June 4, 1935. V. R. DESPARD 2,004,039

PILOT LIGHT

Filed Feb. 20, 1933

FIG. 1.

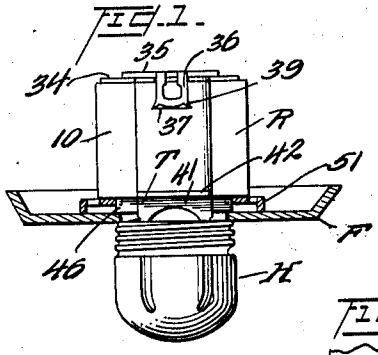


FIG. 2.

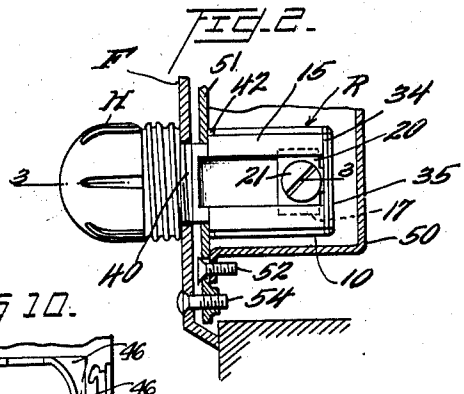


FIG. 10.

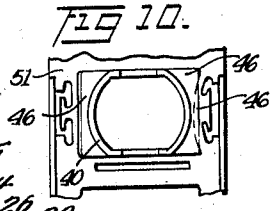


FIG. 3.

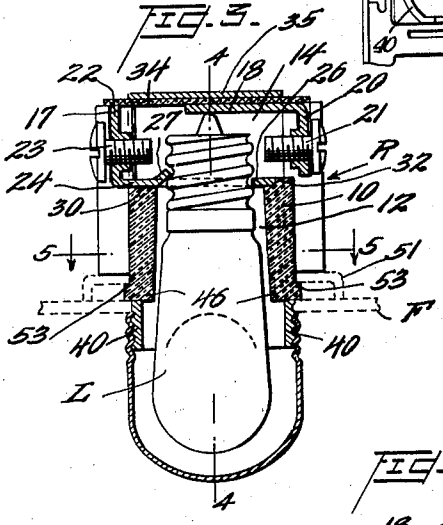


FIG. 4.

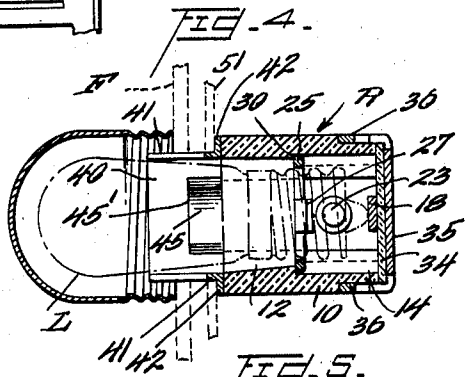


FIG. 5.

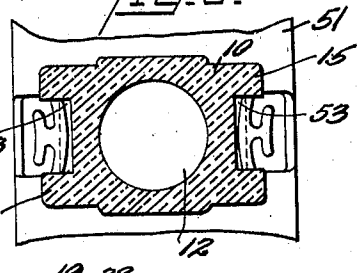


FIG. 8.

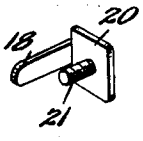


FIG. 6.

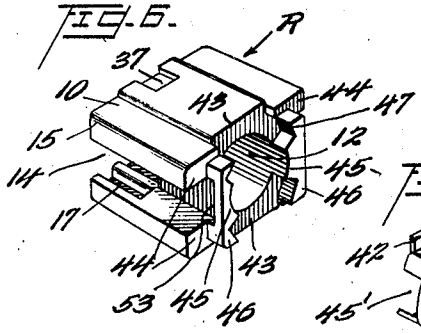
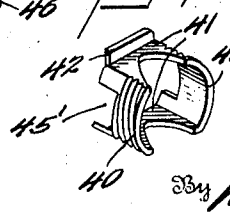


FIG. 7.



