Aug. 28, 1928. 1,682,599

G. M. CONDIT

SWITCH SOCKET

Filed May 18, 1926

Fig. 1.

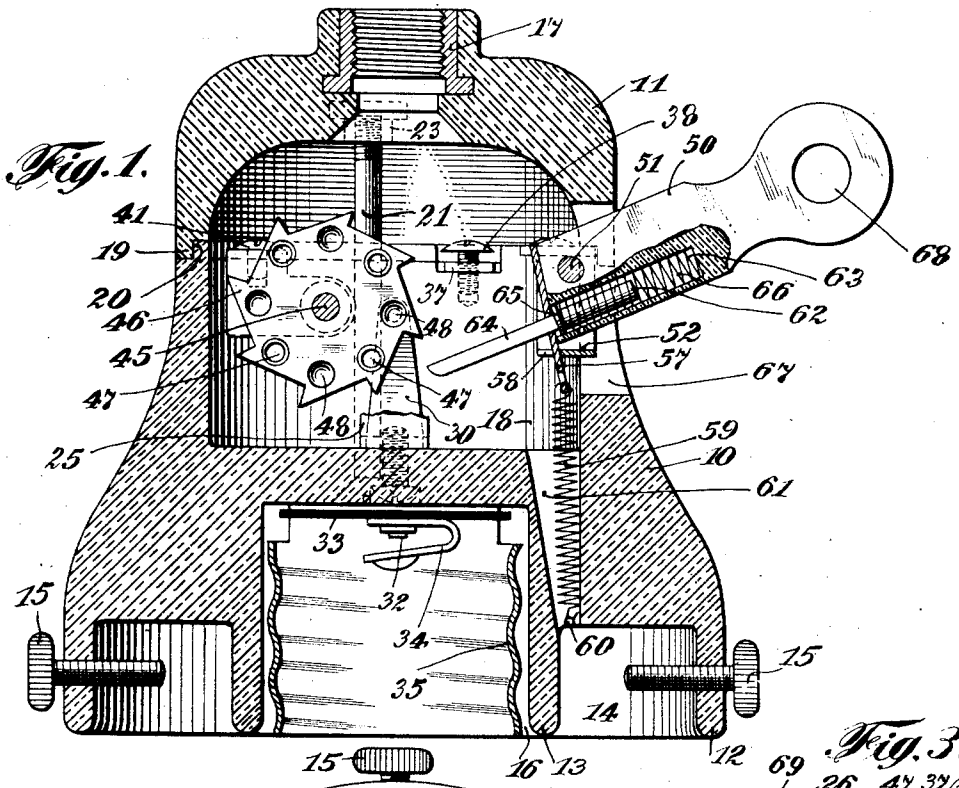


Fig. 2.

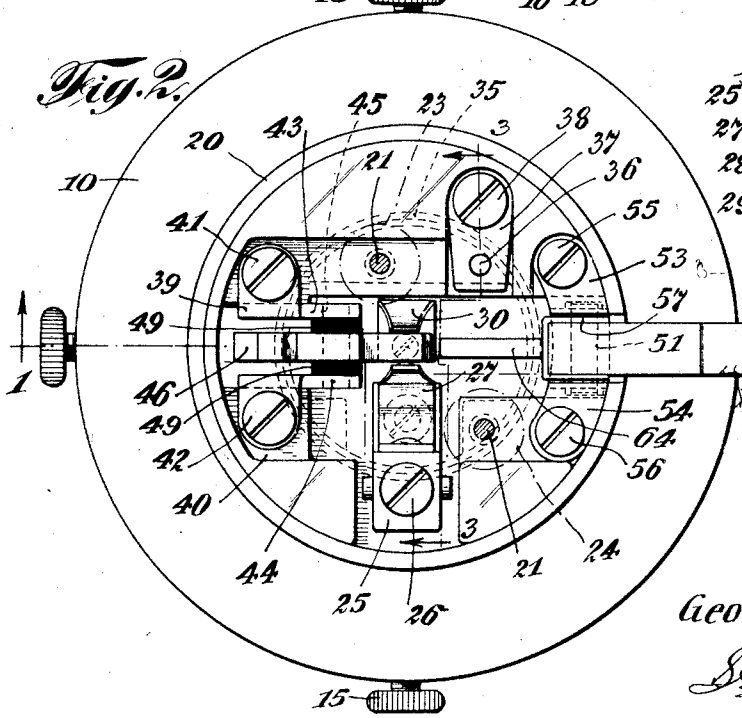
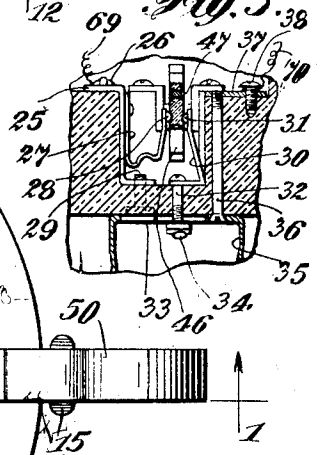


