Oct. 20, 1925. 1,558,116

C. D. PLATT

ELECTRIC SWITCH

Filed May 13, 1922 3 Sheets-Sheet 1

Fig. 1.

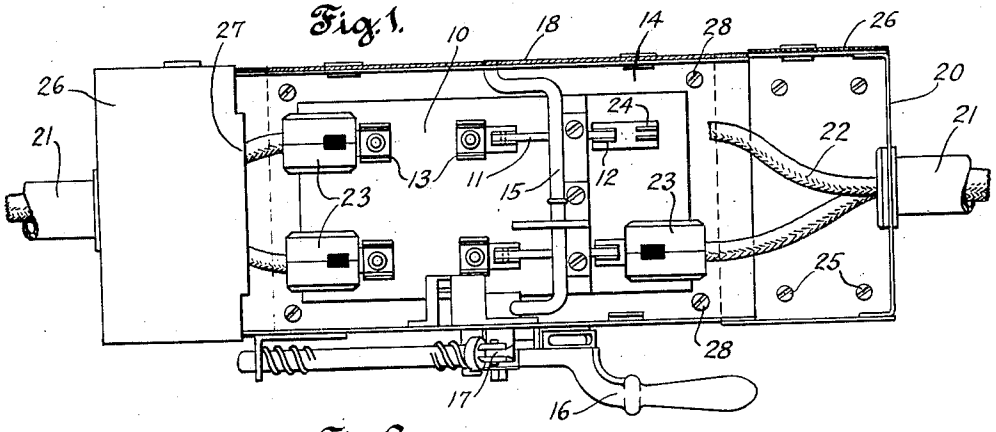


Fig. 2.

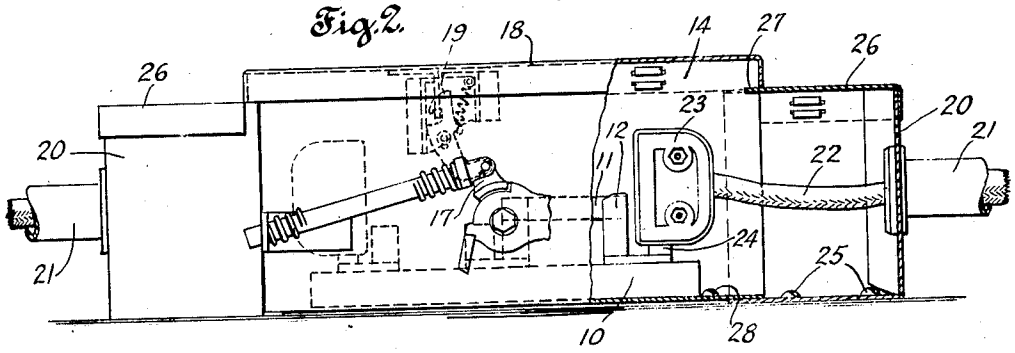
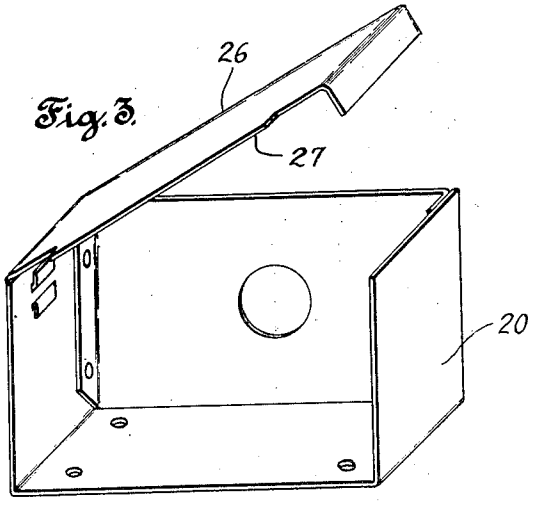


Fig. 3.



INVENTOR
C. D. Platt
BY
H. J. Allyn, ATTORNEY

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Fig. 5.

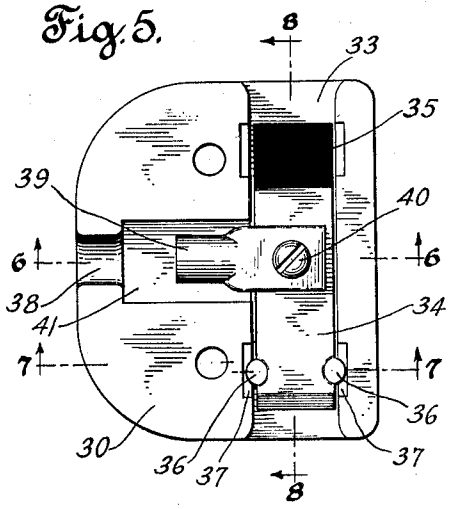


Fig. 4.

