

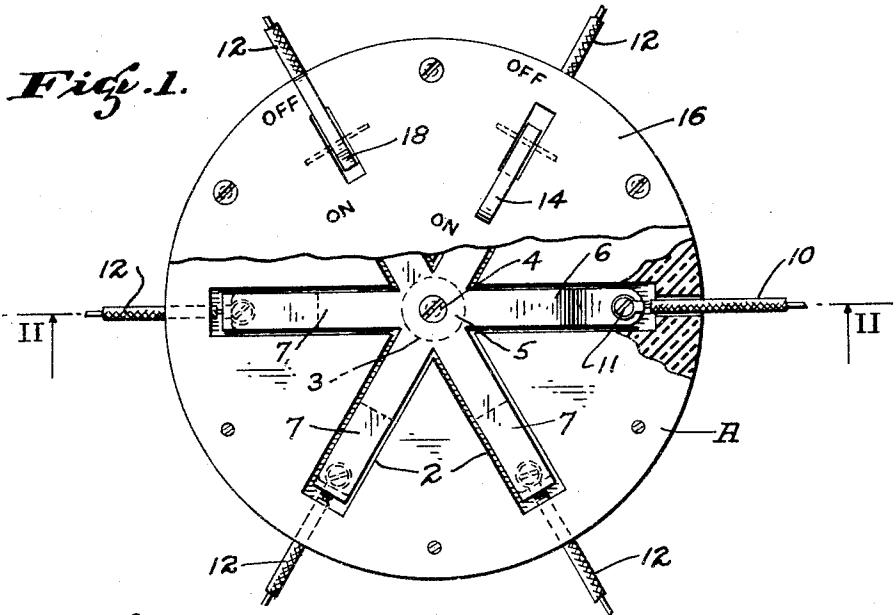
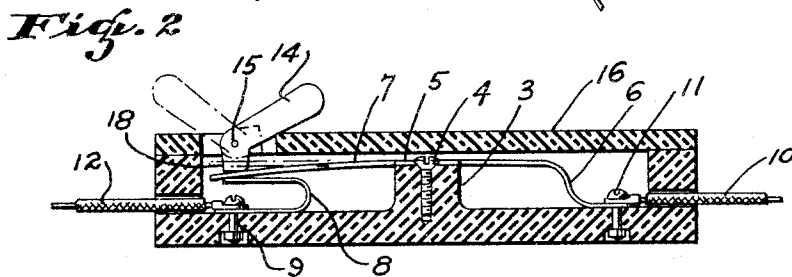
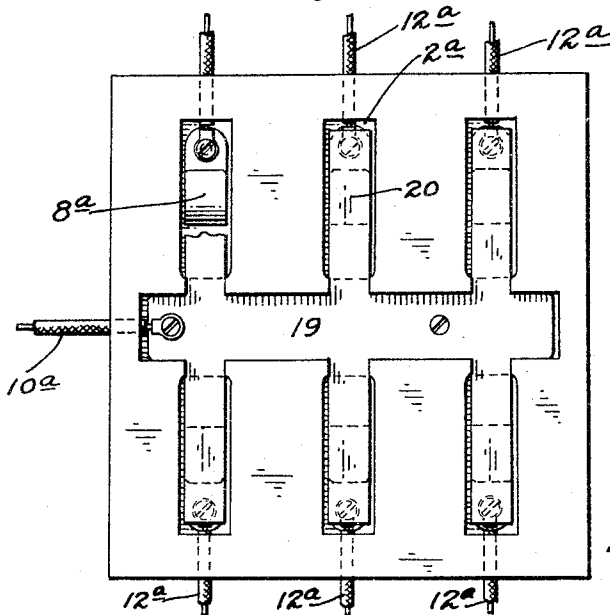
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J. B. LUTHER

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ELECTRIC SWITCH

Filed April 8, 1931



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ELECTRIC SWITCH

Application filed April 8, 1931. Serial No. 528,498.