Fig. 3.



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SWITCH SOCKET.

Application filed May 18, 1926. Serial No. 109,818.

This invention relates to a switch socket of the type adapted to be used in conjunction with lighting fixtures for receiving an electric lamp bulb whether associated with a shade or used without a shade. I am aware that heretofore switch sockets for this purpose have been constructed in various manners and to be operated by numerous types of switches. In these switch sockets, however, as heretofore constructed, there is a likelihood of short circuits which as will be understood is disadvantageous from many standpoints. The object of my present invention is the provision of a simply constructed substantially short circuit-proof switch socket, and to this end the same is preferably constructed to include a body member of suitable insulating material within which the operating parts of the switch and the lamp socket are contained, as will be hereinafter more particularly described.

In the drawing Figure 1 is a section on line 1—1, Fig. 2.

Fig. 2 is a plan showing the cap removed to illustrate the manner in which the operative parts are placed within the body member, and

Fig. 3 is a sectional elevation showing the arrangement of the contact devices and taken at right angles to the position of these parts as shown in Fig. 1, on line 3—3 Fig. 2.

In the form of the invention as illustrated in the drawing, the switch socket made in accordance therewith comprises a shell including a body member 10 and a cap 11 therefor. These parts are made of any suitable insulating material. As illustrated, the body member 10 is provided at one end with a peripheral flange 12 and a concentrically disposed circular rib 13 providing for an intermediate annular space 14 for the reception of a lamp shade which may be secured in position therein by means of set screws 15 or otherwise. This construction provides for a centrally disposed space or recess 16 adapted to receive a lamp socket as hereinafter described. The cap 11 is preferably fitted with a tapped bushing 17 by means of which the switch socket may be suitably connected to a fixture, although as will be understood the switch socket may be suitably attached to a fixture in any desired manner. The body member 10 and the cap 11 are recessed to provide a space or chamber within the same as indicated at 18 to receive and contain the operating parts of the switch as hereinafter described. Also as illustrated, the body member at the end opposite the flange 12 is provided with a shoulder 19 and the adjacent end of the cap 11 with a flange 20 adapted to fit over the shoulder 19, and the cap may be secured in position on the body member by means of screws 20 and 21 which are turned down in nuts 23 and 24 that may be molded into place in the cap 11. It will be understood that this means of connecting the cap to the body member is only illustrative, as other similar and equivalent means may be employed for this purpose.

Secured in the body member there is a terminal bracket 25 provided with a binding screw 26. Riveted or otherwise connected to the terminal bracket 25 there is a spring contact 27 provided at its free extremity with a contact boss 28. The terminal bracket 25 is secured in position by means of a bolt 29 passing through a portion of the body member 10 and the inner end of the terminal contact or otherwise. As indicated in Fig. 3, these members extend and lie within a portion of the chamber 18 in the body member 10. In this chamber and in a position oppositely disposed to the spring contact 27 there is a spring contact 30. At its free end this spring contact 30 is provided with a contact boss 31, and the spring contact 30 as illustrated is secured in position by means of a bolt 32. The bolt 32 passes through the inner end of the spring contact, through a portion of the base of the body member 10, and also through a disk 33 of insulating material placed at the inner end of the recess 16 and has connected thereto the center contact 34 for an electric lamp bulb. The other lamp bulb terminal is the usual screw socket 35 placed within the recess 16 and connected in position therein by a bolt 36, the head of which lies under the insulating disk 33, extends through a portion of the body member 10 and is connected to the other lead terminal 37 which is secured in position thereby. This lead terminal 37 is provided with a binding screw 38 in the usual manner.

