Jan. 30, 1962 A. DONSKY 3,019,407

SERIES LAMP SOCKET

Filed Aug. 22, 1960

FIG. 1

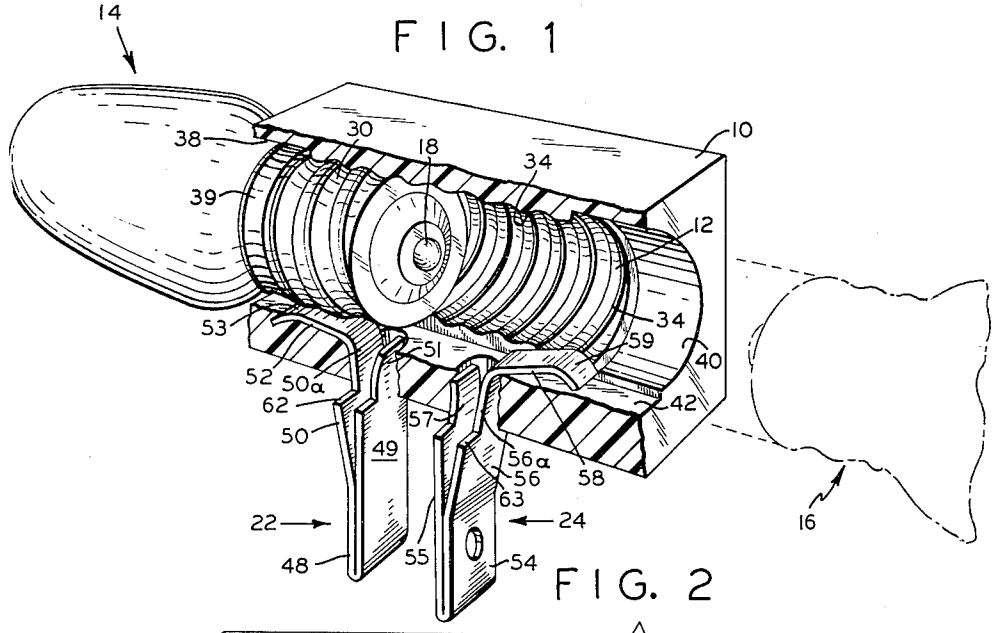


FIG. 2

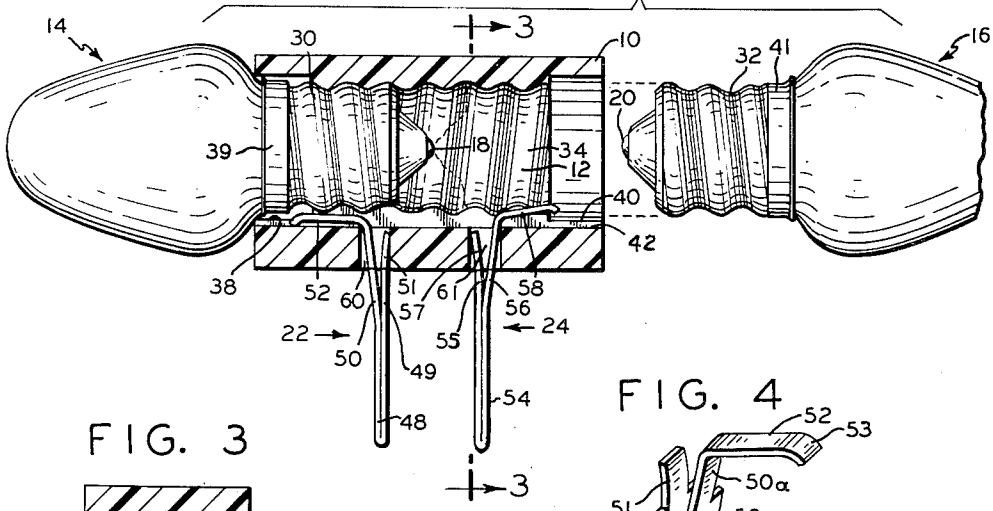


FIG. 3

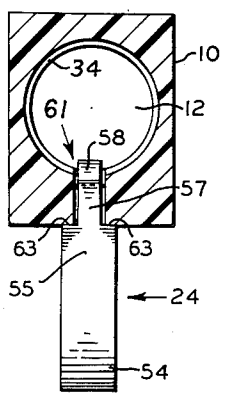
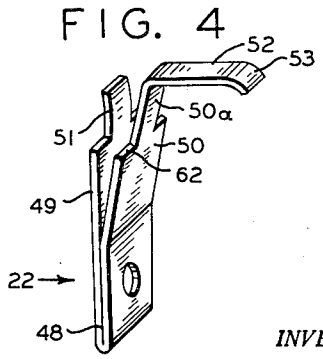


FIG. 4



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SERIES LAMP SOCKET

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This invention relates to an improved night light of the type used to provide low level illumination for safe passage in hallways and staircases. More particularly, the invention relates to a multiple bulb socket that connects a plurality of light bulbs in series across the terminals of an electrical outlet.

