

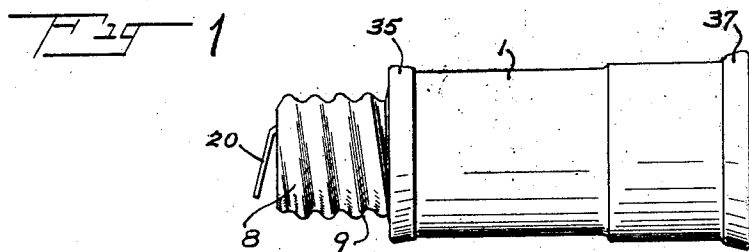
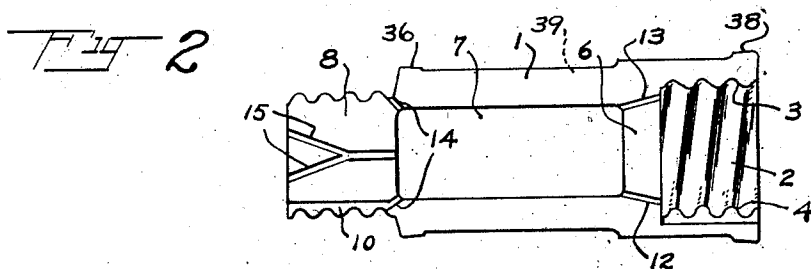
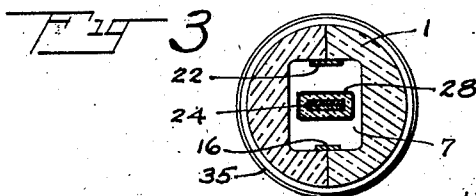
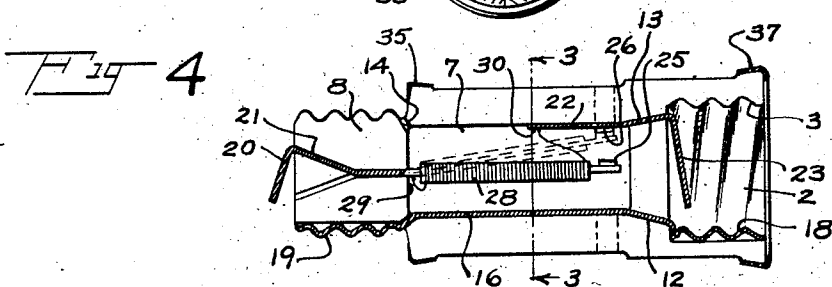
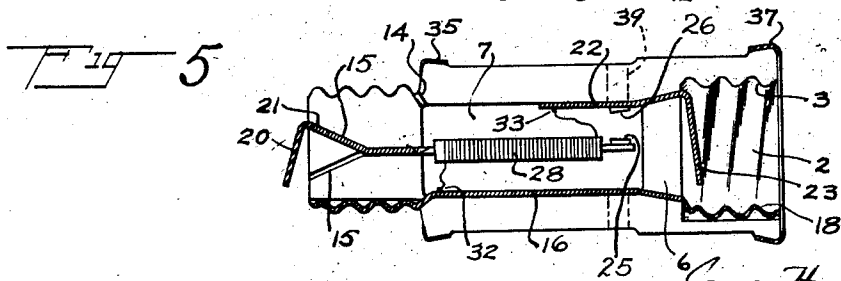
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J. H. BETTS

SOCKET PLUG SWITCH

Filed June 30, 1924



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UNITED STATES PATENT OFFICE.

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SOCKET-PLUG SWITCH.

Application filed June 30, 1924. Serial No. 723,128.

This invention relates to socket plug switches and has for its object to improve upon structures heretofore built by reducing the number of parts and simplifying the construction whereby to produce a better article at a lower price.

