

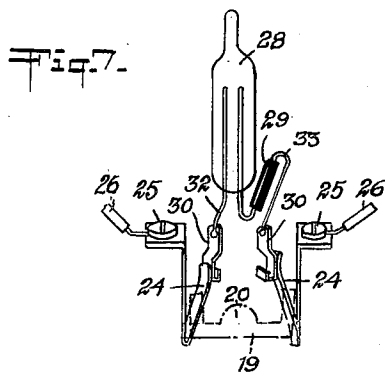
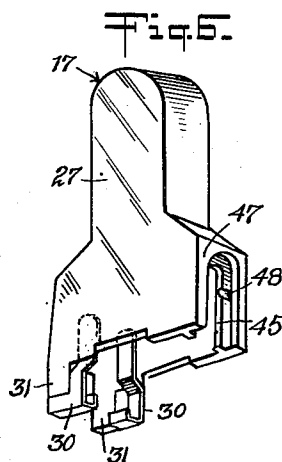
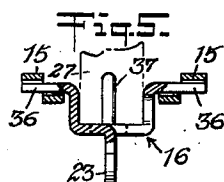
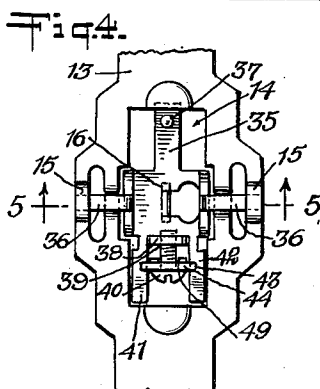
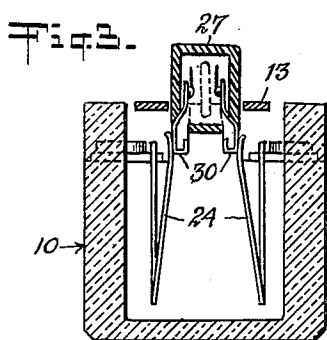
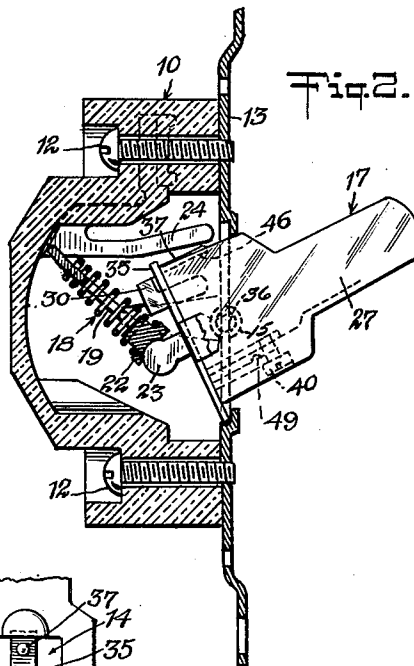
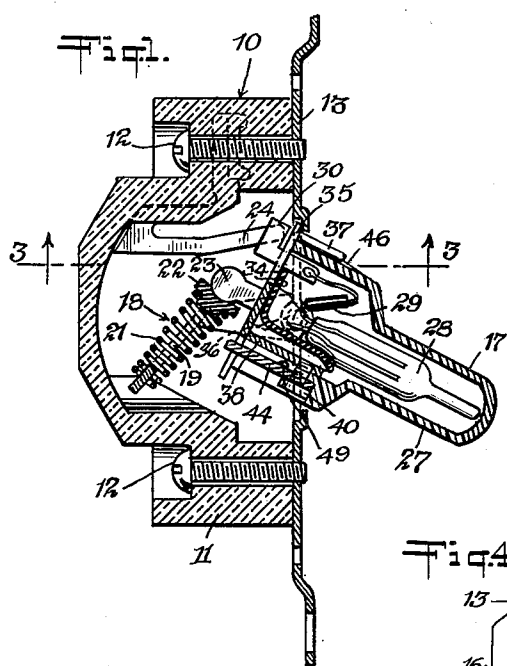
Jan. 17, 1950

H. KAUPP

2,494,560

GLOW SWITCH

Filed April 9, 1947



INVENTOR.

