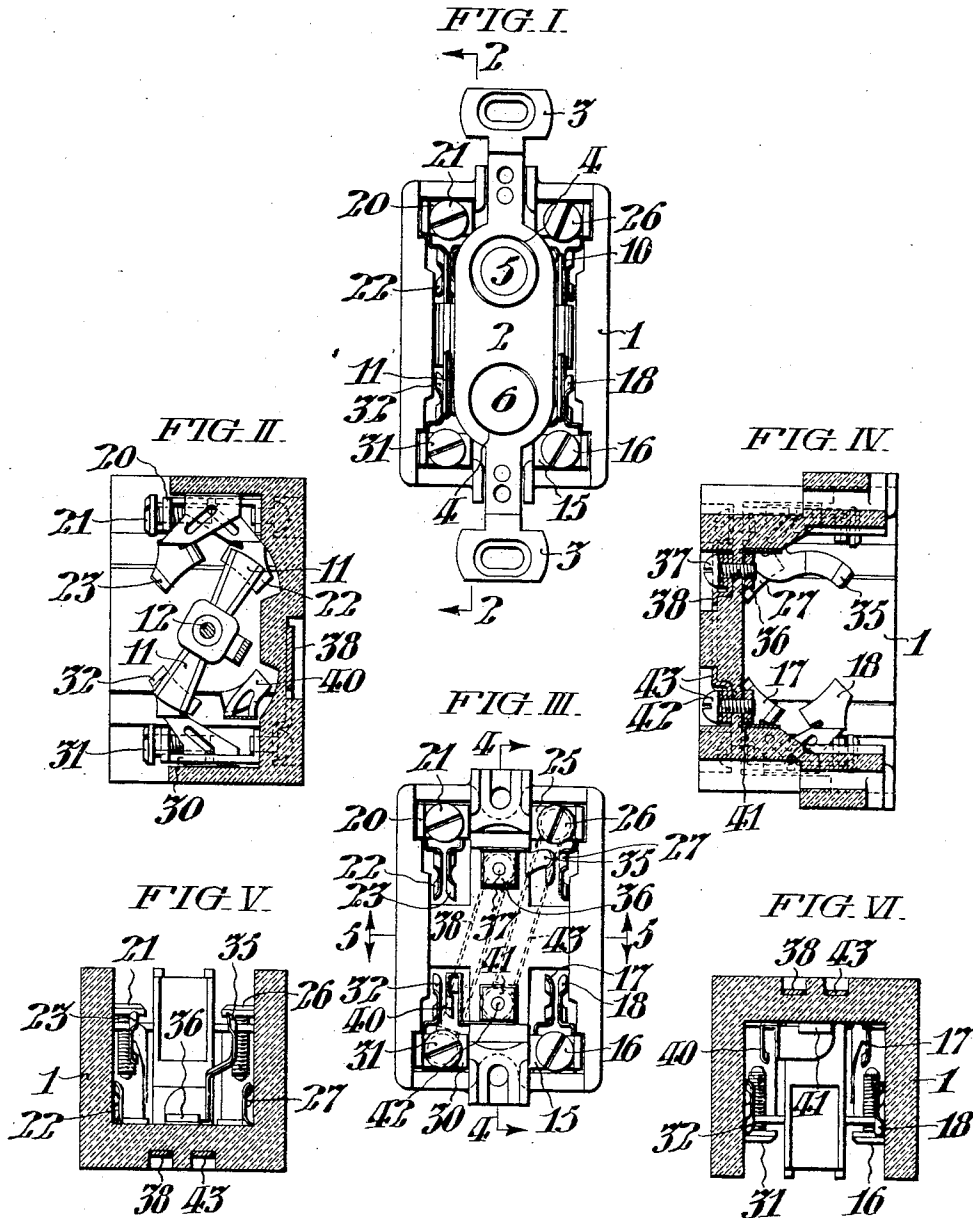


W. S. MAYER.
FOUR-WAY ELECTRIC SNAP SWITCH.
APPLICATION FILED AUG. 26, 1907.

948,564.