A well known socket plug flasher switch on the market comprises a porcelain body carrying interior and exterior screw shells at the respective ends, an intermediate chamber containing a thermostatic switch, an exterior insulating shell, and the conventional shell and terminal fastening screws, etc. Such a construction is expensive to manufacture and assemble and as heretofore manufactured contains unnecessary and expensive adjusting means.

I have found that a material simplification and cheapening can be effected in such class of switch device, and adjusting means eliminated as unnecessary, by constructing the insulating body in molded sections to hold the metal conductors and switch parts without fastening screws, and fastening the sections together for final assembly. In such a structure, the conventional interior and exterior screw shells are eliminated in favor of conducting strips corrugated to engage or be engaged by a standard socket, or plug or lamp base, respectively.

According to a specific form of the invention, two halves of insulating material are molded with screw plug and socket ends, an intermediate switch chamber, and slots for receiving and holding bent flat strip conductors. Assembling is effected by laying the flat strip conductors in the slots of one half, applying the other half to completely hold and enclose the strip conductors and switch parts, and fastening by screws, or preferably by spinning outside rings on the halves.

In the accompanying drawings,

Fig. 1 is a perspective view,

Fig. 2 is a longitudinal section showing one of the body portions removed,

Fig. 3 is a transverse section on the line 3-3 of Fig. 4,

Fig. 4 is a diagram showing a series controlled circuit, and

Fig. 5 is a diagram showing a shunt controlled circuit.

Referring to Fig. 2, each body half 1 consists of a socket end 2 having molded

screw threads 3 to receive a threaded plug or lamp base, with at one side a longitudinal slot 4 intersecting the screw threads. The socket portion is closed by a transverse wall 6 separating the central thermostat switch chamber 7, which as herein shown, is generally rectangular in form. At the other end of the body 1 is a plug portion 8 having molded screw threads 9, which latter are slotted as at 10 similarly to slot 4. Molded or cut in wall 6 of the insulating body are diagonal slots 12, 13, and through the plug portion 8 is a diagonal slot 14 and a slot 15, here shown as partly straight and partly diagonal. In slots 12, 14 and extending through chamber 7 is a line conductor 16 preferably composed of a flat strip bent as shown to engage the slots and be held therein. The ends of strips 16 as at 18, 19 are rolled or corrugated as shown to align with the respective screw threads 3, 9, and to spring into and out of slots 4, 10 in order to give the necessary frictional contact with the plug or lamp base screwed into threads 3 and the socket screwed onto threads 9, respectively. Center contact at one end is made by a conductor 20 having bent end 21 laid in slot 15 and at the other end by a bent conductor 22 laid in slot 13 and having a bent end 23. The thermostatic switch 24 is interposed between conductors 20 and 22, being preferably carried by conductor 20 as shown, and composed of two metals, as steel and brass so arranged as to cause contact 25 to vibrate toward and from contact 26 on conductor 22. In Fig. 4 the side of the strip toward contact 26 is steel and the other or lower side is brass. The heater 28 is connected at 29 to conductor 20 and thence by loose connection across contacts 25, 26 to conductor 22 at 30.

In Fig. 4 the heater coil is thrown in series with the line when contacts 25, 26 are open, thus causing expansion of the brass side to close contacts 25, 26 to light the lamp and also short circuit the heater 28, which allows the strip to cool off and open the contacts.

In Fig. 5 the upper side of the thermostat is of brass and the lower side is of steel. The heater is here connected at 32 to line conductor 16 and at its other end to conductor 22 at 33. In this form the heater is directly across the line when the contacts 25,

26 are closed, thus causing the heater to heat up and separate contacts 25, 26 to light the lamp by reason of the expansion of the upper or brass side of the thermostat. This disconnects the heater, causing the strip to cool off and again close contacts 25, 26.

