

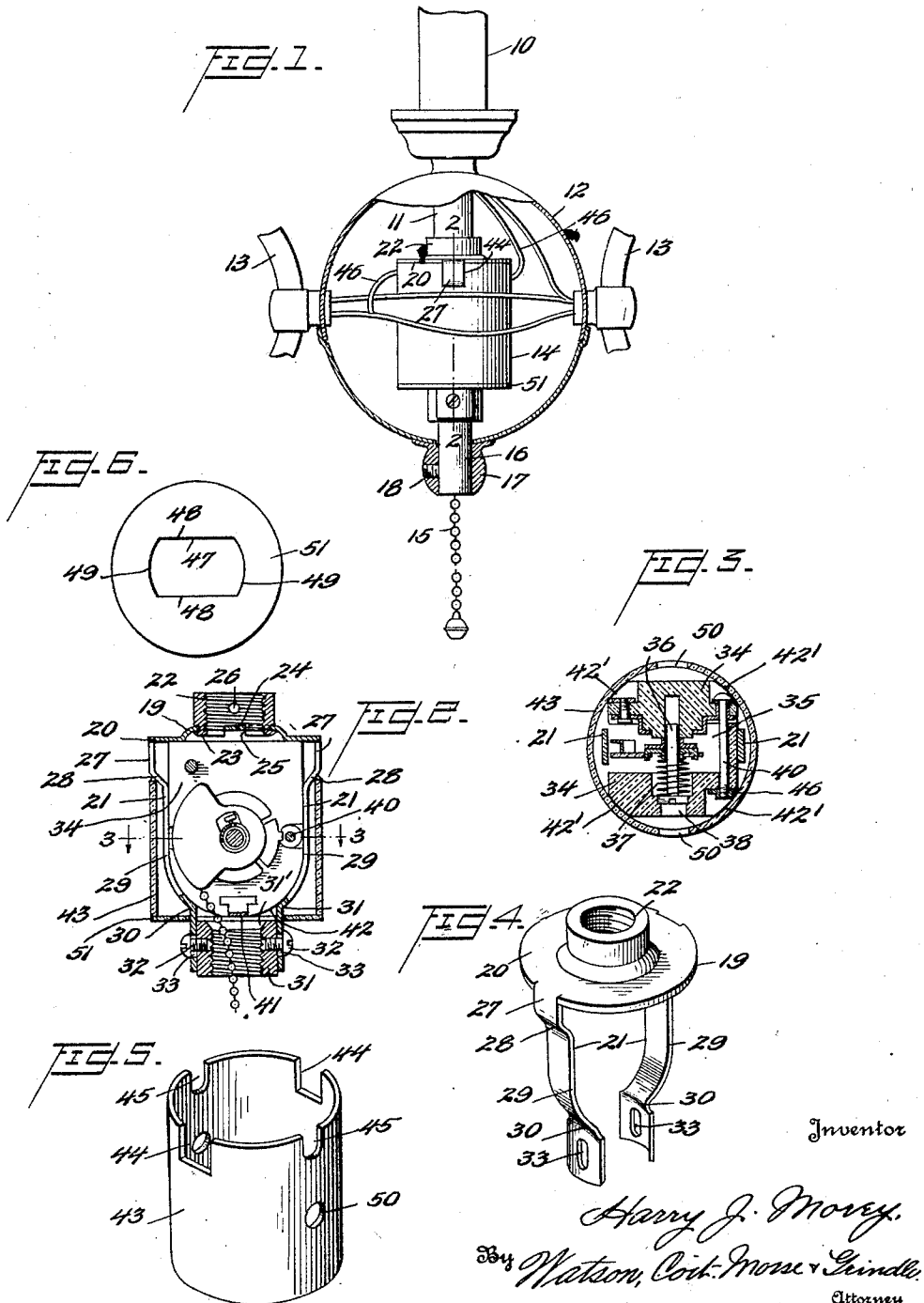
Sept. 4, 1928.

1,682,849

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FIXTURE BODY SWITCH

Filed June 25, 1924



Patented Sept. 4, 1928.

1,682,849

UNITED STATES PATENT OFFICE.

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FIXTURE-BODY SWITCH.

Application filed June 25, 1924. Serial No. 722,398.

This invention relates to fixture body switches and more particularly to that type of fixture body switch adapted to be operated by a pull chain and to be arranged within and supported by a chandelier, electrolier or other type of fixture, although it is evident that it may be used in any location where it is desired to close or open an electric circuit by means of a pull chain type of switch.

It is an object of this invention to provide in a fixture body switch a novel means for supporting the switch within a protective housing.

It is another object of this invention to provide a supporting means for a fixture body switch whereby the switch proper is freely supported and relieved from any strain due to the weight of fixtures which may be attached beneath it.

It is a further object of this invention to provide in a fixture body switch a combined chain guide and means for holding the completed structure assembled.

The invention may be best understood by reference to the accompanying drawings taken together with the following description.