Patented Feb. 8, 1910.



WITNESSES:

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948,564.

Specification of Letters Patent.

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Application filed August 26, 1907. Serial No. 390,160.

To all whom it may concern:

Be it known that I, WALTER S. MAYER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Four-Way Electric Snap-Switches, of which the following is a specification.

My invention relates to an improvement in four way electric switches, and it has for its object to provide a switch of this character in which the movable contacts of usual form may be employed.

Other objects of my invention will be set forth and developed in the detailed description of the drawings.

A convenient embodiment of my invention is illustrated in the accompanying drawings which form a part of this specification, but it is to be understood that changes in the details of construction within the scope of the claims may be made without departing from the invention.

In the drawings, Figure I is a top plan view of a switch embodying my invention; Fig. II is a section on the line 2—2 of Fig. I; Fig. III is a view similar to the view shown in Fig. I, with certain parts removed; Fig. IV is a view taken on the line 4—4 of Fig. III; Fig. V is a view taken on the line 5—5 of Fig. III, looking toward the top of the drawing; and Fig. VI is a view taken on the line 5—5 looking toward the bottom of the drawing.

Referring to the drawings,—1 designates a receptacle of material which is a non-conductor of electricity, such, for instance, as porcelain, and 2 designates a plate or strip extending across the said receptacle and being connected thereto. By means of extensions 3 of the said strip the member 1 is connected to its support. The central portion of the strip is provided with openings 4 in which the push buttons 5 and 6 are located. The inner ends of the push buttons are, as usual, connected indirectly to the contact members 10 and 11, pivotally supported upon the shaft 12 by means not shown in the drawing. At the opposite corners of and within the insulating member 1, contact brushes and binding posts are provided.

15 designates a binding post to which a

line wire may be connected by means of a binding screw 16.

17 and 18 designate contact brushes or fingers, both of which are connected to the post 15. The brush 17 is located near the bottom of the receptacle 1, while the brush 18 is located at a point above the brush 17, as indicated in the drawings. 20 designates a binding post to which the end of a line wire is adapted to be connected by means of a binding screw 21. 22 and 23 designate contact brushes or fingers, both of which are connected to the binding post 20. The brush 22 is located toward the bottom of the member 1, while the brush 23 is located toward the top of the said member. It is to be understood that the position of these brushes 17 and 18, and 22 and 23 may be reversed with respect to each other. In the construction shown, the brushes 17 and 18, and 22 and 23 are formed of a single piece of suitable material, though, if desired, these brushes may be made separately, and each of them connected to the respective posts 15 and 20.

25 designates a binding post to which a line wire is adapted to be connected by means of a binding screw 26.

27 designates a contact brush or finger which is connected to the post 25.

30 designates a binding post to which a line wire is adapted to be connected by means of a binding screw 31.

32 designates a contact brush or finger which is connected to the binding post 30.

35 designates a contact brush which is secured to the bottom of the member 1 by means of a nut 36, which is in engagement with a screw 37, the head of the screw being in engagement with one end of a link 38, the opposite end of the said link having electrical connection with the lower end of the binding post 30.

40 designates a contact brush or finger which is secured to the bottom of the member 1 by means of a nut 41, which has screw-threaded engagement with a screw 42, the said screw being connected to one end of a link 43, the other end of the said link having electrical connection with the binding post 25.

The contact brush 27 is located adjacent to the bottom of the member 1, while the contact brush 35 is located at a point above

the said brush 27. The brush 40 is located toward the bottom of the member 1, while the brush 32 which is connected to the binding post 30 is located at a point above the brush 40. It will be understood, however that the relative positions of the brushes 27 and 35 and 32 and 40 may be reversed without changing the principle of operation of my invention.

The contact brushes 17 and 18 being integral with each other constitute in effect a single means for effecting electrical communication between the contact 10 and the binding post 15. In the same way the contact brushes 22 and 23 constitute in effect a single means for establishing electrical connection between the contact plate 11 and the binding post 20.

