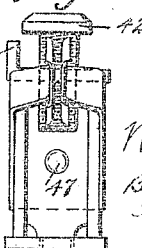
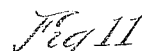
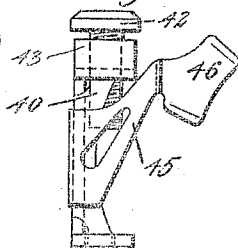
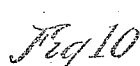
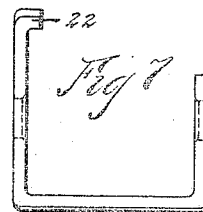
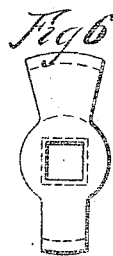
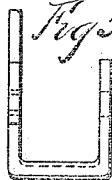
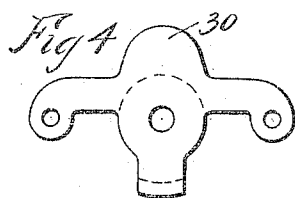
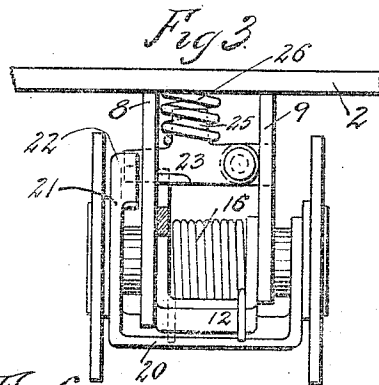
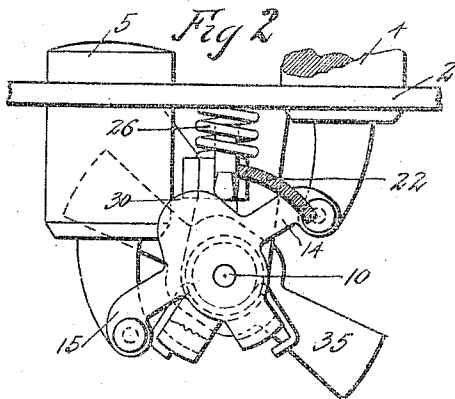
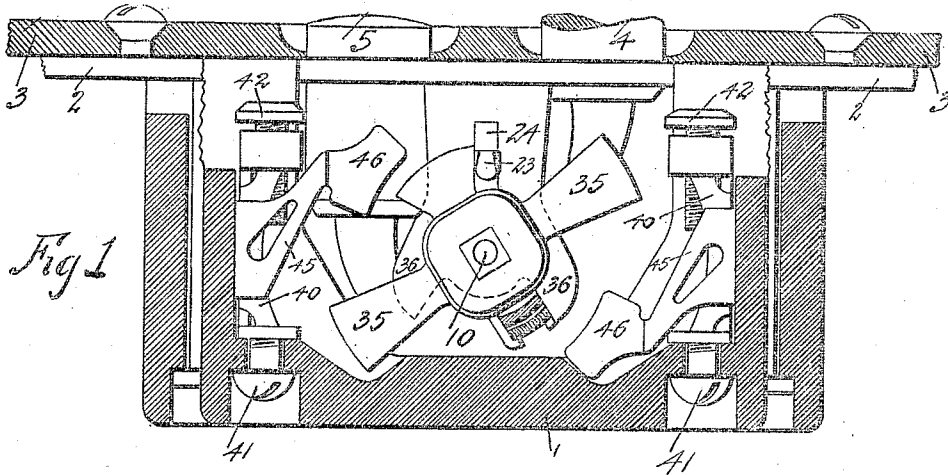


W. S. MAYER.
ELECTRIC SWITCH.
APPLICATION FILED JAN. 2, 1907.

971,623.

Patented Oct. 4, 1910.



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ELECTRIC SWITCH.

971,623.

Specification of Letters Patent.

Patented Oct. 4, 1910.

Application filed January 2, 1907. Serial No. 350,329.

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 Electric Switches, of which the following is a specification.

My invention relates to an improvement in electric switches of the character in which two push buttons are employed and by the movement of either one of which a spring is placed under tension, which, when released, occasions rapid movement of certain parts of the device to bring them either into or out of contact with certain other parts of the said device, whereby an electric current may be either closed or broken.