In the drawings:

Figure 1 is an elevation of a switch constructed according to this invention shown in position in a fixture, parts of the fixture being broken away to more clearly illustrate the means of mounting the switch;

Figure 2 is a longitudinal section through the switch taken on the line 2—2 of Figure 1;

Figure 3 is a transverse section through the switch on the line 3—3 of Figure 2;

Figure 4 is a perspective view of the yoke member which carries the switch proper;

Figure 5 is a perspective view of the insulating housing; and

Figure 6 is a plan view of the insulating washer used to close the housing.

In Figure 1 there is shown a common form of electric fixture or electrolier having arranged within the ornamental tube 10 the supporting pipe or conduit 11 which is adapted to carry the weight of the fixture from a hickey or other attaching device mounted in a conduit box or similar device on the ceiling or wall. The upper portion of the canopy 12 is supported from the tube 10 and serves to support the radiating arms 13 which may be of any desired number or style, carrying at their ends the lights. The

wires to supply current to the lights pass between the tube 10 and the pipe 11 and are connected to wires passing through the radiating arms 13, within the canopy 12. It is often desirable to be able to turn off or on all of the lights on a fixture at one time without going to the unwarranted expense of installing wall switches, or where such a switch cannot be readily installed, such as in rewiring old houses, and for this purpose the switch 14 of this invention is shown mounted in the canopy 12, supported from the pipe 11 and having the chain 15 by means of which the switch can be manipulated. This chain can be brought out through a tube such as 16 so that it will hang directly below the canopy 12.

The tube 16 as will be seen by reference to Figure 1 provides means for supporting the lower portion of the canopy 12 and its associated parts by means of the knob or sleeve 17 passing over the tube 16 and being connected therewith by means of a set screw 18. In order to relieve the switch proper from any strain due to supporting this weight, there is provided means to directly connect the tube 16 to the pipe 11 and to allow the switch to float within this means in order to more readily protect it.

This supporting means comprises the metallic structure 19, best shown in Figure 4, and includes the flat top member or disk 20 having depending, from radially opposite sides thereof, the integral arms 21 and having attached centrally thereof and above its surface the internally threaded collar 22. The collar 22 may or may not be an integral part of the disk 20, but as shown is formed of a separate metal sleeve having a reduced lower end which passes through a hole in the disk and is spun over, as shown at 23, to retain it in the disk. In order that the collar may not rotate within the disk when it is being screwed on to a supporting member such as the pipe 11, there is provided the transverse strap 24 integral with the disk 20 and over which the slots 25 of the collar 22 fit, thus preventing any relative rotation between the two parts. The collar 22 may be provided with the set screw 26 as is usual in order to prevent its accidental unscrewing from the pipe 11.

The arms 21 depend vertically for a short distance from the edge of the disk 20, as shown at 27, and are then offset inwardly as

shown at 28 and continue parallel to each other to the point 29, where they converge along an arcuate curve to the point 30 where they again become parallel, but are then curved transversely in order to receive and closely engage the outer walls of the internally threaded collar and chain guide 31 which is secured to them by means of the screws 32 passing through the elongated holes 33 in the lower ends of the arms and being threaded into the collar. The upper end of the bore in the collar 31 is counter sunk as shown at 31' in order to provide a rounded edge for the chain to slide over.

The switch proper, which is of known construction and hence need not be described specifically in this application, includes a pair of insulation members 34 forming between them at their lower end, a recess 35 in which the working parts of the switch are mounted. The working parts of the switch are rotatably mounted about the pivot 36, carrying the tension spring 37, which causes the snap action and retracts the chain after each operation. The head of this pivot is square and is slotted to receive a screw driver and is shaped to fit a square aperture within one of the insulation members 34, outwardly of which there is provided the reduced opening 38 for the passage of a screw driver. It will be seen that by pressure longitudinally of this pivot, the head will be pressed out of the square aperture against the action of the spring 37 until it comes within the enlarged opening 39 in the insulation member when it can be rotated in order to vary the tension of the spring and the head allowed to again come back to its square recess in order to prevent further rotation. The two insulation members 34 are held together near their horizontal centers by means of the screws 40 which also provide means for connecting the terminal wires. A spacer 41 maintains the lower ends of the insulation members the proper distance apart.

The two insulation blocks 34, when fitted together, form with the switch a structure substantially rectangular in cross section, having a flat top and flat sides with rounded corners as shown at 42'. The bottom of this structure is arcuate as shown at 42 following the same curve as that of the two arms 21, and the size of the whole structure is such as to snugly fit between the parallel arms 21 with the disk 20 fitting against the top thereof, and with the arcuate portion 42 being engaged by the curved parts of the parallel arms so that the switch in effect floats between these arms. It may be placed in position by sliding it between the arms from one side and is adapted to be held in this position against sliding by means of an insulating sleeve, generally denoted by the reference character 43, which sleeve is of an outside diameter substantially the same as the diameter of the disk

20, and which is adapted to pass upward over the switch body and parallel arms 21 from below and engage against the rounded edges 42' of the switch body, and also against the under surface of the disk 20. The upper edge of the insulation sleeve is provided with four notches or slots 44, 44 and 45, 45. The rectangular notches 44 are of a width equivalent to the width of the upper ends of the arms 21 and are adapted to allow the straight portions 27 of these arms to pass through the insulation sleeve and be substantially flush with the outer surface thereof as shown in Figure 2. The notches 45 provide means for bringing out the wires 46 from the switch as best shown in Figure 1.