In the operation of my device, if one end of one of the contact members, for instance 10, is in engagement with the contact brush 18, the other end being in engagement with the brush 27, a current entering the device through the binding post 15 would pass thence through the brush 18 and the said contact and the brush 27 directly to the line wire connected to the binding post 25. If, however, the position of the contact member 10 be reversed, and one end thereof be moved into contact with the contact brush 17, the other end being in contact with the contact brush 35, connection will be made from the post 15 through the contact member 10, the brush 35 and the link 38 to the binding post 30, and thence to the line wire which may be connected thereto. The same passages of the current through the contact member 11 and the contact brushes with which it is adapted to contact take place when the said contact member 11 is moved from one position to the other, as described in connection with the contact member 10. That is to say, if one end of the contact member 11 is in contact with the brush 23 while the other end is in contact with the brush 40, a current passing from a line wire to the binding post 20 would travel through the said contact member 11 and the brush 40 to the link 43 and thence to the post 25 and to the line wire connected therewith. If, however, the position of the contact member 11 is changed, so that one end is in contact with the brush 22, the other end being in contact with the brush 32, a current entering the said contact member 11 from the binding post 20 would pass through the contact member 11 to the post 30 and thence to a line wire connected to the said post.

Having thus described my invention, I claim:—

1. In a device of the character described, a plurality of contact members of conducting material pivotally supported intermediate their ends, contact fingers arranged in pairs at the opposite ends of the said con-

tact members, a pair of contact fingers located at one end of each of the said contact members being in electrical communication, and a pair of contact fingers located at the opposite end of each of the said contact members being disconnected electrically, and means for occasioning movement of the said contact members to bring the opposite ends of the contact members into contact with either of the fingers of the respective pairs of fingers as may be desired.

2. In a four way electric snap switch, the combination of four pairs of contact devices, two pairs being located at one end of the said switch and two pairs located at the other end of the said switch, the devices of one pair at each end of the said switch being electrically connected, and the devices of the other pair at each end of the said switch being electrically disconnected, the electrically disconnected devices at one end of the said switch being electrically connected with the disconnected devices at the opposite end of the said switch, contact members pivotally supported intermediate their ends, one end of each of the said contact members in all positions of rest being in contact with one of the said electrically connected devices at the opposite ends of the said switch, and the opposite ends of the said members being in contact with one of the devices of each of the disconnected pairs of devices, means for occasioning movement of the said contact members to bring them into contact alternately with different devices.

3. In a device of the character described, the combination of pivotal contacts, means for occasioning pivotal movement of the said contacts, a terminal at each end of each of the said pivotal contacts, means whereby each of the said pivotal contacts is adapted to have electrical connection with the terminals at its ends when in one position, and means whereby when in another position each of the said pivotal contacts has electrical connection with a terminal at one end and with the terminal at the opposite end of the other pivotal contact, whereby electric currents may pass directly through the said device through the respective pivotal contacts from terminal to terminal when in one position or each of the said currents may form a loop through the said device when the said pivotal contacts are in another position.

4. In a device of the character described, the combination of two pivoted contact plates, a terminal located adjacent to each end of each of the said plates, contacts for electrically connecting the said plates and terminals, intermediate contact members one of which is adapted to contact with one of the contact plates upon one side of its pivot and has electrical connection with the termi-

nal at the opposite end of the other contact plate and the other one of said intermediate contacts being adapted to contact with the said other contact plate on the side of its
5 pivot nearest the last-named terminal, and the said last-named intermediate contact having electrical connection with the terminal at the opposite end of the first-named contact plate, and the said contact plates
10 when in one position having electrical connection with the terminals at their opposite ends and each of the said plates when in reverse position having one end in electrical

communication through a contact member with one of the said terminals and its other 15 end having electrical connection through one of the said intermediate contacts with a terminal at one end of the other of said contact plates.

In testimony that I claim the foregoing 20 as my invention, I have hereunto signed my name this 21st day of August, A. D. 1907.

WALTER S. MAYER.

In the presence of—

F. WM. FINK,

CHARLES H. RUSSELL.