May 12, 1931. C. M. LEFKOWITZ 1,804,425

LINK SWITCH

Filed Aug. 9, 1928 2 Sheets-Sheet 1

Fig. 1

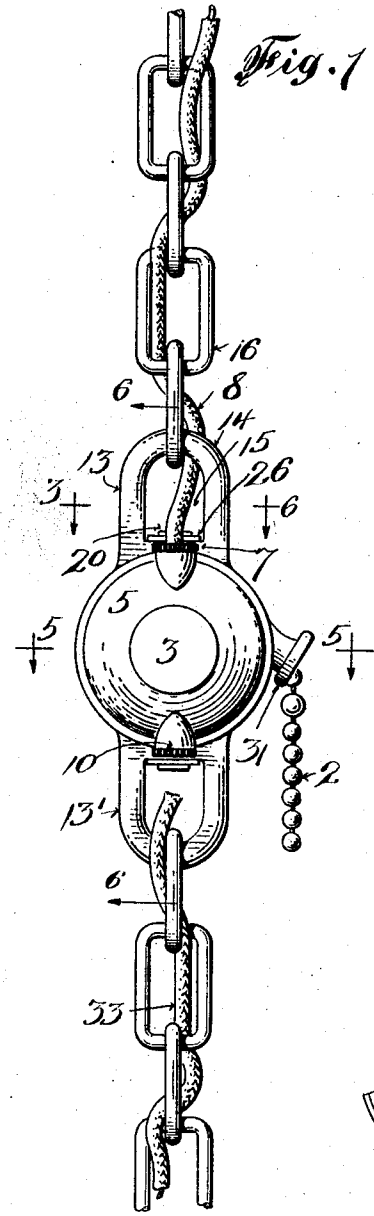


Fig. 2.

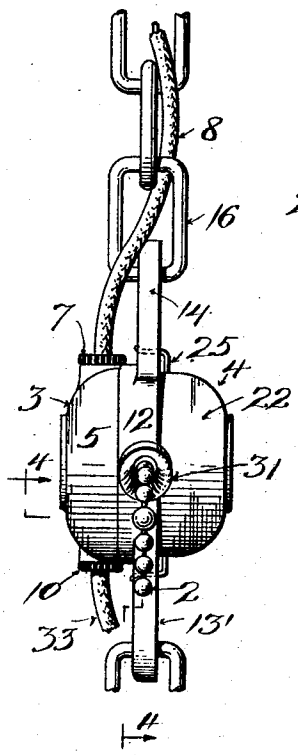


Fig. 3

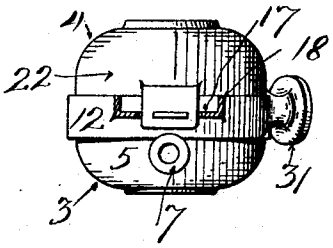


Fig. 4.

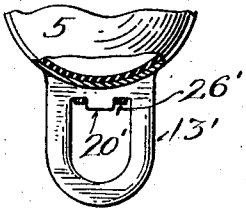
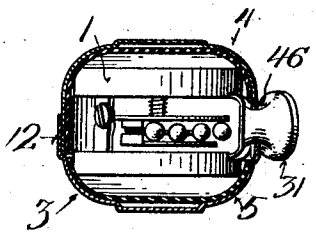


Fig. 5.



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Filed Aug. 9, 1928 2 Sheets-Sheet 2

Fig. 6.

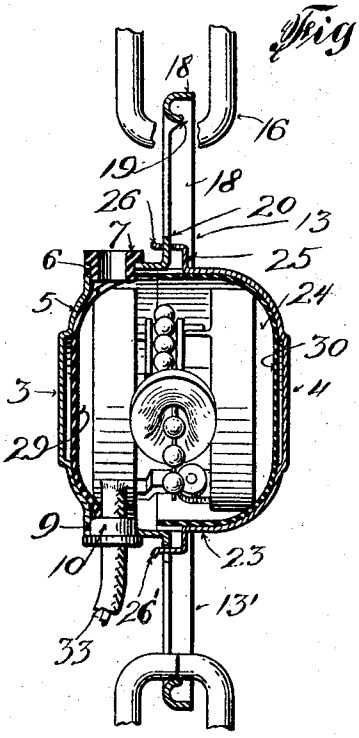


Fig. 7.