Also fixed in position on the body member 10 there are brackets 39 and 40. As illustrated, these are secured in place by screws 41 and 42. The bracket 39 is provided with an extension 43 and the bracket 40 with an extension 44. These extensions lie within the chamber 18 and preferably against oppositely disposed walls defining the same and are fitted with a pin or shaft 45 upon which

there is revolubly mounted a switch ratchet 46. This switch ratchet is fitted in equally spaced positions with a series of conductor members 47 preferably in the form of eyelets which extend transversely through the ratchet and may have their ends turned down so as to secure the same in place, or as will be understood, these conductor members may be of other form and secured in position in any desired manner. Intermediate of the conductor members 47 the switch ratchet 46 is provided with a series corresponding in number with the conductor members of recesses 48 placed in corresponding positions in the opposite sides thereof. The switch ratchet is disposed centrally between the extensions of the brackets 39 and 40 by washers 49 which are preferably made of insulating material and through which as will be understood the pin or shaft 45 extends. The switch ratchet is placed so as to operate between the free ends of the spring contact members 27 and 30, and the contact members 47 carried by the switch ratchet and the intermediate recesses in the switch ratchet are so placed as to be engaged successively by the bosses 28 and 31 at the free ends of these spring contacts whereby when the switch ratchet is in those positions in which one of the conductor members 47 lies intermediate of the bosses 28 and 31 the circuit will be closed from the terminal bracket 25 through the spring contact 27, through the adjacent conductor member 47 to the spring contact 30, thence to the center contact of the lamp bulb, through the lamp to the screw socket 35, through the screw 36 to the opposite terminal bracket 37. Whereas as will be understood when the bosses 28 and 31 engage in any of the recesses 48 intermediate of the conductor members in the switch ratchet the circuit will be broken between the spring contact members 28 and 30. It will also be understood that the boss contacts 28 and 31 by engaging with the conductor members 47 or with the recesses 48 coact therewith to form stops for the switch ratchet to determine the extent of the movement thereof and to maintain the same in any one of its revoluble positions.

The switch ratchet 46 is preferably operated by a lever 50. This lever 50 is mounted on a pin or shaft 51 journaled adjacent its ends in the side members of a bracket 52 fitting within a portion of the chamber 18 in the body member 10. The bracket 52 is secured in position by having the end portions 53 and 54 thereof secured in place by means of screws 55 and 56 or otherwise. Fitting across the inner end and extending along the adjacent sides of the lever 50 there is a yoke 57 through the side members of which the pin or shaft 51 also passes. In the cross member of the bracket 52 there is a notch 58 for the reception of a portion of the yoke 57 whereby this end portion of the bracket acts as a stop for the lever 50 and the parts associated therewith. The lever is maintained in a normal position by means of a spring 59 which extends between the inner or lower end of the yoke 57 and a pin 60 fixed in the body member 10. As illustrated, this spring 59 passes through a recess 61 provided therefor in the body member so that the pin 60 is placed at the base of the annular recess 14 in order to be readily accessible.

The lever 50 is fitted with a plunger 62 which lies within a recess 63 provided therefor in the lever. The inner or forward end of the lever as indicated at 64 is adapted to engage with the teeth of the switch ratchet to operate the same when the lever is actuated. This end of the plunger extends through an aperture provided therefor in the face of the yoke 57 within which and lying within the recess 63 the plunger is provided with a rib 65 which limits the outward movement thereof. The plunger is normally maintained in position with the rib 65 against the inner surface of the yoke 57 by means of a spring 66 which extends from the base of the recess, partially surrounds the plunger, and at its opposite end bears against the rib 65. The lever 50 extends through a notch 67 provided therefor in the walls of the body member 10 and its cap 11 and at its outer end may be provided with an aperture 68 for the attachment thereto of a chain or cord for operating the lever when the same is out of normal reach of the operator.