A night light, or safety light, is used to provide low level illumination in dwellings and other structures to afford safe passage in corridors or stairs, to discourage intruders, or to illuminate devices having emergency use, such as fire extinguishers. Lamps of this type generally operate continuously all night or even continuously day and night.

Inasmuch as night lights are relied upon for purposes of safety or in an emergency, they must provide highly reliable illumination.

Prior night lights generally comprise a single low wattage bulb. Since the bulb is operated at its rated power, the operating life is no greater than that of an ordinary light bulb. These lamps often produce excessive glare, requiring a shade, and the illumination is concentrated over a small area, making them even more inefficient. Since the envelope of the bulb is small, the bulb often becomes excessively hot, presenting a burn hazard upon contact with one's skin. Furthermore, the operating life and, accordingly, the reliability of prior night lights incorporating switches is reduced by repeated high transient currents and by the mechanical shock of switching the lamp on and off, especially turning it off when the filament is hot.

Accordingly, it is an object of this invention to provide an improved lamp for low level illumination using standard bulbs and having greater reliability and longer operating life than prior lamps of this type.

It is a further object to provide a lamp of the above type that operates at a relatively low bulb temperature, free of the hazard of burns from contact with the bulb.

Still another object of my invention is a lamp for low level illumination that is simple in construction, inexpensive to manufacture, and economical to operate.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the features of construction, combination of elements, and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the invention will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawings, in which:

FIGURE 1 is a perspective view, partly cut away, of a lamp embodying my invention,

FIGURE 2 is a side elevation view, partly in section, of the lamp of FIGURE 1,

FIGURE 3 is a transverse vertical sectional view taken along section lines 3—3 of FIGURE 2, and

FIGURE 4 is a perspective view of a terminal used in the lamp of FIGURE 1.

Similar reference characters refer to similar parts throughout the several views of the drawing.

In general, my invention includes a multiple bulb socket in which the light bulbs are connected in series, providing low level illumination and greatly extending the life of the bulbs. In a two-bulb socket embodying the invention, each bulb operates with one-half the line

voltage. Accordingly, bulbs designed for use at the line voltage operate at a fraction of their rated power. In this manner the illumination is reduced to a low level, lamp life is greatly extended, and the bulbs do not get excessively hot.

Referring to FIGURES 1 and 2, my lamp includes a housing **10** formed with a threaded aperture **12** supporting two light bulbs generally indicated at **14** and **16** in an end-to-end abutting relationship. Thus, the base contacts **18** and **20** of the bulbs **14** and **16** are in contact with each other. A pair of terminals generally indicated at **22** and **24**, forming a conventional male plug, are in electrical contact with the shell contacts **30** and **32** of the bulbs. Thus, the bulbs **14** and **16** are connected in series between the terminals **22** and **24**, and when the terminals are plugged into a conventional electrical outlet, one-half the line voltage will be applied across each of the bulbs **14** and **16**. The individual bulbs are preferably commercial ones, designed to operate at line voltage (normally 110 volts). Therefore, each bulb will operate at approximately one-fourth its rated power.

More specifically, housing **10** is made of a dielectric material, preferably a thermosetting plastic which has high strength and can be readily machined. Aperture **12** extends through housing **10** and is formed with threads **34** to mate with the threaded shell contacts **30** and **32** of the bulbs **14** and **16**. Unthreaded recesses **38** and **40** are preferably formed at the ends of aperture **12** to receive the unthreaded portions **39** and **41** of the shell contacts. Accordingly, no conducting parts of the bulbs are exposed, thus precluding any shock hazard.

Referring to FIGURE 4, the terminal **22** may be formed from a single strip of conducting material folded over to form a double thickness prong **48**, which extends upwardly in a straight section **49** and an angled section **50**. The section **49** terminates in a reduced stub portion **51**, while the section **50** has a portion **50***a* joined by a substantially horizontally-extending contact **52**. The contact **52** is arched in an upwardly convex curve and has a downwardly-extending lip **53** on its outer end. The terminal **24** is similar to the terminal **22**, having a prong **54**, a straight section **55**, an angled section **56**, a stub portion **57**, and a contact **58** with a lip **59**.