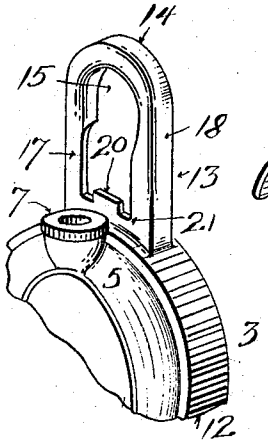
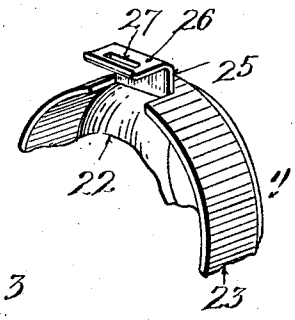


Fig. 8.



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UNITED STATES PATENT OFFICE

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LINK SWITCH

Application filed August 9, 1928. Serial No. 298,429.

My invention relates to a novel link switch and it belongs to that class of switches which are adapted to be hung in connection with an overhead lamp or chandelier. A type of suspended electric switch has been proposed which can be connected between the links of the chain which supports an overhead electric lamp or chandelier and my invention belongs to that type of switch. One of the principal advantages of switches of this kind is that the switch is separated from the other parts of the electric apparatus, so that it may be conveniently operated and so that the switch may be readily removed and replaced without disassembling any part of the lighting apparatus and without disarranging the electric circuit even though the person making the chain is not versed in such matters.

One object of the present invention is to provide a link switch having a shell, casing or socket adapted to be supported in suspended position, as above described, and to receive and hold standard forms of switch mechanisms now in general use.

Another object is to provide a link switch which will be regularly balanced, so that it will hang in a straight position and not detract from the appearance of the apparatus to which it is applied; and which will enclose the switch mechanism completely within a casing and present a pleasing and artistic appearance.

Another object is to provide a link switch which may be readily assembled and disassembled without the use of tools.

Another object of the invention is to provide a device of the kind described which, though stamped from thin sheet metal, will not slip through the meeting ends of the links of the chain to which it is attached.

Another object is to provide a link switch which may be inexpensively stamped from sheet metal at a very reasonable cost.

Another object is to provide a suspended socket made of separable parts which will permit access to be had to the switch mechanism for removal or repair without detaching the casing entirely from the supporting chain.

In the drawings forming part of this application,

Figure 1 is an elevation showing my switch attached to a chain such as may be used for supporting an overhead lamp or chandelier.

Figure 2 is a side elevation thereof,

Figure 3 is a sectional view taken on the line 3—3 of Figure 1,

Figure 4 is a sectional view taken on the line 4—4 of Figure 2,

Figure 5 is a sectional view taken on the line 5—5 of Figure 1,

Figure 6 is a sectional view taken on the line 6—6 of Figure 1,

Figure 7 is a perspective view of a portion of one of the casing members of the switch,

Figure 8 is a perspective view of another section of the switch casing.

I have shown an ordinary or well known type of switch mechanism 1 adapted to be contained within my improved casing but the mechanism of the switch forms no part of the present invention and any switch mechanism may be used in connection with my improved device. The present link switch having an improved socket, shell, or casing, is adapted to receive and hold the different types of switch mechanisms now in standard use. It is sufficient to point out that a pliable chain or pulling member 2 is associated with the switch mechanism and it is adapted to operate the switch mechanism for opening and closing the circuit. It will be understood that this operating or pliable member may take different forms according to the type of switch mechanisms employed.

The type of socket or casing illustrated consists of the two shell members 3 and 4. The shell member 3 has a curved wall 5 having an aperture 6 near the top which is lined with an insulating sleeve 7 this opening being adapted to permit the passage through the shell of one of the wires 8 which is to be connected with a portion of the switch mechanism enclosed within the socket or casing. At the bottom this shell member 3 is also provided with an opening

9 which is lined with an insulating sleeve 10 and through the latter the wire 11 is adapted to be passed for making electrical connection with another terminal of the switch mechanism. The shell member 3 is provided with a cylindrical portion 12 extending from one face of the curved portion 5. From the top of this cylindrical portion there projects a loop or bracket 13 which is preferably stamped integral with the cylindrical portion 12 although it may be made separately and attached thereto.