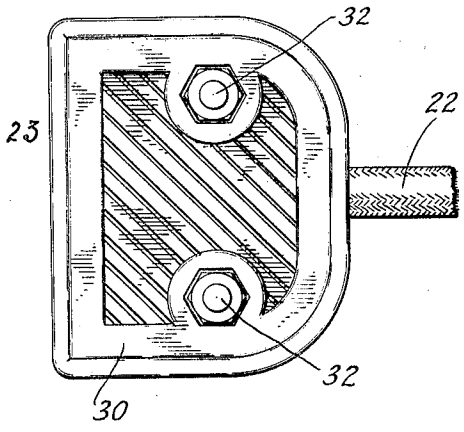


Fig. 6.

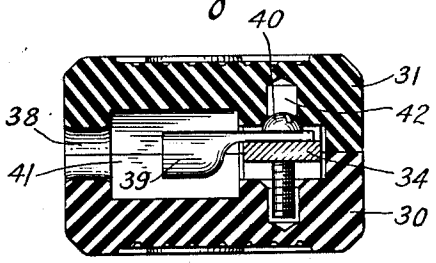


Fig. 8.

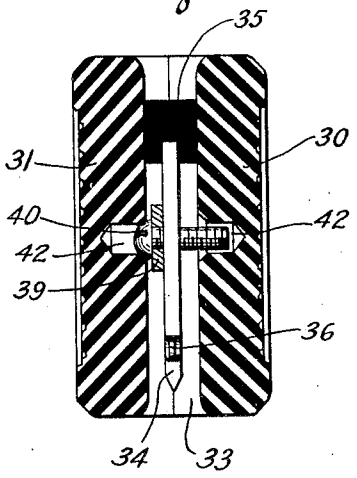
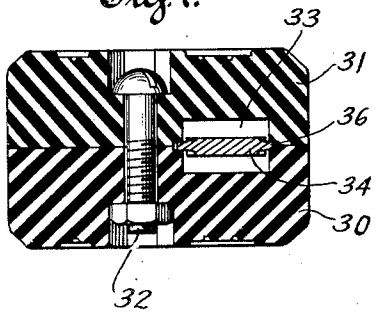


Fig. 7.



C. D. Platt INVENTOR

BY

K. S. Allyn ATTORNEY

Oct. 20, 1925.

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C. D. PLATT

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Fig. 9.

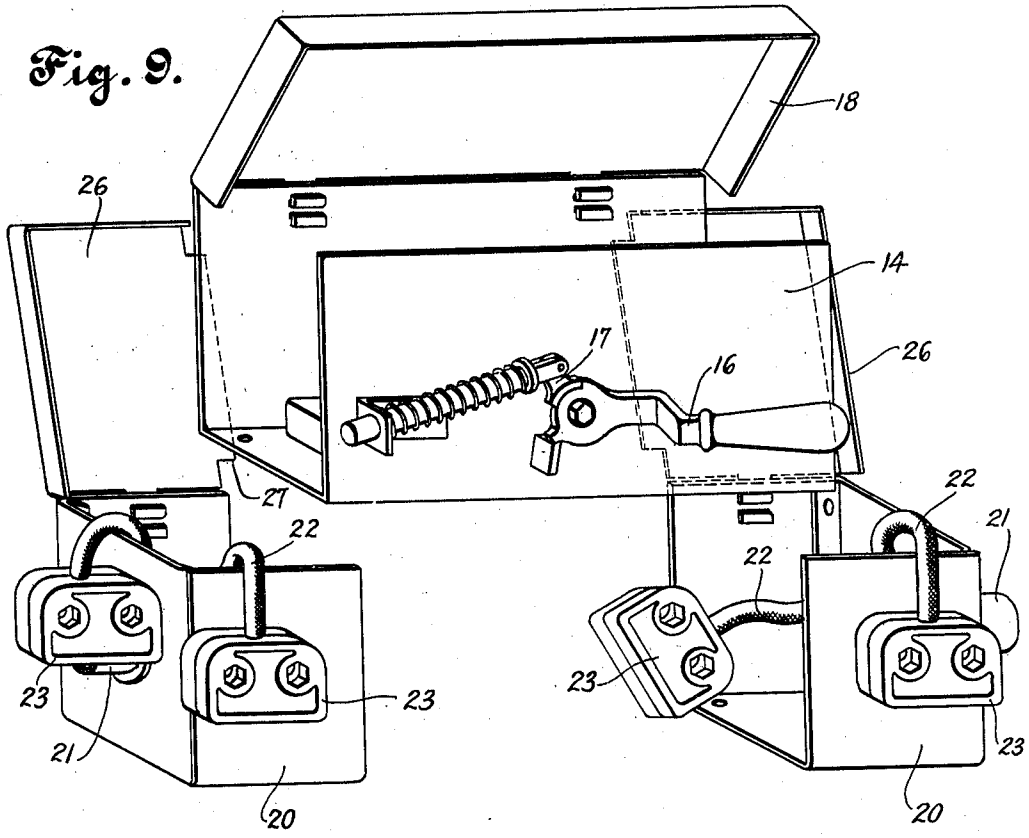
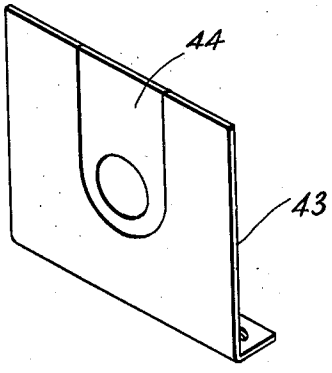