In order that my invention may be more readily understood, reference is to be had to the accompanying drawings, in which,

Figure 1 is a transverse section of a suitable receptacle or case, the operating parts of the device being shown in elevation; Fig. 2 is a view showing in elevation certain of the operative parts shown in Fig. 1, certain other of the said parts being removed; Fig. 3 is an elevation looking to the left in Fig. 2, the push buttons being removed; Fig. 4 is a side elevation of the member to which the push buttons are connected; Fig. 5 is an edge elevation of the same; Fig. 6 is an end elevation of the trigger catch to which the contact arms or poles of the device are rigidly secured; Fig. 7 is an edge elevation of the same; Fig. 8 is an end view of a stop which is adapted to be engaged by the trigger catch; Fig. 9 is a side view of the said stop; Fig. 10 is a side elevation of a binding post and a contact brush secured thereto; and Fig. 11 is a view looking to the left in Fig. 10.

In the drawings, 1 designates a cup-shaped receptacle or casing of porcelain or other suitable material, to which is connected the various operative parts of my improved switch.

2 designates a plate which is fastened to the wall or any other suitable object at the point at which the switch is to be used.

3 designates a face plate which is attached to the plate 2.

The plates 2 and 3 are provided with holes at suitable points through which the freely

movable buttons 4 and 5 respectively project. 8 and 9 designate lugs which project downwardly from the plate 2.

10 designates a shaft which is journaled in the downwardly projecting lugs 8 and 9, the opposite ends of the said shaft extending through and beyond the opposite sides of the said lugs 8 and 9.

12 designates an oscillating U-shaped member (which may be designated a controller) journaled upon the shaft 10, which member or controller is provided with arms 14 and 15 which extend in opposite directions from one of the legs or sides of the said member, and to which the lower ends of the push buttons 4 and 5 are respectively pivotally connected, as most clearly shown in Fig. 2 of the drawings. The U-shaped oscillating member 12 is located intermediate or between the downwardly projecting lugs 8 and 9 upon which the shaft 10 is journaled. 16 designates a spring which is coiled around the shaft between the opposite legs of the said U-shaped oscillating member 12, the opposite ends of the said spring being crossed or extending past each other and downwardly upon opposite sides of the bridge portion of the said U-shaped member 12, as indicated in the drawings.

20 designates a U-shaped trigger catch or shifter also supported upon the shaft 10. The opposite legs of the member 20 are located upon opposite sides of the lugs 8 and 9, as indicated in Fig. 3 of the drawings. One leg of the said U-shaped member 20 is extended, as indicated at 21 in the drawings, and is provided with a projection 22, which is adapted to engage the outer free end of a pivoted stop lever 23, which is pivoted at one end to a lug or bracket on the downwardly projecting lug 9. The free end of the stop lever projects through an opening 24 in the plate 8. The upper edge of the lever 23 is provided with a lug 25 which projects into a coiled spring 26, one end of which abuts against the inner or lower side of the plate 2, the other end of which surrounds the lug or projection 25 and abuts against the upper edge of the said stop lever 23.

30 designates a rise or cam projection extending upwardly from one of the legs of the U-shaped controller or member 12, and which rise or projection is adapted to con-

tact with the lower edge of the stop lever 23 and occasion pivotal movement of the same.

The relative positions of the free end of the stop lever 23 and the projection 22 (shown in section in Fig. 2) of the member 20, are such that when either one of the buttons 4 or 5 is depressed, the expansion of the spring 26 occasions downward movement of the stop lever 23 into the one or the other of the depressions between the rise 30 and the arms 14 or 15 of the oscillating member 12, so as to carry the outer end of the said lever out of alinement with the said flange to permit movement of the member 20. The bridge of the U-shaped member 20, as in the case of the bridge of the U-shaped member 12, is located between the ends of the coiled spring 16, as indicated in the drawings.

The contact arms or poles 35 are rigidly connected to the U-shaped trigger catch member or shifter 20 but are insulated therefrom. Being rigidly connected to the said member 20, it is obvious that the said poles which are adapted to contact with or engage the spring brushes to be hereinafter referred to and described move in unison with the said trigger catch member 20.

