses.

5. A shoe comprising an upper and sole means having a toe recess and heel recess therein, bulb means disposed on said upper exteriorly thereof, an electric switch in said toe recess, a battery casing of conductive material in said heel recess, a detachable cover of conductive material connected to said casing, a wire terminal member on said cover, an insulated rivet fixing said wire terminal to said cover, a slidable member extending through said rivet and biasing means urging said member in a direction toward the rear of said casing, first electric wire connected to said terminal and bulb means, a second electric wire connected to said cover and said switch, and a third electric wire connected to said switch and said bulb means.

6. The shoe of claim 5 wherein said casing is provided with a detent projecting inwardly of its bottom, so a battery can be held firmly in position therein between said slidable member and detent.

7. The shoe of claim 5 wherein said switch comprises a plate member having a recess in one end thereof secured to said sole, an insulated leaf spring is fixed in said recess and connected to said third wire, a contact member is provided on said plate member, biasing means in said recess normally maintain said leaf spring out of engagement with said contact member, and said second wire is connected to said plate member.

8. The shoe of claim 5 wherein said rivet has an enlarged cup portion on the underside of said cover and said slidable member has a collar thereon, and said biasing means is a coil spring mounted around said slidable member between said cup portion and said collar.

9. The shoe of claim 5 wherein said bulb means comprises a socket member secured to the toe portion of said body, a bulb secured therein, and a translucent globe enclosing said bulb.

10. The shoe of claim 9 including an internally and externally threaded collar secured to the top of said toe

7

portion, said socket member comprising an externally and internally threaded tubular sleeve having a radial flange projecting from the center thereof, one end of said sleeve threaded into said collar whereby the flange engages one end of said collar, said globe being provided with a threaded bore receiving the other end of said sleeve, a bulb having a base threaded into said sleeve and having a filament within said globe, the diameter of the bulb being less than the diameter of the threaded bore in said

5

8

globe whereby the globe may be separated from said sleeve and said bulb.

**References Cited in the file of this patent**

**UNITED STATES PATENTS**

1,933,243	De Merolis et al. ....	Oct. 31, 1933
2,671,847	Lerch .....	Mar. 9, 1954
2,931,893	Arlas et al. ....	Apr. 5, 1960
3,008,038	Dickens et al. ....	Nov. 7, 1961