As best seen in FIGURES 1 and 3, the stub portions **51** and **57** and reduced portions **50***a* and **56***a* extend into holes **60** and **61** (FIGURE 2) communicating with the aperture **12**. Shoulders **62** and **63** abut the housing **10** to prevent entry of the prongs **48** and **54** into the holes. The lips **53** and **59** bear against the bottom of a longitudinal slot **42**, with the contacts **52** and **58** above the slot so as to engage the shell contacts **30** and **32** of the bulbs. The arched form of the contacts **52** and **58** provides a spring action when the bulbs are screwed into the aperture **12**, the contacts being depressed downwardly, e.g. the contact **52** in FIGURE 2, to maintain a firm, resilient engagement with the shell contacts of the bulbs.

It will be apparent that my invention is suited for use with bulbs having a bayonet-type base as well as the screw-type bases shown above. Moreover, rather than having prongs for plugging the lamp into a wall receptacle, the socket may have a screw-type base for insertion into a conventional bulb socket.

Thus I have described an improved night light in which two light bulbs are connected in series to provide safe, highly reliable, low level illumination over a large area. The useful life of the bulbs is thus greatly extended by operating them at one-half their design voltage. Further economy of operation results from the low power requirement of the lamp, viz., one-half that of a single-bulb lamp. The power saving is effected without an

appreciable loss in usable light, since the two bulbs cover a larger area with their illumination than would a single bulb. Also, the reduced power consumption results in lower temperature, thereby substantially lessening burn and fire hazards.

When desired, a switch may be incorporated in my lamp. The detrimental effects of a switch on bulb life are reduced to negligible proportions in my lamp by reduced transient current values and the lower operating temperature thereof.

It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficiently attained and, since certain changes may be made in the above article without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

I claim:

1. A lamp comprising, in combination, first and second light bulbs, each having first and second electric contacts, means mounting said bulbs with said first contacts in engagement with each other, third and fourth contacts supported by said mounting means, each of said third and fourth contacts engaging one of said second contacts, a pair of electrical terminals supported by said mounting means, said terminals being adapted for insertion in a standard electrical outlet, and means connecting said terminals to said third and fourth contacts, whereby said bulbs are connected in series between said terminals.

2. A multiple bulb lamp comprising, in combination, a housing, a pair of light bulbs each having a base, each of said bases having a shell contact and a base contact, means supporting said bases in said housing member with said base contacts in engagement with each other, a pair of terminals suitable for plugging into an electrical outlet, means connecting each of said terminals to the shell contact of one of said bulbs, whereby said bulbs are connected in series between said terminals.

3. An electric lamp comprising, in combination, a housing member, first and second light bulbs, each having a base contact and a shell contact, means forming an aperture in said housing member, said bulbs disposed in said aperture with said base contacts in electrical engagement with each other, first and second terminals, means connecting each of said terminals with one of said shell terminals, whereby said bulbs are connected in series between said terminals, said terminals being disposed for electrical connection with an electrical outlet.

4. A lamp for low level illumination comprising, in combination, a dielectric housing member, means forming an aperture through said housing member, two electric light bulbs, each of said bulbs having a base, a base terminal and a shell terminal on each of said bases, means retaining said bases in opposite ends of said aperture with said base terminals in electrical contact with each other, means forming a longitudinal groove in said aperture, means forming two holes extending from said groove through said housing member, first and second conductor prongs adapted for insertion into an electrical outlet, each of said prongs extending from the exterior of said housing member into one of said holes, first and second arched contacts extending from said prongs into the interior of said housing and disposed along said groove, whereby each of said arched contacts is resiliently depressed between one of said shell terminals and the opposing surface of said groove, and said bulbs are thereby connected in series between said conductor prongs.

5. The combination defined in claim 4 in which said retaining means comprises mating screw threads on said shell terminals and said aperture.

6. The combination defined in claim 5 in which said aperture has means forming an enlarged, unthreaded recess at each end, thereby to admit unthreaded portions of said shell terminals adjacent the envelopes of said bulbs.

7. A socket for connecting two light bulbs in series, each bulb having a base including a shell contact and a base contact comprising, in combination, a dielectric housing member, means forming an aperture through said housing member, means for retaining said bases in opposite ends of said aperture with said base contacts in electrical contact with each other, means forming a longitudinal groove in said aperture, means forming two holes extending from said groove through said housing member, first and second conductor prongs adapted for insertion into an electrical outlet, each of said prongs extending from the exterior of said housing member into one of said holes, first and second contacts, each extending from one of said prongs into the interior of said housing and disposed along said groove, each of said contacts being substantially arched, whereby each of said contacts is adapted to be resiliently depressed between one of said shell contacts and the opposing surface of said groove, whereby when said bulbs are positioned in said aperture they are connected in series between said conductor prongs.

References Cited in the file of this patent

UNITED STATES PATENTS

974,947	Benjamin	Nov. 8, 1910
1,684,915	Giles et al.	Sept. 18, 1928