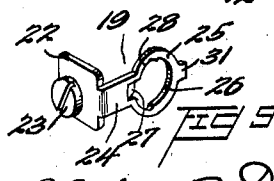


FIG. 9.

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PILOT LIGHT

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Application February 20, 1933, Serial No. 657,706

12 Claims. (Cl. 177—311)

This invention relates to pilot lights, and particularly to pilot lights for use with wall or face plates.

It is a general object of the present invention to provide a novel and improved pilot light.

More particularly it is an object of the invention to provide a pilot light of the type to be used with a wall or face plate, and wherein the receptacle for the lamp is behind the face plate and a portion of the lamp in front of the face plate and covered by a hood secured to a part extending through the face plate.

One of the novel features of the invention resides in the provision of a unique receptacle for the lamp of a pilot light and in the manner of securing the lamp engaging contacts therein.

Another important feature of the invention resides in the construction of the lamp engaging contacts and their associated terminals.

Still another novel feature of the invention resides in the provision of a receptacle block of insulating material and a thimble frictionally secured thereto and extending through an opening in the face plate to receive a lamp hood.

Still another feature of the invention resides in the construction of the contact for engaging the screw shell of the lamp base.

A still further feature of the invention resides in the provision of a receptacle for a pilot lamp in which the terminal of the contacts for engaging the lamp base are inserted into channels from the rear of the receptacle and secured in position solely by an insulating plate closing the rear thereof.

Other and further features and objects of the invention will be more apparent to those skilled in the art upon a consideration of the accompanying drawing and following specification, wherein is disclosed a single exemplary embodiment of the invention, with the understanding, however, that such changes and variations may be made therein as fall within the scope of the appended claims without departing from the spirit of the invention.

In said drawing,

Figure 1 is a plan view of a pilot light constructed according to the present invention shown as mounted in a wall plate and supported by a mounting strap, the latter two parts being shown in horizontal section;

Figure 2 is a side elevation of a pilot light according to the present invention, shown as mounted in an outlet box which supports the mounting strap and the plate, all parts but the pilot light being shown in section;

Figure 3 is a section on line 3—3 of Fig. 2;

Figure 4 is a section on line 4—4 of Fig. 3;

Figure 5 is a section on line 5—5 of Fig. 3, looking in the direction of the arrows;

Figure 6 is a perspective view of the insulating base of the receptacle;

Figure 7 is a perspective view of the hood-carrying thimble;

Figure 8 is a perspective view of the center lamp contact and associated terminal;

Figure 9 is a perspective view of the screw shell lamp contact and its associated terminal, and

Figure 10 is a plan view of the receptacle and a fragment of the mounting strap, showing on the left-hand side the fastening means in its original condition and on the right-hand side this means deformed to engage the insulation block of the receptacle to secure it in the strap.

Pilot lights are used for a variety of purposes, and are coming into quite general use in house and building wiring to indicate the condition of circuits or appliances in other parts of the building, for indicating the attachment of portable devices and for various other purposes. It is highly desirable that pilot lights can be used with the customary wall or face plate appliances, and in the interest of interchangeability, the present type of pilot light is constructed to cooperate with a standard opening in a wall plate of the type adapted to receive convenience outlets, push buttons, switches, and the like.

Heretofore difficulty has been experienced in endeavoring to provide a suitable receptacle to house the whole pilot lamp behind the wall plate and at the same time to provide adequate ventilation to carry off the heat from the light bulb. Such devices were cumbersome and required the space of a complete single gang. The present pilot light is intended to be used, if desired, in conjunction with one or two other wiring devices all arranged in the space of a single gang, and for that purpose only the receptacle is arranged behind the wall plate, a portion of the lamp extending to the front of the face plate where it is adequately ventilated and does not occupy space in the wall box. This portion of the lamp is suitably covered by a perforated hood or shield which may take several forms, one merely to permit the light from the lamp to give an indication and another for use with clear lamps to provide low intensity illumination as for a night light or to illuminate push buttons, door numbers, and the like.

