Oct. 25, 1927. 1,646,964

C. L. HOPKINS

SWITCH MECHANISM

Filed July 31, 1924

Fig. 1

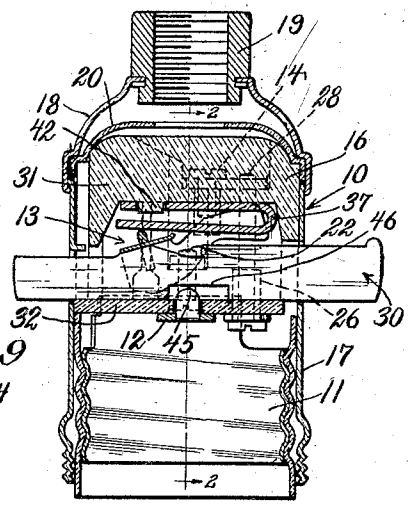


Fig. 7

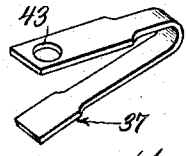


Fig. 8

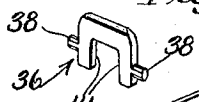


Fig. 9

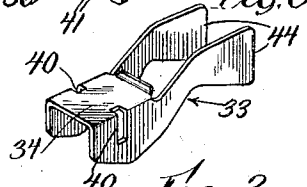


Fig. 5

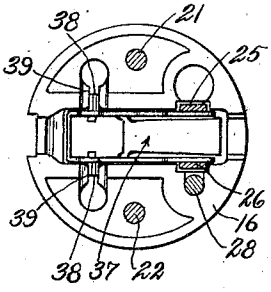


Fig. 3

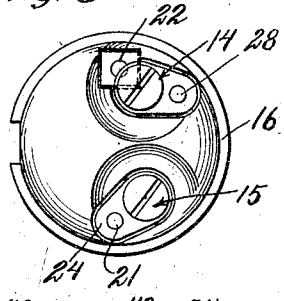


Fig. 2

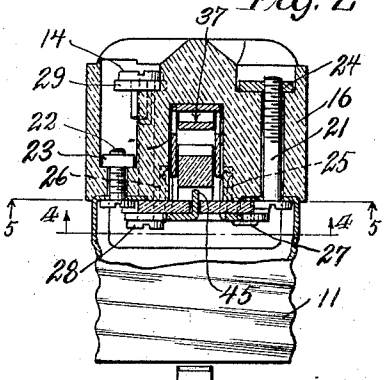


Fig. 6

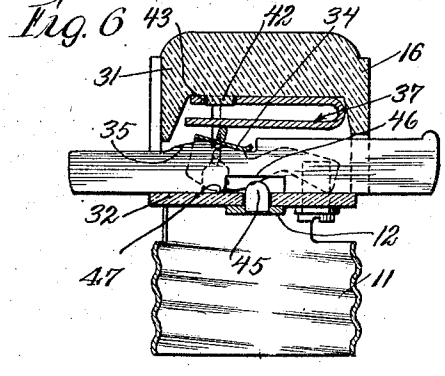
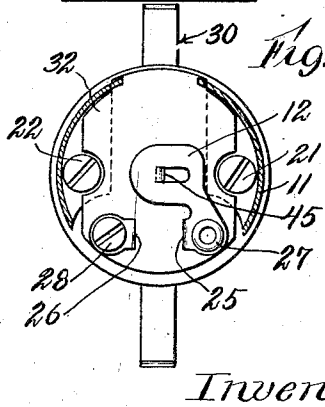


Fig. 4



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Attys.

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UNITED STATES PATENT OFFICE.

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SWITCH MECHANISM.

Application filed July 31, 1924. Serial No. 729,210.

My invention relates to switch mechanisms and more specifically to switch mechanism suitable for electric lamp sockets.

One of the objects of my invention is to provide a simple switch mechanism which will be quick in action and durable and efficient in use.

Further objects will appear from the description and claims.

In the drawings, in which an embodiment of my invention is shown,

Figure 1 is an axial section of a switch socket;

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

Fig. 3 is a top view of the interior socket construction.

Fig. 4 is a section on the line 4—4 of Fig. 2;

Fig. 5 is a section on the line 5—5 of Fig. 2;

Fig. 6 is an axial section on the same plane as Fig. 1, showing the switch in "on" position;

Fig. 7 is a perspective of a switch spring;

Fig. 8 is a perspective view of the bearing foot; and

Fig. 9 is a perspective view of the oscillatable switch blade member.

Referring to the drawings in detail, the construction shown therein comprises a sheet metal casing 10, shell and contact members 11 and 12, switch mechanism 13, wiring terminals 14 and 15 and an insulating base 16 on which the contacts, switch mechanism and wiring terminals are mounted.

The casing 10 comprises a cylindrical shell member 17 and a cap member 18 having a readily detachable connection with the shell and secured to the internally threaded nipple 19. An apertured insulating fiber cap 20 is placed between the cap 18 and the insulating base 16.

The threaded shell contact 11 is held on the insulated base 16 by means of screws 21 and 22 (Fig. 2). The screw 22 is threaded into a nut 23 seated in the recess in the insulated base. The screw 21 is threaded into the binding plate 24 of the wiring terminal 15 and thus serves not only to hold the contact in place but also to electrically connect it with the wiring terminal.