This invention relates to an electric switch and especially a switch structure whereby a number of switches may be closely positioned and compactly arranged on a single panel or

5 base.

The object of the present invention is to generally improve and simplify the construction and operation of electric switches; to provide a multiple circuit controlling switch which permits a compact arrangement of the switches; to provide a switch structure employing a main contact plate to which a current conducting feed wire is connected; to provide a contact plate having a plurality of resilient contact arms formed thereon and adapted to be disposed at right angles thereto or radially arranged; and, further, to provide a plurality of pivotally mounted switch actuating levers, one for each contact arm, said switch levers adapted during pivotal movement to depress the resilient contact arms into engagement with cooperating contacts and to be maintained either in an off or an on position by the resilient contact arms.

25 The switch is shown by way of illustration in the accompanying drawing, in which—

Fig. 1 is a plan view of the switch partly broken away, said view showing a contact plate having a plurality of resilient contact arms radially positioned.

Fig. 2 is a central, vertical section taken on line II—II of Fig. 1.

Fig. 3 is a plan view showing the cover plate and switch arms removed, said view showing a modified form of the contact plate with the resilient contact arms arranged at right angles thereto and on opposite sides thereof.

Referring to the drawing, in detail and particularly Figs. 1 and 2, A indicates a panel or base member which may be constructed of porcelain, bakelite, vulcanized rubber, or any other suitable insulating material. Formed in the upper or outer face of the base member are a plurality of radially positioned depressions or pockets 2 and between them is formed a central pedestal 3. Secured to the pedestal by means of a screw 4 is a main contact plate 5 and formed thereon is a feed arm 6 and a plurality of radially disposed arms 7, there being one arm for each pocket 2.

The contact plate and arms are constructed of a resilient metal such as spring brass or the like, this being an important feature as will hereinafter be described.

Secured in the outer end and in the bottom of each pocket 2 is a resilient metallic contact member 8, said contact members being secured by terminal screws 9. The feed wire supplying the switch with current is indicated at 10 and is connected through a terminal screw 11 with the main arm 6 of the contact plate. The current passes through one or more of the contact arms 7 and the contacts 8 and leaves the switch through the wires 12, these wires being connected with electric lamps, or whatever the case may be.

The contact arms 7 as previously described are constructed of resilient material and are normally maintained in an elevated position with relation to the contacts 8, hence under normal conditions no current flow can take place through the wires 12. In order to establish a circuit through the wires 12 a plurality of switch levers 14 are employed. These levers are pivotally mounted as at 15 in a cover plate 16. The inner end of each lever is cam shaped as shown at 18 and as such is maintained either in an off or on position as the case may be due to the upward pressure of the resilient contact arms 7. When the switch levers assume the position shown in full lines at 14, the contact arms 7 are depressed and a circuit is thus closed through the contacts 8 and when the position of the switch levers are reversed, or in other words when they assume the dotted line position shown at 14a the circuit through the contacts 7 and 8 is broken. One or more circuits may be established as desired as each switch lever is independently operable.

By arranging the resilient contact arms 7 and the switch levers 14 radially as shown in Figs. 1 and 2 a circular type of switch structure is obtained and a very compact arrangement of a number of switches is the result. The mechanism employed, to-wit, the pivotally mounted switch arms, the main contact plate, the resilient arms 7, and the resilient contacts 8 are readily accessible as removal of the cover plate 16 exposes the entire mech-

anism, hence permitting connections to be readily made and also permitting inspection and repairs whenever desired.