The preferable construction is to make the two body portions 1 substantially identical, and to use flat conductor strips which can be partly inserted into the holding slots and flexed or sprung so as to frictionally hold therein. The other half is then put over to complete the engagement. Final assembling is effected by spinning a ring 35 on shoulder 36 adjacent the plug end and ring 37 on end shoulder 38 adjacent the socket end. As herein shown no adjustable contact need be provided, as same is not found necessary after adjustment in the factory, but if adjustment is desired it is only necessary to provide a hole as shown in dotted lines at 39, Fig. 2, with a contact screw on the stationary conductor 22 to be adjusted by screw driver relatively to contact 25.

It is to be understood that the invention is not to be restricted to making the body of two halves as specifically shown herein, nor to making the conductors of flat wires, it being within the scope of this invention to have the conductors wholly mounted in slots in one body piece and the other serving as a holding means and cover, but it is considered that the greatest economy is obtained by making the two body portions practically identical and using conductors and slots partly in each, in combination with the external holding rings. Instead of holding rings it is of course understood that the two halves may be otherwise fastened together as by screws or riveting. If a thermostat not responsive to external temperature variations is desired, one such as shown in Kelley Patent #908,679, January 15, 1909 may be used, the holding slots and conductors being modified accordingly. By the construction described it is seen that fastening screws, screw shells, etc., heretofore used in small flashers of this type are eliminated, inasmuch as ample contact is secured by the corrugated resilient terminals 18, 19.

It will be seen that in assembling the conductors simply have to be laid into the slots and one or both of the connections 29, 39 in Fig. 4 made by soldering, or both connections 32, 33 in Fig. 5.

Various modifications and changes may be made in the specific construction and details herein shown without departing from the scope of the appended claims.

I claim:

1. An electric switch device comprising longitudinal body sections of insulating material formed when assembled to embody at one end a screw plug and at the other a screw socket, said sections enclosing a cen-

tral switch chamber, at least one of said body sections formed with interior slots to receive and hold conductors passing into and through the central chamber to provide center and side contacts for each screw end and switch connections in the chamber, and means for fastening the sections together.

2. A flashing socket plug comprising two sections of insulating material each formed at one end as a partial screw plug and at the other as a partial screw socket and with an intermediate chamber, said portions when assembled completing the respective screw plug and socket, at least one of said halves being formed with conductor receiving and holding slots, conductors inserted and held in said slots and chamber comprising internal and external end and side contacts and a thermostatic switch, and means for securing the sections together.

3. An electric switch device comprising similar longitudinal body sections of insulating material formed when assembled to embody at one end a screw plug and at the other a screw socket, said sections enclosing a central switch chamber, said body sections formed with interior slots to receive and hold conductors passing into and through the central chamber to provide center and side contacts for each screw end and switch connections in the chamber, and means for fastening the sections together.

4. An electric switch device comprising similar longitudinal body sections of insulating material formed when assembled to embody at one end a screw plug and at the other a screw socket, said sections enclosing a central switch chamber, said body sections formed with interior slots to receive and hold resilient strip conductors passing into and through the central chamber to provide center and side contacts for each screw end and switch connections in the chamber, and means for fastening the sections together.

5. A flashing switch device comprising a hollow body of insulating material formed at one end to contact with a socket and at the other end to receive a plug or a lamp base, said body having an intermediate chamber, a line conductor in the form of a strip extending from end to end through said body and chamber and exposed at the ends of the body to form contacts, said body being formed with slots to frictionally engage and hold said strip in position, a center terminal conductor exposed at each end of the body, and a thermostatic switch in said chamber having connections with said conductors so as to periodically flash a lamp when in circuit between a source of supply and a lamp.

6. A flashing switch device comprising a hollow body of insulating material formed at one end to connect with a socket and at the other end to receive a plug or lamp base, said body having an intermediate chamber

carrying a thermostatic switch, said body interiorly formed with conductor slots, conductors frictionally held in the slots and exposed at the ends of the body to provide line and lamp terminals, and a thermostatic switch in said chamber having connections with said conductors such as to periodically flash a lamp when in circuit between a source of supply and a lamp.

Signed at New York in the county of 10
New York and State of New York this 25th
day of June A. D. 1924.

JAMES HOMER BETTS.