The switch mechanism effects a double break in series between the wiring terminal 14 and the center contact member 12. For this purpose, the switch mechanism is provided with a pair of fixed contact members 25 and 26. The contact member 25 is formed as an integral part of a sheet metal stamping member which conprises also the center contact member 12. This sheet metal member is held in place on the insulating base by means of the eyelet 27.

The other switch contact member 26 is secured in place on the insulating base and electrically connected with the wiring terminal 14 by means of a screw 28 threaded into the binding plate 29.

The switch mechanism further comprises a reciprocable insulating push bar 30 extending through the casing 10 and between the two parts 31 and 32 of the insulating base, an oscillatable switch blade member 33, (Fig. 9) having a bearing plate portion 34 engaged by the cam portion 35 of the push bar, a bearing foot 36 (Fig. 8) secured to the bearing plate portion 34 and a U-shaped yieldable leaf spring bearing plate member 37 (Fig. 7) with which the bearing foot 36 engages and on which it slips back and forth as the push bar 30 is operated. The bearing foot member 37 is held against being carried along with the push bar 30 by means of a pair of trunnions or pintles 38 formed integral therewith and engaging slots 39 in the insulating base. For securing the bearing foot member 36 to the bearing plate portion 34 of the oscillatable member, the oscillatable member is provided with a pair of slots 40 which receive the side portions 41 of the bearing foot member. The U-shaped spring member 37 is positioned by means of a lug 42 on the insulating base which enters a hole 43 formed in the base portion of the spring 37.

The assembly of the switch construction is very simple. The spring 37 is slipped into place, the opening 43 receiving the boss 42. The side portions 41 of the bearing foot are slipped into the slots 40 of the oscillatable switch member and this sub-assembly is then slipped into place in the insulating base, the pintles 38 entering the slots 39. The insulating base with the contacts and switch mechanism in place thereon is then slipped into place in the casing or shell member 17. The push bar 30 is then put in place, holding the parts previously assembled in position.

As the push bar 30 is operated, the crest

of the cam 35 rides along the bearing plate portion 34 and as the crest passes the point of engagement of the bearing foot portion 36 with the yielding member 37 the bearing plate portion 34 will be caused to oscillate and as this will cause a slip of the bearing foot member on the yielding member 37 this oscillation will be very rapid, causing a quick snap action of the oscillatable switch contacts 44 which cooperate with the stationary switch contacts 25 and 26 to control the circuit therebetween.

The push bar 30 is held in position by means of a lug 45 struck up from the center contact member 12 and entering the notch 46 on the push bar.

The lug 45 forms a spring detent for holding the push bar in position, as the center contact member 12 will yield under pressure. One end of the notches 46 is inclined, as indicated at 47, so that when sufficient pressure is exerted on the push bar this inclined end of the slot will force the lug 45 downwardly against the spring action of the center contact member sufficiently to permit the complete withdrawal of the push bar. Of course, when a lamp is screwed into the socket it will hold the center contact against any yielding spring action and will consequently prevent any accidental withdrawal of the push bar.

The circuit is from the wiring terminal 14 through the screw 28, switch contact 26, oscillatable switch contacts 44, stationary switch contact 25, center contact member 12, shell contact 11, and screw 21 to the wiring terminal 15.

While I have shown but one form of my invention, it is obvious that it may be embodied in other forms covered and defined by the claims.

I claim:

1. A switch construction comprising an oscillatable bearing plate, a switch blade carried thereby, a bearing foot secured to said plate and offset from the plane thereof, a yieldable bearing plate slidably engaged by said bearing foot and a cam member having a crest slidable along said oscillatable bearing plate to cause said oscillatable bearing plate and foot to oscillate with a snap action on said yieldable plate.

2. A switch construction comprising an oscillatable bearing plate, a switch blade carried thereby, a bearing foot secured to said plate and offset from the plane thereof, a yieldable leaf spring bearing plate slidably engaged by said bearing foot, and a cam member having a crest slidably on said oscillatable bearing plate to cause said oscillatable bearing plate and foot to oscillate with a snap action on said yieldable plate.

3. A switch socket construction comprising a casing, receptacle contacts housed by said casing, and mechanism for controlling the circuit comprising an oscillatable bearing plate, a switch blade carried thereby, a bearing foot secured to said plate and offset from the plane thereof, a yieldable leaf spring bearing plate slidably engaged by said bearing foot, and a push bar extending transversely through said casing and provided with a cam member having a crest slidable along said oscillatable bearing plate to cause said oscillatable bearing plate and foot to oscillate with a snap action on said yieldable plate.

4. A switch socket comprising a sub-assembly, including (1) an insulating base, (2) shell and center contacts mounted on said base and (3) wiring terminals mounted on said base, a casing for housing said sub-assembly, switch mechanism for controlling the circuit, including a push bar extending through said casing and serving to hold said sub-assembly in said casing, said push bar being removable laterally to permit removal of said sub-assembly from said casing, said center contact being of spring material and provided with means movable therewith for holding said push bar in position and being yieldable to permit withdrawal of said push bar.

In witness whereof, I have hereunto subscribed my name.

CHARLES L. HOPKINS.