In Fig. 3, a plan view is shown of a modified form of the structure. In this instance the main contact plate is elongated as shown at 19 and the resilient arms are disposed at right angles thereto as indicated at 20, the arms extending from opposite sides of the plate 19. The base plate is in this instance made square or rectangular in shape and pockets 2a are formed therein for the reception of the contacts 8a and the resilient contact arms 20. The contacts 8a are secured in the same manner as disclosed in Fig. 2. A rectangular shaped cover plate, not shown, is employed and the switch levers 14 are pivotally mounted therein in alignment with the resilient contact arms 20. The main feed wire is connected with plate 19 as shown at 10a and the secondary wires are connected with the contacts 8 as shown at 12a. This construction and arrangement is also exceedingly compact and a considerable number of independently operable switches may thus be placed within a comparatively small area.

While certain features of the present invention are more or less specifically described, I wish it understood that various changes may be resorted to within the scope of the appended claims. Similarly, that the materials and finish of the several parts employed may be such as the manufacturer may decide, or varying conditions or uses may demand.

Having thus described my invention, what I claim and desire to secure by Letters Patent is—

1. In a switch of the character described, a base member having a plurality of pockets formed therein, a contact member in each pocket, a main contact plate secured to the base and connected with a source of electric current supply, said contact plate being insulated with relation to the contacts, a plurality of resilient contact arms on the plate, one for each pocket and normally maintained out of engagement with the contacts in the pockets, and means for moving the resilient contact arms into and out of engagement with the contacts.

2. In a switch of the character described, a base member having a plurality of pockets formed therein, a contact member in each pocket, a main contact plate secured to the base and connected with a source of electric current supply, said contact plate being insulated with relation to the contacts, a plurality of resilient contact arms on the plate, one for each pocket and normally maintained out of engagement with the contacts in the pockets, a cover plate on the base member enclosing the pockets, the contacts and the resilient contact arms, and a plurality of switch levers pivotally mounted on the cover

plate, one switch lever for each resilient contact arm, said switch levers adapted during pivotal movement to move the resilient contact arms into and out of engagement with the contacts to close a circuit therethrough.

3. In a switch of the character described, a base member having a plurality of pockets formed therein, a contact member in each pocket, a main contact plate secured to the base and connected with a source of electric current supply, said contact plate being insulated with relation to the contacts, a plurality of resilient contact arms on the plate, one for each pocket and normally maintained out of engagement with the contacts in the pockets, a cover plate on the base member enclosing the pockets, the contacts and the resilient contact arms, a plurality of switch levers pivotally mounted on the cover plate, one switch lever for each resilient contact arm, and a cam member on the inner end of each switch lever and engageable during pivotal movement of the switch levers to depress the resilient contact arms into engagement with the contacts to close a circuit there-through.

4. In a switch of the character described, a base member constructed of insulating material and having a plurality of radially disposed pockets formed therein, a central pedestal formed between said pockets, a main contact plate secured in the pedestal and connected with a source of electric current supply, a plurality of radially disposed resilient contact arms on the plate, one for each pocket, a contact member in each pocket, a cover member for the base, a plurality of switch levers pivotally mounted on the cover plate, one for each resilient contact arm, and means on each switch lever engageable with the resilient contact arms to depress the arms during pivotal movement of the levers into engagement with the contacts to close a circuit therethrough.

5. A switch of the character described comprising a base formed of insulating material and having a plurality of elongated radially extending pockets formed therein, a pedestal formed centrally of the base, a contact plate supported by the pedestal, radial arms on the contact plate extending into said pockets, a contact member in the bottom of each pocket, one of said radial arms being bent downwardly and secured to a contact member to form a lead in connection, and means for selectively depressing the other arms into contact with the other contact members.

6. A switch of the character described comprising a base formed of insulating material and having a plurality of radially extending pockets formed therein, a central pedestal member formed integrally with the base and lower than the walls between said pockets, a resilient contact plate supported by said pedestal and having radial arms extending one

into each of said pockets, resilient contact
members positioned in the pockets beneath
said arms and normally spaced from the
arms, a cover plate enclosing said pocket
members and means on the cover plate for
5 selectively depressing the arms of the contact
plate into engagement with the contact mem-
bers.

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