June 6, 1967 A. CIRKO 3,324,289

FLASHING ELECTRIC LAMP

Filed Dec. 21, 1964

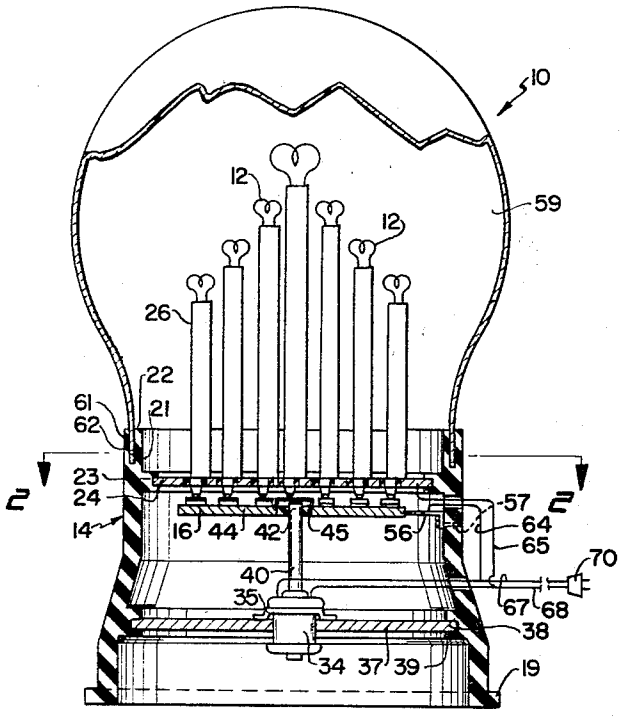


Fig. 1.

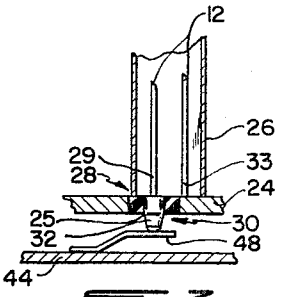


Fig. 3.

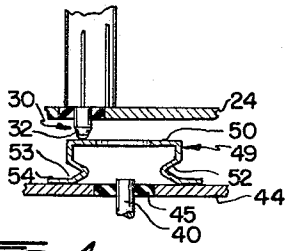


Fig. 4.

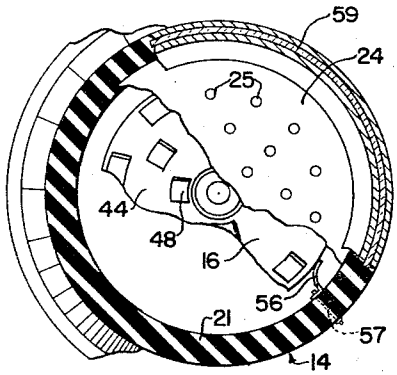


Fig. 2.

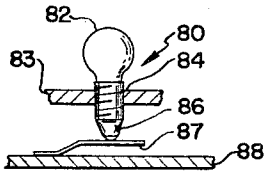


Fig. 5.

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FLASHING ELECTRIC LAMP

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This invention relates to incandescent display lamps and more particularly to that type of incandescent display lamp which is designed for ornamental purposes.

The principal object of this invention is to provide a lamp which, when energized by a source of electric power, twinkles in a starlight fashion and which is sufficiently compact and self-contained so that it may be connected to the standard electrical outlet by a conventional plug for use in Christmas trees, small display signs and in other locations where the twinkling effect is required.

It is appreciated that certain apparatus, such as signs and the like, have heretofore been arranged and designed whereby electric lamps and the like carried by the signs are operated intermittently either in a random manner or in a pattern. However, such apparatus has been bulky and it has not achieved the twinkling effect so desirable.

The present invention provides an incandescent lamp apparatus which, by reason of the manner in which it is constructed, achieves the desired effect as noted above.

The present invention comprises a supporting base, an electric lamp unit mounted on the base and having a plurality of light filaments, each of which is provided with separate electrical contact elements, means carried by the base and connected to a source of electric power to intermittently and alternately energize the filaments when the power is turned on.

In the drawings which illustrate the embodiments of the invention,

FIGURE 1 is an elevation of the apparatus partially in section,

FIGURE 2 is a view of the apparatus on the plane of and in the direction of 2—2 of FIGURE 1, in which various portions of the apparatus are partially cut away.

