

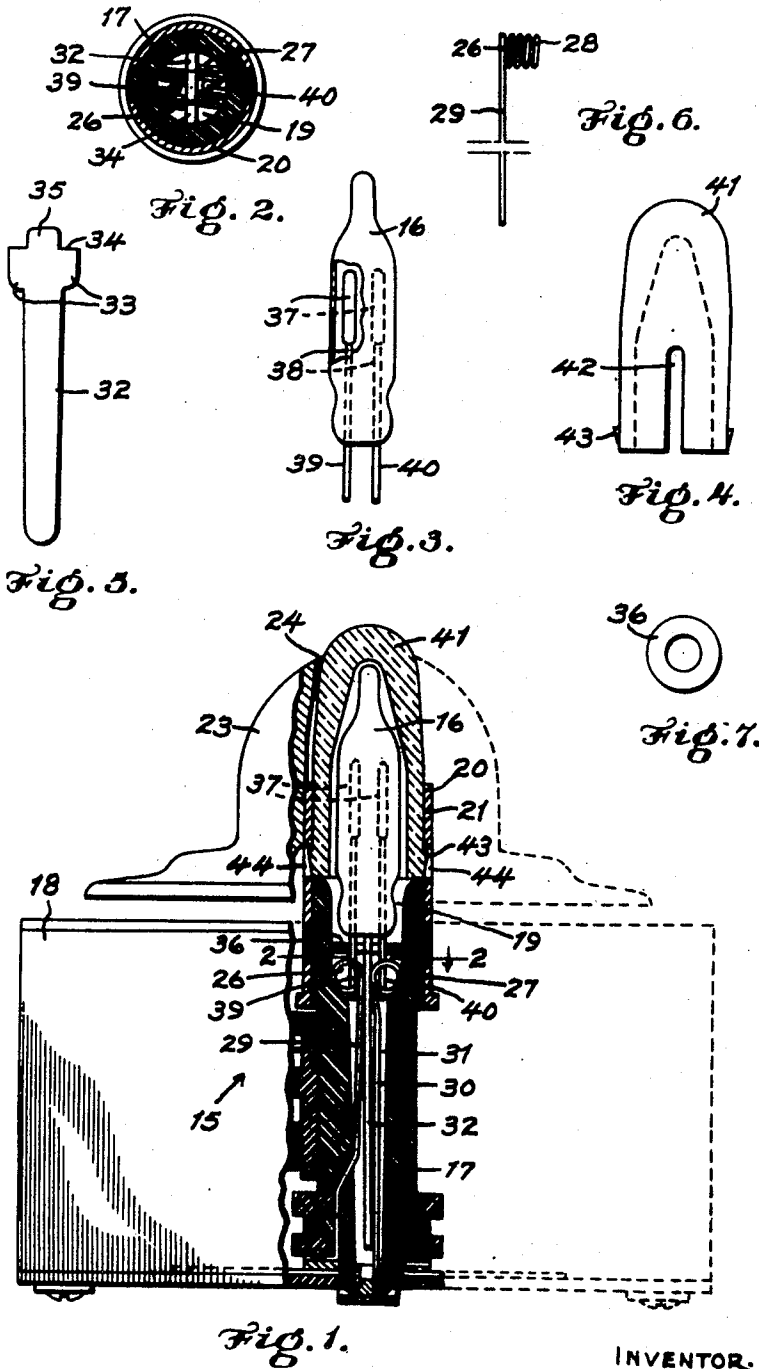
June 3, 1952

J. F. BEAL

2,599,361

PILOT LIGHT LAMP AND SOCKET STRUCTURE

Filed June 17, 1949



INVENTOR,
JAMES F. BEAL.
BY *John F. Beal*
ATTORNEY.

UNITED STATES PATENT OFFICE

2,599,361

PILOT LIGHT LAMP AND SOCKET STRUCTURE

James F. Beal, Renfrew, Ontario, Canada, assignor, by mesne assignments, to Renfrew Electric and Refrigerator Co. Limited, Renfrew, Ontario, Canada, a corporation

Application June 17, 1949, Serial No. 99,851

2 Claims. (Cl. 173—328)

1

This invention relates to new and useful improvements in pilot light lamp and socket structure.

It is one of the objects of the present invention to provide a device of this character wherein defective or "burned-out" pilot light lamps in electric switch units may be readily and conveniently removed and replaced.

Another object of the present invention is to provide a device of this character in which the pilot light lamp is detachably supported in its socket in an electric switch unit and is rotatable with the switch operating mechanism.

A further object of the present invention is to provide a device of this character wherein the detachable pilot light lamp is protectively enclosed in a detachable cover cap or hood.

Still another object of the present invention is to provide a device of this character which is novel and practical in form and one that will more satisfactorily perform the functions required of it.

Having regard to the foregoing and other objects and advantages which will become apparent as the description proceeds, the invention consists essentially in the novel combination and arrangement of parts hereinafter described in detail and illustrated in the accompanying drawings in which:

Fig. 1 is a sectional elevational view taken through the center of an embodiment of the present invention.

Fig. 2 is a section taken on the line 2—2 of Fig. 1.

Fig. 3 is an elevational view of the pilot light lamp shown in detached form.

Fig. 4 is an elevational view of the cover cap or hood for the pilot light lamp shown in detached form.

Fig. 5 is a front elevational view of the insulator or divider member.

Fig. 6 is a side view of one of the socket contact terminals shown in detached form, and

Fig. 7 is a plan view of the assembly washer and contact cover.

Primarily, the present invention finds embodiment in the form of pilot light lamp and socket structure for electric switch units and while the invention is adaptable and applicable to electric switch mechanism in general, it finds more particular adaptation to the type of switch shown in my Patent No. 2,462,594 wherein the pilot light lamp is mounted in and rotatable with the switch operating mechanism and handle.