Referring now to the drawing, it will be seen

that the pilot light comprises three essential parts, first, the receptacle R including the contacts for engagement by the lamp L, second, a thimble T, and third, the hood H for the lamp. The receptacle R is entirely supported to the rear of the face plate F, here shown as formed of insulating material, thimble T passes through an opening in the face plate, while the hood H is entirely in front of the face plate.

The lamp receptacle is formed in the molded block **10** of insulating material, generally in the form of a parallelepipedon, which is provided centrally with a substantially cylindrical hole **12** opening onto the front face thereof and of a diameter to receive loosely the lower portion of the lamp. This hole intersects a transverse groove **14** which extends through the rear portion of the block and reaches between the two sides **15** thereof and is of a depth slightly less than half the length of the block. The side walls of this groove, near their ends, are each channelled as at **17** to the depth of the groove, which provides pairs of facing channels parallel to the axis of the hole **12** and for a purpose to be later described.

In order to make electrical connections with the base of the lamp, there is provided in the receptacle a center contact **18** and a screw shell contact **19**. The center contact comprises a strip of metal extending out at right angles from a substantially rectangular tab portion **20** which forms the terminal and is perforated and threaded to receive the terminal screw **21**.

The screw shell contact **19** is formed from a metal plate having the terminal tab **22** turned up at one end and accommodating the screw **23**. From the tab extends a neck portion **24** enlarged into a ring **25**. The opening in this ring is unique in that approximately one-half of its circumference is formed, as at **26**, at a radius substantially that of the bottom of the threads on the base of the lamp. Opposite this portion a lug **27** is struck up to a distance above the plane of the ring equivalent to one-half of the pitch of the thread on the base. The remaining portions **28** of the circumference of the opening are of a greater diameter than the largest diameter of the thread on the lamp base. This permits the lamp base to be screwed into the contact, as shown in Fig. 3, with the portion **26** engaging between a pair of threads and with the lug **27** engaging between the next pair of threads so that a true threaded engagement of the lamp base shell with the contact is had.

The screw shell contact rests against the bottom wall **30** of the transverse groove in the block **10** with the ring surrounding the opening **12** as seen in Fig. 3. A tab **31** on the ring opposite the strap portion **24** is received in a notch formed in an elevated portion **32** on this bottom wall **30**. In so positioning the contact, the terminal plate **22** thereon is received with its edges in the channels **17** in such a manner that it completely closes that end of the groove **14**.

The opposite end of the groove is closed by the terminal tab **20** on the center contact and the engagement of this tab with the walls of its channels supports this contact in position to be engaged by the center contact of the lamp as clearly seen in Fig. 3. This closes both ends of the groove and the rear of the groove is then closed by a cover plate **34** of insulating material of substantially the same area as the whole end of the block **10**. This insulation plate bears against the upper edge of the terminal **22** and against a portion of the contact **18**, and serves to hold the two contacts and their terminals firmly in position. The insulation plate **34** is held onto the block **10** by means of a smaller size cover plate **35** of metal having a pair of downturned ears **36** received in notches **37** in the sides of the block and having their ends **39** expanded therein by means of the connecting strut in a manner to lock them in position. For full details of this manner of fastening the insulation plate in position, reference may be had to my copending application Serial Number 587,599, Attaching means for metal parts and insulating material, filed January 19, 1932.