This member extends upwardly from the cylindrical portion 12 in the form of a loop or yoke 14 which is adapted to receive through the opening 15 the ends of the chain link 16 on which the device is to be supported.

The member 13 consists of a vertical wall 17 having a laterally extending flange 18 to make the same more rigid, and there is an inwardly turned flange 19 around the edge of the opening 15 which not only tends to stiffen the member 13 but it also presents a wider bearing surface to rest in the loop of the chain link 16 so that if the ends of the chain link are not soldered together a slight separation of these ends will not permit the member 13 to pass between them, owing to the lateral width of the flange 19. Adjacent the lower edge of the member 13 I have provided an upwardly extending projection 20 on opposite sides of which are recesses 21 and the purpose of this projection will be apparent in the subsequent description.

I have shown another supporting member 13′ projecting from the cylindrical wall 12 at the opposite side of the shell member 3 and lying in the same vertical plane with the other supporting member 13. This latter supporting member is constructed the same as the one first described and it will be lettered the same except with prime numbers.

The other shell member 4 consists of a curved wall 22 from which extends laterally a cylindrical wall 23 and the latter is adapted to slidingly fit into the cylindrical wall 12 of the socket member 3 so that when both socket members are in assembled position they form a chamber 24 in which the switch mechanism is adapted to be enclosed and protected.

The socket member 4 has a finger or lip stamped from the cylindrical wall 23 and, as shown in Figure 8, this consists of an upwardly or outwardly extending member 25 which is bent and then extends horizontally at 26 and is provided with a slot 27 to receive the projection 20 on the socket member 3. This finger or engaging member is duplicated on the opposite side of the socket member 4 and it is adapted to engage the member 20 on the socket member 3. I have shown a cupped disc 29 of insulating material inserted in the socket member 3 to serve as a lining to insulate the switch mechanism from the socket or casing, and I have shown a corresponding cupped disc 30 of insulating material, disposed in the member 4 which also serves to insulate the switching mechanism from the socket. The member 3 is shown provided with an aperture 46 through which outwardly and downwardly extends a throat 31 through which the actuating member or chain 2 of the switch is adapted to extend and in which it is adapted to slide in and out as the chain is operated to turn the switch on or off.

In Figure 1 I have shown the device arranged between two sections of a chain for supporting a lamp or chandelier so that the switch takes the place of several links in the chain, although it will be understood that the device may be attached in any other manner. The wire 8 is intertwined with the links of the chain and it is passed through the sleeve 7 and the wire is connected with one of the terminals of the switch. In like manner the wire 33 is intertwined with the links of the portion of the chain below the switch device and it is carried through the sleeve 10 and this wire is attached to the other terminal of the switch device.

The switch mechanism, which is generally supplied as an assembled unit, is inserted into the socket member 3, a portion projecting laterally from this member, and then the socket member 4 is placed over the projecting portion of the switch mechanism with the cylindrical portion 23 fitting within the cylindrical portion 12; and as the two socket members are pressed together the fingers 26 will be forced over the tops of the projections 20 until the slots 27 register with these projections, whereupon the fingers will snap down into the position shown in Figure 6. The projections 20 passing through the slots 27 will serve as locks to hold the two socket members firmly together. It will be understood that when the switch mechanism was inserted into the member 3 and before the member 4 was applied thereto, the wires 8, 33 were carried through the sleeves 7, 10 and were attached to the terminals of the switch mechanism and that the operating member or chain 2 was led out through the throat 31.

The socket members having been assembled in the manner described, the switch in its socket becomes an assembled unit and it may be sold, transported, or handled in this condition. In order to attach it to the chain in the manner shown in Figure 1, two of the links 16 of the chain are slightly opened to pass them over the ends of the supporting members 13, 13 into line with the openings 15, 15′ and then the ends of the links are pressed together to close them

around the supporting members, as shown in Figures 1 and 2. The switch being assembled in this manner is adapted to be operated by the member 2 for turning on and off the current supplied through the wires 8, 33. The switch is separated from the lighting device and if any difficulty occurs in the switch it may be removed from the circuit and a new one may be assembled in its place.