Fig. 10.



INVENTOR

C. D. Platt,

BY

ATTORNEY

Patented Oct. 20, 1925. 1,558,116

UNITED STATES PATENT OFFICE.

CLARENCE D. PLATT, OF BRIDGEPORT, CONNECTICUT.

ELECTRIC SWITCH.

Application filed May 13, 1922. Serial No. 560,593.

To all whom it may concern:

Be it known that I, CLARENCE D. PLATT, a citizen of the United States of America, residing at Bridgeport, Fairfield County, Connecticut, have invented new and useful Electric Switches, of which the following is a specification.

It is recognized as standard practice today to enclose electric switches in boxes and to protect the cables or conductors by electric conduits. Such constructions are very desirable and in many cases necessary. In case the parts of an ordinary switch are injured or burned out, it is ordinarily difficult to replace the switch and considerable time is required for the operation.

The main object of my invention is to so construct the switch and connections that the parts liable to be injured may be very readily replaced in a minimum time without danger to the operator or material interruption of the service.

A further object is to provide a construction wherein it is possible and perfectly safe to replace a switch-box unit without interrupting the main circuit in any way and in which the live wires may be safely handled although they may be alive or "hot" up to the point of attachment to the switch unit.

In carrying out the invention, the switch box is formed in two or more parts, one of which carries the switch proper and the terminals, and the remainder of which serve as means of connection for the conduit or conduits. The electric connections between the conductors and the switch are established by means of especially constructed members in the nature of plugs or sockets adapted to be readily applied to the circuit terminals of the switch. These connector members are so constructed that it is practically impossible to make accidental contact with the cable ends.

Fig. 1 is a plan view of a construction embodying the improvements of my invention, the cover of the main section and the cover of one end section of the box being removed and one of the connectors being omitted.

Fig. 2 is a side view and partial section of the same construction, the covers all being in place.

Fig. 3 is a perspective view of one of the end members of the box or casing.

Fig. 4 is a side view of one of the connectors.

Fig. 5 is an inside view of the same.

Figs. 6 and 7 are horizontal sections on the planes of the lines 6—6 and 7—7 respectively of Fig. 5.

Fig. 8 is a vertical section on the plane of the line 8—8 of Fig. 5.

Fig. 9 is a perspective view showing the switch carrying part detached from the conduit connected parts.

Fig. 10 shows a modified form of end member.

The switch proper is mounted on the insulating base 10 and has one or more swinging or hinged contact members 11, each of which has a cooperating stationary contact 12. Provision is usually made for fuses to protect each line. In this case I have shown fuse clips 13 to receive the cartridge type of fuse.

The insulating base 10 may be secured in the box section 14 in any suitable manner. This switch box section is open at one or both ends and provided with a shaft or crank 15 which is suitably connected with the swinging switch members 11. This crank 15 may be operated in any suitable manner, for instance, by means of a handle 16 and quick-break mechanism 17 as shown in the Getchell Patent #1,393,111. The main switch box is preferably provided with a cover 18 which may be hinged to it in any suitable manner. I also prefer to provide some form of interlocking mechanism such as 19 to ordinarily hold the cover closed when the circuit is closed through the switch.