The thimble T is a metal stamping having the arcuate sides **40** externally threaded, as shown, near their ends. These sides are connected by the deeply notched flat sides **41**, each of which has an outwardly turned bottom flange **42**. These bottom flanges are received against the depressed surfaces **43** on the front end of the block **10**, which surfaces **43** are beneath the end surface **44** of the block just the thickness of the flanges **42**. The notches **45'** in the bottoms of the arcuate walls of the thimble fit over the inward projections **45** on the shoulders **46** projecting forwardly from the insulation block and the edges of the notches may have frictional engagement with the side walls of these projections. In addition, the arcuate walls beside the notches may bear against the surfaces **47** frictionally so that the thimble is firmly but not securely fixed to the insulation part, by merely pressing the two together.

The assembly of insulation block, terminals and thimble is adapted to be supported from the walls of a switch or outlet box **50**, as shown in Fig. 2, by means of a mounting strap **51** extending across the open face of this box and secured thereto as by screws **52**. This mounting strap is preferably of the type to interchangeably receive wiring devices for various functions. It is provided with one or more substantially rectangular openings each to snugly accommodate the projections **46** on the front face of the block **10**. Adjacent each edge of the opening which engages the long side of the projection **46** is a portion bendable beneath the shoulder **53** on the block **10**, as clearly seen in Figs. 3, 5 and 10, and as more fully described in my copending application Serial Number 580,411, Electric wiring apparatus, filed December 11, 1931. The wiring device is inserted from the back with the thimble extending through the opening in the strap **51** and the portions of the strap then deformed as shown in Fig. 5 and at the right in Fig. 10 to lock beneath the shoulders **53** to secure the receptacle in the mounting strap. In so doing, the mounting strap overlies the flanges **42** on the thimble, and since the mounting strap is firmly locked to the insulating material, it completes the attachment of the thimble to the insulating block and further insures that the thimble is locked behind the mounting strap so that it cannot be drawn outwardly from the box.

The wall plate F has an aperture of a shape to loosely accommodate the thimble which projects sufficiently far forwardly from the mounting strap **51** to protrude through the face plate, as clearly seen in Figs. 3 and 4. The face-plate is attached by screws **54** to the mounting strap and hence indirectly to the box **50**, but the plate has no function whatsoever in supporting any part of the pilot light and merely serves as a covering member for the box **50** to provide a finish.

After the plate has been mounted, the lamp L

can be screwed into the receptacle and then the pressed metal hood H applied by screwing it onto the thimble until its lower edge substantially engages the wall plate. Other means aside from threading may be used for attaching the hood to the thimble, and obviously the hood may be made of various materials and of different shapes, and perforated or provided with large openings to allow the light to shine from the lamp as desired. It will be noted that the heated end portion of the lamp is fully exposed and adequately ventilated, and yet it is protected against damage by the hood. The hood has no other function than as a shade and protector to the lamp.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. Electric wiring apparatus including in combination, a face plate having an opening therein, a mounting strap behind said plate and supporting it, means supporting said strap across the front of an outlet box, an opening in said strap in register with the plate opening, a pilot lamp receptacle including an insulating body and a threaded metal thimble, said thimble fitting through both said openings and having a flange in back of the strap and engaging on the body, means securing the strap and body together to support the body, lamp contacts in said body, a lamp engaging said contacts and projecting beyond the front of said plate, and a lamp hood screwed over said thimble.

2. Electric wiring apparatus including in combination, a perforated mounting strap adapted to be secured across the front of an outlet box, a face plate having an opening therein and secured to said strap, a pilot lamp receptacle including a metal thimble extending through both strap and plate, and an insulating body and means securing the body to said strap, a flange on the thimble positioned between the strap and body, lamp contacts in said body, a lamp extending through the plate, thimble and strap and engaging said contacts, and a lamp hood engaged over said thimble in front of said plate.

3. A pilot light for use with a wall plate having an aperture smaller than the maximum diameter of the pilot lamp including in combination, an insulating body having lamp receiving contacts, means to support the body behind the wall plate, a thimble passing through the aperture in said wall plate, means on said thimble engaged by said body supporting means to position the thimble, a lamp passing through said thimble and engaging said contacts to be held thereby and a lamp hood engaging the thimble and enclosing the portion of the lamp projecting beyond the wall plate.