Henry Kaupp

BY

Munn, Liddy & Glaccum
Attorneys

UNITED STATES PATENT OFFICE

2,494,560

GLOW SWITCH

Henry Kaupp, Glendale, N. Y., assignor to The
Roberts Numbering Machine Co., Inc., Brook-
lyn, N. Y.

Application April 9, 1947, Serial No. 740,409

5 Claims. (Cl. 200—172)

1

My device relates to switches and more particularly to an illuminated wall switch.

My main objective was to design such a glow switch that would incorporate many new and unique constructional and safety features resulting in a more attractive and serviceable switch than a similar device now on the market.

The primary objective of my invention was to provide an illuminated switch handle for electrical switches of the wall type in order that a person entering a dark room could quickly determine the location of the switch. The switch handle itself is made from translucent material and acts as a protective covering for the small source of illumination that is mounted therein. The source of illumination consists of a small gas filled bulb of the neon or argon type which is illuminated when the main switch is in the "off" position. Such a bulb consumes a minimum of electricity yet furnishes sufficient illumination to guide a person directly to the wall switch when the room is in a darkened condition. As soon as the wall switch is operated to close the main circuit into which it is wired, the electrical contacts for the neon bulb are automatically disconnected, extinguishing the illumination from this source. Even if connected in parallel arrangement with the main switch circuit, the neon lamp would extinguish when the switch was placed in the "on" position due to the high resistance of the neon lamp circuit. This would cause the current to seek the path of least resistance which would be through the lamp furnishing the source of illumination for the room.

Another advantage that my switch has over similar types is that the translucent handle containing the neon bulb may be readily removed without the necessity of removing the switch wall plate. Due to the unique method of mounting the handle member to the switch mechanism, the pivotal pin usually present in this type of device for securing the handle to the main switch mechanism has been eliminated, facilitating the removal of the handle.

Another feature is that the handle which forms the translucent housing for the bulb is constructed as a single unit comprising the translucent housing, the bulb and insulated plate and the electrical contacts for the bulb circuit. This enables the entire handle member to be removed and replaced in the event the bulb burns out without the necessity of replacing a new bulb and completing wire connections by soldering or other similar means. It is planned to produce these replaceable units at a very low cost enabling any

2

home owner to quickly and efficiently install a new unit without the necessity of engaging the services of an outside repair man.

As an added protective feature, a pin acts as a protective device when the handle unit has been removed. The pin is positioned in the center of the aperture of the wall plate and when the handle member has been removed it prevents anyone from inadvertently placing his finger in this aperture and touching the electrical contacts.

Further advantages and unique features of my device will be apparent as I proceed with the description.

With reference to the drawings—

Fig. 1 shows a side elevation in section of a wall switch mechanism incorporating my device;

Fig. 2 shows a side elevation partially in section;

Fig. 3 shows a sectional view on line 3—3 of Fig. 1;

Fig. 4 shows a partial front elevation with the switch handle removed;

Fig. 5 shows a sectional view on line 5—5 of Fig. 4 showing the pivotal bracket;

Fig. 6 shows a perspective view of the switch handle; and

Fig. 7 shows a perspective view of the neon bulb and its electrical connections.

In Fig. 1, I show a sectional side elevation of a snap-type wall switch 10 which is equipped with conventional hollow porcelain housing 11 within which is mounted the toggle switch mechanism 18. Affixed to the front of the porcelain housing 11 by means of screws 12 is a metal hanger bracket 13. Located in the center of the bracket 13 is a rectangular opening 14. Positioned on opposite sides of the opening 14 are bearing mounts 15 which are formed from the bracket 13 and which support the pivotal bracket member 16 to which the handle member 17 is mounted and secured.