FIGURE 3 is an enlarged fragmentary view partially in section of an embodiment of the invention as shown in FIGURE 1,

FIGURE 4 is an enlarged fragmentary view of a portion of the apparatus shown in FIGURE 1, and

FIGURE 5 is an enlarged fragmentary view of a portion of an alternate embodiment of the invention.

Referring to the drawings, and specifically to FIGURES 1, 2 and 3, the apparatus generally numbered **10** comprises a plurality of incandescent filaments **12** mounted on a supporting base **14** and arranged to be alternately and intermittently energized by electric power through a motor-driven contact mechanism **16**, the latter also being driven by the same source of electric power that energizes the filaments.

The supporting base is generally in the form of a cylindrical shell having a widened lower flange portion **19**, and is preferably composed of a strong dielectric substance such as the material sold under the trade mark "Bakelite" or any of the well-known plastic materials.

The inner wall **21** of the supporting base **14** is provided, near the upper end **22** of said base, with an annular recess **23** adapted to receive and provide an air-tight seal for a metallic disc **24**, such as copper or the like, or any other of the stronger metals which also are good electrical conductors. The disc **24** is perforated, as shown in FIGURE 2, with a multitude of perforations **25** over which vertical glass stanchions **26** which encase and support the filaments **12** are located. By referring to FIGURE 3, which shows in enlarged detail the perforations referred to and the glass encased filaments **12**, it will be seen that the lower ends **28** of the glass stanchions **26** cover the perforations **25**, said lower ends being fused to the disc **24** so that each of said stanchions seal each of said perforations. One end **29** of the filaments **12** project downwardly through the perforations and is connected to a conically shaped contact element **30**, the lower tip **32** of which projects downwardly below the bottom of the disc. The other end **33** of the filament **12** is connected by soldering or the like to the disc **24**.

The contact mechanism **16** which is mounted within the supporting base **14** below the tips **32** of the contact elements **30**, comprises a small electric motor **34** secured in an upright position centrally of the disc **24** by means of support brackets **35**, the latter being secured by rivets or the like to a disc-like support **37**, the peripheral edges **38** of which are adapted to fit into an annular recess **39** formed on the inner walls of the supporting base **14**. The shaft **40** of the rotor of the electric motor projects vertically upwardly and has secured at its upper end **42**, a disc-shaped metallic plate **44** composed of an electrically conductive material, such as copper or brass or the like, the said upper end **42** of the shaft having a press fit within a sleeve **45**, said sleeve itself having a press fit within a circular aperture formed centrally through said plate **44**. The sleeve is composed of a dielectric material, such as fiber or the like, to insulate the shaft **40** from the plate **44**, the press fit providing sufficient friction between the shaft and the sleeve to permit the motor to rotate the plate **44**. Mounted by means of soldering or the like to the upper surface of the metallic plate **44** are a plurality of spring fingers **48**, one of which is shown in detail in FIGURE 3, arranged and spaced so that each finger will lay in brief contact with the tips **32** of the elements **30** as the plate **44** is rotated. There may also be secured by soldering or the like to the upper surface of the metallic plate, an annular contact element **49**. The latter element which is shown in detail in FIGURE 4 is disposed on the plate **44** concentrically with the axis of the shaft **40**, and has an upper annular contact face **50**. An annular V-shaped side support **52**, the lower end **53** of which is flared outwardly to form a flange **54** which rests on the plate **44** and is secured thereto by soldering or the like, as previously pointed out. The annular contact element **49** is situated below one of the tips **32** of the elements **30** so that upon rotation of the plate, the annular contact face **50** thereof remains in continuous contact with said tip, the side supports **52** providing sufficient resiliency and flexilibity of vertical movement of the annular contact element **49**, whereby a continuous contact is achieved.

A spring contact finger or brush **56** is secured to the inner wall of the supporting base **14** by rivets **57** and projects inwardly of said supporting base to make sliding contact with the peripheral edge of the plate **44**.

The filaments **12** are enclosed in a glass envelope **59**, the lower edge **61** of which fits into an annular recess **62** formed in the upper end of the supporting base **14**, the juncture of the envelope and supporting base being sealed in any suitable manner, such as is standard in the art of the manufacture of incandescent lamps, in order that an oxygen free atmosphere may be provided within the glass envelopes by any suitable method also well-known in the art of the manufacture of incandescent lamps. The spring contact finger **56** and disc **24** are connected in parallel with the motor **34** by leads **64** and **65**, respectively, and **67** and **68** respectively, as shown in FIGURE 1, to a suitable electrical plug **70**, the latter being adapted to fit standard electrical outlets.