In the accompanying drawings then wherein

2

an embodiment of the present invention is disclosed and wherein like numerals of reference designate corresponding parts in the various illustrations, the numeral 15 indicates the invention as a whole and in general terms includes a pilot light lamp or bulb 16 mounted in the socket of the switch center post 17 which in turn is mounted in the switch unit 18. In the foregoing I have referred to the member 16 as a "pilot light lamp," however for purposes of convenience in the ensuing description I shall refer to it as a "lamp."

The center post 17 herein illustrated is of elongated form and composed mainly of insulating material. One end of the center post is provided with a lamp receiving socket 19. Extending around and secured to the upper portion of member 17 is a metallic ferrule 20, the ferrule forming a pocket 21 for the reception of a transparent cover cap for the lamp which will be later referred to.

For purposes of illustration, the center post is shown mounted in the switch unit 18 where the said post proper is rotatable through operating handle 23. At its outer extremity, handle member 23 is provided with an opening 24 for purposes of exposing the end of the transparent cover cap so that when the lamp is illuminated, the rays therefrom will be visible when the switch is under load conditions.

As clearly indicated in Fig. 1, a pair of resilient terminal contact members 26 and 27 are mounted at the base of the socket 19. As shown in Figs. 2 and 6, the socket contact terminals are in the form of conductive spring coils 28 with the helices thereof preferably slightly spread or spaced to facilitate insertion of the lamp terminals while extending outwardly from the socket contact terminals are conductor leads 29 and 30. As further illustrated in Fig. 1, the conductor leads are designed to extend through the tapered bore 31 of the center post for ultimate electrical connection with the switch unit terminals from and through which current is supplied to the lamp and the switch unit.

The insulator or divider member 32 is designed to separate the conductor leads 29 and 30 in the bore 31 as well as the contact terminals 27 and 26 in the socket. For this purpose then the divider 32 is inserted in the bore as shown in Fig. 1 between the leads 29 and 30. The upper portion of the divider is provided with a pair of outwardly projecting arms 33 the base portions of which rest upon the shoulder forming end of the bore while the upper portions of the

3

arms 33 form shoulders 34 and a tongue 35. The arms 33 complete the insulating means between the resilient contacts 26 and 27 while the assembly washer 36 extends over the tongue 35 and when forced into position, the washer rests upon the shoulders 34 as indicated.

In its construction, the pilot light lamp 16 is provided with electrodes 37 connected by means of leads 38 with terminal conductors 39 and 40. The terminal conductors it is observed extend outwardly from the base portion of the lamp sufficiently to enable them to extend through and frictionally engage the helices of the contact terminals 26 and 27. Thus when the lamp 16 is inserted in socket 19, the terminal conductors 39 and 40 first engage the spring coils 28 and when pressed inwardly, further spread the helices of the coils 28 so that the terminal conductors frictionally and conductively engage the terminal contacts 26 and 27 to form strong electrical conductive connections.

The transparent cover cap or hood 41 as illustrated in Figs. 1 and 4 is designed to protectively enclose the lamp 16 when mounted in the center post. The side walls of the cover cap are provided with elongated slots 42 to enable the cover member to be sprung and inserted in the pocket 21 of the center post. The cover cap is further provided with a pair of lugs 43 for engagement with side wall openings 44 in the pocket 21 to detachably retain the cover cap in position.

For purposes of removing and replacing the lamp 16, the operating handle 23 is first removed after which the sides of the cover cap are sprung or pressed toward one another in order to release the lugs 43 after which the cover member may be removed from the pocket. The lamp 16 is then removed by a straight outward pull when a new lamp is inserted and the various parts reassembled in reverse order.

Many changes may be made in the above and many apparently widely different embodiments constructed without departing from the spirit or the essential characteristics of the invention. It is intended therefore that the present disclosure be interpreted as illustrative and not in a limitative sense.

What I claim as my invention is:

1. In lamp and socket structure of the character described, a tubular center post having an enlarged lamp bulb receiving socket at one end, a pair of conductor leads extending into the tubular

4

center post and having socket contact terminals made as laterally disposed parallel conducting spring coils in the socket transversely to and spaced apart on opposite sides of the axial line of the tubular center post and socket, an elongated divider member of insulating material fitted endwise in the tubular opening of the post and socket and insulating between the conductor leads and the conducting coils thereof, and a lamp bulb fitted in said socket and having parallel spaced apart conductor leads extending therefrom inserted transversely between and spreading the helices of the spring coil contacts to establish the lamp in circuit with the conductor leads.

2. In lamp and socket structure of the character described, a tubular center post having an enlarged lamp bulb receiving socket at one end, a pair of conductor leads extending into the tubular center post and having socket contact terminals made as laterally disposed parallel conducting spring coils in the socket transversely to and spaced apart on opposite sides of the axial line of the tubular center post and socket, an elongated divider member of insulating material fitted endwise in the tubular opening of the post and socket and insulating between the conductor leads and the conducting coils thereof, a lamp bulb fitted in said socket and having parallel spaced apart conductor leads extending therefrom inserted transversely between and spreading the helices of the spring coil contacts to establish the lamp in circuit with the conductor leads, and an insulating washer inserted in said socket over the transversely extending conducting spring coils and having a central opening through which the spaced apart conductor leads of the lamp bulb are inserted.

JAMES F. BEAL.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,642,695	Pumphrey	Sept. 20, 1927
2,246,613	Bigman	June 24, 1941

FOREIGN PATENTS

Number	Country	Date
255,969	Great Britain	Aug. 5, 1926
812,016	France	Jan. 27, 1937