In order to retain the insulation sleeve 43 in position, there is provided the washer 51 shown in Figure 6, circular in form and of a diameter equivalent to the outside diameter of the insulation sleeve. It has in the center thereof the elongated opening 47 with the parallel sides 48 and the arcuate ends 49. This opening 47 is adapted to pass over the lower parallel ends of the arms 21 with the arcuate portions 49 engaging against their outer surfaces, and the straight sides 48 engaging against their edges. After the washer 51 is in position, the collar 31 is placed between the arms 21 at their lower ends and its upper surface engages against the lower surface of the washer 51 between the arms since it is of a diameter substantially equivalent to the distance between the two curved ends 49 of the aperture in the washer, and thus serves to retain the washer in position, itself being held by the screws 32, thus completing the assembly and maintaining the whole rigidly together. The insulation sleeve 43 is provided centrally of its length and in the same plane with the notches 45 with the two holes 50 in such a position that one of them may come directly over the opening 38 in order that a screw driver may be passed there-through to vary the tension of the operating spring 37 as explained. Two of these holes are provided in order that the insulation sleeve may be symmetrical and no attention need be paid in the assembly thereof to position a hole above the screw such as would be necessary if only one were provided.

The threaded opening in the chain guide or collar 31 is adapted as previously explained to support a tube such as 16 from which the lower portion of the canopy 12 may be supported, and which tube also provides an extension of the chain guide. By supporting the canopy from the tube 16, it will be noted that it is directly supported, then, from the pipe 11 through the interposed connecting means, including the collar 22, the disk 20, the parallel arms 21 and the chain guide or collar 31 without subjecting the switch proper to any strain, incident to the weight of the fixture.

It will of course be obvious to those skilled in the art that many other uses may be found for a switch and mounting of this type, and it is not intended that this invention shall be limited except by the scope of the attached claims.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a fixture body switch for electric circuits in combination an insulating switch body containing switch mechanism of the pull chain type, a metal plate adapted to fit on top thereof, an internally threaded collar attached to said plate and depending arms on said plate converging beneath and there engaging said switch body to loosely support the same from said plate.

2. In a fixture body switch for electric circuits in combination, a pull chain switch having an insulating body, said body having parallel sides and a rounded bottom, a metal plate, means whereby said plate may be attached to a support and a pair of arms depending from said plate, converging beneath and there engaging said body to loosely support the same.

3. In a fixture body switch for electric circuits in combination a pull chain switch having an insulating body, a metal disk adapted to fit on top of said body, parallel arms extending from said disk and engaging the sides of said body, said arms converging beneath said body, and a chain guide joining said arms to retain said switch body in position.

4. In a fixture body switch for electric circuits, in combination a pull chain switch having an insulating body, means to support said switch body including a metal disk, depending arms thereon engaging the sides of said switch body, converging portions on said arms engaging the underside of said switch body, an insulating sleeve surrounding said switch body and arms and a chain guide adapted to support said insulation sleeve.

5. In a fixture body switch assembly for electric circuits, in combination a self-contained pull chain switch including an insulating body, means supporting said body including a metallic disk, depending arms thereon

embracing said body, an insulating sleeve surrounding said body and arms, a washer against said sleeve at the end thereof remote from said disk and a chain guide attached to said arms and retaining said washer in position.

6. In a fixture body switch assembly for electric circuits, in combination a self-contained pull chain switch including an insulating body, means supporting said body including a metallic disk, depending arms thereon embracing said body, an insulating sleeve surrounding said body and arms, a washer against said sleeve at the end thereof remote from said disk, a chain guide attached to said arms and retaining said washer in position, means on said chain guide to support part of a fixture and means on said disk to support said assembly.

7. In a fixture body switch, in combination, a pull chain switch assembly, a pair of arms passing beside said assembly and converged partially beneath the same to loosely support said assembly, means connecting said arms together above said assembly, means to attach said connecting means to a support, an enclosing casing around said arms and assembly and means on said arms to retain said casing in position.

8. In a fixture body switch, in combination, a pull chain switch assembly, a pair of arms passing beside said assembly and converged partially beneath the same to loosely support said assembly, means connecting said arms together above said assembly, means to attach said connecting means to a support, an enclosing casing around said arms and assembly and means positioned by said arms to retain said casing in position.

9. In a fixture body switch, in combination, a pull chain switch assembly, a pair of arms passing beside said assembly and converged partially beneath the same to there engage and loosely support said assembly, means connecting said arms together above said assembly and means to attach said connecting means to a support.

In testimony whereof I hereunto affix my signature.

HARRY J. MOREY.