The toggle switch mechanism 18 is of the conventional type consisting of a U-shaped electrical contact member 19 that is pivoted to the sides of the porcelain housing 11. Projecting upward from the bottom of member 19 is a raised portion 20 that engages one end of a coil spring 21. Positioned on the opposite end of the coil spring 21 is a cup shaped disc 22 into which the knob 23 projects. Knob 23 is an integral part of the pivotal member 16 to which the handle 17 is secured and manipulation of the handle 17 to the "on" and "off" positions causes the U-shaped member 19 to alternately make and break the electrical circuit between the stationary spring

3

contacts 24. The contacts 24 are secured to the terminals 25 and the electrical conductors 26 for the circuit into which the switch is to be wired are secured to the terminals 25.

The handle unit 17 consists of a hollow translucent housing 27 for the neon lamp 28 which is mounted snugly within the housing 27. Also enclosed in this housing is a resistor 29 which is connected to one terminal of the lamp 28. A pair of contacts 30 are shaped so as to make engagement with projections 31 of the housing 27. To the contacts 30 are attached the wires 32 and 33 for the lamp 28. Shaped around the bottom of the lamp 28 and assisting to hold the lamp in its position in the housing is an insulated plate 34.

The pivotal bracket 16 to which the handle member is secured is comprised of a base 35 the sides of which are bent upward at right angles and then outward to form pivot arms 36. The pivot arms 36 are supported by the bearing mounts 15. A portion of the center part of the base 35 is cut out and bent downward at right angles to form the knob 23 that engages in the cup shaped disc 22 of the toggle switch mechanism 18. Mounted in the center of the upper portion of the plate 35 is a pin 37. The center portion of the lower extremity of the plate is bent upward at right angles and parallel to the axis of the pin 37 to form a projection 38. The projection 38 is equipped with a hole 39 that is adapted to receive screw 40. The sides 41 and 42 of the lower extremity of the plate 35 are equipped with notches 43 into which one end of the support plate 44 fits. The support plate 44 is held in spaced relation to the projection 38 by having one end held in place by the notches 43 while the opposite end is secured to the projection 38 through screw 40.

Figure 6 shows a perspective view of the handle unit 17 illustrating how the lamp contacts 30 fit over the projections 31 of the housing 27. At the opposite end from the contacts 30 and located inside the housing 27 a short distance from the base 47 is a U-shaped flange 45 integral with and forming part of the housing 27.

As shown in Fig. 1 when the handle member 17 is secured to the pivotal bracket 16 through screw 40, the flange 45 is engaged on one side by the projection 38 and on the opposite side by the support plate 44. Through the screw 40 the projection 38, the flange 45 and the support plate 44 are held tightly together resulting in the handle member 17 being firmly secured to the pivotal bracket 16. As shown in Fig. 1, when the handle member 17 is in the down or "off" position, the lamp contacts 30 are contacting the stationary spring contacts 24 resulting in the lamp circuit being energized. It should be noted that in this position the U-shaped contact member 19 of the main switch is held at the bottom of the porcelain housing 11 by the toggle switch mechanism 18 and the main circuit is only receiving the limited amount of electrical current that is diverted through the neon bulb which is insufficient to light the main source of illumination for the room. When the handle member 17, as shown in Fig. 2, is moved upward to the "on" position, the contacts 30 are moved out of engagement with the stationary contacts 24 and the neon lamp circuit is de-energized. At the same time, this operation of the toggle switch mechanism 18 causes the U-shaped contact 19 of the main circuit to bridge the gap between the stationary contacts 24, resulting in the main circuit being energized. The neon light, when lit, serves to indicate that the main circuit is completed and, therefore, if the switch is moved

4

to the "on" position the lamp supplying the room illumination or whatever other load that is connected to the switch will be energized. If the neon bulb in the handle does not light when the switch is in the "off" position, it is probable that the lamp supplying illumination is defective.

As shown in Fig. 2, when the handle is in the "on" position, the screw 40 securing the handle member 17 to the bracket 16 is exposed and by slightly loosening this screw the compression holding the handle member 17 to the bracket 16 is released and the handle member 17 can then be readily removed. In the event the screw 40 becomes loose, the handle 17 will be retained in position by projections 49 on the plate 44 which engage in notches 48 of the flange 45. In the event the bulb is defective or has burned out, a new handle may be easily secured in place by anyone who can manipulate a screw driver. During this changing no terminals or other electrical contacts are exposed and the change may be made with a maximum of safety. In replacing a unit, the pin 37 will engage in the groove 46 in the top of the housing 27. When the handle member 17 is in place, it is merely necessary to tighten up on the screw 40 which firmly secures the handle member 17 to the pivotal bracket 16.