In order to limit the pivotal or oscillating movement of the U-shaped member 20, I have provided the downwardly and outwardly projecting lugs or ears 36 upon the lower end of the lug 8. It will be observed that the bridge portion of the U-shaped member 20 is located between the said lugs and adapted to contact with them, its swinging pivotal movement being in this manner limited.

40 designates binding posts which are secured by means of screws 41 to the casing or receptacle 1.

42 designates binding screws which are adapted to engage screw-threaded perforations in the binding posts 40 and by means of which the line wires are connected to the said binding posts.

43 designates upturned projections, the purpose of which is to prevent the spreading of the wires or cords which are connected to the binding posts.

45 designates spring brushes having spring contact portions 46 at their inner ends. These brushes are constructed of relatively thin metallic sheets, which are bent in the manner illustrated most clearly in Figs. 10 and 11 of the drawings, so as to bring the spring contact portions 46 of each brush into juxtaposition so that when a pole is moved into position between the said contact portions, such pole will be in engagement with each of them. The brushes 45 are illustrated as being connected at their bridge or base portions to the binding posts 40, the connection being made at 47, as in-

dicated in Fig. 11 of the drawings. It will be observed upon an examination of Fig. 1 of the drawings, that the spring arms to which the contact portions 46 are connected extend upwardly or downwardly from the base or bridge portions which are connected to the binding posts, depending upon the fact as to whether the contact brushes are turned so that one edge or the other thereof is on top. By reason of the particular relative arrangement between the said base portion and the spring arms 45, the brushes may be used upon either side of the device. That is, by reason of the particular construction shown, the contact brushes are reversible or interchangeable. It will be noted that the points of support of the brushes 45 are in substantial alinement with the shaft 10 upon which the contacts 35, the controller 12, and the shifter 20 are pivoted, and that the spring arms of one of the said brushes extend upwardly and inwardly and that the spring arms of the other of said brushes extend downwardly and inwardly. In the position shown in Fig. 1, the contacts 35 lie in a plane intermediate the brushes 45, while in Fig. 2 the contacts have been moved into position to engage the spring contact portions 46 of the spring brushes 45. By reason of the construction and arrangement of parts as illustrated, I am enabled to use a very shallow box to contain the operative parts of my device.

In the operation of my improved switch, one of the push buttons 4 or 5 is depressed, occasioning movement of the U-shaped member 12, with the result that the spring 16 is placed under tension, by reason of the fact that the bridge portion of the said member moves against and occasions a winding movement of one end of the said spring, the other end thereof being held stationary by the member 20. Inasmuch as one end of the spring is held stationary by the U-shaped member 20, when the other end is subjected to a winding movement and pressure, it will be understood that pressure will be exerted upon the said member tending to occasion movement of it in one direction. Movement, however, is prevented by reason of the fact that as the member 12 is turned about its pivot, the rise 30 thereof engages the edge of the pivoted stop lever 23, raising and holding the same in alinement with the projection 22, thus preventing movement of the member 20 and of the poles 35 connected thereto. When, however, the button 4 or 5, as the case may be, is depressed a sufficient distance to carry the rise beyond or past the stop lever 23, the latter, by reason of the expansion of the spring 26, is pushed or moved down into the depression between the said rise 30 and the arm 14 or 15 which has been raised. In moving to this position, the outer free end of the stop lever 23

reaches a point below the projection 22 upon the member 20, so that the spring 16 in unwinding to return to normal tension snaps the member 20 together with the poles 5 35 connected thereto into a position in which they are either in contact with the contact springs 46 or else are out of contact with the said springs, which latter position is illustrated in Fig. 1 of the drawings.

10 The broad subject-matter of invention disclosed herein and not claimed, is claimed in my copending application filed August 26, 1907, Serial No. 390,159.

15 Having thus described my invention, I claim:—

In a device of the character described, the

combination of a pivot, contacts supported upon the said pivot, means for occasioning movement of the said contacts, and contact springs supported in substantially horizontal 20 alinement with the said pivot upon opposite sides thereof, the said springs being reversible, and one of the springs extending upwardly from its point of support and the other of said springs extending downwardly. 25

In testimony that I claim the foregoing as my invention, I have hereunto signed my name this 26th day of December, A. D. 1906.

WALTER S. MAYER.

In the presence of—

HARRY F. AMBLER,

LAURA KLEINFELDER.