The end of the enclosing box is formed by means of a separate member 20 to which is secured in any suitable manner a conduit 21 for the conductors 22. In the construction herein shown both ends of the main box are closed in the same manner. Each conductor is provided with a terminal member 23 for connection to stationary clip or clips 24 corresponding to and connected to the stationary terminals 12 of the switch. The end member 26 of the box may be secured to a support in any suitable manner, as for instance, by means of screws 25. Each main member is preferably provided with a hinged cover 26 having a part 27 adapted to be engaged by the end flange of the cover 18 so as to prevent the cover

26 from being opened when the cover 18 is closed. The main box is secured to a support in any suitable manner, for instance, by means of screws 28.

The preferred form of connector is illustrated on sheet 2. It consists of two parts 30 and 31 which are preferably duplicates of each other and formed of insulating material and adapted to be secured together by bolts such as 32. Each part is provided with a longitudinal channel 33 and these channels form a recess for the circuit blade 34. One end of this blade is provided with an insulating butt 35 which serves to substantially close the upper end of the recess. The other end of the blade is preferably somewhat sharpened or beveled as shown in Figs. 5 and 8, and provided with lugs 36 pressed out from the edges to rest in grooves 37 in the insulating members so as to securely hold the lower end of the blade 34 in the center of the recess and thus insure proper engagement of the blade with the switch terminal without danger of binding the blade. The conductor 22 passes through a groove 28 formed between the parts of the insulating members and is secured to a socket member 39 which in turn is fastened to the blade 34 by means of a screw 40. The insulating members are provided with recesses 41 to accommodate the socket 39. The insulating members are also provided with recesses 42 to alternatively receive the head or shank of the screw 40 and thus support the blade 34 intermediate its ends.

In the construction shown, the entire switch unit including the main box section may be removed or only the switch per se or such parts as it may be necessary to replace.

In case of destruction of or injury to the switch, it is simply necessary to open the cover 18, turn back the covers 26, pull off the connectors 23, take out the screws 28 or other means of support, and substitute a new switch unit, replace the connectors 23, and close the covers. As the circuit is opened when the cover is opened, and as the connectors 23 have insulating bodies or clip pieces, there is no danger of the operator coming in contact with live parts. This construction also makes it unnecessary to loosen binding screws or tape exposed ends of wires while making the necessary changes. Such a construction and arrangement is particularly advantageous where the switches are used in power lines where interruption in the service even for a few minutes is a very serious matter, and in which case it is necessary to replace a worn out or burned out switch-unit without interrupting the circuit in the "leading in" or live wires.

Fig. 10 shows an end member or plate 43 adapted to be used in place of the end member 20. It has a knock-out 44 for any suitable form of conduit connection.

I claim:

1. A construction of the character described comprising a box consisting of a main member and a separate end member, two flexible conductors entering the box through said end member, a circuit terminal secured to the end of each of said flexible conductors, an insulating housing for each of said terminals, a switch mounted in said main box member and having projecting terminal clips adapted to detachably receive said circuit terminals within said insulating housings, said main box member being open at the front to permit access to said switch and to said housings and a cover for said main box member to normally enclose said parts, said main box member being detachably associated with said end member to permit ready removal when said terminals are disconnected.

2. In an electric switch, a combination of a main switch and an enclosure therefor, an end member, a stationary conduit connected to said end member, a cover for said end member, a readily detachable connector for the conductor in said conduit, means for detachably securing said main switch enclosure to said end member and a cover for said enclosure serving to hold the cover of the end member in place.

3. In an electric switch, a main casing, a switch mounted therein, a cover for said casing, an end member for said casing, a conduit connected to said end member means for detachably securing said main switch casing to said end member and a cover for said end member adapted to be held in closed position by the cover of said casing.

4. An enclosed switch construction comprising two stationary end members having circuit terminals and a removable switch box having switch contacts and terminals adapted to receive said circuit terminals.

5. A safety switch construction comprising a casing open at both ends and at the front, a switch mounted in said casing having an external operator and internal circuit terminals, end members for said casing having conduit connections and flexibly mounted plug terminals adapted to be readily engaged with and disengaged from the circuit terminals of said switch and means for detachably securing said switch casing to said end member.

6. A safety switch of the character set forth in claim 5 having separately mounted covers for the main enclosure and for the end members.

CLARENCE D. PLATT.