The usual lead wires from the source of supply are conveyed from the fixture through the bushing 17 and secured to the terminal brackets 25 and 37 as indicated at 69 and 70, and then it will be understood the switch socket may be fixed in position. In the operation of the switch socket when the lever 50 is swung downwardly as viewed in Fig. 1, the inner end of the plunger 62 engages one of the teeth of the switch ratchet so that in completing the downward movement of the lever the switch ratchet is turned a partial revolution sufficiently far to move the switch ratchet to cause the disengagement of the boss contacts 28 and 31 from one of the conductor members 47 to the next pair of recesses 48 or from a pair of recesses to the next conductor members, the switch ratchet being maintained in position by the frictional contact of the said boss contacts and the conductor members or the said recesses. In the return movement of the lever 50 to its normal position the plunger 62 is moved inwardly and the rounded extremity of the end 64 thereof slides over and from the adjacent face of the switch ratchet, as will be readily understood.

I claim as my invention:

1. In a switch socket, a body of insulating material, spaced spring contacts therein, a revoluble member mounted between the said

spaced spring contacts and adapted to make and break an electrical circuit between the same, a lever mounted in the body member, and a plunger yieldingly mounted in the said lever for operating the said revoluble member.

2. In a switch socket, a body of insulating material, spaced spring contacts therein, a revoluble member mounted between the said spaced spring contacts and adapted to make and break an electrical circuit between the same, a lever, means for normally maintaining the lever in an initial position, a plunger, and means for yieldingly maintaining the plunger in an initial position in the said lever, the plunger being adapted upon the operation of the lever to engage the revoluble member to turn the same a predetermined portion of a revolution.

3. In a switch socket, a body of insulating material, spaced spring contacts therein, a ratchet mounted to turn between the said spaced spring contacts, a plurality of spaced conductor members each extending through the ratchet and adapted to cooperate with the spaced spring contacts to close a circuit between the same and also to normally maintain the ratchet in a predetermined position, a lever pivotally mounted in the body member, means for normally maintaining the lever in an initial position, and a plunger movable in the said lever and adapted to engage the said ratchet to impart a partial revolution thereto upon the actuation of the said lever.

4. In a switch socket, a body of insulating material, spaced spring contacts therein, a ratchet mounted to turn between the said spaced spring contacts, a plurality of spaced conductor members each extending through the ratchet and adapted to cooperate with the spaced spring contacts to close a circuit between the same and also to normally maintain the ratchet in a predetermined position, the said ratchet being provided with a plurality of oppositely disposed recesses also adapted to cooperate with the said spaced spring contacts to maintain the ratchet in positions intermediate of those in which the said conductor members in the ratchet are engaged by the spaced spring contacts, a lever pivotally mounted in the body member, means for normally maintaining the lever in an initial position, a plunger carried by the lever, and means for normally maintaining the plunger in an initial position in the lever, the said plunger being adapted upon the operation of the lever to engage with the said ratchet to impart a partial revolution thereto.

5. In a switch socket, a body of insulating material, lead terminals mounted therein, lamp terminals also mounted therein, spaced spring contacts therein, a ratchet mounted to turn between the said spaced spring contacts, conductor members extending in spaced positions between the opposite faces of the said ratchet and adapted to be engaged successively by the said spring contacts for completing an electric circuit, the ratchet being provided with series of oppositely disposed recesses intermediate of the said conductor members to be engaged by the said spaced spring contacts to maintain the ratchet in positions in which the circuit is broken at the said spring contacts, a lever pivotally mounted in the body member, a plunger carried by the lever and adapted upon the operation of the lever to engage the ratchet to impart a partial revolution thereto, and electrical connections between one lead terminal through the said spaced spring contacts to one of the lamp terminals and also from the other lamp terminal to the other lead terminal.

Signed by me this 26th day of April, 1926.

GEORGE M. CONDIT.