To remove the switch and its socket as a whole from the chain the links 16 may be opened sufficiently to disengage them from the supporting members 13, 13'. In most cases, however, it will be necessary only to detach the socket member 4 from the member 3, by releasing one of the fingers 26 from the projection 20, whereupon the socket member 4 may be detached from the member 3. This leaves the latter member still supported by the chain and serving as a connecting link between the two sections of the chain. The switch mechanism may be removed, repaired or replaced without detaching the socket member 3 from the chain, if desired.

Having described my invention, what I claim is:

1. A switch adapted to be supported in the form of a link, including a switch mechanism and means for enclosing the same, comprising a shell member having oppositely extending yokes projecting therefrom to be engaged by chain links or other supporting members, said shell member having openings adjacent said yokes for the passage of feed wires in the switch mechanism, and a second shell member co-operating with said first shell member to enclose the switch mechanism, and means for detachably securing said second shell member to said first shell member to permit the shell to be opened while said first shell member remains supported as a link.

2. A switch adapted to be supported in the form of a link, including a switch mechanism and means for enclosing the same, comprising co-operating shell members forming an enclosure for the switch mechanism, means for detachably securing said shell members together one of said shell members having oppositely extending yokes projecting therefrom and adapted to receive therethrough chain links or other supporting members, said yokes having laterally extending flanges adjacent the ends of the openings in said yokes.

3. A switch adapted to be supported in the form of a link, including a switch mechanism and means for enclosing the same, comprising co-operating shell members forming an enclosure for the switch mechanism, means for detachably securing said shell members together said shell members having co-operating cylindrical portions sliding one within the other, one of said shell members having yokes projecting therefrom and adapted to receive therethrough chain links or other supporting members.

4. A switch adapted to be supported in the form of a link, including a switch mechanism and means for enclosing the same, comprising co-operating shell members forming an enclosure for the switch mechanism, one of said shell members having oppositely extending yokes projecting therefrom and adapted to receive therethrough chain links or other supporting members, and means for detachably securing said shell members together whereby the shell may be opened while said first shell member remains suspended as a link, comprising projections on one of said shell members, and resilient fingers on the other shell member co-operating with said projections to secure the shell members together by a snap action.

5. A chain switch adapted to be supported in the form of a link, including a switch mechanism, and means for enclosing the same, comprising cooperating, separable shell members forming an enclosure for the switch mechanism, one of said shell members having oppositely extending loop members projecting therefrom to serve as chain links and adapted to receive therethrough chain links or similar supporting members, said shell having appertures to receive wires therethrough, and means for detachably securing said shell members together.

6. A chain switch adapted to be supported in the form of a link, including a switch mechanism, and a shell for enclosing the same, said shell including cooperating, separable shell members forming an enclosure for the switch mechanism, one of said shell members having yokes extending in opposite directions in the same vertical plane to serve as chain links adapted to receive therethrough chain links or similar supporting members and means for detachably securing the other shell member to the shell member having the yokes, said last mentioned shell member and its yokes being adapted to be supported as a link regardless of whether said second shell member is attached or detached, said shell having apertures to receive wires therethrough to permit the switch to be wired after it has been supported as a link.

7. A chain switch adapted to be supported in the form of a link, including a switch mechanism, and a shell for enclosing the same, said shell including cooperating, separable, shell members having snap means for detachably securing them together, one of said shell members having loop members extending in opposite directions to serve as chain links adapted to receive there-

through chain links or similar supporting members, said first shell member being adapted to be supported through said loop members regardless of whether the second shell member is present or removed, said shell having apertures to receive wires therethrough, said switch mechanism being adapted to be wired after the shell has been assembled as a link.

8. A chain switch adapted to be supported in the form of a link, including a switch mechanism, and a shell for enclosing the same, said shell including cooperating, separable shell members having means for detachably connecting them together, one of said shell members having loop members extending in opposite directions and provided with lateral flanges, said loop members being adapted to receive chain links or similar supporting members therethrough.

Signed at the city of New York, county of Bronx, and State of New York, this 2nd day of July, 1928.

CHAS. M. LEFKOWITZ.