4. A pilot light assembly including in combination, an apertured face plate, an insulating body including lamp contacts, common means to support the face plate and body from an outlet box, a hood on the opposite side of the face plate from the body to cover the aperture in the face plate and a device for supporting said hood directly from said common means.

5. A pilot light assembly including in combination, an apertured face plate, an insulating body including lamp contacts, common means to support the face plate and body from an outlet box, a lamp engaging said contacts and extending through said aperture, a hood covering the portion of lamp projecting beyond the face plate, and hood supporting means extending from the hood through the face plate and supported by said common means.

6. A pilot lamp receptacle comprising a block of insulation having an opening therethrough, a portion of which is of a size to accommodate the lamp base and the adjacent portion of the bulb, a second and larger portion of said opening accommodating a screw shell and center contact grooves in the walls of the larger portion, terminals integral with said contacts and received in said grooves and an insulating cover closing the larger portion of the opening and holding the terminals and contacts in position in the block.

7. A pilot lamp receptacle comprising a block of insulation having an opening longitudinally therethrough, screw shell and center lamp contacts near one end of said opening, a terminal on each contact, lateral passages from the opening to the sides of said block, grooves in the walls of said passages extending longitudinally of the block, each pair of grooves slideably receiving one of said terminals and an insulation cover for the contact end of said opening secured to the block and engaging said terminals and retaining them in position.

8. A pilot lamp receptacle comprising a block of insulation having an opening longitudinally therethrough and a transverse passage at one end intersecting said opening, grooves in the walls of the passage near the ends thereof parallel to the axis of the opening, a contact for the screw shell of the lamp comprising a ring resting on the bottom of the passage coaxial to said opening, a terminal plate in the grooves at one end of said passage and electrically connected to said ring, a terminal plate in the other set of grooves, a contact for the center lamp terminal electrically connected to the second terminal and a plate of insulation secured to and over the passage end of the block and with the terminals closing the passage except to the opening.

9. A pilot lamp receptacle comprising a block of insulation having an opening longitudinally therethrough and a transverse passage at one end intersecting said opening, grooves in the walls of the passage near the ends thereof parallel to the axis of the opening, a contact for the screw shell of the lamp comprising a ring resting on the bottom of the passage coaxial to said opening, a terminal plate in the grooves at one end of said passage and electrically connected to said ring, a terminal plate in the other set of grooves, a contact for the center lamp terminal electrically connected to the second terminal, a plate of insulation secured to and over the passage end of the block and with the terminals closing the passage except to the opening, and means at the opposite end of the block to cooperate with a mounting strap to support the receptacle behind a wall plate.

10. A pilot lamp receptacle comprising in combination, a block of insulation having a lamp receiving opening longitudinally therethrough, a deep groove transverse to said opening and block at one end of the block, the side walls of said groove being channelled near the ends thereof, a terminal plate in each pair of channels and each closing one end of the groove, a lamp contact integral with each terminal, one at the top and the other at the bottom of said groove and an insulation plate secured to the block closing the open side of the groove and holding the terminals in position.

11. A pilot lamp receptacle for use with a face

plate including in combination, a block of insulation having an opening to receive a lamp base, lamp engaging contacts in said block, terminals on said block, a thimble secured to the block coaxial to said opening and having a portion adapted to extend through an opening in a face plate, and a lamp hood removably closing the end of the thimble.

12. A screw shell contact for a lamp receptacle comprising a metal plate of less thickness than the spacing of threads on the lamp base, an opening through said plate for the lamp base having an arcuate side of a radius substantially equivalent to that at the bottom of the lamp base threads, a lug having its inner end at the same radius on the opposite side of the opening and displaced one half thread pitch from the first portion, the remainder of the opening being large enough to clear the thread tops.

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