While the invention has been described in detail with respect to a present preferred form which it may assume, it is not to be limited to such details and form since many changes and modifications may be made in the invention without departing from the spirit and scope of the invention in its broadest aspects. Hence, it is desired to cover any and all forms and modifications of the invention which may come within the language or scope of any one or more of the appended claims.

I claim:

1. In combination with a toggle switch mechanism having a housing, a pivotal bracket member to which a handle is detachably mounted, said bracket having a depressed center portion with a knob projecting downwardly therefrom, a projection formed at right angles to said center and equipped with means to secure said handle, a pin extending at right angles from said center portion and adapted to position in a groove in the top of said handle and pivotal means connecting said bracket to the housing of said switch mechanism.

2. An illuminated handle member for actuating a toggle switch mechanism, said member comprising a hollow translucent housing equipped with a groove and detachably mounted to said switch mechanism through a pivotal bracket member equipped with a projection, a pin, and a downward projecting knob, said pin adapted to engage in said groove, said knob operatively connected to said switch mechanism, said handle secured by screw means to said projection, an electrical bulb disposed in said housing and an electrical circuit for said bulb comprising electrical contacts secured to said housing and wired to said bulb, said switch mechanism equipped with stationary electrical contacts, said switch mechanism being operable to make and break the circuit between said stationary contacts, said bulb circuit being energized when said circuit is interrupted by the switch mechanism and being de-energized when said circuit is closed by the switch element.

3. An illuminated handle member for actuating a toggle switch mechanism, said member comprising a hollow translucent housing equipped with a groove and detachably mounted to said switch mechanism through a pivotal bracket

5

member, said bracket having a depressed center portion with a knob projecting downwardly therefrom, a projection formed at right angles to said center portion and equipped with means to secure said handle, a pin extending at right angles from said center portion and adapted to position in said groove of said housing, pivotal means connecting said bracket to the housing of said switch mechanism, said knob operatively connected to said switch mechanism, an electrical bulb disposed in said housing, an electrical circuit for said bulb comprising electrical contacts secured to said housing and wired to said bulb, said switch mechanism equipped with stationary electrical contacts, said switch mechanism being operable to make and break the circuit between said stationary contacts, said bulb circuit being energized when said circuit is interrupted by the switch mechanism and being de-energized when said circuit is closed by the switch element.

4. In combination with a toggle switch mechanism, a removable handle comprising a hollow translucent housing, the walls of one side thereof defining a U-shaped opening, a flange adjacent said opening, a pivotal bracket member operatively connected to said switch mechanism, a pair of members on said bracket engaging said flange and a screw extending through said members and governing the compression on said flange.

5. An illuminated handle member for actuating a toggle switch mechanism, said member comprising a hollow translucent housing, the walls of one side thereof defining a U-shaped opening, a

6

flange equipped with notches adjacent said opening, a pivotal bracket member operatively connected to said switch mechanism, a pair of members on said bracket engaging the flange, projections on one of said members adapted to position in said notches, a screw extending through said members and governing the compression on said flange, an electrical bulb disposed in said housing, electrical contacts secured to said housing and wired to said bulb, said switch mechanism equipped with stationary electrical contacts, said switch mechanism being operable to make and break the circuit between said stationary contacts, said bulb circuit being energized when said circuit is interrupted by the switch mechanism and being de-energized when said circuit is closed by the switch mechanism.

HENRY KAUPP.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
924,463	Hofmann	June 8, 1909
1,985,276	Brach	Dec. 25, 1934
2,069,427	Stott	Feb. 2, 1937
2,134,696	Bigman	Nov. 1, 1938
2,153,479	Pastrick	Apr. 4, 1939
2,214,317	Bash et al.	Sept. 10, 1940
2,246,613	Bigman	June 24, 1941