In the operation of the apparatus when the power is turned on by connecting the plug **70** to a suitable electrical outlet, the motor **34** will rotate disc **44** causing spring

fingers **48** to make intermittent contact with the tips **32** of the elements **30**, thereby intermittently closing the electrical circuit through the leads **64–65**, thereby intermittently and alternately energizing the filaments **12**. It will be appreciated that said spring fingers **48** may be staggered in any manner to produce either a random energizing of the filaments **12** or to light the latter in a more regular manner. It will further be appreciated that the filaments **12** themselves may be arranged in various patterns, such as in concentric circles or the like, or in any other manner desired.

In an alternate embodiment **80** of the invention, the filaments **12** of apparatus **10** may be replaced by a multitude of incandescent lamps **82**, as shown in FIGURE 5. In this embodiment, the disc **83** which corresponds to disc **24** of apparatus **10**, is provided with a multitude of internally threaded apertures **84** corresponding to the perforations **25** of apparatus **10** which serve as sockets for said lamps **82**, said lamps making an electrical contact with the sides of the aperture and a tip **86** thereof protruding below disc **83** to make contact with spring fingers **87** corresponding to spring fingers **48** of apparatus **10** which are secured to a metallic plate **88**, the latter corresponding to metallic plate **44** of apparatus **10**. Alternate embodiment of the invention **80** operates in the same manner as apparatus **10**. However, as each of the lamps **82** provides its own oxygen free atmosphere, the glass envelope **59** of apparatus **10** is not required in alternate embodiment **80**.

What I claim as my invention is:

1. Flashing electric lamp apparatus comprising a supporting base, an electric lamp unit mounted on the base, having a plurality of light filaments, said filaments each having a common ground and each being provided with a separate contact element, said filaments being enclosed in a single sealed glass envelope, a turntable mounted for rotation on the base beneath the lamp unit, a plurality of resilient contact members connected to a common source of power and arranged in the turntable for rotation therewith to make and break contact with, in alternate and intermittent manner, the contact elements of the filaments as the turntable is rotated, an electric motor mounted on the base and connectable to said source of power, said motor having a driving connection with the turntable so as to rotate the latter when the power is turned on to thereby cause the energizing of the filaments in said alternate and intermittent manner.

2. Flashing electric lamp apparatus comprising a supporting base, a plurality of electric lamps mounted on the base, said lamps each presenting a lower electric contact surface, means connecting each lamp to a common ground, a turntable mounted for rotation in the base beneath the lamps, a plurality of resilient contact surfaces connected to a common source of power and arranged on the turntable for rotation therewith to break and make contact with, in alernate and intermittent manner, the contact surfaces of the lamps as the turntable is rotated, an electric motor mounted on the base and connectable to said source of power, said motor having a driving connection with the turntable so as to rotate the latter when the power is turned on to thereby cause the energizing of the lamps in said alternate and intermittent manner.

3. Flashing electric lamp apparatus as claimed in claim **2** in which the turntable carries at least one contact member presenting a continuous annular contact face to at least one of the filament contact elements.

4. Flashing electric lamp apparatus comprising a tubular base formed of dielectric material, an electro-conductive plate having a plurality of holes formed therein mounted in and having an airtight seal at its peripheral edge with the wall of the base adjacent one end of the latter, said plate having an upper and a lower surface, airtight electro-insulative material filling the holes, an elongated electric light filament at each hole above the upper surface of the plate, each of said filaments being encased in the electro-insulative material and having one end connected to the plate, an electric contact element connected to the other end of each of the filaments and extending below the plate, a single airtight light-passing cover enclosing the filaments for providing an airtight enclosure therefor, an electroconductive turntable mounted for rotation on the base beneath said electric contact element, an electro-conductive brush mounted on the base slidably contacting the turntable, a plurality of short electroconductive spring finger elements mounted on the turntable for making and breaking contact with the contact elements when the turntable is rotated, a motor connected to the turntable for rotating the latter, and electric leads connecting the plate and brush as terminals in an electrical circuit, said leads being connectable to a source of electric power so as to energize the filaments when the contact elements are engaged by the spring fingers.

5. Flashing electric lamp apparatus as claimed in claim **4** wherein the motor is an electric motor and including means for connecting the motor to a source of electric power.

6. Flashing electric lamp apparatus as claimed in claim **4** wherein the cover means comprises a single glass envelope having an airtight seal with the walls of the base.

7. Flashing electric lamp apparatus as claimed in claim **4** wherein the spring fingers are arranged in a random pattern so as to result in energizing of the filaments in a random manner.

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